

## **BUILDING ACT 1984 - SECTION 16(10)(a)**

### **DETERMINATION OF COMPLIANCE WITH REQUIREMENT B1 (MEANS AND WARNING OF ESCAPE) IN PART B (FIRE SAFETY) OF SCHEDULE 1 TO THE BUILDING REGULATIONS 2010 IN RESPECT OF THE ERECTION OF A 2 STOREY SIDE AND REAR EXTENSION, SINGLE STOREY REAR EXTENSION AND LOFT CONVERSION.**

#### **The proposed work and question arising**

4. The papers submitted indicate that the building work to which this determination relates to is the proposed erection of a two-storey side and rear extension, a single storey rear extension and a loft conversion with a rear dormer. The scheme includes the formation of an entirely new protected stair rising through the three levels. The stair is protected by a fire resisting enclosure with a single self-closing fire door at each level. These doors lead to a landing or lobby area which provides access to the rooms via standard (not fire-resisting) doors. At ground floor level the stair has a second door which allows for direct exit to a side street

5. The work was the subject of a full plans application which you presented to the Council on 23 January 2012, that was later rejected by the Council on 23 March 2012, on a number of grounds including that your proposals do not comply with requirement B1 (Means of warning and escape) of the Building Regulations 2010 in relation to Part B Fire Safety. However, you believe that your plans for the work not only comply with requirement B1 but provide a safer solution for your clients. It is in respect of this question that you have applied for a determination.

#### **The applicant's case**

6. In support of your case, you state that in preparation of your proposals, you were conscious of the following:

*Buildings Regulations Approved Document B (Fire Safety) Volume 1, on page 4:*

*Use of guidance:*

*The Approved Documents are intended to provide guidance for some of the more common building situations. However, there may be alternative ways of achieving compliance with the requirements. **Thus there is no obligation to adopt any particular solution contained in an Approved Document if you prefer to meet the relevant requirements in some other way.***

*Building Regulations Approved Document B (Fire Safety) Volume 1, page 9:*

*General Introduction*

*In providing fire protection of any kind in dwellinghouses, it should be recognised that measures which significantly interfere with the day to day convenience of the occupants may be less reliable in the long term.*

*Building Regulations Approved Document B (Fire Safety) Volume 1 page 13:*

*B1.iii Initially, a fire will create a hazard only in the part in which it starts and is unlikely, at this stage to involve a large area. The fire may subsequently spread to other parts of the building, usually along the circulation routes.*

*B1.iv The primary danger associated with fire in it's early stages is not flame but the smoke and noxious gases produced by the fire. They cause most of the casualties and also may obscure the way to escape routes and exits. Measures designed to provide safe means of escape must therefore provide appropriate arrangements to limit the rapid spread of smoke and fumes.*

7. You state that the Building Regulations Approved Document B (Fire Safety) Volume 1 does not require a protected stair for a two-storey building (the requirements may be met with an unprotected stair and egress windows or doors), but it does require a protected stair for a two-storey building with a loft conversion. Subsequently, you suggest that the protected stair is there to help protect the occupants of the second (loft) floor and the protected stair illustrated in *Approved Document B (Fire Safety) Volume 1, page 19, Diagram 2* is only a protected stair if all the doors to the habitable rooms are closed. If all these doors are not closed, the stair is not a protected stair. You consider the stair arrangement shown in *Approved Document B (Fire Safety) Volume 1* may be the best that can be achieved with a mid-terrace property. However, you state that your building is an end-of-terrace property with a side extension, so you feel that you are not limited in the same way.

8. You regard the need to close all doors to habitable rooms to achieve a protected stair as interfering with day-to-day convenience and that it would make no sense that you propose this arrangement for your client, when, in your opinion, you could propose a scheme that would allow your clients to leave doors open to habitable rooms as they choose, yet still have a far safer environment for anyone on the upper floors. This was also agreed by your clients.

