Report

On

Appeal Against Condition 1 and 2 Attached To Grant of Revised Fire Safety Certificate (Reg. Ref. FA 16/1187/REV)

By

Dublin City Council

For

Material Alterations comprising the fit out of Office Units at Second Floor Level of DCU, Innovation House, DCU, Glasnevin

Client	:	An Bord Pleanala
An Bord Pleanala Ref No	:	29B.FV0012
DCC Reg Ref	:	FA/16/1187/REV
Our Ref.	:	16280_29B.FV0012
Date	:	21st September 2016

1.0 Introduction

This report sets out my findings and recommendations on the appeal submitted by Ryan & Associates Engineering Consultants on behalf of Ronan Furlong, Executive Director of the Alpha Innovation Campus, against Condition 1 and 2 attached to the Fire Safety Certificate FSC2003/16/REV (DCC Register Reference No. FA/16/1187/REV) granted by Dublin City Council in respect of an application identified in the application form as *Material Alterations to Previously Granted Fire Safety Certificate.*

1.1 Subject Matter of Appeal

An application for a Revised Fire Safety Certificate under Part IIIA of the Building Control Regulations 1997-2014 was made by Ryan & Associates Engineering Consultants on behalf Ronan Furlong, Executive Director of the Alpha Innovation Campus, on 11th April 2016.

The Fire Safety Certificate was granted by Dublin City Council on 24th June 2016 with 2 Conditions attached.

An appeal against Condition 1 and 2 was lodged with An Bord Pleanala by Ryan & Associates Engineering Consultants on behalf Ronan Furlong, Executive Director of the Alpha Innovation Campus, on 18th July 2016.

The conditions under appeal read as follows:

Condition 1
All storage rooms, repair and maintenance workshops, Laboratories classified as high hazard and kitchens, are to be enclosed in 30 minutes fire resistance complete with 30 minute self closing fire resisting doorsets FD30S.
Reason
To show compliance with Part B of the Second Schedule to the Building Regulations 1997-2013, Section B3; - Internal fire spread (Structure).

Condition 2
Each unit / separate tenancy is to be enclosed in a compartment separate from the rest of the building in accordance with section 3.2.4.1 of Technical Guidance Document B.
Reason
To show compliance with Part B of the Second Schedule to the Building Regulations 1997-2013, Section B3; - Internal fire spread (Structure).

1.2 Documents Reviewed

- Fire Safety Certificate Application and supporting documentation: -
    - Completed application form for a Revised Fire Safety Certificate to Dublin City Council dated 11th April 2016.
    - Revised Fire Safety Certificate Application Documentation by Ryan & Associates Engineering Consultants lodged in support of this application.
- The Granted Fire Safety Certificate with 2 attached conditions dated 24th June 2016.
- Appeal submissions to An Bord Pleanala:
    - Submission dated 14th July 2016 by Ryan & Associates Engineering Consultants
    - Fire Officer Report on the appeal submission dated 27th July 2016.
    - Submission dated 24th August 2016 by Ryan & Associates Engineering Consultants
- History file from Dublin Fire Brigade including: -
    - Application form and correspondence in relation to the application and notification of decision, reports dated 22/01/2016, Fire Safety Certificate dated 25/09/2016
    - Certified copy of Managers Order FSC1134/16/7D
    - Drawings and Fire Safety Report received 12/08/2016

Having regard to the nature of the Condition under appeal, it is considered that the appeal can be adjudicated upon without consideration of the entire of the application.

2.0 Technical Consideration

2.1 Case made by the Applicant/Appellant:

The appellant provides a background to the appeal that is summarised as follows: -

- An application was submitted as a 7 Day Notice on 12th August 2015 and this application was validated.
- No further request for additional information was made so the works were began on site.
- Four requests for extensions of time were granted from 20th October 2015 to 19th January 2016
- No request for additional information was made and a number of attempts to contact the Fire Officer were unsuccessfully made.
- On 25th January 2016 the Fire Safety Certificate was granted with 5 conditions.
- An Appeal was made to An Bord Pleanala but said Appeal was made too late and after the statutory appeal period had lapsed.
- A revised Fire Safety Certificate for material alterations was made to address the conditions on the original granted Fire Safety Certificate.
- This Fire Safety Certificate was granted with two Condition attached which are the subject of this appeal.

