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CLUID HOUSING – MAHON, CO. CORK

ENGINEERING A SUSTAINABLE FUTURE

Document Control Sheet

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Introduction

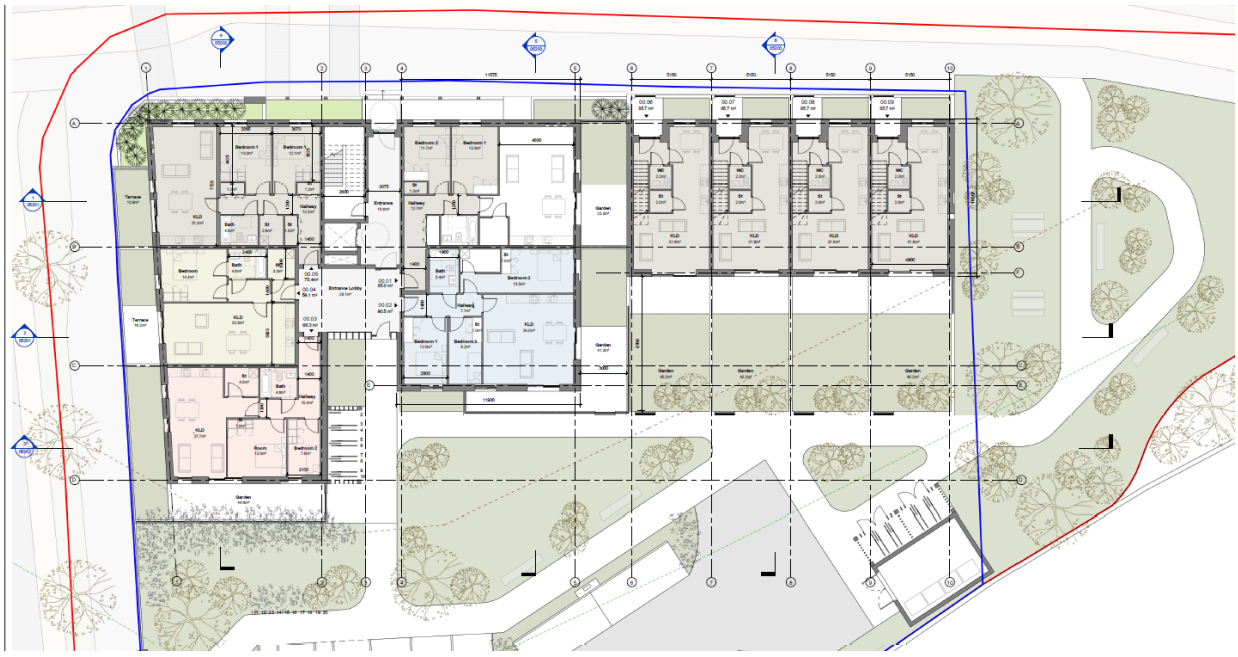
General

ORS, Marlinstown Office Park, Mullingar, Co. Westmeath have been engaged by Plus Architecture to provide a brief compliance report for a new residential development located at Mahon, Co. Cork. The goal of this report is to highlight the fire safety elements that will be implemented in this building to ensure the grant of a fire safety certificate. This report relates to the relevant building control requirements set out in TGD:B, specifically:

1. 'Technical Guidance Document B, 2006 (AMD 2020), Fire Safety'
2. 'Technical Guidance Document B Vol.2, Dwelling House, 2017'
3. 'British Standard 5588-1:1990 – Fire precautions in the design, construction and use of buildings – Part 1: Code of Practice for residential buildings'

It is proposed to construct a new residential development in Cork City Council consisting of 1 apartment block and 4no. attached townhouses: The Block to the West is a 4-storey apartment block containing single storey apartments. The Block located to the East are 4no. 2 storey townhouses.

The apartment block to the West will require its own fire safety certificate. The townhouses to the East do not require a FSC although they are required to follow requirements in accordance with TGD:B Vol. 2. This brings the total number FSC applications to 1 no.



