

Report for An Bord Pleanála

on

**Appeal against Condition 2 on Fire Safety Certificate FSC/092/2022
(Submission Number 3002530 / Application Number
FSC2104473DR)**

for

The Proposed Block C Residential Building

at

Cherrywood T6, Cherrywood, Dublin 18

Client: An Bord Pleanála
An Bord Pleanála Ref: 313791-22
Our Ref: ABP_R021_Issue 1

1.0 Introduction

This report sets out my findings and recommendations on the appeal submitted by Jensen Hughes, acting on behalf of LSREF V Eden T2/T6 Limited, against Condition 2 on Fire Safety Certificate FSC/092/2022 by Dun Laoghaire Rathdown County Council in respect of an application for works related to Proposed Block A Residential Development at Cherrywood T6, Cherrywood, Dublin 18.

It is noted that having regard to the nature of the Conditions under appeal, it is considered that the appeal can be adjudicated upon without consideration of the entire of the application.

1.1 Subject of Appeal

Condition 2 of the granted Fire Safety Certificate (FSC/092/2022) by Dun Laoghaire Rathdown County Council is as follows: -

Condition 2:

All maisonettes accessed from the first floor landing of each of the common protected stairwells are to comply with one of the following options:

a) *At least one alternative exit is to be provided and all habitable rooms are to be entered directly from either a protected entrance hall or protected landing.*

Or

b) *All residential units are to be provided with a sprinkler system complying with the recommendations of BS 9521: 2021, Fire Sprinkler systems for domestic and residential occupancies – Code of Practice.*

Reason:

To comply with Part B of the Second Schedule to the Building Regulations 1997 to 2020.

2.0 Documentation Reviewed

- 2.1 Fire Safety Certificate Application (application form, compliance report and fire safety drawings) submitted by Jensen Hughes, on behalf of LSREF V Eden T2/T6 Limited, on 11th May 2021.
- 2.2 BCMS log of request for revised information dated 21/07/2021 created by Dawn Richards.
- 2.3 Additional Information from Jensen Hughes to Dublin Fire Brigade dated 18th February 2022.

- 2.4 BCMS log of request for revised information dated 08/03/2022 created by Dawn Richards.
- 2.5 Additional Information from Jensen Hughes to Dublin Fire Brigade dated 30th March 2022.
- 2.6 Granted Fire Safety Certificate FSC/092/2022 from Dun Laoghaire Rathdown County Council dated 13th May 2022.
- 2.7 Letter of Appeal from Jensen Hughes, acting on behalf of LSREF V Eden T2/T6 Limited, received by An Bord Pleanála on 10th June 2022.
- 2.8 Fire Officer's report on Fire Safety Certificate Appeal dated 11th July 2022 to An Bord Pleanála.
- 2.9 Jensen Hughes response to Fire Officer's report dated 15th August 2022 to An Bord Pleanála.

3.0 Building Control Authority's Case

In response to the appeal of Condition 2 Dublin Fire Brigade offer the following rebuttal: -

Technical Guidance Document B – Fire Safety (2006) (Reprint 2020) – amendments and corrections incorporated, was reprinted in 2020, five years after the publication of BS 9991: 2015, Fire safety in the design, management and use of residential buildings.

The Department of Housing, Planning and Local Government made reference to BS 9991: 2015 in Technical Guidance Document B – Fire Safety (2006) (Reprint 2020) and formed the opinion in March 2020 that the most relevant code of practice to use in Ireland was and still is BS 5588: Part 1.

Technical Guidance Document B – Fire Safety (2006) (Reprint 2020), Section 1.1.2, Purpose Group 1(c) Flats and maisonettes states:

1.1.2 Guidance on the provision of means of escape in buildings containing flats and maisonettes, etc. Residential(Dwellings), Purpose Group 1(c), is provided in the following:

- BS 5588: Part 1: 1990, Fire precautions in the design, construction and use of buildings, Part 1, Code of practice for residential buildings;

and

- Sub-sections 1.4 (general provisions for means of escape), 1.6 (open plan flats), 1.7 (protected corridors / lobbies serving all flats), and 1.8 (domestic sprinkler systems), of this Technical Guidance Document.