Condition 1
The appellant states the Laboratories can fulfil a wide range of functions and refer to clause 24.1 of BS 5588 Part 11 that states: -

'where these activities involve the storage, handling and use of significant quanties of highly flammable, reactive or explosive materials, the laboratories should be classified as High Hazard Areas'

The appellant states that in the laboratory identified on the drawings submitted as part of the fire safety certificate application there will be no storage, handling or use of any highly flammable, reactive or explosive materials within this room and as such this laboratory should not be considered as an area of high fire risk.

It is the appellant's contention that the labelling of this room as a laboratory is an indicative term and does not necessarily reflect the work that will be undertaken within the room.

The appellant states that minor soldering works will be undertaken and that these works are considered to be no more of a risk than using a hair dryer. Furthermore storage indicated within the laboratory will only comprise some shelving for general storage purposes that would be associated with any typical office. Given the above the appellant believes that it is not considered necessary to enclose this room in fire resisting construction.

The appellant states that in the workshops there will be no maintenance and repair and they will not contain oil or highly flammable substances. Again it is the appellant's contention that the labelling of this room as a workshop is an indicative term and does not necessarily reflect the work that will be undertaken within the room. The appellant states that minor soldering works will be undertaken and that these works are considered to be no more of a risk than using a hair dryer.

Given the above the appellant believes that it is not considered necessary to enclose the workshops in fire resisting construction.

The appellant states that the storage area in Unit No. 1 is not a designated storage room and in fact forms part of the workshop adjoining it. An additional exit was provided to ensure the requirements of inner rooms were complied with. Furthermore storage indicated within this room will only comprise some shelving for general storage purposes that would be associated with any typical office. Given that no highly flammable or explosive substances will be stored within this area the appellant believes that it is not considered necessary to enclose this room in fire resisting construction.

Condition 2

The appellant states as constructed the fit out of this floor level complies with Section 1.2.3.6 of Technical Guidance Document B and Clause 8.7.2 of BS 5588: Part 11 as: -

- The means of escape from each occupancy does not pass through any other occupancy.
- The common corridor serving the different occupancies forms a protected corridor achieving 30 minutes fire resistance in accordance with Section 1.2.5.1 of Technical Guidance Document B
- A fire detection and alarm system, complying with the requirements for a L2 type system as defined in IS3218 has been provided throughout the storey.

The appellant further confirms the following: -

- No changes have been made to the existing elements of structure which achieves a minimum 60 minutes fire resistance.
- The walls separating each occupancy from the protected corridor do not form part of the elements of structure and as such it is considered acceptable for these walls not to achieve the same level of fire resistance.
- The DOE document 'Design principles for fire safety' allows for sub-compartmentation having a lesser standard of fire resistance than the main structural elements in connection with the means of escape.
- In accordance with Tables A1 and A2 of Technical Guidance Document B compartment walls in office buildings up to a height of 5m only need achieve 30 minutes fire resistance. While it is acknowledged that the top storey of this building is more than 5m above ground floor these compartment walls do not form part of the elements of structure and as such a fire resistance of 30 minutes is considered to be acceptable.
- The project is located within the main reception building for the DCU Alpha university campus and has 24hr manned security with a fully addressable fire alarm system with repeater panel beside the security station.
- The building is in use by technology companies.

2.2 Case made by the BCA

Condition 1
Dublin City Council notes that the basis of compliance used for this application is Technical Guidance Document B and BS 5588 Part 11. Section 3.2.4.1 of Technical Guidance Document B states that: -

'Many of the codes of practice and other documents referred to in Section B1 (1.1) for the purpose of means of escape, identify specific area of accommodations that are regarded as places of special fire risk. These areas should also be separated by way of compartmentation in accordance with the recommendations contained in those documents.'

Table 11 of BS 5588 Part 11 lists areas of ancillary accommodation found within buildings to which that standard applies and recommends minimum periods of fire resistance for their enclosures. The areas referred to in Condition No. 1 are specifically recommended in Table 11 of BS 5588 Part 11 to be separated from other parts of the building by robust construction having a minimum standard of fire resistance of 30 minutes.

