



Planning & Environment

ASSESSMENT REPORT: Crown Sydney Hotel Resort Barangaroo South (SSD 6957)



Secretary's Environmental Assessment Report
Section 89E of the *Environmental Planning and
Assessment Act 1979*

March 2016

ABBREVIATIONS

Applicant	Crown Sydney Property Pty Ltd, or any other person or persons who rely on this consent to carry out the development that is subject to this consent
CIV	Capital Investment Value
Commission	Planning Assessment Commission
Concept Approval / Concept Plan	Approved Concept Plan for the redevelopment the site (MP 06_0162)
Consent	Development Consent
Council	City of Sydney Council
Department	Department of Planning and Environment
EIS	Environmental Impact Statement and accompanying appendices prepared by JBA Urban Planning Consultants Pty Ltd and dated July 2015
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPA	Environment Protection Authority
EPI	Environmental Planning Instrument
Minister	Minister for Planning
MOD8	Modification number eight of the Concept Approval MP 06_0162
OEH	Office of Environment and Heritage
RMS	Roads and Maritime Services
RtS	Response to Submissions report and accompanying appendices, prepared by JBA Urban Planning Consultants Pty Ltd and dated October 2015 and Further Response to Submissions report dated 16 February 2016.
RtDAP	Response to DAP report prepared by Crown Resorts dated 16 February 2016
SEARs	Secretary's Environmental Assessment Requirements
Secretary	Secretary of the Department
SEPP	State Environmental Planning Policy
SRD SEPP	<i>State Environmental Planning Policy (State and Regional Development) 2011</i>
SSD	State significant development
SSP SEPP	<i>State Environmental Planning Policy (State Significant Precincts) 2005</i>
TfNSW	Transport for NSW

Cover Photograph: View east, across the harbour, towards the proposed building (Source: EIS)

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EXECUTIVE SUMMARY

This report provides an assessment of a State significant development application (SSD 6957) lodged by Crown Sydney Property Pty Ltd (the Applicant) under Part 4 of *Environmental Planning and Assessment Act 1979* (EP&A Act). The application seeks approval for site remediation, excavation and the construction, fit-out and use of a 71-storey (RL 275 metre) building providing for a hotel, restricted gaming facility, residential and retail uses, basement car parking and signage at Barangaroo South, within the City of Sydney Local Government Area.

On 20 October 2015, the Applicant included the works proposed by the Stage 1C application, SSD 6956 (i.e. remediation, earthworks, excavation and structural works, including installation of perimeter walls) into the Crown Sydney Hotel Resort (CSHR) application, SSD 6957. These works therefore now form part of the assessment of the current application.

The CSHR and Stage 1C applications were publicly exhibited between 23 July 2015 and 24 August 2015. The Department received a total of 45 submissions in response to the CSHR application (comprising 30 submissions from the general public and 15 submissions from government authorities) and 13 submissions to the Stage 1C application (all from government authorities, with none from the public). The City of Sydney, Leichhardt Council and Alex Greenwich MP objected to both applications.

The key issues raised in the submissions include permissibility under the Concept Approval, height and scale, architectural design, impact of ground level licensed area, traffic impacts, loss of open space, overshadowing, wind and obstruction of constellations as viewed from Sydney Observatory.

The Barangaroo Design Advisory Panel (DAP) was established in April 2015 to provide the Department with independent expert urban design advice to assist the Department in its assessment of the CSHR application. The DAP's final report was submitted to the Department on 18 November 2015 and made 12 recommendations. The key recommendations include:

- review the footprint of the podium to create a more generous public domain and design the licensed area to be legible as public and accessible space;
- greater design resolution between the podium and the upper and mid-tower components and refinement of form/proportions to achieve greater slenderness in the tower;
- no branding signage should be located on the building above podium level and public access should be provided at upper levels of the tower; and
- reassessment of the location of the porte-cochere and northern façade to support a strong and pedestrian safe relationship with Hickson Park and Central Parklands.

The Applicant submitted its Response to Submissions (RtS) providing additional information to address the concerns raised during the exhibition and respond to key issues. The Applicant also submitted a response to the DAP's report (RtDAP) and amendments were made to the design of the western and southern podium elevations.

The Department has considered the merits of the proposal in accordance with the relevant matters under section 79C, the objects of the *Environmental Planning and Assessment Act 1979*, the principles of Ecologically Sustainable Development, issues raised in submissions and the DAP's recommendations. The Department is satisfied that the proposal is generally consistent with the citing, height, scale and GFA requirements of Block Y of the Barangaroo Concept Plan (as proposed to be modified by MOD 8). The Department's assessment acknowledges that the Barangaroo 'Built Form Principles and Urban Design Controls' have not yet been updated. However, it concludes, given the generally minor nature of the recommended changes that the absence of the finalised document does not prevent the Department from being able to determine the appropriateness of the development.

The Department's assessment concludes that the CSHR would achieve design excellence as its shape, form and use of materials provide for a distinct and iconic landmark building, it responds

appropriately to the surrounding public domain, has minimal impact on view corridors and the design implements a variety of environmentally sustainable measures.

Having regard to the DAP's recommendations and the Applicant's response to the DAP's recommendations, the Department's assessment has concluded that the building podium will comprise a sophisticated design, is appropriately articulated and is visually segmented to ensure it has an appropriate human scale and relationship with the public domain. The shape and form of the tower is elegant and slender, the materials are of a high quality and the three key components of the building form a cohesive structure that will result in a distinct and iconic landmark building.

The Department also concludes that 500 on-site non-residential car parking spaces will be generally sufficient and that there is sufficient capacity within nearby public car parks to accommodate any additional CSHR patrons (during the Friday to Sunday peak periods) should they be required. The construction and operational traffic generated by the proposal will also have an acceptable impact on the surrounding road network.

The Department is satisfied that the land will be remediated in accordance with the requirements of SEPP 55 and that it will be rendered suitable for its intended future uses. Furthermore, proposed construction and operational noise impacts are reasonable given the circumstances of the site and distance from sensitive receivers. Operational noise from mechanical plant will be limited and appropriate hours of operation have been applied to the uses within the building.

The Department has considered the amenity of the building for future residents, including balcony size and design, building depth and access to sunlight, ventilation, deep soil planting, hotel amenity, overshadowing and noise, and is satisfied that the impacts have been satisfactorily addressed within the Applicant's EIS, RtS and the Department's recommended conditions.

The Department supports the proposed signage and is satisfied that future signage within signage zones will be capable of being appropriately positioned and integrated into the design of the building.

The proposal will form an integral part of the development of the Barangaroo South precinct and will provide significant public benefit through the provision of new hotel, tourist, residential accommodation and significant employment opportunities. The Department therefore concludes that the proposal is in the public interest and recommends that the application be approved, subject to conditions.

1. BACKGROUND

1.1 Introduction

The application seeks approval for site remediation, excavation and the construction, fit-out and use of a 71-storey (RL 275 metre) building, providing for a hotel, restricted gaming facility, residential and retail uses, basement car parking and signage at Barangaroo South.

1.2 The Barangaroo Site

The Barangaroo redevelopment is a major urban renewal project located along the north-western edge of the Sydney CBD within the City of Sydney LGA. The site is bounded by Sydney Harbour to the north and west, Hickson Road to the east and King Street Wharf/Cockle Bay/Darling Harbour to the south.

The Barangaroo site has a total area of approximately 22 hectares along the harbour foreshore and has been divided into three distinct redevelopment precincts (from north to south) comprising the Headland Park (now called Barangaroo Reserve), Barangaroo Central, and Barangaroo South (refer to **Figure 1**).



Figure 1: The location of Barangaroo and the three Barangaroo development precincts (Base source: Nearmap)

1.3 The Subject Site

The site is located at the north-western corner of Barangaroo South and is bounded by Lime Street to the east and Darling Harbour to the west. The land to the north and south is currently comprised of concrete and bitumen hardstand, which includes structures and uses supporting the Barangaroo construction processes. In the future, these sites are proposed to be developed into public open

space (to the north) and Watermans Cove (to the south). The site has a total area of 12,651sqm, which is comprised of the following three components:

- building site area – 6,204sqm;
- underground basement works beyond the building footprint – 5,062sqm; and
- ground level outdoor seating licensed area – 1,385sqm.

The site is generally flat and devoid of any land or marine based vegetation. It is surfaced with a concrete bitumen hardstand, and much of the site is currently occupied by storage areas for construction materials and equipment.

The site and its surroundings are shown at **Figures 2 and 3**.

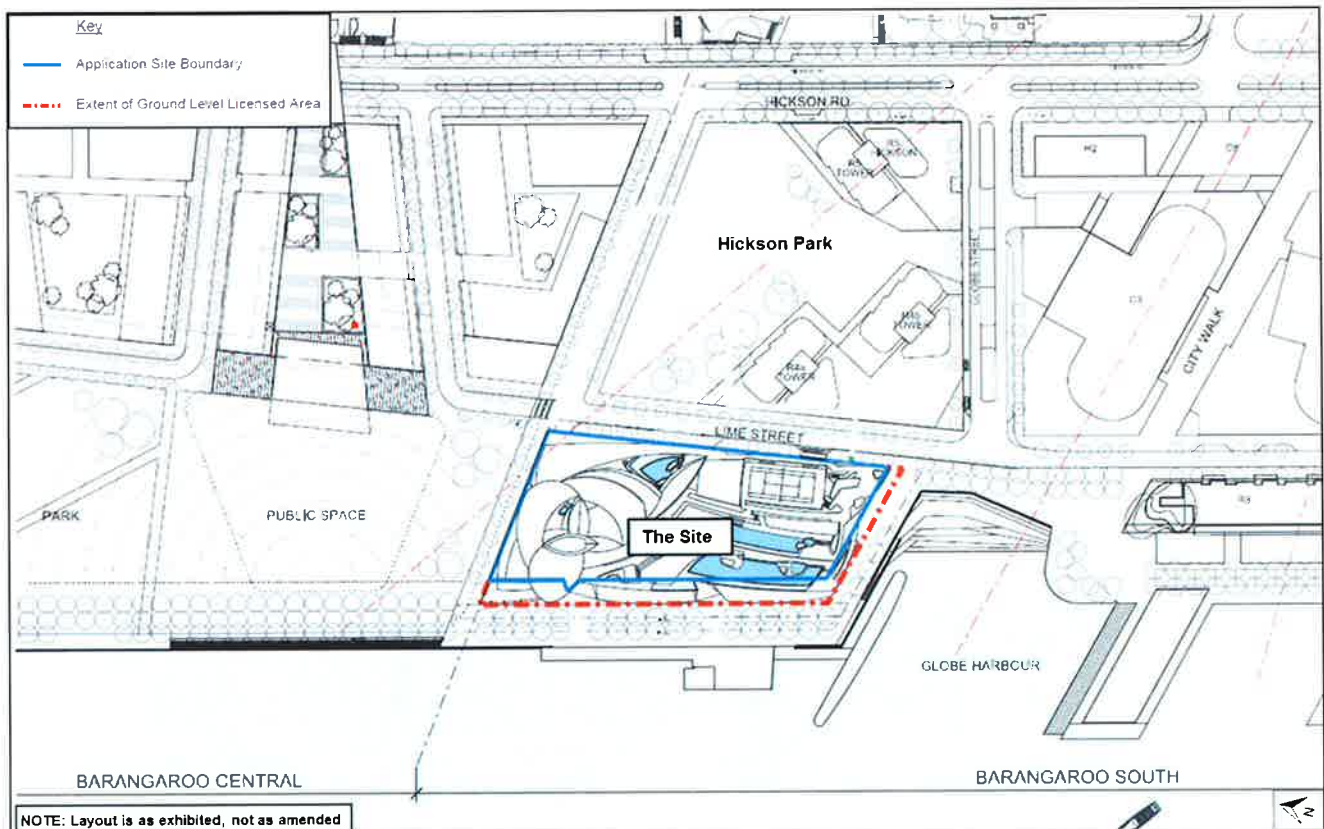


Figure 2: The subject site and its proposed future surrounding context (Base source: Applicant's EIS – as exhibited)

1.4 Approved Barangaroo Concept Plan

On 9 February 2007, the then Minister for Planning approved a concept plan (MP 06_0162) for:

- mixed use development involving a maximum of 399,800sqm GFA, including:
 - maximum 388,300sqm within eight development blocks;
 - maximum 8,500sqm passenger terminal; and
 - minimum 3,000sqm active uses within the public recreation zone.
- maximum building heights and built form design principles;
- approximately 11 ha public open space/public domain and a 1.4km foreshore promenade;
- alteration of the existing seawalls and creation of a partial new shoreline to the Harbour; and
- underground car park beneath the northern headland park for 300 car parking spaces.

Since its original approval, the Concept Approval has been modified on seven occasions as summarised in **Table 1**.

Table 1 – Modifications to approved Concept Plan MP06_0162

Mod No.	Summary of Modification	Approved
Mod 1	Administrative changes to the approval and re-wording design excellence terms.	25 Sep 2007
Mod 2	Increase of 120,000sqm GFA of commercial uses in Block 2, 3, 4 and 5 (Barangaroo total 509,800sqm).	16 Feb 2009
Mod 3	Reduction of 18,800sqm GFA to 489,500sqm. Reinstatement of a headland at the northern end of the site and enlargement of the northern cove to achieve a greater naturalised shape, form and edges. Removal of development Block 8 and part of Block 7 and redistribution of the associated land use mix and realignment of Globe Street.	11 Nov 2009
Mod 4	Enlargement of Concept Plan area into Sydney Harbour, redistribution of land use mix and increase of maximum GFA by 74,465sqm to 563,965sqm, including: <ul style="list-style-type: none"> • a maximum of 128,763sqm of residential uses • a maximum of 50,000sqm of tourist uses GFA; • a maximum of 39,000sqm of retail GFA; • revision of built form controls and urban design principles; • increase of building heights and establishment of maximum building heights for Blocks X and Y; • removal of passenger terminal; and • increase in community uses and provision of a cultural centre. 	16 Dec 2010
Mod 5	Administrative changes	Withdrawn
Mod 6	Realignment of development block boundaries of Blocks 3, 4A and 4B and associated revision of urban design controls, amendment of bicycle parking rates and design excellence provisions	25 Mar 2014
Mod 7	To make concrete batching plants a temporary permitted use.	11 Apr 2014

1.5 Modification 8 of the Barangaroo Concept Plan

The Department has referred a section 75W modification application (MP 06_0162 MOD 8) to amend the Barangaroo Concept Plan (hereafter referred to as MOD 8) to the Planning Assessment Commission (the Commission). MOD 8 proposes the following alterations:

- increase the total site-wide maximum GFA from 563,965sqm to 605,911sqm by adjusting the GFA allocated to Barangaroo South;
- amended site boundary, urban structure, layout and land-uses and maximum height limits (RL) of development blocks at Barangaroo South;
- alteration of public domain areas, including Globe Square;
- increase of car parking; and
- revised Design Guidelines to guide the future development within Barangaroo South.

The Crown Sydney Hotel Resort (CSHR) site is located at Block Y of the Barangaroo Concept Plan. MOD 8 provides the following key changes to the development parameters for Block Y:

- relocation of Block Y from a pier over the harbour to the land adjacent to the waterfront;
- increase of the total maximum tower height by 105m (from 170m to RL 275m);
- increase of the total maximum GFA by 44,500sqm (from 33,000sqm to 77,500sqm); and
- inclusion of an indicative number of car parking spaces for the Block Y hotel (including gaming facility) of 500 spaces.

The current application for the CSHR relies on the changes proposed by MOD 8.

The Department notes that MOD 8 has been concurrently referred to the Commission for determination. As discussed in **Sections 3.2 and 5.2**, the CSHR proposal is consistent with MOD 8.

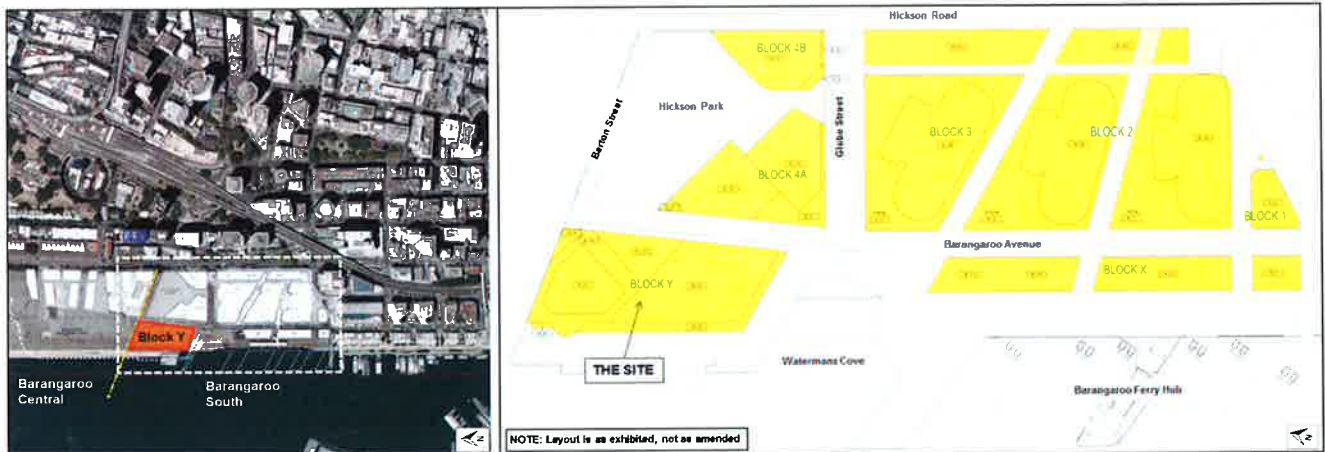


Figure 3 The location of the site in relation to the surrounding area (left) and MOD 8 block layout (right) (Base source: Applicant's EIS – as exhibited)

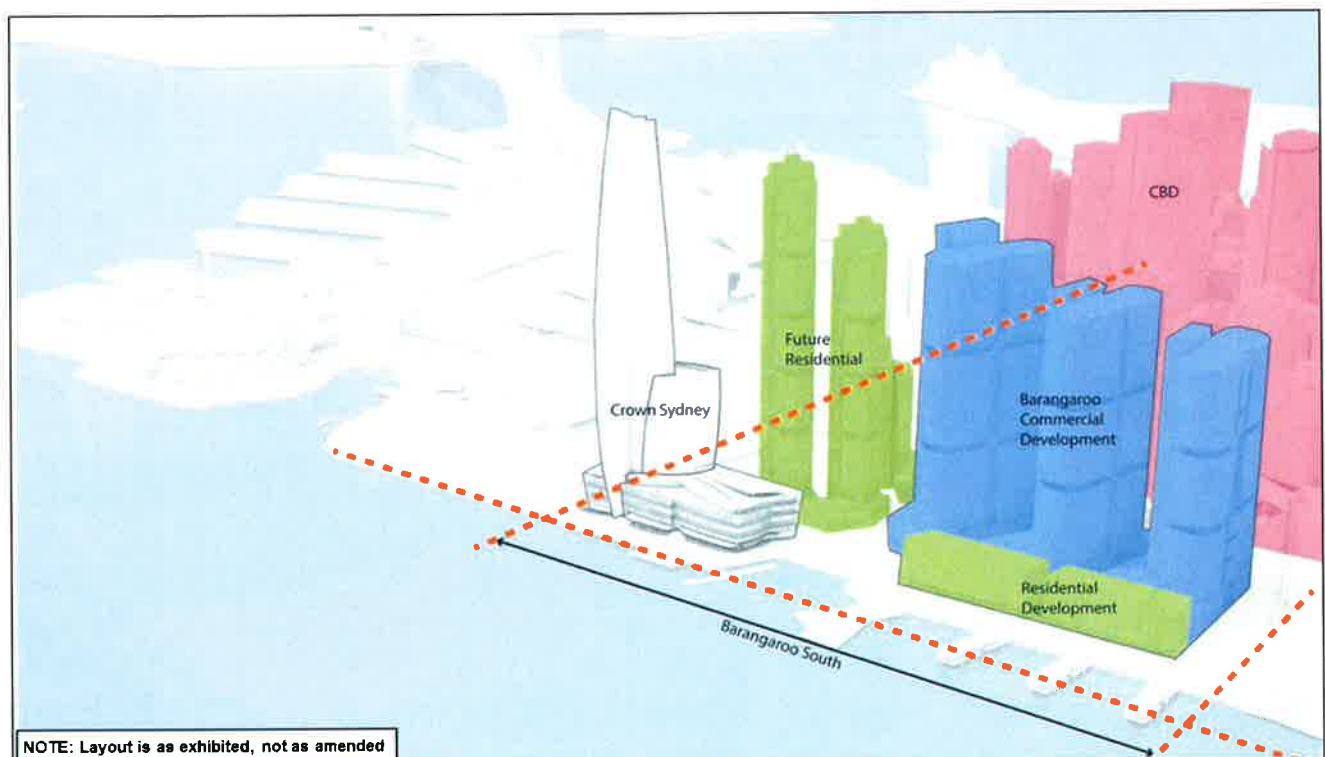


Figure 4 3D perspective view of the proposed Crown Sydney Hotel Resort in relation to MOD 8 development block layout (Base source: Applicant's EIS – as exhibited)

1.6 Current Construction Works at Barangaroo South

Pursuant to the Barangaroo Concept Plan, a number of other key approvals have been issued to date for development at Barangaroo South, including:

- commercial building C2;
- commercial building C3;
- commercial building C4;
- commercial building C5;
- residential buildings R8 and R9;
- bulk excavation and basement car park;
- block 4 and 5 remediation works;
- stage 1A permanent public domain works;
- ferry hub; and
- retail building R7.

The works associated with these approvals are located within the southern part of Barangaroo South (which is known as Stage 1A) and are either currently under construction or have already been completed (refer to **Figure 5**)

Additionally, the Stage 1A Permanent Public Domain Works includes the provision of all permanent ground treatments and finishes, landscaping, furniture and fixtures, public domain structures, lighting, civil and stormwater infrastructure and utility services for Stage 1A of Barangaroo South.

