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Fire Safety Certificate Compliance Report

BLOCK B
PROPOSED MIXED USE DEVELOPMENT,
MAIN STREET,
NEWCASTLE,
CO.DUBLIN

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Project Preface

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INTRODUCTION

Description of Works

This Fire Safety Certificate Application is for the proposed construction of a standalone two storey mixed use building comprising a café unit at ground floor and a community centre at first floor. This application will be for the shell and core construction of Unit 1 - Cafe (Ground Floor) and the construction and fit out of Unit 2 – Community Centre (First Floor) which shall be an open plan space.

Purpose Group

The building comprises the following uses in accordance with Table 0.1 of TGD-B 2006: -

- Unit 1 (Ground Floor Café) – Purpose Group 5 – Assembly & Recreation
- Unit 2 (First Floor Community Centre) – Purpose Group 5 – Assembly & Recreation

Scope

This Fire Safety Certificate Compliance Report will demonstrate that the premises and the proposed works relevant to this application will, if constructed in accordance with the drawings and design details submitted with this application, together with the performance requirements prescribed in this report, comply with the requirements of Part B (Fire Safety) of the Second Schedule to the Building Regulations 1997-2019.

The scope of this report deals primarily with life safety and the provisions of means of escape.

This compliance report is sub-divided into sections dealing with each of the specific requirements of Part B as follows: -

- Section 1 – B1: Means of Escape in Case of Fire;
- Section 2 – B2: Internal Fire Spread (Linings);
- Section 3 – B3: Internal Fire Spread (Structure);
- Section 4 – B4: External Fire Spread; and,
- Section 5 – B5: Access and Facilities for the Fire Services.

Schedule of Drawings

This report should be read in conjunction with the following drawings:

Drawing Number	Drawing Title	Scale
2020.098.2.FSC.101	Site Location Map	A3 @ 1:1000
2020.098.2.FSC.102	Site Layout Plan	A2 @ 1:250
2020.098.2.FSC.103	Proposed Ground Floor Plan	A3 @ 1:100
2020.098.2.FSC.104	Proposed First Floor Plan	A3 @ 1:100
2020.098.2.FSC.105	Proposed Section A-A	A3 @ 1:100
2020.098.2.FSC.106	Proposed Front (North East) and Rear (South West) Elevations	A3 @ 1:100
2020.098.2.FSC.107	Proposed Side (North West) and Side (South East) Elevations	A3 @ 1:100
2020.098.2.FSC.108	FSC Floor Area Calculation Drawing	A3 @ 1:200

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0.0 EXECUTIVE SUMMARY

To summarise, this application is for the proposed construction of a standalone two storey mixed use building comprising a café unit at ground floor and a community centre at first floor. This application will be for the shell and core construction of Unit 1 - Cafe (Ground Floor) and the construction and fit out of Unit 2 – Community Centre (First Floor) which shall be an open plan space.

We believe that once the works are carried out in accordance with this report and accompanying drawings, the proposed building will comply with Part B of the Second Schedule of the Building Regulations.

This is demonstrated throughout this report in detail and in support of this, we submit that:

0.1 Means of Escape

The proposed building meets the requirements of TGD-B 2006 in terms of safe means of escape for the occupiers. This report and the enclosed dimensioned floor plans demonstrates compliance within the limited travel distances. The width of all horizontal and vertical circulation routes and final exits are adequate to cater for the expected number of occupants in the building.

Unit 1 at ground floor will comprise 3 final exits at ground floor level. Unit 2 at first floor level will comprise a single means of escape by way of a protected stair enclosure which will discharge directly to outside at ground floor level. This is considered acceptable as the first floor is not more than 5m above ground level and the areas are permitted to have a single means of escape. The estimated occupancy of 44 is less than the maximum allowable 50 occupants and the travel distance to the stair is within the maximum single travel distance of 18m.

0.2 Structure & Compartmentation

Unit 1 and Unit 2 will be compartmented from each other. The compartment walls and floors will provide 60-minutes fire resistance. Stair 1 will be enclosed in 30 minutes fire resisting construction including FD30S fire doors and will continue up to the underside of the roof.

The floor between both units will be constructed as a 60 minute fire resisting compartment floor, and the wall between the stair and Unit 1 will be constructed as a 60 minute fire resisting compartment wall.

Any structural steel supporting elements of structure will be provided with 60 minutes fire resistant protection. Any steel only supporting the roof will be excluded from the requirements for elements of structure.

Passive fire safety protection shall be in installed in accordance with section 3 of TGD-B.

0.3 External Fire Spread

External fire spread calculations have been provided for the purpose of this application and all relevant boundaries are within the allowable limits.

Please see Section 4 of this compliance report which demonstrates that there will be sufficient boundary distance provided in accordance with B4.

0.4 Fire-Fighting Access & Facilities

The total ground floor area of the building on completion of the proposed works will be approximately 276m². Therefore, in accordance with Section 5.1.7 of TGD-B 2006, there will be no requirements for any external fire mains or fire hydrants to be provided to specifically serve the premises; however, as part of the proposed mixed use development, there will be a number of fire hydrants provided onsite and are indicated on the accompanying site plan.

Adequate circulation is provided for Fire Brigade Vehicle access and the design of access routes and hardstandings is for a pump appliance.

Please see Section 5 of this compliance report which demonstrates that there will be sufficient Fire-Fighting Access and Facilities provided in accordance with B5.

0.5 Active Fire Safety Systems

A minimum of an 'L2/3X' type fire detection and alarm system will be provided in the proposed building which will be designed, installed and commissioned in accordance with IS 3218:2013+A1:2019. As Unit 2 (First Floor Community Centre) will be fitted out as part of the works relevant to this fire safety certificate application, the relevant installations for fire detection and alarm systems will be provided in the shell and core Unit 1 (Ground Floor Café) until fit out.

An emergency lighting system will be provided in the proposed building which will be designed, installed and commissioned in accordance with I.S.3217:2013+A1:2017. This system may not be installed in Unit 1 Café (Ground Floor Shell & Core) at the completion of the works relevant to this fire safety certificate application as it will be part of the fit out works.

1.0 MEANS OF ESCAPE

1.1 Basis of Compliance

B1 Means of Escape in case of fire will be demonstrated by reference to the relevant recommendations in the following design guidance: -

- Sections 1.2 - 1.4 of Technical Guidance Document B (TGD-B) 2006.

