

# Barangaroo Concept Plan Modification 8 and State Environmental Planning Policy Amendment (Barangaroo) 2015

MP06\_0162 MOD 8

Submission to NSW Planning and Environment  
2 May 2015





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## 1.0 Executive Summary

### 1.1 Overview

This submission responds to the Modification 8 application to the Barangaroo Concept Plan as well as associated amendments to existing state planning legislation to support the significant changes being pursued under s75W of the Environmental Planning and Assessment Act 1979 (the Act).

The City of Sydney (the City) objects to Modification 8 and the requested SEPP amendments and calls for the proposed significant departure from the current approval framework to be considered by the Planning Assessment Commission (PAC). The increased development yield does not correspond with any increased public amenity or public benefit commensurate with private gain to the proponents. The revised block layout and cove removal is not supported. Modification 8 is not in the public interest and highlights the prejudicial legacy of Part 3A of the Act which allows, through transitional provisions, unconstrained modifications to concept plans for this site with significantly less rigor than the approvals process relevant to development through the superseding Part 4 of the Act. The proposal is also prohibited by three existing SEPPs, which are proposed to be changed.

The proponent's submission fails to justify on social and environmental grounds, in accordance with the *objectives* of the Act, how a minimum \$20-bet gaming facility, high roller hotel and luxury apartments is a preferred land use to public foreshore recreational parkland, a public benefit outcome obligated under the current approvals. Planning gains to the concept plan must exhibit:

- a level of public benefit commensurate with the uplift in development potential;
- existing approved floor space reuse through redistribution of building envelopes;
- environmental sensitivity by moving the casino/hotel development block east within the existing development rights area defined in the SEPP;
- increased commitments to affordable and key worker housing; and
- greater detail in traffic modelling and the ability to meet modal split targets.

With no express provision in the Act to vary the meaning of the Minister's original Approval (the parent 2007 Concept Plan approval), the City contends that the s75W modification must be measured against the original Approval and not the incremental



**Figure 1. Current Concept Plan approval as at MOD 6**  
Source: Barangaroo Delivery Authority website



**Figure 2. Proposed MOD 8 illustrative design against CBD backdrop**  
Source: Proponent's SSD Application

modifications made to date when assessing the impact of cumulative changes. This is an accepted principle in relation to Part 4 of the Act. This is critical given the Concept Plan Modification 8 follows:

- the 2006 competition and Concept Plan approval given in 2007 by the Minister for Planning;
- following an EOI process, a bid lodged by Lend Lease was selected by the NSW Government in December 2009 with an optional non-conforming component which led to Modification 4 to the Concept Plan that included a “landmark hotel” building within the Harbour;
- the Meredith Sussex and Shelley Penn *Barangaroo Review* under Minister Hazzard in August 2011 which, among other recommendations, encouraged Lend Lease to relocate the approved “landmark hotel” building from the Harbour. Following the review, then Premier the Hon Barry O’Farrell MP invited Lend Lease to consider alternative sites for the hotel;
- an announcement in 2012 by Lend Lease that it had entered into exclusive negotiations with Crown Resorts for a new VIP gaming facility and resort (casino) and apartments in Barangaroo South. The location of the casino was not disclosed at that time;
- an ‘unsolicited proposal’ submitted to NSW Department of Premier and Cabinet by Crown Resorts in 2013 and the associated grant of a 99-year restricted gaming licence in 2014 allowing Crown to operate a minimum \$20-bet gaming facility after November 2019 when Echo Entertainment’s exclusive Star Casino licence expires. The Barangaroo South site was selected for the licence approval, subject to planning approval; and
- speculation that the NSW Government may have an agreement with Crown Resorts to build the casino at Barangaroo.

Under NSW law, the assessment of the s75W modification and SEPP amendments is entirely separate to the unsolicited proposals process (USP) and any landowner or developer agreement(s). Pre-determination of the USP and any land agreement(s) should not be seen to reduce planning risk in the assessment and is unreliable in expressing any element of entitlement. If the USP arrangements are held out to reduce the planning risk under the Act, then governance arrangements could be seen as compromised and any approval tainted.

Modification 8 requests the relocation of the hotel building from the harbour area which was outside the original bid area to land now required by the current Concept Plan for waterfront public open space. The hotel site extending into the harbour as a pier

however remains. To be clear, the hotel, residential apartments and gaming facility (casino) is now proposed to be situated on land where it is prohibited to be built.

The request to vary the Concept Plan and to vary underlying State planning legislation (SEPPs) to facilitate this relocation, and its various flow-on effects, is considered unreasonable as a 'modification' and a misuse of the former Part 3A powers and devolved Parliamentary powers to amend State legislation.

## 1.2 Key Issues

The key issues in this submission are:

### Proper Planning Process

1. The Secretary of NSW Planning and Environment should direct that Modification 8 be externally assessed by a suitably qualified and experienced planning consultant independent of the NSW State Government. Its recommendations should be considered and determined by the Planning Assessment Commission (PAC). Such a determination process is consistent with the standing delegations for Ministerial Approvals established by the previous Minister for Planning Brad Hazzard, which would require determination of this application by the PAC. The presence of an essentially 'private agreement' (as compares to a public agreement) between the State Government and Crown Resorts generates a perceived bias in the development assessment process which needs to be managed to ensure public trust in planning, a key objective of the current government and its proposed reforms, is maintained.
2. The public have a reasonable expectation that existing planning legislation (SEPPs) and the current Concept Plan are carried out over time as committed to and approved. Successive and constant proponent-led increases in yields at public expense, creates uncertainty and continues poor public policy. Modifications which re-write existing zoning, development envelopes, development guidelines and approvals to suit a highly specialise, exclusive, commercial opportunity on land that is zoned for public open space, can undermine confidence in the planning system. The City does not support cumulative "planning creep" to the extent demonstrated from the original Concept Plan approval through to Modification 8.

The changes in Modification 8 (MOD 8) are so significant as to:

- re-write the existing zoning law (including the reversal of a prohibition for development over preserved waterfront public open space);



- change the Barangaroo boundaries;
- swap the development guidelines; and
- significantly alter the detailed parameters of the existing Concept Plan.

The impact assessment of the requested changes in the Proponent's submission is limited to the matters being modified, rather than the cumulative development that has evolved since the development was approved. The City believes that the reasonableness of the modification must be closely scrutinised.

3. The process of modifying an approved Concept Plan under s75W of the Act has no defined rigour or limits on the Minister's ability to modify a determination. For example, there is no requirement to consider whether the modified development is substantially the same as that originally approved or to consider the cumulative impacts of the entire development as modified.
4. Had the Barangaroo Concept Plan not been classed as a transitional Part 3A project, given the repeal of Part 3A, Part 4 of the Act would have required a very different and more rigorous set of processes. Part 4 would have the Proponent justifying why compliance with the established building envelopes is unreasonable or unnecessary in the circumstances and that there are sufficient environmental planning grounds to justify contravening the planning controls. Part 4 would limit the scope of modification as it only allows a consent authority to modify consent if the development would be substantially the same development as originally approved. The proposed MOD 8 increase in GFA, dramatic change in height and rearrangement of block envelopes would fail relevant considerations under Part 4.
5. A new planning proposal process should be required, including a series of consent authority resolutions, strategic community consultation, independent analysis and third-party appeal rights. These checks and balances ensure an appropriate modification can proceed to determination following appropriate impact mitigation, public consultation and demonstration of public benefits.
6. A new concept plan application should be carried out for the Barangaroo site given the degree of proposed change. More transparent and accountable assessment, with checks and balances equivalent to those under Part 4 of the Act, are essential to good governance.