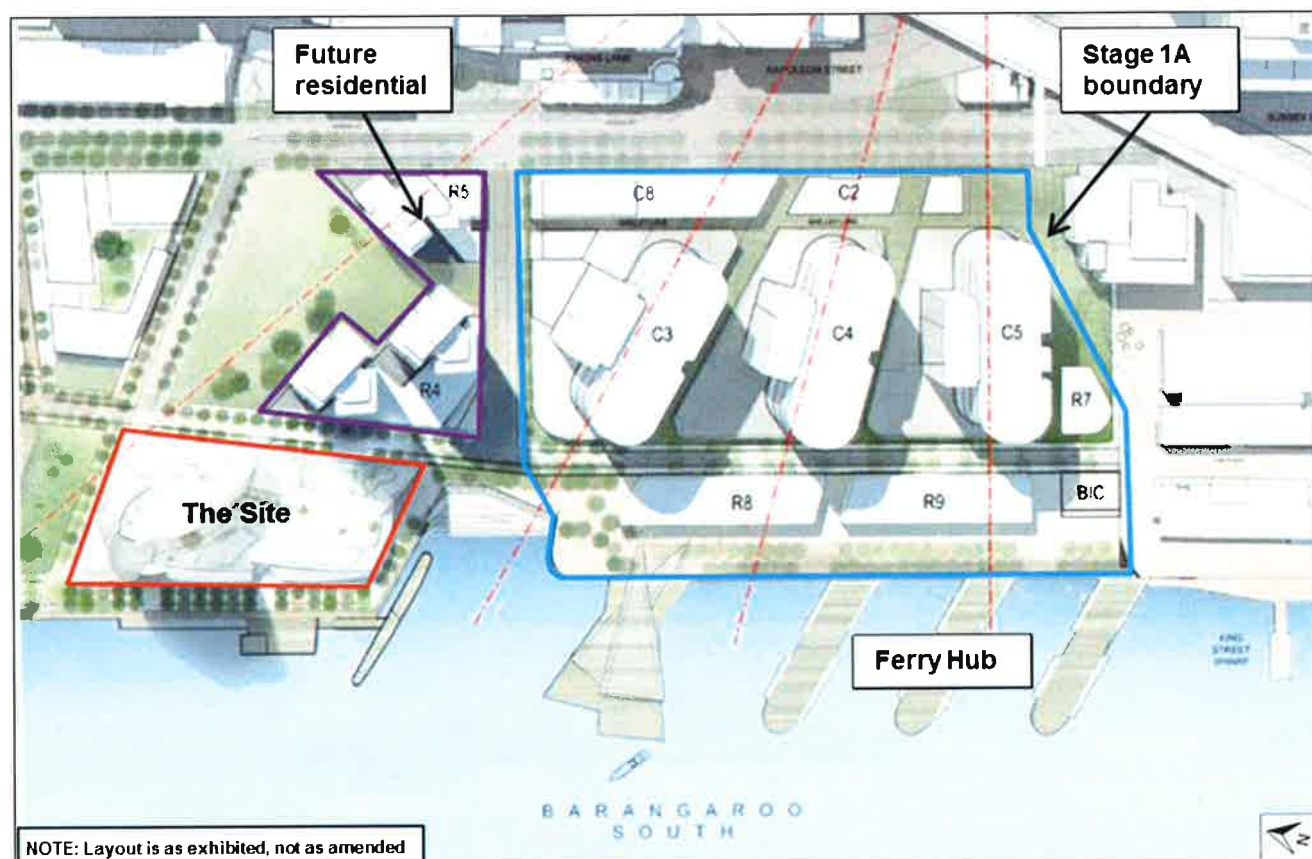


Figure 5: The site (outlined in red) overlaid on MOD 8 layout together with current construction works, completed buildings and public domain works (outlined in blue) at Barangaroo South (Base source: Applicant's EIS – as exhibited)

1.7 Barangaroo Design Advisory Panel

The Barangaroo Design Advisory Panel (DAP) was established in April 2015 to provide the Department with independent expert design advice to assist the Department with its assessment of the MOD 8 and CSHR Applications.

The DAP comprises three experts: Mr Peter Poulet (NSW Government Architect), Ms Shelley Penn and Ms Meredith Sussex.

Preliminary and Final Reports have been prepared by the DAP following its consideration of the application and the Applicant's Response to Submissions, respectively. The Final DAP report is provided at **Appendix B** and the recommendations of the DAP are given further consideration in **Section 5** and **Appendix F**.

2. PROPOSED DEVELOPMENT

2.1 Development Description

On 20 October 2015, the Applicant included the works proposed by the Stage 1C application, which include remediation, earthworks, excavation and structural works and installation of perimeter walls (SSD 6956) into the CSHR application (SSD 6957). These works therefore now form part of the assessment of the current application.

The key components and features of the proposal, as refined in the Response to Submissions (RtS) (refer to **Section 4.4**) are provided in **Table 2** below and are shown in **Figures 6 to 11**.

Table 2: Key components of the SSD application

Aspect	Description
Demolition and remediation	<ul style="list-style-type: none"> • Demolition of existing hardstand; • removal of existing sand filled sea wall (caisson wall); • site remediation including earthworks, excavation, installation of perimeter walls; and • soil treatment, off-site disposal and de-watering (as required).
Built form	<ul style="list-style-type: none"> • Construction of a 71 storey, 271.1 metres (RL 275) tower including podium; and • bulk excavation to RL -10.3 metres and construction of three basement levels.
Gross floor area	<ul style="list-style-type: none"> • A total GFA of 77,500sqm, comprising: <ul style="list-style-type: none"> ○ 48,200sqm tourism floorspace, including: <ul style="list-style-type: none"> - 41,313sqm hotel; and - 6,085sqm restricted gaming facility. ○ 22,600sqm residential; and ○ 6,700sqm retail.
Hotel use	<ul style="list-style-type: none"> • A hotel located at levels 6-26 and 66-69, comprising: <ul style="list-style-type: none"> ○ a total of 350 rooms/keys, conference facility; and ○ ancillary hotel facilities and amenities.
Residential use	<ul style="list-style-type: none"> • A total of 66 residential apartments, located on levels 34 to 65, comprising: <ul style="list-style-type: none"> ○ 28x2 bedroom apartments; ○ 32x3 bedroom apartments; ○ 5x4 bedroom apartments; and ○ 1x5 bedroom apartment.
Restricted Gaming	<ul style="list-style-type: none"> • A total of 6,085sqm restricted gaming facility GFA provided within the podium and the tower located at levels: <ul style="list-style-type: none"> ○ 1-2 within the podium (VIP Gaming); and ○ 25-26 within the tower (Crystal Club VIP Sky Gaming).
Retail use	<ul style="list-style-type: none"> • A total of 6,700sqm retail GFA comprising shops, restaurants/cafes and bars located within the podium at ground to third floor levels.
Outdoor licensed area	<ul style="list-style-type: none"> • A total of 1,385sqm licensed area GFA at ground floor level and located: <ul style="list-style-type: none"> ○ the full width of the western, Darling Harbour frontage to a depth of nine metres; and ○ the full width of the southern, Globe Harbour frontage to a depth of five metres.
Vehicle parking	<ul style="list-style-type: none"> • A total of 35 motorcycle parking spaces; • a total of 2 service vehicle bays (maximum medium rigid vehicle size); • a total of 610 car parking spaces, comprising: <ul style="list-style-type: none"> ○ 250 valet car parking spaces; ○ 250 self-parking spaces; and ○ 110 residential car parking spaces.
Bicycle parking	<ul style="list-style-type: none"> • End of trip facilities (changing rooms, lockers and showers) within the basement; and • a total of 188 bicycle parking spaces, comprising: <ul style="list-style-type: none"> ○ 83 non-residential spaces within the basement; ○ 68 residential spaces within the basement; and ○ 37 visitor (public) spaces within the public domain.
Signage	<ul style="list-style-type: none"> • Business and building identification signage and signage zones.

The CSHR has a Capital Investment Value (CIV) of \$1,127,374,000 and is expected to generate 1,100 construction jobs and 1,831 operational jobs. The initially separated remediation, earthworks, excavation and structural works has a CIV of \$81,561,000 and is expected to generate 160 construction jobs.



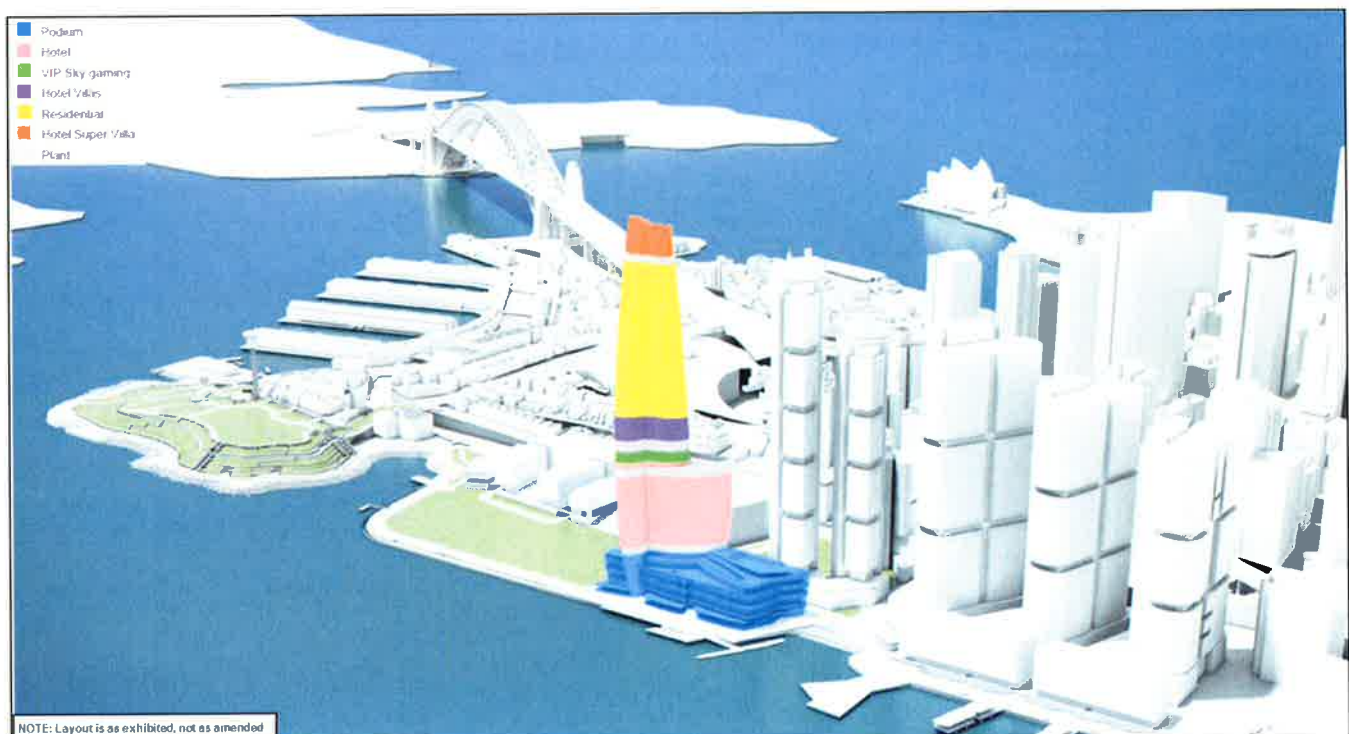
Figure 6: View looking south-east across the harbour to the site (Source: Applicant's EIS – as exhibited)



Figure 7: View looking north-east from the southern end of Darling Harbour towards the site (Source: Applicant's EIS – as exhibited)



Figure 8: View north across Watermans Cove towards the development (Source: applicant's RtDAP)



NOTE: Layout is as exhibited, not as amended

Figure 9: Colour coded location of key uses within the proposal (Source: Applicant's EIS – as exhibited)

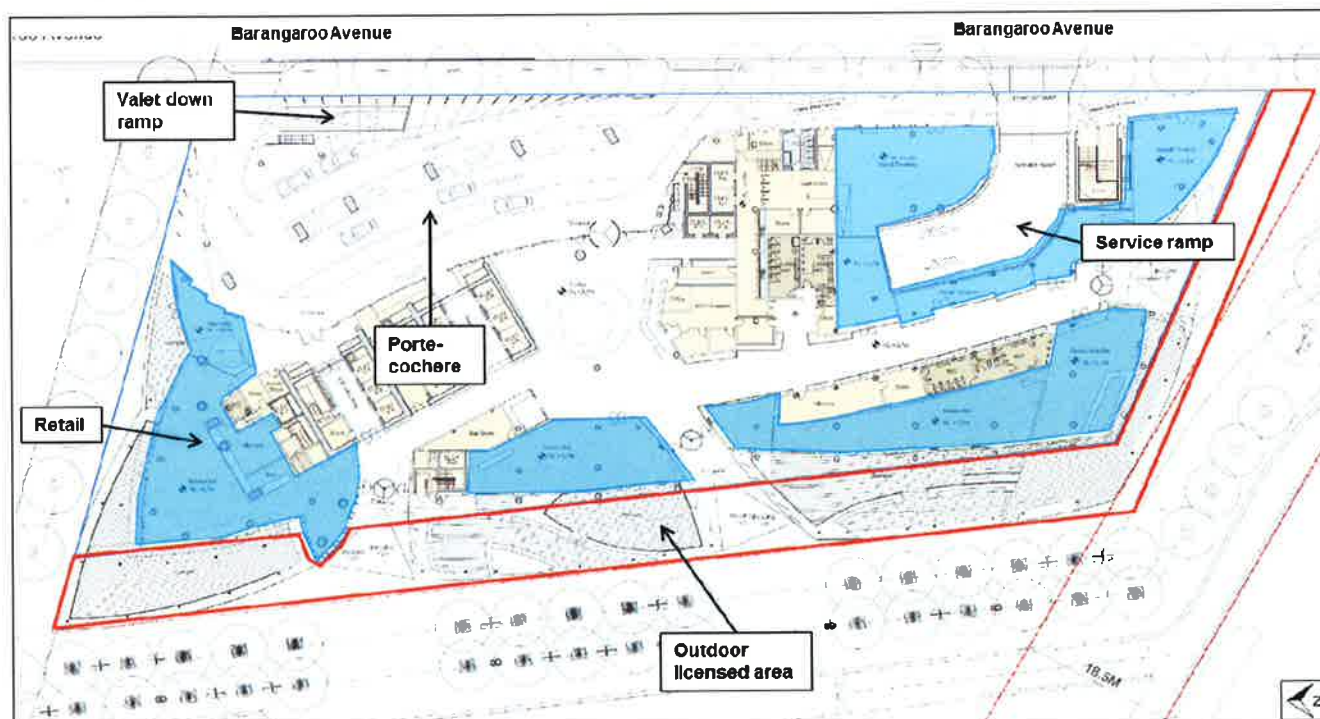


Figure 10: Proposed ground floor layout, including location of retail accommodation (highlighted blue) and outdoor licensed area (outlined in red) (Base source: Applicant's RtDAP)

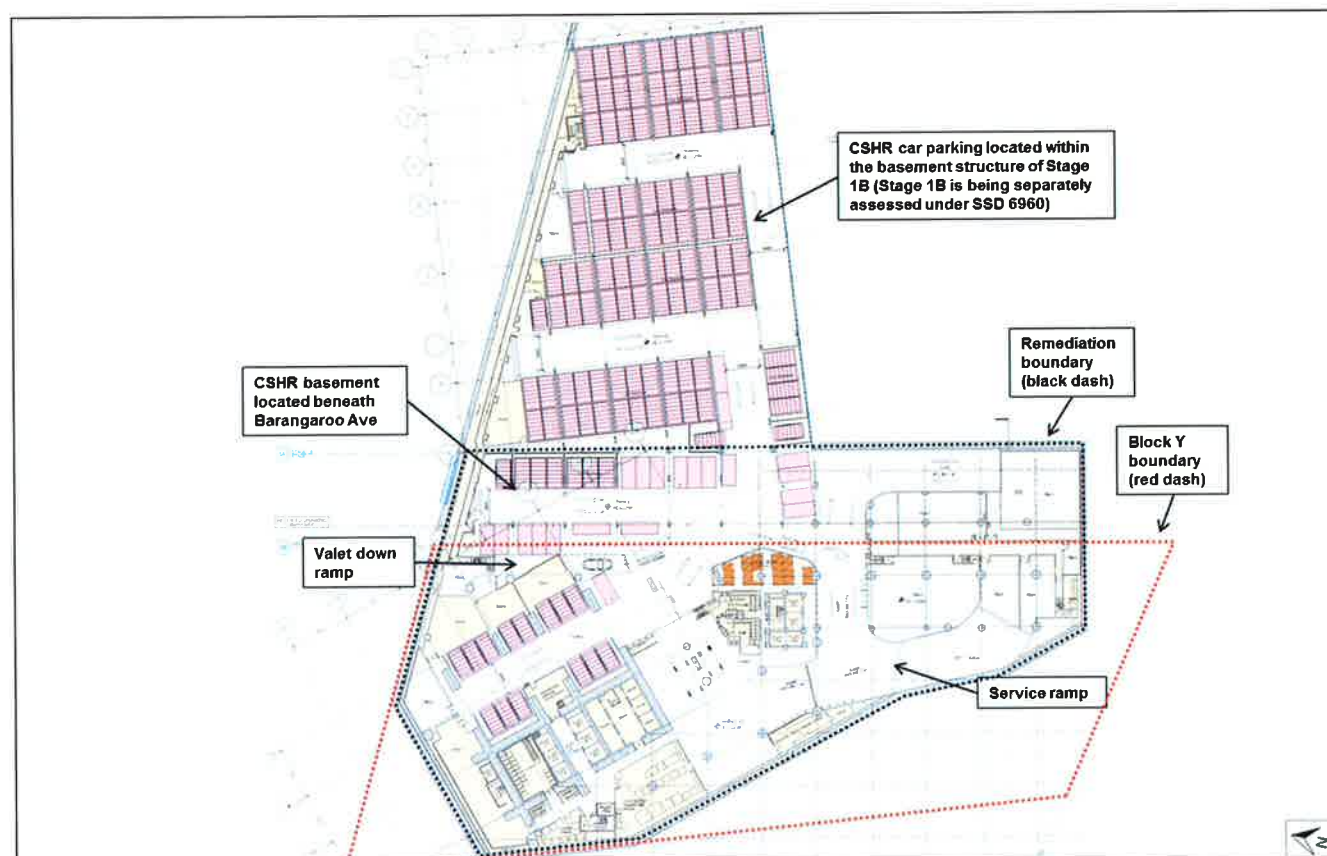


Figure 11: Proposed basement floor layout (Base source: Applicant's EIS)

2.2 Significance of the Proposal

A Plan for Growing Sydney

A Plan for Growing Sydney sets out the NSW Government's vision for Sydney to 2031. The Plan anticipates that the population of Sydney will increase by 1.6 million people by 2031 and this will result in the need for approximately 689,000 new jobs across the metropolitan area.

The Plan aims to accelerate urban renewal across Sydney and encourages growth in both infill and greenfield areas to stimulate balanced growth throughout Sydney. It also aims to make the best use of transport and infrastructure, making Sydney more sustainable and efficient. In planning for growth, the Plan focuses urban renewal in Strategic Centres, areas close to transport hubs and corridors and advocates efficient use of land in infill areas.

The City of Sydney LGA is located within the Central Subregion and the site is located within the Global Sydney Strategic Centre. The delivery of the Barangaroo redevelopment is identified as a key priority for the Strategic Centre. Other key priorities include maintaining Sydney CBD as Australia's premier location for employment, providing capacity for long-term office growth, supporting the land use requirements of the financial services knowledge hub in the CBD and providing capacity for additional mixed use development, including additional housing and tourism facilities.

The proposed development supports the strategic aims of the Plan by including retail, hotel, residential and restricted gaming as part of an overall mixed-use development within the Sydney Global Strategic Centre. It will contribute significantly to the delivery of Barangaroo as a tourist and entertainment precinct.

NSW Long Term Transport Masterplan 2012

The *NSW Long Term Transport Masterplan 2012* (LTTMP) is a 20-year plan aimed at improving the transport system in NSW. The plan sets up the framework by which the NSW Government can deliver a modern and integrated transport system that improves customer experience. The Plan identifies key challenges for Sydney such as relieving pressure on its already congested transport network and meeting the demand placed on this network by the significant forecast population at Barangaroo. The proposal provides an outcome consistent with the LTTMP as it:

- delivers new development in a central location that has excellent access to public transport;
- will generate approximately 1,100 construction and 1,831 operational jobs in a location readily accessible by public transport;
- supports future economic growth, which will maximise the use of current and future planned public transport (including potential new train station at Barangaroo); and
- provides access to a significant number of new employment opportunities in close proximity to public transport.

Barangaroo Integrated Transport Plan 2012

The *Barangaroo Integrated Transport Plan 2012* was prepared by TfNSW to consider the transport requirements for Barangaroo based on the forecast demand for transport in western and central parts of the Sydney CBD. The plan recognises that Barangaroo is constrained by its topography and will need to achieve a significantly higher mode share target for public transport use than other part of the CBD.

The application has confirmed that it would meet the mode share targets established under the plan (as updated by MOD 8 TMAP), being 61% train, 19% bus and light rail, 4% car, 4% cycling 12% for pedestrian, taxi, bicycles and motorcycles.

Sydney City Access Strategy 2013

The *Sydney City Access Strategy 2013* is a 20-year strategy, which outlines initiatives aimed at reducing congestion, providing for future growth and improving customer experience on all modes of

transport in Sydney. The strategy was devised in response to commitments made in the LTTMP relating to improving access and to Sydney's city centre. The strategy sets out actions relating to Wynyard Walk, bus routes and services, light rail, trains and CBD rail capacity. The proposal does not propose any alterations to Hickson Road or other public roads and therefore would not undermine the actions set out in the strategy. Furthermore, it is expected that future traffic generation will not have a significant adverse impact on road / intersection operation.

Applicant's Justification

The Applicant considers that the proposal is justified stating that:

- there is a strategic need for the proposal to ensure the provision of an iconic landmark building as part of the high quality built environment within Barangaroo South;
- the proposal will facilitate the delivery of a new world-class facility that caters for domestic and international tourists, can host events, and can address the significant shortfall in high quality hotel accommodation;
- the development is consistent with and complies with all the relevant strategic policies, environmental planning instruments, including MOD 8;
- the development will result in a wide range of positive social and economic benefits;
- the development will help to reactivate and renew the harbour foreshore;
- the development achieves design excellence and Ecologically Sustainable Development; and
- there are no adverse environmental impacts.

