

Fire & Risk Solutions Ltd.

Chartered Engineers
Professionals in Fire and Safety

Report 3690

An Bord Pleanála Appeal regarding the attachment of Conditions No.'s 1 & 4 by Galway City Council to grant of Fire Safety Certificate for material alteration and extension to Comerford House to comprise Galway City Museum, Spanish Arch, Galway

Client:

An Bord Pleanála,

64 Marlborough Street,

Dublin 1

FAO:

The Secretary

FENNELL'S BAY, CROSSHAVEN, CO. CORK, IRELAND TEL: +353 (0) 21 4832882 EMAIL: RConnolly@FireRiskSolutions.com

PRINCIPAL: DR R CONNOLLY BE, PhD, CEng, MIEI, MIFireE, MSFPE Registered in Ireland No. 334019

BUILDING CONTROL ACT, 1990 to 2014 - APPEAL

FIRE SAFETY CERTIFICATE APPLICATION FOR MATERIAL ALTERATION AND EXTENSION TO A BUILDING, COMERFORD HOUSE, TO COMPRISE GALWAY CITY MUSEUM, SPANISH ARCH, GALWAY

APPEAL AGAINST THE ATTACHMENT OF CONDITION'S NO. 1 and 4 TO FIRE SAFETY CERTIFICATE (REG. REF. FS/27/20) ON 7th APRIL 2020

AN BORD PLEANÁLA APPEAL REFERENCE 307290-20

Local Authority:

Galway City Council

Appellant:

Galway City Museum c/o Jeremy Gardner & Associates

RECOMMENDATION

In my opinion, the Board may rely on Article 40(2) of the Building Control Regulations to consider the subject appeal on the basis of Conditions only.

It is recommended that the appeal be upheld and the subject Conditions No.'s 1 and 4 both be removed.

The remaining 3 no. Conditions (Conditions No.'s 2, 3 and 5) attached to the granted Fire Safety Certificate are not subject of this appeal and should remain. The granted Fire Safety Certificate should therefore be subject of 3 no. Conditions.

Dr. Raymond J Connolly

BE, PhD, CEng, MIEI, MIFireE, MSFPE

CONTENTS

Page No		
---------	--	--

1.	Relevant information	5
2.	Background	6
3.	Reprise of appeal as presented	7
4.	Consideration	11
5.	Conclusion	15

1. RELEVANT INFORMATION

- i. Application for a Revised Fire Safety Certificate by Mr. Brian Barrett to Galway City Council dated 7th February 2020.
- ii. Compliance Report (DG/850/R1) by Jeremy Gardner Associates Ireland Ltd. and associated drawings dated 13th February 2020.
- iii. Fire Safety Certificate (FS 27/20) granted by Galway City Council dated 7th April 2020 (subject of 5 no. Conditions).
- iv. Letter of appeal from Jeremy Gardner Associates Ireland on behalf of Galway City Museum to An Bord Pleanála dated 3rd June 2020. (Note: Relaxation to statutory 1 month limit of appeal due to Covid 19 as confirmed by Senior Inspector Patricia Calleary).
- v. Report of Senior Assistant Chief Fire Officer, Galway Fire Service, dated 2nd July 2020.

2. BACKGROUND

Jeremy Gardner Associates Ireland Limited acting as agent for Mr. Brian Barrett (Galway City Council) made an application to Galway City Council for material alterations to the existing Comerford House at Spanish Parade, Galway to provide public exhibition space and for the three storey extension of the building for use as a museum. The Fire Safety Certificate was granted by Galway City Council (under Reference FS 27/20) on 7th April 2020 subject to 5 no. Conditions including *inter-alia:*-

Condition No. 1

The hold-open device on the E60Sa fire door from the Exhibition Room 02-02 to Stairs 2 shall be removed and the fire door shall remain in the closed position at all times.

Reason:

In order to comply with B1 (Means of Escape in case of fire) to the Building Regulations, 1997 to 2006 and subsequent amendments.

Condition No.4

The Entrance Hall and Stairs 2 at ground floor level shall not exhibit or contain combustible materials and therefore ensure this space to remain sterile and free of fire load.

