Air-Conditioning (AC) Platform combined with Balcony/Utility Platform (UP)

Latest updates from …

- APSEC Discussion Forum
- Technical Committee (TC) on the Code of Practice on Design for Safety – External Maintenance

Kelvin IP
Chairman, Buildings & Lands Committee, HKIA

15 Dec 2020

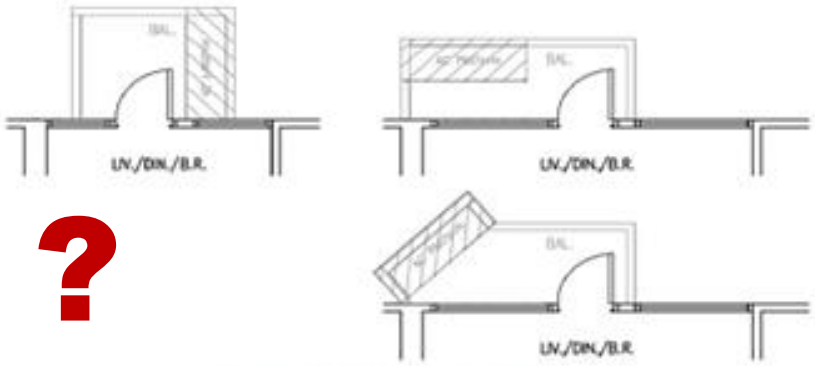


Figure 1: AC Platform in Balcony

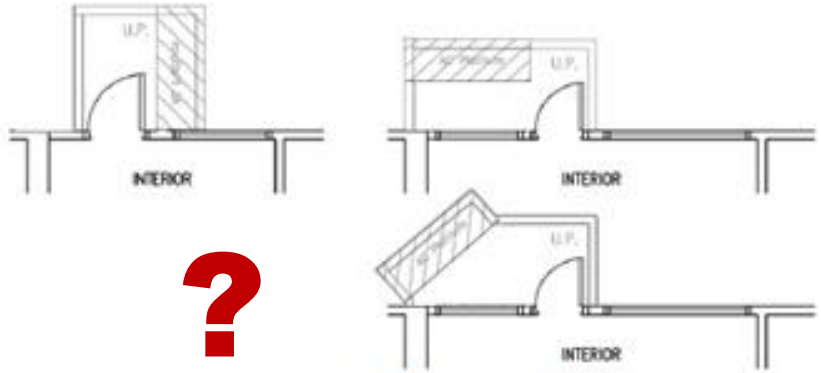


Figure 2: AC Platform in UP

Figure 3: AC Platforms in combined Balcony and UP
(one AC platform is also acceptable)