1.2 Occupancy Analysis

Ref:	Location/Room	Area [1] (m^2)	Occupancy Load Factor (m^2/person)	Estimated Peak Occupant Demand (persons)
Unit 1 - Ground Floor		**249**		
1.01	Café Public Area - 70% [3]	174.3	1 0[2]	174
1.02	Café Back of House - 30% [3]	74.7	30.0[2]	3
Sub Total – Unit 1 Ground Floor				**177**
Unit 2 - First Floor				
1.03	Community Centre	130	3.0[4]	43
1.04	W.C	7.5	Number of Seats	1
Sub Total – Unit 2 First Floor				**44**
Total Occupancy of Building				**221**

Notes:
1. Refers to area of room or storey, as appropriate, with area calculated in accordance with 1.0.10(a) of Technical Guidance Document B.
2. Occupancy load factors as per Table 1.1 of TGD-B 2006 where applicable.
3. Shell and core calculation taking into account back of house areas such as storeroom, bar counter spaces, etc.
4. Floor space factor determined by reference to actual data taken from similar premises.

1.3 Design for Horizontal Escape

1.3.1 Travel Distance

The critical travel distance locations have been identified on the accompanying Fire Safety Certificate drawings, and summarised in the following table. All travel distances are as per recommendations of Table 1.2 of TGD-B 2006.

There will be no situation in the premises relevant to the proposed works where travel distances will be exceeded. If travel is initially in one direction only, then: -

1. The total distance to the nearest storey exit will not exceed the alternative travel distance;
2. The distance in the single direction will not exceed the single (dead-end) travel distances; and,
3. All alternative escape routes will be located in excess of 45° apart.

Location/ Room Reference	Recommended Limits [1] (m)		Maximum Distance To Nearest Storey Exit (m)	
	Single	Alternative	Single	Alternative
Ground Floor				
TD.1 – Unit 1 - Café	12.0m [2]	30.0m [2]	-	7.2m
TD.2 – Unit 1 - Café	12.0m [2]	30.0m [2]	-	17.9m
First Floor				
T.D 3 - Unit 2 – Community Centre	18.0m	45.0m	16.9	-

Notes:
1. Recommended limits of Table 1.2 of TGD-B 2006
2. Where the internal arrangement of walls and fixed furniture is not known, direct distance will be used for assessment. For design purposes the direct distance will be taken as two third of the travel distance

1.2.2 No. of Escape Routes and Exits

Ref. Section 1.2.2 of TGD-B 2006

All areas in the premises with an occupancy of 50 persons or less (Unit 2 First Floor) will be provided with at least one exit or escape route having a minimum clear (opening) width of 800mm.

A minimum 2 escape routes will be provided for all areas in the premises with an occupancy of more than 50 persons (Unit 1 Ground Floor). Please refer to the table below for the width and number of escape routes to be provided.

The exit capacities of all storey and final exits are shown on the accompanying floor plan drawings.

1.2.3 Widths of Exits from Room or Storey

Ref. Section 1.2.4 of TGD-B 2006

As detailed above, all rooms/areas with an occupancy of 50 persons or less will be provided with a minimum of one exit having a width of not less than 800mm. All areas with more than 50 occupants will be provided with the following.

Location	Estimated Peak Occupant Level (Persons)	Proposed Minimum Exit Width (mm) [1]	Exit Capacity (Persons) [2]
Unit 1 Ground Floor	177	1 x 850 (Exit 1) 1 x 850 (Exit 2) 1 x 850 (Exit 3)	0[3] 100 100
Total	**177**		**200**
Unit 2 First Floor	44	1 x 850 (Exit 4)	100
Total	**44**		**100**

Notes:
1. Width refers to:
   (a) minimum clear width when the door is open in accordance with 1.0.10 & figure 1 of TGDB.
   (b) width of corridor / passageway between walls or otherwise the width available between any fixed obstructions.
2. Capacity calculated in accordance with Table 1.4 of TGD-B 2006
3. Allowing for discounting one exit

1.2.4 Assembly & Recreational Buildings – Main Entrance / Exits

Ref. Section 1.2.4 TGD-B 2006

The main entrance of Unit 1 (Ground Floor) will provide a minimum 850mm clear opening width, which can accommodate up to 100 persons. This figure is in excess of 1/3rd of the overall occupancy load of the unit.

The main entrance to Unit 2 (First Floor) will provide a minimum 850mm clear opening width, which can accommodate up to 100 persons. This figure is in excess of 1/3rd of the overall occupancy load of the unit.

1.2.5 Inner Rooms & Access Rooms

Ref. Section 1.2.3.1 TGD-B 2006

There will be no inner rooms provided as part of this application for the shell and core construction of Unit 1 (Ground Floor Café) and the construction and fit out of Unit 2 (First Floor Community Centre); therefore, this section does not apply.

1.2.6 Open Connections Between Floors

Ref. Section 1.2.3.2 TGD-B 2006

There will be no open connections provided between the floors in the proposed building as part of this application; therefore, this section does not apply.

1.2.7 Corridors

Ref. Section 1.2.5 TGD-B 2006

There will be no corridors provided in the proposed building as part of this application; therefore, this section does not apply.

1.2.8 Storeys Divided Into Different Occupancies

Ref. Section 1.2.3.6 TGD-B 2006

There will be no storeys divided into separate occupancies in the proposed building as part of this application. The two units are separated vertically and horizontally by compartment walls and compartment floors respectively.

1.2.9 Escape Routes across a Flat Roof

Ref. Section 1.2.6 TGD-B 2006

There will be no external escape routes leading via a flat roof or an external stair in the proposed building as part of this application; therefore, this section does not apply.

1.2.10 Final Exits

Ref. Section 1.4.7 TGD-B 2006

The final exits serving the areas relevant to this application will have adequate clear opening widths for means of escape purposes as previously detailed in this compliance report. Furthermore, the following is noted:

1. All final exits will deliver directly out to the open air.
2. All final exits will have a running man sign fitted over.
3. Final exits shall have a capacity not less than that of the escape routes they serve.
4. Each exit will be provided with a minimum clear height of not less than 2000mm.

1.3 Design for Vertical Escape

1.3.1 Number of Escape Stairs

Ref. Section 1.3.2 TGD-B 2006

Unit 2 (First Floor Community Centre) will be served with one protected escape stair, discharging to a ground floor final exit.

1.3.2 Single Escape Stairs

Ref. Section 1.3.3 TGD-B 2006

As noted above, Unit 2 (First Floor Community Centre) will be served by a single escape stairs. This is considered acceptable as the floor is not more than 5m above ground level and the areas are permitted to have a single means of escape. The estimated occupancy of 44 is less than maximum allowable 50 occupants and the travel distance to the stair is within the maximum single travel distance of 18m.

1.3.3 Width of Protected Stairways

Ref. Section 1.3.5 TGD-B 2006

The table below determines the capacity of the protected stairway.