1 Means of Escape

1.1 Common Corridors

1.1.1 Ventilation of Common Corridors

The common circulation areas to the residential accommodation located to the West of the site shall be provided with a means of venting smoke in accordance with TGD-B and BS 5588-1. Ventilation to the protected corridors in the blocks can be achieved either naturally or mechanically.

Based on the design, it is noted that the corridors serving apartments have access to external walls, and AOVs opening externally are available.

a) AOVs directly to the exterior of the building:

- The AOV shall be situated inside the corridor with a free area of at least 1.5m^2 that vents directly to the outside. The AOV shall be fitted as close to the top of the ceiling as possible.

This section is not applicable to the apartment block located to the East of the site.

1.1.2 Travel Distances in Common Corridors

Travel distances for the apartment blocks have been met.

The block located to the West have a shared hall/corridor. Halls/Corridors with a single means of escape (i.e. one stair) is 7.5m. This is based on corridors being provided with a smoke control system. The travel distance is taken from the furthest apartment door in the corridor to the door of the protected lobby to the stair.

1.1.3 Protected Lobbies

All escape stairs serving the apartment block to the West have been provided with protected lobbies. This section does not apply to the apartment block located to the East

1.2 Layout of Internal Apartments

1.2.1 Protected Entrance Halls (Applicable to apartments located to the West of the Site)

Apartments adopting a protected corridor layout are limited to a maximum travel distance of 7.5m inside the corridor from the apartment entry to the furthest internal door. All rooms except WCs are to be separated from the corridor by 30 minute fire resisting construction. Entrance doors between the apartment and protected corridor shall be FD60S doors.

1.2.2 2-Storey Dwelling Units (Townhouses located to the East of the Site)

The 2-storey dwelling units over the ground and first floors that are entered directly from the outside are considered houses for means of escape purposes (two-storey houses with a top storey less than 4.5m above ground level).

Any habitable room in these instances which is an inner room shall be provided with a window for means of escape or rescues in accordance with the following: -

- Escape windows shall have an unobstructed opening not less than 850mm by 500mm.
- The bottom of the window opening shall be no more than 1100 mm and not less than 800mm (600 mm in the case of a rooflight) above the floor, immediately inside or beneath the window or rooflight.
- Doors and windows that are provided for escape or rescue purposes from a room above ground level shall meet the following recommendations: -
  - If a window is a dormer window or a roof light, the distance from the eaves of the roof to the sill or vertical plane of the window or sill of the roof light shall not exceed 1.7m when measured along the roof.
  - Any doors (including a French window or a patio window) shall be guarded with a protective barrier in accordance with BS 6180.
  - The ground beneath the window or balcony shall be clear of any obstructions (such as iron railings or horizontally hung windows) and shall be of a size and material that is suitable and safe for supporting a ladder.

Any stairways within these units serving an upper storey shall be enclosed with storey-height construction, which need not be fire resisting, and shall discharge directly to open air.

2 Section B3 – Internal Fire Spread (Structure)

2.1 Fire Resistance of Structural Elements

The apartment block to the West of the site has a top storey level of 20m or less which will require its loadbearing elements to achieve 60 minutes fire resistance. The townhouses to the East of the site which will require its loadbearing elements to achieve 30 minutes fire resistance.

2.2 Compartmentation

Every floor shall be constructed as a compartment floor with a fire resistance of 60min for apartment blocks to the West and 30min for Townhouses to the East as outlined above.

Walls separating an apartment from any other area of the building shall be constructed as a compartment wall with a fire resistance of 60min.

Any ancillary accommodation shall be separated with compartment walls from other areas of the building.

Entrance doors to apartments from the common circulation routes shall achieve the same fire resistance as the wall they are situated in. However, the maximum fire resistance of any door shall be FD60S.

Floors inside the townhouses shall achieve 30 minutes fire resistance for stability and 15 minutes for integrity and insulation.