Department of Housing, Planning and Local Government, Circular Letter BC02-2020 dated 2nd March 2020 – Additional Guidance to Technical Guidance Document B Fire Safety 2006 states:

'Section 0.1.4 of TGD B indicates that the detailed provisions set out in the document are intended to provide guidance for some of the more common building situations. In other situation, alternative ways of achieving compliance with the requirements of the Regulations may be appropriate. The use of alternative design solutions, standards, systems or methods of fire protection to those outlined in the Document are acceptable, provided the level of fire safety achieved is adequate to satisfy the requirements of the Regulations.'

Queries have been raised as to the role of BS 9991 in demonstrating compliance with Part B of the Building Regulations. In this regard, in the case of buildings containing flats, BS 9991 is not considered as a means to prima facie indicate compliance with Part B of the Second Schedule to the Building Regulations.'

Technical Guidance Document B – Fire Safety (2006) (Reprint 2020) – amendments and corrections incorporated states in regard to means of escape in case of fire:

Means of escape in case of fire.	B1	A building shall be so designed and constructed that there are adequate means of escape in case of fire from the building to a place of safety outside the building, capable of being safely and effectively used.
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It is Dublin Fire Brigades contention that this requirement is not complied with as no adequate means of escape has been provided from the top floor of the maisonette accessed from the First Floor Landing. No alternative means of escape is provided.

Section 1.1.2, Purpose Group 1(c) Flats and maisonettes states: -

1.1.2 Guidance on the provision of means of escape in buildings containing flats and maisonettes, etc. Residential(Dwellings), Purpose Group 1(c), is provided in the following:

- **BS 5588: Part 1: 1990, Fire precautions in the design, construction and use of buildings, Part 1, Code of practice for residential buildings;**

and

- **Sub-sections 1.4 (general provisions for means of escape), 1.6 (open plan flats), 1.7 (protected corridors / lobbies serving all flats), and 1.8 (domestic sprinkler systems), of this Technical Guidance Document.**

Clause 10.4 'Recommendations for maisonettes with one or more storeys situated more than 4.5m above ground or access level and entered from above or below' states:

The following recommendations are applicable.

- a) No maisonette should be so planned that any habitable room is an inner room.
- b) On every storey situated more than 4.5 m above ground level (other than the floor of entrance to the maisonette) either:
 - 1) an alternative exit from each room should be provided (see Figure 9 and Figure 11); or
 - 2) at least one alternative exit should be provided, and all habitable rooms should be entered directly from either a protected entrance hall or a protected landing (see Figure 10).

It is Dublin Fire Brigades contention that this requirement is not complied with as no adequate means of escape has been provided from the top floor of the maisonette accessed from the First Floor Landing, as no alternative means of escape is provided.

Furthermore Dublin Fire Brigade state that the proposed compensating measures do not adequately compensate for the fact that no alternative exit is provided from the upper level of the maisonette as required in Clause 10.4 of BS 5588 Part 1: 1990. Also the proposed building is not designed to provide adequate means of escape in case of fire from the building to a place of safety outside the building, capable of being safely and effectively used as required in Technical Guidance Document B – Fire Safety (2006) (Reprint 2020) that came into effect 1st July 2020.

