



An
Bord
Pleanála

FSC Report

ABP-318731-23

**Appeal v Refusal or Appeal v
Condition(s)**

Appeal v Condition 19

Development Description

The construction of a three-story apartment block comprising 23 apartments in total at Barnhill Place, Barnhill Road, Dalkey, Co. Dublin

**Building Control Authority Fire Safety
Certificate application number:**

FSC2205849DR/7DN

Appellant

Belgrove Homes Limited

Agent

Project Fire Protection

Building Control Authority:

Dun Laoghaire Rathdown County
Council

Inspector

Stefan Hyde

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1.0 Introduction

- 1.1. The report sets out my findings and recommendations on the appeal submitted by Project Fire Protection [hereafter referenced as PFP] on behalf of Belgrove Homes Ltd regarding a proposed development at Barnhill Place, Barnhill Road, Dakey, Co. Dublin.
- 1.2. The proposed development consists of the construction of a three storey apartment block comprising 23 apartments over basement car park level.
- 1.3. The appeal was submitted against Condition 19 of the Fire Safety Certificate (FSC2205849DR/7DN) granted by Dun Laoghaire Rathdown County Council [hereafter referenced as DLRCC] on 23rd November 2023.

Condition 19 reads as follows:

Condition 19:

A commercial sprinkler protection system shall be provided throughout the basement which shall be designed, installed and commissioned in accordance with IS EN 12845:2015+A1 2019.

With the stated reason for the condition being:

Reason: To ensure compliance with Part B of the Second Schedule to the Building Regulations, 1997 to 2022.

2.0 Information Considered

2.1. The information considered in this appeal comprised the following:

- Appeal submission by PFP received by An Bord Pleanála on 19th December 2023
- Full copy of the FSC application package received by DLRCC in the course of the assessment of the FSC. Issued to An Bord Pleanála on 21st December 2023 and 9th January 2024 by DLRCC following requests by An Bord Pleanála.
- Granted Fire Safety Certificate issued by DLRCC on 23rd November 2023
- Response by the Building Control Authority [hereafter referenced as BCA] received by An Bord Pleanála on 19th January 2024
- Further submission from the appellant received by An Bord Pleanála on 13th February 2024

3.0 Relevant Cases

3.1. There have been several appeals in relation to the imposition of sprinkler protection in car parks of residential developments over the past number of years. Below is a non-exhaustive list of these cases:

- ABP 315367-23
- ABP 315985-23
- ABP 317213-23
- ABP 319294-24

4.0 Appellant's Case

4.1. The appellant initially set out the appeal against Condition 19 of the FSC on the basis of the following:

- The appellant sets out a review of B1 – B5 using TGD-B 2006 (as amended in 2020) as the basis of design stating commitments given in the FSC relevant to the design of the building. Below are pertinent elements cited regarding sprinklers as set out in the submission:

- B1: Means of escape

The appellant notes the car park ventilation complies with the requirements of BS 5588, Part 1, 1990, section 36.7 in that it aggregates no less than 2.5% of the floor area of the basement.

- B3: Internal Fire Spread (Compartmentation)

The appellant notes that Section 3.5.2 of TGD-B states that for a number of reasons identified that car parks are not normally expected to be fitted with sprinklers.

The basement compartment will comply with B3 of TGD-B

- B5: Fire Fighting Facilities

The appellant notes that Section 5.4.3.1 of TGD-B states that basement car parks are not normally expected to be fitted with sprinklers.

The appellant then references a list of buildings that do require sprinkler protection noting none of these are applicable in this instance.

The appellant concludes that TGD-B only requires sprinklers in resident units to facilitate open plan apartments or where extended travel distances are proposed. Neither are present in the submitted design.

