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File: 2007-206

12 October 2011

Thakral Holdings Limited
Level 12/ 301 George Street
SYDNEY NSW 2000

Attention: David Hogendijk,

Dear Sir,

RE: City One Development
Contribution to Wynyard Station Egress

Further to our letters of 2nd and 11th August and meeting on 4th August, we are pleased to provide further advice on the impact upon egress of the additional escalator at the George Street entrance and a total power failure scenario, where all escalators are stationary. Our letter of 2nd August provided advice regarding the contribution that the proposed City One Development can make to emergency egress from Wynyard Station. That advice assumed that escalators running in the direction of egress would continue to operate and that one escalator was out of service.

The National Fire protection Association (NFPA) Standard 130, Standard for Fixed Guideway Transit and Passenger Rail Systems, 2010 Edition, is an internationally recognised benchmark for egress provisions from railway stations and has been adopted by Railcorp in its own guidelines (SGFLS) and extensively used for new stations and upgrades of existing stations on the CityRail network. It also formed the basis of the egress system design for the new Epping to Chatswood railway stations. It should be noted that NFPA 130 permits the use of escalators for evacuation and this has been adopted in line with other CityRail stations such as ECRL, Chatswood and Parramatta. The advice provided herein is based upon this standard. NFPA 130 also provides criteria for the determination of exit capacity; these were summarised in our previous letter.

Applying the NFPA 130 calculation to a scenario where all escalators are stationary and one escalator is out of service (not used), we have calculated an exit capacity through the proposed City One Development of **790 people/min** (see attachment). The increased flow from the previous 768 people/min is due to the additional escalator at George Street providing greater capacity.

Thus it is possible to evacuate 3160 people in the 4 minutes nominated in NFPA 130 for platform evacuation and 6320 people in 8 minutes. This latter duration is considered to be conservative for evacuating people from a point of safety to open space.

Whilst it is not possible to accurately predict the future egress population for Wynyard Station, based on our considerable experience in evacuation calculations for railway stations, we would estimate the likely future egress population for Wynyard Station to be approximately 4000. On this basis, the egress capacity provided by the proposed City One Development corresponds to 158% of likely demand whilst both NFPA 130 and the BCA limit horizontal exit capacity to 50%.

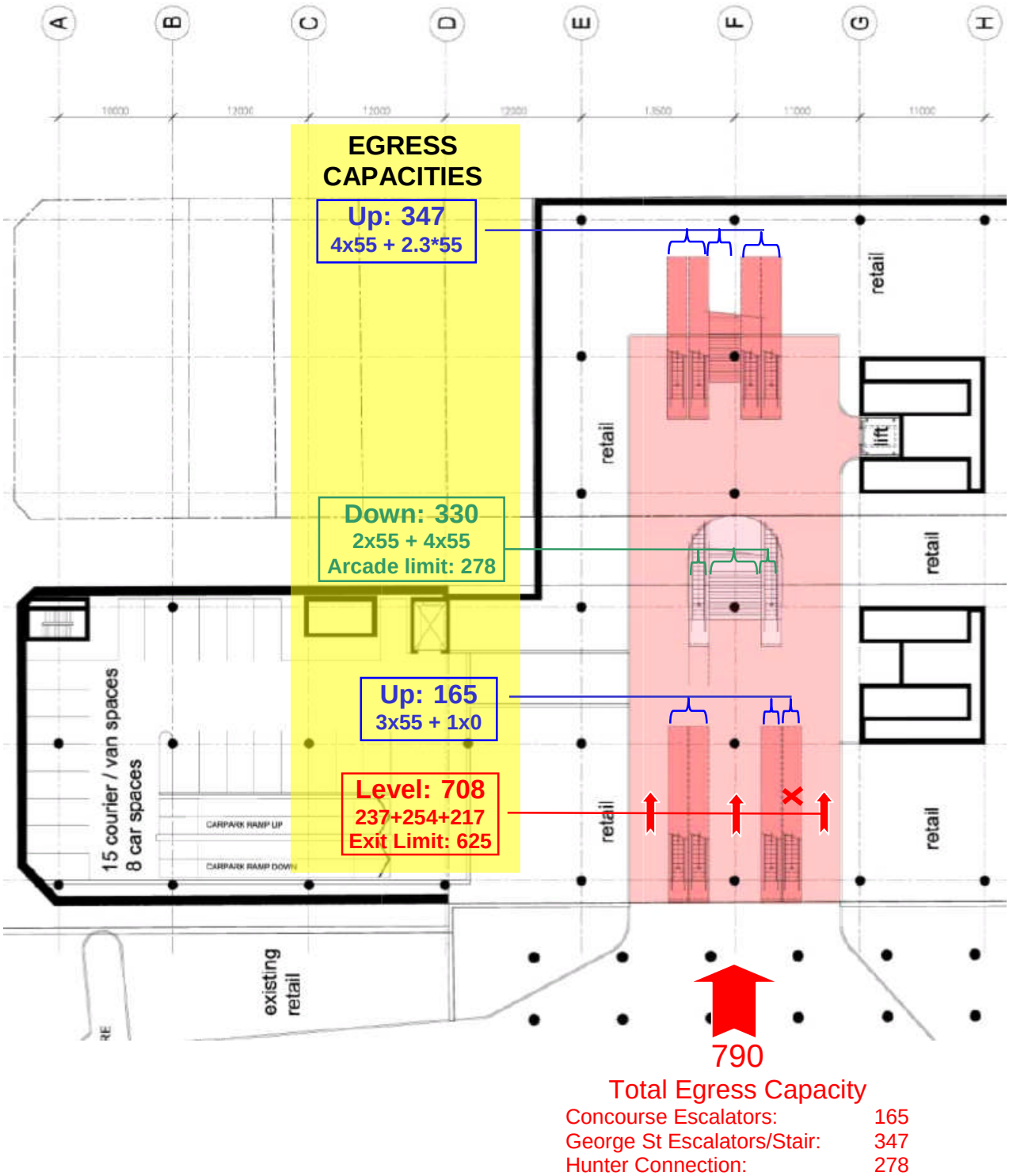
Putting aside the BCA and NFPA 130 limits on horizontal exits, all the exit capacity of Wynyard station can be met through the proposed City One Development even with stationary escalators. Whilst the BCA does not contemplate simultaneous evacuation of adjacent buildings the egress capacity provided is considered adequate to permit such simultaneous evacuation if the 50% horizontal exit limit is adopted.

In our opinion the proposed exit capacity of the City One Development is adequate to cater for the existing and likely future egress requirements of Wynyard Station through the proposed development.

Yours faithfully,

Stephen Grubits
Managing Director
for **Stephen Grubits & Associates Pty Ltd**

Attachment


A
B
C
D
E
F
G
H
EGRESS CAPACITIES
Up: 347
4x55 + 2.3*55
Down: 330
2x55 + 4x55
Arcade limit: 278
Up: 165
3x55 + 1x0
Level: 708
237+254+217
Exit Limit: 625
retail
retail
retail
retail
retail
lift
15 courier / van spaces
8 car spaces
CARPARK RAMP UP
CARPARK RAMP DOWN
existing retail
790
Total Egress Capacity
Concourse Escalators: 165
George St Escalators/Stair: 347
Hunter Connection: 278