

Barangaroo Concept Plan Modification MP06_0162 Mod 4

Barangaroo South (Hotel development, additional GFA and Height)
SEPP (Major Projects) 2005 proposed amendment

Submission to the NSW Department of Planning 24 September 2010



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Figure 1: Former container shipping terminal, to be developed in three stages: The Headland, Barangaroo Central and Barangaroo South (the subject of this submission)

Figure 2: 2009 Concept Plan Modification No.2 – current Concept Plan Approval (2009)

1.0 Executive Summary

The City of Sydney (the City) does not support the proposed modification to the Barangaroo Concept Plan (CP (Mod 4)) as submitted by Lend Lease (the Proponent). For a modified Concept Plan to be acceptable it will require substantial amendments including a major redesign of the northern portion of Stage 1 (which the City refers to as Stage 1B).

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

The submission Recommendations are found in **Section 9** of this report.

A detailed view analysis is contained in a **Supplementary View Analysis Report**.

A. Executive Summary Outline

The key issues are as follows:

s. 75W application modification under Part 3A EP&A Act (CP (Mod 4))

1. A tower building in Darling Harbour regardless of use is opposed;
2. ESD commitments must be evident and strengthened in the Concept Plan;
3. Additional gross floor area (GFA) is opposed due to public transport deficit and bulk;
4. Floor plates of the commercial buildings must reduce as height increases;
5. Heights of buildings throughout must be adjusted to reduce negative impacts;
6. Affordable Housing component should be increased;
7. Absorption of the Overseas Passenger Terminal GFA is opposed;
8. Widths, alignments, openness and utility of the public streets must be increased;
9. Accessibility and openness of the mid-block connections must be increased;
10. Public domain should include further improvements; and
11. The application unamended should be refused; if approved in part, it should be staged

Other matters

12. Involvement of the Planning Assessment Commission recommended;
13. Commitment and adherence to Design Excellence regime; and
14. Proposed ongoing refinement and assessment process.

SEPP amendment request

1. Change to Barangaroo SEPP boundary to include Hickson Road opposed; and
2. Change to the definition of remediation opposed.

Instrument of Approval amendments

1. Changes to Conditions A1, B4, B5, B8, B9, (and B10) are opposed.

B. Executive Summary Expansion

The City has examined the merits of the application to change the Concept Plan and SEPP and strongly recommends to the Minister for Planning the following:

1. A tower building in Darling Harbour regardless of use is opposed

Regardless of its use, a high-rise tower building located in Darling Harbour is on balance an unacceptable departure from the approved Barangaroo Concept Plan, State Environmental Planning Policy (Major Projects) 2005 (SEPP) and is prohibited by the Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (SREP).

An in-harbour tower weakens the distinctive western edge of the compact high-rise city and the distinctive peninsula land form due to its location and tower form-factor (as distinct from a low-rise horizontal pier). The microclimatic effects of the tower will be negative on the waterfront promenade (the principal public space of Barangaroo) and will overshadow it at the most critical time of the year (1.00pm to 2.00pm in the winter months). Wind acceleration between the tower/pier and the land-based buildings at the promenade level is also a serious concern. Surface vehicle access to the hotel functions will cause permanent pedestrian conflicts, in-water construction will be expensive and the proposed hotel and restaurant use is prohibited by the SREP which is a statutory control.

