

# **NOTES IN SUPPORT OF AN APPLICATION**

**FOR**

**A FIRE SAFETY CERTIFICATE**

**FOR**

**ST. CLARES NATIONAL SCHOOL**

**AT**

**MANORHAMILTON, CO. LEITRIM**

This Specification Report must be read in conjunction with drawings issued under Fire Safety Revisions. All Codes of Practice etc. to be complied with by main Contractor and Specialist Sub-Contractors. All Certificates relating to fire safety devices, products and systems (e.g. fire door certs., fire alarm commissioning certs etc.) must be made available on request of the Fire Officers, Architect, Client or any other body empowered to do so.

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## **CONTENTS**

- 1.0 Details of Proposal
- 2.0 Design Criteria considered and incorporated in the proposal
- 3.0 Fire Performance for Materials, Structure and Components
- 4.0 Purpose Group Classification
- 5.0 Requirement B1: Means of Escape
- 6.0 Requirement B2: Internal Fire Spread (Linings)
- 7.0 Requirement B3: Internal Fire Spread (Structure)
- 8.0 Requirement B4: External Fire Spread
- 9.0 Requirement B5: Access and Facilities for Fire Service
- 10.0 Fee Calculation

## 1.0 DETAILS OF PROPOSAL

### 1.1 Scope

The proposal is to construct single storey extensions to existing school building including 1 no SEN classroom, 3 no. SET rooms, office and ancillary rooms. Provision of enlarged car parking area to provide 3 no. additional staff car parking spaces including one designated car parking space.

#### **Ground Floor Level**

Existing:

2 buildings containing total of 8 classrooms, multi-purpose hall, staff and office facilities and ancillary rooms

Proposed:

It is proposed to join the existing 2 buildings into 1 building. The extension will accommodate 1 no SEN classroom, 3 no. SET rooms, 1no. office and ancillary rooms.

In this report it is demonstrated that the works, if carried out 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 necessary design requirements. The objective of the fire safety measures set out in this report is to satisfy the obligation of the regulations, (i.e. health, safety and welfare of persons in and about a building) and not, per se, to protect against the risk to property and consequential loss.

This report is not to be regarded as a specification for the works.

The report is subdivided into sections dealing with each of the specific requirements of Technical Guidance Document; Part B, as follows:

- Section 1 Means of Escape in Case of Fire
- Section 2 Internal Fire Spread (Linings)
- Section 3 Internal Fire Spread (Structure)
- Section 4 External Fire Spread
- Section 5 Access and Facilities for Fire Service

### 1.2 Schedule of Drawings

| Drawing Number | Drawing Title                   | Scale     |
|----------------|---------------------------------|-----------|
| FSC - 001      | Site OSI map Plan               | 1:1000@A3 |
| FSC - 002      | Proposed site plan              | 1:500@A1  |
| FSC - 003      | Proposed floor plans            | 1:100@A1  |
| FSC - 004      | Proposed Elevations & Sections. | 1:100@A1  |

## 2.0 DESIGN CRITERIA CONSIDERED AND INCORPORATED IN THE PROPOSAL

| Location                        | Design Criteria                                                                          |
|---------------------------------|------------------------------------------------------------------------------------------|
| Area referred to in application | Building Regulations Technical Guidance Document 'B' 2024 version.                       |
|                                 | BRE External Fire Spread: Building Separation and Boundary Distances.                    |
|                                 | BS 9999 Code of Practice for fire safety in the design, management and use of buildings. |

## 3.0 FIRE PERFORMANCE FOR MATERIALS, STRUCTURE AND COMPONENT

When a fire performance rating for materials/structure/components is referred to in this report it shall be taken as meaning (except as noted otherwise in this report) that the material/structure/components satisfies the performance criteria prescribed in Appendix A and B of Technical Guidance Document B.

In particular, where a fire resistance rating for elements of structure and other forms of construction is specified in this report it shall mean that the item satisfies the performance criteria prescribed in table A1 of T.G.D. 'B'. A fire door is a door or shutter, provided for the passage of persons, air or objects, which together with its frame and furniture as installed in the building is intended when closed to resist the passage of fire and/or gaseous products of combustion and is capable of meeting specified performance criteria to those ends.