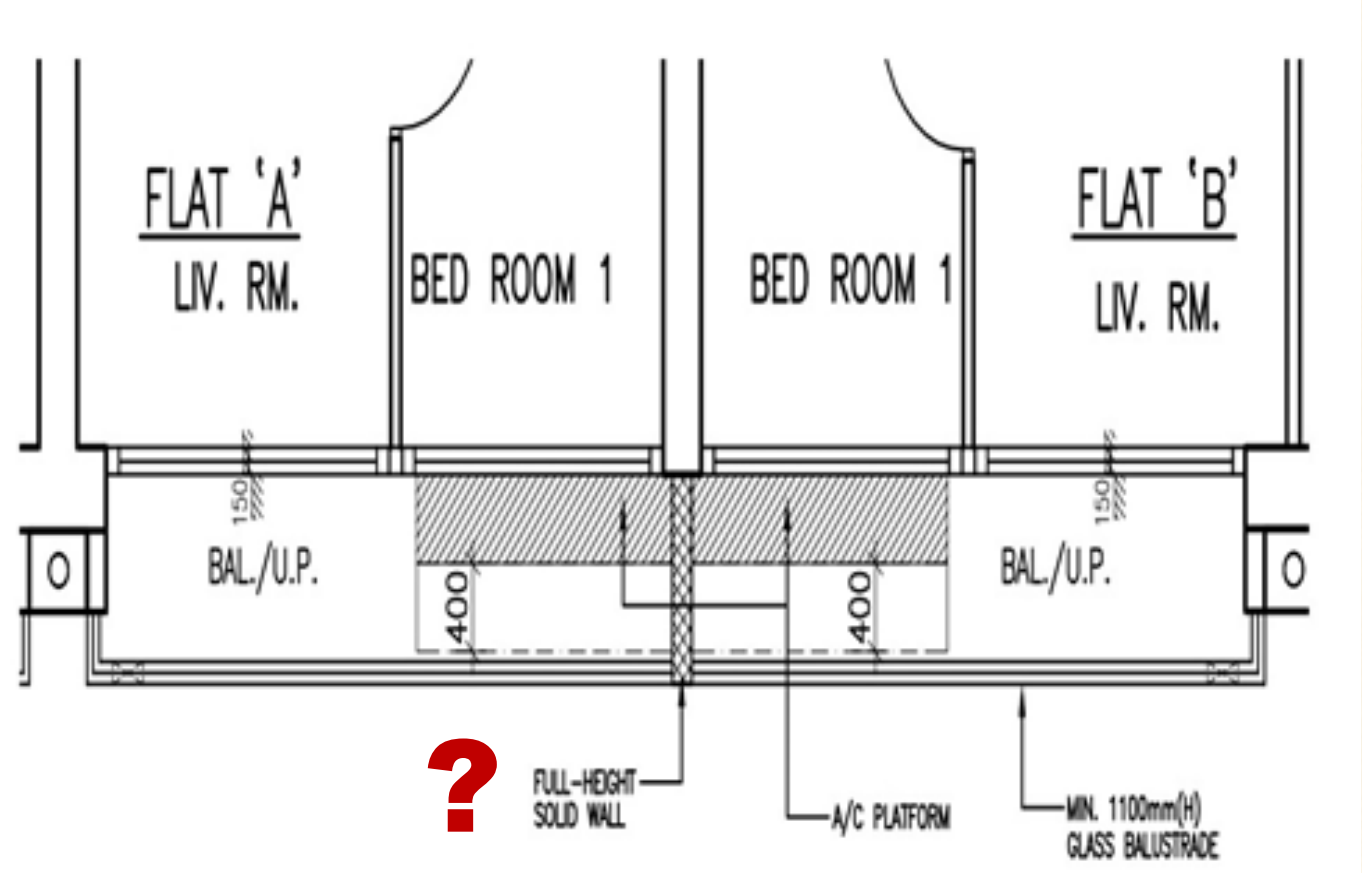
Item (a) of Appendix B to Design for Safety Code:
Should follow the disposition shown in Figures 1, 2 or 3 of the Code

Alternative dispositions may be acceptable, subject to:

- ✓ **Performance requirements of the Code complied with.**
- ✓ **Lighting/Ventilation requirements of habitable spaces NOT prejudiced.**

- ☐ Inclined AC platform renders length of **400mm working space < length of AC platform [item (d) of Appendix B]**
  → **NOT** acceptable ✗

- ✓ **Combined features may Co-exist with *AC Room* and/or individual *AC Box/Hood* at same building.**



*Can **short-side** of AC platform, if not for the purpose of air intake/exhaust, be of **solid design**, say a full-height solid wall?*

Screen provided at the <u>short-side</u> of AC platform should also be designed with 70% permeability, as different designs in intake & exhaust system of AC are available in market.

