



15 June 2020

Julie Seong
Assistant Development Project Manager, Residential, Development
Level 14, Tower Three, International Towers Sydney
Exchange Place, 300 Barangaroo Avenue,
Barangaroo NSW 2000 Australia

Dear Julie,

Re: One Sydney Harbour, Building R4B Barangaroo South – Section 4.55(2) Modification Application for State Significant Development SSD 6965, Lift System & Performance

This modification application seeks consent for amendments to the total number of apartments, the apartment mix, layouts and car parking allocation. Design modifications are also proposed to the fenestration of the façade and to the podium rooftop landscaping.

Broadly, the following amendments are sought as part of this modification application:

- increase the number of apartments from 283 to 290;
- revised dwelling mix and internal layout changes;
- changes to the landscaped podium layout; and
- changes to the number of car spaces from 320 to 324.

The lift engineering for Building R4B Barangaroo South has been carried out by Lendlease Integrated Solutions Vertical Transportation Design Services and we confirm lift performance of the proposed lifts is commensurate with international global standards.

Lift Design Criteria

The international guides for Vertical transportation design are the Chartered Institution of Building Services Engineers (CIBSE) Guide D or The Vertical Transportation Handbook (Strakosch). Additionally Lendlease Residential have company benchmarks for luxury residential apartments which is higher than those of CIBSE and Strakosch.

The target performance levels in each of these guides is as follows:



Target Performance Levels						
Apartment Type	Lendlease Residential	CIBSE Luxury	CIBSE Normal	CIBSE Low Income	Strakosch Downtown	Strakosch Development
Interval (sec)	<60	45-50	50-60	60-70	40-60s	50-90s
Balanced 2-Way Handling Capacity (%)	10%	8%	6% to 8%	5% to 7%	5-7%	6-7%

Definition of Terms

The following definitions are important to provide background information to understand the way in which lifting systems are designed and measured in terms of quality and performance.

Two Way Traffic – This is where the dominant traffic flow is to and from the main floor of the building, the main floor is the primary entry and exit from the lifting system, in this case “Ground Floor”.

Handling Capacity - This is the percentage of the buildings population that can be transported in a five minute period, with the car load at no more than 80% of the cars designated capacity.

Average Interval – This is the average period of time between successive car departures from the main lobby.

Populations for a residential building are defined by the expected bedroom occupancy and are adjusted for the apartment building quality

	Occupancy Ratio's					
Apartment Type	Barangaroo South R4B	CIBSE Luxury	CIBSE Normal	CIBSE Low Income	Strakosch Downtown	Strakosch Development
Studio	1.5	1.0	1.5	2.0	1.5-1.75	1.75-2.0
1 Bedroom	1.5	1.5	1.8	2.0	1.5-1.75	1.75-2.0
2 Bedroom	2.0	2.0	3.0	4.0	3.0-3.5	3.5-4.0
3 Bedroom	3.0	3.0	4.0	6.0	4.5-5.25	5.25-6.0
4 Bedroom	4.0					

Traffic Studies

The design for each rise of the building were applied to Elevate (V8.27) using the general analysis mode and the results are presented below.

Building R4B Barangaroo South

Low Rise serving Ground and level 1 to 32 (DA Levels)
1 x 21 passenger and 2 x 18 passenger lift @ 4.0m/s
Average Interval 34.8sec for a 10% HC (two way)

High Rise serving Ground and level 33 to 57 (DA Levels)
1 x 21 passenger and 2 x 18 passenger lift @ 6.0m/s
Average Interval 30.8sec for a 10% HC (two way)

Each rise extends to basement for carpark pickups

Passenger Lift Provisions

Lift Type and Capacity

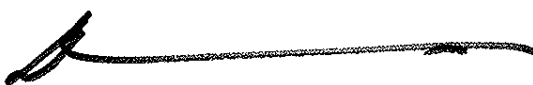
- The passenger lifts in all Lendlease residential buildings are a minimum of 17 person with car dimensions 1400mm wide x 2000mm deep x 2500mm high (clear internal) to allow for the requirements of the BCA DDA provisions, stretcher capabilities and movement of furniture such as king sized beds
- Additionally one lift in each rise of Building R4B has been increased to 21 person (1600w x 2000d) to provide additional space for larger furniture and building plant
- Doors are at a minimum 1100mm wide x 2100 high
- Group collective operational control
- Lifts are designed to comply with the requirements of the SAA Lift Code AS1735, Workcover Authority and the NCC.
- Lifts will incorporate facilities for persons with a disability to comply with AS1735 Part 12 (NCC Compliance)

Conclusions

Building R4B vertical transport provisions result in commensurate or greater performance than international benchmarks for luxury apartments.

Should you require further information please don't hesitate to contact me.

Yours Sincerely

A handwritten signature in black ink, appearing to read "Ian S Robinson".

Ian S Robinson
Technical Manager – Vertical Transportation, Integrated Solutions
Lendlease