All doors shall be fitted in accordance with Appendix B, T.G.D. 'B' and will be rated in accordance with BS 476, Parts 21 and 31.

All fire doors shall have the appropriate performance given in table B1. In this table doors are identified by their performances under test to BS 476: parts 22 in terms of integrity for a period of minutes, i.e. FD 30. A suffix (s) is added for doors where restricted smoke leakage at ambient temperatures is needed.

All fire doors shall be fitted with an automatic self-closing device, which shall be capable of closing the door from any angle and against any device fitted to the door. All fire doors installed shall be permanently identified in accordance with the recommendations of BS 8214:1990, to indicate period of fire resistance, the manufacturer, year of manufacture and other pertinent details i.e. where the door is:

- To be kept closed when not in use or
- Held open by an electro-mechanical device

Every fire door (i.e. the complete fire door assembly) shall be supported by a fire test report and assessment from an accredited laboratory, which indicates that the complete assembly will meet the required performance.

#### 4.0 PURPOSE GROUP CLASSIFICATION

| Floor Level  | Use (according to Table 1 of TGD 'B') | Purpose Group Classification per Table 0.1 of T.G.D. 'B'. |
|--------------|---------------------------------------|-----------------------------------------------------------|
| Ground Floor | Assembly and Recreation               | 5(a) (ii)                                                 |

#### 5.0 REQUIREMENT SECTION 1: MEANS OF ESCAPE IN CASE OF FIRE

##### 5.1 Estimated Peak Occupancy Levels – Ground Floor Level

| Location                                                                          | Area <sup>(1)</sup><br>(m <sup>2</sup> ) | Occupancy Load Factor <sup>(2)</sup> (m <sup>2</sup> /person) (Table 2-8.) | Estimated Peak Occupancy level |
|-----------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------------------------------------|--------------------------------|
| SEN Classroom                                                                     | 70.1 m2                                  | 2.0                                                                        | 35                             |
| Multi Activity Room                                                               | 20.1 m2                                  | 2.0                                                                        | 10                             |
| Quiet Space                                                                       | 12 m2                                    | 2.0                                                                        | 6                              |
| Set Room 1                                                                        | 15.3                                     | 2.0                                                                        | 8                              |
| Set Room 2                                                                        | 15.5                                     | 2.0                                                                        | 8                              |
| Set Room 3                                                                        | 13.8                                     | 2.0                                                                        | 7                              |
| Office                                                                            | 20.1                                     | 7.0                                                                        | 3                              |
| <b>Total potential Extension occupancy for means of escape purposes per unit:</b> |                                          |                                                                            | <b>77</b>                      |

**Notes:**

<sup>(1)</sup> Refers to room or storey with area calculated in accordance with TGD 'B'

<sup>(2)</sup> Occupancy Load factors as per Table 2 of TGD 'B'

## 5.2 Travel Distances

| Location      | Recommended Limits of Travel distances <sup>(1)</sup> |                                   | Proposed Max Limits of Travel & distances |                                   |
|---------------|-------------------------------------------------------|-----------------------------------|-------------------------------------------|-----------------------------------|
|               | Escape in one direction                               | Escape in more than one direction | Escape in one direction                   | Escape in more than one direction |
| SEN Classroom | 18                                                    | 45                                | 13.2                                      |                                   |
| Store Room    | 18                                                    | 45                                | 10.5                                      |                                   |
| SET Room 01   | 18                                                    | 45                                | 4.7                                       |                                   |
| SET Room 02   | 18                                                    | 45                                | 4.7                                       |                                   |
| SET Room 03   | 18                                                    | 45                                | 4.7                                       |                                   |
|               |                                                       |                                   |                                           |                                   |

### Notes:

All distances above in metres.

<sup>(1)</sup> Recommended limits from Table 3 of TGD B (2024)

The above table details escape distances for the worst-case scenario within the floor plan (furthest distances). All other areas have been measured to be less than those within the above table and therefore for clarity have not been shown on the accompanying drawings. As additional mitigating measures we are proposing fitting an L1 fire alarm interlinked system.

## 5.3 Minimum Number of escape routes

With an Occupancy of less than 500 the minimum number of escape routes generally is 2.

