



Ref; #8162/AB1

05<sup>th</sup> August 2020

Liz Yao  
**Frasers Property Australia**  
Level 2, 1C Homebush Bay Drive,  
Rhodes NSW 2138

**Ref: VT Services Provisioning for: Ivanhoe Apartments Stage 2 – Building C4,  
Epping Road, Macquarie Park, NSW.**

Dear Liz,

In regards to the Vertical Transportation (VT) Services Design requirements, we understand that ADG 4F-1 clause 2 states “for buildings of 10 storey and over, the maximum number of apartments sharing a single lift is 40”.

DSC have undertaken traffic analysis and initial design strategies for the lifts of the proposed Ivanhoe Stage 2 Building C4 development.

Although the lift design does not strictly comply with ADG 4F-1 clause 2, it does meet international design criteria outlined by Chartered Institute of Building Services Engineers (CIBSE) and the design of similar residential buildings.

Based on our experience and supported by professional legal opinion and discussions on similar buildings, it has been established that the ADG is a guide and can be deviated from should calculations be provided to show that the lift concept design meets international benchmark requirements.

Please find attached calculations for the development showing the lift configurations meeting the CIBSE Guide D 2019 performance criteria. On this basis, the quantity of lifts prescribed by the ADG would be an over provision in this instance and therefore the ADG non-compliance is justified.

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In Australia the lift waiting times and handling capacities are not governed by any standards or NCC/BCA requirements. Thus, the VT design has been developed to incorporate sufficient vertical transportation elements to achieve performance levels for a “Luxury” apartment type for the market tower and “Low Income” apartment type for the social towers, as referenced by the Chartered Institute of Building Services Engineer’s – (CIBSE) Guide D – “Transportation in Buildings” 2019 edition.

Occupancy Ratio's			
Apartment Type	Luxury	Normal	Low Income
Studio	1.0	1.5	2.0
1 Bedroom	1.5	1.8	2.0
2 Bedroom	2.0	3.0	4.0
3 Bedroom	3.0	4.0	6.0
Car Park	1 person / car with 25% churn during peak periods		

Residential elevators systems are required to provide a handling capacity of 5% to 8% of the buildings population and an “Average Waiting Interval” (AWI) of between 45 to 70 seconds during two-way traffic peaks.

Target Performance Levels as per CIBSE Guide D			
Apartment Type	Luxury	Normal	Low Income
Average Waiting Interval (seconds)	45-50	50-60	50-70
Balanced 2-Way Handling Capacity (%)	8%	6-8%	5-7%

We confirm average waiting times and handling capacities will be in line with requirements as summarised in Traffic Analysis Outcome Performance table below.

Traffic Analysis Outcome Performance Levels for Building C4			
Apartment Type	Luxury	Normal	Low Income
Average Waiting Interval (seconds)	Less than 45.00		Less than 60.00
Balanced 2-Way Handling Capacity (%)	8%		5-7%
Building Population	664		620
Lift Speed	2.50 m/s		1.75 m/s
Lift Capacity	3@1600kg		4@1600kg



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Please contact the undersigned should you need further assistance or clarification.

**Andrew Batynski**  
Vertical Transportation Engineer

**Donnelley Simpson Cleary**  
**Consulting Engineers Pty Ltd**