

Report for an Application for a Fire Safety Certificate,

for

Converting an existing one and a half storey dwelling and retail shop into a single storey tea room with local shop on the ground floor and staff changing and store at first floor,

at

**Cappagh,
Glenmore,
Co. Kilkenny.**

for

Glenmore Community Development Committee,

Prepared by

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INTRODUCTION

0.1 Scope

This report is submitted with the relevant drawings and other documentation in support of an application for a Fire Safety Certificate on behalf of Glenmore Community Development Committee.

This Reports intention is to demonstrated that the works, if constructed in accordance with the drawings and design details submitted with the application together with the performance requirements prescribed in this Report, will comply with the requirements of Part B (Fire Safety) of the Second Schedule to the Building Regulations 1997 to 2006. It is noted that the objective of the fire safety measures set out in this Report is to satisfy the obligations of the Building Regulations, which are concerned with the health, safety and welfare of persons in and about the proposed building or works. Additional measures may be necessary to protect against the risk of property and consequential loss; such measures are however a matter for the Client and their Insurers.

Where fire performance ratings for materials / structure / door sets are referred to in this Report they are to be taken as meaning (unless otherwise noted in this Report) that the materials / structure / door sets satisfy the performance criteria prescribed in Appendix A and Appendix B of Technical Guidance Document –B 2006 (TGB-B:2006). Where a particular product or method of imparting fire resistance is referred to in this report it does not preclude the use of alternative products / methods subject to an equivalent level of fire performance being achieved. It is noted that this report is not to be regarded as a specification for the works.

0.2: Purpose group classification

Areas of the development to which the works apply is classified in accordance with Table 0.1 of Technical Guidance Document B 2006 as follows:

Material Change of Use and Alterations from Private Dwelling Purpose Group 1(a) to Purpose Group 5(iv) Cafe (Tea Room) Shop, Existing retail shop incorporated into Tea Room/Shop.

0.3: Description

This fire safety certificate application relates to the proposed material alterations and change of use by converting the private dwelling into a tea room (cafe), internally opening up the original party wall between the two buildings, constructing an access stairs to the first floor of the shop, this first floor used as a store, staff changing, w.c. the stair enclosure shall be a 30min fire rating, and the ceiling/floor between shop/kitchen and staff room/store shall be 60min fire rating.

Ground Floor Areas, Tea Room/Shop/Kitchen/W.C.'s 138.8 sqm

First Floor Area, Store, Changing Room, W.C. 56.7 sqm

Ground Floor to First Floor 2435mm

B1: MEANS OF ESCAPE IN CASE OF FIRE

1.0: Design basis.

Purpose Group 1(c) (Flat or maisonette)

MEANS OF ESCAPE

Technical Guidance Document B 2006.

1.1.6 Purpose Group 5(iv) Assembly & Recreation.

As the ground floor there are four escape doorways, one escape doorway on the west side, two on the south (front elevation) and one on the escape doorway on the east side, all escape doorways are final exits.

1.2.2. Number of Escape Routes and Exits.

Due to the small size of the ground floor tea room, shop and kitchen, the number of occupants, and the actual number of escape routes, the proposal is in compliance.

1.2.2.1. Number of Occupants.

Restaurant - Occupancy load Factor 1.0

Kitchen - Occupancy load factor 7.0

Storage - Occupancy load factor 30.00

Restaurant $\frac{95\text{sqm}}{1.0} = 95$

Kitchen $\frac{17\text{sqm}}{7.0} = 2.4$

Storage $\frac{40\text{sqm}}{30.0} = 1.3$

1.2.2.2. Travel Distance

Table 1.2 Limitation on Travel Distance Purpose Group 5, Assembly & Recreation (b) other areas, in one direction 18m, in more than one direction 45m

1.2.2.3.

See attached drawing 23-09-005 and 23-09-006 for the actual alternative escape routes. Actual travel distances less than maximum allowed for.

1.2.2.4.

Actual number of escape routes are greater than the minimum number required under Table 1.3

1.2.2.5.

Single escape only envisaged for store room at the first floor, occupancy load factor for this area is 1.3.

1.2.3.1.