## 5.4 Room Exit Widths

Room exits are in accordance with Table 5 of TGD B (2024). We also propose using compensating measures in the form of an automatic fire detection system and reduced travel distances. The following is a breakdown of each areas occupancy rate, the required exit widths and the proposed exit width.

| Location | Estimated Peak Occupancy level | Width of escape required ref table 5 TGD B in mm |
|----------|--------------------------------|--------------------------------------------------|
|          |                                |                                                  |

|                     |    |       |
|---------------------|----|-------|
| SEN Classroom       | 35 | 800mm |
| Multi Activity Room | 10 | 800mm |
| Office              | 6  | 800mm |
| Set Room 1          | 8  | 800mm |
| Set Room 2          | 8  | 800mm |
| Set Room 3          | 7  | 800mm |
| Office              | 3  | 800mm |
|                     |    |       |

Note:

The minimum widths given in the table above may need to be increased in accordance with requirements within TGD M: Access for People with Disabilities.

Total building occupancy existing building according to TGD B (2024): 318

Total building occupancy of proposed extension according to TGD B (2024): 77

Total building occupancy for escape purposes: 395 (1925 mm total escape width to be provided to external exits.

Total external exits provided in whole building (including existing): 3

## 5.5 Inner Rooms

The Building contains no inner rooms.

## 5.6 Corridors

Corridors are in accordance with section 1.4.4 of TGD B (2024).

All new Corridors will be constructed as protected corridors and shall be constructed according to TGD B (2024) 1.4.4.2

## 5.7 Stairways

N/A

## 5.8 Single escape stairwell

N/A

### 5.8.1 General

The proposal is to construct an extension to St. Clares National School

### 5.8.2 Construction

- a) The floor areas are divided and additional signage is required to ensure that exits/exit paths are visible from all parts of the floor areas in accordance with BS 9999.

- b) The typical external wall construction is cavity blockwork with a 1 hr fire rating. Internal walls are concrete blockwork. The external wall construction will have a 60min fire resistance from inside.

### 5.8.3 Travel distances and escape routes

- a) The travel distance to the nearest storey exit in the proposed building do not exceed the limits set out in Table 3 TGD B (2024).

Please refer to accompanying drawings for further details.

## GENERAL PROVISION FOR MEANS OF ESCAPE

### 5.9 Protection of Escape Routes

All corridors are to be constructed as protected escape routes.

#### 5.9.1 Fire Resistance of Enclosures

In accordance with section 1.9.2.1 (TGD B (2024), all walls, partitions and other enclosures that need to be fire resisting shall have the appropriate performance given in tables 31 and 32 of Appendix A in TGD 'B' (2024).

| Part of the building                            | Minimum provisions of fire resistance performance |              |              | Method of exposure   |
|-------------------------------------------------|---------------------------------------------------|--------------|--------------|----------------------|
|                                                 | Loadbearing capacity                              | Integrity    | Insulation   |                      |
| Structural frame                                | *                                                 | No provision | No provision | Exposed faces        |
| External Wall 1m or more from relevant boundary | *                                                 | *            | 15           | From Inside          |
| Roof                                            | 30                                                | 30           | 30           | From underside       |
| Protected Corridor                              | 30                                                | 30           | 30           | Each side separately |

- \* = 60 min according to Table 32, Group 5a

#### 5.9.2 Fire Resistance of Doors

In accordance with Appendix B, table 36 of T.G.D. 'B', all doors that need to be fire resisting shall satisfy that criteria.

Any reference to a Fire Door in this report is intended to mean a complete door assembly, which includes the door leaf or leaves, the door frame, ironmongery (hinges, latches, closers, etc.) and any seals required between the frame and leaf or between leaves and which is installed in the building and is capable of meeting the required performance.

### **5.9.3 Protection of Escape Stairways**

N/A

### **5.10 Doors on Escape Routes**

All Doors on Escape Routes are in accordance with section 1.9.3 TGD B (2024)

#### **5.10.1 Door Fastenings**

In accordance with paragraph 1.9.3.1.1 of TGD 'B', doors on escape routes will not be fitted with lock, latch or bolt fastenings and shall be fitted only with simple fastenings that comply with the following:

- It shall be easy to operate, it shall be apparent how to undo it and it shall be operable from the side approached by people escaping
- It shall be operable without a key or other similar object and it shall be operable without requiring people to manipulate more than one mechanism.

