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# Preliminary Fire Safety and Access & Use Strategy

For

## A Proposed Residential Development

At

## Lands to East of St Paul's College, Dublin 5

| | | |
|---|---|---|
| **CLIENT** | : | Crekav Trading GP Limited |
| **PROJECT TITLE** | : | St Paul's Residential Development |
| **REPORT NUMBER** | : | 17029 R03 Issue 01 |

| | ISSUE 01 | ISSUE 02 | ISSUE 03 | ISSUE 04 | ISSUE 05 |
|---|---|---|---|---|---|
| **STATUS** | Final | | | | |
| **DATE** | 24.09.2019 | | | | |
| **BY** | NMB | | | | |
| **CHECKED** | SH | | | | |

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## 1.0 INTRODUCTION

### 1.1 SCOPE OF REPORT

This Report is submitted in support of a planning application for the proposed construction of a residential development at lands to East of St. Paul's College, Dublin 5.

The Fire Safety and Access & Use Strategy is being submitted with the Planning Application to demonstrate that the proposed design is in substantial compliance with Part B (Fire Safety) & Part M (Access & Use) of the Building Regulations and that it will be possible in due course to obtain a Fire Safety and Disability Access Certificate without giving rise to changes that would require planning permission.

### 1.2 OUTLINE DESCRIPTION OF THE PROPOSED DEVELOPMENT

The development will consist of the construction of a residential development set out in 9 no. blocks, ranging in height from 5 to 9 storeys accommodating 657no. apartments, residential tenant amenity spaces and a crèche. At basement level the site will accommodate car parking spaces, bicycle parking, storage, services and plant areas. Landscaping will include extensive communal amenity areas, and a proposed significant area of public open space. The proposed development also includes for the widening and realignment of an existing vehicular access onto Sybil Hill Road and the demolition of an existing pre-fab building to facilitate the construction of an access road from Sybil Hill Road between Sybil Hill House (a Protected Structure) and St Paul's College incorporating upgraded accesses to Sybil Hill House and St Paul's College and a proposed pedestrian crossing on Sybil Hill Road. The proposed development also includes for the laying of a foul water sewer in Sybil Hill Road and the routing of surface water discharge from the site via St. Anne's Park to the Naniken River and the demolition and reconstruction of existing pedestrian stream crossing in St. Anne's Park with integral surface water discharge to Naniken River.

### 1.3 BASIS OF COMPLIANCE

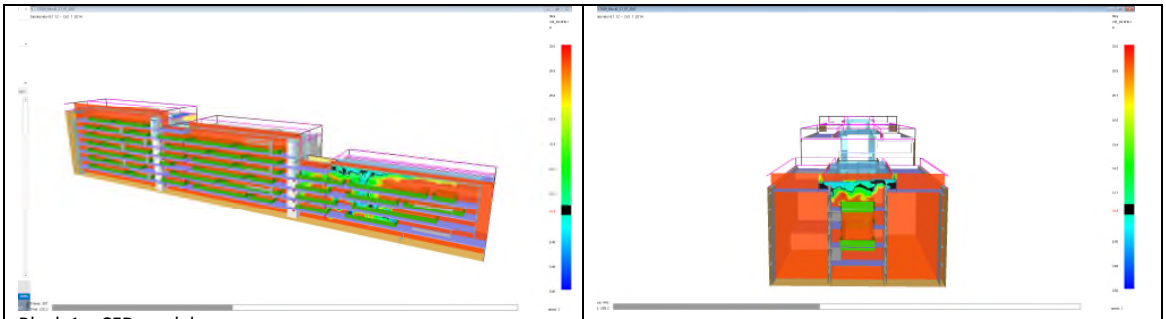
| Purpose Group | Design Guidance (Fire Safety / Access & Use) |
|---|---|
| Residential | BS 9991: 2015 & BS 9999: 2017 / TGD-M 2010, BS 8300: 2018 & UK ADM |
| Residential Tenant Amenity Space | BS 9991: 2015 & BS 9999: 2017 / TGD-M 2010, BS 8300: 2018 & UK ADM |
| Crèche | Fire Safety in Preschools published by the Department of Environment / TGD-M 2010, BS 8300: 2018 & UK ADM |
| Car Park & Ancillary Accommodation | BS 9991: 2015 & BS 9999: 2017 / TGD-M 2010, BS 8300: 2018 & UK ADM |

The aforementioned guidance proffers prescriptive design solutions which are considered prima facie compliance with Parts B & M of the Building Regulations, alternative solutions are acceptable based on a fire engineering approach as set out in Technical Guidance Document B 2006 to the Building Regulations. Accordingly the Fire Safety and Access & Use Strategies being adopted make provision for the acceptance of substantiated deviations from some of the prescriptive solutions in these codes, based on the use of the enhancement measures.

## 2.0 FIRE SAFETY STRATEGY

### 2.1 MEANS OF ESCAPE IN CASE OF FIRE

Blocks 1 & 6 both comprise a weather protected balcony approach to the apartments with open connections between each floor level in this space. It is noted that the proposed design has been reviewed with the Dublin City Council Fire Officer as part of pre application meetings. It was agreed with the Fire Officer that a CFD analysis validating the tenability conditions along the balcony escape routes would be submitted as part of the Fire Safety Certificate application. MJP have already undertaken extensive CFD reviews as part of this exercise. The floating roof over the weather protected area is above the surrounding structure providing permanent natural ventilation to the space.



Block 1 – CFD model

The balconies will be fire separated from the adjacent apartments via 30-minute fire resistant construction up to a minimum height of 1,100mm above FFL with the apartment entrance doors fitted with FD30s fire door sets as per the design provisions of BS 9991 vis-à-vis balcony approach apartments. Allowing for the proposed design whereby the CFD analysis will validate tenable conditions to the balcony escape routes, it is proposed that there will be no limit on dead-end travel distances along the balconies similarly to the design provisions of Clause 7.3 of BS 9991 vis-à-vis apartments provided with external balcony approach or deck approach. The limit that is imposed is driven by the provision of dry risers to each core which will require maximum distances of 45m from the dry riser landing valve.

