

Provision of Sky Garden in Refuge Floor

Introduction

A refuge floor provides a safe and comfortable place for occupants to stay and wait for rescue in case of fire. When not in use as a refuge, the floor space may also be utilised as a garden which provides recreational garden space for communal use and helps enhance our built environment. The Buildings Department has examined, in consultation with Fire Services Department (FSD), the possibility of incorporating such gardens in refuge floors.

Refuge floor cum Sky Garden

2. Further to the promulgation of incentives in Joint Practice Note (JPN) No. 1 to promote the provision of communal sky gardens for environmental enhancement, the Building Authority (BA), having examined all relevant matters, is prepared to accept the incorporation of communal sky gardens in refuge floors subject to compliance with all the following conditions:

- (a) Requirements on refuge floors specified in paragraph 21 of the Code of Practice for the Provision of Means of Escape in Case of Fire (MOE Code) and paragraph 18 of the Code of Practice for Fire Resisting Construction (FRC Code), except those special provisions mentioned below, are complied with. In assessing the net area for refuge and the minimum dimension of the area for refuge, no account should be taken of the space occupied by any planters, equipment and furniture in the refuge floor;
- (b) All garden furniture and equipment in the refuge floor are firmly fixed;
- (c) All furniture, equipment and rubbish bins and other artificial features, including the finishing materials used in these gardens are non-combustible materials and do not emit toxic gas in case of fire, and are so sited that they will not obstruct the exit routes and lift openings. Rubbish bins, where provided, are fitted with self-closing lids;
- (d) The garden is not to be used for activities involving the use of naked fire e.g. barbecuing. A notice to this effect should be posted at prominent locations at the garden; and
- (e) Other criteria applicable to communal sky gardens specified in the JPN No. 1 are complied with.

Wholesale Conversion of Existing Buildings

3. Wholesale conversion of an existing industrial building or other types of buildings may entail the provision of a refuge floor in accordance with the MOE Code. To promote the provision of greenery for environmental enhancement, the BA is prepared to accept the incorporation of communal sky gardens in such refuge floors subject to compliance with paragraph 2 above. In view of the constraints posed by the original design of the existing building, the BA is also prepared to accept a refuge floor, including the main roof as a refuge floor, that does not meet the technical requirements prescribed in paragraphs 21.2 and 21.3 of the MOE Code and/or paragraph 18.2 of the FRC Code, subject to the provision of enhanced fire service installations to the satisfaction of FSD and the incorporation of suitable greenery within the refuge floor. If the main roof is used as a refuge floor, it should be designed as a green roof such that no less than 50% of the total roof area is planted with greenery¹ and the design complies with paragraphs 2(b) to (d) above.

Lift Access

4. Where sky gardens are incorporated in refuge floors, relaxation on the restriction to provide lift door openings onto such floors may be granted subject to the following:

- (a) The lift landing doors should open onto a protected lobby with doors having an FRP of not less than 1 hour and walls having an FRP of not less than 2 hours; and
- (b) The lift operation is arranged in such a manner that the landing doors at the refuge floor, other than those for fireman's lifts, will be automatically locked when the fire alarm is on.

Fire Service Installations

5. Where a drencher system is required at external wall openings, FSD may waive such requirement if the circumstances so justified on the merits of individual cases.

6. Further to paragraph 3 above, the following is an example of enhanced fire service installations that may be required by FSD to compensate for a deficiency in the refuge floor:

- (a) Water flow rate of the drencher system to cover all external wall openings of the refuge floor might have to be greater than 10 litres per minute per square metre as required by the Code of Practice for Minimum Fire Service Installations and Equipment. This will enhance protection against smoke travelling into the refuge floor through such external wall openings; and

/(b)

¹ Greenery in the form of a short grass turf suitable for foot traffic can be counted towards the net area for refuge.

- (b) Where a sprinkler system is required to protect the converted building, the sprinkler heads shall be of fast response type for early detection and suppression of fire so as to minimize the presence of smoke.

Landscape Works

7. While live plants are unlikely to pose undue fire risk², the use of artificial plants for decorative purpose should be avoided where possible. The Authorized Person should advise the management to ensure that any artificial plants and soil substrate materials are non-combustible and do not emit toxic gases in case of fire.

8. Greenery described in paragraph 3 above is restricted to live plants only. Subject to structural feasibility, plants with larger mature size are encouraged to enhance the greenery provision and amenity value of the sky garden. Reference can also be made to the “Study on Green Roof Application in Hong Kong Final Report” accessible from the website of the Development Bureau ([http://www.devb.gov.hk/filemanager / en / content_29/Green%20roof%20study_final%20report.pdf](http://www.devb.gov.hk/filemanager/en/content_29/Green%20roof%20study_final%20report.pdf)).

9. A maintenance and management manual for the landscape works should be made available for end-users to safeguard public hygiene and safety of the sky garden.

Early Consultation

10. The BA may impose additional requirements depending on the special circumstances of individual cases. Authorized Persons proposing sky gardens in refuge floors with very special design are advised to make early enquiries. FSD also welcomes any enquiries prior to formal submission of plans.

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² Live plants that are likely to be highly flammable (such as those secreting resinous sap or having volatile waxes or oils in their leaves, twigs and stems) should be used with caution.