#### **5.10.2 Direction of Opening**

In accordance with paragraph 1.9.3.3 of TGD 'B', doors on escape routes shall be hung so that they open in the direction of escape.

#### **5.10.3 Amount of Opening, and effect on associated escape routes**

In accordance with paragraph 1.9.3.4 of TGD 'B' all doors on escape routes shall be hung to open not less than 90°, and have a swing that is clear of any change of floor level other than the threshold on the line of doorway, and shall not reduce the required width of any escape route across a landing.

### **5.11 Height of Escape Routes**

In accordance with paragraph 1.9.5 of TGD 'B' (2024) all escape routes will have minimum clear headroom of not less than 2.0 metres, as shown on drawings.

### **5.12 Floors on Escape Routes**

In accordance with paragraph section 1.9.6 of TGD 'B' (2024) the floors of all escape routes shall have non-slip even surfaces.

### **5.13 Final Exits**

Final exits shall be in accordance with the recommendations in TGD B, Section 1.9.7. as per drawing. The final exits shall be provided with mandatory adequate signage to

indicate the direction of escape from all parts of the building to the final exit and open air.

#### **5.14 Lighting of Escape Routes**

In accordance with section 1.9.8 of TGD 'B' artificial and escape lighting is to be provided in all escape routes, and shall be sufficient to illuminate all parts of the route (defined and undefined).

Emergency lighting is to be provided in compliance with 1.9.8.3 TGD B (2024). According to Table 11 the provision of escape lighting within the building for each part of the building shall be as follows:

| <b>Part of Building</b> | <b>Purpose Group</b> | <b>Parts requiring escape lighting</b> |
|-------------------------|----------------------|----------------------------------------|
| Classrooms              | 5                    | Defined and undefined escape routes    |
| SET Rooms               | 5                    | Defined and undefined escape routes    |
| WCs                     | 5                    | Defined and undefined escape routes    |
| Storage                 | 7                    | Defined escape routes                  |

#### **5.15 Electrical Installations and Protected Circuits**

In accordance with section 1.9.10 of TGD 'B' electrical installations shall be carried out by an approved contractor and to ETCI rules. Protected circuits using cabling to IS 3218:2013+A1:2019 for fire detection and alarm systems and IS 3217:2023 for emergency lighting systems are proposed. IS10101:2020+AC12020 to be followed for all electrical installations.

Distribution Boards housed in protected corridors shall be housed in lockable fire resisting enclosures.

#### **5.16 Fire Safety Signs**

All fire safety signage shall comply with section 1.9.12 of TGD B, BS 5499:Part 5: 2002 and with S.I no 132 of 1995 safety, health & welfare at work (signs) regulations 1995. These Regulations require the provision of emergency and other signs in a place of work, as defined in the safety, health & welfare at work Act, 2005.

#### **5.17 Fire Detection and Alarm Systems**

In accordance with paragraphs 1.9.13 of TGD 'B', In most types of commercial buildings, a high level of protection is required. According to Table 12, a type L2/L3 fire detection and alarm system should be used.

As a supplementary measure we propose that a L1 alarm system shall be designed, installed, commissioned and maintained in accordance with IS3218:2013 + A1:2019.

## 5.18 First-Aid Fire Fighting Equipment

Portable fire extinguishers shall be required under the Fire Services Act 1981 and The Safety, Health and Welfare at Work Act 2005.

Selection, installation and maintenance of firefighting equipment shall be in accordance with ISEN 3 parts 1-6 and IS291:2015 as required under the SHWWA 2005. The appropriate number, type and position of required portable extinguishers shall be installed and maintained by suitably trained persons in this field.

## 5.19 Heat Producing Appliances

Heating of the premises will be by electric heat pump with thermostatic/time control. All heat producing appliances shall be in accordance with part J of the building regulations. In accordance with section 1.9.10 of TGD 'B' electrical installations shall be carried out by an approved contractor and to ETCI rules.