Inner room situation not envisaged.

1.2.3.2.

No open connection between floors.

1.2.4.Width of Escape Routes and Exits.

Minimum width of escape route not less than 850mm, as per Table 1.4 T.G.D. Part B

1.2.5.

Protected corridors not incorporated into escape routes

1.2.6.

External escape stairs not incorporated into escape routes.

1.2.7.

Evacuation consideration outlined in 1.2.7. not incorporated in escape strategy.

1.2.8.

Not applicable.

1.2.9.

Not applicable.

1.3.3.

Single escape stairway from first floor store, as mentioned above, travel distance is 6.0m , occupancy load factor is 1.3, floor level above ground level less than 5m, actual 2.4/2.6m.

1.3.4.

Width of escape stairs, minimum clear width not less than 800mm.

1.3.6. Protection of Escape Stairway.

The enclosure of the escape stairway is constructed of blockwork, therefore greater than 30min fire rating, all doors accessing stairs 30 minute fire rating, self closing.

1.4.2.2.Fire Resistance of Escape Doors.

Fire resistance of escape doors are noted on the drawings, in general doors are 30 minute fire rating, self closing and noted as FD30S, and fitted in accordance with Appendix B, T.G.D. Part B, 2006.

1.4.4.1.Protected Stair Enclosure

Protected stair enclosure min. 30 minute fire rating, height of escape route greater than 2m, floor surface non-slip, even surfaces.

1.4.7. Final Exits.

Final exits are situated to evacuate persons away from the building.

1.4.8 Lighting of escape routes

In the event of failure of the normal electrical lighting, emergency escape lighting will activate, this emergency lighting will clearly indicate the escape route and allow safe movement through the building.

Escape lighting, these signs should be distinctively and conspicuous marked by an exit sign in accordance with BS ISO 3864-1 and BS 5499-4.

1.4.9 Lifts

Not applicable, none proposed.

1.4.10 Electrical installations and protected circuits

Electrical installations are to be in accordance with the Electro-Technical Council of Ireland's "National Rules for Electrical Installations". Electrical installations shall be in accordance with Section 1.4.10, Technical Guidance Document B, 2006.

1.4.11 Ventilation systems

Any natural or mechanical air-conditioning systems proposed shall meet the relevant requirements of Section 1.4.11, Technical Guidance Document B 2006 and BS 9999: 2017.

1.4.12 Refuse chutes and storage

Refuse chutes not part of proposal, bin storage area shall be provided externally as indicated on the proposed ground floor plan. in accordance with the recommendations of Section 1.4.12, Technical Guidance Document B, 2006.

1.4.13 Fire safety signs

Fire safety signs shall comply with the recommendations in Section 1.4.13, Technical Guidance Document B 2006.

Exit signage shall be provided in accordance with the relevant recommendations in I.S. 3217: 2013 +A1: 2017, Safety, Health and Welfare at Work (General Applications) Regulations 2007 and ISO 3864: 2011 Safety colours and Safety signs are to be provided to indicate:

- (a) Exits/escape routes, as well as
- (b) Fire-fighting equipment,
- (c) Fire alarm call points and
- (d) Fire door signs, etc.

1.4.14 Fire detection and alarm systems

Detection and Alarm System in accordance with I.S.3218: 2013. It is also proposed to interconnect the Fire Detection and Alarm System of the ground floor shop unit/cafe with the proposed Fire Detection and Alarm System given the timber construction of the existing floors.

Fire Detection and Alarm Systems shall be designed, installed, commissioned and certified by a specialist.

1.4.15 Provisions for disabled persons

Where access for the disabled is provided to parts of the building, means of escape shall comply with the relevant recommendations in Technical Guidance Document M for access and BS 9999: 2017 for egress.

1.4.16 First-aid fire-fighting equipment

Fire hose reels are not required to serve the proposed residential development in accordance with Section 1.4.16, Technical Guidance Document B, 2006.

Portable fire extinguishers shall be provided throughout the development, which will comply with I.S. EN 3 2004 and which will be installed inspected and maintained in accordance with I.S. 291: 2015.

