

Determination in respect of the fire safety adequacy of bedroom doors in a heritage hotel (Ref 004/002/55).

Following advice from the Chief Fire and Rescue Adviser, the Secretary of State has determined, under article 36 of the Regulatory Reform (Fire Safety) Order 2005, that, if the rooms in question are to continue to be used as bedrooms their doors should be:

- upgraded to achieve a period of fire resistance of 30 minutes;
- fitted with smoke seals; and
- fitted with self closing devices.

This Determination is based entirely on the unique circumstances of the hotel in question and the decisions have been taken after careful consideration of the particular circumstances relating to this case.

It is now a matter for the enforcing authority and the responsible person.

A copy of the advice of the Chief Fire and Rescue Adviser to the Secretary of State underpinning this determination is set out below.

Chief Fire and Rescue Adviser's report to Secretary of State

1. Background

- 1.1 In accordance with Article 36 of the Regulatory Reform (Fire Safety) Order 2005 ("Fire Safety Order") the enforcing Fire and Rescue Authority and the responsible person for the premises jointly applied to the Secretary of State for determination of the disputed matters relating to fire safety.
- 1.2 As a result of the determination application I commissioned technical support to assist me in my findings.
- 1.3 The premises concerned is a Grade 1 listed building in use as a hotel within which six bedrooms are the subject of dispute.
- 1.4 In accordance with their enforcement responsibility the Fire and Rescue Authority issued an enforcement notice to the responsible person for the hotel on the basis that there is a failure to comply with Article 14(2)(b) of the Fire Safety Order. Among the requirements was to upgrade the doors to six of the bedrooms to a 30 minute fire resistance standard and fit with appropriate self closing devices.
- 1.5 The responsible person accepts that the existing doors would not offer more than about 10 minutes fire resistance if tested to the relevant British Standard. However, he contends that the standard required by the Fire & Rescue Authority is unnecessary and would require onerous alterations to the fabric of the (Grade 1) listed building.

2. Technical Description

- 2.1 A technical assessment of the matters in dispute was undertaken which included an examination of the documents submitted by both parties to the determination and a visit to the premises to consider the risk and the means of escape relating to the dispute bedrooms.
- 2.2 The disputed area comprises six first floor hotel bedrooms served by an un-fenestrated internal corridor. The corridor, in turn, is served by three routes leading out of the building; two by means of a staircase to the ground floor and the third directly to outside made possible because of the sloping nature of the site.
- 2.3 The arrangement of these routes is such that from the doorway of any of the six bedrooms in question it is possible to escape in either direction, in an acceptable travel distance, along the corridor via a route that is a satisfactory alternative to the other routes, to a place of safety outside the building.

- 2.4 All internal escape routes from the bedrooms in question include the corridor as a common element. Because of the arrangement of the rooms smoke entering the corridor from any of the 6 bedrooms will always impact on the escape route from at least one of the other bedrooms.
- 2.5 For the corridor to provide an effective escape route in the event of a fire in one of the six bedrooms it is necessary for the corridor to sustain tenable conditions for the period of time occupants might reasonably need to use it. This will include the time necessary for the fire to be detected, a warning given, the occupants of the bedrooms to respond and then to travel along the corridor to an escape route leading to outside of the building.
- 2.6 To maintain tenable conditions it is necessary for the corridor to be separated from the adjoining bedrooms by partitions and doors capable of withstanding the ingress of combustion products into the corridor for the period of time described above.
- 2.7 Each of the en-suite bedrooms has all the normal facilities expected of a hotel of this character.
- 2.8 The doors to the six bedrooms are subject to the Fire and Rescue Authority's enforcement notice, which requires a range of measures to be taken. The requirements disputed by the Responsible Person are those in relation to the six doors.

3. Risk Summary

- 3.1 A summary of the risks associated with the disputed bedrooms is as follows:
 - a. There is a normal fire loading within the rooms with furnishing and contents of the bedrooms being typical of a country house hotel;
 - b. The risk of the building and contents is assessed as medium rather than low as asserted by the responsible person.
 - c. The existing doors will not provide a reasonable period of fire resistance to protect the corridor from ingress of the products of combustion
 - d. The premises is fitted with a suitable fire detection and alarm system but not a fire suppression system.
 - e. The occupancy and response time to a fire or fire alarm operating is relative to the use eg bedrooms do require consideration of greater response and evacuation time than a day occupancy (office/seminar room);
 - f. All normal sources of ignition are present eg lights, lamps, television, hairdryer, ironing facilities.