Location	Number of Floors Served	Max Number of Persons for a stair width of		Peak Occupancy
Protected Stair 1	1	Min. 900mm	100	44

Note 1: Stair capacities have been determined in accordance with Table 1.5 of TGD-B 2006

Therefore, the protected stairs serving the first floor will have a total capacity to accommodate for up to 100 persons which will be in excess of the estimated peak occupancy of 44 persons at first floor level.

1.3.4 Protection of Escape Stairs

Ref. Section 1.3.6 TGD-B 2006

The protected escape stairs will be enclosed in a minimum of 30-minutes fire resistant construction including FD30s fire doors.

1.3.5 Exits from Escape Stairs

Ref. Section 1.3.6.3 TGD-B 2006

The protected escape stairs will discharge to a ground floor final exit (Exit 4) which will have a capacity to serve the total occupancy of the relevant unit (Unit 2).

1.3.6 Lifts

Ref. Section 1.4.9 TGD-B 2006

It is proposed to install a lift to make the first floor accessible for wheelchair users. The lift will not be used as an evacuation lift. A wheel chair refuge will be provided within the protected escape stair.

1.3.7 Fire Protection of Lift Installations

Ref. Section 1.4.9.2 TGD-B 2006

The lift will be contained within the enclosure of the protected escape stair. The lift will not serve any basement area. The lift and associated equipment will be contained above the lift shaft.

1.3.8 Vertical Escape for Disabled People

Ref. Section 1.4.15 TGD-B 2006

It should be noted that a Disability Access Certificate Application will be submitted in conjunction with this application and relates to the same proposed works.

As access is provided to the building for all people, appropriate means of escape is also provided including means of escape for wheelchair users from wheelchair accessible areas.

A refuge will be provided in the stair enclosure as shown on the enclosed floor plan drawing. The refuge will conform to BS5588-8: 1999 and will measure 1400 x 900mm.

In accordance with the recommendations of section 14 of BS 5588-12, provision will be made for 2-way intercommunication between the refuge location and a control point in the escape stairway.

Unit 1 (Café) at ground floor level comprises two levels and it is proposed to install a platform lift to allow for wheelchair users to access both levels. The platform lift may not be installed at the completion of the works relevant to this fire safety certificate application as long as the unit is vacant and will be installed as part of the fit out works. Horizontal escape for wheelchair users will be available on both levels within Unit 1, therefore, refuge areas will not be required.

1.3.9 Lobby Protection of Escape Stairs

Ref. Section 1.3.8 TGD-B 2006

No protected lobby will be provided and this is considered acceptable as the stairway serves only one floor which is not more than 20m above ground level.

1.4 General Provisions for Means of Escape

In addition to the preceding sections of this report, the design of escape routes is to conform to the following recommendations of Section 1.4 of TGD-B 2006.

1.4.1 Fire Detection & Alarm Systems

Ref. Section 1.4.14 TGD-B 2006

The building will be provided with a minimum L2/3X fire alarm system which will be designed, installed and commissioned in accordance with I.S. 3218: 2013 - A1 2019.

As Unit 2 (First Floor Community Centre) will be fitted out as part of the works relevant to this fire safety certificate application, the relevant installations for fire detection and alarm systems will be provided in the shell and core Unit 1 (Ground Floor Café) until fit out.

Automatic detection (smoke and heat detection as appropriate) shall be provided throughout escape routes and rooms off escape routes, in accordance with the Category L3 level of coverage. For vulnerable areas / places of fire risk (i.e. store rooms), these areas shall be provided with appropriate detection in accordance with the L2 element of fire detection coverage.

Fire Detection & Alarm System	
Sounders:	Located so as to give 65dB in all areas (or 5dB above ambient).
Manual Call Points:	One located at final exit and at locations so that no occupant has to travel more than 30m to reach a break glass unit.
Wiring:	All new cables associated with I.S. 3218 system will be in accordance with one of the following (depending on rated voltage): IS EN 60702-1, BS 7629-1 or BS 7846. In addition, all cables will as a minimum meet the classification for standard PH30 cable when tested in accordance with IS EN 50200 including Annex E.2.

Additionally, the fire detection and alarm system is to comply with the following and the appropriate certificates will be issued: -

1. The system will be *designed* and certified to comply with I.S. 3218: 2013 - A1 2019;
2. The system will be *installed* and certified to comply with I.S. 3218: 2013 - A1 2019;
3. The system will be *tested & commissioned* and certified to comply with I.S. 3218: 2013-A1 2019. The commissioning of the system will be carried out by an independent certified electrical contractor;
4. *User* – It will be the users responsibility to keep the fire detection and alarm system log book up to-date;
5. All interfaces with the fire detection and alarm system will be installed, tested and commissioned which may include AOVs for venting, HVAC, air-conditioning systems, generator systems, gas isolation, electrical isolation, automatic door releases, electromagnetic devices, 'green' break glass units etc. where relevant;
6. Sounder strobes will be provided strategically within the premises to provide a visual notification and warning to persons of a fire alarm; The locations for the VAD's will be designed and located by the Fire detection and alarm system Designer in accordance with their Risk Assessment / Design Methodology.
7. A sound meter will be used to record sound levels throughout the premises to ensure that a minimum sound level of 65dB(A) is achieved to all areas when all doors are in a closed position.

1.4.2 Normal & Emergency Lighting

Ref Section 1.4.8 TGD-B 2006

An emergency lighting system will be provided in the proposed building which will be designed, installed and commissioned in accordance with I.S.3217:2013+A1:2017. This system may not be installed in Unit 1 Café (Ground Floor Shell & Core) at the completion of the works relevant to this fire safety certificate application as long as the unit is vacant and will be part of the fit out works.

In general emergency lighting is to be provided in the following areas: -

1. Throughout defined escape routes and circulation routes.
2. Habitable rooms >30m²
3. Toilet / toilets lobbies as per the recommendations of IS 3217: 2013. + A1 2017
4. Windowless accommodation.
5. Outside final exits from the building and on external escape routes as per the recommendations of IS 3217: 2013 +A1 2017.

It will be considered that the emergency lighting system will operate for a period of not less than 3 hours following failure of the normal supply in accordance with Section 10 of I.S.3217:2013+A1:2017.

In accordance with Section G 6 of I.S.3217:2013+A1:2017.:

1. Emergency exit signs may be switch-maintained but should be illuminated at all material times (For simplicity, Maintained signs should be installed unless otherwise requested by client).
2. Emergency escape lighting is required: non-maintained or switched-maintained systems of operation shall generally be used unless specified otherwise by Emergency Lighting Designer.