1.4.17 Heat producing appliances

Method of heating shall be electrical air sourced heat pump (position shown on drawing). Heat producing appliances shall be in accordance with Section 1.4.17, Technical Guidance Document B and Technical Guidance Document J.

B2: INTERNAL FIRE SPREAD (Linings)

2.1 Wall and Ceiling Linings

The following ratings are to be achieved.

Location Designation

Required Linings Provided.

Circulation areas i.e. Stairway

Class O All walls and ceilings in these areas are to have a plaster or equivalent finishes which give a minimum Class O surface spread of flame when tested to BS 476: Part 6 1989 & Part 7 1997.

All other areas unless otherwise specified

Class 1: All walls and ceilings in these areas are to have a plaster or equivalent finish which gives a minimum Class 1 surface spread of flame when tested to BS 476: Part 7 1997.

Toilets Class 3: All walls and ceilings in bathrooms and toilets are to have a plaster finish or a ceramic tile finish both of which give a minimum Class 3 surface spread of flame when tested to BS 476: Part 7 1997.

Table 2.1: Linings Provided

Note: (A): All wall & ceiling linings shall comply with Sections 2.1 & 2.2, Technical Guidance Document B 2006.

2.2 Variations and special provisions

2.2.1 Walls

In Purposed Group 5 (b) wall linings of not lower than a Class 3 rating may be provided up to a maximum total area that does not exceed the lesser of the following, half the floor area of the room or 20m². Each section of wall lining a maximum of 5m² and to be separated from any other part by a minimum distance of 2m in accordance with Section 2.2.1, Technical Guidance Document B 2006.

2.2.2 Fire-protecting suspended ceilings

Suspended ceiling not incorporated in proposal.

2.2.3 Fire resisting ceiling

Stairway compartment masonry walls are to be carried up to the underside of the external flat roof, and ceiling/flat roof joists fire stopped at junction of ceiling/flat roof and blockwork enclosing stairway.

No recessed fittings shall be provided within the 30-minute fire resisting floor between the retail shop and store above and service penetrations shall be fire stopped with proprietary products to maintain the fire resistance of the floor.

2.3 Thermoplastic materials

2.3.1 Thermoplastic materials

Thermoplastic materials as described in Appendix A, Clauses A15 and A16, which do not meet the provisions of Section 2.1, Technical Guidance Document B 2006 may be used in windows, rooflights and lighting diffusers in ceilings if they are provided in accordance with the requirements of Section 2.3, Technical Guidance Document B 2006.

2.3.2 Windows

No thermoplastic materials within window panes.

2.3.3 Rooflights

3 No. Velux type roof lights located in the pitched roof of the tea room at ground floor.

2.3.4

L2.3.4 Lighting Diffusers

Thermoplastic lighting diffusers if used shall be in accordance with Section 2.3.4, Table 2.1 and Diagram 10, Technical Guidance Document B 2006.

B3: INTERNAL FIRE SPREAD (Structure)

3.1 Fire Resistance Ratings.

Structural Element Fire Res. Required (Minutes)

External Walls 60min. Existing masonry walls providing a minimum of 60-minutes fire resistance. Refer to Section B4 for space separation calculations.

Floors - Floors separating ground floor shop and store above. - 30 minutes fire resistance with minimum of two layers of 15mm Fireline board to underside of minimum 38mm timber joists at 600mm centres with minimum 21mm t&g wood board floor over.

Alternative methods such as upgrading from above using proprietary products to achieve 30 minutes fire resistance also acceptable.

Compartment walls

- Separating walls to adjoin buildings greater than 60min to be maintained as masonry construction. Free standing building, 1.7m from nearest building to the west, 3.5m from nearest building to the east, over 10m from building to the south, cliff face on the north side.

Floor between shop and store 30 min. Fire rating.

Electrical meter enclosure in the stairs area approved 30-minute fire resisting construction

Table 3.1: Fire Resistance Ratings

Note: (A): Fire resistance ratings required from Table A1 and Table A2, Appendix A, Technical Guidance Document B, 2006. Structural elements should have at least the fire resistance given in Appendix A, Table A1, Technical Guidance Document B, 2006.

(B): Excluding elements of structure permitted under section 3.1.4, Technical Guidance Document B, 2006.