3. STATUTORY CONTEXT

3.1 State Significant Development

The proposal is a State significant development pursuant to section 89C of *Environmental Planning and Assessment Act 1979* (EP&A Act) as it is development at Barangaroo with a CIV in excess of \$10 million under clause 3 of Schedule 2 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Therefore, the Minister for Planning is the consent authority for the development.

3.2 Permissibility

The SSD has been submitted pursuant to the currently proposed amendment to the Barangaroo Concept Plan (MOD 8). Therefore the Department's assessment and recommendation on the current proposal is premised on MOD 8 being approved (which is being considered by the Commission concurrently). The proposal is considered to be consistent with MOD 8 in particular it complies with the Terms of Approval, Modifications to Concept Plan, Commitments of MOD 8 including the location, GFA, building envelope parameters. This is considered in further detail at **Section 5**.

Subject to the approval of MOD 8 the current proposal would be generally consistent with the terms of the approval of the Concept Plan.

3.3 Delegated Authority

Consistent with the Minister for Planning's delegation, the application can be determined by the Commission and the application is being referred to the Commission for determination.

3.4 Environmental Planning Instruments

The following Environmental Planning Instruments (EPIs) apply to the site:

- *State Environmental Planning Policy (State and Regional Development) 2011*;
- *State Environmental Planning Policy (State Significant Precincts) 2005* (SSP SEPP);
- *State Environmental Planning Policy No.55 – Remediation of Land*;
- *State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004*;
- *State Environmental Planning Policy No.64 – Advertising and Signage*;

- *State Environmental Planning Policy No.65 – Design Quality of Residential Apartment Development;*
- *State Environmental Planning Policy (Infrastructure) 2007; and*
- *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005.*

The Department's detailed consideration of the proposal against the above EPIs is provided in **Appendix D** of this report.

3.5 Restricted Gaming Licence

On 8 July 2014, the Independent Liquor and Gaming Authority granted a licence to Crown Sydney Gaming Pty Ltd to operate a Restricted Gaming Facility on the site for 99 years from 15 November 2019. The key requirements and restrictions of the licence include:

- the operation of traditional table games, semi-automated table games and fully automated table games;
- exclusion of poker machines;
- minimum bet limits;
- restriction on membership to VIP members, VIP member guests and the licensee's guests;
- the total floor space occupied by gaming tables within the Restricted Gaming Facility can be up to the lesser of:
 - 20,000sqm; and
 - 20% of the total GFA of the Hotel Resort building.
- gaming in the Restricted Gaming Facility may be conducted 24-hours-a-day, 7-days-a-week, every day of the year; and
- the Hotel Resort will be licensed to serve alcohol in all areas.

The Applicant has confirmed that the development would be operated in accordance with the restrictions of the licence and that the Restricted Gaming Facility is 6,085sqm or 7.9% of the total GFA of the CSHR.

3.6 Objects of the EP&A Act

Decisions made under the EP&A Act must have regard to the objects of the EP&A Act, as set out in **Section 5**. The proposal complies with the objects because the application seeks approval to construct a 71-storey building on previously disturbed land within the Barangaroo site, outside areas of ecological significance. The proposal is compatible with the surrounding character of nearby development at Barangaroo. The proposal therefore represents an orderly and economic use of land at Barangaroo.

3.7 Ecologically Sustainable Development

The EP&A Act adopts the definition of Ecologically Sustainable Development (ESD) found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

- the precautionary principle;
- inter-generational equity;
- conservation of biological diversity and ecological integrity; and
- improved valuation, pricing and incentive mechanisms.

The development incorporates ecologically sustainable design initiatives and sustainability measures, including:

- minimum 5 Star Green Star Custom rating (aiming for 6 Star) for the entire integrated resort, which includes the hotel, gaming, residential and commercial uses;
- minimum 4 Star NABERS energy rating (aiming for 5 Star) for the hotel component;
- residential component to comply with BASIX minimum requirements;
- extensive energy metering and sub-metering to support energy monitoring;

- provision of renewable energy through photovoltaics;
- reduction of embodied carbon footprint of the base building of 20% compared to standard construction practices;
- efficient fixtures and fittings;
- rainwater harvesting and reuse; and
- maximise diversion of construction and operational waste from landfill.

The Department has considered the project in relation to the ESD principles and has concluded that the proposal has been designed to utilise sustainability initiatives implemented within Barangaroo South, achieve low operational energy consumption, low potable water use, minimisation of waste to landfill, and environmentally responsible materials selection. In addition, the Department considers that the precautionary and inter-generational equity principles have been applied in the decision making process via a thorough and rigorous assessment of the environmental impacts of the proposal.

3.8 Secretary's Environmental Assessment Requirements

On 2 July 2015, the Department notified the Applicant of the Secretary's Environmental Assessment Requirements (SEARs) for the SSD application in accordance with section 78A(8A) of the EP&A Act. The Department is satisfied that Section 1.5 of the EIS adequately addresses compliance with the SEARs to enable the assessment of the application for determination purposes.

3.9 Environmental Planning and Assessment Regulation 2000

Subject to any other references to compliance with the regulation cited in this report, the requirements for notification (Part 6, Division 6 of the EP&A Regulation) and fees (Part 15, Division 1AA of the EP&A Regulation) have been complied with.

4. CONSULTATION AND SUBMISSIONS

4.1 Exhibition

As stated at **Section 2.1**, the Stage 1C remediation and earthworks SSD application has been incorporated into the CSHR SSD application.

In accordance with section 89F of the EP&A Act, the CSHR and Stage 1C applications were concurrently made publicly available in accordance with the EP&A Regulation for at least 30 days. The Department publically exhibited the applications from 23 July 2015 until 24 August 2015. The applications were publically available on the Department's website, at the Department's Information Centre and at the City of Sydney and Leichhardt Council offices.

The Department also placed a public exhibition notice in The Daily Telegraph, Sydney Morning Herald, Central Sydney Local and Inner West Courier on 22 July 2015, and notified adjoining landholders, and relevant State and local government authorities in writing.

Copies of the submissions may be viewed at **Appendix A**. A summary of the issues raised in the submissions is provided below.

4.2 Public Authority Submissions

A total of 15 submissions were received from public authorities in response to the exhibition of the CSHR application, with the Department of Family and Community Services, Independent Liquor & Gaming Authority, Ausgrid and Sydney Ports raising no issues with the proposal. Both the City of Sydney and Leichhardt Councils objected to the proposal. A further six submissions were received in response to the RtS.

A total of 13 submissions were received from public authorities in response to the exhibition of the Stage 1C application, with the Department of Family and Community Services, Independent Liquor

& Gaming Authority, Ausgrid, Sydney Ports, Heritage Council and NSW Police raising no issues with the proposal. Both the City of Sydney and Leichhardt Councils objected to the proposal. A further five submissions were received in response to the RtS.

All the issues raised by the public authorities in response to both the CSHR and Stage 1C applications are summarised in the **Table 3** below. The issues raised have been addressed in detail in **Section 5** and by way of recommended conditions in the instrument of consent at **Appendix H**.

Table 3: Summary of public authority submissions

City of Sydney (Council)	
Exhibition	<p>Council objects to the proposal as it would precede the determination of MOD 8 and SEPP Amendment. In addition, Council raises the following concerns:</p> <ul style="list-style-type: none"> the insufficient evidence has been provided to substantiate the remediation and earthworks; the restaurant and outdoor bar area should not encroach on or have a privatising effect on the promenade; the wind assessment should use the same assessment methodology as MOD 8 and wind shields/skirts should be incorporated into the built form of the tower and podium to address downdrafts; shopfront and signage strategy should be prepared and signage should be integrated into the design of the building so not to detract from the vista of the public waterfront; awnings should be provided above public entries associated with through-site links; uses under public roads (basement areas) should be limited to common areas and accesses; at least 10% (preferably 20%) of key worker housing and a greater diversity of dwelling mix should be provided; the visual assessment should include an analysis of the vista from the waterfront promenade; the residential car parking provision is in excess of the Sydney LEP 2012 controls and public car parking should be reduced generally due to public transport availability; the car parking spaces related to the hotel, gaming, retail and entertainment uses must not be operated as a commuter car park; and the dimensions of the loading dock should be designed to accommodate waste vehicle collection. <p>Council also raised a broad range of issues, which relate specifically to MOD 8, which are addressed separately as part of Department's assessment of MOD 8.</p>
Response to Submissions	Council reiterated its objections to the proposal as detailed within its original submission.
Leichhardt Council	
Exhibition	<p>Leichhardt Council objects to the proposal and raises the following key issues:</p> <ul style="list-style-type: none"> the proposal is a significant departure from the 2007 Concept Approval and is therefore not 'substantially the same'; the proposal must be assessed against the Modification 7 application as MOD 8 has not been approved; greater transparency and separation in the planning process is required for this site; the Barangaroo applications to date should have been subject to better community consultation; the proposed uses are currently prohibited within the SEPP (State Significant Precincts) 2005; the building height is contrary to the established planning for the CBD which sees buildings scaling down to the water's edge; insufficient/inadequate key worker accommodation; insufficient detail is provided about the gaming facility; there is a car parking shortfall of 300 spaces; and there are inconsistencies between the proposal and MOD 8, particularly relating to the absence of key worker accommodation and wintergardens.

Response to Submissions	Leichhardt Council reiterated its objections to the proposal as detailed within its original submission.
Transport for NSW (TfNSW)	
Exhibition	<p>TfNSW does not object to the proposal. However, it has raised the following key issues:</p> <ul style="list-style-type: none"> the traffic analysis should be revised to take account of the impact of the CBD Light Rail on the traffic movements in Wynyard and Barangaroo precincts and operation of Hickson Road/Napoleon Street intersections; a detailed explanation is required of the traffic generation estimation used for the hotel; the future traffic flows on Hickson Road (AM and PM peak) should be reported in the Transport Assessment Report; a Construction Pedestrian and Traffic Management Plan is required; confirmation is required that adequate public car parking exists at Headland Park, Barangaroo Central and Towns Place to cater for shortfall of 300 visitor spaces for the hotel; a management plan is required to manage traffic moving through the precinct to access car parking spaces; coach parking provision should be identified; an assessment of impacts on bus operation is required together with mitigation measures (if necessary); the Transport Assessment Report and Travel Demand Management Report should be updated to reflect current policies and the status of transport projects; and the construction of Wynyard Walk should be considered/assessed as part of the construction impacts.
Response to Submissions	<p>TfNSW recommended conditions requiring:</p> <ul style="list-style-type: none"> a detailed analysis of car parks surrounding the site proposed to accommodate the shortfall in hotel parking; confirmation of the location and number of bicycle parking spaces and end of trip facilities; the preparation of a Construction Traffic and Pedestrian Management Plan; and the Applicant to liaise with TfNSW on the final location of coach parking within Barangaroo South.
Roads and Maritime Services (RMS)	
Exhibition	<p>RMS does not object to the proposal and raised the following issues:</p> <ul style="list-style-type: none"> clarification of peak car parking demand mitigation measures is required; AM and PM peak traffic generation impacts require careful consideration; vehicular queuing should not generally be permitted in Hickson Road; an assessment of the cumulative impacts of nearby developments is required; RMS should be consulted on any future applications for water based structures; the Travel Demand Management Plan should include the proposed new metro station to be built at Barangaroo as part of the Sydney Metro project; the Construction Traffic Management Plan (CTMP) should be amended as follows: <ul style="list-style-type: none"> update the 2011 / 2013 traffic volume comparison; include an assessment of the Walsh Bay / Barangaroo bus movements; include the construction of Wynyard Walk; consider the impact of new traffic lights on Hickson Road; and provide further consideration of road network dynamics and vehicle queuing.
Response to Submissions	RMS has stated that further clarification is required within the CTMP about cumulative traffic impacts from other nearby projects.
Department of Primary Industries (DPI)	
Exhibition	<p>The DPI does not object to the proposal and raised the following issues:</p> <ul style="list-style-type: none"> a Groundwater Post-Cutoff System Monitoring and Management Plan is required; further description is required of the fresh and saline groundwater fluxes at the site; calculations are required of the ongoing seepage through the basement wall; and documentation is required of nearby bores (1km radius) and evaluation of potential impacts on any bores used for ground water abstraction.
Response to Submissions	<p>The DPI recommended that:</p> <ul style="list-style-type: none"> the RtS be updated to note that ground water seepage is based on design criterion

	<p>rather than field based assessments; and</p> <ul style="list-style-type: none"> the Applicant consult with the DPI during the development of the future Groundwater Post-Cutoff System Monitoring and Management Plan.
Office of Environment and Heritage – Heritage Council of NSW (Heritage Council)	
Exhibition	<p>The Heritage Council does not object to the proposal and provided the following comments:</p> <ul style="list-style-type: none"> the proposal would alter significant views from a number of State Heritage Register items; and the proposal would interrupt the western views from the Sydney Observatory and its setting within Observatory Park.
Response to Submissions	The Heritage Council reiterated its comments on the proposal as detailed within its original submission.
Museum of Arts and Applied Sciences - Sydney Observatory (MAAS)	
Exhibition	<p>MAAS did not object to the proposal and raised the following concerns:</p> <ul style="list-style-type: none"> the proposal will obscure the Omega Centauri constellation for part of the year, which may impact the experience of visitors to the Sydney Observatory; and light spill from the development should be kept to a minimum.
Response to Submissions	MAAS reiterated its comments on the proposal as detailed within its original submission.
Office of Environment and Heritage - Environment Protection Authority (EPA)	
Exhibition	<p>The Environment Protection Authority does not object to the proposal noting that the site is regulated by the conditions attached to the Environmental Protection Licence (No.13336). The EPA provided a list of recommended conditions in the event that planning consent is granted.</p>
Commonwealth Department of Infrastructure and Regional Development (Aviation and Environmental Branch)	
Exhibition	The Department of Infrastructure and Regional Development does not object to the proposal, noting it granted approvals for CSHR to carry out a controlled activity for the intrusion into airspace.
NSW Police	
Exhibition	The NSW Police does not object to the proposal and has confirmed that it will work with the Applicant to develop an Alcohol and Security Management Plan.
Sydney Water	
Exhibition	Sydney Water does not object to the proposal and provided comments on protection and access to Sydney Water assets, extension, adjustment and amplification of Sydney Water's systems, trade waste licence and environmental approval.

4.3 Public Submissions

A total of 30 public submissions were received during the exhibition of the CHSR application comprising 28 submissions from the general public (18 in objection, nine in support and one comment) and objections from the Member for Sydney, Alex Greenwich MP and The National Trust.

Mr Alex Greenwich MP objects to the proposal raising concerns regarding the excessive amount of car parking and likely traffic impacts, the impact of basements on provision of deep soil areas for tree planting, the size and number of advertising signs, the location and its impact on connectivity broadly and to the harbour, lack of open space along the harbour, lack of public benefit, excessive height of the building, impact on public view corridors, impact on Sydney Observatory, overshadowing of open space and the harbour, wind impacts and inappropriate construction hours.

The National Trust objects to the proposal raising concerns about the height of the building and its impact on Millers Point and the Sydney Observatory (suggesting the building should be stepped down to lessen the impact on conservation areas and listed buildings), the proposal occupies land designated for open space and blocks views northward, the loss of open space and that the building should be a public building for public benefit.

No public submissions were received in response to the initially separated remediation, earthworks, excavation and structural works application.

The concerns raised in public submissions are summarised in **Table 4** below.

Table 4: Summary of issues raised in public submissions

Issue	Proportion of submissions
Inappropriate height / bulk	42.9%
Loss of public realm / open space	39.3%
Adverse traffic impacts	35.7%
Overshadowing of Pyrmont, water and public domain / spaces	25.0%
Obstruction of Sydney Observatory sightlines	21.4%
Excessive car parking provision	17.9%
Inconsistent with the original masterplan for the site	17.9%
One casino is enough for Sydney	14.3%
Adverse wind impacts	10.7%
Objections relating to MOD 8	10.7%
Proposal submitted prior to determination of MOD 8	10.7%
Adverse impact on views to and from the city and Opera House	10.7%
The podium is poorly activated	10.7%
Poor pedestrian connections through the site	7.1%
The signage is inappropriate and will be visually obtrusive	7.1%
Privatisation of harbour foreshore and the eastern public open space	7.1%
Lack of deep soil below park due to basement	7.1%
Lack of sufficient social benefit	7.1%
Insufficient affordable housing	7.1%
Insufficient sustainable measures, adherence to BASIX is not good enough	7.1%
The provision so many car parking spaces implies casino will be an 'open casino' and not just for VIPs	7.1%

Other issues raised (less than 5%) in resident submissions to the exhibition included:

- proposal should be for hotel use only;
- adverse impacts from building illumination;
- tree planting has been adversely altered to emphasise the casino entry;
- the modern design adversely impacts on the heritage of Millers Point;
- no public or recreational access;
- adverse pedestrian safety due to porte-cochere location opposite park;
- insufficient community consultation;
- adverse noise nuisance due to proposed construction hours;
- exclusion from the 'lock out' area will result in increases in crime; and
- inadequate public transport.

The comments of support raised within the submissions are summarised below:

- support tourism and employment;
- good / landmark design;
- employment opportunities for indigenous youth;
- address chronic hotel room shortage in Sydney; and
- appropriate height and modern design.

The Department has considered many of the issues raised in submissions during its assessment of MOD 8 and these issues have been resolved in the assessment of that application. The Department notes that the proposal is consistent with MOD 8. Consequently, the Department has considered the submissions raised insofar as they relate to detail design issues of the CSHR (in **Section 5**).

4.4 Response to Submissions

On 19 October 2015, the Applicant lodged its RtS report for the proposed development, which includes the site remediation, earthworks, excavation and installation of perimeter walls (previously exhibited under SSD 6956) into the scope of the CSHR application (**Appendix A**).

On 26 February the applicant lodged its response to the DAP report and an updated Further Response to Submissions report, both dated 16 February 2016 (**Appendix A**).

The above documents and their appendices provide a response to the issues raised in submissions and include the following key changes to the proposal:

- amendment to the design of the western podium elevation, including additional articulation to break down the proportions of the façade and alteration of materials; and
- amendment to the design of the southern podium elevation, including the alteration of materials and division of the elevation into two parts.

5. ASSESSMENT

Table 5 identifies the matters for consideration under section 79C of the EP&A Act that apply to SSD. The table represents a summary for which additional information and consideration is provided for in further sections of the report and the relevant appendices or the EIS.

Table 5: Section 79C(1) Matters for Consideration

Section 79C(1) Evaluation	Consideration
(a)(i) any environmental planning instrument	Satisfactorily complies - see Appendix D
(a)(ii) any proposed instrument	Refer to Sections 3 and 5 of this report.
(a)(iii) any development control plan (not applicable to SSD)	Satisfactorily complies - see Appendix D
(a)(iia) any planning agreement	Not applicable.
(a)(iv) the regulations	Complies – see Section 3.8 of this report. The application satisfactorily meets the relevant requirements of the EP&A Regulation, including the procedures relating to development applications, public participation procedures for SSDs, and Schedule 2 of the Regulation relating to environmental impact statements.
(a)(v) any coastal zone management plan	Not applicable.
(b) the likely impacts of that development	Appropriately mitigated or conditioned - refer to Section 5 of this report.
(c) the suitability of the site for the development	Suitable as discussed in Sections 3 and 5 of this report.
(d) any submissions	Refer to Sections 4 and 5 of this report.
(e) the public interest.	Refer to Section 5 of this report.
Biodiversity values exempt if: (a) On biodiversity certified land? (b) Biobanking Statement exists?	Not applicable

5.1 Key Assessment Issues

The Department considers that the key assessment issues related to the application include:

- consistency with the Concept Plan;
- built form;
- public domain;
- traffic;
- amenity impacts;

- signage;
- contamination and remediation; and
- other issues.

Each of these key issues is discussed in the following sections of the report.

5.2 Consistency with the Concept Plan

The Barangaroo Concept Plan (MP 06_0162) sets out a number of requirements and parameters for future applications in developing the Barangaroo site.

As discussed in **Section 1.5**, the Department has referred MOD 8 to the Commission for its determination and has recommended the application be approved subject to conditions. MOD 8 seeks approval to modify the location, height, scale and footprint of the Block Y building envelope and associated amendments to the public domain. The current application relies on the proposed changes outlined in MOD 8.

Objections were raised in public submissions and by the City of Sydney, Leichhardt Council and the Member for Sydney on the grounds that the CSHR development is currently prohibited under the SSP SEPP and contrary to the currently approved Concept Plan (MP06_0162 MOD 7), and therefore the application should not be considered in advance of the determination of MOD 8.

As MOD 8 will be determined by the Commission prior to the determination of the current application, the Department considers it appropriate that the current SSD application for the CSHR be assessed in accordance with the Department's final recommendations for MOD 8. The Department has considered the requirements of the Concept Plan (as modified by MOD 8) in detail at **Appendix D and E**.

If MOD 8 is not approved, then the Commission will be unable to determine the CSHR application. Alternatively, if MOD 8 is approved subject to alterations (relevant to Block Y), those corresponding changes will be need to be made to the CSHR application.

An assessment of the key relevant requirements for the site is provided below and includes:

- building envelope and GFA;
- design excellence; and
- Built Form Principles and Urban Design Controls.

5.2.1 Building envelope and GFA

The development comprises a rectangular shaped podium with a mid-rise tower and sculpted tower above (refer to **Figures 6 to 9**). The Department is satisfied that the proposal is consistent with the building envelope provisions of the Concept Plan (as proposed to be modified by MOD 8). A summary of the proposal's consistency with the building envelope provisions is provided within **Table 6** below.