Reason:

In order to comply with B1 (Means of Escape in case of fire) to the Building Regulations, 1997 to 2006 and subsequent amendments.

On 3rd June 2020, Jeremy Gardner Associates Ireland Limited as agent for Galway City Museum (presumably one and the same party as the original applicant, i.e. Mr. Brian Barrett of Galway City Council) appealed to An Bord Pleanála against the attachment of these Conditions (Conditions No.'s 1 and 4) to the granted Fire Safety Certificate. The residual Conditions (Conditions No.'s 2, 3 and 5) are not subject of the current appeal.

3. REPRISE OF APPEAL (AS PRESENTED)

The subject works comprise the material alteration of an existing building and its 3 no. storey extension to comprise a public museum.

Condition No. 1

The hold-open device on the E60Sa fire door from the Exhibition Room 02-02 to Stairs 2 shall be removed and the fire door shall remain in the closed position at all times.

The appellant confirms that the original proposal within the Fire Safety Certificate Compliance Report was to provide a magnetic hold-open device to the subject door that connects the Level 2 Exhibition Room 02-02 to Stairs No. 2. Furthermore, the subject door is stated as not being located on a designated escape route from the Exhibition Room 02-02, which is adequately served by the identified exit available into Stair No. 1. The subject door connecting Stair No. 2 to Exhibition Room 02-02 (and onwards via Stair No. 1 to the remaining exhibits in the existing Comerford House) is solely intended for use for the circulation of patrons. The appellant highlights that "permanently closing the door would significantly compromise the intended use of the building".

The appellant accepts that the subject door forms part of the fire-resisting enclosure to Stair No. 2, which is the sole means of escape route from the Level 6 Exhibition Room (06-01). However, the appellant argues that:-

- (i) A single escape route from the upper floors is acceptable under design guidance in BS 9999:2017.
- (ii) Stair No. 2 is approached by means of protected lobbies at Levels 3, 4 and 6.
- (iii) Exhibition Room 02-02 will of itself form a protected lobby as the room will be maintained as a sterile space with minimal fire load. (Note this strategy is being advanced for a number of rooms in Comerford House)
- (iv) Stair No. 2 will be provided with a pressurisation system in accordance with IS EN 12101-6:2005.
- (v) The attachment of the Condition is onerous and restricts the use of the FD60S door as a circulation route.

The appellant recognises that Section 16.3.7 of BS 9999:2017 advises that stairways should not form part of the primary circulation between different rooms at the same level. The proposed arrangement relies on the stairway as a circulation route between different storeys of the building and specifically between Level 6 and Level 3. The appellant points out that this arrangement arises routinely in multistorey office, retail and education buildings.

The appellant acknowledges that lobby protection is required to Stair No. 2 on all levels, except the topmost Level 6, because the stair comprises the sole exit route from parts of the new extension (specifically Level 6). The appellant confirms that Stair No. 2 is separated from the Exhibition Rooms at Level 3 and Level 6 by protected lobbies. The appellant justifies the omission of lobbies at ground floor level (Level 1) on the basis that the contents of the room are largely non-combustible and the room is being treated as a "relatively sterile space with limited fire loading".

Given its small size and the absence of space to install a protected lobby, the appellant is seeking to treat the Level 2 Exhibition Room 02-02 itself as a sterile lobby, i.e. on the basis of it being a sterile space with limited fire load. It is noted that this argument is advanced in respect of many other rooms in other parts of the Comerford House building.

Furthermore, the appellant highlights that the Fire Safety Certificate application is based on the inclusion of a pressurisation system to BS EN 12101-6:2005, which will minimise the risk of smoke ingress into the stair during an evacuation.

The appellant commits to the routine checking of the subject fire door to ensure that it is not wedged open, its self-closing device is functional and the door has not become damaged.

Condition No.4

The Entrance Hall and Stairs 2 at ground floor level shall not exhibit or contain combustible materials and therefore ensure this space to remain sterile and free of fire load.