4.2. Following receipt of the BCA response to the initial appeal submission the appellant responded with the following points:

- TGD, B 2006 + A1 2020 makes no reference to the provision for car park sprinklers

- A new draft copy of TGD, B which has been available since early 2023 and has gone through a public review makes no reference to the introduction to the requirements for sprinkler systems in basement car parks
- As referred to in Dublin Fire Brigades report, recent research by the NFPA, “Modern vehicle hazards in parking garages” (Jul 2020) in section 8.2 challenges the effectiveness of automated sprinkler systems. It also states in the section 9 that, *“there was an increase both in absolute weight of plastic and as percentage of vehicle weight, adding to the total fuel load of the average vehicle”*, however, goes on to conclude that *“despite the increase in potential fuel, published literature does not show that modern vehicles burn with a significantly higher heat release rate or for a longer time”*.
- Dublin Fire Prevention’s observations on page 4 state that “Fires in electrical vehicles will typically last longer and result in much greater release of heat and smoke than fires to conventional vehicles”. However, the NFPA report referenced above refers to this study carried out in 2016 (Lam et al., 2016) in Canada which showed that *“the EV’s did not present a greater hazard than the ICEV’s HR and heat flux levels measured in the ICEV tests were due to the burning of a full tank of gasoline and were hired and those measured into comparison EV tests.*
- The appellant notes that at basement level dry riser outlets are provided, hose reels are provided and the level of ventilation exceeds 2.5%.
- The appellant references a number of recent similar cases already adjudicated on which all refer to the condition imposing sprinkler protection in the basement car park being removed.
- They conclude that that condition 19 be removed on the basis of the information submitted with the original appeal dated 19th of December, the subsequent additional information submitted and that An Bord Pleanála has already adjudicated on similar cases.

5.0 Building Control Authority Case

5.1. The BCA responded to the appellants submission with a response summarised below which contained an introduction, observations and then highlighted previous papers/research by others, examples of car park fires, risks associated with fighting car fires encountered by DFB, Structural integrity/Fire Protection Concerns, TGD-B – Basement Car Park Ventilation, Broader implications and a conclusion:

- Introduction setting out the proposed development at Barnhill Place, the basis of compliance of the application being noted as TGD-B 2006 + A1 2020 and noting that following the review of the application and the additional information submissions the granting of an FSC with twenty three conditions of which Condition 19 was the subject of appeal.
- Dublin Fire Preventions (DFB) observations:
 - DFB note that TGD-B cannot prescribe to “every aspect of a building design”
 - They infer that the performance objectives set out in the Second Schedule of the Building Regulations allows for considerations of “new hazards due to changes in technology and materials”

- They note that during the course of the application in additional information requests and on a call that sprinklers in the basement car park were requested.
 - In a review of the submitted appeal information raise the issue of modern vehicles and electric vehicles. The issue was noted in the first AI request however in subsequent requests it was noted DFB are of the view sprinklers are required in the basis
 - In conclusion of the review of the submitted documents and the appeal DFB conclude that based on first hand operational experience, the fire loads associated and fire spread associated with modern vehicle fires that sprinklers are required in any “sizeable basement car park” in order to meet the requirements of Part B1 and Part B5 of the Second Schedule to the Building Regulations.
- Evidence derived from research into the fire risks associated with modern vehicles – DFB are submitting that Fire Resistance ratings of car parks have not changed since 1968
 - BRE, Fire spread in car parks, BD 2552, Department for Communities and Local Government – a number of statements are made regarding extracts from these documents
 - NFPA, Modern Vehicle Hazards in Parking Garages & Vehicle Carriers, 2020 – there is a summary of the document however no specific statement in relation to the design proposed in this instance
 - Case studies of 13 examples from of car park fires both within its jurisdiction and internationally from a period ranging from 2003 to 2020. The examples range from basement car parks to above ground open sided.
 - Brief summary of risks associated with modern vehicles which DFB operation personnel typically encounter highlighting increased potential higher environmental risks and smoke generation from EV car fires.
 - Structural integrity/Fire Protection Concerns – DFB note that structural fire ratings for basement car parks do not take account of the fire load of cars with extensive plastics, and nor for the extensive use of Electric Vehicles

- TGD-B Basement Car Park Ventilation – DFB propose that the provision of 2.5% natural ventilation in a basement car park is not sufficient. They noted the applicant had proposed at least the minimum 2.5% natural ventilation required
- Broader implications – DFB note a number of reasons why they believe it would be more appropriate to sprinkler protect a basement car park
- In conclusion DFB note that taking account of the above and their interpretation of the Building Regulations that the Condition should be upheld.