In areas where the normal lighting may be required to be dimmed, under no circumstances shall the emergency exit signage be dimmed or occluded below the minimum levels required in Section G.6.2 of I.S.3217:2013+A1:2017.

Emergency Lighting System Lux Levels (Non-exhaustive)	
Areas to Be Covered	**Lux Level**
Defined Escape Routes	1.0 Lux along the centre line
Un-Defined Escape Routes	0.5 Lux
Open Area Anti Panic Lighting	0.5 Lux
Accessible WC	1.0 Lux
First Aid Point, Fire Fighting Equipment, Manual Call Point, Fire Alarm Panel, Refuge areas	5.0 Lux
High Risk Task Area	15.0 Lux

The emergency lighting system will have a suitable facility for simulating failure of the normal supply for test purposes. The test facility will not interrupt the normal lighting supply to the area concerned and after the test period the emergency lighting system will be automatically restored to its normal state.

1.4.3 Exit Signs

Ref. Section 1.4.13 TGD-B 2006

Every door or other exit providing access to a means of escape is distinctively and conspicuously marked by an exit sign in accordance with either (Type 1 of Annex B IS 3217:2013) IS EN 1838: 2013 or (Type 2 of Annex B IS 3217:2013) IS EN 1838: 2013 and ISO 7010.

This system may not be installed at the completion of the works relevant to this Shell & Core FSCA as it will be part of the fit out works.

In general, exit signage is provided in the following locations: -

- Designated final exits;
- Along escape / circulation routes;
- At corners, junctions etc. where the circulation / escape path changes direction;
- To all storey and final exits; and,
- These are to be supplemented with directional signposting where the routes would otherwise be unclear.

1.4.4 Areas of High Risk

Ref. Section 3.2.4.1 TGD-B 2006

There will be no areas of special fire risk provided in the building as part of this application.

1.4.5 Doors & Door Fastenings

Ref. Section 1.4.3 TGD-B 2006

The time taken to negotiate a closed door can be critical in escaping. New doors on escape routes will therefore be easily identified and readily openable by all people.

All doors on escape routes (whether or not the doors are fire doors) will either not be fitted with lock, latch or bolt fastenings, or will be fitted only with simple fastenings that can be readily operated from the side approached by people making an escape. The operation of these fastenings will be readily apparent and without the use of a key and without having to manipulate more than one mechanism.

Where a door on an escape route has to be secured against entry when the building or part of the building is occupied, it will only be fitted with a lock or fastening which will be readily openable, without a key, from the side approached by people making their escape.

Similarly, where a secure door is operated by a code, combination, swipe or proximity card, biometric data or similar means, it will also be capable of being overridden from the side approached by people making their escape.

Any electrically powered locks will return to the unlocked position either: -

1. On operation of the fire alarm; or
2. On loss of power or system error.

An in addition they should be released on activation of a manual door release unit (Type A) conforming to BS EN 54-11: 2001 + A1: 2006 positioned at the door on the side approached by people making their escape. Where the door provides escape in either direction a unit will be installed on both sides of the door.

1.4.6 Direction of Opening

Ref. Section 1.4.3.3, TGD-B 2006

The door leaf of any new doorway or exit will, where reasonably practicable, be hung to open in the direction of escape, and will always do so if the number of persons that might be expected to use the door at the time of a fire is more than 20.

The accompanying floor plan drawings will demonstrate that all relevant escape route doors will open in the direction of escape.

1.4.7 Amount of Opening & Effect on Associate Escape Routes

Ref. Section 1.4.3.4, TGD-B 2006

All new doors on escape routes will be hung to open not less than 90°, and with a swing that will be clear of any change of floor level.

1.4.8 Vision Panels in Doors

Ref. Section 1.4.3.5, TGD-B 2006

Vision panels will be provided on doors on escape routes which subdivide corridors or where doors swing both ways.

1.4.9 Automatic Sliding Doors / Revolving Doors

Ref. Section 1.4.3.6, TGD-B 2006

There are no automatic sliding doors or revolving doors in the proposed building as part of this application; therefore, this section does not apply.

1.4.10 Construction of Escape Stairways

Ref. Section 1.4.4 TGD-B 2006

The protected escape stair will be constructed of materials limited combustibility.

The new stair in the building has been designed in compliance with Part K of the Second Schedule to the Building Regulations. The stair has been designed by the relevant designer responsible for Part K, as appropriate under the Building Control Regulations.

1.4.11 Height of Escape Routes

Ref. Section 1.4.5, TGD-B 2006

There will be a minimum height of 2m maintained for means of escape on escape routes to the proposed areas with no projections below this level, with the exception of door frames, which in turn will not intrude below a height of 1.96m above finished floor level.

1.4.12 Floors of Escape Routes

Ref. Section 1.4.6, TGD-B 2006

All floors will have non-slip and even surfaces. Where a ramp forms part of an escape route, it should not be steeper than 1 in 12 if it is shorter than 9 m, otherwise it should not be steeper than 1 in 20.

1.4.13 Electrical Installations

Ref. Section 1.4.10, TGD-B 2006

All electrical installations will be designed and installed in accordance with relevant recommendations of Electro-Technical Council of Ireland's "*National Rules for Electrical Installations*" (IS 10101:2020).

Protected circuits which are required to continue to function in fire conditions (i.e. fire alarm sounders circuits, emergency lighting, etc.) will meet the requirements for classification of CWZ in accordance with BS 6387: 2013.

1.4.14 Mechanical Ventilation Systems

Ref. Section 1.4.11. TGD-B 2006

Any mechanical ventilation systems will be designed to ensure that in a fire the air movement in the building is directed away from protected escape routes and exits, or that the system (or an appropriate section of it) will be closed down. In the case of a system which re-circulates air, it will meet the relevant recommendations for re-circulating distribution systems, in terms of its operation under fire conditions.

All mechanical ventilation and air conditioning systems will be constructed in accordance with BS 5588: Part 9 1999. The ventilation duct work will penetrate a number of fire rated walls and floors. These penetrations will be protected in accordance with BS 5588: Part 9 1999.

1.4.15 Refuse Chutes & Storage

Ref. Section 1.4.12, TGD-B 2006

There are no refuse storage chambers, refuse chutes, refuse hoppers or rooms for the storage of refuse proposed as part of this application.

1.4.16 Fire Fighting Equipment

Ref. Section 1.4.16, TGD-B 2006

Portable fire extinguishers will be provided (where relevant) to the proposed areas in accordance with the recommendations of I.S. 291: 2015 and will be manufactured to an appropriate standard such as I.S. EN 3-7:2004 +A1: 2007.