The omission of the lobby between the Entrance Hall and Stair No. 2 is justified by the appellant on the basis of the following factors:-

- (i) The raised platform and balustrade in the Entrance Hall will comprise non-combustible construction.
- (ii) All wall linings to be Euro Class B_{s2,d3}.

- (iii) The door from Entrance Hall to Stair No. 2 to be upgraded from FD30S to FD60S.
- (iv) The intended contents of the Entrance Hall to be limited to inclusion only of:-
 - Stone artefacts mounted on a feature "Portmore" wall
 - A reader rail set on the walkway balustrade
 - Projection screens
 - Graphics panels
 - Projection machines
 - Integrated lighting and audio systems

The appellant again confirms that Stair No. 2 is to be provided with a pressurisation system to BS EN 12101-6:2005 and that Section 17.2.4 of BS 9999:2017 recognises that such a provision sufficient to permit omission of protected lobbies. Furthermore, given that the combustible contents of a room separated from a stairway are not restricted, the appellant argues that equally the combustible contents of the Entrance Hall should not be restricted, where the lobby is omitted on the basis of the equivalent protection being provided by the pressurisation system.

The Fire Authority addresses both appealed conditions within a single response on the basis that the Conditions are inter-related and address the same fundamental issue, i.e. the extent to which Stair No. 2 requires fire protection. The Authority points out that Stair No. 2 provides the sole means of escape for members of the public located within the Level 6 Exhibition Room, which is located c.10 metres above external ground level.

The Fire Authority explains that its concern is founded on Clause 1.3.3(a) of Technical Guidance Document B that restricts instances of single stair escape for public assembly buildings (of the type subject of this appeal) to cases where the stair does not serve a level in excess of 5 metres above ground level. There is a clear contradiction with this guidance inherent in the proposed design of the 3-storey extension. The Fire Authority states that it is open to the adoption of alternative design guidance such as that contained in BS 9999:2017 provided that the level of safety is adequate to satisfy the requirements of Part B1 to the Building Regulations.

The Fire Authority accepts that equivalent guidance regarding single stair escape in Section 17.3.3(b) of BS 9999:2017 references a maximum storey height of 11 metres. Furthermore, the Fire Authority accepts the guidance contained in Section 17.2.4(a) of BS 9999:2017 to permit a pressure differential system be installed instead of the provision of lobbies to protect single stairways from adjacent accommodation. However, the Fire Authority contends that there is no fire separation between the Entrance Hall and Stair No. 2 with the Hall being in effect a part of the stair. The Fire Authority suggests that any combustible materials within the Entrance Hall would effectively be placed within

the protected stairway, undermining its essential sterile condition. The Fire Authority questions how the pressurisation system would deal with the Entrance Hall being a part of the stair enclosure.

The Fire Authority recognises guidance in Technical Guidance Document B (Appendix B3(b)(i)) to the effect that electro-magnetic hold-open devices may be used where a self-closing device would be a hindrance to the normal use of the building but <u>only</u> in cases where the door can also be closed manually and <u>where the door does not protect the only escape stairway</u> from the building (or part of a building) – as is the case in the subject appeal. The Fire Authority expresses a concern that a failure of the combined electro-mechanical hold-open and self-closing device could impede occupant escape and undermine the performance of the pressurisation system.

There was no further response from the appellant to clarify or counter the Fire Authority's assertion that the Entrance Hall in effect forms a part of Stair No. 2.

A further 3 no. Conditions were also attached to the current application but same are not subject of this appeal and do not require consideration *de novo*.

4. CONSIDERATION

The appeal is being considered as presented and no new issues arise as demand de novo consideration.