### **Lack of Public Interest and Community Engagement**

7. There is a lack of acknowledgment associated with MOD 8 concerning the need for additional public benefits for significant uplift in development potential. Additional public benefits should be documented and publicly exhibited with public input prior to lodgement. In direct contrast, MOD 8 reduces the quality and quantity of public open space (by manipulating what is classed as public open space) and has a range of other negative externalities as set out in this submission. The City questions the emphasis on private gain over public interest associated with the modification.
8. The Secretary of the NSW Planning and Environment should consider that:
  - the degree of modification would not being capable of assessment as an amendment under Part 4 of the Act, and should be subject to a fresh application, and therefore fresh review of the development as a whole including a public interest test;
  - the Sussex Penn Barangaroo Review noted that, in referring to the comments of the original competition winners during the assessment of MOD 4 to the Concept Plan, **that 500,000sq.m or more of floor space would be acceptable at Barangaroo but only if accompanied by additional public benefits.**

### **Bulk and Scale**

9. The proposed amendments will reduce the integrity to the current scheme and fail to deliver a more beneficial design outcome.
10. The planning framework for block structure, open space, built form and the waterfront treatment should reflect the original Concept Plan principles that support an iconic master-planned development of international significance.
11. The block structure creates negative wind effects on the waterfront promenade and the internal street network.

### **Affordable Housing**

12. NSW Planning and Environment should condition the provision of at least 10% but preferably 20% of residential floor space as 'key worker housing' (on-site as set out in the Project Development Agreement), to compensate the failure of the Barangaroo Delivery Authority to take up the existing development agreement option of increasing the provision from the existing 2.3%.

The submission **Overview** is found in **Section 2** of this report.

The detailed submission **Recommendations** are found in **Sections 3, 4, 5 and 6.**

## 2.0 Background

### 2.1 Approved Concept Plan and Modifications

It is not possible to consider Modification 8 (MOD 8) without looking at the original vision for Barangaroo and the previous modifications to the Concept Plan.

The recognisable framework of the original Concept Plan has already been eroded with subsequent modifications to it, and this departure will be further exacerbated by MOD 8. The Concept Plan under MOD 8 would be a radical transformation from the original Government's Brief and Jury recommendations in relation to Barangaroo South.

The vision for Barangaroo originally portrayed in the HTBI competition winning scheme and Jury Report was for a precinct that:

*“had a clear street layout and structure, which provided a strong delineation of public versus private demarcated by Globe Street, which also defined development envelopes to the east and public open space to the west, (the latter comprising 50% of the site, excluding streets, lanes and space within the development blocks). The public open space component suggested a range of formal and informal spaces serving separate recreational functions, as a sequence unfolding along the length of the site and culminating in a headland park. Gross Floor Area (GFA) was distributed across building envelopes which were evenly graded from higher at the south to lower at the northern central area. It included a public foreshore promenade, partial new shoreline to the harbour and limited alteration of the existing sea walls.”*

*Source: Sussex - Penn Barangaroo review, August 2011*



**Figure 3. Competition winning entry, subject to the jury recommending a natural northern headland, a large northern cove and a larger water intervention at the southern cove**  
Source: NSW Planning and Environment



**Figure 4. Original Concept Plan**  
Source: NSW Planning and Environment

## 2.2 City's Response to Secretary's Environmental Assessment Requirements (SEARs)

The City responded to the draft SEARs for MOD 8 in April 2014 and raised the following matters for the Applicant's review in order to deliver an appropriate level of assessment:

- Explanation is needed of why the revised mix of uses cannot be accommodated within the approved GFA and development area through harvesting and redistribution;
- Preparation of a detailed options paper for the hotel, apartments and casino building demonstrating why the building cannot be located within the established building zone;
- Demonstration of maintaining the foreshore quality and amount of publicly accessible open space;
- Address in detail the recommendations of the Sussex/Penn Review;
- Revisit affordable housing provision and location with the proposed increase in floorspace noting that the nature of the proposed uses will add additional pressure for key worker housing;
- Demonstration that any proposed changes will have acceptable traffic impacts, in terms of traffic generation, modal split targets and required car parking; and
- Social, heritage and remediation impacts to be addressed in detail.

There has been varying degrees of responses on the above matters. However, key issues that remain are set out in this submission.

### 2.3 Proposed Development

MOD 8 seeks approval to endorse the revised mix and location of uses, revised maximum GFAs, revised building envelopes, revised public open space and public domain concepts, a reduced shoreline to the harbour and an increase in the area of the Barangaroo site.

Specifically, MOD 8 seeks approval for the following:

- **increase the total maximum GFA** at Barangaroo from 563,965 to 605,911 sqm by amending the GFA allocated to Barangaroo South as follows:
  - increase the maximum GFA of Block Y from 33,000 to 77,500 sqm;
  - increase in the maximum GFA of Block 4A from 8,150 to 86,579 sqm;
  - decrease in the maximum GFA of Block 4B from 29,900 to 19,558 sqm;
  - deletion of Block 4C and reallocation of its 39,000 sqm of GFA;  
reduce the maximum GFA for Block 2 from 209,213 to 197,280 sqm

- reduce the maximum GFA for Block 3 from 142,669 to 129,934 sqm;  
and
- reduce the maximum GFA of Block 1 from 9,400 to 1,927 sqm.
- **amend the maximum height limits** (RL) of certain development blocks at Barangaroo South as follows:
  - increase the maximum height of Block Y from 170 to 275 metres;
  - increase the maximum height of Block 4A from 41.5 to 250 metres;  
decrease the maximum height of Block 4B from 175 to 107 metres;
  - decrease the maximum height of Block 1 from 80 to 25 metres
  - amend the development block configurations of Block Y and Block 4.
- **amend the GFA allocated to various land uses** within Barangaroo, including the following:
  - to increase the maximum tourist uses GFA from 50,000 to 76,000 sqm (of which a maximum of 59,000 sqm is proposed to be allocated to Barangaroo South);
  - to increase the maximum residential GFA from 128,763 to 183,000 sqm (of which a maximum of 154,000 sqm is proposed to be allocated to Barangaroo South);
  - to decrease the maximum retail GFA from 39,000 to 34,000 sqm (of which a maximum of 30,000 sqm is proposed to be allocated to Barangaroo South);
  - to increase the maximum GFA in the public recreation zone (i.e. outside of the development blocks) from 14,500 to 15,000 sqm; and
  - to increase the maximum active use GFA within the public recreation zone from 4,500 to 5,000 sqm (of which 3,500 sqm is proposed in Barangaroo South).
- **amend the Barangaroo site boundary** due to the north-eastern relocation of the hotel from the water to the land (Block Y) and southern relocation of the Pier;
- **amend public domain areas;**
- **reduction in the size of the Southern Cove** (Globe Harbour);
- **a new set of Design Guidelines** for Barangaroo South; and
- **increase in car parking** with the proposed increases in GFA.

State Environmental Planning Policy Amendment (Barangaroo) 2015 (the SEPP Amendment) seeks to change three existing SEPPs as follows:

- **SEPP (Major Development) 2005**, to amend zoning map, maximum building height map and maximum GFA allocation map;
- **SEPP (State and Regional Development) 2011**, to amend the Barangaroo site boundary to extend the site into the harbour west of the proposed hotel and casino block; and
- **SEPP (Sydney Harbour Catchment) 2005**, to amend the Barangaroo site boundary to extend the site into the harbour west of the proposed hotel and casino block.

## 3.0 Bulk and Scale

### 3.1 Qualitative and Quantitative Changes

The collective character of built form in the current Concept Plan will erode should MOD 8 proceed. The proposed relocation of the casino/hotel block separates out the tower to the northern end with additional height, as opposed to set within the backdrop of other towers of Barangaroo development in the current Concept Plan. A monumental tower on the landscape, as viewed from Darling Harbour and the Headland Park is not in keeping with the city urban form along the water's edge. The abrupt ending to the progressive heights of towers is seen as undesirable imbalanced built form composition and urban scale shift. Taller buildings should be away from the water's edge providing a distribution of water views through the depth of the city.