Table 6: Consistency with building envelope provisions

Component	Concept Plan	Proposal	Consistent
Building Height			
Podium	Maximum RL 40m	RL 39.61m	Yes
Mid-Rise Tower	Maximum RL 110m	RL 105.60m	Yes
Tower	Maximum RL 275m	RL 275m	Yes
Building Width/Depth			
Podium	Maximum width 130.90 metres Maximum depth 59.55 metres (plus 6m and 5m balcony/terrace zone on the western and southern elevations)	120m 51.2m	Yes
Mid-Rise Tower	As shown in Figures 12 and 13	As shown in Figures 12 and 13	Yes
Tower	As shown in Figure 12 and 13	As shown in Figures 12 and 13	Yes
GFA			
Block Y	Maximum 77,500sqm	77,500sqm	Yes

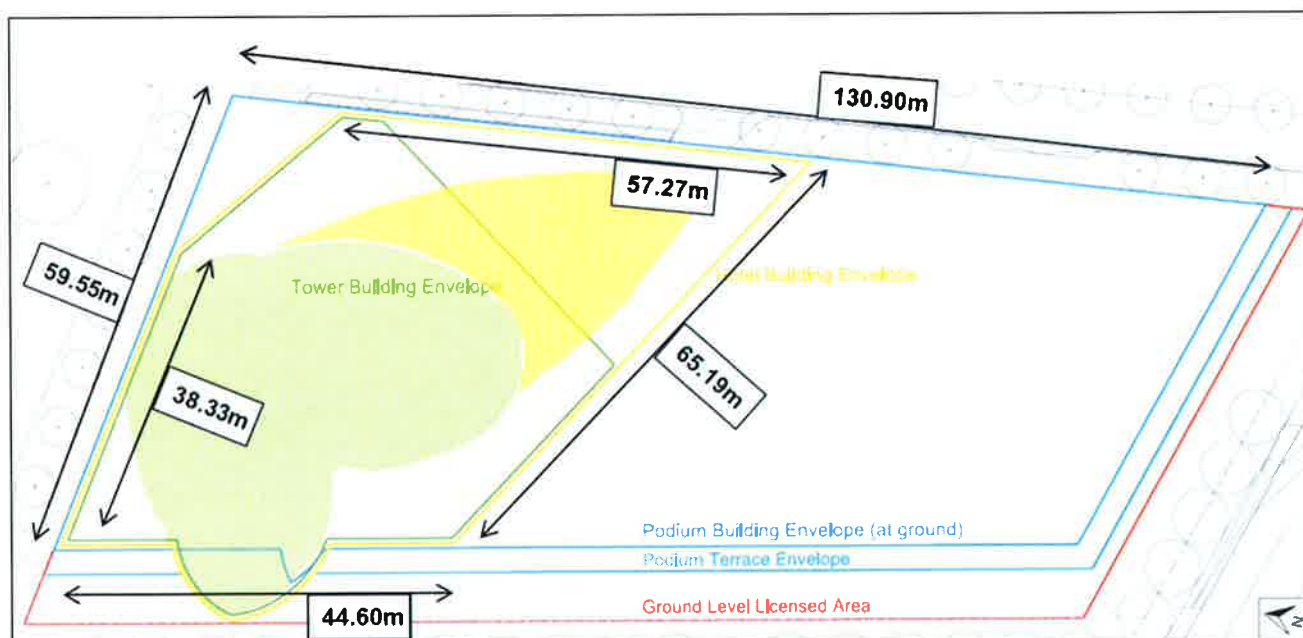


Figure 12: Approximate Block Y building envelope widths and depths. The tower (highlighted green) and mid-rise tower (highlighted yellow) indicated within envelopes (Base source: Applicant's EIS)

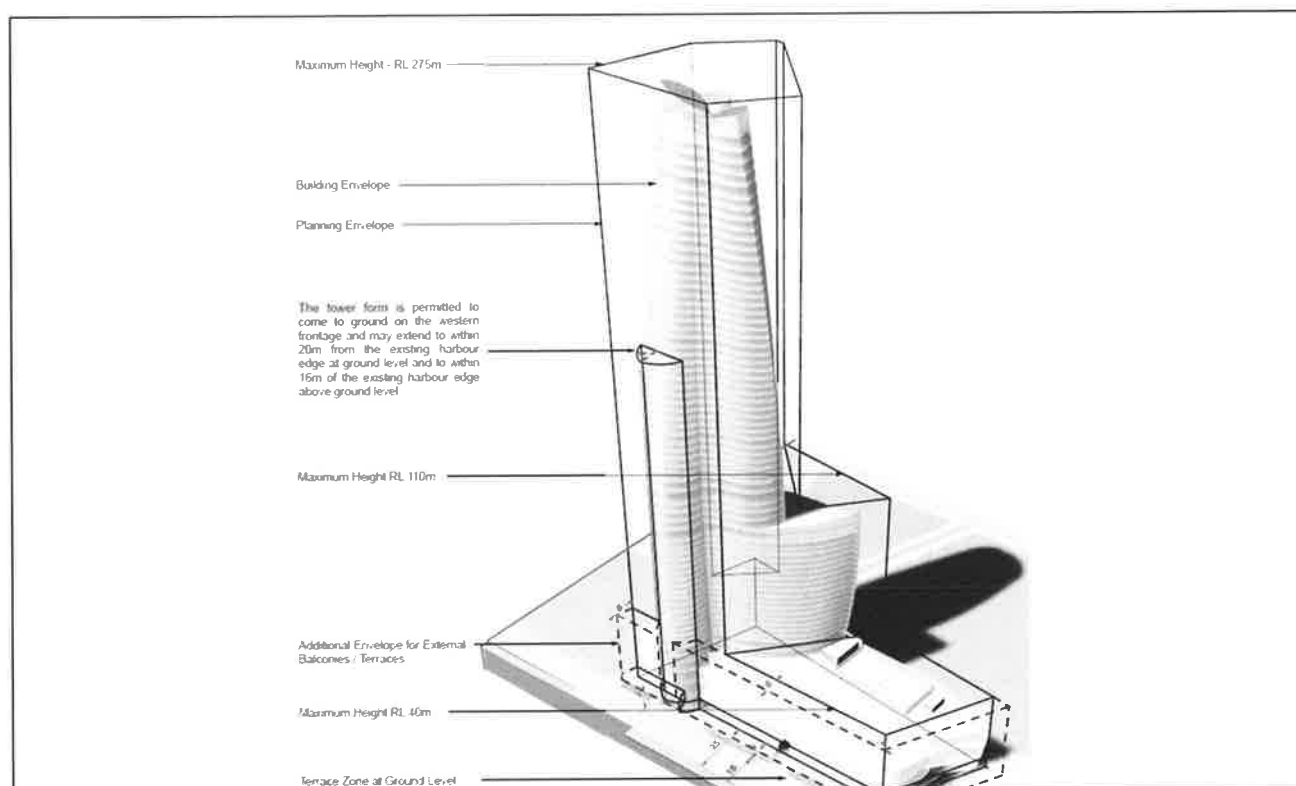


Figure 13: Perspective representation of the Block Y building envelope and the CSHR building within the envelope (Base source: Applicant's EIS)

5.2.2 Design Excellence

The approval requirements of the Concept Plan and the SSP SEPP provide particular design excellence requirements for the proposed building (as it is greater in area than 1,500sqm (77,500sqm) and taller in height than RL 57 (RL 275m).

A critical requirement is that the Applicant holds a design excellence competition as the process for appointing the architects for the scheme and that the competition is judged by a design review panel appointed by the Secretary of the Department of Planning and Environment. The key design excellence considerations are:

- whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be provided;
- whether the form and external appearance of the building will improve the quality and amenity of the public domain;
- whether the building will meet sustainable design principles in terms of sunlight, natural ventilation, wind, reflectivity, visual and acoustic privacy, safety and security, and resource, energy and water efficiency; and
- the results of the design excellence competition.

The Applicant has undertaken a design competition between architects of its choosing. This is not consistent with the terms of the Concept Plan and SSP SEPP as the design competition was not an open competition judged by a design review panel established by the Secretary. Notwithstanding this, the Applicant asserts that the development exhibits design excellence.

The Department notes that the requirement for a design excellence competition can be waived if the Secretary (or her delegate):

- certifies in writing that an architectural design competition is not required because of the excellence of the proposed building design; and
- is satisfied that:
 - the architect responsible for the proposed design has an outstanding reputation in architecture; and

- necessary arrangements have been made to ensure that the proposed design is carried through to the completion of the development.

The Secretary engaged the DAP to review the proposed design of the CSHR. The DAP's final report was provided to the Department on 18 November 2015. The DAP concluded that the proposal will meet a high degree of design excellence subject to addressing a number of the DAP's recommendations.

The Applicant held an international internal design review and competition process to select the architect for the development. The proposed development has been designed by the winning architect, Wilkinson Eyre Architects (WEA). Accordingly, the proposed building has been designed by WEA, which has significant international reputation in the field of architecture. The Applicant has also confirmed that it will retain the architects over the life of the project.

The Department has considered the design excellence criteria contained within the SSP SEPP and Concept Plan, and concludes that the application exhibits design excellence for the following reasons, and as discussed further at **Sections 5.3, 5.4, 5.6 and 5.7**:

- the DAP concluded that the development would meet a high degree of design excellence subject to addressing matters relating to the location and proportionality of the podium and its relationship to the tower and central parklands, design of the licensed area and provision of public access, internal layout and external façade treatment, wind mitigation and signage. These matters have been satisfactorily addressed as discussed in **Section 5**;
- the building's overall design, shape and form and use of materials will provide for a distinct and iconic landmark building and the proposal will positively enhance the built environment of Barangaroo South;
- the proposal is appropriately activated and landscaped at ground floor level and will provide for an overall high standard and quality of public domain and amenity, which will improve the overall public domain for the precinct;
- the residential component will meet or exceed almost all of the Apartment Design Guide design criteria;
- the proposal is contained wholly within the MOD 8 building envelope and as such would have minimal impact on view corridors;
- the design implements a variety of environmentally sustainable measures to achieve a minimum of 4-Star NABERS rating and 5-Star Green Star rating under a new custom built Green Star tool; and
- wind impacts onto the public domain can be addressed.

The Department has considered the design of the building, and noting the above points, considers that the building exhibits design excellence.

Given the above, it is recommended that the Secretary (or her delegate) form the view that the application exhibits design excellence, and waive the requirement for the Applicant to undertake a design excellence competition (**Appendix C**).

5.2.3 Built Form Principles and Urban Design Controls

Future Assessment Requirement (FAR) B5 requires applications to demonstrate compliance with the Built Form Principles and Urban Design Controls prepared by Rogers, Stirk, Harbour and Partners (the Barangaroo Design Guidelines). These guidelines are a supplement to the Concept Plan and set out broad objectives and standards to guide the design and built form of future developments within Barangaroo South.

Amended Barangaroo Design Guidelines were submitted with MOD 8. The Department considered these guidelines as part of its MOD 8 assessment and concluded that the:

- Applicant's proposed 'design solutions' should be deleted to allow for greater flexibility and an unprejudiced merit based assessment of future applications; and

- the document should be updated to reflect the established structure and format of the approved Barangaroo Design Guidelines.

The Department acknowledges that at the time of the writing of this report the Barangaroo Design Guidelines had not yet been updated. However, it concludes, given the generally minor nature of the recommended changes, that the absence of the finalised document does not prevent the Department from being able to determine the appropriateness of the development.

A comprehensive assessment of compliance with the Barangaroo Design Guidelines (as amended by MOD 8) is provided at **Appendix E** of this report. In summary, the Department considers that the proposed building generally complies with these controls.

5.3 Built form

The Department notes that approximately 50% of the submissions received from the public raised concerns about the built form of the development. The Department considers that the following built form considerations are the key assessment issues in determining the appropriateness of the proposed building in this prominent location:

- podium design and layout;
- cohesiveness of the building form;
- materials and detailing;
- reflectivity;
- ground floor activation and through site links; and
- public access to upper levels.

As part of its assessment, the Department commissioned the DAP to provide advice on the proposal, specifically relating to the building's architectural design, form, materials, detailing, impacts on the public domain and sustainable design principles.

The DAP reviewed the CSHR proposal and provided advice and recommendations to the Department to assist with its assessment. These recommendations both accord with and follow the DAP's recommendations in respect to the MOD 8 proposal.

The Department has made reference to, and considered, the DAP recommendations as relevant to the discussion of the various built form elements below. The Department notes that the DAP concluded that the development would meet a high degree of design excellence subject to addressing its recommendations. The DAP's report is appended at **Appendix B**.

5.3.1 Podium design and layout

The DAP recommends (Recommendation No.1) that the podium footprint be reduced to create a more generous public domain along the foreshore.

The Department notes that matters relating to the overall building footprint and public domain design have been assessed as part of MOD 8.

The Applicant has stated that a reduction in the size of the podium would have a major impact on the scale, economic and financial viability of the VIP gaming facility within the podium and therefore the future of the project. In response to the DAP's recommendation and the Department's proposed changes to MOD 8, the Applicant has amended the podium design in the following ways:

- the southern podium elevation has been redesigned to include a change in materials to break up its overall massing and therefore reduce the perception of dominance over Watermans Cove (refer to **Figures 14 and 15**); and
- the western podium elevation now includes breaks within the façade dividing the elevation into individual building segments rather than a continuous built form (refer to **Figures 14 and 16**).

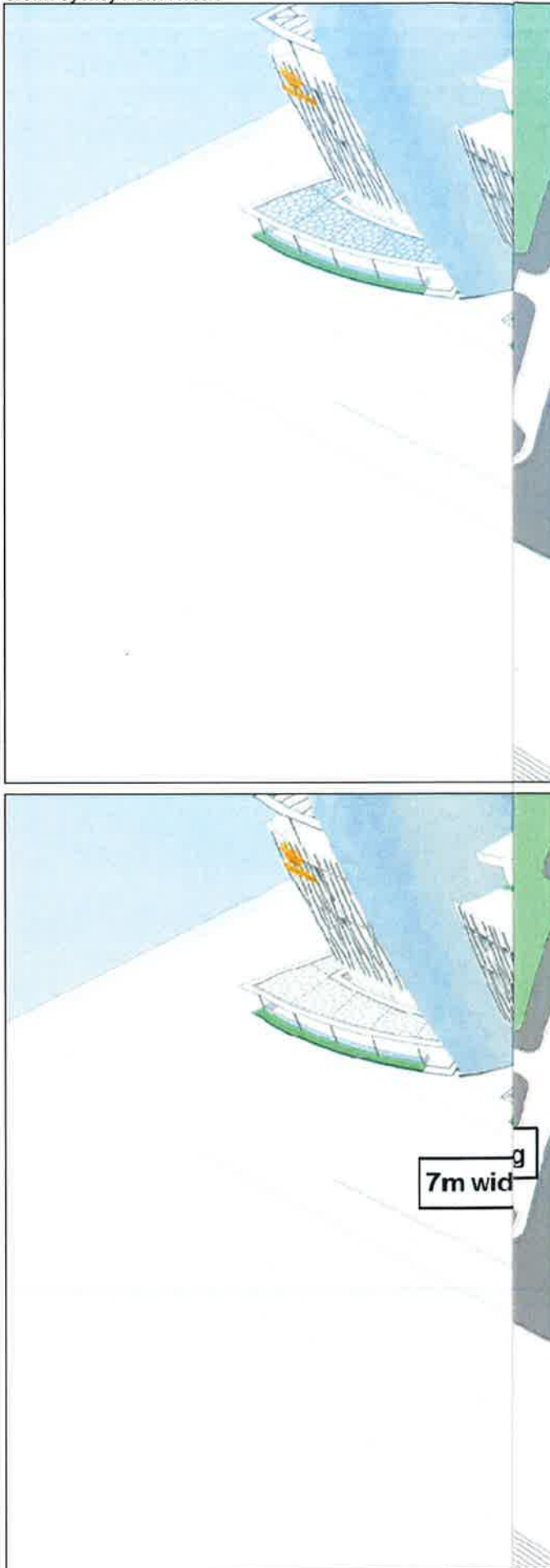


Figure 14: The CSHR podium as originally e

As part of the SSD assessment, the Department notes that the western elevation is now divided into three unequal segments, which are punctuated by the projection of the tower and a seven metre wide recess. The southern elevation has been amended to include a change in materiality at the south-eastern corner, which divides the elevation into two, while also providing a strong architectural statement to this important and prominent corner of the building.

The Department considers that the proposed scale of the podium is acceptable and that it has an appropriate relationship to the public domain and foreshore as:

- the architectural treatment responds positively to the requirements of modification B3 of the Concept Plan (as amended by MOD 8);
- the podium facades have been appropriately articulated, which has reduced the perceived bulk and length of the podium elevations;
- the amended elevations ensure that the podium has a more human scale relationship with the public domain and the foreshore; and
- the proposed amendments to the design of the podium improve the overall appearance of the building and add additional visual interest to the overall design.



Figure 15: View east towards the western elevation showing the façade articulation (Source: Applicant's RtDAP)



Figure 16: View north towards the southern elevation fronting Watermans Cove and showing the façade articulation (Source: Applicant's RtDAP)

5.3.2 Cohesiveness of the building form

The proposed building is comprised of three key built form components, the podium, the mid-rise tower and the tower.

The DAP recommends (Recommendation No.2) that greater clarity and design resolution between the upper and lower towers and the podium and refinement of the forms and proportions to achieve greater slenderness in the tower.

The Applicant asserts that the architectural response to the site is founded in the achievement of design excellence and it is its intention to create an addition to Barangaroo South that is complementary to existing commercial towers yet unique, separate and distinct. In this regard:

- the tower will be articulated to read as if it comes to ground on the northern edge of the site, accentuating its verticality and separating it from the podium block;
- the tower form continually tapers towards the top, creating a slender and elegant form, with a slight rotation and twist to its shape as it rises;
- the building is sculptural in its design and is intended to form a 'habitable artwork'; and
- the RL 275 metre tower will be clad in a light glass façade with constantly changing angles reflecting the building's surroundings and the sky. The basis for the tower's design emanates from three petal forms that twist and rise together, with one petal tailing off and spreading out to form the main hotel accommodation (i.e. the mid-rise tower).

The Department notes that the proposed building is contained wholly within the building envelope (as modified by MOD 8) and comprises an iconic design with landmark qualities. The podium, mid-rise tower and the tower facades share key architectural treatments and materials that intrinsically link each piece together to form the overall building composition. However, each component is also uniquely designed in its own right adding to the visual interest of the development and its sculptural form (refer to **Figure 17**). The fluid nature of the architectural design of the building emphasises its elegance and verticality.

The Department is satisfied that the three building components (i.e. the podium, mid-rise tower and the tower) are appropriately related and the overall building is appropriately proportioned, as:

- the three components of the building are highly cohesive and the overall design of the building achieves an elegant and visually slender development;
- the location of a singular tower at the northern end of the site, away from other existing and proposed towers, prevents tower-crowding within the townscape and ensures that distant and close quarter sightlines are possible around all sides of the mid-rise and tower components;
- the building's twisted, tapering and sculptural nature emphasises its verticality and overall slenderness;
- the mid-rise tower is located to the rear of the tower, has a sculptural pointed footprint and is confined to the lower part of the overall tower height. As a consequence, the tapering tower remains the dominant built form component of the development;
- the materials and architectural treatments appropriately unify the building and add visual interest;
- the mid-rise tower and tower components are substantially more slender in girth than other commercial towers within Barangaroo South; and
- the building is considered to achieve design excellence as discussed in **Section 5.2.2**.

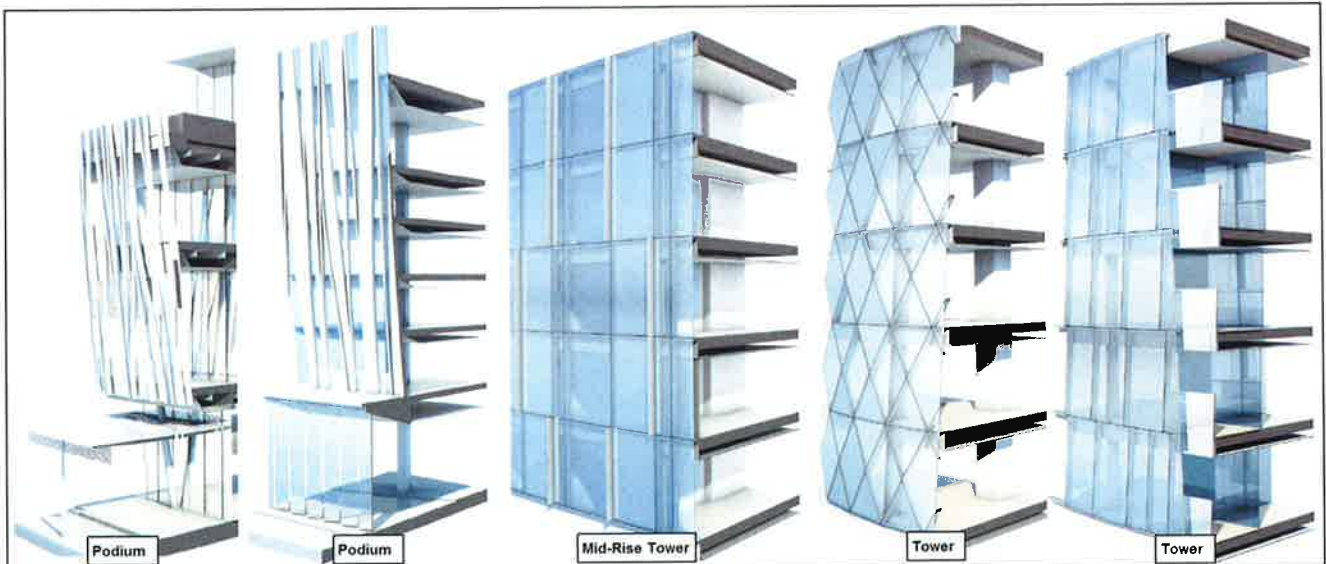


Figure 17: Elevational sections showing the key façade treatments for the podium, mid-rise tower and the tower (Base source: Applicant's EIS)



Figure 18: Views east (left) and north (right) towards the proposed CSHR building (Source Applicant's RtDAP)

5.3.3 Materials and detailing

The composition of building materials is a significant and critical component in achieving the high standard of design and appearance proposed by the development.

The DAP recommends that:

- (Recommendation No.8) the operable façade elements and the mix, type and arrangement of opaque to clear façade panels be co-ordinated to ensure that these create a cohesive whole. In addition, glazing should be selected to achieve the pale glass façade as presented in renderings; and
- (Recommendation No.11) the building use a consistent glazing type for the tower to ensure consistency across the three dimensional form.

The Applicant has confirmed that it is its intention to use a single glazing type throughout the project, with only reflectivity varying between the tower and hotel glazing (refer to **Section 5.3.4**). In addition, numerous glazing types, together with various materials and techniques for the back-pan materials, spandrel, opaque panels and internal window dressing options are being considered and tested in full-scale prototype (refer to **Figure 19**). The Applicant asserts that these measures will achieve a

cohesive appearance, the pale glass finish as presented and consistency across the three dimensional form.