## 6.0 REQUIREMENT B2: INTERNAL FIRE SPREAD (LININGS)

### 6.1 Basis for Compliance

- Section 2 of Technical Guidance Document B (2024)

### 6.2 Material Classification

Internal wall and ceiling linings are to comprise materials, which meet the appropriate classifications specified in Section 2 of TGD 'B'. We wish to confirm that there are no Thermoplastic materials proposed in the development. Wall and ceiling linings are to achieve the following minimum classifications:

| LOCATION      | CLASSIFICATION                                            |
|---------------|-----------------------------------------------------------|
| All locations | Class B -S <sub>3</sub> , d <sub>2</sub> (European Class) |
|               |                                                           |

According to 2.2.2.1 (TGDB 2024) part of the surface of a wall in a room may be of a class other than specified where:

- The Area is not greater than 5m<sup>2</sup> with a combined area total of 20m<sup>2</sup> or half the area of the room, whichever is lower

The parts must be separated by a minimum of 2m

## 7.0 REQUIREMENT B3: INTERNAL FIRE SPREAD (STRUCTURE)

### 7.1 Basis for Compliance

- Section 3 of TGD 'B'.
- Code of practice for fire safety of furnishings and fittings in places of assembly.

## 7.2 Fire Resistance Standard

| Ref Table 31 Minimum provisions of fire resistance performance |                      |                                                                       |              |              |                      |
|----------------------------------------------------------------|----------------------|-----------------------------------------------------------------------|--------------|--------------|----------------------|
|                                                                | Part of the building | Minimum provisions when tested to relevant parts of BS 476 (1) (mins) |              |              | Method of exposure   |
|                                                                |                      | Loadbearing capacity (2)                                              | Integrity    | Insulation   |                      |
|                                                                | Structural frame     | 60                                                                    | No provision | No provision | Exposed faces        |
|                                                                | External Wall        | 60                                                                    | 60           | 15           | From inside          |
|                                                                | Roofs                | 30                                                                    | 30           | 30           | From underside (3)   |
|                                                                | Compartment Wall     | 60                                                                    | 60           | 60           | Each side separately |

### Notes:

<sup>(1)</sup> Refers to height of top storey above ground level or depth of lowest basement storey below ground level, measured in accordance with Appendix C of TGD 'B' and 'storey' definition in section 1.0.9 of TGD 'B'.

<sup>(2)</sup> From Table A2 of TGD 'B'

## 7.3 Compartmentation

Compartmentation for the proposed building shall be in accordance with section 3.4 of TGD 'B'. 3.4.4.5 sets out the need for compartmentation in Non-residential buildings (Purposegroup 5a).

Compartmentation is not a requirement for this building as maximum capacity for this use is not reached (Table 15, TGD B)

## 7.4 Provision of Compartment Walls and Compartment Floors

According to TGD B (2024) 3.4.4.1 and 3.4.4.5 no Compartment Walls are required in this building.

## 7.4 Provision of fire resisting walls

According to TGD B 3.4.4.7 (a) all store rooms in this non-residential school will be enclosed in a fire resisting construction with doors to be fire doors.

## 7.5 Construction of Compartment Floors and Compartment Walls

Compartment walls are to be constructed with a 60 min fire resisting construction as outlined in TGD B (2024) 3.5.5

## **7.6 Protected Shafts**

N/A

## **7.7 Openings between Compartments**

In accordance with section 3.7 of TGD 'B' the passage of services through compartment walls and floors are to be fire stopped by an approved system or method.

## **7.8 Concealed Spaces**

All concealed spaces shall be interrupted by fitting cavity barriers and sub dividing extensive cavities as per section 3.6 of TGD B (2024).

According to Table 17, TGD B the maximum dimension of the cavity space between roof and ceiling is 20m.

## **7.9 Protection of Openings and Fire-Stopping**

In accordance with section 3.7 of TGD 'B' all openings, joints, imperfections of fit in or between designated fire barriers shall be fire stopped or protected by sealing so that the fire resistant rating of the barrier is not impaired. In addition, all openings for pipes/ventilation ducts/flues etc. which pass through a compartment wall or compartment floor (unless the pipe is in a protected shaft) or cavity barrier, shall meet the appropriate provisions set down in TGD part B section 3.7.2. We would propose using alternative A, a proprietary seal around all pipes in accordance with TGD B part 3.7.2.