The analogy is that of a front row standing shoulder to shoulder in an auditorium, blocking the stage views of the remaining seated auditorium, also trying to view the stage (the harbour).

Compared to the qualitative framework of the original Concept Plan and Concept Plan as modified to date, MOD 8 would result in:

- Eroded delineation between the restricted development line to the east of Globe Street and public open space. In turn this leads to the erosion of the built form being "held" by the alignment of Globe Street, the loss of uninterrupted view corridor from south to north and the division of the legibility of the public waterfront;
- reversal of the gradual progression of CBD building height from south to north;
- reduction in the quantity and quality of public open space;
- loss of a consistent public foreshore promenade;
- significant overshadowing of the public domain; and
- disconnection between the waterfront promenade and parkland.

From a quantitative point-of-view, the uplift in floor space from the original Concept Plan is documented below. This is a near doubling of the vision for Barangaroo, occurring incrementally with lack of sufficient checks and balances.



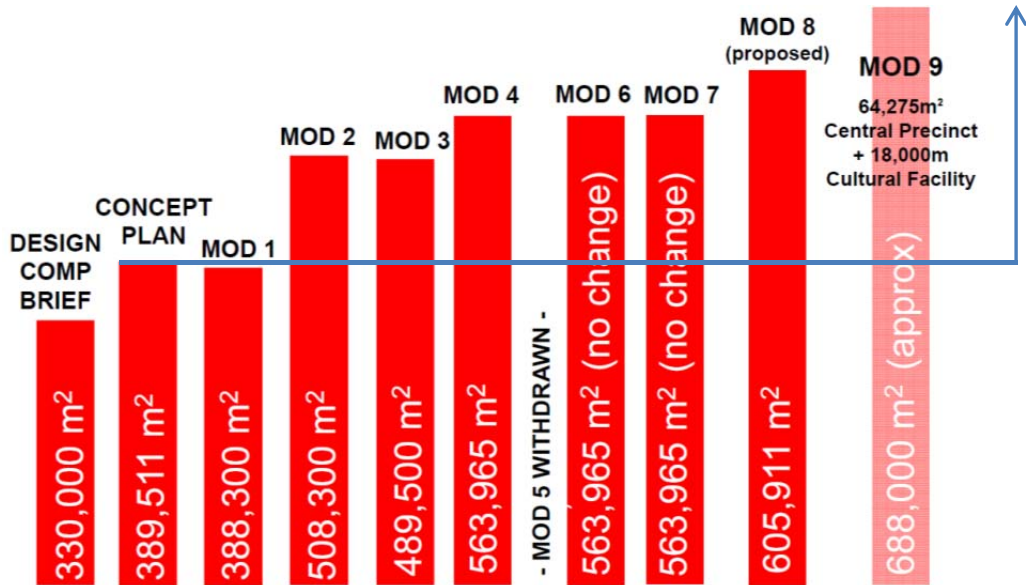


Figure 5. Cumulative increase in gross floor area  
 Source: City of Sydney

Broken down into its component land uses, the development density from cumulative increases (605,411sqm compared to the original 399,800sqm) places significant changes the Concept Plan vision. The proposed infrastructure will be challenged to meet increasing demand in the escalation of development footprint. The following growth for the Barangaroo South development is proposed in MOD 8.

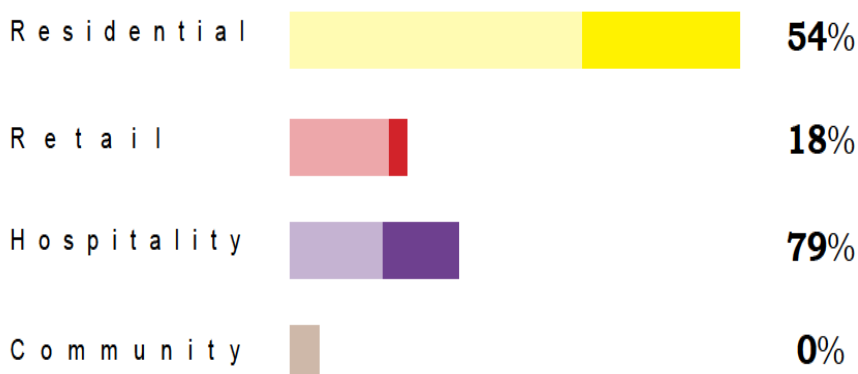


Figure 6. Proposed GFA increase, Barangaroo South  
 Source: City of Sydney

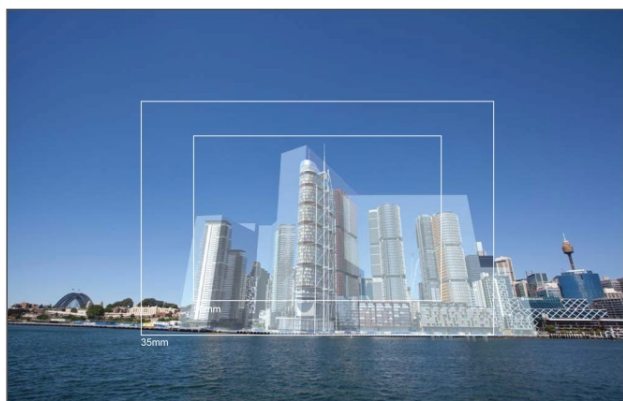
### 3.2 Waterfront Bulk and Scale

Incrementally increasing building heights towards the north (culminating in the casino/hotel building) is contradictory to historical planning principles for the Sydney CBD, introduced in the ground-breaking 1971 Strategic Plan, and is not supported. Where once there was gradual transition from higher Barangaroo building envelopes at the south to lower scale at the north, MOD 8 presents as a clear reversal of the evenly graded built form.

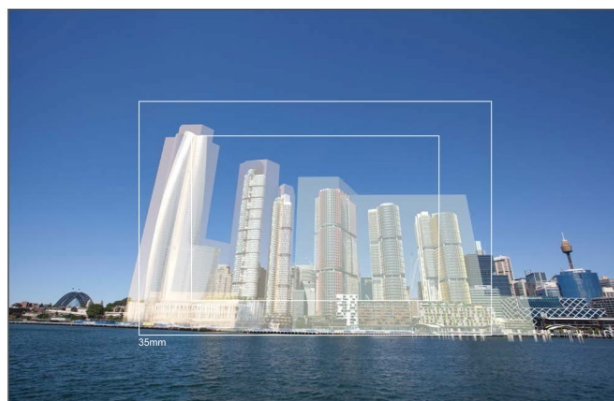
There are poor arguments in the planning report lodged with MOD 8 that the casino/hotel block's relocation from over the harbour to the waterfront open space demands a much taller envelope than currently approved and permitted, else the future building would lose "landmark" quality. Merely by siting it forward of every other tall building in the precinct, on land reserved for open space, "landmark" attributes are artificially and unreasonably generated and without the need for additional height and high earning floor space.

The combined effect of Block Y and Block 4A is to present a "wall" of development when viewed from the west at Balmain East and White Bay.

A lower tower form within the existing development zone defining the northern boundary of Barangaroo South is a more desirable overall built form and identity.



MOD 4



MOD 8

**Figure 7. Waterfront address, MOD 4 compared to MOD 8**  
Source: VirtualIdeas/JBA

The hotel tower features a bulky base taking up an area the size of an urban block. This rather unappealing base dominates the entire western waterfront, the north-eastern parkland and the eastern street frontage.