Fire extinguishers might not be provided in Unit 1 (Ground Floor Café) at the completion of the works relevant to this fire safety certificate application as long as the unit is vacant and will be part of the fit out works.

First aid and fire-fighting equipment shall be provided with appropriate training by all occupants. Manual firefighting equipment will be provided and will comply with IS 290 and IS 291 for sitting, inspection and maintenance of extinguishers and all portable extinguishers will comply with the requirements of IS/EN 3 and will be fitted throughout the building to comply with the above.

1.4.17 Heat Producing Appliances

Ref. Section 1.4.17, TGD-B 2006

Any heat producing appliances provided will comply with the relevant recommendations of Technical Guidance Document (TGD) J and the relevant Irish / British Standards and Codes of Practice.

2.0 INTERNAL FIRE SPREAD (LININGS)

2.1 Basis of Compliance

B2 Internal Fire Spread (Linings) will be demonstrated by reference to the relevant recommendations in the following design guidance: -

- Section 2 of Technical Guidance Document B 2006 (Fire Safety).

2.2 Walls and Ceiling Linings

Ref. Section 2.1, TGD-B 2006

The following ratings will be achieved in the areas relevant to the proposed works: -

Location	Designation Required	Proposed Linings
Protected escape routes / circulation areas i.e., protected corridors etc.	Class 0 [1] or [Class B – s3, d2 (European class)]	Walls and ceilings in these areas are to have a plaster or equivalent finish, which will give a Class 0 surface spread of flame when tested to BS 476: Part 6 1989+A1: 2009 & BS: 476 Part 7: 1997.
All rooms exceeding 30m² and places of high & special fire risk	Class 0 [1] or [Class B – s3, d2 (European class)]	Walls and ceilings in these areas are to have a plaster or equivalent finish, which will give a Class 0 surface spread of flame when tested to BS 476: Part 6 1989+A1: 2009 & BS: 476 Part 7: 1997.
All other rooms	Class 1 or [Class C – s3, d2 (European class)]	Walls and ceilings in these areas are to have a plaster or equivalent finish, which will give a Class 0 surface spread of flame when tested to BS 476: Part 6 1989+A1: 2009 & BS: 476 Part 7: 1997.
Toilets	Class 3 or [Class D – s3, d2 (European class)]	Walls and ceilings in these areas are to have a plaster or equivalent finish, which will give a Class 0 surface spread of flame when tested to BS 476: Part 6 1989+A1: 2009 & BS: 476 Part 7: 1997.

Note1: Class 0 rating will be certified in accordance with the relevant sections in Section A 8 to A17 in Appendix A of TGD-B 2006

Where linings are provided in areas that do not comply with Table 2.1 above and Section 2.2 of TGD-B 2006, they will be treated during manufacture to provide a Class 0 surface spread of flame and will be certified to verify the same.

Surface treatment to achieve Class 0 of any new timber wall or ceiling linings in the premises will not be allowed. All timber linings that need to achieve Class 0 will have the Class 0 inherently manufactured into the product in accordance with Section 2.0.6 of TGD-B 2006 and A10 of Appendix A of TGD-B 2006 and the relevant certificates will be provided.

2.3 Variations & Special Provisions

Ref. Section 2.2 TGD-B 2006

Part of the surface of a wall in a room may be of a class lower than specified in Section 2.1 of TGD-B 2006 (but not lower than Class 3) if the area of that part (or, if there are two or more such parts, the total area of those parts) does not exceed the lesser of the following: -

1. Half the floor area of the room; or
2. 60m² and
3. The part of the lower class rating will not exceed 15m² and will be separated from any other such part by a distance of not less than 2m.

2.4 Fire Protecting Suspended Ceilings

Ref. Section 2.2.2, TGD-B 2006

Any fire protecting suspended ceilings shall be in accordance with the requirements of section 2.2.2 of TGD-B 2006.

2.5 Fire-Resisting Ceiling

Ref. Section 2.2.3, TGD-B 2006

Any fire resisting ceilings shall be in accordance with the requirements of section 2.2.3 of TGD-B 2006.

2.6 Thermoplastic Materials

Ref. Section 2.3, TGD-B 2006

Any new thermoplastic materials will achieve a TP(a) or TP(b) classification in the event that they do not achieve the above ratings and their usage will be confined to those areas specified in Section 2.3 of TGD-B 2006.

3.0 INTERNAL FIRE SPREAD (STRUCTURE)

3.1 Basis of Compliance

B3 Internal Fire Spread (Structure) will be demonstrated by reference to the relevant recommendations in the following design guidance: -

- Section 3 of Technical Guidance Document B 2006 (Fire Safety).

3.2 Fire Resistance Standard

Ref. Section 3.1.2, TGD-B 2006

The fire resistance required for elements of structure for the proposed works is a minimum of 60-minutes in accordance with Tables A1 and A2 of Appendix A of TGD-B 2006.

Location	Purpose Group	Height (m)	Design Reference	Min. Proposed Period of Fire Resistance (mins.)
Subject Building	5	< 5	Table A2 of TGD-B	60 (mins)

3.3 Schedule of Elements of Structure

Location	Min. Proposed Period of Fire Resistance (mins.)
Subject Building	- Compartment walls - Loadbearing walls - Floors and supporting structures - External walls apart from walls on unprotected areas

Notes:

1. Elements of structure as defined in Appendix D of Technical Guidance Document B 2006.
2. It is noted that elements which only support the roof do not fall within the scope of the "elements of structure" definition and therefore do not require any fire resistance rating

Part of Building	Minimum provisions when tested to relevant parts of BS 476 (minutes) [1]			Method of Exposure
	Load-Bearing Capacity	Integrity	Insulation	
External walls [3]	60	60	15	From inside [2]
Compartment walls	60	60	60	From each side
Compartment Floors	60	60	60	From underside
Protected Stairway	30	30	30	From each side
Cavity Barriers	-	30	15	Each side separately

Notes:
1. Or relevant European Standard.
2. 30 minutes for any part adjacent to an external escape route.
3. External walls apart from walls on unprotected areas.

3.3.1 Internal / Fire Rated Walls

The new internal walls which are shown on the accompanying floor plan drawings as achieving a minimum of 30 minutes fire resistance will be taken up to the underside of the soffit or roof above and will be fire stopped at the junction.

3.3.2 Compartment Walls

The proposed compartment walls will be constructed to provide 60 minutes fire resistance (Integrity, Insulation and Loadbearing Capacity) on both sides with the wall construction taken up to the underside of the soffit or roof construction above) and fire stopped at the junction to achieve a minimum of 60-minutes fire resistance.

