

Notes on Provision of Green Roofs in School Buildings

Introduction

The following notes provide tips on the provision of green roofs in school buildings to ensure safety of the premises and their occupants.

New Installations in Existing School Buildings

2. Installation of a green roof will impose loading on building structures. The loading capacity of structural members in a building varies depending on the original design when the building was first built as well as the subsequent use, alterations and additions and maintenance conditions of the building throughout its life. A particular type and extent of green features may be feasible in certain locations but not the others. It is therefore important that professional advice from an authorized person (AP) and/or a registered structural engineer (RSE) registered under the Buildings Ordinance (BO) is sought prior to embarking on a proposal to install green roofs in an existing school building. Where no new building works is involved, application for prior approval and consent from the Building Authority would not be required. However, it should be assessed whether the capacity of the existing building structure is adequate for the work.

Assessment of Existing Green Roofs

3. If there was no greening facilities in the original design of the existing school buildings, and roof greening has been carried out without seeking prior professional advice from AP/RSE, the schools should take the following actions as described in paragraphs 4 and 5 below to ensure safety of the school premises.

4. The schools should consult AP/RSE as soon as possible under the following circumstances which may pose a higher risk to building safety:

- (a) greening on inaccessible roofs¹;

¹ Inaccessible roofs generally refer to roofs which are not intended for any activities and are only accessible using cat ladders or the like for carrying out maintenance works.

- (b) greening on long-span roof structures such as those commonly found in assembly halls, sports halls, canteens, large libraries etc.;
- (c) greening on cantilevered slab structures; or
- (d) where water ponds are provided on the roof.

5. Generally speaking, AP/RSE should also be consulted where accessible roofs² have been provided with roof greening and

- (a) stepping onto the greening area is allowed;
- (b) the soil depth exceeds 75 mm; or
- (c) there are signs of building defects on the ceiling below such as dampness, rust stains, corrosion of reinforcement, cracks or signs of distress, spalling, exposed reinforcement, etc. found in the ceiling below the green roof.

Maintenance of Green Roofs

6. Adequate fall and drainage outlets on the roofs shall be provided to avoid ponding of water which may overload the roofs. They should be maintained in good working order without defects. All such drainage provisions shall be inspected regularly and where leakage, blockage or defects are detected, they should be rectified immediately.

7. Regular inspection to the ceiling below the green roofs is required. If building defects or phenomena as described in paragraph 5(c) above are spotted, the school should enlist the professional advice from AP/RSE promptly.

8. Proper planning, design, installation and maintenance of green roof are essential to safeguard the structural safety of green roofs. Professional advice from AP/RSE should be sought in case of doubt.

Buildings Department
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² Accessible roofs generally refer to roofs where proper staircases have been provided.