Further, the building envelopes for the hotel/casino and future residential towers are larger than the illustrative designs that have been prepared, giving rise to even further future creep in both height and floor space. The generous envelopes should more accurately reflect the proposed outcomes.

#### **Recommendation 1**

The casino/hotel tower should be set within Barangaroo commercial tower backdrop within the land zoned for development rather than in the prohibited public open space zone. The retention of the depth of Globe Harbour will help achieve the desired waterfront address to the relocated podium and tower.

The large podium base of casino/hotel tower should be shrunk to fit the development potential outcomes. Building envelopes should be reduced in size to correspond to the developed designs for Block Y (hotel/casino) and Blocks 4A and 4B (residential towers), discouraging yet further increases in GFA and height, robbing the majority of the western CBD of shared western harbour views often needed to incentive redevelopment of redundant building stock.

### **3.3 Hickson Road Bulk and Scale**

The proposed envelope does not continue the scale of development adjacent on Hickson Road, specifically the lower scale of Buildings C1 and C2/6. This is contrary to the design intent for Hickson Road, which has been to present a built edge to Hickson Road that was of unified aboveground scale and treatment capable of a continuous pedestrian colonnade at street level.

The loss of a unifying building scale of RL 33 along Hickson Road is not sufficiently compensated by the Northern Park.

#### **Recommendation 2**

Before assessments are concluded, the approved envelopes for Barangaroo Central should be included in the shadow modelling exercise to give a more accurate indication of the conditions in the Northern Park. Following this, the envelope for 4B should be adjusted to guarantee a built edge to Hickson Road that corresponds to the height and depth of C1 and C2/6

Controls should be developed to ensure good amenity for the Northern Park, a sun access plane for the blocks to the north of the park in Barangaroo Central.

### 3.4 Architectural Expression

A collective architectural identity for Barangaroo South is currently lacking and should be achieved by adopting a unifying architectural vocabulary among the proposed built fabric. The proposed indicative towers of both the casino/hotel and the residential towers do not unify any collective identity.

#### **Recommendation 3**

Buildings in the amended blocks must demonstrate a unifying identity for Barangaroo South that encompasses a variety of expression of form, materials and details.

### 3.5 Wind Effects

The proposed casino/hotel block location creates negative wind effects on the waterfront promenade and Globe Street which are confirmed in the wind assessment to exceed comfort levels, safety levels and in some cases distress levels. The wind downdrafts of the casino/hotel block are accelerated around the north-western corner of the tower and strong southerly winds are accelerated by the commercial towers facades to the south. Along the waterfront, the wind assessment characterises the promenade as being suitable for able-bodied pedestrians only, with other pedestrians expected to be in distress. During strong southerlies (up to 8% of the year), wind speeds along the waterfront promenade will exceed comfortable pedestrian walking criteria. Generated wind effects appear to be constantly ignored and underplayed during departmental assessments, and then become the subject of rectification proposals as the buildings are built (for example Hickson Street loggia by Tzannes Associates).

Consistent with this, there are no recommendations within the wind assessment about the actual mitigation measures available to mitigate wind downwash, whether these measures may be practical or feasible, whether changes to the block parameters would improve compliance or whether wind levels could be complaint under any scenario. This is unacceptable planning practice.

#### **Recommendation 4**

Relocate the casino/hotel block to land zoned for urban development east of Globe Street. Modification to demonstrate how negative wind effects are to be mitigated to suitable levels.

## 4.0 Public Open Space

### 4.1 Quantum of Public Open Space

The modification includes an increased width for Globe Street and the introduction of a new vehicular road to service the casino/hotel tower. These new roads are included in the calculation for public open spaces but effectively represent a reduction in the amount of usable public open space.

Roads and laneways are not to be counted as public open space, nor the former hotel wharf which is proposed to have a building of undetermined use erected on it. If they are included, the amount of public open space is clearly less than the committed 50% of the site – a cardinal objective of the overall development from the beginning.

#### **Recommendation 5**

A true calculation of usable public open space (not including vehicular roads or the wharf) should be provided to make clear the reduction of open space that accompanies MOD 8.

### 4.2 Quality of Public Open Space

MOD 8 provides a large open space bound by land parcels and streets alternatively behind the casino/hotel block. The significance of the park in the context of the rest of Concept Plan and its geometry is seen as accidental and secondary to the siting of the hotel/casino tower block and residential tower blocks. The park connects the waterfront of Barangaroo Central through a bottle-neck opening that will likely be a significant wind pocket.

The relocation of public open space away from the foreshore to become the Northern Park compromises the clear hierarchy of public spaces that was established in previous iterations of the Concept Plan, where emphasis was placed on locating public space on the waterfront. The casino/hotel block now interrupts the continuity of the foreshore experience of Barangaroo, completely blocking views to Headland Park and the harbour beyond.

The Northern Park is poorly integrated into the street grid of Barangaroo, poorly connected to Barangaroo Point to the north and Darling Harbour to the south, and does not relate to cross links to the city from Hickson Road. The disconnection between the Northern Park and the waterfront promenade due the segregating effects

of the casino/hotel footprint may expose the waterfront promenade to increased crime and anti-social behaviour during night time.

The height and location of the casino/hotel block results in some overshadowing of the waterfront promenade at all times of the year up to 11am. It introduces a morning shadow rather than an afternoon shadow from the current approval.

The Northern Park will be poorly activated along the major frontage to the hotel/casino, where a porte cochere, loading dock and car park entry have been earmarked.

The scale and height of the buildings surrounding the Northern Park (Blocks Y, 4A and 4B) will impart a sense of significant containment and constraint, with limited views.

#### **Recommendation 6**

The Northern Park must integrate with the Concept Plan form effectively. Alternative design solutions are recommended to reconfigure the park, particularly its relationship with the casino/hotel block.

### **4.3 Reduction of Globe Harbour**

The character and value of Globe Harbour is reduced in MOD 8. Globe Harbour is presently one of the strongest enduring features of the Concept Plan and linked Hickson Road to the water. The creation of a large water intervention at the 'southern cove' (now Globe Harbour), was a recommendation of the design competition jury. This followed the international design competition and was incorporated as a condition of approval of the original Concept Plan.

Conditions also required active edges around the southern cove, and pedestrian linkages along the foreshore and connections to Hickson Road. MOD 4 implemented these conditions by introducing Globe Harbour.

Reducing the size of Globe Harbour as currently proposed undermines the intent of the Concept Plan and the urban structure of Barangaroo with water connections between the foreshore and Hickson Road.

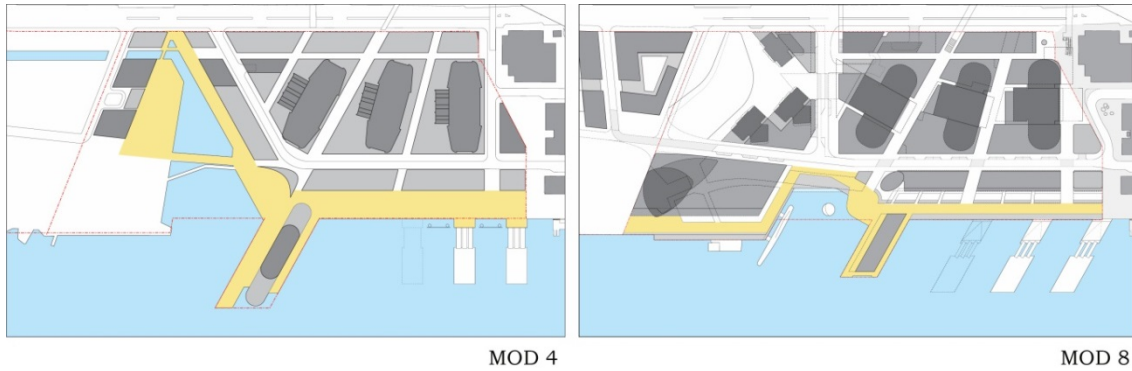


Figure 8. Block definition comparison, MOD 4 to MOD 8

Source: Proponent's Environmental Assessment

Reconfiguration of the shoreline has effectively changed the radial structure of the master architect's original design intent (Rogers et al). The proposed modification is in essence a new design that does not possess the same design approach when compared to the current Concept Plan.