It is noted that the achievement of compliance with the minimum fire resistance ratings for the construction identified in Table 3.1 above is to be achieved as follows:

Masonry Wall Construction, masonry construction is to be designed and detailed in accordance with IS 325 and BR128 "Guidelines for the Construction of Fire Resisting Structural Elements" to achieve the specified fire ratings.

3.2 Compartmentation

3.2.1 Ground floor cafe/shop and first floor store treated as one compartment, due to small size and proposed use of each space.

Table 3.1: Compartmentation

Note: (A): Compartmentation sizes required from Table 3.1, Technical Guidance Document B 2006.

Ground floor cafe/shop/kitchen and first floor store, below requirements for separate compartments.

3.2.3 Junctions and protected shafts

In accordance with Section 3.2.3., Technical Guidance Document B 2006 there shall be continuity at the junctions of the fire resisting elements enclosing a compartment and any openings from one compartment to another shall not present a weakness to the spread of fire.

3.2.4 Provision of compartment walls and compartment floors

Compartmentation shall be in accordance with Section 3.2.4, Technical Guidance Document B 2006, i.e. the following to be constructed as compartment walls / floors:

- (a) Walls common to two or more buildings i.e. separating walls, no walls are common to other buildings
- (b) Compartment walls and compartment floors shall be provided to separate parts of a building that are occupied for different purposes and by different tenancies, not part of proposal

3.2.5 Construction of compartment floors and compartment walls

All compartment walls shall comply with the recommendations of Section 3.2.5 of Technical Guidance Document B 2006 i.e.

- (a) Form a complete barrier to fire between the compartments they separate.
- (b) Have the appropriate fire resistance.
- (c) Be constructed in accordance with relevant recommendations of Sections 3.2.5.1 to 3.2.5.11, Technical Guidance Document B 2006.

3.2.5.1 Compartment floors in residential (institutional) buildings

Not applicable.

3.2.5.2 Compartment floors in high buildings

Not applicable.

3.2.5.3 Fire resistance of timber floors in existing buildings

Existing timber floors shall be upgraded from below in accordance with Section 3.2.5.3, Technical Guidance Document B 2006 to 30 minutes fire resistance with minimum of 15mm Fireline board to underside of minimum 38mm timber joists at 600mm centres with minimum 21mm t&g wood board floor over. Alternative methods such as upgrading from above using proprietary products to achieve 30 minutes fire resistance are also acceptable.

3.2.5.4 Compartment walls

Not applicable, building height in accordance with Appendix C, Technical Guidance Document B 2006 is 6.0m.

3.2.5.5 Separating walls

Not applicable, building height in accordance with Appendix C, Technical Guidance Document B 2006 is 6.0m.

3.2.5.6 Separating walls in dwelling houses

Not applicable.

3.2.5.7 Accommodation of services in compartment walls / floors and separating walls

Not applicable, other than, wires except where necessary to allow for services to pass through. Services shall be surface mounted or accommodated in service ducts.

3.2.5.8 Separating parts

Protected stair shaft shall run up to underside of flat roof.

3.2.5.9 Junction of compartment walls/floors with other walls

Fire stopped so as to maintain the fire resistance of the compartment in

accordance with Section 3.2.5.9, Technical Guidance Document B 2006.

3.2.5.10 Courtyards, light-wells and opposite elevations of the same building

Not applicable.

3.2.5.11 Junction of compartment wall and roof

Attic space/void over cafe area shall be treated as part of the cafe space, and not forming a separate space.

3.2.6 Openings between compartments

3.2.6.1 Openings in separating walls

Not applicable, no openings proposed.

3.2.6.2 Openings in other compartment walls or in compartment floors

Ducting/shaft from kitchen to flat roof above shall be as having the same fire rating as the floor it passes through, until it reaches the flat roof to its plant. Any proposed openings between compartments shall be in accordance with Section 3.2.6,

Technical Guidance Document B 2006 as follows:

(a) In accordance with Section 3.2.6, Technical Guidance Document B 2006

any proposed door openings in compartment walls shall be protected by means of fire doors, in accordance with the provisions outlined in Appendix B and Table B1, Technical Guidance Document B 2006.