Blocks 2, 3, 4, 5, 7, 8 & 9 will be designed to include ventilation to a central lobby whereby travel distances will be limited to maximum 7.5m from individual apartment entrance doors to the vented lobby via an unvented corridor. An exemplar floor is shown below:

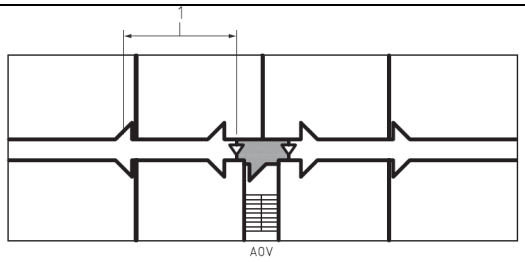



**Figure 6(a) of BS 9991**

**Key**

| | |
|---|---|
| 1 | Maximum travel distance 7.5 m |
| 2 | Maximum travel distance 7.5 m (max. 15 m if sprinklers are fitted; see **7.4** and **11.2**) |
| AOV | Automatic opening vent (1.0 m² minimum) |
| | Fire-resisting construction |
| | Self-closing FD 30S fire door (double swing) |
| | Self-closing FD 30S fire door |
| | Area requiring a smoke control system |

The basement car park will be served via 8 no. escape stairs, each of which will be double lobby protected at basement level (except for the podium access stair) complete with permanent natural ventilation to the lobbies discharging to the external air via fire rated ductwork.

It is noted that the ground floor residential tenant amenity space in Blocks 1 & 6 will each be provided with means of escape independent of the residential Cores.

## 2.2 INTERNAL FIRE SPREAD (STRUCTURE)

Blocks 1, 2, 3, 4, 5 & 6 (each with a topmost floor > 18m) will be designed to achieve a minimum of 90 minutes fire resistance (stability, integrity and insulation). The floor slab construction separating the basement and all residential Blocks overhead will also achieve 90 minutes fire resistance.

Blocks 7, 8 & 9 (each with a topmost floor < 18m) will be designed to achieve a minimum of 60 minutes fire resistance (stability, integrity and insulation).

It is not proposed to provide any sprinkler protection to the development as the topmost floor height of each Block is less than 30m.

The individual residential units will each be designed as standalone compartments fire separated from all adjoining accommodation.

## 2.3 EXTERNAL FIRE SPREAD

The external walls and roof of the Blocks will be so designed and constructed that they afford adequate resistance to the spread of fire to and from neighbouring buildings as per the external fire spread requirements of BRE 187.

## 2.4 ACCESS & FACILITIES FOR THE FIRE SERVICE

The external site access routes serving the development will be so designed such that there will be adequate provision for Fire Brigade appliance access.

The Cores in Blocks 1, 2, 3, 4, 5 & 6 (which serve a topmost floor > 18m above access level) will be designed as fire-fighting shafts each provided with a fire-fighting stair, a fire-fighting lift, a vented lobby and dry riser to provide Fire Brigade personnel access and internal fire-fighting facilities although a vented lobby to the fire-fighting shafts in Blocks 1 & 6 will not initially be proposed in the Fire Safety Certificate application allowing for the shaft(s) being accessed directly from the weather protected/covered balcony approach.

The stair cores in Blocks 7, 8 & 9 will also be provided with a dry riser to assist Fire Brigade fire-fighting facilities.

Dry riser inlet valves will be provided externally to allow Fire Brigade personnel to connect fire hose reels from the Fire Brigade appliances to serve the dry risers in each Block.

It is proposed that the basement car park will be provided with natural ventilation.

## 3.0 ACCESS & USE STRATEGY

### 3.1 EXTERNAL ACCESS ROUTES & ACCESSIBLE ENTRANCES

The external site landscape will be designed to include accessible access routes to serve each of the Blocks. The access routes will include level approach, gently sloped approach, ramped approach and stepped approach routes as applicable to ensure universal access will be provided.

Each of the residential Cores will be provided with an accessible entrance to facilitate wheelchair/disabled access. Similarly the ground floor residential tenant amenity space in Blocks 1 & 6 and the ground floor crèche in Block 7 will also be provided with accessible entrances.

The basement car park will be provided with designated disabled car parking spaces as per TGD-M 2010.

### 3.2 CIRCULATION WITHIN BUILDINGS

The upper floors to each Block will be served via accessible passenger lift(s) and an ambulant disabled stair designed in accordance with TGD-M / BS 8300 / UK ADM. Blocks 1, 2, 3, 4, 5 & 6 will be provided with at least 1 no. Core extending to basement level thus facilitating lift access between basement, ground and the upper floors. Blocks 7, 8 & 9 will be provided with stair and lift access to and from the basement via a podium access core.

The ground floor residential tenant amenity space in Blocks 1 & 6 and the ground floor crèche in Block 7 will be provided with internal circulation routes accessible to wheelchair users/disabled persons.

### 3.3 SANITARY FACILITIES

The ground floor residential tenant amenity space in Blocks 1 & 6 and the ground floor crèche in Block 7 will be provided with sanitary facilities including changing room facilities, ambulant disabled WCs, accessible WCs etc. as appropriate. All provisions will comply with TGD-M 2010.

No communal sanitary facilities will be provided for the apartments.

### 3.4 RESIDENTIAL UNITS

The internal layout of the residential units will be designed in accordance with TGD-M 2010 such to include accessible entrance doors, visitable WCs and habitable rooms.