Globe Street, the main access from Hickson Road penetrates too deep into the waterfront by narrowing the promenade to size of a footpath.

Incorporation of water in the Concept Plan has significantly been marginalised. The Globe Harbour inlet is currently *the* key public place in Barangaroo South. Under MOD 8 the Concept Plan will lose the significance of this valuable waterfront built-edge and the public open space. The opportunity to transform the precinct into a signature public waterfront development would be rationalised. The waterfront plaza has been reduced to the extent that seems no longer sufficient to support the scale of surrounding development. The bulk of the northern end of the plaza is dedicated to a single use of casino/hotel podium frontage and has lost potential for a multi-layered fine grain expression.

#### **Recommendation 7**

Alternative design approaches are recommended to reconfigure the shoreline that could support the original master plan design principles. A deeper cove of water, as is within the existing Concept Plan, is required.

Limit the waterfront podium length of the casino/hotel block and allow other uses to effectively engage the water edge.

Street reconfiguration requires careful consideration to ensure public open spaces are away from vehicular traffic.

#### 4.4 New Northern Park

The intended use of the new park should be fully assessed. The Barangaroo site has a number of parks and open spaces suitable for passive activities, sitting and relaxing. The majority of these spaces are located adjacent to the water. If the new park is being designed with the same intent then an assessment should be undertaken to assess whether this type of use has reached saturation. The study should assess whether the park space, or part thereof, may be more suitable for other uses such as more active recreation or children's play space. The park should not just be providing a forecourt or view corridor to the casino/hotel and apartment buildings.

##### **Recommendation 8**

An open space review should be undertaken or made available for the entire Barangaroo site to look at the existing proposed open space, its intended uses and an assessment to identify any shortfalls in use. This should also take into account the expected demographic of future residents and community in the wider area.

The intention to provide basement car parking under the park is not supported unless all structures are located at least 1.8m below the surface to allow for adequate soil depth for planting.

##### **Recommendation 9**

Any structural intrusions below the park should be at a minimum distance of 1.8m from the surface to allow for adequate growth of plants and trees within the park.

The overshadowing of the park from Barangaroo Central is unknown at this stage as the future modification for Barangaroo Central has not been lodged. However, consideration must be given to the creation of sun access planes to protect relevant significant parts of the park from overshadowing by the Central Precinct. These controls should be based on the approved concept plan envelopes for Barangaroo Central. The controls can be incorporated into the proposed SEPP amendment.

##### **Recommendation 10**

Sun access modelling should be carried out to determine the desired amount of sunlight to the park, after intended use is identified, and determine relevant sun access planes for Barangaroo Central based on the current Concept Plan envelopes.



## 5.0 Affordable and Key Worker Housing

The City's *Sustainable Sydney 2030* aim is to create a diversity of housing for the community, including a target that by 2030, 7.5% of all housing in the LGA will be affordable (community rental) housing and 7.5% will be social housing. The City has continually made representations that large in-fill and CBD sites like Barangaroo, provide at least 10%, preferably 20%, of apartments as affordable housing for essential urban workers – in line with the affordable housing SEPP.

The NSW Government's should provide a good proportion of well-located housing that is affordable to essential urban workers on public lands when they are redeveloped. The City seeks to facilitate, advocate and secure increased affordable and key worker housing particularly in large scale redevelopments where there is scope and need.

There is a history of public ownership, community association and community housing associated with Barangaroo and Millers Point more generally. The landowner remains the NSW Government through its development vehicle, the Barangaroo Delivery Authority. Given the scale of existing and proposed residential, commercial/tourist, community uses and open space across the site, Barangaroo value to pay for a good proportion of affordable housing for qualifying essential urban workers.

However, Lend Lease is currently obligated to provide affordable housing of only “up to 2.3%” of residential floor space (which is itself an imprecise undertaking) under the Barangaroo Stage 1 Project Development Agreement (“the PDA”). Barangaroo Delivery Authority should urgently excise an option under the PDA to make further provision for on-site key worker housing, comprising an additional 2.3% of residential floor space, but at this stage has not done so.

The provision of affordable and key worker housing is an important community benefit which ensures that workers essential to the functioning of the city, who may otherwise afford not to, can live close to their workplaces. Affordable and key worker housing provides housing diversity, inclusiveness and equity to infill development.

### **Recommendation 11**

The Concept Plan should include a fresh condition committing Barangaroo South to at least 10%, preferably 20% key worker housing (affordable housing), owing to the proposed uplift in residential GFA across the entire site.

## 6.0 Traffic and Transport

The acceptability of the development intensification and land use mix is subject to the provision of additional public transport, improved pedestrian and cycling connections and reduced private motor vehicle use.

Given the significant increase in car parking, traffic impacts from the proposal should be thoroughly tested and mitigation strategies agreed before any determination of the Concept Plan modification.

### 6.1 Intensification of off-street car parking

The Barangaroo Integrated Transport Plan (BITP) was developed in 2012 by the Barangaroo Transport Taskforce. The submitted Transport Management and Accessibility Plan (TMAP) 2015 maintains (except for ferries) the following mode split targets as specified in the previous 2008 TMAP and the BITP:

- 63% rail
- 20% bus
- 12% pedestrian or other (including cycling and taxis)
- 4% private car (this applies to journey-to-work trips only and does not include residential, retail patrons, tourist or site visitor movements)
- 1% ferry, which has now increased to 4% ferry within the confirmed provision of a new ferry hub at Barangaroo. It is not clear where the 3% additional ridership is drawn from, but presumably spread across all other modes.

Changes to GFA and associated parking since Mod 2 in 2008 are:

- commercial GFA has decreased 16% and parking for commercial has decreased 3%;
- tourist GFA has increased 34% and tourist parking has increased 242%;
- residential GFA has increased 91% and residential parking has increased 186%; and
- morning peak (“AM”) traffic generation is modelled to increase 7% and evening peak (“PM”) generation is modelled to increase 3%.

Changes to GFA and associated parking since Mod 4 in 2010 are:

- commercial GFA has declined 3.3% and parking for commercial has increased 0.7%;

- tourist GFA has increased 46% and tourist parking has increased 220%;
- residential GFA has increased 43% and residential parking has increased 89%;
- AM traffic would increase 6% and PM 5%.

## 6.2 Intersection performance

Despite significant increases in parking spaces, the submitted TMAP concludes little difference in functioning of the road network with relatively minor delays in both the AM and PM commuter peak hours. Despite potentially significant traffic generation due to parking provisions for all land uses, the TMAP cites capacity loss at intersections of between 20-50% (mainly in the evening peak). A number of these intersections are identified as currently operating near or at capacity already resulting in significant delays.

Modelling of the road network does not consider the redistribution of traffic arising from changed conditions as a result of light rail (including the construction period) or the RMS Traffic Capacity Improvements plan which involves the use of outskirt CBD streets including Sussex Street as priority traffic bypass corridors.

### **Recommendation 12**

Given the significant increase in car parking, any traffic impacts from the proposal should be thoroughly tested and mitigation strategies agreed before any determination of the application to modify the approved Concept Plan. Specific omissions within the traffic modelling concerning light rail changes and RMS capacity improvements, during construction and post-commencement, should be addressed.