4.0 Appellant's Case

In their appeal letter the appellant makes the following case: -

- BS 5588 Part 1 is an older guidance document which does not reflect current design practices. Section 10.4 of BS 5588 Part would recommend that on every storey situated more than 4.5m above ground level an alternative means of escape would be recommended from the upper level of the maisonette/duplex units where the height of the storey is over 4.5m above ground.
- The BS 9991: 2015 has been issued that reflects the modern approach to fire safety design. Recommendations outlined in Section 9.5.2, point c) of BS 9991: 2015 no longer requires an alternative escape route for maisonettes/duplexes with one floor above 4.5m above ground or access level.
- BS 9991: 2015 is not referred to as based for prima facie compliance with Part B of the Second Schedule to the Building Regulations primarily based on its 'stay put' policy. However, the approach outlined in Section 9.5.2 point c) of BS 9991: 2015 does not imply the use of stay put policy and is also used in TGD-B Volume 2 which references BS 9991.
- BS 5588 Part 1 is an older guidance document, first published circa 20 years ago, which does not reflect current design practices. Therefore, in absence of any explicit guidance in the newest TGD-B 2016 +A1 2020 in respect to this common design scenario, Local Authorities have in recent years been accepting a different approach from the old BS 5588 standard based on the recommendations outlined in Section 9.5.2 c) of BS 9991: 2015.
- The appellant contends that their design proposal is in compliance with the Building Regulations based on Section 1.0.11.2 – Alternative Solutions: -

1.0.11.2 Alternative solutions - Where it is impracticable to comply fully with a particular requirement of this Technical Guidance Document, it may be necessary to consider alternative solutions which best fit the particular circumstances (see also 0.1.4, 0.1.5 and 0.1.6). The provision of compensating fire safety measures may also be necessary and these could include a range of passive and/or active measures.

- The additional compensative active and passive fire protection measures have been considered, as follows: -
 - The internal stairway connecting each level will be enclosed in fire resisting construction (minimum of 30 minutes) and will deliver occupants directly to the first floor landing of the central escape stair.
 - The walls enclosing the protected stairway will be continued up to the ceiling.
 - Penetrations through the ceiling will be fire stopped to maintain the fire resistance of the ceiling.
 - An enhanced fire alarm detection system to be provided. In particular LD1 fire detection and fire alarm system in accordance with BS 5839-6: 2013 will be provided within these units.

- The above strategy is recognized by a number of regulations such as: -
 - BS 9991: 2015 specifically Section 9.5.2 c) of BS 9991: 2015, and
 - TGD-B Volume 2: 2017 when dealing with dwellings with one floor more than 4.5m above ground level

- Section 9.5.2 of BS 9991: 2015 states: -

9.5.2 Maisonettes having a floor level higher than 4.5 m above ground or access level

Maisonettes that have a floor level that is situated higher than 4.5 m above the ground level or the access level should have at least one of the following:

- a) an alternative exit from any habitable room that is not on the entrance level of the maisonette (see Figure 2); or
- b) a protected stairway enclosure serving all habitable rooms and one alternative exit from every floor level other than the entrance level (see Figure 3); or
- c) a protected stairway enclosure and an LD1 fire detection and fire alarm system in accordance with BS 5839-6:2013, if no floor is more than 7.5 m above or below the level of the entrance of the maisonette; or
- d) a protected stairway enclosure and an AWFSS (see 11.2, Table 2).

- Section 1.3.3. of TGD-B Volume 2: 2017 states: -

1.3.3 Dwelling Houses with one floor more than 4.5 m above ground level (Purpose Group 1(b))

The following provisions apply to dwelling houses where there is one storey which is at a height of more than 4.5 m (see Diagram 3(c) & Appendix C, Diagram C4). This type of dwelling house will typically have three storeys above ground level:

- (a) a habitable room should not be an inner room unless:
 - (i) it has a floor level not more than 4.5 m above ground or access level; and

(ii) it is provided with a door or window for escape or rescue which complies with the provisions of 1.3.7.

(b) unless the top storey is separated from the lower storey by fire-resisting construction (refer to S3 and Appendix A and Diagram 2(b)) and is provided with an alternative escape route leading to its own final exit, the internal stairway should:

(i) be a protected stairway (see 1.3.8);

(ii) connect the ground and all upper storeys, and

(iii) either deliver directly to a final exit (Diagram 2 (a)) or give access to not less than two independent escape routes delivering to alternative final exits (see Diagram 2(b));

(c) automatic smoke detection and alarms should be provided in accordance with 1.3.6;