The key issues put forward by Fire and Rescue Service and the Responsible Person are set out in the table below:

Key Issue	A summary of Fire and Rescue Service position	A summary of Responsible person's position
Ignition sources	There are the normal range of ignition sources, typical of the occupancy	Not commented upon
Fire loading	There is a normal fire loading with the furnishings and contents of the bedrooms being typical of the occupancy	Fire in a bedroom would be slow growing because of the relatively low fire loading, low surface spread of flame and the volume of the room.
The level of risk	The premises are a normal risk, since the description in the accepted guidance of lowest risk premises does not apply in this case	The level of risk is low because of low fire loading and slow rates of spread, reduced travel distances, the excess availability of staircases and escape routes, the size of the bedrooms and the ceiling heights and the levels of staffing.
The resistance of the doors to fire	The doors will not provide a reasonable period of fire resistance without the provision of adequate smoke seals and intumescent strips on the doors or frames and the application of non invasive intumescent paint or varnish to the doors to increase the fire resistance.	Accepts that "these doors will not offer more than about 10 minutes fire resistance in a BS 476 test" The doors would not be subject to attack by high temperatures for at least 5 minutes after the smoke detector has activated. It would be a further 5 minutes before burning through the doors was to occur. After burning through, the door frame should remain stable for at least a further 10 minutes.

Self closing devices on the doors	That the doors must be self closing, to function as protection for the corridor.	Recognises that self closing devices will provide additional protection against cold smoke spread into the corridors.
Protection of corridors from smoke and fire	The corridors must be protected from the effects of a fire in a bedroom, in order to allow persons to escape in order for Article 14 (2) (b) to be satisfied. The guidance requires every corridor which serves part of the means of escape to be protected routes with 30 minutes of fire resistance.	The sections of (unprotected) corridors are short, have two directions of escape and would meet the travel distance requirements of the accepted guidance for an inner room situation.
Travel distances in rooms and corridors and number of exits	No comment on travel distances, recognises the availability of multiple exits	The size of rooms at the hotel and travel distances in the rooms and corridors are significantly shorter than the maximum permissible in the guidance. The number of rooms served by an undivided corridor is lower than allowed in the guidance, the number of exits to staircases or open air is greater than is required.

Speed of detection	The effect of natural air currents in a room influence the movement of smoke and may allow smoke to pass through the unsealed door, or away from detectors, rendering the system ineffective, resulting in a fire burning for some time before being detected by the fire detection and alarm system. Smoke and fire may enter the corridor before the actuation of the alarm.	Notes that a “type 2” fire detection and alarm system to BS 5839 Part 1 2002 is fitted. Assumes that there will be an interval of 5 minutes between the fire being detected and the bedroom doors being subject to high temperatures.
Response time of guests	There are factors that will result in guests responding slowly to an emergency. These factors include depth of sleep, the age of guests, use of medication, influence of alcohol, unfamiliarity with the sound of the alarm and the layout of the premises.	Unlikely that the occupants of the rooms will take longer to respond than 5 minutes because the duty manager (who has an addressable alarm panel in his flat that is on the third floor of the premises) will evacuate those most at risk.
Response of staff	Difficulties of language of staff or guests may be present. Robust management plans and procedures for investigating fires and evacuation are required.	The manager’s partner will evacuate the remainder of the guests and 6 fire wardens (staff in the staff accommodation, on site but outside the main building) will also react.

Response of F&RS	The safety of persons should not be reliant upon the attendance of the F&RS. The nearest station is some way away; it is not permanently crewed and may be committed elsewhere or delayed by traffic.	Not commented upon
The impact of the requirements on the historical value of the premises.	The requirements have been met elsewhere in the premises on similarly historical elements of the fabric of the building, including doors. The requirements provide improved fire separation to the premises, restricting fire spread and damage by fire and hot gases to other parts of the premises, therefore being of value in preserving the historic fabric of the premises. The disputed improvements can be made in non invasive and reversible ways.	There is no specific information provided to describe English Heritage's view of the impact on the historical value of the doors in question, however it is the basis of their request for the determination.

4. Conclusion

- 4.1 Consideration of the technical support I commissioned leads me to advise that the risks to guests occupying the six bedrooms in dispute would be significantly reduced by providing additional protection from a fire in a bedroom served by the same corridor.
- 4.2 It was apparent that the bedroom doors fit poorly in their frames with uneven gaps between the door and the frame.
- 4.3 It is considered that the existing doors (even with self closing devices fitted) cannot be relied upon to prevent the egress of smoke at the early stages of a fire.
- 4.4 The existing bedroom doors cannot be described as smoke stopping doors and the corridor is not adequately protected from smoke.

4.5 If the rooms in dispute are continued to be used as bedrooms it is considered appropriate to undertake the following measures which enable an appropriate balance to be struck between ensuring sufficient fire safety measures are in place for the safety of people and maintaining the historic fabric and character of the building:

- (i) Upgrade the doors to achieve a period of fire resistance of 30 minutes
- (ii) Fit each of the bedroom doors with smoke seals; and
- (iii) Fit each of the bedroom doors with self closing devices

4.6. The above measures are commensurate with the enforcement notice issued by the Fire and Rescue Authority.

Sir Ken Knight
Chief Fire & Rescue Adviser
November 2008