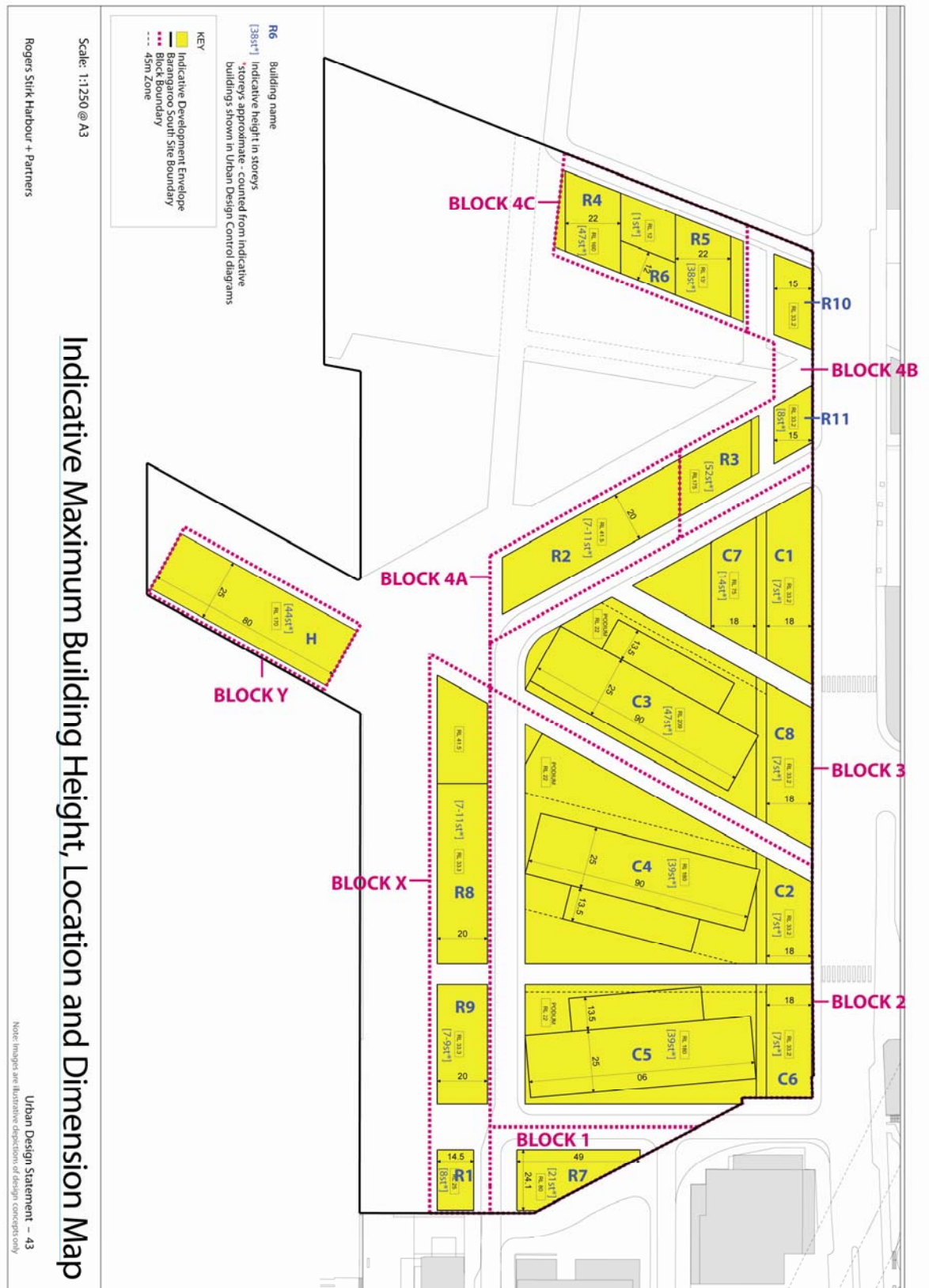
It is recommended that the commercial office tower C3 be the preferred landmark building for Barangaroo South, being in a location which is accessible, visible, land-based and has the least negative impact on the new public domain – in particular the waterfront promenade which will have a high economic value reliant on good activation, microclimatic attributes and public accessibility. If the tower/pier is removed, and C3 becomes the alternate landmark building with a tapering profile, the City would not oppose an additional 11 metres in height being added to the maximum height of C3 to achieve this outcome.

2. ESD commitments must be evident and strengthened in the Concept Plan

Barangaroo is integral to the proposed low carbon zone in the City's northern CBD and should therefore have the ability to interconnect with any nearby city based decentralised utility scheme. The City specifically seeks the Proponent's commitment to deliver compatibility with, and the capacity to interconnect to (at a precinct scale):

- low carbon and renewable energy systems; and
- advanced waste and water collection and treatment systems;

The City requires the Proponent's commitment to provide an appropriate area in a basement location of one of the buildings as a district hub or base for green infrastructure including tri-generation, evacuated waste and water related infrastructure in consultation with the City.



2. Additional Gross Floor Area (GFA) is opposed

As noted in the 2009 Planning Assessment Commission (PAC) review¹ of the *Director-General's Environmental Assessment Report*² for the Concept Plan Mod 2 application (commercial floor area increased by up to 120,000m²), the acceptability of increased floor area and increased population in and around Wynyard is tied to public transport improvements to rail capacity such as the CBD Metro and new connections such as the Kent Street pedestrian tunnel link to Wynyard, in addition to the ferry hub and light rail. The abandonment of CBD Metro and a failure to unreservedly commit to the pedestrian link funding, exposes the existing GFA increase, let alone any further increase, to a major public transport deficit. Any minor additional floor space could only be considered in the future (across various uses) only if Metro or other heavy rail capacity is reinstated, pedestrian links contractually committed to, and building bulk and heights are appropriate.

3. Floor plates of the commercial buildings must reduce as height increases

There must be a more 'distributed' approach to commercial floor plates with the largest floor plates in the low-rise, reducing to large medium-rise floor plates and reducing to smaller premium high-rise floor plates at the upper levels in order to address environmental amenity, bulk and visual impacts. A distributed floor-plate mix is generally consistent with the diverse financial services makeup as inferred in the Johnson Report³ and the Federal Government's response on the future of Australia's future export-orientated financial services sector. The mix of businesses in a financial services centre is more diversified than tenancing the same floor plate for the full height of every tower. A 2400m² NLA commercial floor plate elevated over 200 metres above the pavement is not tenable or necessary, has no contemporary precedent and its impact on the city is unacceptable. Above RL120, all towers should reduce in area to a maximum floor plate Floor Space Area (FSA) of 1400 m² (consistent with the maximum area under the DCP controls) and maximum wall length of 50m.

