

REPORT TO AN BORD PLEANÁLA

ON

**APPEAL AGAINST CONDITION ON A FIRE SAFETY CERTIFICATE
(Register Ref No: 15/8147)**

ISSUED BY DUNLAOGHAIRE-RATHDOWN COUNTY COUNCIL

FOR

**MATERIAL ALTERATIONS TO OFFICE BLOCK: BLOCK G, CENTRAL PARK,
LEOPARDSTOWN, DUBLIN 18**

Client: An Bord Pleanála
An Bord Pleanála Ref: FS 29B.FS0516
Our Ref: CTA1606
Date: March 2016

1.0 BACKGROUND

This Report sets out my findings and recommendations on the appeal submitted by Michael Slattery Associates (MSA) against a condition attached to a granted fire safety certificate (Register Ref. No: 15/8147) issued by Dunlaoghaire-Rathdown County Council (DLR) in respect of an application for material alterations to office block, Block G, Central Park, Leopardstown, Dublin 18.

The material alterations relate to the proposed installation of an accommodation stairway between the ground and first floors of the building (within the same tenancy).

Having considered the drawings, details and submissions on the file 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, as no significant matters have been noted other than the subject matter of the appeal. Accordingly, I consider that it would be appropriate to use the provisions of article 40(2) of the Building Control Regulations, 1997 in this case.

1.1 SUBJECT MATTER OF THE APPEAL

- An application for a Fire Safety Certificate (Reg. Ref. No: 15/8147) was lodged by MSA and received by DLR on 2 November 2015.
- The Fire Safety Certificate was granted by DLR, dated 19 November 2015, with one condition.
- An appeal against the condition was submitted by MSA on 11 December 2015.

The condition states: *The proposed accommodation stairs between ground and first floor linking 2 no. levels of the same tenancy to be enclosed in not less than 30 minute fire resisting construction complete with FD30S doorsets at ground floor level or at first floor level or at both ground and first floor levels.*

Reason: *To comply with Part B5 of the Second Schedule to the Building Regs, 1997 to 2013.*

1.2 DOCUMENTS REVIEWED

- Application for Fire Safety Certificate lodged by MSA, received by DLR on 2nd November 2015, including completed application form, technical compliance report and drawings lodged in support of the application.

- Appeal submission by MSA to An Bord Pleanala, dated 11th December 2015
- Submission by DLR to Bord Pleanala dated 14th January 2016
- Submission by MSA to Bord Pleanala dated 8th February 2016
- Previous fire safety certificate file Reg. Ref. Nos: 09/8129, which is referenced in the current application documents.

1.3 Site Visit

Due to perceived anomalies between the technical submission with the current application and the specifications set out in the previously approved scheme, it was considered appropriate to visit the site to establish what the as-constructed situation was. The relevant matters were:

- The current application (in Appendix A) stated that automatic natural smoke ventilators were provided to the top of the atrium, while the last approved submission stated that powered smoke extract would be provided.
- The current submission made reference to smoke retarding enclosure of the atrium at 6th and 7th floors, and showed fire rated enclosure at the ground and first floors, but was unclear as to fire rated enclosure at other upper levels (the previously approved design referred to in the application noted that the design was based on the atrium being open at the lower floors).

I visited the site on 24th February in the company of the CBRE building facilities manager and established that (a) the atrium is provided with mechanical smoke extract and (b) the atrium is separated from the office accommodation at each level by 30 minute (integrity) fire rated glazing and additionally from the lift galleries at 6th and 7th floors by toughened glass (forming the high-level smoke reservoir).

2.0 FINDINGS

The case made by the Appellant is summarised as follows:

- The works (involving provision of an open accommodation stairs between ground and first floors, with both floors occupied by the same tenant) were being done to comply with Condition 1 attached to the base Fire Safety Certificate (Ref. No. 09/8129).
- Compliance with the functional requirements of B5 is addressed by reference to the criteria in section 5.0.3 of the compliance report.
- Given that the building is provided with two firefighting shafts (that serve the ground and first floors), it is considered that the condition requiring 30 minute fire resisting

enclosure of the stairs on at least one level is excessive/unduly onerous and not necessary for compliance with the B5 functional requirement.

