

## **Facilities for External Inspection and Maintenance of Buildings**

### **Introduction**

Buildings do require inspection and maintenance or repair from time to time throughout their life. Many of the maintenance activities for the external building services and building elements need to be carried out at height outside the external walls of a building. Examples of these activities include maintenance and repair of external drainage pipes, window cleansing, re-painting of walls, overhauling of finishes and repairing of the fabric of the external structure.

### **Facilities to be Provided**

2. It is recognized that the availability of permanent access facilities would help to improve safety at work during external building maintenance. Authorized Persons (APs) and Registered Structural Engineers (RSEs) are strongly advised to consider, at the design stage of a project, incorporating such facilities for safe access to the external walls of buildings.

#### **Suspended Working Platform**

3. One of the common types of access facilities takes the form of a permanent suspended access system comprising a working platform suspended on ropes from a securely mounted overhead structure. Reference should be made to PNAP ADV-11 on the construction and maintenance of suspended working platforms.

#### **Gondola System (Suspended Working Platform)**

4. The Construction Industry Council has identified gondola system as one of the desirable safety design features which would be effective in providing safe access to external walls. APs and RSEs are strongly recommended to make provision for gondola system at the roof of new buildings, including residential projects, so that the workers can safely carry out maintenance and repair works outside the external walls of the buildings in future. Reference should be made to PNAP ADV-11 for the installation, use and maintenance of such system.

5. The design of gondola system to be installed at roof level of buildings should comply with the following guidelines/considerations :

#### *Planning Department's considerations*

/(a) .....

- (a) Gondola enclosures could be considered as rooftop utility structures and exempted from the calculation of height restriction if it could be demonstrated that the size is of the minimum to fulfill the functional requirements. In general, the height of rooftop utility structures should not exceed 15m beyond the main roof or 10% of the building height, whichever is the less.
- (b) The height of rooftop utility structures should also have regard to stipulated restrictions on the statutory town plans and such other considerations as the preservation of the view of ridgelines from vantage points.

*Lands Department's guidelines*

- (a) The relevant building height restriction under lease is complied with. Gondola enclosures could be considered as rooftop utility structures and could be exempted from the calculation of height restriction under lease if the size is not excessive.

*Buildings Department's guidelines*

- (a) The structural design of the supporting elements for the gondola system shall comply with the Buildings Ordinance, Building (Construction) Regulations and relevant codes of practice.
- (b) All structural supports, members and fixings for the gondola system shall be properly designed to withstand all combinations of loads imposed by the system and shall be subject to the Building Authority's approval. These structural elements shall either be corrosion resistant or protected with anti-corrosion system.
- (c) Adequate restraint shall be provided to prevent undue sway or motion of the gondola system on all areas of the façade of a building which can be exposed to wind.
- (d) Convenient and safe access to the gondola system shall be provided.

**Mechanical Booms or Anchorages**

6. Where a permanent suspended access system is not proposed, consideration should be given for the installation of mechanical booms or anchorages on the roof at suitable locations to facilitate the installation of a suspended access system at a later date. In addition, alternative permanent features (such as hooks, bolts, holes, platforms) at suitable locations for anchorage of temporary structures or scaffoldings should be provided to facilitate future external maintenance and repair works and at the

/same .....



same time, to provide better safety for the workers engaged in these works. All associated structural members, fixings and anchorages of facilities should either be corrosion resistant or protected with anti-corrosion system.

#### Cast-in Anchor Devices

7. APs and RSEs are also advised to provide cast-in anchor devices in the design and construction of new buildings. The anchors will provide for the direct attachment of personal fall protection systems and equipment for use of workers to prevent and/or arrest falls from height when working on the external walls of buildings during repair and maintenance works. For technical details of the location, design and installation of cast-in anchor devices as well as their operation and maintenance, reference should be made to the “Technical Guidelines On The Design, Installation & Maintenance Of Cast-in Anchors At External Walls Of New Buildings” published by the Construction Industry Council (which can be downloaded in its website <http://www.hkcic.org>).

#### Location of Access for Maintenance and Repair

8. As drainage and other service pipes are often placed in lightwells and re-entrants, APs are therefore advised to pay special attention on access for repair and maintenance when designing lightwells and re-entrants.

9. Access to the common facilities for maintenance and repair should preferably be through common areas of a building or areas which are designated in the Deed of Mutual Covenant for the purposes of inspection and maintenance. The lowest level of re-entrants and lightwells housing soil and waste pipes or stacks should be designated as common areas with access, including access through cat-ladder where appropriate, to facilitate maintenance and clearance of any refuse.



( AU Choi-kai )  
Building Authority

Ref : BD GR/1-115/8

This PNAP is previously known as PNAP 218

First issue April 1998

Last revision February 2010

This revision June 2012 (AD/NB1) – General revision and para 7 added