4. Heights of buildings throughout must be adjusted to reduce negative impacts

The Proponent's plan departs from the approved Concept Plan particularly in relation to building heights. Building heights should be responsive to view corridors, overshadowing, wind impacts, active edges, and envelope bulk. In this proposal, the bulky commercial towers should transition in height rising upwards from south to north and in reducing form-factor from east to west, which will significantly reduce unnecessary morning

¹ Planning Assessment Panel Review of Recommendations, February 2009
[http://majorprojects.planning.nsw.gov.au/files/31100/Planning%20Assessment%20Commission%20report%20-%20Barangaroo%20-%20Modification%20%20\(commercial%20floorspace\).pdf](http://majorprojects.planning.nsw.gov.au/files/31100/Planning%20Assessment%20Commission%20report%20-%20Barangaroo%20-%20Modification%20%20(commercial%20floorspace).pdf)

² Director-General's Environmental Assessment Report, November 2008
[http://majorprojects.planning.nsw.gov.au/files/30759/Barangaroo%20-%20Modification%20%20\(commercial%20floorspace\)%20-%20DG%20Report.pdf](http://majorprojects.planning.nsw.gov.au/files/30759/Barangaroo%20-%20Modification%20%20(commercial%20floorspace)%20-%20DG%20Report.pdf)

³ Australia as a Financial Centre – Building on our Strengths, January 2010
http://www.treasury.gov.au/afcf/content/final_report.asp. The report does not list the range of businesses but refers to the diverse make up of services and scale of businesses which co-locate in order to create a financial services hub

overshadowing of the waterfront promenade in winter. The two residential towers R4 and R5 are considered too tall and incompatible with the future use of the adjacent land previously allocated for the 'innovation centre' on the northern corner of the southern cove. The R4 + R5 site is more suited to a premium hotel with direct access from Healy Street and Hickson Road and adjoining the future public building and will have panoramic views. Any building in this location should remain constrained by the current 100m height control due to view impacts on existing buildings. The band of waterfront residential edge buildings should reduce in height to approximately RL25 (with an additional part setback level to RL28) and with 25% of the footprint area allowed to a maximum of RL35 for variation. Recommended heights for all buildings are included in this submission (refer to Table 3).

The podium levels to the three commercial buildings are considered too low and must increase by at least one floor to approximately RL25. An appropriate podium height reduces the visual and amenity impact of the high-rise towers on the public domain and improves the distribution of commercial floor area at the lower level. Importantly, a higher podium means that wind turbulence (downdraft) is generally kept away from pedestrian friendly streets.

The heights of the major commercial towers C3, C4 and C5 should be adjusted to resolve excessive bulk, negative environmental impacts and provide height differentiation. Tower C5 should be reduced to a maximum envelope height of RL140 (roof at RL133); Tower C4 should have a maximum envelope height of RL180 (roof at RL173); and Tower C3 should have a maximum envelope height of RL209 (roof at RL202) but only provided that in each instance there is a maximum floor area per level above RL120 of 1400m² FSA and a maximum wall length of 50m; a maximum envelope length of 60m between RL60 and RL120, and a maximum envelope length below RL60 of 80m. As previously noted, if Block Y and the tower/pier is removed, tower C3 (but only in the case of a tapering profile) could have a maximum envelope height of RL220 (roof at RL213) as an alternative landmark.

Adequate building separation is required between high-rise buildings R3 and C3 (the tallest building in the development proposal). Building C7 should be reduced in height to RL33.2 to match the height of building C1 (which should become affordable housing). A by-product of this reduction in height is that a future view corridor along Grosvenor Street is preserved if future development on a nearby site (189 Kent Street) enables this view extension.

6. Affordable Housing component to be increased

The proposed percentage of affordable housing expressed as 'up to' 2.3% is unacceptable. Barangaroo is publicly owned land, and is one of the few major urban renewal sites capable of incorporating an appropriate proportion of affordable housing for key workers in the city. It is consistent with policies of the City of Sydney and the NSW Government to incorporate a reasonable proportion of affordable housing.

The expression 'up to' is imprecise and the percentage value is too low. The City recommends that no less than 10% of residential be affordable housing and that 20% is preferable. It is recommended that this be achieved by converting some of the commercial office or retail GFA to affordable housing and that it be located in low-rise circumstances away from the waterfront, such as building C1 on Hickson Road.

7. Absorption of the Overseas Passenger Terminal GFA is opposed

The proposed transfer of a nominal 8,500 m² of floor area attributed to the Overseas Passenger Terminal to 'community uses' is not supported and should not be approved. Consistent with the City's August 2008 submission, the Overseas Passenger Terminal should be a minimum size and relocated to another site within Barangaroo such as Barangaroo Central. This could be in addition to, or instead of, White Bay and therefore its notional floor area should not be absorbed into the development of Barangaroo South.