I agree with the view of the Fire Authority that both of the Conditions subject of this appeal are interrelated and should be viewed in combination and it is my intention to structure my consideration of this appeal accordingly. Within such a context, there are a number of individual and discrete matters requiring consideration in this case, namely in the specific subject circumstances whether:-

- (i) the reliance on a fire door held in the open position by an electro-mechanical device is acceptable
- (ii) a single stair escape route is acceptable
- (iii) lobby protection is required at all levels

Condition No. 1 as attached to the granted Fire Safety Certificate reflects the Fire Authority's opinion that a fire door relying on an electro-magnetic hold-open device is not acceptable in the current design. This reflects the Fire Authority's concern that the hold-open device may fail and that as a result the fire door will be ineffective in protecting the integrity of the stair as an escape route. It is worth clarifying for the avoidance of doubt that Condition No. 1 does not require the subject door to be "permanerntly removed" as alleged in his submission to the Board and some of the appellant's concerns regarding disruption to customer circulation throughout the museum may be unfounded. However, the Condition does state that the fire door "shall be closed at all times" which is open to the potential interpretation that the door shall not be available for use in day-to-day circulation. Such an interpretation would yield the same result as requiring removal of the door, which is not in fact being asked for, and therefore such an interpretation is considered unduly onerous. Rather the proper interpretation should be that the door shall remain closed at all material times, i.e. when not being used as a means of moving from Stair No. 2 into Exhibition Room 02-02.

The appellant contends that hold-open devices are permitted by reference to Clause 32.1.6.2 of BS 9999:2017. The Fire Authority counters that Appendix B2(b)(i) of Technical Guidance Document B prohibits the application of hold-open devices where a stair is the only one serving a building or a part of a building (as is the case here). However, there are seven other fire doors throughout the subject building also proposed to be fitted with hold-open devices and these other doors have not being subject of prohibition despite also being in similar circumstances of single escape. For example, the hold-open device on the door between ground floor room 01-06 and Stair No. 1 is equally critical to

protecting the sole escape routes via Stair No. 1 from the Level 2 Exhibition Room 02-04 and Level 4 staff area, as is the door subject to Condition No. 1 in protecting Stair No. 2. Whilst there is a difference in the height of the topmost storeys of Comerford House and the new extension, both scenarios are in excess of 5 metres above ground level. Equally, the Fire Authority has not sought removal of the hold-open device from the door between Star No. 2 and the ground floor Entrance Hall.

The disparity in the Fire Authority's treatment of hold-open devices between its consideration of the existing Comerford House and the new extension also extends to the requirements being imposed regarding lobby protection to the single stair condition, i.e. Stair No. 1 is to be approached without lobbies on Level 1 and no compensatory pressurisation system is being sought. It is presumed that the extent of material alteration being proposed within Comerford House includes in effect the "retention" of the single stair exit from the Staff Area on Level 4, i.e. giving rise to their being no new or greater contravention with Part B1. This is a matter of conjecture as the exact extent of material alterations is not spelt out in the application.

In the specific instance of the use of electro-magnetic hold-open devices, I am of the view that the Fire Authority has been inconsistent in its approach to the applicant's proposals within the existing and new parts of Comerford House and also within different levels of the new extension. Further, the Fire Authority has accepted the overall design by reference to BS 9999:2017 and notwithstanding the guidance contained therein has chosen to replicate additional and more onerous restrictions on use of hold-open devices contained in Appendix B to Technical Guidance Document B. It is inappropriate to "cherry pick" between different design standards in this manner.

Similarly, regarding the issue of a single stair, Section 17.3.3(b) of BS 9999:2017 prohibits single stair buildings being above 11 metres whilst Clause 1.3.3(a) of Technical Guidance Document B reduces the restriction to 5 metres in the specific case of public assembly buildings. It is noted that the traditional purpose group classification system is not used in BS 9999:2017 and as such public assembly buildings are not given any special treatment. Again, the Fire Authority is "cherry picking" design restrictions from different design codes. Also the fact remains that the Conditions imposed do not change the outcome that parts of the approved new extension are in excess of 10 metres above ground level and are being served by a single stair. This reality is not being remediated by either of the subject Conditions. The inferred argument that Stair No. 2 is somehow of increased importance due to the single stair condition is undermined by the Fire Authority's prior acceptance of Stair No. 2 being a candidate for omission of lobby protection on the basis of the proposed pressurisation system. In simple terms, lobbies are required to single stairways serving above any first floor level. This is a lower threshold within which to agree to their replacement with a positive pressurisation system rather

than the subject scenario where the single stair not only extends beyond first floor but also beyond the 5 metres height threshold preferred for public assembly building.