## 6.3 Parking demand for Casino/Hotel block

The total parking demand for the proposed casino/hotel block has been estimated based on the anticipated number of arrival and departures (self-park and valet parking) into the basements of the Crown resorts in Melbourne, with peak periods on Friday, Saturday and Sunday evenings. The parking demand analysis does not take into account residential, entertainment, restaurants/retail, cultural centre visitors or coach/taxi vehicle movements.

The comparison between parking generation of the Crown resort in Melbourne and the proposed MOD 8 parking demands is not justified by any breakdown of the proposed

land uses for MOD 8. It is not possible to deduce the parking generation, therefore traffic generation and traffic impacts of the mooted casino component as opposed the hotel component, or the residential component as opposed to all other components. It is then difficult to understand the full range of traffic impacts associated with the modification.

**Recommendation 13**

Full parking demand for the casino/hotel, broken down in land uses, should be estimated and factored into the TMAP traffic generation predictions, intersection performance analysis and modal split targets.

**6.4 Loss of on-street parking**

The number of on-street publicly parking spaces has been reduced from 275 to 40 across the Concept Plan. The commercial parking potential within the hotel/casino has been increased. The character of streets that may have been affected by this proposal has not been addressed.

**Recommendation 14**

The future character of proposed streets must be demonstrated with illustrative street sections and discussion on the loss of on-street parking spaces.

**6.5 Delivery of Barton Street**

The proposal is for Barton Street to be delivered in two halves, with the southern half as part of Barangaroo South and the northern half as part of Barangaroo Central. MOD 8 does not provide details of the design of the interim solution or final design of the road and does not confirm whether Barangaroo South can be sufficiently managed if the remainder of this road is not constructed for a number of years.

There is no obvious reason for only constructing half of Barton Street as part of Barangaroo South. There are a number of issues caused by delivering a road in this fashion. Barangaroo South should deliver the entire road at one time. The City does not support the proposed staged delivery of the road and sacrificial works where they can be avoided.

#### **Recommendation 15**

Barton Street should be delivered as a complete road by Barangaroo South. This would on the area and the design of the park and any associated changes should be documented.

### **6.6 Road Network Character**

The proposed Barton Street is not given a design description in the design guidelines. It is unclear what the intended characteristic of this road will be compared with the parallel Globe Street. The design and treatment of its intersection with Hickson Road is also not addressed as part of MOD 8.

#### **Recommendation 16**

The following should be included in MOD 8 for the design of Barton Street and the future Stage 1B public domain package:

- An interim design showing what will be delivered as part of Barangaroo South, including all required temporary works for drainage lighting etc.
- A final design for the road once the opposite side is delivered by Barangaroo Central to show the areas of sacrificial works.
- An intersection design with Hickson Road in both the long and short term.

### **6.7 Basement access**

The TMAP refers to Stage 1A basement parking access via ramps in Globe and Lime Street as well as an egress point on Hickson Road. It refers to two entry/exit points for the Stage 1B basement, with access from the northern end of Globe Street. It then says the primary vehicle access route into the casino/hotel will be via Hickson Road and Globe Street as well as a porte-cochere within the hotel site boundary.

It further identifies a consolidated basement entry/exit for service vehicles, as well as self-park patrons and residents further south on Lime Street. The references marked in Figure 2 (Barangaroo Site Access) do not match references in the TMAP. Vehicle access to basement parking and loading areas should be minimised in quantity and width to minimise adverse impacts on the public domain.

**Recommendation 17**

All loading bays should be contained within buildings with site access points of minimal width to minimise adverse impacts on the public domain.

**6.8 Cycling infrastructure**

The BITP cites a target mode for cycling by workers of 4% with this to more than double by 2024. It refers to the need for further connections including to the foreshore.

The City supports the provision of bi-directional cycleways in Napoleon Street and Hickson Road as identified in the BITP. The TMAP lodged with MOD 8 states on page 16 “Napoleon Street West will no longer serve as a vehicular access route through the precinct”. However, the amendments to the Statement of Commitments do not reflect this - see Commitment 19, point 1. The City contends that a bi-directional separated cycleway in Napoleon Street linking with the Kent Street cycleway is essential for Barangaroo South.

It is acknowledged that City of Sydney officers have been lobbying for the provision of enhanced walking and cycling infrastructure with BDA and these provisions should be demonstrated, including at least a dedicated uphill cycleway in Napoleon Street, a bi-directional cycleway in Sussex Street between King Street and Napoleon Street and a bicycle link from the Sydney Harbour Bridge via High Street to Hickson Road.

The TMAP outlines a proposal to deny access to bicycle riders on all streets and paths, including the foreshore path, except Globe and Lime Streets which are designated traffic streets. This appears to run contrary to the design intent for the Stage 1A Public Domain and the temporary public domain within Barangaroo Central.

The BITP states City Walk will provide a second option for bicycle access to Barangaroo South from Napoleon and Kent Streets but the TMAP has not upheld this commitment.

All internal streets and the foreshore path should be accessible to bicycle riders and this should be committed to.

The City requests the Proponent clarify the end-of-trip facilities and how they relate to each building.

**Recommendation 18**

Increased cycling connections should be demonstrated to Barangaroo South.

Clarify the extent of proposed cyclist access through-out Barangaroo South.

A public bike hire facility is highly desirable and should be investigated.

**6.9 Walking**

Over 90% of all trips within the Sydney CBD are made on foot and pedestrian volumes are only increasing. The BITP states that provision of suitable pedestrian access to and from Barangaroo by workers and visitors from across the city centre is critical. It recognises the need for footpath widening to ensure that major pedestrian paths have sufficient width.

The RMS Traffic Capacity Improvement Plan (REF dated November 2014) proposes the narrowing of a number of major pedestrian corridors feeding the western CBD. The TMAP states that RMS is currently investigating reinstatement of an eastbound traffic lane on Margaret Street that was previously removed to provide additional footpath capacity. The suitability of any RMS proposals to narrow footpaths must take into account high pedestrian access requirements to Barangaroo.

In accordance with NSW Government documents, *Sydney's Cycling Future* (December 2013) and *Sydney's Walking Future* (December 2013), the proponent should be encouraged to establish a Green Transport Committee comprising building occupants, including residents, to implement Green Travel Plans focussing on behaviour change toward sustainable active transport choices, primarily walking, including in combination with public transport. The Committee would oversee implementation of the Green Travel Plan to support increased cycling and walking to the Barangaroo precinct by residents, workers, visitors and patrons in conjunction with infrastructure provision such as end of trip facilities and a public bike hire system.

**Recommendation 19**

Reconcile the apparent disconnection between the need to provide sufficient pedestrian access to Barangaroo South versus the RMS desires to increase traffic capacity on surrounding streets.

A Green Transport Committee should be established during the design of the subsequent buildings to ensure necessary walking and cycling infrastructure is installed and car parking reliance is minimised.

### 6.10 Bus infrastructure

Locations for new bus stops to serve future routes along Hickson Road are currently being investigated by Transport for NSW. These stops should be in close proximity to Barangaroo South and provide good accessibility for commuters and visitors travelling to the precinct. The Barangaroo Integrated Transport Plan envisages two pairs of bus stops would be provided on Hickson Road to serve Barangaroo South and Central Barangaroo/Headland Park.

#### **Recommendation 20**

Confirm the location of, and capacity for, new bus infrastructure to service the demand of MOD 8 and Barangaroo South generally.

### 6.11 Light rail and heavy rail

The acceptability of increased floor area and increased population in and around Wynyard is tied to public transport improvements to rail capacity.

By 2031 the three busiest CBD stations are expected to experience an increase of more than an additional 10,000 passengers per hour in the peak and the Department of Transport has stated that under certain scenarios, even without Barangaroo, Wynyard station is nearing capacity for commuters and could reach this in 2017.