- The unenclosed stairs does not cause any excessive compartment area or volume as noted in the B3 section of the compliance report.
- The increased potential unprotected area for B4 boundary separation calculations are within acceptable limits for compliance with B4, as noted in section 4 of the compliance report.
- The possibility of 47sqm fires occurring on both of the two levels is at odds with normal design practice where a single fire is assumed to occur.
- For a growing fire which initiates on the lower level adjacent to the open void to grow to 47sqm on both levels is highly unlikely
- The presence of the open void will result in the fire growing on the upper level, more slowly than in the case of a single level with no opening in the floor. Thus it is considered that the extent of fire development prior to fire service intervention will be less than in the case of a fire with no floor void. This can be verified using a Zone Model to demonstrate the rate of fire growth in the 2 storey open void situation, compared with a fire in a single storey area with no floor opening.

The case made by the building control authority is summarised as follows:

- The design of the building per the original parent application (Ref. 09/8129) provided for an un-sprinklered building with a growing fire which has grown to 47sqm in area on a single floor.
- The new opening would allow for early and rapid spread of fire on the lower floor to the floor above.
- In the time estimated for fire brigade intervention (on which the 47sqm fire limit was based) potentially two separate 47sqm fires will have evolved which may well bring about a much more challenging scenario for firefighting personnel.
- The building control authority has sought the advice of the fire authority, based on which it suggests how the new risk might be mitigated, by providing structures to limit the potential for fire spread to a second floor.
- These structures would require the introduction of 30 minute fire rated construction at one level (to enclose the opening).
- The building control authority must have regard to the life safety of persons in and about the building, including the firefighting personnel, together with the protection of adjoining properties.

- In light of the above, certain designs, including the 47sqm unsprinklered fire, which have been considered as acceptable, are now being questioned as to their suitability, particularly in relation to clusters of high risk buildings, as in this case.
- This new thinking in the greater Dublin area has led to a stricter approach to assessment of such designs. This approach considers larger fires on a single floor, with fire retarding enclosure of the atrium on the upper levels and fire resisting construction on the top levels or, alternatively, the provision of sprinkler protection.
- This building does not include these additional features while still being adjacent to other tall blocks and is based on the 47sqm unsprinklered fire which is considered to be at the lower/more liberal end of the acceptability spectrum of fire safety design.
- The current proposal potentially heightens the risk to firefighting personnel and may have an adverse effect on the protection of adjoining blocks in the already approved liberal design.

3.0 CONSIDERATIONS:

MSA state that the works are being done to comply with Condition 1 of the parent Fire Safety Certificate (09/8129), which stated *“Any instance of the proposed ‘accommodation stairs between 2 floors of the same tenancy only and accessed off the main floor subject to future fire cert application’ shall be enclosed in not less than 60 minute fire resisting construction including 30 minute fire resisting door sets with cold smoke seals i.e FD30S doorsets”*.

The approved parent design noted possible future provision of such stairways and stated that any such provision would be subject to a separate Fire Safety Certificate application, hence the current application. Condition 1 on the parent Fire Safety Certificate provided in advance for future enclosure of such stairways. The current application is considered as in effect seeking to remove this condition.

The reason for the condition was stated by DLR as being for the purposes of compliance with Part B5 of the building regulations (access and facilities for the fire service). This was presumably on the perceived basis of potential difficulties that might be encountered by the fire service due to a potentially large fire developing on two floors (due to fire spread via a new unprotected stair opening between floors). This is considered (by DLR) as being beyond the limits of the original design fire size of 47sqm confined to one floor, as set out in the original fire safety design.

MSA state that all issues relevant to Part B5 were addressed in their compliance report which noted that the new works will cause no new or greater contravention to the B5 functional requirements in the existing building on the basis that:

“The access and facilities for the fire service will not be altered in such a way as to reduce the extent of performance of those that existed before the material alteration, and the building height and volume will not change is not the subject of a material change of use”.

By reference to Section 5.0.3 of Technical Guidance Document B (TGDB), this implies that the proposed works would be in compliance with Part B5 of the regulations. Additional difficulties that might be encountered by the fire service due to a potential increase in maximum fire size would not be expected to be addressed under Part B5, but might be under Part B3 (restrictions on the maximum floor area or volume within a compartment, that are designed to limit potential fire size). The type of fire load within the compartment is not being altered.

The building has been constructed on the basis of each floor being considered as a separate compartment, suitable for use by a different tenant on each floor. By co-joining two floors by way of a stairway that is not within a protected shaft, and where the two floors are occupied by the same tenant, this results in an increase in the original compartment size. However, the applicant has shown that the increase in compartment floor area and volume is still significantly within the limits recommended under Table 3.1 of TGDB.