Figure 19: CSHR tower glazing glass selection (Source: Applicant's RtDAP)

The Department is satisfied that appropriate steps are being taken by the Applicant to ensure that the façade panel / glazing achieves the highest standard of appearance, and when constructed provide for a building that replicates the high quality design presented in the computer generated images provided with the application.

To ensure that the building achieves the highest standard of design and appearance, the Department recommends a condition requiring the submission of the final schedule of materials from Wilkinson Eyre Architects.

5.3.4 Reflectivity

The application proposes to limit the reflectivity of the glazing to the mid-tower (hotel component) to a maximum of 20% in accordance with the City of Sydney DCP 2012. Glazing for the tower is proposed to be limited to up to a maximum of 32%.

The application includes a Reflectivity Study (RS), which has assessed the likely reflectivity of the glazing of the building facades. The RS concludes that the building performs well in terms of solar reflectivity and that reflections will not cause unacceptable glare subject to the installation of vertical fins in key locations to limit reflections.

The Applicant has stated that the tower component reflectivity is capable of being greater than 20% as the scattered reflections caused by the curved and smaller panels of this part of the façade allows for a higher level of reflectivity with no adverse impacts.

The Department is satisfied that the 20% reflectivity of the mid-tower is appropriate and will ensure that glare is limited and would not have an adverse impact on pedestrians or drivers. The Department considers that the reflectivity of the podium should also to also be limited to a maximum of 20%.

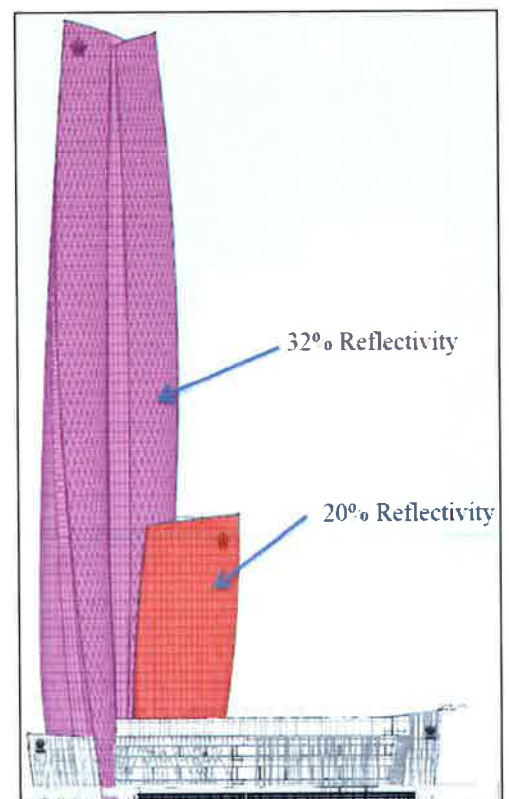


Figure 20: Façade reflectivity (Source: Applicant's EIS)

The Department considers that the reflectivity of the tower up to a maximum of 32% is acceptable as:

- the detailed analysis within the RS concludes that the reflections will not have any adverse impacts or present significant risks to drivers as exposure to reflections would be brief and not continuous along the road;
- the height of the tower and curved and panelised nature of the façade will ensure that the intensity and duration of any reflections are limited; and
- vertical fins are proposed in key locations on the building façade to further reduce reflections.

The Department recommends a condition requiring that reflectivity be limited in accordance with the maximum limits noted above.

5.3.5 Ground floor activation and through site links

Concerns were raised in public submissions that the podium is poorly activated and that pedestrian connectivity through the site is poor.

The Department notes that the ground floor podium includes the provision of retail, restaurant and café uses, five principal entry points and multiple secondary entries within the licensed terrace area (refer to **Figures 21 and 22**).

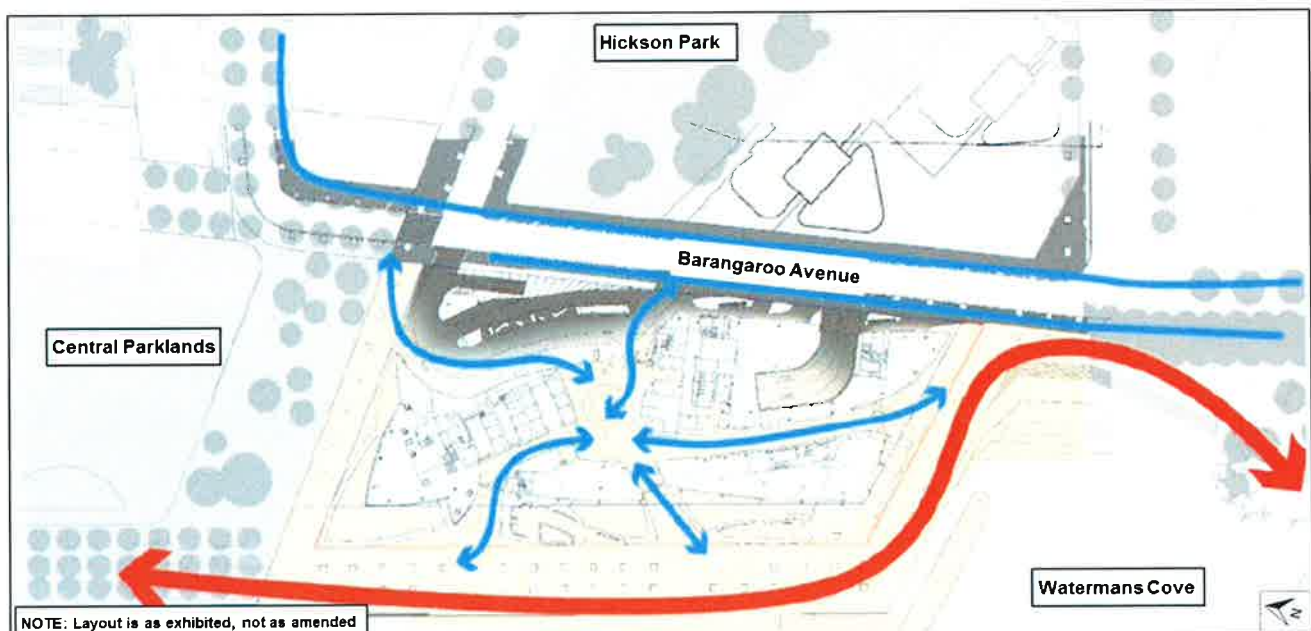


Figure 21: Public permeability through the CSHR podium and along the promenade (Source: Applicant's RtDAP)

The porte-cochere occupies approximately half of the eastern elevation. However, this is not considered to have a detrimental impact on the activation of that elevation as:

- the CSHR main lobby is located within this space, which is expected to be the subject of continuous activity;
- the architectural treatment of the porte-cochere is visually permeable and will allow pedestrians to view across the space into the CSHR and towards the Central Parklands to the north; and
- the porte-cochere will be approximately eight metres in height, which will create a sense of openness and connectivity between the CSHR lobby and Barangaroo Avenue.

The Department is satisfied that the proposed five principal pedestrian entry points sufficiently provide adequate through-site links and notes that these routes will be accessible 24-hours-a-day.

In light of the above assessment, the Department is satisfied that the proposal provides an appropriate level of ground floor level activation and through-site connectivity.

5.3.6 Public access to upper levels

As exhibited, the proposed CSHR did not include an observation deck or general public access to the upper levels of the tower.

The DAP recommended (Recommendation No.4) that public access (not limited to guests) be provided to the views at upper levels of the tower building (this recommendation was echoed by the National Trust).

In response to the DAP's recommendation, the Applicant has confirmed that it will provide a public observation area at level 65 of the tower (approximately 250 metres above ground), which will be accessed as part of a guided tour.

The Department is satisfied that the proposed amendment will adequately provide for public access to views at the upper levels of the tower. The Department recommends a condition requiring the submission of amended plan(s) showing the inclusion of the public observation area together with a management plan detailing how the facility will be operated.

5.4 Public domain

5.4.1 Ground floor outdoor seating licensed area

The proposed CSHR development occupies the entire Block Y site. Beyond the boundary of the Block Y site to the west and south and with the area zoned RE1 'Public Recreation', the application proposes an active use zone comprising licensed outdoor seating areas contained within landscaped terraces. The licensed areas are shown at **Figures 22, 23 and 24** and extend:

- nine metres to the west, fronting the waterfront promenade; and
- five metres to the south, fronting Watermans Cove.

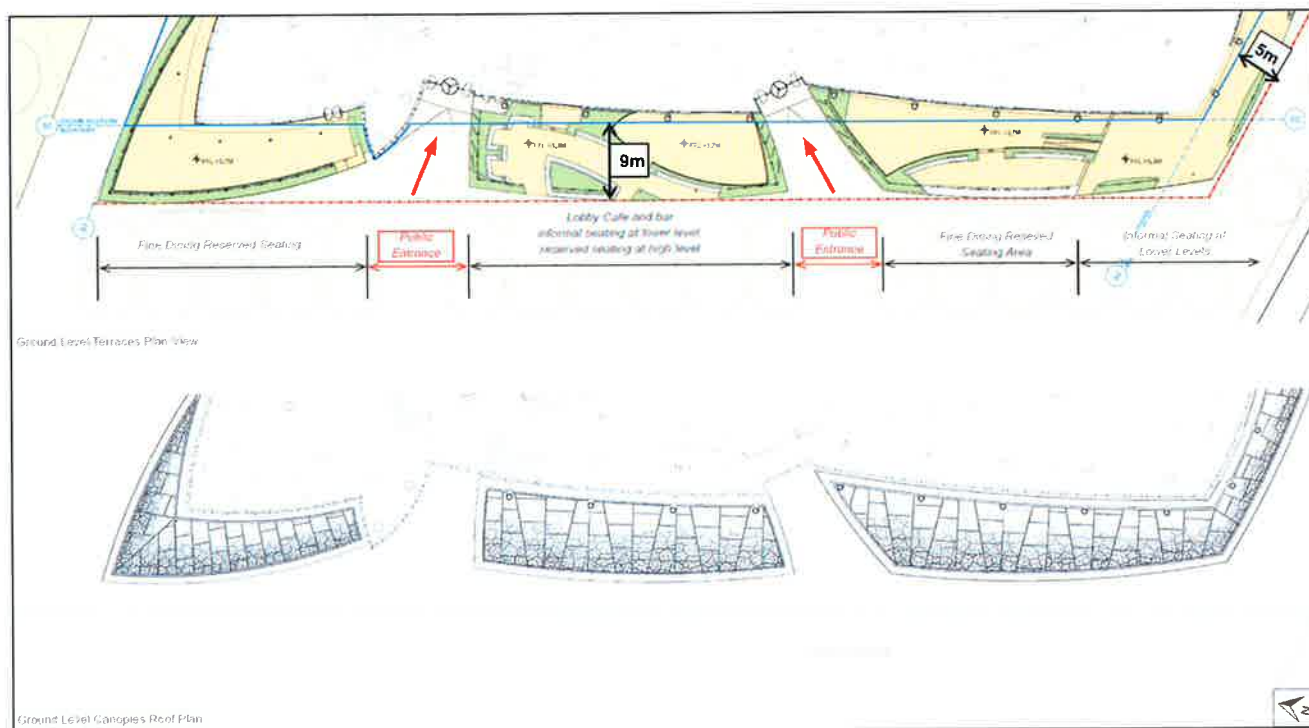


Figure 22: Ground floor level outdoor seating (terrace) licensed area and landscaping (top) and glazed canopies (bottom) (Base source: Applicant's EIS – as exhibited)

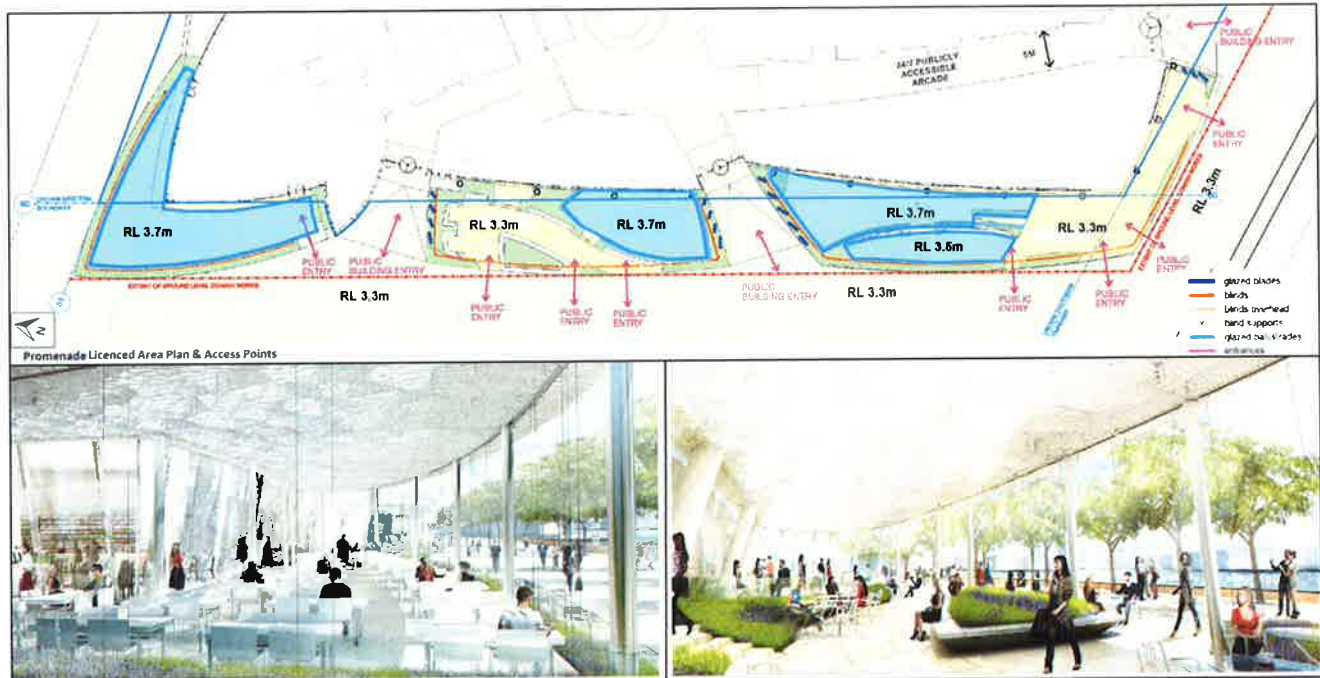


Figure 23: Access points to the proposed podium and licensed areas (pink arrows) and RL levels (higher levels highlighted in blue) (Source: Applicant's RtDAP)



Figure 24: View south along the promenade (top) and CSHR public entry flanked by the licensed terrace area (bottom) (Source: Applicant's RtDAP)

In its assessment of MOD 8 the Department considered the principle of the division of the waterfront promenade into active use and pedestrian movement zones. The Department concluded that the inclusion of active use zones is consistent with existing developments to the south (buildings R8 and R9) and sufficient space would be provided for pedestrian circulation and the inclusion would not disrupt north/south pedestrian desire lines.

Concerns were raised in public submissions that the proposal had a privatising impact on the harbour foreshore and Council stated that the licensed area should not encroach, or have a privatising impact on the promenade. The DAP has raised a concern (Recommendation No.1) that the design of the licensed area should be discernible as public and accessible 24-hours-a-day. The DAP also recommended (Recommendation No.7) that landscaping treatments including the

selection of paving and plant species should better integrate with surrounding landscaping to support the perception of public accessibility.

The Applicant has stated that the licensed terrace areas promote visual and physical connectivity and legibility as a generous and accessible public space. The terraces are designed as an elegant and lightweight series of glazed canopies, which provide weather protection and therefore year-round activation. Furthermore, there are numerous access points to the building and terrace areas providing an inclusive public space (refer to **Figure 23**).

The Department generally considers that the proposed ground floor licensed area is of an acceptable design and layout as:

- the canopy structure is lightweight in appearance and open on all sides;
- the canopy roof is 5.2m high and has a woven/transparent design which emphasises the openness of the space;
- the licensed terrace area has numerous pedestrian access points creating a visually and physically permeable space between the promenade's active use (i.e. the licensed terrace area) and pedestrian movement zones;
- the elevated seating areas (between 200-400mm above the level of the promenade) and clear glass balustrades within the licensed area will not visually obstruct clear pedestrian sightlines across/through the space;
- extensive soft landscaping strengthens the visual connection with the broader landscaping of the promenade.

However, notwithstanding the above, the Department agrees with the DAP that the licensed area should be legible as a public and accessible open space and that appropriate hard and soft landscaping treatments should be provided to ensure a coherent transition between the licensed area and the foreshore promenade.

The Department therefore recommends a condition requiring additional details of the licensed area demonstrating that it includes clear sightlines across the space, is visually connected with the public domain, provides appropriate and cohesive landscaping treatments and does not impede appropriate access.

5.4.2 Relationship between the building and adjoining open spaces

The site is adjacent to new public open spaces, Hickson Park to the east and the Central Parklands to the north.

Opposite Hickson Park, and at the ground floor north-eastern corner of the podium, the proposal includes a porte-cochere for the primary use of the hotel and gaming facility (refer to **Figure 10**). The porte-cochere comprises an undercover one-way road with set-down areas and its architectural design is generally composed of stone finishes and vertical glass blades.

Opposite the Central Parklands, and at the ground floor northern end of the podium, the proposal includes retail accommodation, part of the licensed seating area and the northern end of the porte-cochere (refer to **Figure 25** and **26**).

Concerns were raised in public submissions about the impact on pedestrian safety resulting from the location of the porte-cochere opposite Hickson Park. The DAP has recommended (Recommendation No.6) that the location of the porte-cochere and northern façade be further considered in order to support a strong, coherent and pedestrian safe relationship between Hickson Park, the Central Parklands and the foreshore. In addition, the DAP recommended the provision of greater public access along the northern façade to ensure an appropriate relationship with the Central Parklands.

The Applicant has stated public access along the northern façade, including pedestrian routes across the CSHR site have been designed and configured with a high degree of permeability. In

addition, the landscaping and glass fin placement has been specifically designed to welcome and direct pedestrian in the hotel whilst ensure that CSHR integrates with the future Central Parklands.



Figure 25: Northern elevation fronting the Central Parklands (Base source: Applicant's RtDAP)

The Department notes that the detailed design of Barangaroo Avenue and Barton Street will form part of a separate, future public domain application for Barangaroo South and does not form part of the CSHR application. In its assessment of MOD 8, the Department considered the potential for vehicle and pedestrian conflicts in the vicinity of Block Y and Hickson Park. The Department concluded that the detailed design of Barangaroo Avenue and Barton Street can satisfactorily mitigate any potential vehicle and pedestrian conflicts at Block Y. The Department concludes that the location of the CSHR porte-cochere is acceptable. Notwithstanding this, the Department recommends a condition requiring that a pre and post construction road safety audits be undertaken for the porte-cochere prior to the issue of the relevant Construction Certificate.

The Department notes, at ground floor level, that approximately three quarters of the length of the northern façade of the podium is activated by a combination of building entry points, cafes and restaurants and part of the licensed terrace area (refer to **Figure 26**). Above ground floor level, the northern end of the podium is entirely occupied by restaurant accommodation and ancillary terraces.

The Department considers that the proposal provides an appropriate level of activation and public access along the northern façade of the building as:

- the ground floor and upper floors of the podium provide a combination of uses and entries, which will actively and passively enliven the northern elevation of the podium at all levels;
- the porte-cochere driveway is limited to the eastern end of the northern elevation and is appropriately screened by floor to ceiling glass fins;
- the architectural treatment of the podium is of a high standard of design and appearance and will frame the southern end of the Central Parklands in an visually engaging manner; and
- the detail of the hard and soft landscaping (under a separate future application), will ensure an appropriate public domain relationship between the park and CSHR.

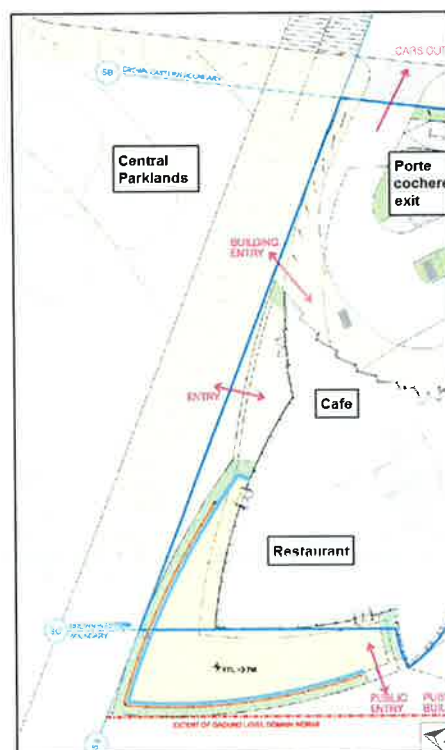


Figure 26: Relationship of northern elevation to Central Parklands (Source: Applicant's RtDAP)

5.5 Traffic

5.5.1 Traffic generation

The proposed remediation and construction works and the operation of the completed development will generate additional vehicular movements, which have the potential to impact on the surrounding road network. A Construction Traffic Management Plan (CTMP) and Traffic Assessment (TA) were submitted with the EIS, which include traffic modelling and consider the expected potential traffic impacts (including cumulative impacts) on the existing road network and intersections.

Using the predicted vehicle movements the CTMP and TA have modelled the impact of the development on the Level of Service (LOS) of the following key intersections that would be utilised by construction vehicles:

- Hickson Road and Globe Street;
- Napoleon Street and Hickson Road;
- Sussex Street and Shelley Street;
- Sussex Street and Erskine Street; and
- Napoleon Street, Margaret Street and Kent Street.

Concerns have been raised in public submissions about the impact of the traffic generated by the development on the surrounding road network. The impacts of traffic generation arising from remediation and construction activities and the operation of the completed hotel and resort are discussed below.

Remediation and construction

As a result of the proposed construction activity, the proposal is estimated to generate additional vehicle movements, as shown in **Table 7**.

Table 7: Construction vehicles per day / hour

Stage	Vehicles per Day	Vehicles per Hour
Remediation / Basement	40 – 90	4 – 7
Construction	40 – 64	4 – 6

Existing construction traffic at the Barangaroo South generates, on average, 100 truck deliveries per day (weekday) and the majority of this vehicle activity occurs outside the commuter peak periods of 8-9am and 5-6pm. As a consequence, existing movements have only a relatively minor impact on the operation of nearby intersections between the critical PM peak of 4-7pm.

