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RESIDENTIAL DEVELOPMENT AT
LEHENAGHMORE, CORK

FIRE SAFETY ASSESSMENT

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1 Introduction

Denis O'Sullivan & Associates have been engaged as Consulting Engineers for the proposed development at proposed residential development at Lehenaghmore Cork

The proposed development consists of the construction of *155 residential units and a creche* within the vacant green field site at Lehenaghmore, Cork. The overall development consists of 3 bed semi-detached, 4 bed semi-detached, townhouses, Ground floor and Duplex units, Apartment-Blocks and a creche.

2 Fire Safety Assessment

A Fire Safety Compliance report shall be developed setting out the means by which compliance with Part B (Fire Safety) of the second schedule to the Building Regulations 1997 to *2024* is to be achieved for the proposed construction of the development.

2.1 Design Criteria

This specification and calculations are based on the following design guides:

- Technical Guidance Document B 2006- Fire (TGD 'B'), published by The Minister for the Environment under Article 7, of the Building Regulations reprinted edition 2020
- Technical Guidance Document B 2017 - Volume 2 Dwelling Houses- Fire (TGD 'B'), published by The Minister for the Environment under Article 7, of the Building Regulations
- *Technical Guidance Document B 2024 - Volume 1 Buildings other than Dwelling Houses - Fire (TGD 'B)', published by The Minister for the Environment under Article 7, of the Building Regulations*

2.2 Assessment Summary

Building Classification

1. The main use of the building is classified as Purpose Group 1(a), Dwelling house with no storey with a level which is more than 4.5m above ground level, as per *Table 1 TGD 'B', Classification of Buildings by purpose group*.
2. *The main use of the building is classified as Purpose Group 1(c), Flat or Maisonette, as per Table 1 TGD 'B', Classification of Buildings by purpose group.*
3. *The main use of the building is classified as Purpose Group 5 (b), Day Centre (Creche), as per Table 1 TGD 'B', Classification of Buildings by purpose group.*

SECTION B1 – MEANS OF ESCAPE IN CASE OF FIRE

Purpose Groups

1. The main use of the building is classified as Purpose Group 1(a), Dwelling house with no storey with a level which is more than 4.5m above ground level, as per *Table 1 TGD 'B', Classification of Buildings by purpose group*.
2. *The main use of the building is classified as Purpose Group 1(c), Flat or Maisonette, as per Table 1 TGD 'B', Classification of Buildings by purpose group.*
3. *The main use of the building is classified as Purpose Group 5 (b), Day Centre (Creche), as per Table 1 TGD 'B', Classification of Buildings by purpose group.*

Dwelling Houses

The dwellings shall fall under purpose group 1(a) and shall comply with the following:

- a) Any habitable room which is an inner room will be provided with a window for escape or rescue.
- b) The stairway serving upper stories shall be enclosed with storey height construction and shall discharge directly to the open air.
- c) A fire detection and alarm system type Grade D, LD2 will be installed in the units.

An automatic fire detection & alarm system type LD2 is proposed for the individual dwellings. The fire alarm shall be designed and installed in accordance with *I.S. 3218: 2024 Code of Practice for Fire Detection and Alarm Systems*. The system shall consist of mains powered smoke and heat detectors with battery backup located in the escape routes and all high-risk areas e.g. kitchen/living room and all bedrooms. These alarms shall be interconnected so that detection of a fire of one of the detectors shall provide an audible alarm from each detector.

Where windows are required for escape or rescue, they will comply with the following:

- (a) The window will have an openable section which will provide an unobstructed clear open area of at least 0.33 m² with a minimum width and height of 450mm.
- (b) The bottom of the window opening will be not more than 1100mm and not less than 800mm above the floor immediately inside the window.
- (c) There are no dormer windows or rooflights proposed so this section will not apply.
- (d) The area beneath the window externally will be such to make escape or rescue practicable. The ground below the windows will be suitable to support a ladder safely and will be accessible to the fire service.
- (e) The opening section will be secured by means of fastenings which are readily openable from the inside and will be fitted with safety restrictors. No lockable handles or restrictors will be fitted to escape windows.

Heating to the dwellings shall be provided by way of heat pumps located at ground floor level in the rear gardens. Refrigerant gas pipes shall be ducted to the internal heat pump unit which will supply hot water to radiators, underfloor heating and hot water storage cylinders.

Proposed Electrical installations shall comply with I.S. 10101:2020 "National Rules for Electrical Installations".

Compartmentation

The buildings shall be constructed so that each unit is constructed as a compartment. Each compartment shall be separated from each other by 60-minute compartment walls and floors.

Evacuation Considerations

Normal "self-help" evacuation procedures shall be used in these building. For people with disabilities a refuge area shall be provided in the escape stairs from which further evacuation can be made under less pressure of time.

Flat or Maisonette,

Within these units there will be no inner rooms that are habitable rooms, and the internal stairway will be constructed as a protected escape stairway which will:

1. Be constructed as a protected stairway enclosed within a minimum of 30-minute fire rated construction from first to second floor and within 60-minute fire rated construction from ground to first floor. The apartments will be separated from the ground floor apartment units by 60-minute walls and floors.
2. The protected stairway will connect the ground and all upper storeys.
3. The protected stairway will deliver directly to a final exit.

An automatic fire detection & alarm system type LD2 is proposed for the individual Flats. A type L3X is proposed in the communal areas which will also be linked to a heat detector and sounder in the entrance corridor of the Flats. The fire alarm will incorporate automatic detectors and manual call points. The drawings accompanying this report are indicative only and the fire alarm is to be designed and installed in accordance with [I.S. 3218: 2024](#) Code of Practice for Fire Detection and Alarm Systems.

Day Centre (Creche),

The layout of the Creche will comply with TGD 'B'.

An automatic fire detection & alarm system type L1 is proposed for the creche. A type L3X is proposed in the communal areas which will also be linked to a heat detector and sounder in the entrance corridor of the Flats. The fire alarm will incorporate automatic detectors and manual call points. The drawings accompanying this report are indicative only and the fire alarm is to be designed and installed in accordance with I.S. 3218: 2024 Code of Practice for Fire Detection and Alarm Systems.

Section B5 – Access & Facilities for the Fire Services

Fire Main

The Development shall receive fire-fighting water from the public mains. It is proposed to install Fire hydrants as indicated on the drawings accompanying this report.

Fire hydrants shall be provided within the development as indicated on the site layout drawing. The fire hydrants are required so that the location of the hydrants shall be in accordance with TGD 'B'.

Vehicle access

Fire brigade vehicle access to the exterior of the building will be in accordance with TGD 'B'.

Fire appliances have access to the buildings from at Lehenaghmore via the development road. Fire appliances will have access to the front elevations of all building from the internal estate roads which will comply with either 'Recommendations for Site Development Works for Housing Areas' (Department of the Environment and Local Government, October 1998) or The 'Design Manual for Urban Roads and Street' (Department of Transport, Tourism and Sport and the Department of Environment, Community and Local Government) or Making Places : a design guide for residential estate development (by Melville Dunbar Associates and Cork County Council).

The required minimum clear widths as shown in TGD 'B' can all be achieved for pumping appliances as the street's widths are adequate. Turning facilities for appliances shall be provided in any dead-end access routes that are more than 20m long in accordance with TGD 'B'.

Personnel access to building for fire fighting

Access to the buildings for firefighting purposes are by way of the normal exit / entrance doors.