8. Widths, alignments, openness and utility of the public streets must be increased

Given that Barangaroo South is an extension of the city, the intensification of land use with proposed floor space ratios on two Blocks exceeding the maximum available in the City Centre, there is no justification to reduce the width of the new city streets and lanes below the minimum standards elsewhere in the city. Globe Street, Napoleon Street, 'City Walk' and Shelley Lane should not be approved as shown and require minimum widths as set out in this submission.

Alignments are important. Margaret Street West should exactly align with existing Margaret Street to protect the view corridor and provide pedestrian capacity, and Globe Street should extend the exact current width and alignment of Lime Street. The re-alignment of Globe Street with Lime Street to the south improves the building depth of commercial Blocks 2 and 3 giving more space for podium setbacks so that the towers' wind impacts are lessened on the streets. This tower re-alignment (C5) will improve street views north-south and create a consistent waterfront promenade depth equal to King Street Wharf. There is a potential for a north view along Globe Street over the southern cove. It is acknowledged that this improvement reduces the waterfront setback to approximately 24m which is preferable to 30m or greater.

There should be no basements below primary city streets and promenades (Margaret Street West, Globe Street, Napoleon Street, 'City Walk' and the waterfront promenade) which will provide a network of street trees and underground services to major new buildings. Over time, the provision of services will change, street trees will be replaced and redundancy needs to be preserved. It is essential that the primary streets are not built under and do not contain car parking, strata lots or other below grade conflicts which would interfere with the retrofit, maintenance and amplification of landscaping and common or private services.

Future forms of communication, energy and services and their network distribution must be catered for, and precinct wide resources including water reuse and sewer mining and recovery services such as evacuated waste will be introduced. This service-reticulation redundancy is absolutely essential as is mature street tree planting and maintenance. A tunnel link between basements is acceptable provided there is 1.5m clear of planting depth above them under the street surface.

9. Accessibility and openness of the mid-block connections must be increased

The mid-block east-west pedestrian links through Block 2 and Block 3 should be extended so that in both cases they fully connect⁴ from the waterfront promenade to Hickson Road. These may need to be moved marginally northwards, where necessary, to preserve adequate activation and podium surrounds to C3 and C5. Both mid-block pedestrian connections should be publicly accessible at all times, and along with Shelley Lane, be open to the sky with minimal bridges and canopy/roof glazing. The security treatment of closing these connections at night and treating them as semi-indoor corporate foyers is opposed. Retail and other active uses should be introduced to either side of these connections to improve levels of security and activity.

10. Public domain should include further improvements

The Concept Plan must capture key public domain enhancements, including smaller scaled enhancements which add detail and character. The following should be included:

- a small square on the western side of Hickson Road where 'City Walk' commences;
- continuous waterfront timber boardwalk up to 6 metres wide set down and generally parallel to the waterfront promenade including the southern cove; and
- continuous street trees in Hickson Road, Margaret Street West, Globe Street, Napoleon Street and the waterfront promenade.

The Stage 1 Concept Plan must be considered holistically in the context of Stage 2.

11. The application unamended should be refused; if approved in part, it should be staged

Without substantial amendments as set out in this submission, the City of Sydney is strongly opposed to the proposed modification to the currently approved Concept Plan. If the application is conditionally approved in part, then for the purposes of determining the application, it is recommended that the application be divided into two sub-stages 1A and 1B, and that the development contained in those sub-stages be determined and deferred as follows (refer Figure 4):

- southern half of Stage 1 (referred to as Stage 1A by the City) be potentially approved but only subject to conditions which remove the tower/pier hotel use and

⁴ This requires break-throughs at the Hickson Road and waterfront perimeter blocks. The planning principle behind this requirement was generally captured in the retail public domain plan in the *Project Development Agreement* under an earlier configuration of the block design.

Block Y; amend the building designs, amend the quantum of GFA and improve and protect the public domain; and

- northern half of Stage 1 (referred to as Stage 1B by the City) be separated out and deferred, and that the Proponent be required to respond to directions for design amendments including (but not limited to) the removal of the tower/pier and relocation of the hotel, removal of the northern residential towers, increased separation between towers (and preserving the Grosvenor Street view corridor), amending building heights, remodelled building designs, adding more affordable housing in Hickson Road (C1), amend the quantum of GFA, retention of the canal (including its connection to Barangaroo Central) and other improvements to protect the public domain.