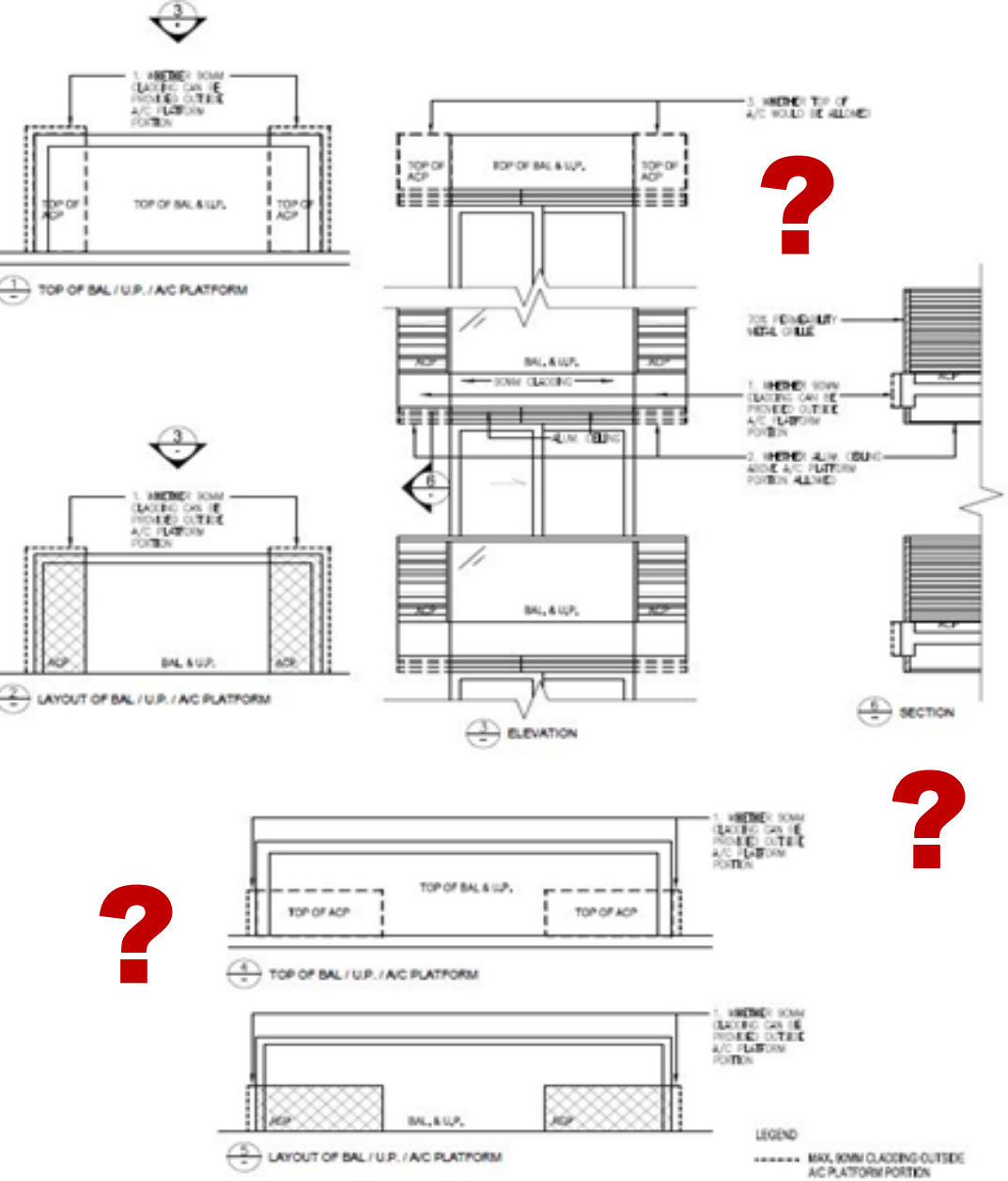


Figure 3: AC Platforms in combined Balcony and UP (one AC platform is also acceptable)

*A/C platform designed as an integral part of the Balcony/UP so as to achieve a coherent and decent outlook….**Acceptable??***

- ✓ ***Same external finishing*** **treatment (such as with 90mm thick cladding) along the outer perimeter of the combined balcony/UP/AC platform.**
- ✓ ***Aluminium ceiling*** **above the whole combined balcony/UP/AC platform.**
- ✓ **For the uppermost combined balcony/UP/AC platform, having a *top roof/cover* over the whole combined feature.**

Architectural Features ?? → on a **case basis** and subject to consideration at Buildings Committee.

[Subject to finalised summary of ADF to be issued by BD]

Item (g) of Appendix B of the Code:

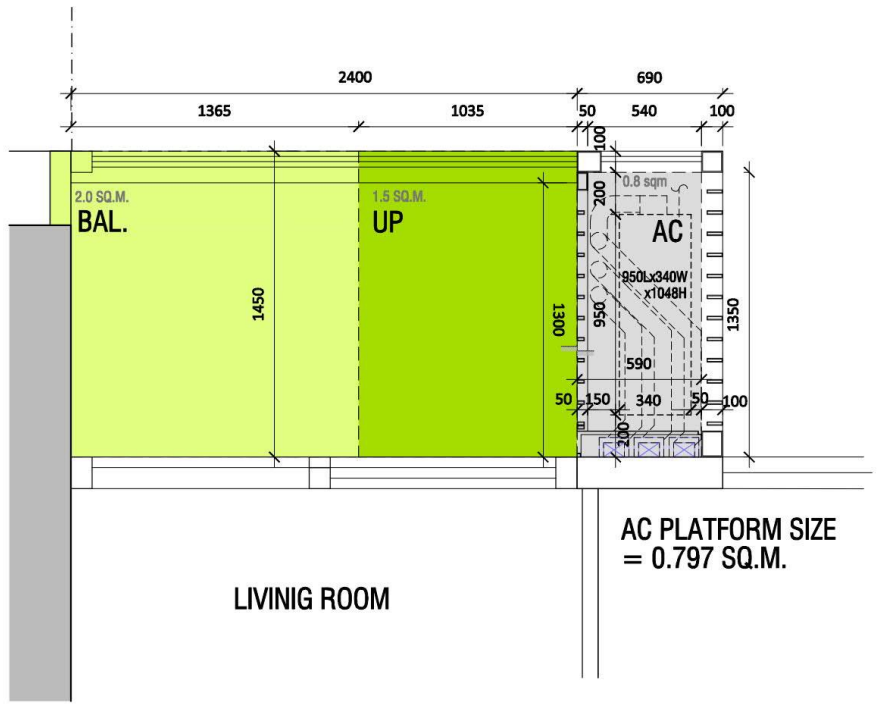
*Any **screens** provided at the **edge of the platform** should **NOT be higher than 1.1m** (1.6m for platform with stacked ACs) and should have permeability not less than 70%.*