#### **Recommendation 21**

A light rail corridor should be preserved on Hickson Road with alignment to the centre of the road.

NSW Planning and Environment needs to undertake or require, prior to finalisation of the Concept Plan modification, an analysis of the timing and delivery of long term public transport heavy rail improvements into Central Sydney



## 7.0 Heritage

Progressive increases in the level of adverse impact upon heritage precincts and buildings of national, state and local cultural significance has resulted with each modification of the Concept Plan. MOD 8 is a significant departure in terms of heritage impacts from the original winning design scheme prepared in 2007.

The proposed amendments have an adverse impact on the heritage significance of the Millers Point Heritage Conservation Area, the individual heritage items within this precinct, Observatory Hill and Sydney Observatory. The erosion of the setting of these national significant places and the Millers Point precinct should not be permitted.

Similarly the resulting overshadowing of Darling Harbour and loss of visual connectivity between the two peninsulas of the harbour should not be permitted.

### 7.1 Adverse heritage impacts upon views and the setting of heritage places and precincts

#### *Views and visual Impacts*

The proposed relocation of the casino/hotel block from over the harbour onto land within the site in front of Blocks 4A – C, along with the proposed increase in permissible height controls by 105 metres and maximum gross floor area will result in increased adverse impacts upon the setting and upon views to, within and from a number of heritage precincts and numerous heritage items.

Precincts and items affected include those of national state and local heritage significance including the more immediate as follows:

- Millers Point Heritage Conservation Area.
- Millers Point and Dawes Point Village Precinct
- Sydney Observatory and Fort Phillip Group, including buildings and their interiors and grounds;
- Observatory Hill Park including Boer War Memorial, Bandstand, fences and landscaping;
- Messenger's Cottage for Fort Phillip Signal Station;
- Messenger's Cottage for Sydney Observatory;
- Bureau of Meteorology, 9 Upper Fort Street;
- Fort Phillip Signal Station, Observatory Hill;

- Fort Street Primary School site including buildings and their interiors, fig trees and grounds, 1005 Upper Fort Street;
- National Trust Centre;
- Agar Steps
- The former Grafton Bond Store, 201-217 Kent Street, (but located at Hickson Road Millers Point)
- The former Moreton's Hotel at 20-26 Sussex Street Sydney
- The former MWS stores, 2-4 Jenkin Street (Part of 30-38 Hickson Road)
- Sandstone retaining wall and trees at corner of Sussex Street and Napoleon Streets.
- The former Dalgety's Bond Stores at 6-10 Munn Street.
- Terraces at 18, 18a, 20, 20a Munn Street
- Terraces at 14-16 Merriman Street.
- Cottage at 18 Merriman Street
- Terrace groups at 20-42 and 44-48 Merriman Street.
- Terrace Group, 5-9 Agars Steps;
- Terrace Group, Carlson Terrace 110-114 Kent Street
- Terrace Group, 3-9 High Street;
- Terrace, 115-121 Kent Street;
- Terrace, 123-125 Kent Street.
- Lane off Gas Lane (Jenkins Street);
- Pyrmont Bridge
- Jones Bay Wharf, Pirrama Road Pyrmont
- Royal Edward Victualling Yard Darling Island
- Jones Bay Wharf
- Sydney Harbour Bridge

The combined result of location, height and bulk associated with the casino/hotel block result in a tower that is unmatched in its visual prominence in Sydney. The impacts of the proposed tower are considered invasive and extreme to the point that the proposal

will have a devastating impact upon the cultural significance of these heritage items and precincts.

The Statement of Heritage Impact by Tanner Denton Kibble Architects dated September 2014 clearly states that

***“the impacts are far greater than in previous Modifications because of the size of the proposed buildings and the revised location of the hotel.”***

The argument in the Environmental Assessment by JBA Planning, that the increase in height and bulk is justified in order to achieve a landmark status for the relocated casino/hotel ignores the level of the adverse heritage impacts. If approved the tallest building in Sydney will be located at the most extreme north-western point adjacent to the Millers Point heritage precinct that has heritage significance at a national level. The Visual and View Analysis report by JBA Planning states ‘Heritage views will not be affected by the proposed Concept Plan Modification’. The City strongly disputes this statement.

The City contends that the resulting impact upon views and settings of heritage precincts and places is contrary to the provisions of Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (Sydney Harbour REP). Division 2 – Matters for Consideration for development – Clause 25 – Foreshores and waterways scenic quality and Clause 26 – Maintenance, protection and enhancement of views. These clauses require consideration in relation to the maintenance, protection and enhancement of the scenic quality of foreshores and waterways including the scale, form, design and siting of any building.

The photomontages in the Visual and View Analysis clearly demonstrate that the combined result of inappropriate location, and excessive height and bulk results in a casino/hotel tower that has excessive visual prominence resulting in increased adverse heritage impacts upon the setting of heritage precincts and places.

Four views in particular demonstrate the level of impact upon these important cultural heritage places, including

- the panorama from Observatory Hill to the west and over the Barangaroo site;
- the view south along Hickson Road from Munn Street;
- a view west from the northern end of High Street over the Munn Street alignment;
- the view west from the centre of High Street; and

- the view from the southern end of High Street.

### ***Impact upon Observatory Hill***

The photomontages submitted in the Visual and View Analysis demonstrate clearly that the proposed increase in height for the casino/hotel block results in a large reduction of the vast views of the sky and horizon from Observatory Hill, views which are intrinsically significant to the setting of the Sydney Observatory, as well as views across the harbour to heritage precincts at Pyrmont and Balmain.

The Millers Point and Walsh Bay Heritage Review prepared by Paul Davies for the City of Sydney describes the location of Observatory Hill as:

***“iconic in Sydney.”***

The Statement of Significance for Millers Point within the Millers Point and Walsh Bay Heritage Review includes:

***“The Observatory Hill Park is of outstanding historical significance and a major component of the Observatory Hill precinct. The park commands panoramic views to the north, west and south. The Observatory is of exceptional significance in terms of European culture. Its dominant location beside and above the port town and, later, City of Sydney made it the site for a range of changing uses, all of which were important to, and reflected, stages in the development of the colony. These uses included: milling (the first windmill); defence (the first, and still extant, fort fabric); communications (the flagstaffs, first semaphore and first electric telegraph connection); astronomy, meteorology and time keeping.”***

View 7 of the Visual and View Analysis clearly demonstrates the significant increase in adverse impacts upon views from Observatory Hill. View 7 indicates that:

- The casino/hotel tower will dominate the vast sky views experienced from Observatory Hill, the reason for the location of the colonial Observatory and Flagstaff Station.
- The proposed amendments to the casino/hotel tower and the residential towers result in a solid wall of towers as viewed from Observatory Hill looking south-west towards Pyrmont and Darling Harbour.
- The proposed amendments severely limit the visual connectivity between the two peninsulas of Millers point and Pyrmont that frame Darling Harbour and remove the views of Darling Harbour from Observatory Hill south of Darling Island.

**Comparison of View Impacts – View 7  
From Observatory Hill Park**

**Historic and existing**



**Approved Concept  
Plan Modification 6**



**Proposed MOD 8.**

**Note:** The top of the casino /hotel cannot be seen in this view, such is its bulk and scale. Furthermore, the casino/hotel building will be more prominent than the feint shading of the towers suggest.