The omission of lobby protection to Stair No. 2 is justified in the original application by installing a pressurisation system to protect the stair against smoke ingress to an equivalent extent as lobby might do. This trade-off is well established in various codes, including both BS 9999:2017 and Technical Guidance Document B, and clearly has been accepted by the Fire Authority, as evidenced by its attachment of Condition No. 2. In this sense, the argument by the appellant that a restriction on the contents of the ground floor Entrance Hall (opening directly into Stair No. 2) makes no more sense than were a lobby now to be included, imposing similar restrictions on a room once removed from the stair, which in my opinion would be most unlikely to be the case. However, in presenting its argument, the Fire Authority contends that the Entrance Hall is in effect a part of the Stair No. 2 enclosure, i.e. suggesting that there is no fire-resisting construction between the Entrance Hall and Stair No. 2. The application makes clear that there is a FD60S door between the Entrance Hall and the base of Stair No. 2 and that the sides of Stair No. 2 are to be separated from the Entrance Hall by 60 minutes fire-resisting (integrity and insulation) glazing. Given such provisions, the Fire Authority would appear to have erred in its claim that "there is no fire separation between the entrance lobby and Stairs 2". The source of confusion would appear to relate to the stair flights themselves forming a part of the stair enclosure. It is unclear why this issue has not been teased out between the parties during the application process nor indeed why the appellant did not choose to clarify the matter after seeing the comments of the Fire Authority in regard to this appeal.

From all available documentation, it is accepted that the applicant's intention is to provide 60 minutes fire-resisting enclosure to Stairs No. 2. Accordingly, the ground floor Entrance Hall is not a part of the stair enclosure. The omission of lobby protection has been justified by reference to the provision of a pressurisation system. In such circumstances, there is no basis for seeking to restrict the contents of the ground floor Entrance Hall. The restriction on the contents of both protected stairs is inherent in the application documentation, is re-stated by the appellant for Stair No. 2 as part of the appeal submission and does not need the emphasis of being attached as a Condition.

The subject building and its design proposals contain a hybrid of different design approaches, some of which are contradictory and can be explained probably only by the fact that Comerford House is existing. In this regard, I am referring to the proposed use of hold-open devices in 8 no. separate locations with only one location being prohibited (despite the subject fire door not being obviously more critical to occupant life safety than a number of the other 7 no. fire doors) and I am also referring to the acceptance of exhibition rooms forming "lobby" protection to Stairs No. 1. Matters have clearly been complicated by the limited size of the development, its heritage status and the fact that much is

existing. The adoption of a pressurisation system is a recognised trade-off for the omission of lobbies, but the breadth of Condition No. 2, illustrates the likely difficulties to be encountered in successfully designing, installing and commissioning such a system. The argument made during the appeal by the Fire Authority regarding the vulnerability of such a pressurisation system to an open fire door is valid, but one that is in effect already covered by Condition No. 2. In real terms, the system can be designed to cope with foreseeable eventualities such as an individual door failure.

Recognising that Conditions No. 1 and No. 4 are inter-related but after distillation of the individual issues underpinning both, I am satisfied that both conditions can be set aside without undermining the design's full compliance with BS 9999:2017, which has been accepted *ab initio* by the Fire Authority as being a legitimate basis for design.

5. CONCLUSION

In my opinion, the Board may rely on Article 40(2) of the Building Control Regulations to consider the subject appeal on the basis of Conditions only.

It is recommended that the appeal be upheld and the subject Conditions No.'s 1 and 4 both be removed.

The remaining 3 no. Conditions (Conditions No.'s 2, 3 and 5) attached to the granted Fire Safety Certificate are not subject of this appeal and should remain. The granted Fire Safety Certificate should therefore be subject of 3 no. Conditions.

Dr. Raymond J Connolly

BE, PhD, CEng, MIEI, MIFireE, MSFPE