- It is noted that BS 5588 Part 1 does accommodate escape from floors over 4.5m that have an internal protected escape stair without alternative means of escape or sprinklers where the unit is independently entered from the external. In this situation the guidance refers to means of escape design for dwelling houses. Similarly as set out above TGD-B Volume 2 permits floors over 4.5m without alternative means of escape or sprinklers.
- It is noted that accessing the residential units from an enclosed common stair rather than directly from the external does not impact on the standard of safety within the unit. For small buildings like these, the protection to the common escape stair is achieved by means of the protected entrance hall / stair within the units in conjunction with an AOV at the head of the stair which would be in compliance with BS 5588 Part 1 and BS 9991.
- Therefore based on the above, the proposed design approach as detailed in the Fire Safety Certificate application, is considered acceptable as it meets the functional requirements of the Building Regulations.
- The appellant furthermore notes that this approach has been accepted by the Local Authority at the same development at Cherrywood and list three such developments: -
 - Block G Duplex 3, Cherrywood, Dublin 18
 - Block G Duplex 4, Cherrywood, Dublin 18
 - Block G Duplex 5, Cherrywood, Dublin 18

The appellant makes the following additional points in response to Dublin Fire Brigades response to their appeal: -

- It is noted that any reference to BS 9991 within the fire safety certificate compliance report and this appeal response, is only made to outline that the alternative provisions proposed for the duplexes are adequate to compensate for the fact that no alternative exit is proposed from the upper level of the maisonettes as recognized by current and more advanced guidance for residential developments.
- It is noted that during the first Additional Information requested by the Fire Officer dated 21/07/2021, it was requested to modify the compliance report to demonstrate compliance fully with BS 5588 or BS 9991: -
 - *The compliance report is required to be modified showing compliance with either BS 9991 in its entirety (no cherry picking) with the Fire Safety Management Manual Or*
 - *BS 5588 Part 1 and TGD-B showing full compliance.*

The appellant contends that this statement conflicts with the Fire Officers position in their report for this appeal in relation to the use of BS 9991 of not being considered as a means to prima facie compliance with Part B of the Second Schedule to the Building Regulations.

- The appellant furthermore notes that their proposed approach has been accepted on the following additional developments: -
 - Block E Duplex 3, Adamstown District Centre, Co. Dublin
 - Block B Duplex 4, Adamstown District Centre, Co. Dublin

4.0 Consideration

The Appellant and Local Authority refer to two approaches with respect to the design of Maisonettes that have a storey greater than 4.5m above ground level: -

TGD-B / BS 5588 Part 1 approach: -

The following recommendations are applicable.

- a) No maisonette should be so planned that any **habitable** room is an inner room.
- b) On every storey situated more than 4.5 m above ground level (other than the floor of entrance to the maisonette) either:
 - 1) an alternative exit from each room should be provided (see Figure 9 and Figure 11); or
 - 2) at least one alternative exit should be provided, and all habitable rooms should be entered directly from either a protected entrance hall or a protected landing (see Figure 10).

BS9991: 2015 approach: -

9.5.2 Maisonettes having a floor level higher than 4.5 m above ground or access level

Maisonettes that have a floor level that is situated higher than 4.5 m above the ground level or the access level should have at least one of the following:

- a) an alternative exit from any habitable room that is not on the entrance level of the maisonette (see Figure 2); or
- b) a protected stairway enclosure serving all habitable rooms and one alternative exit from every floor level other than the entrance level (see Figure 3); or
- c) a protected stairway enclosure and an LD1 fire detection and fire alarm system in accordance with BS 5839-6:2013, if no floor is more than 7.5 m above or below the level of the entrance of the maisonette; or
- d) a protected stairway enclosure and an AWFSS (see 11.2, Table 2).

Where a protected stair is provided the difference between the two approaches is that the TGD-B / BS 5588 Part 1 approach would require an alternative means of escape from the upper level; whereas the BS9991: 2015 approach would require either an alternative means of escape from the upper level, or the addition of an LD1 alarm system where no floor is 7.5m above or below the entrance of the maisonette or the provision of a sprinkler system.