It is expected that approximately 70% of construction vehicles will approach the site from the southern and western parts of Sydney, the remaining construction vehicles will approach from the north. The Applicant has confirmed that truck movements will be staged / coordinated to prevent trucks circulating in CBD streets whilst awaiting access to the site.

With reference to intersection operation, the CTMP found that traffic generated by the proposed remediation and construction works would result in minimal changes to the LOS of key intersections surrounding the site with the intersections maintaining existing LOS (between B to E).

In light of the above assessment, the Department concludes that the surrounding road network can accommodate traffic generated by the proposed development. In particular, the Department notes that all key intersections would continue to operate at an acceptable LOS.

TfNSW has recommended that the Applicant prepare a Construction Pedestrian and Traffic Management Plan (CPTMP) to appropriately manage the potential impacts of the development on the road network and nearby intersections. RMS has recommended that the CPTMP include the cumulative impacts of other projects within the immediate vicinity of the site. The Department recommends a condition accordingly.

The proposal does not include any on-site car parking spaces for construction workers, which the Department supports. However, the Department recommends that a formalised Green Travel Plan should be provided as part of the CPTMP to encourage public transport use.

Subject to the requirements of the CPTMP condition, the Department's assessment concludes that potential impacts from traffic generation can be effectively managed.

Operational

Given the unique nature of the type of use and operation of the proposed development, the Transport Assessment (TA) submitted in support of the EIS has forecast future traffic generation based on the comparable elements of the Crown resort in Melbourne. In this regard, the TA has relied on Crown Melbourne parking and traffic data, including yearly arrival/departures and excluding unrelated major events (e.g. the AFL grand final and Melbourne Cup). Based on the Applicant's forecast traffic generation plans for the proposed building, shown at **Figure 27** below, the Department calculates that traffic generation during the:

- AM peak (8am-9am) is 71 vehicles per hour; and
- PM peak (5pm-6pm) is 203 vehicles per hour.

Friday, Saturday and Sunday are expected to be the busiest days with respect of traffic movements (with Monday to Thursday being between 10%-20% less than a typical Friday). Peak operational activity is expected to occur between 7pm and midnight.

With reference to intersection operation, the CTMP found that traffic generated by the proposed operation of the CSHR would result in minimal changes to the LOS of key intersections surrounding the site with the intersections maintaining existing LOS (between B to E). Furthermore, traffic generated by the development is expected to peak between 7pm and midnight, which is outside the evening commuter peak hour.

In light of the above analysis, the Department considers that the likely traffic generation impact of the proposed development is acceptable.

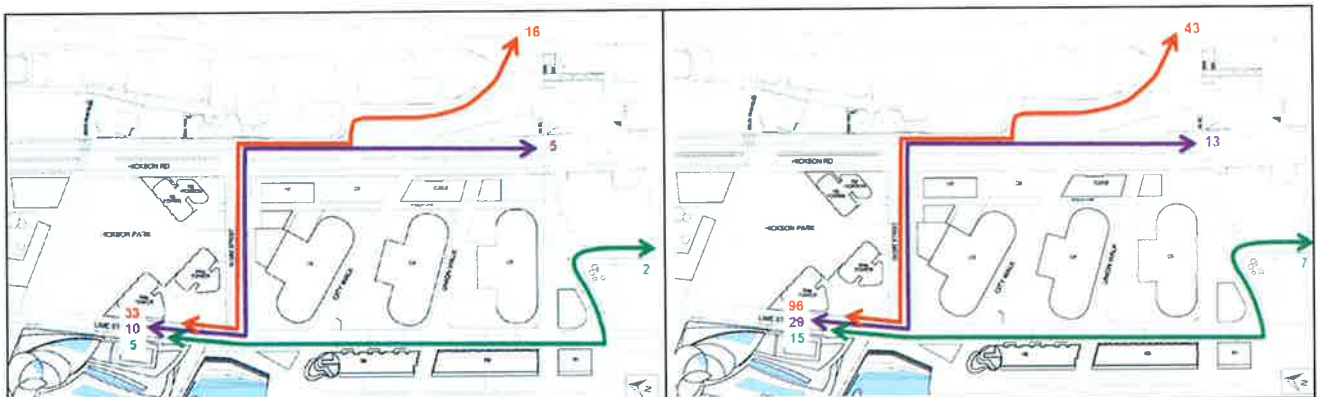


Figure 27: CSHR forecast traffic generation/distribution at the AM (left) and PM (right) peaks (Base source: Applicant's RtS)

5.5.2 Parking

Car Parking

The proposal includes 500 non-residential and 110 residential car parking spaces.

Future Assessment Requirement C4 of the Barangaroo Concept Plan (as amended by MOD 8) states that the car parking provision within Block Y shall not exceed the maximum car parking rates and figures as shown in **Table 8** below.

Table 8: C4 maximum car parking rates and figures and proposed car parking

Unit Type	Unit Nos. / m ²	Concept Plan Car Parking Rate	Maximum No. of Spaces	Proposed No. of Spaces
Retail	6,700	1 space / 600m ²	11	0
1 bed	0	0.5 spaces / unit	0	0
2 bed	28	1.2 spaces / unit	34	34
3 bed+	38	2 spaces / unit	76	76
Hotel	48,200	a) 1 space / room up to 100 rooms then 1 space per 5 rooms; or b) an alternative rate as agreed	a) 150 b) ~	500
Total	-	-	-	610

As shown in **Table 8** above, no on-site car parking spaces are proposed for the retail and 500 spaces are proposed to service the hotel and gaming components of the development. These 500 spaces are to be allocated evenly between:

- self-park – 250 spaces; and
- valet – 250 spaces.

Based on the anticipated operational traffic generation (arrivals/departures) the peak non-residential car parking demand is estimated as 800 spaces on Friday and Saturday evenings (refer to **Figure 28**), which is 300 spaces more than the proposed 500 on-site spaces allocated to non-residential uses. During busy periods, the Applicant proposes the residual demand (i.e. 300 spaces) will be accommodated by other off-street car parks that are nearby the CSHR.

Concerns were raised in public submissions that an excessive amount of car parking has been provided. Conversely, TfNSW and Council have raised concerns that the proposed 500 on-site car parking spaces may be insufficient for the operational needs of the hotel and gaming facility and recommended that quantitative analysis of surrounding car parks be undertaken to justify the 300 space shortfall during peak periods. Council also recommended that the car parking spaces should not be operated as a commuter car park.

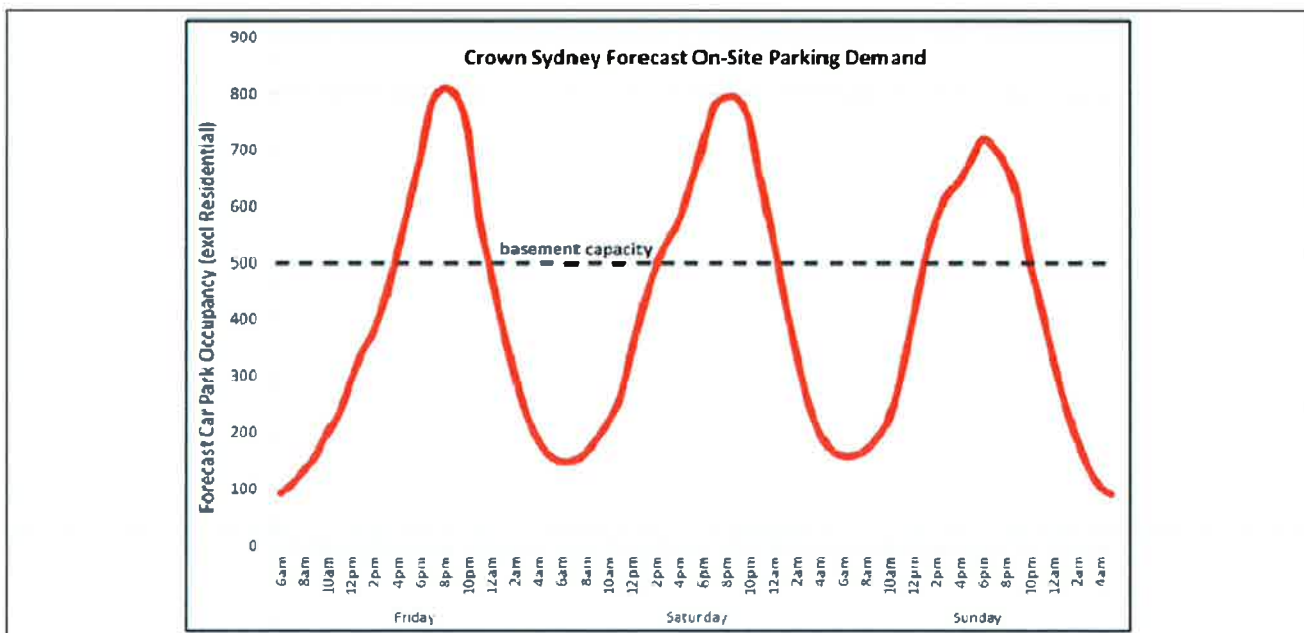


Figure 28: Forecast on-site parking demand (Source: Applicant's EIS)

The Applicant has surveyed existing car parks within the vicinity of the site on a Friday and Saturday evening to verify occupancy rates. The Applicant's survey has confirmed that between 779 and 996 parking spaces remained unoccupied within these car parks.

The Department is satisfied that the proposed residential component of the development complies with the maximum car parking rates as shown at **Table 8** above. Furthermore, the Department notes that the proposal does not include any car parking spaces for use by the retail component of the development.

In its assessment of MOD 8, the Department considered on-site car parking provision and concluded that 500 spaces will be sufficient and that there is sufficient capacity within nearby public car parks to accommodate CSHR patrons during the Friday to Sunday peak periods noted in **Figure 28**.

In light of the above findings, and as the proposal provides for 500 non-residential car parking spaces (which is in accordance with FAR C4 of MOD 8) the Department considers that the proposal will provide for sufficient car parking to support the hotel (and gaming) component of the development.

The Department concurs with Council that the proposed on-site car parking spaces should not be operated as a commuter car park as this would encourage additional private car trips to the city at the likely expense of public transport use. A condition is recommended accordingly.

Bicycle parking

The proposal provides for a total of 188 bicycle parking spaces, comprising:

- 83 employee/staff spaces at basement level;
- 68 residential spaces at basement level; and
- 37 spaces within the ground level public domain.

TfNSW requested further details of the bicycle parking provision and end of trip facilities for staff and visitors.

The Applicant has confirmed that a total of 83 secure bicycle spaces (i.e. secure lockable bike cages) are proposed for employees within the basement. In addition, end of trip facilities are provided, including 83 lockers, six showers and male and female changing rooms. A total of 37 public/visitor cycle parking spaces are provided outside the eastern frontage of the development adjacent to Barangaroo Avenue (refer to **Figures 29 and 30**).

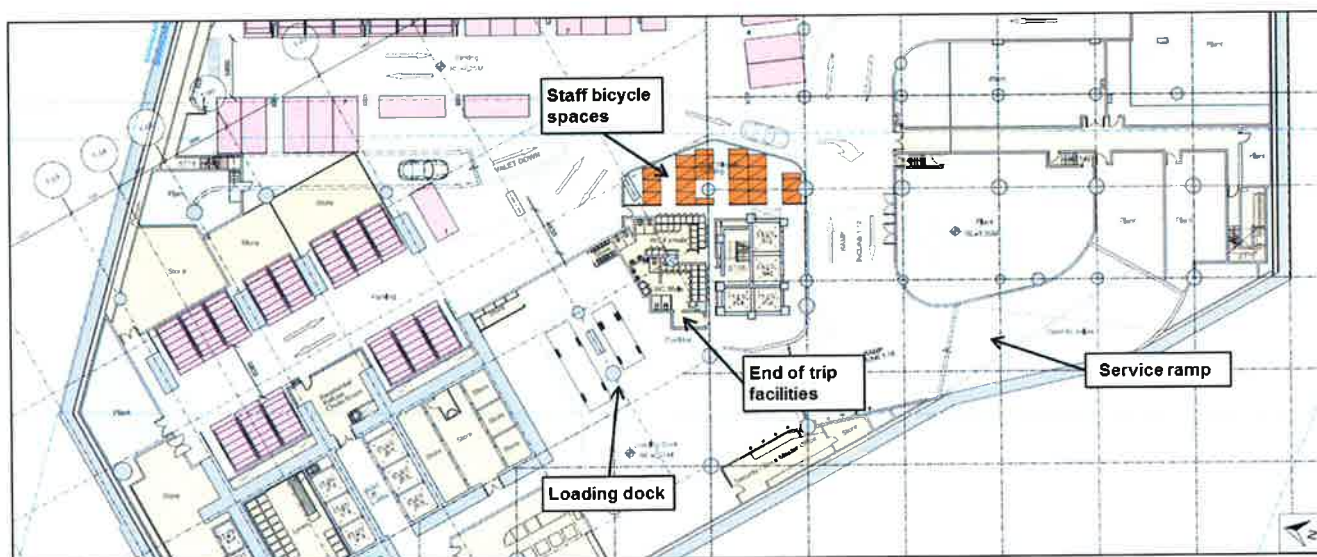


Figure 29: Location of the staff bicycle parking area and associated end of trip facilities at basement level 1 (Base source: Applicant's EIS)



Figure 30: Location of visitor bicycle parking within the public domain (Base source: Applicant's EIS)

The Department is satisfied that the location and quantum of bicycle parking (and end of trip facilities) for staff and for visitors is acceptable.

5.6 Amenity

The achievement of a high standard of amenity is an important consideration of the Department's assessment. In this regard the Department considers that the key amenity considerations are:

- residential amenity;
- hotel amenity;
- overshadowing; and
- noise.

5.6.1 Residential amenity

State Environmental Planning Policy 65 – Residential Apartment Development (SEPP 65) seeks to improve the design quality of residential developments and encourage innovative design. The Apartment Design Guide (ADG) is closely linked to the principles of SEPP 65 and sets out best practice design principles for residential developments.

The Department has considered the quality of future residential amenity as part of its assessment of the application. A full assessment of the proposal against the ADG criteria is provided at **Appendix D**, which demonstrates that the development as a whole provides an acceptable level of amenity. However, there are two departures from the guidelines of the ADG in relation to:

- apartment depth; and
- deep soil zone(s).

The DAP has raised concern (Recommendation Nos. 10 and 12) regarding the depth of apartments, balcony size and usability, access to sunlight and ventilation.

The above matters are discussed below.

Apartment depth and access to sunlight

The ADG recommends that for habitable rooms, depths should be no greater than 2.5 times the ceiling height and for apartments with open plan layouts, the maximum habitable room depth is 8m from a window.

Not all of the proposed apartments meet the ceiling height to room depth ratio and some apartments have a habitable room depth between 9-10.5 metres from a window as shown at **Figure 31**.

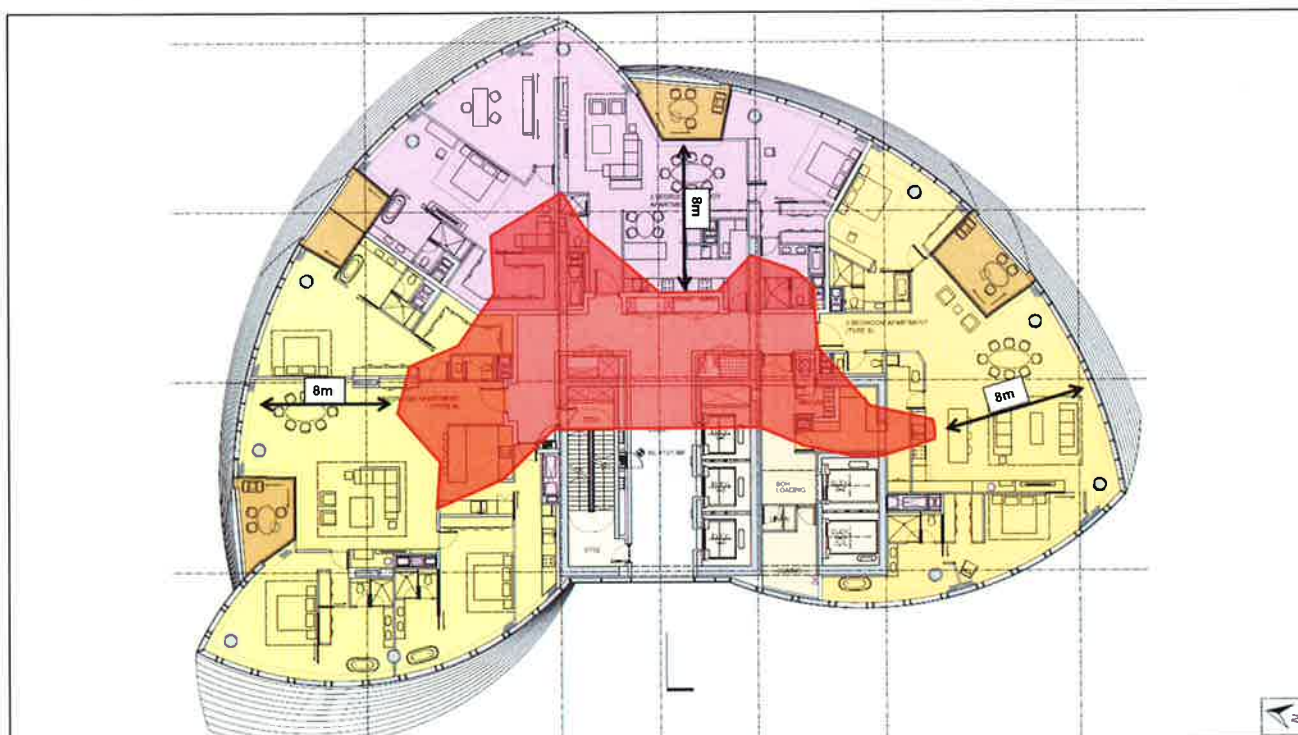


Figure 31: Typical floorplan (Level 34), areas further than 8m from a window highlighted in red (Base source: Applicant's EIS)

In support of the proposed apartment layouts, the Applicant has stated that:

- the rear of the open plan living areas range between 9 and 10.5 metres from a window, therefore only marginally exceeding the requirement;
- the majority of apartments that do not meet the ADG depth guidelines are north facing and will receive extensive solar access and are well lit by natural light despite their depth;
- the facades include high performance glazing, openable elements and the amount of glazing to opaque area exceeds minimum Thermal Comfort requirements of BASIX; and
- all apartments have multiple frontages facing different directions and therefore receive a significant amount of natural cross ventilation.

The Department considers that the proposed apartment depths are acceptable and the apartments have an acceptable level of solar access as:

- approximately 90% of the affected areas (i.e. which are located further than eight metres from a window) comprise non-habitable rooms, including the lift/stair core, entrance halls, circulation areas, walk-in wardrobes and bathrooms;
- the apartments with habitable rooms deeper than 8 metres are dual aspect, north facing with extensive glazing. Such a layout and design will ensure that all rooms will be well-lit, including those habitable room areas further than eight metres from a window; and
- the proposed layout and design of the apartments meet or exceed all other internal amenity criteria of the ADG and will therefore provide for a high standard of overall amenity.

Deep soil zone(s)

The ADG recommends that for sites greater than 1,500sqm, between 7% to 15% of the site should provide for deep soil zone(s). The ADG states that variation to the deep soil zone requirement is possible where a site is located within an urban centre, the ground floor is predominately non-residential and alternative planting is provided.

No deep soil zones are proposed within the development.

The Applicant has stated that the proposed 100% site coverage reflects the mixed use nature of the building and the site's location at Barangaroo and within central Sydney and also confirmed that the development includes appropriate stormwater solutions / onsite retention.

The Department considers that the lack of dedicated deep soil zone(s) within the site is acceptable as:

- the development is located in a dense urban area and it is not unusual for buildings in such locations to occupy the entire site;
- a new avenue of street trees are proposed along the waterfront promenade (located outside the CSHR site);
- the development includes varied (non-deep) soil depths and extensive planting at ground level and roof top landscaped areas throughout the development;
- the ground floor uses in the podium are entirely non-residential (with the exception of the residential lobby);
- the proposal forms part of the Barangaroo Concept Plan, which provides large open spaces (Central Parklands and Hickson Park) to the north and east of CSHR as part of the Barangaroo South and Barangaroo Central precincts; and
- the hydrological impacts of the 100% site coverage will be mitigated by proposed stormwater infrastructure, including on-site retention.

Balconies

The ADG recommends the following minimum sizes for balconies:

Table 9: ADG recommended minimum primary balcony sizes

Dwelling Type	Minimum area	Minimum depth	Complies
2 bed apartment	10sqm	2m	Yes
3+ bed apartment	12sqm	2.4m	Yes

The proposal provides at least one balcony for each apartment which complies with the recommended minimum area and depth requirements of the ADG, with areas ranging between 12sqm to 14.5sqm. There are 28 apartments (between levels 34 – 47) with an additional balcony, off a bedroom, with an area of 4.8sqm.

The DAP has raised concern (Recommendation No.12) about the size of balconies and that wind may have an adverse impact on the usability of the balconies at upper levels.

The Applicant has confirmed that the proposed balconies are usable and functional spaces. In addition, should the Wind Assessment report find unfavourable conditions on balconies mitigation measures will be implemented.

The Department considers that the proposed balconies are acceptable as each apartment is provided with at least one ADG compliant balcony and the ADG does not recommend minimum balcony sizes for secondary balconies.

The Department notes that condition B4 of MOD 8 refers to the potential provision of wintergardens to Blocks 4A, 4B and Y. However, the design of the CSHR building includes only open balconies and no wintergardens.

The Department recommends a condition requiring a wind assessment be undertaken to appropriately measure the likely wind conditions experienced on the residential balconies and include recommendations and mitigation measures where necessary.

Natural cross-ventilation

The ADG recommends that at least 60% of apartments in the first nine storeys of the building are naturally cross ventilated (as apartments at ten storeys or greater are deemed to be cross ventilated where balconies cannot be fully enclosed).

All apartments are located between levels 34 to 65 and are therefore considered to be naturally cross-ventilated as defined by the ADG.

The Applicant asserts that the articulated nature of the building floorplate and placement of windows on multiple facades allows all residential units to be effectively cross-ventilated. In addition, due to the height of the building, apartments will be exposed to air-movements that will further enable effective cross-ventilation.

