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Technical Note

Project title	Cockle Bay Park
Job number	283566
File reference	
cc	Sam Hui - TSA Management Mark Turner - TSA Management
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Subject	Pyrmont Bridge Capacity for Peak Event

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1. Introduction

A new configuration of the vertical transport connection between Pyrmont Bridge and the Cockle Bay Park landbridge has been proposed. During the review of the new design, Place Management NSW raised a query as follows:

"Consider how the proposed stair and two lifts will operate during peak usage i.e., major event mode and ensure adequate capacity to deal with significant people numbers."

The following memo outlines the review of pedestrian capacity at the new stair connection. It provides an outline to the stair capacity when considering conditions that could occur during different phases of an event (i.e. post-event egress). No testing of discrete event scenarios has been undertaken, however, the outputs provide an indication of performance under very busy conditions.

2. New Stair Connection Review

Consultation and design development on the Pyrmont Bridge to landbridge connection has identified that heritage and structural considerations are driving the desire to remove the escalators from the proposed design. The new design includes a 7.5m wide stair and two lifts connecting the Pyrmont Bridge and landbridge, shown in Figure 1 below.

It is understood that Place Management NSW is broadly supportive of the proposed stair and lift only connection. They are seeking additional clarification on how the stair will meet the needs of pedestrian movement in events.

Figure 1 New stair connection between Pyrmont Bridge and landbridge

The Pyrmont Bridge to landbridge connection has previously been assessed (File Reference: 00-07) as part of pedestrian movement through the precinct of which movement during event egress was a key consideration.

It is noted that Cockle Bay Park is located in a precinct that hosts public events and is a venue that is expected to host events itself. It is expected that an event hosted within the Cockle Bay Park precinct would be the most onerous for pedestrian movement profile through the new stair. Events in the wider precinct/promenade will have a wider dispersion and flatter profile due to distance. Events within the Cockle Bay Precinct will egress directly to the Pyrmont Bridge via the stair (amongst other egress routes) and therefore have a higher surge profile. The peak event for movement on the landbridge vertical transport would be an egress from a combined event held in the Northern Park lawn and Crescent Garden lawn (refer to Figure 2).

Figure 2 Spaces considered for pedestrian congregation during a combined event

The review considers the relationship between the egress (existing) demand and the exit capacity over a set period of time. The exit capacity should exceed the demand to ensure minimal queuing.

A high-level review was undertaken to understand the egress capacity from the site relative to the standing capacity in the parks. The following assumptions and inputs were used:

- Spatial capacity for the parks, assuming 0.5m^2/person:
  - Northern Park oval is approximately 4,000 people.
  - Crescent Garden is approximately 2,900 people.
  - Combined capacity of both parks is approximately 8,738 people.
- Only publicly available routes to the east and west are available for egress movement. Routes through the buildings are not available.
- No egress is occurring from the Cockle Bay Park buildings while park event egress is occurring.
- Review considers stair use only. It is noted that two lifts are provided between Pyrmont Bridge and the landbridge and would be expected to be available for use during egress those needing step free access to Pyrmont Bridge.

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- The egress capacity is based on the Guide to Safety at Sports Grounds (the "Green Guide") flow rates and that a fully loaded event would be able to egress within 8-minutes.
- The combined 8-minute egress capacity for leaving the parks is approximately 8,738 people.
- Therefore, the egress capacity exceeds the event egress demand and is therefore considered to have sufficient capacity.

It is also noted that the event review of the previous design (two escalators and ~4m stair) considered that the escalators would not be available for egress movement. Therefore, the proposed 7.5m stair represents an increase in egress capacity for peak event compared to the previous design.

DOCUMENT CHECKING

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