Firestopping methods are to be as follows:

- Cement mortar
- Gypsum based plaster
- Intumescent mastics

### **7.9.1 Cavity Barriers**

Cavity barriers in the building shall be provided in accordance with 3.6.2, Table 16 of TGD B.

Cavity Barriers in stud walls are to be constructed according to 3.6.4.2 (TGDB (2024))

## **8.0 REQUIREMENT B4: EXTERNAL FIRE SPREAD**

### **8.1 Basis for Compliance**

- Section 4 of TGD 'B' (2024).
- BRE External Fire Spread paper dated 11<sup>th</sup> June 2015.

### **8.2 Fire Resistance Standard**

Fire resistance of external walls in accordance with Table 31 and 32 TBD B (2024)

| Purpose Group        | Height of top storey | Minimum periods for elements of structure |
|----------------------|----------------------|-------------------------------------------|
| 5a (not sprinklered) | Not more than 5 m    | 60 min                                    |

All external walls to be constructed with 60 minutes' construction from inside.

## 8.2 External Surfaces

In accordance with Table 19 of TGD 'B': Reaction to fire Classification for external walls

| Purpose Group | Height topmost storey | Less than 1m to relevant boundary | More than 1 m to relevant boundary |
|---------------|-----------------------|-----------------------------------|------------------------------------|
| 5a            | Single storey         |                                   | No requirement                     |

## 8.3 Unprotected Areas

Measured in accordance with TGD B (2024) – 4.4.6.3 Method 2 other Buildings or compartments / Table 21.

### FRONT (North) ELEVATION

Distance to relevant boundary: 16.4 m

Maximum unprotected wall area as a percentage of total wall area according to Table 21: 100%

Unprotected Area SEN Block: = 17.6m<sup>2</sup> = 39% < 100%

Unprotected Area Reception/Office: = 11.5m<sup>2</sup> = 64% < 100%

### SIDE (West) ELEVATION

Distance to relevant boundary: 7.7m

Maximum unprotected wall area as a percentage of total wall area according to Table 21: 60%

Unprotected Area = 1m = 11.1% < 60%

## 8.4 Roof Coverings

The notional performance of the roof coverings shall be as per table A5 of TGD B as follows:

- Profiled sheets of Zinc (single skin) on Structure of Steel or Timber: Broof (t4).

## 9.0 REQUIREMENT B5: ACCESS AND FACILITIES FOR THE FIRE SERVICE

### 9.1 Sources of Water for Fire-fighting

According to TGD B 5.3.2 an internal fire mains is not necessary.

## 9.2 Provision of Hydrant

According to TGD B (2024) 5.3.3.2.1 a fire hydrant is to be provided as the school building will exceed the threshold of 1000m<sup>2</sup>

There are 2 fire hydrants on-site at present (see attached Site Plan FSC002)

## 9.3 Vehicle Access

In accordance with Table 24 of TGD 'B' (2024) access to the proposed building is considered to be in compliance as:

|                                          |                                                 |
|------------------------------------------|-------------------------------------------------|
| <b>Building Volume</b>                   | <7,000 m <sup>3</sup>                           |
| <b>Height of top storey above ground</b> | under 11 m                                      |
| <b>Vehicle access rate required</b>      | 2.4m for every 90m <sup>2</sup> of ground floor |
| <b>Type of appliance</b>                 | Pump                                            |

|                                         |                                     |
|-----------------------------------------|-------------------------------------|
| <b>Proposed buildings ground floor</b>  | 1313 m <sup>2</sup>                 |
| <b>Vehicle access distance required</b> | 35 m                                |
| <b>Actual Vehicle Access provided</b>   | Front Elevation of Building = 24.4m |

## 9.4 Access Routes and Hard Standing

Roads and footpaths shall be constructed in accordance with the requirements of the local authority.

Access to the building is via the existing site access road and turning area in front of the building.

## 9.5 Personnel Access for Firefighting

In accordance with section 5.5 of TGD 'B' (2024) personal access to each part of the building is to occur via normal escape and egress routes.