(b) Openings in other compartment walls or in compartment floors shall be in accordance with Section 3.2.6.2 of Technical Guidance Document B 2006 and be limited to doors which have the appropriate fire resistance and the passage of pipes, ventilation ducts, chimneys, etc, which meet the provisions of Section 3.4 of Technical Guidance Document B 2006.

(c) Protected shafts which meet the relevant provisions of Section 3.2.7, Technical Guidance Document B 2006.

3.2.7 Protected shafts

The stairway is protected by a 30 minute fire enclosure from the ground floor cafe/shop and store at first floor.

3.2.7.1 Construction of escape stair

Protected shafts shall comply with the recommendations of Section 3.2.7.1 of Technical Guidance Document B 2006 i.e.

(a) Form a complete barrier to fire between the compartments they separate.

(b) Have the appropriate fire resistance.

(c) Be constructed in accordance with relevant recommendations of Sections 3.2.5.1 to 3.2.5.11, Technical Guidance Document B 2006.

(d) Protected shafts shall satisfy the provisions about their use, ventilation and the treatment of openings in the paragraphs below.

3.2.7.2 Use for protected shafts

Stairs forms escape from store at first floor, and a alternative escape route from kitchen at ground floor and shall be used in accordance with Section 3.2.7.2, Technical Guidance Document B 2006.

3.2.7.3 Glazed screens to protected shafts

Not applicable – refer to Section 1.4.2.3 of this compliance report on the provision of Un-insulated fire resisting glazing.

3.2.7.4 Pipes for oil or gas in protected shafts

Not applicable.

3.2.7.5 Ventilation of protected shafts conveying gas

Not applicable.

3.2.7.6 Openings into protected shafts

Not applicable.

3.2.7.6.1 Openings in separating walls

Not applicable.

3.2.7.6.2 Openings into protected shafts

Any proposed openings within protected shafts shall be in accordance with Section 3.2.7.6, Technical Guidance Document B 2006 as follows:

- (a) Not applicable – enclosure to protected shaft is not provided as a wall common to two or more buildings.
- (b) Other parts of protected shafts shall be limited to having the following openings:
 - (i) Doors which have the appropriate fire resistance given in Appendix B, Table B1, and fitted in accordance with the provisions of Appendix B
 - (ii) The passage of pipes which meet the provisions of Section 3.4 of Technical Guidance Document B 2006.
 - (iii) Inlets to, outlets from and openings for a ventilation duct which meet the provisions of Section 3.4 of Technical Guidance Document B 2006.
 - (iv) Not applicable – no lift proposed.

3.2.7.7 Buildings containing one or more atria

Not applicable.

3.3 Concealed Spaces (Cavity)

The requirements for Cavity Barriers are assessed hereunder in accordance with Table 3.2 and Table 3.3, Technical Guidance Document B 2006.

Comment

External Walls - New cavity blockwork to be fire stopped at joist level and all window and door openings.

Table 3.3: Provision of Cavity Barriers

Notes (A): The provision of cavity barriers is taken from Table 3.2 Technical Guidance Document B 2006.

3.4 Protection of Openings and Fire Stopping

3.4.1 Openings for pipes

Pipes which pass through the compartment walls / floors uPVC <40mm Firestopping carried out around the pipe and opening kept as small as possible.

>40mm Proprietary sealing system which has been shown by test to maintain the fire resistance of the wall, floor or cavity barrier to be provided to the pipe in the line of the fire resisting element

>40mm Proprietary sealing system which has been shown by test to maintain the fire resistance of the wall, floor or cavity barrier to be provided to the pipe in the line of the fire resisting element

Table 3.4: Openings for pipes

Note: (A): Protection of all openings and fire stopping shall be in accordance with the relevant parts of Section 3.4, Technical Guidance Document B 2006.

3.4.2 Ventilation Ducts

Any natural or mechanical air-conditioning systems proposed shall meet the relevant requirements of Section 1.4.11, Technical Guidance Document B 2006 and BS 9999: 2017.