Appropriate Amendments will be made to the Code by Buildings Department:

- **1.1m height requirement for the perimeter screen will be adjusted to not higher than the Parapet height of the adjoining balcony/UP.**
- **Parapet height of the corresponding balcony/UP is reasonable.**

Background

HKIA has carried out a lot of studies which illustrate that the **0.8m² platform area** (which **includes the perimeter screen**) is **NOT adequate** for accommodating outdoor units (together with associated fittings/accessories for proper running/configuration of refrigerant pipes) in most cases.



- **After deliberation at TC meeting, BD would NOT consider disregarding the AC screen from the 0.8sq.m. platform area.**
- **Rather, BD would consider allowing the inclusion of the perimeter AC screen as part of the Balcony or UP area.**

[Subject to final decision / jurisdiction of BD]

Item (b) of Appendix B of the Code:

*A minimum of **50mm raise in level** from the finished floor of the balcony/UP should be provided in the AC platform.*

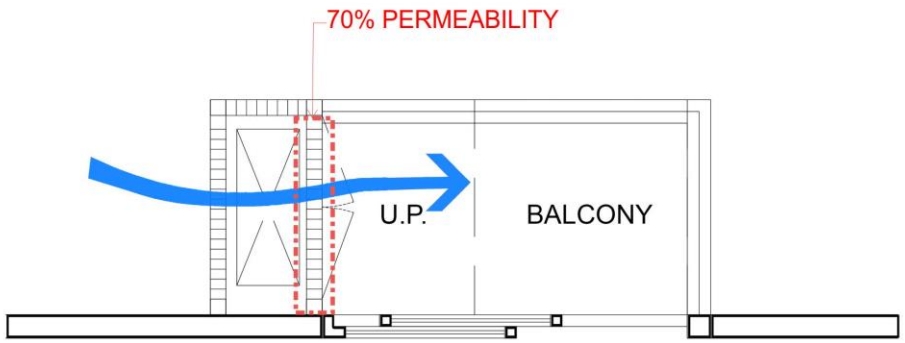
HKIA has proposed the following:

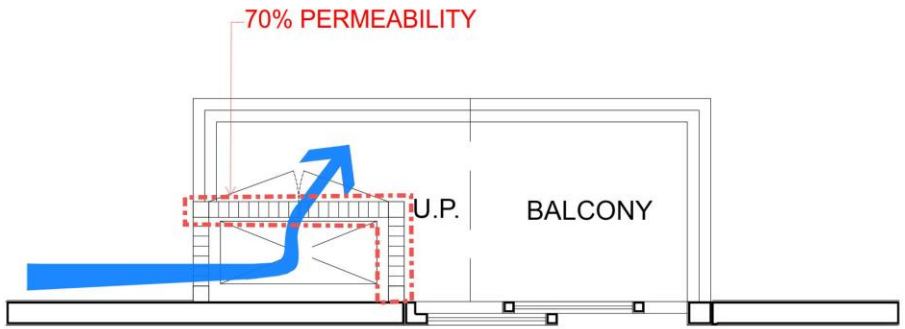
- **Understanding this requirement is to *mitigate chance of abuse* of the AC platform, other anti-abuse measures such as having the AC platform sunken below the finished level of the balcony/UP.**

- **Such alternative arrangement can also help to accommodate and screen-off those taller multi-split or VRV unit from protruding over the screen, hence avoiding unpleasant outlook.**

BD will further consider HKIA's proposal, subject to that *adequate drainage provision* to the combined features can be demonstrated.