The Department notes that due to the height of the residential accommodation within the tower (i.e. commencing at level 34) and semi-circular shape of the tower, all apartments (100%) achieve natural cross-ventilation. The proposal therefore exceeds the ADG recommended minimum number of apartments (60%) achieving natural cross-ventilation.

The Department is satisfied that the proposed apartments will achieve an acceptable standard of amenity in terms of access to sunlight and natural cross-ventilation.

5.6.2 Hotel amenity

The hotel accommodation component of the CSHR is located within the mid-rise tower. The proposed rooms are arranged off a single corridor served by six passenger lifts. A large window is located adjacent to the lift core, which is centrally located within the building (refer to **Figure 32**). All rooms are provided with floor to ceiling glazing.

The DAP recommended (Recommendation No.9) that the arrangement of hotel rooms be reconsidered to enable a glazed view at each end of the hotel corridor and that the corridors are either reduced in length or afforded an increased amenity.

The Applicant has stated that expansive views are provided from each of the hotel lift cores and floor to ceiling city and harbour views from guestrooms. In addition, the innovative design of CHSR ensures the panoramic views are maximised for all guests. The Applicant also asserts that Crown resorts is highly decorated and recognised in the industry for providing luxury accommodation.

The Department considers that the proposed design of the corridors is acceptable as:

- the corridors at each level of the hotel accommodation are provided with a large window, which offers extensive views towards Darling Harbour;
- the window provided to each corridor is located adjacent to the lift cores, which is the part of the hotel corridor that receives the most foot traffic. Consequently, all guests can experience this view while waiting for lifts;
- a suitable level of internal comfort can be achieved by appropriate interior design and ventilation;
- the proposed internal layout currently allows for a variety of room sizes meeting appropriate standards. The reduction of room sizes could therefore jeopardise building layout efficiency; and
- extension of the corridor to the tower edge may impact on the overall design and appearance of the facades.

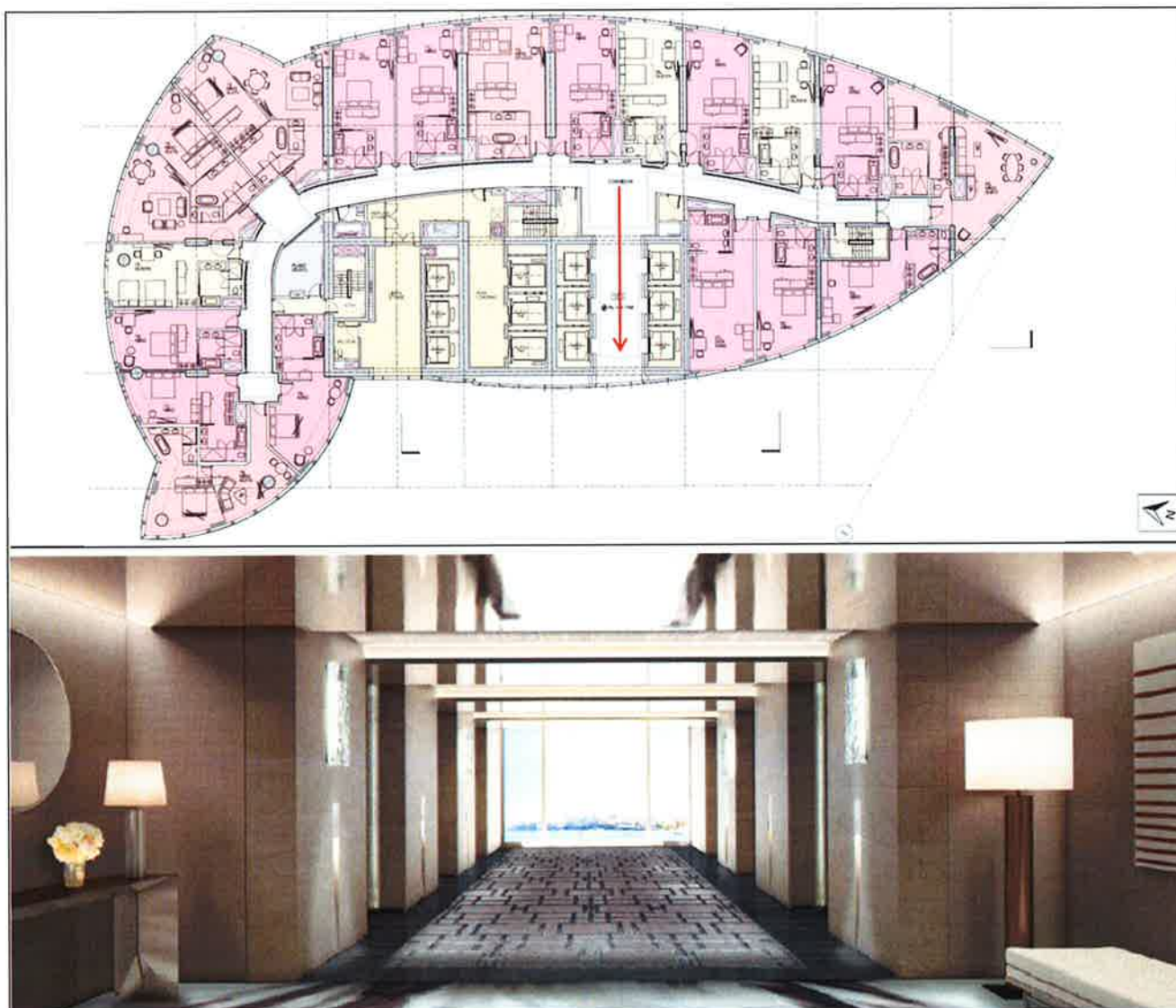


Figure 32: Indicative hotel floor plan (top) and hotel lift and corridor concept imagery (bottom)
(Source: Applicant's EIS and RtDAP)

5.6.3 Overshadowing

In its assessment of MOD 8, the Department considered the impact of the envelope (as amended) and the resulting location and extent of overshadowing. The Department's assessment concluded, on balance, that the overshadowing of the waterfront promenade, Watermans Cove and public domain / open spaces is acceptable.

Concern has been raised in public submissions about the overshadowing caused by the proposed CSHR to Darling Harbour, public domain and open spaces.

The application includes Shadow Diagrams which indicate the likely overshadowing impacts of the development on surrounding areas and properties. The shadow analysis shows that overshadowing caused by the proposed development will be contained within the parameters as set by the MOD 8 Block Y envelope.

The Department considers that as the proposed overshadowing is within the parameters set by MOD 8, it is acceptable. In addition, the Department considers that due to the sculptural tapering form of the proposed building (and as it does not fill a large proportion of the building envelope at mid to upper levels (refer to **Figure 13**) the overshadowing impacts will be lesser than what was considered under MOD 8.

5.6.4 Noise

Construction noise

The remediation, earthworks, basement and above ground works would generate noise, which has the potential to impact on the surrounding sensitive receivers. Construction Noise Reports (CNR) were submitted with the EIS for the CSHR and Stage 1C applications, which include assessments of the existing background noise levels, noise generating activities, cumulative impacts and mitigation measures.

The closest residential property to the site is located at Hickson Road approximately 90 metres east of the site and other residential receivers are also located further away at Balmain East and Darling Island. A pre-school is located approximately 340 metres to the north-east on High Street and commercial receivers are located at the King Street Wharf, Shelly Street and some on Hickson Road (refer to **Figure 33**).

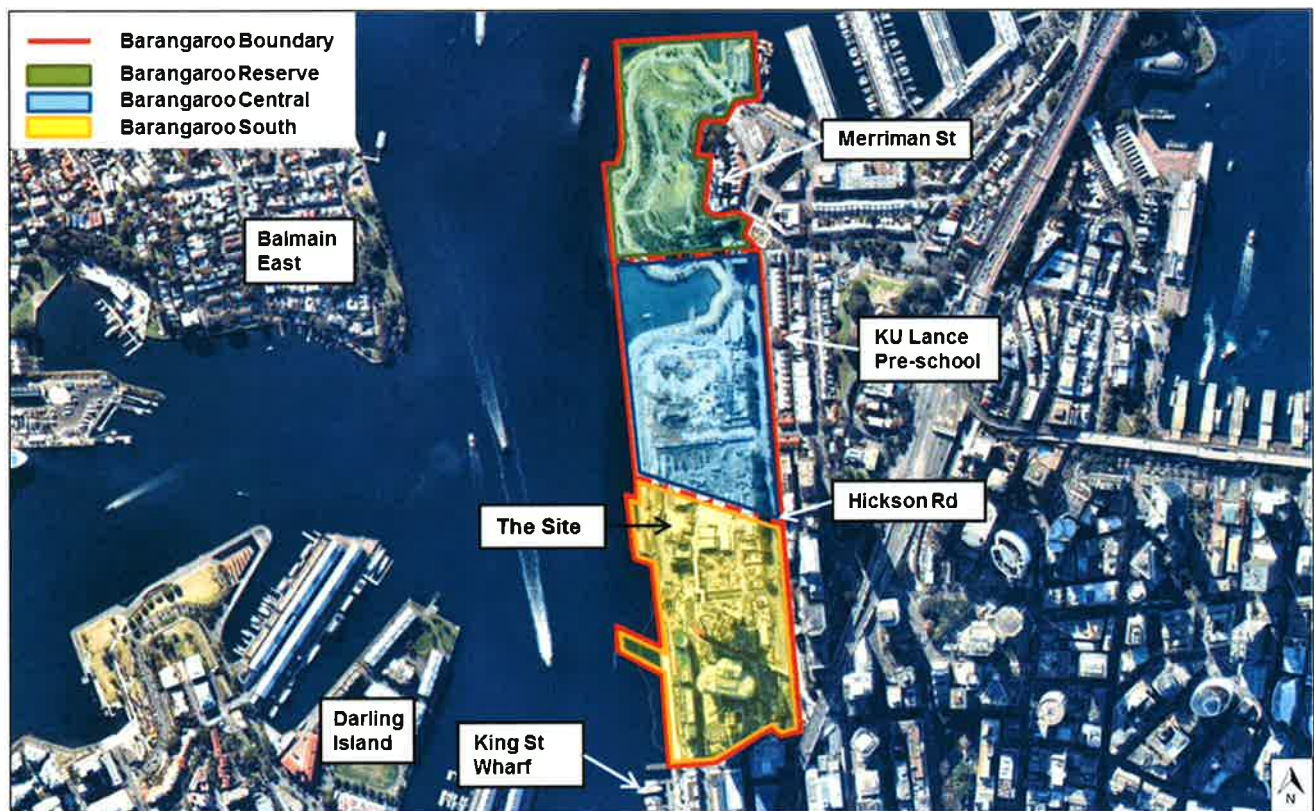


Figure 33: Noise receiver locations (Base source: Nearmaps)

The CNR confirms that the proposed works will require the use of a range of typical construction plant and equipment, including bulldozers, excavators, cranes, trucks, pumps, front-end loaders, piling rigs, concrete saws, compressors, bobcats and a bentonite plant.

The most affected receivers will be apartments on Hickson Road to the east of the site and apartments at Barangaroo South (Building R8). In these locations, the daytime noise management level (NML) is 63 dBA and the Saturday NML is 55 dBA. It is predicted that there would be minor exceedance of the daytime NML (up to 3 dBA), and Saturday NML (up to 11 dBA) as shown in **Table 10** below. Notwithstanding these minor exceedances, the predicted noise levels arising from the proposed works will be similar in magnitude to noise arising from the surrounding construction sites. Noise levels experienced by nearby commercial receivers would be less than the recommended NML for commercial properties of 70 dBA.

Table 10: Noise impacts on sensitive receivers (daytime and Saturday exceedances shown in red)

	Hickson Road	High Street	Merriman Street	Balmain East	Darling Island	Sydney Wharf	Building R8
NML (dBA)							
Day/Sat	63 / 55	57 / 50	56 / 51	59 / 51	57 / 55	57 / 55	63 / 55
Predicted Noise (dBA)							
Piling and Perimeter wall	46	44	42	48	46	46	64
Excavation	65	55	52	50	54	54	66
Structure	62	50	48	46	49	49	61
Façade	56	46	44	43	47	47	59

The Department notes that the modelling undertaken assumes a 'typical worst case' scenario, whereby all plant is running continuously. As such the modelling represents the likely noise levels that would occur during intensive periods of construction and represent the uppermost range of expected noise levels.

The EPA recommends that the Applicant prepare and implement a detailed Construction Noise and Vibration Management Plan (CNVMP), which addresses matters relating to identification, prediction, quantification and monitoring of impacts and undertake reasonable mitigation where necessary.

The Department has considered the proposed noise impacts and is satisfied that those impacts are reasonable given the circumstances of the site and the distance of the site from sensitive receivers. In addition:

- the preparation of a CNVMP will ensure that the impacts of noise are effectively managed and mitigated and in this regard, the Department recommends a condition requiring the preparation of a CNVMP in accordance with EPA recommendations;
- the modelling has assumed a worst case scenario and therefore noise impacts are likely to be less than what has been forecast in the CNR;
- the predicted exceedances are consistent with other projects within the vicinity of the site at Barangaroo South;
- as the predicted noise levels will be similar in magnitude as existing neighbouring construction sites they are unlikely to have an unacceptable cumulative noise impact; and
- noise experienced by commercial receivers would be less than the recommended NML of 70 dBA.

Operational noise

Key operational noise associated with the development is likely to include mechanical plant and noise arising from the use of the restaurants and bar uses on ground / podium levels. The Department notes that the nearest sensitive receivers are the future residential properties within the CSHR, buildings R4A and R4B and residential properties on Hickson Road to the east of the site and also residential properties within Building R8 to the south.

Mechanical plant and equipment

Details of the specific mechanical plant and equipment to be installed in the building are not yet available. To ensure that operational noise from plant and equipment is appropriately limited, the Department recommends a condition requiring the Applicant to limit the emission of noise from plant and equipment to a maximum of the background noise level plus 5 dBA, in accordance with the Industrial Noise Policy.

Hours of operation

The proposal seeks approval for the hours of operation as shown in **Table 11**.

Table 11: Proposed hours of operation

Use	Proposed hours of operation
VIP Gaming and associated restaurants	24 hours / 7 days a week
Hotel	24 hours / 7 days a week
Restaurants (not associated with gaming)	7am – 1am / 7 days a week
Ground floor bars (not associated with gaming)	12 noon – 1am / 7 days a week
Lobby bar	7am – 1am / 7 days a week
Retail	11am – 10pm / 7 days a week

The Restricted Gaming Licence (refer to **Section 3.5**) allows for gaming in the Restricted Gaming Facility to be conducted 24-hours-a-day 7-day-a-week, every day of the year. Given the Restricted Gaming Licence, the Department considers it reasonable that the ancillary and adjoining restaurants associated with the gaming facility (i.e. above ground floor level) also be operated consistent with the gaming facility.

The operation of a hotel 24-hours-a-day 7-day-a-week is commonplace and is considered necessary to allow for the appropriate functioning of a modern hotel establishment. The Department notes that the recently approved SICEEP International Convention Centre Hotel on the opposite side of Darling Harbour will be operated 24-hours-a-day, 7-days-a-week and therefore has no concerns regarding the proposed hotel operation hours.

Due to their location at ground floor level, the Department does not consider that the ground floor restaurants and bars can be reasonably considered to be located within the boundary of the 'Restricted Gaming Facility', which is located entirely above ground floor level. Consequently, the Department does not consider that these establishments should benefit from the 24-hours-a-day, 7-days-a-week operation allowed under the Restricted Gaming Licence. Moreover, these uses should be considered more appropriately as part of the context of the late night entertainment precinct extending from Cockle Bay through to Barangaroo South. In this regard, the Department notes that it is standard practice for such premises to have limited hours of operation until midnight.

The Department therefore considers that the proposed operation of ground floor bars and restaurants to midnight is reasonable:

- given the resort nature of the overall development and as the operation of these establishments will provide for an appropriate level of night-time street activation and vibrancy;
- as all bars and restaurants are located on elevations that do not front residential properties and are unlikely to cause disturbance;
- as the Operational Noise and Vibration report submitted with the application concluded that the proposal would not result in exceedances of the relevant NMLs; and
- subject to the limitation of the use of the licensed terraced areas discussed below, noise will be largely contained within the podium.

The Department notes that the proposal does not include any proposed hours of operation for the outdoor licensed areas associated with the ground floor level restaurants and bars or the roof top amenity spaces. The Department considers that to ensure the development does not result in undue noise nuisance, the use of the licensed terraces should be restricted to 10pm, 7-days-a-week and that amplified noise from roof terraces should be limited.

Notwithstanding the above assessment, the Department considers that the internal operation of the ground floor bars and restaurants may operate to 1am and the outdoor licensed areas may operate to midnight subject to a 12 month trial period to ensure that noise levels are maintained at acceptable levels during operation. The Department notes that this is standard practice for similar development applications overseen by Council and as outlined in its *Late Night Trading Premises Development Control Plan 2007*.

The Department considers that the operation of retail units until 10pm would not have any adverse impacts and is acceptable.

The Department therefore recommends operational conditions that regulate noise, reflect the hours of operation discussed above and include a 12-month trial period for an extension to 1am for ground floor units.

5.7 Signage and signage zones

The proposal includes the provision of eight business identification and building identification signs located at the top of the tower, mid-tower and podium levels and also above pedestrian entrances at ground floor level. In addition, nine signage zones are located above the entrances and windows of the ground level commercial tenancies on all façades of the building. All of the proposed signage and future signage within the signage zones will be illuminated (refer to **Figure 34** and **35**).

A SEPP 64 compliance schedule has been submitted with the application that indicates that the proposed signage is consistent, and the future signs within the proposed signage zones are capable of being consistent, with the design and siting criteria of SEPP 64.

Concerns were raised in public submissions that the signage would be visually obtrusive. Council recommended that a shopfront and signage strategy should be prepared and signage should be integrated into the design of the building. The Member for Sydney raised concerns that there was an excessive amount of signage. The DAP raised concerns (Recommendation No.3) about the prominence of the signage on the tower and mid-tower components of the building and has recommended that all signage above podium level be omitted from the scheme as the iconic nature of the building will act as its own signage.

In response to the recommendations and concerns raised within the submissions, the Applicant has advised that:

- signage at the top of buildings are a prominent feature of the CBD skylines across the world, including the Sydney CBD;
- rooftop signage has been approved for other commercial buildings at Barangaroo;
- the signage is consistent with the provisions of SEPP 64, has been designed to a high standard and will not cause a distraction to drivers on nearby transport corridors;
- the City of Sydney DCP 2012 allows building identification signage on the top of buildings;
- the inclusion of signage zones will ensure that the location and size of signs on the building is well regulated and does not become excessive in size and number; and
- the signage is, and future signage is expected to be, elegant and understated so as not to detract from the public domain or quality of the user experience.

In its assessment of MOD 8, the Department concluded that the development should be afforded signage rights consistent with other development in Barangaroo South and elsewhere in the Sydney CBD. Therefore the Department did not support the DAP recommendation that no branding signage be located on the tower or above the podium.

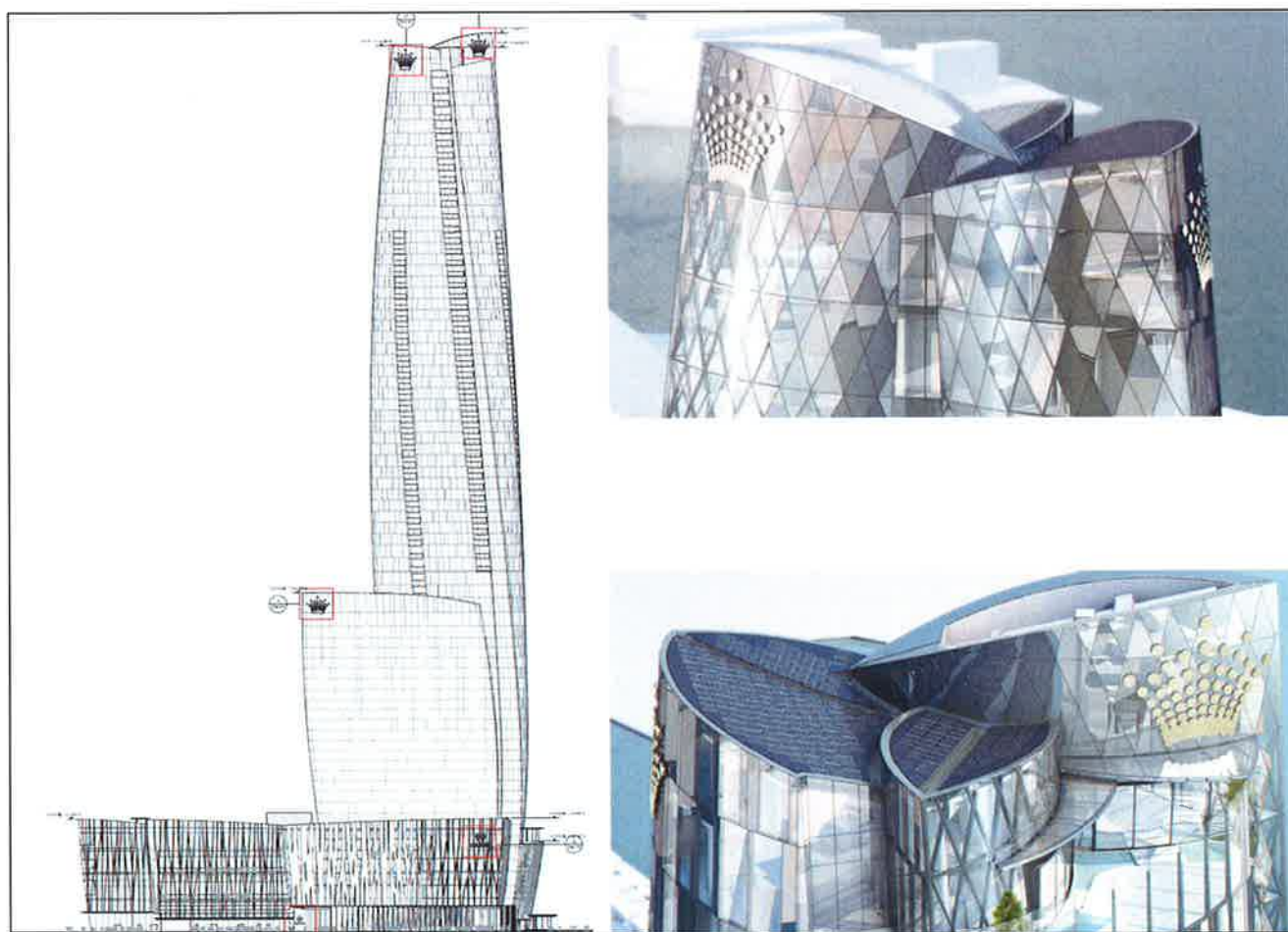


Figure 34: Proposed signage on the eastern elevation (left) and visualisation of tower signage (right)
(Source: Applicant's EIS)



Figure 35: Proposed signage zones to the western elevation (Source: Applicant's EIS - as exhibited)

The Department considers that the proposed signage is acceptable and proportionate to the scale of the development. In particular:

- it is compatible with the amenity and visual character of the area and is appropriately located and is of a high quality;
- the scale of the signs are acceptable within the context of the building and the signage appropriately integrates into its overall design;
- the signs will be backlit and the illumination of the signage is unlikely to have negative impacts upon motorists or residents; and
- when considered in the context of the overall building and the CBD, it will not result in any negative impacts on adjoining properties or the public domain.