Service risers shall either form an open vertical shaft enclosed in 60min compartment walls with FD60S doors at each floor level, or services in risers shall be firestopped at each floor level and enclosed in 30 minute construction with FD30S doors.

3 Section B4 – External Fire Spread:

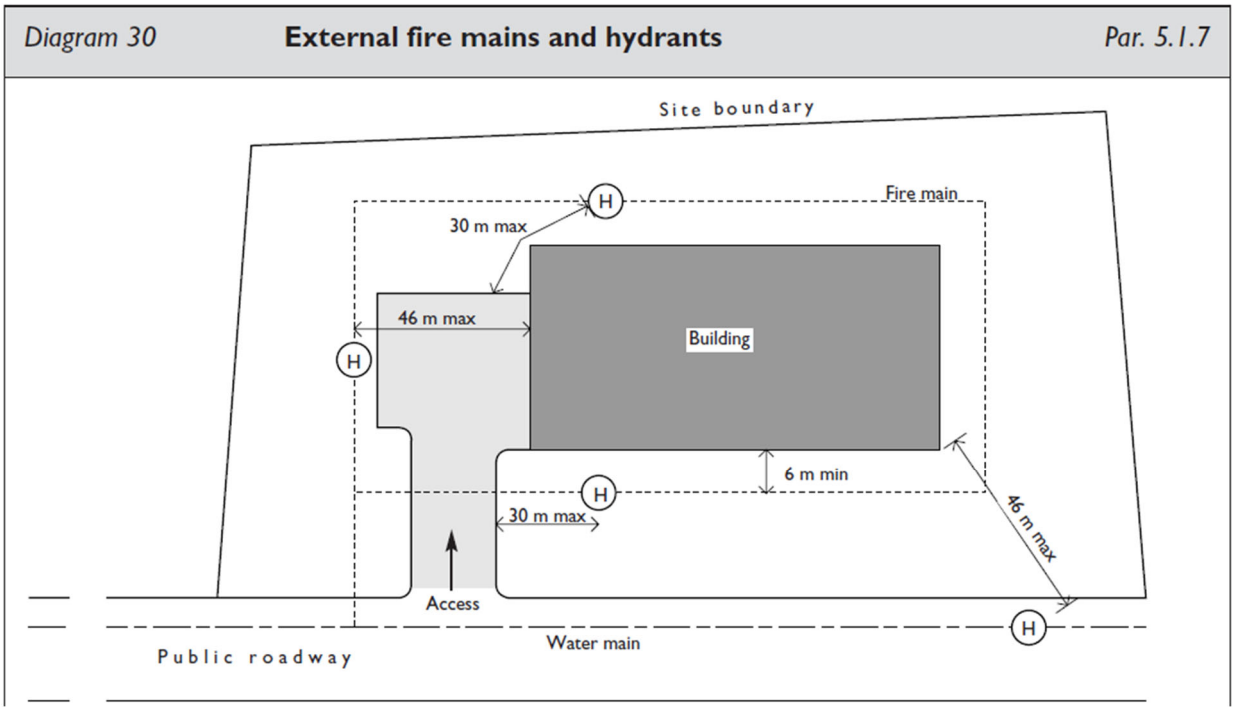
3.1 Space Separation

There are areas where the site boundary nears elevations of the blocks. Given that each floor will be a compartment floor, and the limited amount of unprotected area generally in residential accommodation, space separation should not be an issue in this case. This will be further checked during the detail design stage.

5 Section B5 - Access and Facilities for the Fire Service:

4.1 Fire Hydrants

Fire hydrants are required at a rate of 1 hydrant per 1000m^2 of ground floor area. The locations of hydrants shall be determined at detailed design stage, however the locations shall be in accordance with Diagram 30 of TGD-B as below:



4.2 Access Routes for Fire Tenders

Adequate roadways shall be provided on site to allow fire appliances (pump appliance/high reach appliance) to park (i.e. minimum width of roads between kerbs is limited to 3.7m and a carrying capacity of 17tonne).

It has been ensured that any dead-end access routes for a fire appliance do not exceed 20m. It shall be noted that a hammerhead facility has been provided for the site.