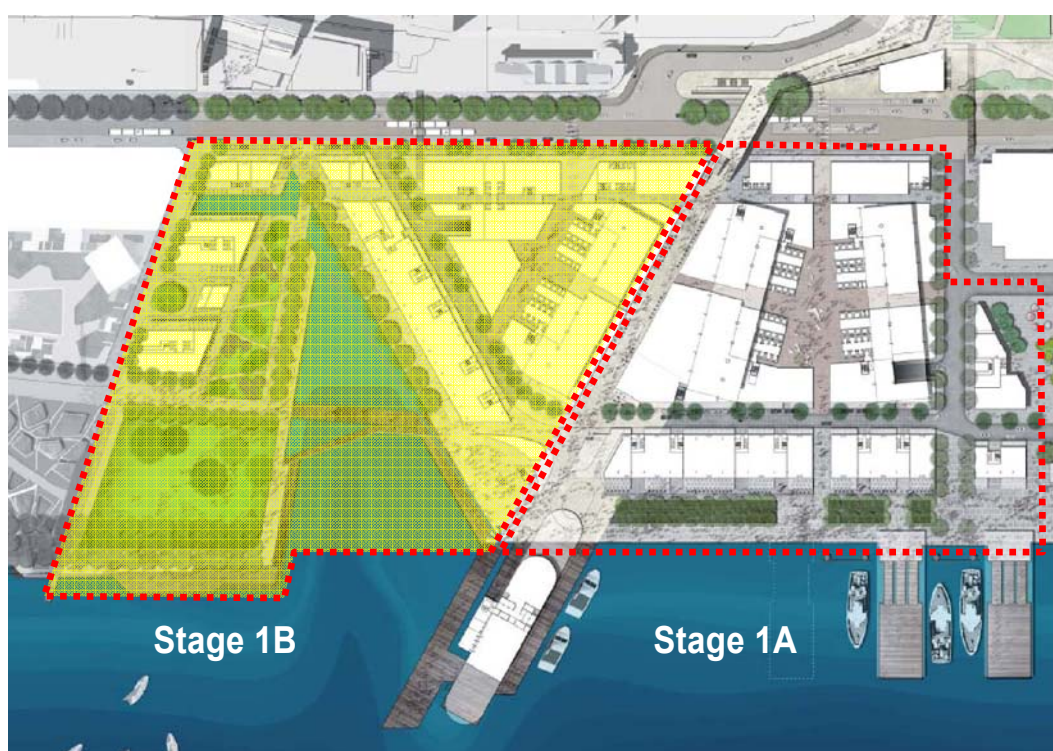


Figure 4. Suggested sub-staging of Barangaroo South to enable progressive approvals

12. Involvement of the Planning Assessment Commission (PAC) recommended

Consistent with the 2009 Planning Assessment Commission (PAC) review of the *Director-General's Environmental Assessment Report* in relation to the Concept Plan (Mod 2), the PAC should be requested by the Minister to review any relevant *Director-General's Environmental Assessment Report* in relation to this application (Concept Plan Mod 4) for consistency and reasonableness prior to any determination being made by the Minister.

However, as the Proponent has entered into a commercial contract (Project Development Agreement) with the NSW Government through its Authority (the BDA), and if the *Director-General's Environmental Assessment Report* recommends any of the following (but not limited to the following which results in a commercial conflict):

- an increase in development value through either amending the SEPP to increase the developable area of the Barangaroo South (such as locating the hotel tower in the harbour); or
- an increase in GFA being an increase in development value and therefore increased payments to the government as reflected in sections 4.4 and 4.5 (and elsewhere) in the Project Development Agreement

then there may be clear and reasonable grounds to suggest that the Minister (under which SHFA and BDA operate and report to) should not be the consent authority and the determination will need to be made by the PAC⁵.

13. Proposed ongoing design resolution and assessment process

The City should work with the Department of Planning to resolve areas which require redesign (Stage 1B modification) and be responsible the ongoing assessment (independent of change of determination function) of Project Applications after the Stage 1A Concept Plan modification has been determined in the following way:

- City of Sydney and Department of Planning form a Barangaroo Joint Taskforce (consistent with the recommendations of the Independent Review of the CSPC) to give guidance in the preparation of Project Applications. The Joint Taskforce should also provide a role in future planning of Barangaroo: Stage 2 - Central Lands; the Headland Park; and broader integration with the City. This proposal for the Joint Taskforce would include senior staff from the City and Department of Planning's strategic planning and design teams and would not fetter the independent assessment by either party;
- City of Sydney should be enabled by direction of the Minister to prepare assessments for individual Project Applications once the Concept Plan Amendment has been approved. These assessments would be undertaken by the City's Major Development Assessment team as recommended by the CSPC in the Report of the Independent Review Panel into the CSPC. These would be referred to the CSPC for comment prior to being referred to the Minister for consideration and determination; and
- the assessment process should be co-ordinated in a way to achieve a high level of community consultation, including appropriate notification, a requirement for scale models to fit into the City model for exhibition and assessment purposes, and a process whereby people can address the consent authority prior to making determinations.

As the engagement of Richard Rogers through Rogers Stirk Harbour + Partners (RSH+P) is fundamental to the basis of design excellence at Barangaroo, it is essential that RSH+P be engaged throughout the duration of the project to ensure design integrity.

