

UNITS OPENING ON TO OPEN BALCONIES V2

Fire and Security Consulting Services (FSCS) is frequently asked about the Regulatory requirements pertaining to openings from residential units on to open access balconies or walkways.

Background

For a Class 2 or 3 building of 3 stories or more, BCA Clause C3.11 and Specification C1.1 Table 3 requires the FRL between sole occupancy units (SOUs) and “public corridors” (balconies and walkways) to be -/60/60 for non loadbearing elements or 90/90/90 for loadbearing elements. However C3.11 section (g) allows for openings to SOUs to open balconies. The background to this concession was to allow light and ventilation for sanitary spaces which commonly abutted the balcony side of Housing Commission multi-storey residential units in NSW.

Whilst clause 3.11 (g) in the BCA allows openings from sole occupancy units on to balconies, this is only available where the balcony is open and the opening is protected in accordance with BCA C3.4 or, as depicted in Figure 1, the openings are at least 1,500mm above the floor. The door to the unit however, is required to be a self closing, tight fitting solid core door and the wall is required to be concrete or masonry or lined internally with a *fire protective covering*.

The rationale behind this concession is that where there is only one exit from the balcony and the escaping occupant has to pass openings into other units which may be involved in fire, the escapee can “duck” down beneath the window opening so as to avoid heat flux from the window opening.

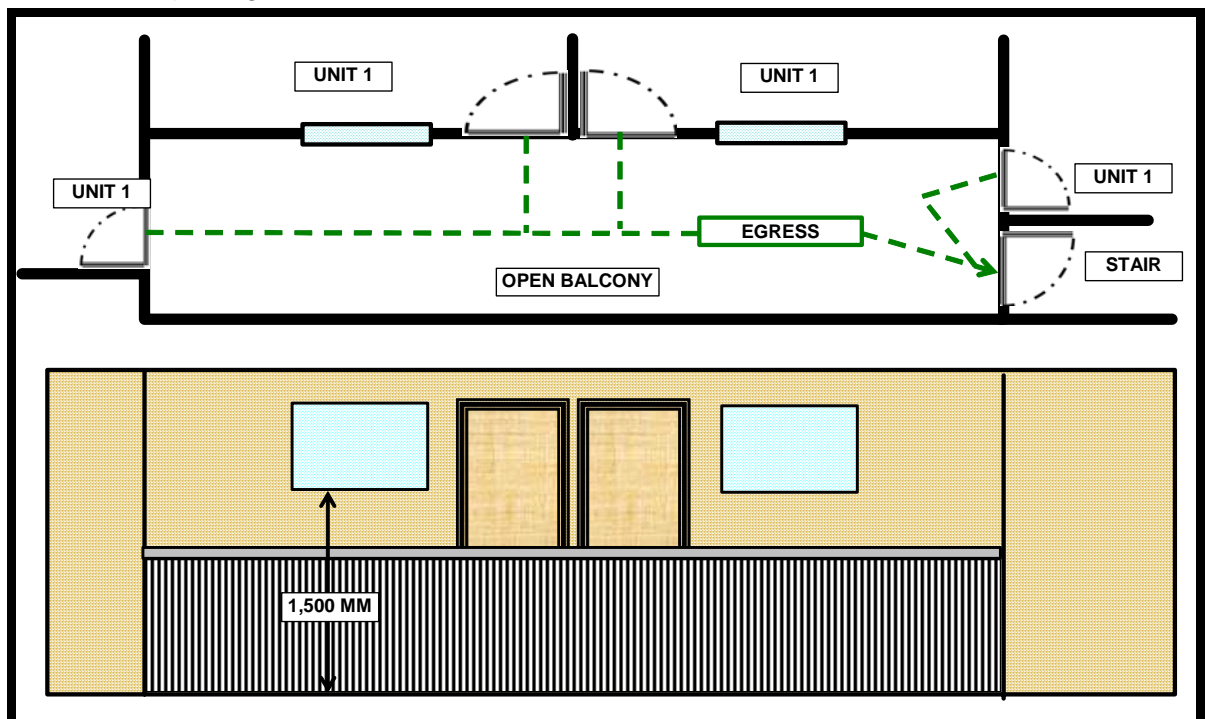


Figure 1 – BCA C3.11 (g) Concession for open balconies.