[END OF REPORT]

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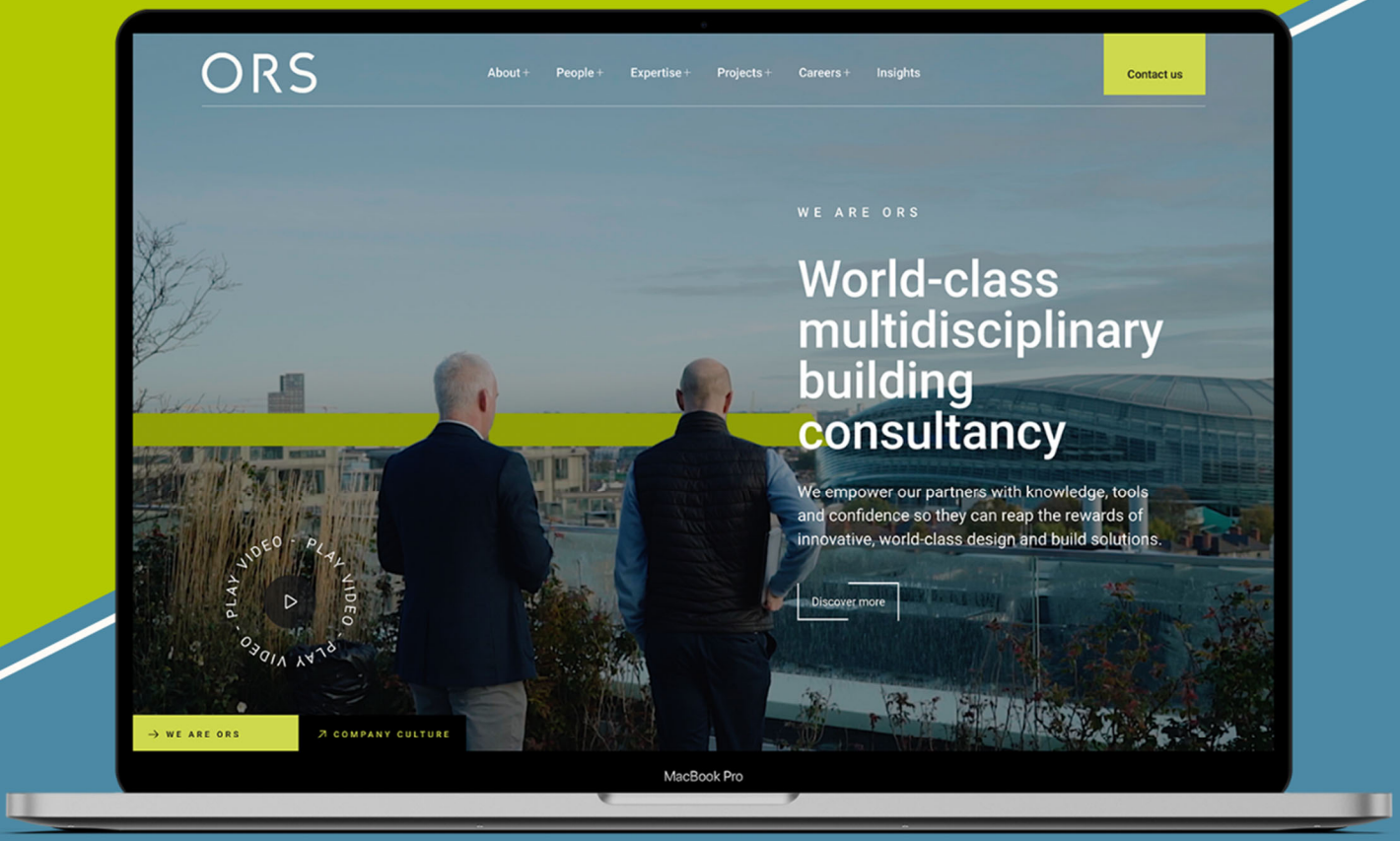

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