Condition 2
Dublin City Council notes that Section 3.2.4.1 (b) of Technical Guidance Document B states that: -

'Compartment walls and / or compartment floors should be provided to separate parts of a building that are occupied mainly … by different tenancies, from one another'.

Tables A1 and A2 of Technical Guidance Document B recommends a minimum period of 60 minutes provision for loading capacity (where applicable), integrity and insulation for compartment walls and floors in unsprinklered offices buildings where the height of the top story is between 5 and 20 metres.

2.3 Consideration of the Issues arising

It is noted that background to the appeal provided by the appellant is not relevant to the technical assessment provided below. It is unfortunate that the application took so long to be processed however it is noted that 7 Day Notice Fire Safety Certificate applications do not require an immediate response by the Local Authority assessing the application. They were not required to ask for additional information before validating the application or before works started on site. The 7 Day Notice Fire Safety Certificate is a facility to allow construction to start on site before a Fire Safety Certificate is processed however it is under the clear understanding that this is at the risk of the client and the client signs a Statutory Declaration to this effect.

Condition 1:
It is noted that in their application under appeal the appellant states that purpose of the application is as follows: -

1. Reduction of the fire resistance provided to the protected escape corridor as conditioned on the previously granted fire safety certificate FSC 1134/14
2. The change of use of a number of rooms within office units 1, 4, and 5 at second floor.

They further state that from time to time these rooms will be used for soldering works. In their report and appeal they compare soldering to both hair dryer and dentist filling equipment.

Their submission is that these rooms are no longer laboratory's, workshops or stores but offices. It is noted that even though this is their stated intent in their appeal they repeatedly refer to these rooms as either laboratory's, workshops or stores.

Table 11 of BS 5588 Part 11 states the following: -

Table 11 — Structural fire protection of areas of ancillary accommodation

Area of ancillary accommodation	The area should be separated from other parts of the building by (see 13.3):
1) Storage areas not greater than 450 m^2 (other than refuse storage areas) 2) Kitchens (separately or in conjunction with an associated staff restaurant or canteen) 3) Engineering services installation rooms [other than those covered by items 9), 10) and 11)] 4) Repair and maintenance workshops where flammable or highly flammable liquids are not used or stored 5) Laboratories classified as high fire hazard areas	Robust construction having a minimum standard of fire resistance of 30 min (see Note 1)
6) Repair and maintenance workshops where flammable or highly flammable liquids are used or stored 7) Storage areas greater than 450 m^2 (other than refuse storage areas) 8) Car parks within or adjoining the building and not greater than 450 m^2 in area 9) Covered loading bays	Robust solid non-combustible construction having a minimum standard of fire resistance of 60 min
10) Refuse storage areas 11) Rooms housing fixed internal combustion engine(s) 12) Boiler rooms and fuel storage spaces 13) Transformer and switchgear rooms for equipment above low voltage 14) Car parks within or adjoining the building and greater than 450 m^2 in area	Robust solid non-combustible construction having a minimum standard of fire resistance equivalent to that required for the elements of construction of the building, and in no case less than 60 min
NOTE 1 Any openings in the required construction should be protected by doors having a similar standard of resistance.	
NOTE 2 Structural fire protection of areas containing equipment associated with life safety and fire protection are covered in 29.4.2.	

Therefore for compliance with BS 5588 Part 11 all workshops (where flammable or highly flammable liquids are not used or stored), stores and Laboratories classified as high fire hazard area need to be enclosed in 30 minutes fire resistant construction.

With respect to the Laboratory and workshops it is clear that the main issue is the use of soldering. Does this make these rooms a workshop or high hazard laboratory or is soldering not an increased risk to a typical office.

A soldering element produces a heat of 400^{o}C. The Health and Safety Authority consider soldering as hot works. Typical recommendations for soldering are as follows: -

- Conduct work on a fire-proof or non-flammable surface that is not easily ignited.
- Wear non-flammable or 100% cotton clothing that covers your arms and legs to help prevent burns.
- Be sure the iron is secure in its stand so it cannot inadvertently dislodge onto the work surface.
- Know where your fire extinguisher is and how to use it.