⁵ If this is deemed necessary or appropriate, then the Instrument of Delegation to the Planning Assessment Commission may need to be amended to include Concept Plan Applications which are currently excluded.
http://www.planning.nsw.gov.au/planningsystem/pdf/gg_notice_pac_delegations_5dec08.pdf

2.0 Overview

2.1 Introduction

The City of Sydney (the City) is committed to a high quality, sustainable redevelopment of the former East Darling Harbour container shipping terminal, recently known as Barangaroo. The City has given consistent advice through formal submissions and participation on reference groups and design advisory panels to the Sydney Harbour Foreshore Authority (SHFA) and the Barangaroo Delivery Authority (BDA) that any redevelopment should have excellent urban planning and environmental credentials as well as contributing to the economic potential of Sydney.

A proposal to create a mixed use commercial office precinct, suitable for an internationally focused financial services sector, is generally supported by the City but only with significant qualifications. A prestige hotel, other visitor accommodation, extensive ground level retail and secondary services, together with an increased residential proportion (including an affordable housing sub-proportion) of a total floor area is also supported in principle. The acceptability of the total development intensification and mix is entirely subject to suitable and committed public transport and pedestrian connections, reduced private motor vehicle usage, public space amenity and the highest sustainability commitments.

The City acknowledges that the NSW Government through the BDA has entered into a *Project Development Agreement*⁶ with Lend Lease (Millers Point) Pty Ltd (the Proponent), and that the Proponent is entitled under the terms of the April 2008 Expression of Interest (EOI) and the *Project Development Agreement* to make an application under Part 3A to vary the Barangaroo Concept Plan including a request for a further increase in GFA. Through this subsequent application, the Proponent is exercising this inherent eligibility and seeking the views of the community, the government and other agencies for its alternative proposal to exceed and vary the current Concept Plan Instrument of Approval and State Environmental Planning Policy (Major Projects) 2005 (SEPP) (the Controls).

The subject CP (Mod 4) application and SEPP amendment for Stage 1 broadly involves two proposals:

- reconfiguration of the layout and disposition of buildings and harbour features; and
- further increase of approximately 60,000m² GFA over and above the 120,000m² GFA increase secured in 2009 through a previous modification (Mod 2).

There is acknowledgment in this submission of the Proponent's desire to include large commercial floor plates for the financial services sector; to include a prestigious hotel

⁶ GIPA (redacted) version of the Project Development Agreement can be found at [http://www.barangaroo.com/downloads/Project%20Development%20Agreement%20\(without%20annexures\).PDF](http://www.barangaroo.com/downloads/Project%20Development%20Agreement%20(without%20annexures).PDF)

amongst other uses, and that they have entered into contractual obligation to be benchmarked as climate-positive. In addition, a number of public domain improvements appear to have been made since the non-complying 'preferred plan' was first presented by the Proponent to the BDA at tender phase, including the deletion of one of the four commercial towers in favour of three, and the removal of elevated pedestrian systems.

It is evident that the Proponent's CP (Mod 4) application (which originates from their non-complying tender proposal) is a major departure from the principles of the original competition winning scheme and the current SHFA-derived CP (Mod 2) and CP (Mod 3). Some of those departures are supportable. It should also be noted that there have been some incremental improvements since the tender phase, including continuous waterfront promenades (exclusive of service roads) and lower waterfront buildings. The provision of one major international hotel and at least one residential tower are all consistent with the August 2008 submission by the City of Sydney, although their proposed locations (i.e., tower/pier in Darling Harbour) have not been previously considered by the City nor are regarded as appropriate.

A significant overarching issue is that the 2009 SHFA derived CP (Mod 2) approval for an additional commercial GFA of up to 120,000m² was entirely predicated on an amplification of funded public transport capacity in the form of the CBD Metro with a new purpose-designed rail station and importantly, a new pedestrian tunnel link to Wynyard to do the heavy lifting. These elements were part of a multi-modal public transport package including light rail, ferry services, medium and heavy rail, and buses.

The uncertainty of the funding for the critical Wynyard pedestrian tunnel link and the abandonment of the CBD Metro announced by the NSW Government prior to these modification requests being lodged, seems to have had no effect on the subsequent incorporation of the maximum GFA of the previous GFA increase, and despite the fundamental collapse of rationale for the previous increase, a request for a further increase in GFA has been sought by the Proponent in the face of this major public transport deficit. Clearly there is no basis upon which a further increase could be agreed.

Given this situation, and despite the earlier acknowledgment of some improvements, in its current form the City would not support approval of the CP (Mod 4) application and SEPP variation without significant amendments and partial redesign, and therefore objects to the application in its current form without all recommendations (including partial redesign) being made as noted in this submission.