6.0 Assessment

- 6.1. Having considered the drawings, details and submissions on the file and having regard to the provisions of Article 40 of the Building Control Regulations 1997, as amended, I am satisfied that the determination by the Board of this application as if it had been made to it in the first instance would not be warranted.

Accordingly, I consider that it would be appropriate to use the provisions of Article 40(2) of the Building Control Regulations, 1997, as amended.

- 6.2. The appellant provides clear indications as to the basis of their design which is demonstrated in the FSC application submission and is further highlighted in the appeal submission noting that the design is based on TGD-B 2006.
- 6.3. The appellant clearly states the requirements of TGD-B in relation to the provision of sprinklers noting that Clause 3.5.2 (b) notes that “where a car park is well ventilated, there is a low probability of fire spread from one storey to another” and therefore “car parks are not normally expected to be fitted with sprinklers”. They also confirm that Clause 5.4.3.1 of TGD-B equally states that “basement car parks are not normally expected to be fitted with sprinklers”.
- 6.4. The BCA allude to the potential inadequacy of the current TGD-B 2020 however it has been revised three times since its introduction in 1991 and on each occasion the Local Authorities were afforded opportunities to make submissions in relation to proposed changes. Electric cars and cars with increased plastics have both been in wide use since TGD-B was revised in 2006 and 2020 and the Department of Housing and Local Government have not amended the provisions in relation to car parks (above ground or basement) in either instance.
- 6.5. It is noted that there was a request verbally and in the additional information requests to provide sprinklers in the car park.
- 6.6. The appellant has submitted a design based on TGD-B 2020 which has been assessed by the BCA and deemed to comply with Part B of the Building Regulations subject to a number of conditions. The condition in relation sprinklers is based on a

DFB policy position rather than any National Guidance. The BCA has not provided a clear basis to dismiss the use of TGD-B as a route to guidance in this instance.

7.0 Recommendation

- 7.1. Based on the above I would recommend that An Bord Pleanála direct the Building Control Authority to remove Condition 19.

8.0 Reasons and Considerations

- 8.1. TGD-B 2006 + A1 2020 does not require the provision of sprinklers in basement car parks as noted in Sections 3.5.2 and 5.4.3.1.
- 8.2. The appellant has submitted a design based on the guidance set out in TGD-B and therefore if they have complied with the provisions the design is therefore considered to comply with Part B of the Second Schedule to the of the Building Regulations.
- 8.3. The BCA has not given clear technical reasoning based on TGD-B 2020 (the guidance document) behind the imposition of sprinklers in Condition 19 of the granted FSC.
- 8.4. Therefore Condition 19 as originally attached by the Building Control Authority to the FSC is not necessary to meet the guidance set out in TGD-B or accordingly to demonstrate compliance with Part B of the Second Schedule to the Building Regulations 1997, as amended. The Board was satisfied that, subject to the attachment of the remaining conditions (excluding Condition 19) as removed by the Board, it has been demonstrated that the proposed development, if constructed in accordance with the design presented with the application and appeal, would comply with the requirements of Part B of the second schedule to the Building Regulations 1997, as amended.

9.0 Conditions

- 9.1. Direct the Building Control Authority to remove Condition 19.

10.0 Sign off

I confirm that this report represents my professional assessment, judgement and opinion on the matter assigned to me and that no person has influenced or sought to influence, directly or indirectly, the exercise of my professional judgement in an improper or inappropriate way.

Stefan Hyde

26/02/2025