Under Part B4 (external fire spread), the maximum size of a compartment is relevant to the separation distance of the building from other nearby buildings. The applicant has presented calculations showing that the increased size of the compartment elevations (two floors exposed externally instead of one) facing nearby buildings is still within the protected area/separation distance limits as required under Part B4.

The remaining issue relates to potential fire spread (under Part B3) of a fire within a compartment to compartments on other floors. In an atrium building where all floors are within the same tenancy, fire spread from one compartment to another is not generally a concern as the floors are not compartment floors. When floors are occupied by different tenants, then they become compartment floors, and potential fire spread from one floor to another has to be provided for.

In this application, Appendix A of the submitted compliance report (“Appendix A: Existing approved design 09/8129: Fire safety compliance Report”), the fire design strategy refers to “the risk presented by the open atrium” to escape routes at upper levels, and to the enclosure of the top two levels, and a smoke management system. There is also reference to the smoke management system as providing protection against fire/smoke spread beyond one floor. It is stated that this arrangement is sufficient to satisfy the functional requirement of B3. It also notes that the smoke control design caters for a situation where the floors have single tenancies and have no fire separation from the atrium.

The revised report submitted on 16th May 2011 (and referenced in Condition 7 of the 09/8129 Fire Safety Certificate) notes that the atrium will be separated from the tenancies by 30 minute (integrity) fire resisting construction. The design in that report is based on considering vertical fire spread between compartments that might arise from a fire on the atrium floor, and that might cause fire spread into the tenancies by radiation through the glazing. The temperature required to cause such radiation is given as 350 degrees C, and a powered smoke extraction system was proposed to provide for a maximum smoke temperature of 200 degrees C.

Summarizing the above, it appears that the Appendix submitted with the application (and stated to be the design approved under Fire Safety Certificate 09/8129) provided for a smoke control system (possibly without fire rated glazing between the tenancies and the atrium) that would prevent a fire on one floor causing fire spread to a compartment of another tenancy, whereas the revised Appendix actually approved (under Condition 7 of Fire Safety Certificate 09/8129) provided for enclosure of the atrium and a design based on potential fire spread from the atrium base into a tenancy floor.

The as-constructed atrium has 30 minute fire resistance (integrity) glazing between each floor and the atrium which, as per the approved design, is considered as preventing fire spread from any one floor into the atrium and thus to another floor. This level of protection would apply (for an appropriate period) regardless of how many individual floors might have a fire e.g. whether there was a fire on one only or on two floors of the Sage tenancy, as each floor has separation from the atrium. The scenario of fire spread from one tenancy to another via the atrium was not contemplated in the approved design.

It could be considered that the relevance of the 47sqm fire size is moot in this case, as it is taken into account only with regard to the initial fire safety design (where it is used as the basis for the smoke extract and unenclosed atrium). However, this design was superseded by the revised design submitted for Fire Safety Certificate 09/8129, which took account only of a potential fire in the atrium base, and not on a fire scenario within the tenancies (provided for by the provision of fire resisting separation of the tenancies from the atrium).

4.0 CONCLUSIONS:

The issue of restricting potential fire size in contemplation of fire brigade intervention is not considered as being covered under the functional requirements of regulation B5 (the Reason given for the condition). It would be covered under the restrictions on compartment size/internal fire spread under regulation B3. The potential impact of the proposal under regulation B1 (protection of escape routes) and under regulation B4 (space separation) are not considered as requiring enclosure of the new stairway at either level. It is considered that the proposed open stairway would not cause any new or greater contravention under regulation B3.

5.0 REASONS and CONSIDERATIONS:

Having regard to the submissions made in connection with the Fire Safety Certificate application and appeal and the documented previously approved fire design, and considering the functional requirements under regulation B5 (access and facilities for the fire service) it is considered that the proposal would not give rise to any new or greater contravention of regulation B5. It is also considered that the proposal would not give rise to any new or greater contravention of regulations B1 (in particular with regard to protection of escape routes), regulation B3 (with regard to restrictions on internal fire spread) or regulation B4 (with regard to space separation from nearby buildings), and that the condition should be removed.

Signed by:

COLM TRAYNOR BE FIEI Chartered Engineer

Date: 3rd March 2016