9. You consider that the protected stair arrangement in *Approved Document B (Fire Safety) Volume 1* is inherently weak, as it requires the occupants to close all doors to habitable rooms. If doors were left open, a fire in the ground floor kitchen, for example could result in the rapid spread of smoke and fumes to the upper floors. Anyone on the top (loft) floor would then have to find a way down through the smoke and fumes (assuming that anyone on the first floor could escape through egress windows).

10. You argue further that *Approved Document B (Fire Safety) Volume 1* advises that most casualties in fires are caused by the effects of smoke and fumes, so it would be irresponsible of you not to propose a solution which would be far more likely to prevent smoke and fumes reaching the upper floors when you knew you could do so.

11. Finally, in your application to the Secretary of State for a determination, which has been copied to the Council, you provided additional information, in that, all new habitable rooms on the ground and first floor in the proposed works have a window, or external door, which comply with paragraph 2.8 of Approved Document B and a linked system of smoke detectors, mains operated with battery backup, is proposed for the three floors.

### **The Council's case**

12. The Council's Head of Building Control responded to this Department on 10 August 2012. Its view is that the matter to be decided by this determination is whether your proposed extensions and loft conversion provides a safe means of escape.

13. To support the Council's view that the proposed building work does not comply with Requirement B1 of the Building Regulations, the Council firstly refers to paragraph B1.v (b) of Approved Document B, Volume 1 which states that;

*B1.v The basic principles for means of escape are:*

*(b) Where direct escape to a place of safety is not possible, it should be possible to reach a place of relative safety, such as a protected stairway, which on a route to an exit within a reasonable travel distance.*

They are of the opinion that the proposed layout does not allow for direct access from the room to a protected stairway.

14. To further support its view the Council refers to paragraph 2.6(a) of approved Document B, Volume 1 which states that;

*Dwellinghouses with one or more storeys more than 4.5m above ground level*

*2.6.1 The dwellinghouse may either have a protected stairway as described in (a) below, or the top floor can be separated and given it's own alternative escape route as described in (b)*

*a. The upper storeys (those above the ground level) should be served by a protected stairway (protected at all levels) which should either;*

*(1) Extend to a final exit , see Diagram 2(a), or,*

- (2) Give access to at least two escape routes at ground level, each delivering to the final exits and separated from each other by fire-resisting construction and fire doors, see Diagram 2(b)

Again, they are of the opinion that the dwellinghouse has not been provided with direct access to the protected stair.

15. The Council state the formation of “lobbies” off the stair were considered to be unprotected and offer a danger to the occupants of the rooms which had access to this area to exit using the stair as it was not separated from the other rooms it served by fire resisting construction. Although the Architect had outlined a situation where a fire on the ground floor will not affect anyone on the floors above, given that all the doors may be left open the Council felt the Architect had not considered a fire on the same floor i.e. a fire on either the first or the second floors may compromise egress to the protected stair. The council considers this area as a risk.

16. The Council state that *Approved Document B, Volume 1* offers no explicit guidance in regards to this proposed layout except paragraph 2.9 which describes inner rooms. Therefore for the purposes of paragraph 2.9 the Council considers the proposed layout provides for an inner room situation. In addition the Council does not consider the architect’s argument valid, that the area could not be considered a room as the definition of a room given in Appendix E of *Approved document B, Volume 1* was for the purpose of B2.

17. Furthermore the Council made a particular reference to paragraph 2.20(b) of *Approved Document B* to support their view that compliance with requirement B1 was not provided. For loft conversions, where a new storey is to be added by converting an existing roof space, the provisions for escape need to be considered throughout the full extent of the escape route. For example, a loft conversion to a two-storey house will result in the need to protect the existing stairway (by providing fire resisting doors and partitions) where previously no protection may have existed.

18. The council state that they have offered to look at the provision for means and escape and allow the proposed layout subject for the following items:

- 1) provision of fire doors (FD20) to all loft rooms; and
- 2) all rooms on ground and first floor being served by a window or door complying with clause 2.9 *Approved Document B Vol. 1*.

These items were not supplied to the Council by the architect.

19. The Council is also of the opinion that there are queries regarding the means of escape to the rear first floor bedroom over/adjacent to a rooflight and to new loft rooms which also needs to be resolved.