From our review of soldering it is clear that it is not a typical office activity and does present additional risk. Whether the room is called an office, workshop or laboratory is really irrelevant, the relevant issue is that the activity of soldering is an additional risk. Therefore it is my opinion that all rooms where soldering intended to be carried out as an activity should be enclosed with 30 minute fire rated construction and FD30S doorsets.

Condition 2:
Section 1.2.3.6 of TGD-B 2006 states the following: -

> **1.2.3.6 Storeys divided into different occupancies** - Where any storey is divided into separate occupancies (i.e. where there are separate ownerships or tenancies of different organisations):
>
> (a) the means of escape from each occupancy should in general not pass through any other occupancy;
>
> (b) the common corridor serving the different occupancies should be a protected corridor (see 1.2.5.1); and
>
> (c) a fire detection and alarm system, complying with the requirements for at least an L3 type system as defined in I.S. 3218: 1989, should be provided throughout the storey (see 1.4.14).

Section 3.2.4.1 of TGD-B 2006 states the following: -

> (b) Compartment walls and/or compartment floors should be provided to separate parts of a building that are occupied mainly for different purposes (see 0.3.2 and Table 0.1), or by different tenancies, from one another;

These two sections appear to contradict one another. Section 1.2.3.6 requires a protected corridor whereas Section 3.2.4.1 requires full compartmentation. This is the fundamental issue under consideration in this appeal.

Section 8.7 of BS 5588 Part 11 offers clarification on the intent of these clauses. It states: -

8.7 Multi-occupied premises

8.7.1 *Commentary*

If a building is in multiple occupancy, people in one part of the premises may not be aware of an outbreak of fire in a different part of the premises, particularly if it is empty. It may be necessary in certain circumstances to provide fire resisting separation between different occupancies, to ensure that escape routes are planned to be independent of each other and to provide a suitable common alarm system, installed to provide warning throughout the premises of any outbreak of fire in any part of the premises.

8.7.2 *Recommendations*

The following recommendations are all applicable to all premises other than offices. For offices, recommendation a) and either recommendation b) or recommendation c) are applicable.

a) The means of escape from each occupancy should be independent of, and should not pass through, any other occupancy.

NOTE Any future subdivision of the storey may cause additional means of escape to be required.

b) Any common corridor between different occupancies should comprise a protected corridor.

c) A common automatic fire detection and alarm system that conforms as a minimum to Type L3 of BS 5839-1:1988 should be installed throughout the building.

The recommendations in this regard for offices are that means of escape should be independent of each occupancy / tenant and either a common automatic fire detection and alarm system or a common protected corridor should be provided. The appellant in their application has provided a protected corridor and a common automatic fire detection and alarm system. Therefore they are meeting / exceeding the recommendations of BS 5588 Part 11.

It is noted that BS 9999 2008 states the following: -

32.4.1.5 Multi-tenancy buildings

Where walls are provided to separate different tenancies in a building or part of a building, they should be constructed as compartment walls, even if the tenancies are in the same occupancy characteristic, except in office buildings in occupancy characteristic A.

Therefore this supports the view that at least in office accommodation that compartmentation is not required between different tenancies.

3.0 Recommendation

On the basis of the foregoing assessment, I recommend that An Bord Pleanala should direct the Building Control Authority to Grant the Fire Safety Certificate with Condition 2 removed and Condition 1 amended as follows: -

Condition 1

All storage rooms, repair and maintenance workshops, Laboratories classified as high hazard, rooms where soldering is carried out (i.e. the rooms subject to the material change of use within office units 1, 4, and 5 at second floor) *and kitchens, are to be enclosed in 30 minutes fire resistance complete with 30 minute self closing fire resisting doorsets FD30S.*

Reason

To show compliance with Part B of the Second Schedule to the Building Regulations 1997-2013, Section B3; - Internal fire spread (Structure).

Des Fortune
Director I Chartered Engineer I BSc(Eng) DipEng MSc (Fire Eng) CEng MIEI

Date: 21st September 2016