3.4.3 Fire-stopping

Fire-stopping shall be in accordance with Section 3.4.5, Technical Guidance Document B 2006, i.e. Firestopping of fire resisting elements generally is to be achieved by ensuring that all junctions / openings for pipes, ducts, conduits or cables are to be kept as few in number as possible, kept as small as practicable and firestopped with a suitable material, (such as cement mortar, gypsum-based plaster, proprietary system etc.).

B4 EXTERNAL FIRE SPREAD

4.1 External walls

All external walls shall be maintained as masonry walls with a plaster render finish to the external.

4.2 External Surfaces

External wall finishes of the development are masonry walls with a plaster render finish which will give a minimum Class 3 surface spread of flame when tested to BS 476: Part 6 1989 & Part 7 1997.

Pitched roof slate finish.

Flat roof membrane finish.

4.2.2 Boundaries.

The proposed development is a free standing proposal, 1.7m from the dwelling on the western side, 3.5m from the dwelling on the eastern side, rock face on the northern side, and over 10m from the nearest building on the southern side.

4.2.5 Unprotected Areas and Fire Resistance

Elevation to the east (1.7m from neighbouring dwelling), one escape door and window, unprotected areas within permitted limits, elevation to the west (3.5m from neighbouring dwelling), unprotected areas, two doors, unprotected areas within permitted limits. Elevation to the south, facing building over 10m away, unprotected areas within permitted limits. Elevation to north, rock face just over 1m away.

4.2.10 Material Change of Use of Existing Buildings

Alterations to existing building within permitted limits of unprotected areas.

4.3 Roof coverings

Roof shall be maintained as a pitched slate roof supported by timber structure which will give a minimum AC designation, refer to Table A5, Part I, Technical Guidance Document B 2006.

Flat roof multi layered Paralon type of roof membrane.

4.5 Rooflights

3 No. roof lights, double glazed units, area of each roof light 1.5 sqm, totalling 4.5 sqm.

B5 ACCESS AND FACILITIES FOR THE FIRE SERVICES

5.0.3 Existing Buildings

Access to the development is provided from public road in front of development.

- (i) Access facilities for the fire service have not altered.
- (ii) The existing building is being extended and the first floor is being extended.

5.1.1 Internal fire mains.

No requirement for internal fire mains in accordance with Section 5.1.2, Technical Guidance Document B 2006.

5.1.2 Sources of water for fire fighting

Sources of water for fire fighting purposes shall be provided by a number of methods in accordance with Section 5.1.6, Technical Guidance Document B 2006 as follows:

- (a) Water carried on fire appliances.
- (b) Existing local authority fire hydrants on public road.

5.1.7 Provision of hydrants

Hydrants are not required in accordance Section 5.1.7, Technical Guidance Document B 2006, floor areas less than 1000m²

5.2 Vehicle access

5.2.2 Design of access routes and hard standing.

The existing public access road to the development is existing and is in accordance with the relevant requirements of Table 5.2, Technical Guidance Document B 2006.

- (a) Minimum width between kerbs $\geq 3.7\text{m}$
- (b) Clear width of gateways not applicable.
- (c) No height restrictions shall be provided within or to the building
- (d) Carrying capacity of roads shall be ≥ 12.5 tonnes.

5.2.3 Existing Buildings

In the case of existing small building, with a total floor area of up to 1000m² where the height of the top storey is under 10m, access for the fire service pump appliances should generally be provided to within 45m of the principle entrance to the building.

- The proposed change of use is to an existing small building, building size is below the above criteria.

5.3 Personnel Access to Buildings for Firefighting

Not applicable.

5.4 Areas Requiring Special Consideration

Not applicable.

5.4.1 Boiler rooms and fuel stores

Not applicable, oil fuelled installations not part of development.

5.4.2 High voltage discharge lighting

Not applicable, low voltage lighting only to be installed.

5.4.2.1 Provision of Emergency Switch

High voltage discharge lighting not envisaged.

5.4.3 Ventilation of heat and smoke

The proposed escape stairs has an openable window on the upper landing.

If you have any further queries, do not hesitate to contact me on michaeltobin1@gmail.com or 087-2195257.



Michael Tobin MRIAI

23rd August 2024.