Or in other words BS9991: 2015 allows either the provision of a sprinkler system or the addition of an LD1 alarm system where no floor is 7.5m above or below the entrance of the maisonette as an alternative to the alternative means of escape from the upper level.

The Appellant is correct in their contention that neither of these alternative solutions would rely on a 'defend in place' policy as they concern the means of escape from an individual unit.

In the Dublin Fire Brigade's response, they put a high emphasis on the fact that BS 9991 is not considered as a means to prima facie indicate compliance with Part B of the Second Schedule to the Building Regulations and that the TGD-B / BS 5588 Part 1 approach does. They also imply that as TGD-B was last issued in 2020, five years after BS9991: 2015 then the TGD-B approach is the most recent. However, it is noted that the primary purpose of the TGD-B that was issued in 2020 was to address the demand for open plan apartments. It did not address maisonette apartments and the argument that this issue reinforces the design approach in BS 5588 Part 1 is not correct. If anything, it reinforced the acceptance that BS 5588 Part 1 is out of date (at least with respect to the design approach of open plan apartments).

Indeed the draft TGD-B 2023 which is out for public consultation moves away from BS 5588 Part 1 and would recommend the following: -

1.6.3.2 Maisonettes with a Floor Situated More Than 4.5m above Ground Level

No maisonette should be so planned that any habitable room is an inner room.

All rooms in the maisonette should be accessed by a protected stairway (See Diagram 21(b)), which should have the appropriate fire resistance as specified in Appendix A, Table 31 and Table 32.

Where a floor within the unit is more than 7.5m above the level of the entrance of the maisonette, a sprinkler system (See Appendix D) should also be provided.

It is noted that this proposed approach in the draft is much more in line with the recommendations of BS9991: 2015 than BS 5588 Part 1.

It is also noted that Appellant raises a very valid point where they point to the first Additional Information requested by the Dublin Fire Brigade, where it was requested to modify the compliance report to demonstrate compliance fully with BS 5588 or BS 9991. In doing so Dublin Fire Brigade imply that would indeed have accepted an approach based fully on BS9991: 2015. Their main concern seems to be therefore not that the BS9991: 2015 approach to maisonettes is flawed but rather that this approach isn't cherry picked from the guidance. Whilst it is unfortunate that the Appellant didn't just follow the BS9991: 2015 approach in full, given that the recommendations with respect maisonettes in each approach are specific to the unit itself it is hard to see how one approach over the other is better.

The Appellant refers to previous examples of where their approach has been accepted. It is noted that in preparing this report I did have the opportunity to review documentation associated with these other reports. It is noted however in Dublin Fire Brigade's response they did not deny that this was the case, so it is reasonable to assume that other developments have been granted Fire Safety Certificates using the BS9991: 2015 approach with respect to maisonettes.

It is also noted in the Condition, Dublin Fire Brigade looks for either: -

a) At least one alternative exit is to be provided and all habitable rooms are to be entered directly from either a protected entrance hall or protected landing.

Or

b) All residential units are to be provided with a sprinkler system complying with the recommendations of BS 9521: 2021, Fire Sprinkler systems for domestic and residential occupancies – Code of Practice.

Whilst part (a) of this Condition is in line with the recommendations of TGD-B / BS 5588 Part 1 approach part (b) is not. This use of sprinklers comes directly from the recommendations of BS9991: 2015. By adding this option they are acknowledging at least in part the relevance of the BS9991 approach.

6.0 Conclusions

Given all of the above in particular the design guidance in BS9991: 2015 and the design guidance in the draft TGD-B 2023 with respect to Maisonettes the proposed fire strategy as offered by the Appellant does demonstrate compliance with the B1 requirement.

7.0 Recommendation

On the basis of my findings and conclusions I recommend that An Bord Pleanála grant the appeal and instruct that Condition 2 is removed from the Fire Safety Certificate.

Signed by:



Des Fortune

MSc(Fire Eng), BSc(Eng), CEng MIEI, MIFireE

Date:

26th January 2023