3.3.3 Floor Construction

The floor construction in the first floor area will achieve a minimum of 60-minutes fire resistance. Any openings or penetrations passing through the floor construction will be fire stopped to maintain the fire resistance and compartmentation of the floor structure.

3.3.4 Protected Shafts

Any service riser shafts which pass through a compartment shall be constructed as 60-minute fire resistance protected shafts.

As the stairway does not pass through compartments. it is not required to be a protected shaft, however, will be constructed as protected stairs with a minimum 30-minute fire resistant construction.

3.3.5 Separating Walls

Not applicable. There are no separating walls proposed as part of the works subject to this application as this is a standalone building.

3.3.6 Structural Steel

Any structural steelwork is to be designed/protected as necessary in accordance with BS EN 1993-1-1 & 1-2 and the associated Annex's and "Fire Protection of Structural Steel in Buildings" by the ASFPCM and Steel Construction Institute, to achieve the specified fire ratings of 60 minutes. The form of protection is to be concrete encasement, sprayed coating, board protection or intumescent coating as appropriate to the application and the end use conditions, having regard to the requirements of Part D: "Materials and Workmanship" of the Building Regulations. 1997-2014.

3.4 Compartmentation

Ref. Section 3.2, TGD-B 2006

Each unit will be a separate compartment and will be separated by a compartment wall and compartment floor from the adjoining unit.

The floor area and volume of each individual compartment will not exceed the recommended limitations of TGD-B 2006 as detailed in the table below, therefore, the maximum floor areas and volumes for compartmentation will not be exceeded.

Maximum area and cubic capacity of a building or compartment					
		Size Proposed		Recommended Limits	
Use	Purpose Group	Area (m^2)	Volume (m^3)	Area (m^2)	Volume (m^3)
Unit 1 (Ground Floor)	5	249	822	1900	21000
Unit 2 (First Floor & Common Area)	5	157	864	1900	21000

3.4.1 Forms of Compartmentation

Ref. Section 3.2.2, TGD-B 2006

Compartmentation will be achieved by means of fire resistant construction and the provision of compartment walls and floors constructed to meet the requirements of Tables A1 & A2 of Appendix A of TGD-B 2006 as detailed in Section 3.2 of this compliance report.

3.4.2 Construction of Compartment Walls and Floors

Ref. Section 3.2.5, TGD-B 2006

Every compartment wall and floor will: -

1. Form a complete barrier to fire spread between the compartments; and,
2. Shall have the appropriate fire resistance as recommended in Tables A1 and A2 of Appendix A of TGD-B 2006.

3.4.3 Accommodation of Services in Compartment Walls and Compartment Floors

Ref. Section 3.2.5.7, TGD-B 2006

Any penetrations that pass through the new compartment walls or compartment floors will be fire stopped at the opening where they pass through which will maintain the required fire resistance of the relevant element of construction i.e. a minimum of 60-minutes fire resistance. The integrity of any new framed structures (i.e. stud walls etc.) will not be breached to allow for the installation of pipes, wires or flues etc. within the wall cavity. Where framed structures will be used for compartment walls or other fire resisting walls, services will be surface mounted or installed within a designated additional service cavity.

3.4.4 Junction of the Compartment Walls with Other Walls

Ref. Section 3.2.5.9, TGD-B 2006

Where a compartment wall meets another compartment wall, or an external wall, the junction will maintain the fire resistance of the compartmentation.

3.4.5 Junction of Compartment Wall and Compartment Floor / Roof Structure

Ref. Section 3.2.5.11, TGD-B 2006

The compartment walls will be taken up to within a maximum gap of 50mm to the underside of the floor construction or the roof construction or roof coverings (where relevant) above and filled with a suitable fire stopping material over the full width of the wall to achieve a minimum of 60-minutes fire resistance. The junction of the compartment wall with the underside of the relevant construction above will be fire stopped so as to maintain the fire resistance of the compartment in accordance with Section 3.2.5.11 of TGD-B 2006 also see diagram 13. Where structural roof members such as beams, purlins, or rafters are built into or carried across a compartment wall, any openings for them will be as small as practicable and any gaps will be effectively fire stopped with non-combustible material over the full width of the wall.

3.4.6 Openings between Compartments

Ref. Section 3.2.6, TGD-B 2006

Any openings between separate compartments will be limited to the following: -

1. Penetrations passing through compartment walls which will be fire stopped in accordance with Section 3.4 of TGD-B 2006 (i.e. achieving a minimum of 60-minutes fire resistance).

3.5 Concealed Spaces (Cavities)

Ref. Section 3.3, TGD-B 2006

Cavity barriers, where required, will be in accordance with Table 3.2 and Table 3.3, Technical Guidance Document - B.

Cavity Barriers To Be Provided In the Following Cases, Where Relevant
1. At the top of an external wall cavity which does not comply with Diagram 17 and at the junction of any such a wall, and a separating wall.
2. At the junction between an external cavity which does not comply with Diagram 17, and every compartment wall and compartment floor
3. At the junction between a cavity wall which does not comply with diagram 17, and every compartment floor, compartment wall, or other wall or door assembly which forms a fire resisting barrier.
4. In a protected escape route above any fire resisting construction which is not carried full storey height or to the underside of the roof covering.
5. Where a corridor (which is not a protected corridor) should be sub-divided to prevent fire or smoke from affecting the routes to two exits simultaneously above any corridor enclosures which are not carried full storey height or to the underside of the roof covering.
6. To sub-divide any cavity (including any roof space) so that the distance between cavity barriers does not exceed the dimensions given in Table 3.3

3.5.1 Construction and Fixing for Cavity Barriers

Ref. Section 3.3.4, TGD-B 2006

Any cavity barriers to be provided will be constructed to achieve a minimum of 30-minutes fire resistance in accordance with Table A1 of Appendix A of TGD-B 2006. Cavity barriers will be tightly fitted to rigid construction and mechanically fixed in position wherever possible. Where this is not possible, due to unforeseen elements, the junction will be fire stopped.

Any openings in cavity barriers will be limited to the following as recommended in Section 3.3.5 of TGD-B 2006: -

1. Fire doors which achieve a minimum of 20-minutes fire resistance;
2. The passage of pipes which meet the provisions of Section 3.4 of TGD-B 2006;
3. The passage of cables or conduits containing one or more cables;
4. Openings fitted with a suitably mounted automatic fire shutter; and,
5. Ducts which (unless they are fire-rated) are fitted with a suitably mounted automatic fire shutter where they pass through a cavity barrier.