[Subject to final decision / jurisdiction of BD]





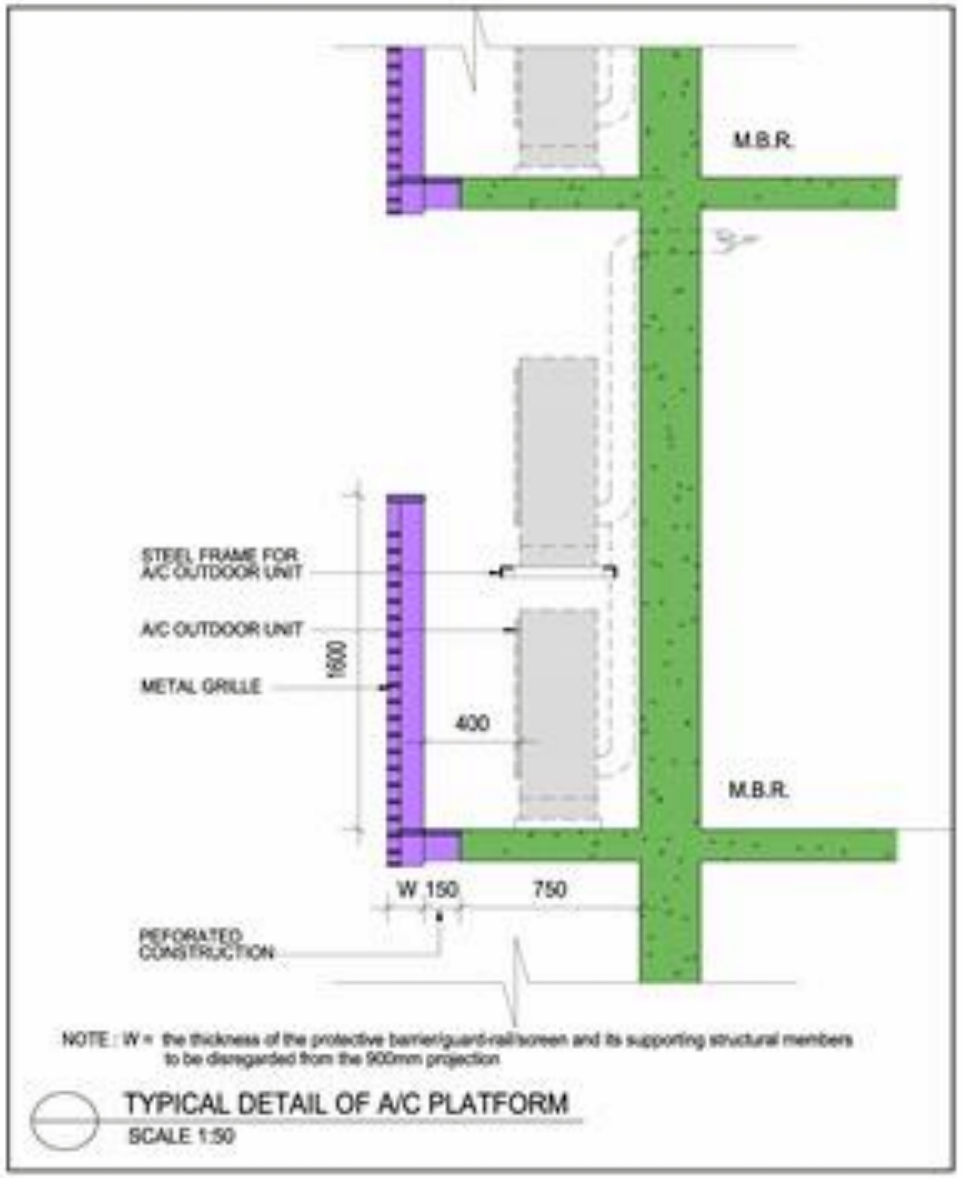
Background

- **Acoustic Balconies** are amongst the most common types of traffic noise mitigation measures, which require, inter alia, 1.2m high ***solid parapet wall*** **without gaps on all sides**.

- The **70% permeability** requirement of the **separating screen** is in fundamental ***conflict with the acoustics performance*** of the said acoustic balcony design.

- HKIA suggested that providing the performance of **the outdoor unit is not undermined**, there was **NO need to impose the permeability requirement** on the separating screen.

BD concerned about the ventilation/performance of the AC units, and inclined not to accept this arrangement at this stage.



At TC meeting dated 8.10.2020…

HKIA & HKIE raised that requirements on the **150 mm wide perforated construction for AC platform** projecting **more than 750 mm (**under paragraph 2(a) of Appendix C of the Code)…

→ *complicate structural design and construction.*
→ not in line with government initiatives on DfMA.
→ ***Recommend to Omit such requirement.***

After deliberation, TC accepted the recommendation.

[Subject to finalized summary of ADF to be issued by BD]

NOTE: Latest Amendments to COP for Structural Use of Concrete 2013

Clause 9.4.1 *"…Instead of pure cantilevered slab arrangement,* ***beam-and-slab*** *arrangement should be used for spans* ***exceeding 1200mm****……*
(d) 150mm for ***cantilevered slab*** *with span* ***greater than 750mm but not exceeding 1000mm****…."*

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THANK YOU

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