**Comparison of View Impacts – View 5  
Views from the corner of Argyle Street and High Street Millers Point**

**Historic and existing**



**Approved Concept  
Plan Modification 6**



**Proposed in MOD 8**



View 5 demonstrates that the proposed increase in the permissible height for the casino/hotel tower by 105 metres (to 275 metres). This combined with the proposed relocation of the building to the north of the residential towers results in adverse impacts upon views from the heart of Millers Point at the corner of High Street and Millers Point, owing to an increase in the proximity of the towers and an increase in bulk and scale

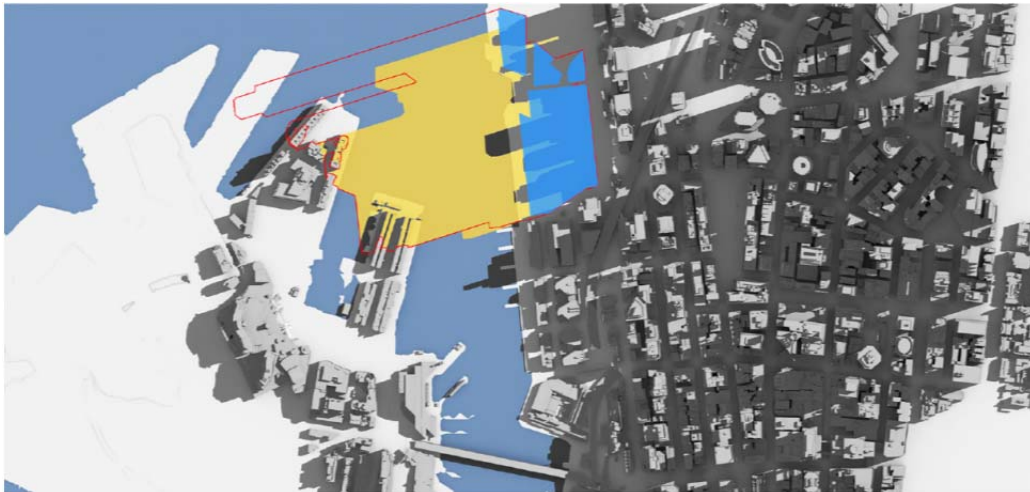
**Recommendation 22**

View 7 should be amended to indicate the full height of the proposed towers as viewed from Observatory Hill.

A more appropriate alternative location should be pursued for the casino/hotel tower so that it is located within the Barangaroo tower backdrop rather than north of the residential towers.

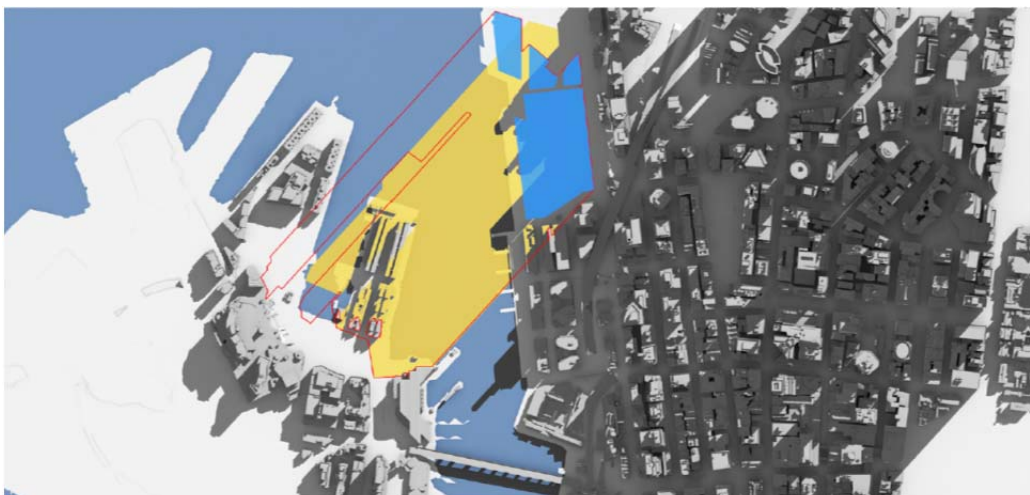
## 7.2 Overshadowing

The shadow studies submitted with MOD 8 indicate that the heritage item, Jones Bay Wharf, will be partly overshadowed from the autumn equinox through to the spring equinox, in the hours around 9am. Much of the water surface of Darling Harbour will also be in shadow from the autumn equinox through to the spring equinox, in the morning hours.



Barangaroo South Concept Plan Amendment (Mod 8) - SEPP Block Shadow Study 21st March, 9am

Approved Concept Plan (Mod 6) SEPP Block Shadows Proposed Concept Plan (Mod 8) SEPP Block Shadows Proposed Concept Plan (Mod 8) SEPP Block Footprint Shadows cast by Existing City Buildings



Barangaroo South Concept Plan Amendment (Mod 8) - SEPP Block Shadow Study 21st June, 9am

Approved Concept Plan (Mod 6) SEPP Block Shadows Proposed Concept Plan (Mod 8) SEPP Block Shadows Proposed Concept Plan (Mod 8) SEPP Block Footprint Shadows cast by Existing City Buildings



### **Recommendation 23**

The overshadowing of Darling Harbour and loss of visual connectivity between the two peninsulas of the harbour should not be permitted.

## **7.3 Adverse impacts upon the functioning of Sydney Observatory**

The functioning of Sydney Observatory is integral to retention of its heritage significance. The Statement of Significance for Millers Point within the Millers Point and Walsh Bay Heritage Review includes:

*“The Observatory is of exceptional significance in terms of European culture”.*

The Sydney Observatory Sky View Impact Assessment by Lend Lease and UNSW Global submitted confirms previous comments raised by the City of Sydney and by the Sydney Observatory that the proposed amendments to the building envelopes will have adverse impacts upon the functioning of the telescopes of the Sydney Observatory:

### ***Impact of additional light spill***

Light spill from the casino/hotel tower and residential towers has the potential to impact upon the clarity of the telescopes within the Sydney Observatory complex, which currently is protected from light spill as lights are confined to levels well below the hill, from very low scale buildings and streets in Millers Point, and the vast dome of the sky as seen from the hill.

The few existing encroachments in terms of light spill are the Sydney Harbour Bridge, and the city high-rise development behind the hill to the south east and southwest. It is critical that light spill to the Observatory is minimised to protect the character of its setting and the functioning of the telescopes, regardless of whether the telescopes are utilised for museum purposes rather than scientific.

### ***Encroachment upon view corridors from the Sydney Observatory telescopes***

The report assesses the encroachment of the residential towers R4A and R4B upon view corridors from the Sydney Observatory telescopes towards the western sky between 236 and 303 degrees Azimuth. The report findings include that the buildings within MOD 8, including the residential towers R4A and R4B, will result in the obstruction of a number of targets including star constellations at various intervals annually including:

- Obstruction of five stars of the Southern Cross between 4 August to 29 September;
- Obstruction of the Jewel Box cluster between 11 August to 6 October;
- Obstruction of the Omega-Centauri between 25 August to 6 October; and
- Obstruction of the Pointers between 1 September to 6 October.

The report attempts to justify the impact of these encroachments, on the basis that cloud, general light pollution, and atmospheric pollutants also result in impacts upon visibility. It attempts to justify the encroachments on the basis of the timing of some of the encroachments being outside visitor viewing times. While general pollution and weather issues are beyond the control of the consent authority, issues related to excessive building height and inappropriate building locations can be resolved to avoid any loss of the significant historical functioning of the Sydney Observatory telescopes.

#### **Recommendation 24**

The encroachment of the residential towers R4A and R4B upon view corridors from the Sydney Observatory telescopes towards the western sky ignore the national significance of these places and results in unacceptable adverse impacts that permanently limit the visitor experience of the Sydney Observatory's telescopes.

A more appropriate alternative location should be determined for the casino/hotel tower, so that it is located within the Barangaroo tower backdrop rather than north of the residential towers Blocks R4A and R4B.