Extreme Interpretation

It is possible to interpret clause C3.11 (g) to the extreme by construction of the unit wall facing the balcony as a simple wall 1,500mm high as depicted in Figure 2 below. Moreover the wall is permitted to be of timber lined internally with 13mm fire rated plasterboard and the door need only be 1,500mm high! This extreme interpretation exists because the BCA does

not define the extent and size of the “windows” nor define the extent of “open” in relation to the balcony (for buildings under 25m in height).

The requirement for the door to be “tight fitting” is nonsensical where the window is permitted to be open.

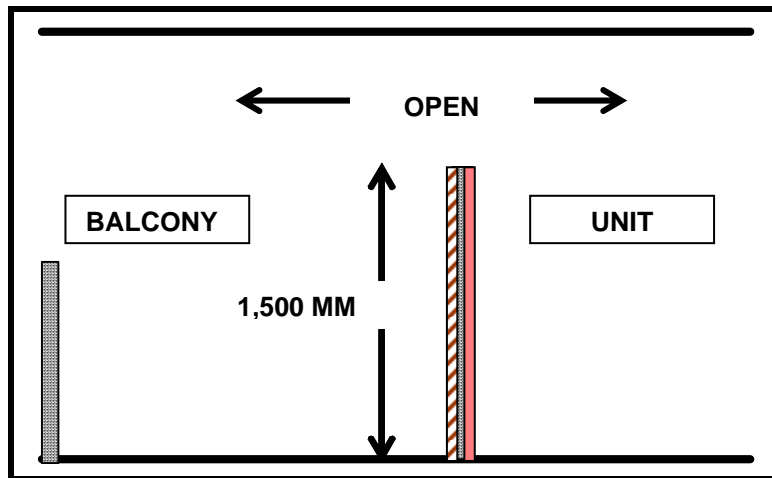


Figure 2 – 1,500mm high SOU Bounding Construction.

The author has had recent dealings with a new unit project where an almost identical scenario to that depicted in Figure 2 was constructed, with the exception that the wall was masonry and the door was full height, and was a fire door!. Photographs (Figures 3, 4 and 5) of that building follow. The portion of the unit immediately behind the 1,500mm high wall was a “courtyard” and the design was formulated to allow borrowed light and ventilation to be provided to the rooms in the unit next to the courtyard from the balcony.



Figure 3 – Open Balcony – Opening to Unit shown at left.



Figure 4 – View from inside the unit showing entry door and opening to the “courtyard”.



Figure 5 – View from inside unit showing entry door and opening to the “courtyard”. The foreground of this “courtyard” shows lockable windows and door to provide the necessary security

Building Code officials and many Certifiers have raised doubts as to the validity of this extreme interpretation of Clause C3.11 (g) and may ask that the design be assessed under the Performance Requirements of the BCA which would require the design to meet CP2, DP5 and EP2.2. This is especially so when the balcony is not entirely open.

Smoke Detection

A further issue arises with respect to partially open balconies in that it may be valid to suggest that as the balconies are “open” that smoke detection is not required in these areas as required by BCA Specification E2.2a Clause 4 (c) (ii) as these are not internal public spaces.

Recommendation

Fire and Security Consulting Services suggests that the building Certifier specifically assess compliance of this type of design and if considered a “non-compliance”, that an Alternative Solution be provided.

The Alternative Solution would model the expected fire conditions in the unit(s) and the flow of smoke into the egress path on the balcony and assess the tenability of the evacuation route as required under Performance Requirement EP2.2. In this assessment the design of the smoke detection and occupant warning system is usually required to be enhanced.

I trust that this paper provides timely and sensible advice as to the issues surrounding the BCA concession.

Prepared by:

Richard A Foster

Dip Mech Eng; Dip Mar Eng; MSFPE

Fire Safety Engineer

RPEQ Mechanical – 7753: Accredited by Board of Professional Engineers as a Fire Safety Engineer

Principal – Fire and Security Consulting Services



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