3.6 Protection of Openings and Fire Stopping

Ref. Section 3.4, TGD-B 2006

Any openings for pipes, ducts, conduits, cables etc. that pass through any part of an element, which serves as a barrier to the passage of fire, will fully comply with all of the recommendations of Section 3.4 of TGD-B 2006.

The junction of the compartment walls with the underside of the floor construction or roof construction or roof coverings will be fire stopped to achieve and maintain a minimum of 60-minutes fire resistance as outlined in Section 3.3 of this compliance report.

Any combustible pipes that pass through compartment walls or other fire resistant walls will be fitted with collars or equivalent to achieve a minimum of 30 or 60 minutes fire resistance as required, to ensure continuity of the compartmentation.

Fire stopping of fire resisting elements generally will be achieved by ensuring that all junctions / openings for pipes, ducts, conduits, cables etc. are kept as few in number as possible, kept as small as practicable and fire stopped with a suitable material (such as cement mortar, gypsum based plaster, proprietary system etc.).

Any openings for pipes, ducts, conduits, cables etc. that pass through any part of element, which serves as a barrier to the passage of fire, will be sealed using Alternative A, B or C as described within Section 3.4.2 of TGD-B 2006. A proprietary sealing system has been utilised were existing services pass through a fire resistant element of construction.

Where any electrical installations, switch boxes etc. are introduced to any fire resistant stud partitions, these installations will be fitted with intumescent gaskets to maintain the fire resistance of the partition.

3.7 Special Provisions

Ref. Section 3.5, TGD-B 2006

Not applicable.

4.0 EXTERNAL FIRE SPREAD (STRUCTURE)

4.1 Basis of Compliance

B4 External Fire Spread will be demonstrated by reference to the relevant recommendations in the following design guidance: -

- Section 4 of Technical Guidance Document B 2006 (Fire Safety); and,
- BRE 187: 2014, "Building Separation and Boundary Distances".

4.2 Fire Spread between Neighbouring Buildings

4.2.1 Construction of External Walls

Ref. Section 4.1 TGD-B, 2006

External walls will comprise cavity blockwork construction and a curtain wall system.

4.2.2 External Wall Finishes

The external wall finishes will comprise a mix of render, stone cladding and a curtain wall system.

4.2.3 Unprotected Areas

Ref. Table 1 – BRE 187:2014

Acceptable unprotected areas have been calculated in accordance with the enclosing rectangle method as per BRE 187: 2014, "Building Separation and Boundary Distances". The space separation calculations demonstrate that sufficient boundary distances will be provided in accordance with the Building Research Establishment (B.R.E) Report (BR 187) Second Edition 2014.

Please see the accompanying Elevations which show the space separation calculations and the accompanying Site Plan which demonstrates that there is sufficient distance provided to the boundary.

Proposed Front (North East) Elevation		
Enclosing rectangle Unprotected area – Windows % unprotected Allowable boundary distance @ Actual boundary distance (Notional Boundary at centreline of road)	= 	3m high x 15m = 45m² 33.3m² 74% 3.17m > 7m
Proposed Rear (South West) Elevation		
Enclosing rectangle Unprotected area – Windows % unprotected Allowable boundary distance @ Actual boundary distance (Notional Boundary)	= 	3m high x 15m = 45m² 27m² 60% 2.5m > 30m
Proposed Side (North West) Elevation		
Enclosing rectangle Unprotected area – Windows % unprotected Allowable boundary distance @ Actual boundary distance (Notional Boundary at centreline of road)	= 	3m high x 12m = 36m² 24.5m² 68% 2.83m > 9m

Proposed Side (South East) Elevation		
Enclosing rectangle Unprotected area % unprotected Allowable boundary distance @ Actual boundary distance (Boundary Hedgerow)	 = 	3m high x 3m = 9m² 5.42m² 60% 1.5m > 18m

Notes:
1. Where a section of an external wall needs to be protected, it should achieve the fire resistance performance criteria outlined in section 3.2 of this report i.e. 60 minutes integrity and stability and 15 minutes insulation. Note: where the wall is adjacent to an external escape route, the insulation criteria increases to 30 minutes

4.3 Roof Coverings

Ref. Section 4.3 of TGD-B 2006

4.3.1 Separation Distances

Minimum required designations –

Location	Separation Distance	Minimum Designation Required	Minimum European Designation Required
All areas to which this application relates.	Within 6m of relevant Boundary	AA, AB, AC	BROOF(t4)

Notes:

1. Distance from "relevant" boundary/compartment to roof junction
2. Designation in accordance with the test methods specified in S476 : Part 3 : 1958

4.3.2 Plastic Rooflights

Any plastic rooflights provided will have TP(a) (rigid) or TP(b) classification and will be in accordance with the requirements of section 4.3.5 of TGD B.

4.3.3 Glass in Rooflights

Any glass in rooflights will be in accordance with the requirements of section 4.3.6 of TGD B.

5.0 ACCESS & FACILITIES FOR THE FIRE SERVICE

5.1 Basis of Compliance

B5 Access & Facilities for the Fire Service will be demonstrated by reference to the relevant recommendations in the following design guidance: -

- Section 5 of Technical Guidance Document B 2006 (Fire Safety).

5.2 Fire Mains

5.2.1 Internal Fire Mains

Ref. Section 5.1.2, TGD-B 2006

The height of the premises above ground level will be approximately 4m and no basement accommodation will be provided. Therefore, in accordance with Section 5.1.2 of TGD-B 2006, there will be no requirements for any internal fire mains to be provided.

5.2.2 External Fire Mains and Hydrants

Ref. Section 5.1.7 & 5.1.8, TGD-B 2006

The total ground floor area of the premises on completion of the proposed works will be approximately 276m². Therefore, in accordance with Section 5.1.7 of TGD-B 2006, there will be no requirements for any external fire mains or fire hydrants to be provided to specifically serve the proposed premises; however, as part of the proposed mixed use development, there will be a number of fire hydrants provided onsite and are indicated on the accompanying site plan.

5.3 Fire Brigade Access

Access for fire appliances will be provided in accordance with the provisions outlined in 5.2.2 below. Vehicle access routes and hard-standings will meet the criteria described in 5.2.4 if they are to be used by fire brigade vehicles.

5.3.1 Perimeter (Vehicle) Access

Ref. Section 5.2.3, TGD-B 2006

Vehicle access will be provided in accordance with the criteria indicated in Table 5.1. Any elevation to which vehicle access is provided in accordance with Table 5.1 shall contain a door giving access to the interior of the building.

Referring to Table 5.1 and the below table, the total volume of the building is less than 7000m³ and the height of the top storey above ground will be under 10m, therefore vehicle access will be required at rate of 2.4 m in length for every 90m² of ground floor area.