2.2 Waterfront Interface

The removal of the waterfront service road in favour of a continuous waterfront promenade with active edges and mixed uses is a significant improvement over the current Concept Plan approval. The reconfiguration of the waterfront edge to lower scaled buildings with active edges is generally consistent with previous City submissions and is better urban

design practice for pedestrians. At least one additional 4-6 metre full height wide break should be created in the centre of building R8 to improve permeability and building interest as well as making gaps for the mid-block connections to link the waterfront promenade and Hickson Road. A detailed study of the final configuration of the waterfront promenade is required to resolve the public domain detail – planting, local shade, weather protection, interface with built-form edges (including retail and food and beverage), lighting and activation.

Waterfront boardwalk

A boardwalk generally parallel to and lower than the waterfront promenade of varying width (up to 6m) and design should be incorporated in the concept plan. A solid balustrade wall to the waterfront promenade is not recommended. The boardwalk should be continuous along the waters edge including the southern cove.

Waterfront buildings height

The average height of the waterfront buildings should be reduced in parts to improve the human scale relationships and microclimatic conditions. It is recommended that 6 storeys with a set back 7th storey (2/3rds the area of the floor below) should be the typical height of all waterfront edge buildings. At a few locations, small sections (approximately 20% of plan area) could 'pop up' to be 7-8 storeys for variation. This is consistent with recent approvals in other urban renewal areas.

Waterfront design

The waterfront buildings should have the greatest architectural design difference, and should be subject to a competitive design process (competitions) with adjoining buildings designed by 10 or more different architects, essentially one architect per core-serviced apartment building. This would be consistent with the Proponent's 'Residential Ribbon' concept as documented on p.98 of the Rogers Stirk Harbour + Partners *Urban Design Statement*, referring to a concept sketch and Amsterdam's Scheepstimmermanstraat waterfront housing as a model. What makes the Amsterdam waterfront housing an international model is that every dwelling was designed by a different architect, so to emulate that outcome with integrity would be to have each building served by a foyer designed by a different architect (in the Amsterdam example, 60 different designs).

'Cultural Centre'

The proposed 'Cultural Centre' represented in the Proponents' illustrations does not form part of the modification proposal and no built form or area allocation is being sought. The City however supports serious consideration for a National Centre for Indigenous Art and Culture in an appropriate location such as the tender bid phase 'innovation centre' site.

2.3 Southern Cove

The re-profiled southern cove with weir, cycle pedestrian bridge link and canal connection to Barangaroo Central is generally supported with some design development required. The

slightly narrower waterfront public promenade along the southern edge of the southern cove connecting Globe Square to Hickson Road is generally supported provided it is not obstructed by public domain intrusions. As for the main streets (including 'City Walk' but excluding mid-block connections)), there should be no car parking or other uses located below these streets other than an occasional tunnel link co-ordinated with tree layout and set well below the road surface as noted in the submission.

Weir

The weir adds interest to the Southern Cove however its inclusion is co-dependent on the canal feature extending into Barangaroo Central. If the canal is not incorporated in the future design of Barangaroo Central, then the weir may serve no purpose.

2.4 Tower/pier hotel

As previously noted, the Proponent is entitled to suggest non-conforming ideas, such as higher commercial buildings and the tower/pier in Darling Harbour. However, by moving the international hotel function into the water (and thereby increasing the development area for commercial use on land), a consequence is the argument for even greater commercial floor area on the land. This departure from the maximum floor space control could not survive the *sufficient environmental planning grounds* test in s. 20 (b) of the SEPP (used to test the reasonableness for not complying with development standards), and therefore the Proponent has requested the Minister to amend the controls themselves.

A key issue is that an exposed tower form will generate unacceptable overshadowing and wind impacts on the most public and populous part of the project, the waterfront promenade. A low-rise pier structure, perhaps two or three storeys in height with a public use, may well be an acceptable proposition as it has been in the past.

Furthermore, there are other more suitable locations within the development area for a large hotel relying on high levels of visitor and service access requirements (that does not cross a primary pedestrian promenade) and that has ample area for the ballroom and meeting functions which normally underpin the viability of a genuine large-scale hotel.

Major hotels are inherently risky ventures, and over 20 hotels in Sydney have been converted to residential over the last decade, including those with reasonable average occupancy rates of around 65%. The hotel share of the Australia economy has declined from 0.238% of GDP in 2002 to 0.188% of GDP in 2010⁷ and is expected to recover to about 0.20% in 2016 (but not back to the post Olympics levels). According to the IBISWorld Report H5711 released on 10 August 2010, in Australia *'the Hotel industry operates in a highly competitive global environment'* and there are many threats including overseas economic wellbeing, high aircraft fuel prices the competitiveness and attraction of other destinations. The relevance of these considerations is that hotels are risky by

⁷ Roman Zwolak, Hotel Accommodation in Australia August 2010, IBISWorld Industry Report H5711 p.7

nature, and their possible conversion to other uses is a sector feature, gauged only by the tolerance of the asset owner to withstand a downturn in profitability. In the very least, a precautionary principle would be to ensure that any major hotel relying on overseas visitors is capable of conversion to other uses in time rather than deteriorate, and for this risk alone the harbour location cannot be appropriate for a hotel.