The Department therefore supports the proposed signage and is satisfied that it meets the key assessment criteria in SEPP 64 (refer to **Appendix D**).

The Department notes that the proposed signage zones will be positioned to directly relate to the entrance and frontage of the relevant ground floor tenancy and range between 1.0m and 1.5m in height with varying lengths depending on the extent of the tenancy frontage. The Department has considered the principle of the proposed signage zones and is satisfied that all future signs will be capable of being appropriately positioned, proportioned and integrated into the design of the building and is therefore acceptable. Notwithstanding, the Department recommends a condition requiring that future signs within the signage zones be subject to separate approval.

5.8 Contamination and Remediation

The site is contaminated with pollutants as a result of the previous wider use of this portion of Barangaroo as a gasworks and port. Additional contamination may also be present as a byproduct of historic land reclamation / uncontrolled filling of the site.

Remediation Strategy

The proposal seeks approval for remediation works to ensure the site is suitable for its future use. The proposed key remediation works will include:

- demolition of existing hardstand and delineation of the underlying contaminated material and installation of perimeter walls creating a ground water retention system to facilitate remediation and excavation;
- excavation of potentially contaminated material within the perimeter walls to a depth of approximately 2.5 metres below existing ground level (a total of approximately 18,000m³);
- soil treatment where excavated material is classified as hazardous waste in accordance with EPA's *Waste Classification Guidelines*;
- off-site disposal, dewatering and water treatment (as required); and
- validation of the resultant excavation to demonstrate compliance with the Remedial Action Plan Addendum.

The Applicant has stated that it expects a large amount of the excavated material will comply with the site specific treatment criteria and therefore would not be considered to be contaminated and require any remedial treatment. Further, as the RAP has confirmed that the existing water quality at the site does not represent an unacceptable risk to human health or the environment, the Applicant is not proposing any active groundwater remediation. Water management is discussed further at **Section 5.10**.

The Department is confident that appropriate controls will be in place to protect the human health of nearby sensitive receivers and workers on site. To ensure that no health impacts arise should asbestos be encountered on the site, the Department has recommended a condition requiring the preparation of an Asbestos Management Plan prior to commencing works. With this condition in place, the Department's assessment concludes that the potential health impacts associated with the remediation works would be effectively managed.

The application is accompanied by a Remedial Action Plan (RAP), RAP Addendum and Human Health and Ecological Risk Assessment (HHERA). Although the application is also supported by a Site Audit Report and Site Audit Statement, the Department notes that both of these were issued for an earlier version of the RAP. However, the Site Auditor has stated that his original Site Audit Report and Site Audit Statement can be relied upon as being relevant to the revised RAP and that on the completion of the remediation and validation an updated Site Audit Statement will be provided.

The proposed remediation works will be undertaken in accordance with the abovementioned RAP (as amended) and the supporting detailed HHERA. The EPA has not raised any objections with regard to the RAP, RAP Addendum or HHERA and noted that the Barangaroo site is regulated by Environmental Protection License 13336.

The Department is satisfied that subject to the requirements of the RAP, RAP Addendum, HHERA and the recommended conditions of consent, that the land would be remediated in accordance with the requirements of SEPP 55 to ensure the land is made suitable for its intended future use as a hotel resort. The Department's assessment therefore concludes that the proposal is consistent with the relevant provisions of SEPP 55. Further detailed consideration of SEPP 55 is provided at **Appendix D**.

Waste Management

The Applicant has prepared a Waste Management Plan (WMP) as part of the EIS which identifies waste sources and quantities and ensures all waste streams would be classified and disposed of in accordance with the EPA's *Waste Classification Guidelines 2009* (WCG).

Waste generated by the development would include:

- 18,000m³ (approx.) general solid waste / special waste (asbestos), not requiring treatment prior to disposal to landfill;
- 2,000-5,000m³ (approx.) restricted solid waste consisting of soil of varying quality. With treatment some of this material may be suitable for disposal as general solid waste; and
- 1,200m³ hazardous waste, specifically marine sediment contaminated by tar. This material would require treatment prior to disposal to landfill.

The EPA has stated that waste will require careful management and has recommended that the Waste Management plan be revised to include details of stockpile, contamination soil and sediment management, in-situ classification of waste material, any concrete crushing and screening plant, transportation of waste, de-watering process and on-site water treatment plant and contingency plan for any event that may affect excavation and contaminated soil treatment.

The Department has incorporated the EPA's recommended conditions into the development consent. With the recommended conditions in place, the Department concludes that waste generated by the development can be effectively managed.

5.9 Air Quality

The initially separated remediation, earthworks, excavation and structural works application includes an Air Quality Impact Assessment (AQIA) and the CSHR application includes an Air Quality Review (AQR). The AQIA identifies primary pollutants of concern, the nearest sensitive receivers and undertakes dispersion modelling to assess potential air quality impacts in accordance with the relevant guidelines. The AQR concludes that the CSHR will not result in any adverse air quality impacts.

Primary air pollutants identified in the AQIA include heavy metals, petroleum derived Volatile Organic Compounds (VOCs), nitrogen oxides (NOx), phenol, naphthalene, dust and odour. These pollutants were identified as being generated during excavation and materials handling, where heavy metals from contaminated soil may be released to the air attached to dust or small soil particles (Particulate Matter - PM10). The combustion of diesel fuel in plant and equipment would generate a range of pollutants, and the excavation of material would also generate the gaseous emission of pollutants and odour to air.

The EPA has not raised any objections on air quality grounds. However, it has stated that air quality will require careful management and has recommended conditions relating to updating the robustness of the AQIA and additional matters regarding dust generation, odour and stockpile management. The Department supports the EPA's recommended conditions and concludes that there are unlikely to be any adverse air quality impacts associated with the proposed works subject to the recommended conditions.

5.10 Other

5.10.1 Water Management

In addition to the RAP, the EIS includes a Stormwater Management and Infrastructure Assessment (SMIA), which sets out the strategy for water management during the works.

The SMIA confirms that the existing ground water quality at the site does not represent an unacceptable risk to human health or the environment. Further, the construction of the basement / perimeter wall is expected to improve groundwater quality to the west of the site as it will isolate soil and any unexpected groundwater contamination from migrating from the site to the surrounding area or towards Darling Harbour.

The EPA recommends conditions relating to water management, including methods for water discharge, use of contaminated water and water treatment plant operation. The Department supports the EPA's recommended conditions and has included these in the recommended development consent accordingly.

DPI has stated that the site is well characterised and understood hydro/geologically and recommends conditions requiring the preparation of a Groundwater Post Cutoff System Monitoring and Management Plan (Groundwater Monitoring Plan). The Department notes that the proposal does not propose any ongoing extraction of groundwater. The Department supports the DPI's view and has recommended that the Applicant consult directly with the DPI in relation to the preparation of a Groundwater Monitoring Plan.

The Department's assessment therefore concludes that the potential water impacts of the development can be effectively managed, subject to conditions.

5.10.2 Waste vehicle collection

Council has recommended that the dimensions of the loading dock should be designed to accommodate waste vehicles.

The Applicant has confirmed that the loading dock has been designed to accommodate vehicles no larger than standard garbage trucks (medium rigid vehicles). A vertical clearance of 3.6 metres has been provided so that it is not possible for larger vehicles (i.e. heavy rigid vehicles) to access the loading dock.

The Department is satisfied that the development will be able to adequately accommodate on-site garbage collection within the designated service vehicle loading docks.

5.10.3 Wind

The CSHR site is susceptible to winds from a variety of directions and from time to time experiences strong winds gusts.

Concerns have been raised in public submissions about the potential wind impacts of the development. Council has recommended that wind shields/skirts should be incorporated into the built form of the building. The DAP recommended (Recommendation No.12) that increased tree and understorey planting be provided to the north of the development within the Central Parklands to ensure appropriate wind conditions and that the landscaping is delivered at the time of the opening of the CSHR.

The application includes a Wind Impact Assessment (WIA), which analyses the existing wind climatology and tested wind impacts resulting from the development.

The WIA indicates that from a comfort perspective, the majority of locations around the site are acceptable for pedestrians sitting, standing or walking. However, pedestrians may experience difficulties during windy conditions at the north-west corner of the CSHR, within the Central

Parklands, adjacent to the waterfront promenade. The WIA concludes that these negative wind conditions can be suitably mitigated through the provision of tree planting along the waterfront promenade and within the Central Parklands. In addition, the operable horizontal blinds within the licensed terrace area and the vertical glass blinds located along the west side of the podium would further improve wind comfort conditions.

In addition to the conclusions of the WIA, the Applicant has confirmed that planting within the Central Parklands does not form part of this application and a separate development application will be submitted to address this matter at a later date.

The Department notes that the timeframe for the submission of details of the Central Parklands and its landscape strategy is not yet known. However, confirmation has been provided that the Central Parklands will remain hoarded and public access to this space will not be allowed until such time as the landscaping has been finalised and is in place.

In light of the above assessment, the Department is satisfied that no additional wind mitigation measures are necessary as public access to the potentially wind affected area will not be permitted until the Central Parklands has been appropriately landscaped.

The impact of wind on residential balconies is discussed at **Section 5.6.1**.

5.10.4 Sydney Observatory

Concerns were raised in public submissions and by Council about the impact of the development on Sydney Observatory. MAAS raised concerns that the proposal will obscure Omega Centauri for part of the year, which may impact the experience of visitors to the Sydney Observatory and light spill from the development should be kept to a minimum.

In its assessment of MOD 8, the Department considered the impact of the amended building envelope on the observational function of Sydney Observatory. The Department concluded that the interruption of views toward a number of star constellations from Sydney Observatory, for part of the year, is acceptable. The Department also concluded that future buildings should not unreasonably result in adverse light spill.

A preliminary External Lighting Design and Light Spill Mitigation Strategy has been submitted with the application, which outlines design principles to reduce the potential impacts of future lighting on the Sydney Observatory and other nearby properties.

The Applicant asserts that the positioning of Sydney Observatory (i.e within the Sydney CBD) is not ideal for astronomical observations due to the presence of smog, pollution, and existing CBD light glare. Notwithstanding these constraints, the Applicant has committed to adhering to the requirements of Australian Standard AS 4282 'Control of the Obtrusive Effects of Outdoor Lighting' and will minimise light spill as part of the detailed design of future stages of the development.

The Department concurs with Council's comment that future buildings should not unreasonably result in adverse light spill and recommends a condition requiring the preparation of a robust final Lighting and Light Spill Report, including mitigation measures to minimise light spill necessary.

5.10.5 Heritage

Concerns were raised in public submissions by Council, the Heritage Council and the National Trust about the impact of the proposed development on nearby local and State significant heritage items, including Millers Point Conservation Area, Sydney Observatory and Sydney Opera House.

In its assessment of MOD 8, the Department considered the impact of the amended building envelope on heritage items. The Department concluded that the modified envelopes would not adversely impact on any heritage items.

The Department notes that the proposed building is contained wholly within the building envelope and due to the sculptural tapering form of the proposed building it does not fill a large proportion of the building envelope at mid to upper levels (refer to **Figure 13**). In light of this, the Department considers that view impacts from surrounding vantage points and heritage items would be generally better than what was assessed under MOD 8 and are therefore acceptable.

5.10.6 Archaeology

The application includes an Archaeological Report by Casey & Lowe, which confirms that archaeological remains are expected to be found within a 30-40 metre zone (Archaeological Zone) within Barangaroo South, west of Hickson Road. Furthermore, it confirmed that no significant archaeological remains are expected west of the Archaeological Zone as this area was within the harbour / under water until the 1960/70s wharf was constructed.

The Heritage Council has confirmed that the proposed earthworks have no impact on heritage items or conservation areas. Further, the proposed works are located entirely within modern reclamation zones for the former contained terminal wharf and will therefore have no impact on aboriginal or non-aboriginal archaeology.

The Department notes that there are no local or State significant heritage items on the site and the site is located outside and west of the Archaeological Zone. The Department therefore concludes that the proposal is unlikely to have any archaeological impacts.

5.10.7 Affordable / key worker housing

The Housing Strategy prepared in accordance with MOD 8 requires a total of 2.3% of residential GFA within Barangaroo South (3,542sqm) to be key worker accommodation. It is estimated that a total of approximately 60-71 one-bedroom key worker apartments (or an alternative housing mix) could be provided in Barangaroo South.

Concerns have been raised by the City of Sydney Council, Leichhardt Council and in public submissions that the CSHR development should contain affordable / key worker accommodation. City of Sydney Council also suggested that a minimum of 10-20% key worker housing should be provided.

While the Department acknowledges the concerns around the rate of key worker housing, MOD 8 commits to provide a rate of 2.3% within Barangaroo South and does not specify an exact location. However, the Applicant has confirmed that it is likely to be provided in Building R5 (Block 4B), which is located to the east of CSHR, and that a range of unit sizes could be provided.

As key worker accommodation will be provided in accordance with the Housing Strategy and is likely to be provided adjacent to CSHR, the Department considers the absence of key worker accommodation within the CSHR development is acceptable.

5.10.8 Social and economic benefit

Concern was raised in public submissions that the development lacked sufficient social benefit.

As part of its RtS, the Applicant has provided a Benefits Analysis to supplement the Social Impact Assessment submitted with the EIS. These analyses note the following broad public benefits:

- employment opportunities during the construction and operational phases;
- Crown's commitment to training facilities in Western Sydney and the National Centre of Indigenous Excellence at Redfern;
- attraction of international tourists and extended opportunity to grow tourism within Sydney;
- 24-hour activity and public access improving safety around the development and adjoining open spaces;
- visitor allure in response to the iconic/landmark building;
- Crown Resorts Foundation has established a \$200 million National Philanthropic Fund; and

- the NSW Government will collect Restricted Gaming Facility licence revenues, taxes, stamp duties and rates as a result of the operation of the facility, which can be reinvested into the community in the form of social and physical infrastructure.

In light of the above assessment, the Department considers that the proposal provides for some broad social benefits. Moreover, the Department considers that the project should, in this regard, be considered in the context of the broader Barangaroo Concept Plan and the range of benefits provided across the precinct, such as significant open spaces, access to the foreshore and the creation of approximately 102,000 new employment opportunities and a major tourism and entertainment precinct.

5.10.9 Construction of basement beneath Barangaroo Avenue

Council has raised concern about the maintenance issues arising from the provision of private development (i.e. car parking spaces) within the basement beneath Barangaroo Avenue (refer to **Figure 11**).

The Department considers that the proposed provision of basement beneath Barangaroo Avenue is acceptable as:

- such provision is not uncommon within Sydney and has occurred at other locations within Barangaroo South; and
- the future subdivision of the land will ensure that land ownership is clearly delineated therefore ensuring that any future maintenance work can be appropriately discussed between stratum owners.

5.10.10 Hours of construction

The proposal seeks approval for the following hours of construction:

- 7am to 6pm Monday to Friday;
- 7am to 5pm Saturday; and
- No work on Sunday or public holidays.

A comparison between the proposed hours of construction and Council's and EPA's recommended hours of construction is provided in **Table 12** below.

Table 12: Comparison between the proposed, Council and EPA hours of construction

	Council's Recommended Hours of Construction	EPA's Recommended Hours of Construction	Proposed Hours of Construction
Monday to Friday	7.30am to 5.30pm	7:00am to 6:00pm	7:00am to 6:00pm
Saturday	7.30am to 3.30pm	8:00am to 5:00pm	7:00am to 5:00pm
Sunday or public holidays	No work	No work	No work

The Department considers that the proposed hours of construction are acceptable as:

- although the proposed construction hours do not coincide with Council's recommended hours of construction, the proposed hours are generally consistent with the EPA's recommended construction hours for the site as shown in **Table 12**;
- the Applicant has committed to implementing all reasonable and feasible noise mitigation measures;
- the extended hours would improve construction efficiency, which would reduce the total duration and therefore impact of the works;
- noise and air quality impacts will be regulated by the EPL during the extension of the hours of construction; and
- the CNVMP sets out appropriate monitoring procedures.

Some activities are also proposed to occur 24-hours-a-day, seven-days-a-week, such as essential maintenance (e.g. dust suppression and emergency works), delivery of materials as required by

police/RMS on safety reasons, extended concrete pours for lateral restraining structures, concrete finishing processes, early truck arrivals (before 7am), works to various authorities' utilities and operation of the Bentonite Plant, wastewater treatment plant (WTP) and other environmental equipment.

Concerns were raised in public submissions about adverse noise nuisance arising from the proposed hours of construction.

The Applicant has stated that the extended construction hours will enable the major noise generating activities to be carried out in a more efficient manner and would therefore shorten the overall construction period and impact on sensitive receivers.

The Department has considered the proposed 24-hours-a-day, seven-days-a-week construction activities and has grouped these into activities with potentially low and high noise/amenity impacts as noted within **Table 13** below.

Table 13: Consideration of 24-hours-a-day, seven-days-a-week construction activities for the site

Low Impact Construction Activities	High Impact Construction Activities
essential maintenance (e.g. dust suppression and emergency works)	extended concrete pours for lateral restraining structures
delivery of materials as required by police/RMS on safety reasons,	concrete finishing processes (including concrete curing, post tensioning and membrane placement)
works to various authorities' utilities	truck movements
operation of the Bentonite Plant, wastewater treatment plant (WTP) and other environmental equipment	

The Department considers that the high impact activities pose a significant risk of causing unacceptable noise disturbance and a consequential adverse impact on amenity. The Department therefore does not agree to these activities being allowed to be carried out 24-hours-a-day, seven-days-a-week. The Department considers that due to the location and nature of the site, the low impact activities are unlikely to result in unacceptable noise or amenity impacts should they occur 24-hours-a-day, seven-days-a-week.

The Department therefore recommends a condition that:

- a) requires the construction to be carried out in accordance with the proposed hours of construction;
- b) allows low impact construction activities to operate 24-hours-a-day, seven-days-a-week; and
- c) any work generating a high noise impact (i.e work exceeding a NML of $L_{Aeq} 75dBA$) shall only be undertaken between:
 - i. 8am to 6pm Monday to Friday;
 - ii. 8am to 1pm Saturday; and
 - iii. in a continuous block of no more than 3 hours, with at least 1 hour respite between each block.

6. CONCLUSION

The Department has assessed the merits of the proposal taking into consideration the relevant EPIs, issues raised in all submissions and the recommendations of the DAP. The Department is satisfied that the impacts have been satisfactorily addressed within the proposal and the recommended conditions. The Department also considers that the proposal is consistent with the Barangaroo Concept Plan (as proposed to be amended by MOD 8) and is an appropriate development for the site.

The Department has considered the built form impacts of the proposal, noting that the height and scale of the development would result in a highly prominent building. It is considered that the proposal responds to the constraints of the site and surrounding context in a positive, unique and iconic way.

The building podium comprises a sophisticated design, is appropriately articulated and is visually segmented to ensure it has an appropriate human scale and relationship with the public domain. The building as a whole displays a high standard of design and appearance that achieves design excellence. The shape and form of the tower is elegant and slender, the materials are of a high quality and the three key components of the building form a cohesive structure that will result in a distinct and iconic landmark building. The building responds appropriately to the surrounding public domain, has minimal impact on view corridors and implements a variety of environmentally sustainable measures.

The Department concludes that 500 on-site non-residential and 110 residential car parking spaces will be generally sufficient and that there is adequate car parking capacity within nearby public car parks to accommodate any additional CSHR patrons (during the Friday to Sunday peak periods) should they be required. The construction and operational traffic generated by the proposal will also have an acceptable impact on the surrounding road network.

The Department's assessment also concludes that the proposed apartments will provide for an appropriate level of residential amenity. Furthermore, the proposed overshadowing of public domain caused by the proposal is less than the maximum allowed by MOD 8 building envelope and is therefore acceptable.

The proposal has been designed in accordance with ESD principles and will achieve low operational energy consumption and potable water use, minimisation of waste to landfill and environmentally responsible materials selection.

The contamination, signage and noise impacts have also been carefully considered and can be satisfactorily addressed through recommended conditions of consent.

The proposal will have a number of significant positive economic, social and environmental impacts. The proposal will strengthen the role of Barangaroo as a tourist destination and complement the development of the Barangaroo South precinct and broader revitalisation of Darling Harbour. The non-residential uses, particularly the hotel and the gaming facility components, will also provide a significant boost to local employment by creating up to 1831 ongoing jobs on the western fringe of the CBD.

The Department is satisfied that the recommended conditions and implementation of measures detailed in the Applicant's EIS and the Response to Submissions report, will adequately mitigate the residual environmental impacts of the proposal.

Subject to the recommended conditions, the Department considers the proposals are in the public interest and recommends the applications for approval.

7. RECOMMENDATION

It is recommended that the Executive Director, Priority Projects Assessments:

- a) **consider** the recommendations of this report;
- b) **waive** the requirement to undertake a design competition for the CSHR in accordance with clause 19(4) of the SSP SEPP and Modification C2(7) of the Barangaroo Concept Plan; and
- c) **sign** the attached waiver at **Appendix C**.

It is recommended that the Planning Assessment Commission, as delegate of the Minister for Planning:

- a) **consider** the recommendations of this report;
- b) following the determination of MOD 8 (MP06_0162 MOD 8), **grant consent** to the State significant development application (SSD 6957), subject to conditions, under section 89E of the EP&A Act, having considered matters in accordance with (a) above;
- c) and **sign** the attached development consent at **Appendix H**.

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29/3/16.