Ground Floor Area = 276m² | Rate of 2.4m in length for every 90m² =276/90=3.06 x 2.4 = 7.36m; therefore, a minimum of 7.36m will be required. As noted in the accompanying site plan, vehicle access will be provided to the front and rear elevations which is greater than 40m.

Volume of Building m³	Height of top storey	Provide vehicle access	Vehicle access provided	Type of appliance
Up to 7,000 m³	Less than 10m	at rate of 2.4 m in length for every 90m² of ground floor area	> 40m	Pump

5.3.2 Design of Access Routes and Hardstanding

Ref. Section 5.2.4, TGD-B 2006

For buildings lower than 10m in height, the access will be to the standards for pumping appliances. Where access is to an elevation in accordance with Table 5.2, overhead obstructions such as overhead cables that would interfere with the setting of ladders etc., will be avoided in the area shown on Diagram 32.

Type of Appliance	Pump
Minimum width of road between kerbs	3.7m
Minimum width of gateways between kerbs	3.1m
Minimum turning circle between kerbs	16.8m
Minimum vehicle clearance height	3.7m
Minimum carrying capacity	12.5 tonnes

The design of access routes and hardstandings are to be in accordance with 5.2.4 and Table 5.2 of TGD-B 2006 for a pump type appliance and are thus to be designed to have a minimum carrying capacity of 12.5 tonnes.

5.3.3 Personnel Access to Interior of Building

Ref. Section 5.3, TGD-B 2006

Fire personnel access to the building will be satisfied by normal means of escape for low-rise buildings and is therefore satisfactory. The building does not exceed 20m above ground level and no basement accommodation will be provided, therefore firefighting shafts are not required.

5.4 Special Fire Fighting Facilities

5.4.1 High Voltage Discharge Lighting (if any)

Ref. Section 5.4.2, TGD-B 2006

Any high voltage discharge lighting provided on-site will be provided with an isolation switch which will be readily accessible and clearly signed to allow Fire Brigade personnel to turn off the high voltage lighting before commencing with firefighting.

5.4.2 Escape Stairways

Ref. Section 5.4.3.2, TGD-B 2006

The protected escape stair will be provided with either of the following in accordance with section 5.4.3.2 of TGD-B 2006:

1. Openable windows at each upper storey or landing; or
2. An openable vent having clear openable area of not less than 1m² situated at the top of the enclosure

5.4.3 Large Undivided and Windowless Spaces

Ref. Section 5.4.3.3, TGD-B 2006

The proposed building does not exceed 4000m² in area or 20,000m³ in cubic capacity, therefore, the ventilation of heat and smoke is not required.

Dated: 15th of March 2021

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for and on behalf of

Logical Real Estate Consulting

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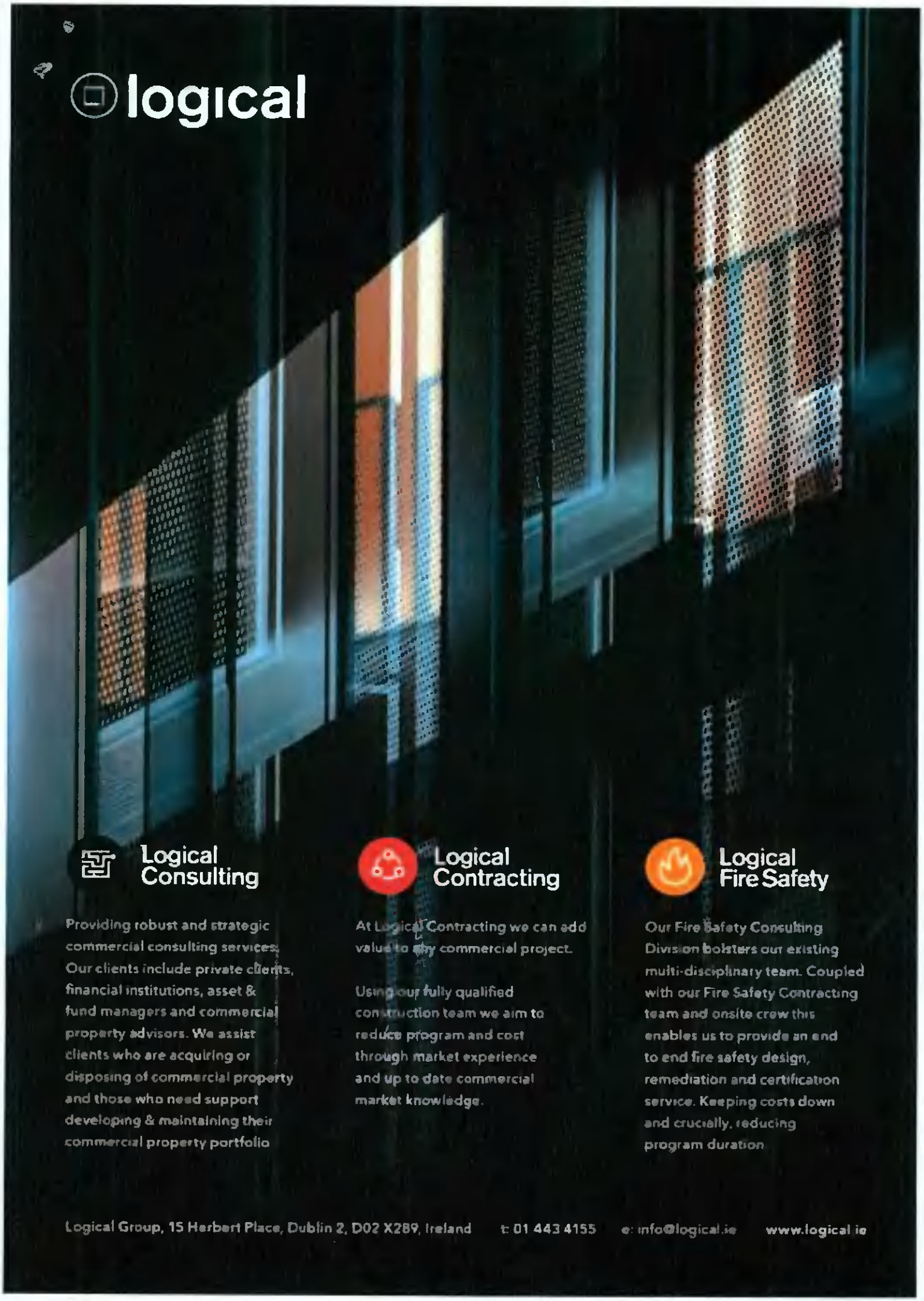
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