## **The Secretary of State's consideration**

20. The Secretary of State has given careful consideration to the circumstances of this case and the arguments presented by both parties.

21. The Council are of the opinion that in relation to guidance offered in Approved Document B, Volume 1, the proposed layout does not allow for direct access from the room to a protected stair and that the dwellinghouse itself has not been provided with direct access to the protected stair due to the formation of unprotected lobbies (i.e. the landing areas not being enclosed with fire-resisting construction) between the habitable rooms on the first and second floors (converted roof space) and the protected stair.

22. However, you believe that the protected stair illustrated in Approved Document B (Fire safety) Volume 1 is inherently weak, as it requires the occupants to close all doors to habitable rooms. You suggest that your proposal of providing half-hour fire doors with door closures to the protected stair at each level being inherently robust.

23 In providing any kind of fire protection in houses it should be recognised that measures which significantly interfere with the day-to-day convenience of the occupants may be less reliable in the long term. Based on previous work that supported the changes to Approved Document B (Fire safety) in 2006 to remove the provision relating to self-closing devices from internal doors within dwellings, the Secretary of State takes the view that self-closing devices on fire doors within dwellings offer very little benefit as they are prone to being disabled by the occupants. As such your approach to protection of the stairway itself is not considered to be any better than that provided by the approach described in the Approved Document.

24 What is in question in this case is whether the proposed layout at each floor level offers appropriate means of escape in case of fire from the building to a place of safety outside the building. Whilst the Approved Document provides guidance in relation to a 'whole house', another way of assessing whether an appropriate level of safety has been offered by a particular layout is to consider each floor in turn.

25. At ground floor level, the conventional approach is to provide direct access from each room to an entrance hall which in turn leads to a final exit. Whilst there is no fire resisting enclosure, an escape route through a largely unoccupied/unfurnished space plus physical separation from each room reduces the risk of people becoming trapped by fire. The proposed ground floor layout reflects this approach.

26. At first floor level, the conventional approach would be to provide an escape window from each habitable room or direct access to a protected stairway. The proposed layout introduces a landing lobby between each room and the protected stairway. Whilst this layout is unusual, the Secretary of State takes the view that it is similar to the situation at ground floor level and could, therefore, be considered to provide an equivalent level of safety. The addition of escape windows provides an added benefit.

27 At second floor level, escape windows are not considered appropriate and so a protected stairway is considered to be necessary. Similar to the first floor, the proposed layout has three rooms, a bedroom, a playroom and a bathroom all accessed via an unprotected landing lobby with a fire resisting door leading onto the stairway. Whilst this is similar to the proposed layout at first floor level, the second floor lobby is much smaller and the paths of which both doors swing (i.e. the adjacent bedroom door and the fire resisting door leading to the stair) is likely to cause some considerable inconvenience for the occupants of the house due to their collision. There is, therefore a significant risk that the stairway door will be removed by present or future occupants.

28. The Secretary of States takes the view that whilst the proposal includes the formation of a protected stair, the arrangement of doors at second floor level is sufficiently inconvenient that it is unlikely to provide the level of safety required. As such your proposals do not satisfy Requirement B1.

29. The Secretary of State is of the opinion that there are relatively simple measures that could be adopted to achieve compliance in this case. i.e. the provision of fire resisting construction and associated fire doors around the perimeter of the second floor lobby landing (and removal of the extra door leading to the stair on this floor) which would provide a more practical layout for the occupants and serve to protect the escape route. This is a matter which you should discuss with the Local Authority.

### **The determination**

30. As indicated above, the Secretary of State considers that your proposals in the plans, as submitted, do not make adequate provision for means of escape in case of fire]. He has therefore concluded and hereby determines that the plans of your proposed building work do not comply with requirement B1 in Part B (Fire safety) of Schedule 1 to the Building Regulations 2010 in relation to the work in question.

31. You should note that the Secretary of State has no further jurisdiction in this case and that any matters that follow relating to the building work should be taken up with the building control body. A copy of this letter is being sent for information to the Council.