In the current economic environment, the owner of such a premium hotel is likely to be one of only a relatively few international chains able to raise sufficient capital. Operators are generally known to dictate the terms of their involvement through their 'brand', including valet, access and delivery requirements, presentation and themed interior design, through to a potential preference for a relatively conservative (meaning non-icon) architecture to suit their particular demographic. A hotel use in this context, is financially, operationally, and aesthetically risky, with relatively few tenant options compared to commercial uses.

Furthermore, the BDA have entered into the First Deed of Amendment⁸ with the Proponent to expressly prevent the use of the tower for residential use and its strata sub-division were it used as serviced apartments. It is unlikely however that the Deed would survive an extended period of non-profitability, and if that were the case, it is likely that the government would be 'reasonable' and relent and agree to the building's conversion to a profitable use, given that both parties would financially benefit. If this Deed were to be further amended to allow residential, the value increase provisions in the *Project Development Agreement* would result in a profit share between the Proponent and the NSW Government, the very same parties to the Deed.

Finally, the Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005⁹ prohibits the proposed development under s18 *Development control in the waterways* which expressly prohibits over water *entertainment and tourist facilities*¹⁰ in Maritime Waters W1 (refer to Section 8).

2.5 Commercial building bulk

As there is no justifiable case to increase the floor area of the development given the public transport deficit together with the bulk, view loss, wind and overshadowing considerations (largely generated by absorbing the additional floor area), there is ample scope to model the commercial office towers so that they remain suitable for the commercial office market as well as being more appropriate for the city.

⁸ First Deed of Amendment, 8 June 2010, <http://www.barangaroo.com/downloads/First%20Amending%20Deed.PDF>

⁹ Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
<http://legislation.nsw.gov.au/main/top/view/inforce/epi+590+2005+cd+0+N> and Zoning Map
http://www.planning.nsw.gov.au/harbour/pdf/maps/sydney_harbour_rep_zoning_map.pdf

¹⁰ **tourist facility** means a building or place, such as a hotel or motel, used by tourists or holiday-makers for the purposes of holiday accommodation, sport or recreation, and includes:
(a) shops attached to or incorporated within the building or located at the place, and
(b) other facilities serving the needs of tourists and holiday-makers using the building or place, but does not include a caravan park

Architectural testing by the City's urban design team indicates that the proposed Block Envelopes and the indicative building forms (and as shown in the model at the Department of Planning) are somewhat larger than they need to be.¹¹ This creates scope for building modelling, which is essential. The three commercial towers C3, C4 & C5 require modelling based on a 'distributed' floor area principle. This would allow for floor plates approximately 25m wide (excluding cores) to be up to 80m long for the lowest rise (up to RL60 in height), 60m length up to RL120 in height, and 50m long and max 1400m² GFA for any floor above RL120. This is explained in more detail in this submission (see 5.3 - 5.7)

The proposed location of the three commercial towers is generally supported, subject to some important adjustments as noted elsewhere. However, the high-rise western shoulders of C5 and C4 in particular, create unacceptable wind and overshadowing effects



Figure 5. The Leadenhall Building by Rogers Stirk Harbour + Partners, City of London

until approximately mid-day or late morning in winter on the waterfront promenade, and are too bulky. It is highly unusual to present a campus-style large floor plate as a high-rise building. However, it is not unusual around the world such as in New York, to require high-rise towers to reduce in bulk as they increase in height. This principle is what created the profile of the Empire State Building and other Manhattan landmarks such as the Chrysler Building which is referred to as a model landmark in the *Urban Design Statement* by Rogers Stirk Harbour + Partners. A diminishing floor plate for a high-rise tower can be seen in Rogers Stirk Harbour + Partners design for the 50 storey, 220m high Leadenhall Building in the City of London – *'The building's tapering profile is prompted by a requirement to respect views of the nearby St Paul's Cathedral. The floor plates of the fully glazed office floors progressively diminish in depth towards the apex of the building'*.¹²

¹¹ Refer to Appendix 3.

¹² p. 232, The Leadenhall Building, From the House to the City, Richard Rogers + Architects



Figure 6. The three Stages of Barangaroo. Barangaroo South is Stage 1. The base drawing is the non-complying tender plan by Rogers Stirk Harbour + Partners.

3.0 Background

3.1 Introduction

There is significant background associated with the redevelopment of this site including the original competition, the call for development proposals and the modifications to the Concept Plan Approval. An overall chronology has been provided with this submission at Appendix A.

The Sydney Harbour Foreshore Authority (SHFA) derived modification (Mod 2) of the Barangaroo Concept Plan was assessed by the Department of Planning (DoP) in late 2008 and approved by the Minister for Planning in February 2009. It was a relatively poorly constructed and documented proposal, which now approved, makes assessment of the current request against the current controls difficult.

The SHFA Concept Plan (Mod 2) effectively disassembled the 2007 Concept Plan Approval¹³ into land use and floor areas options which were potentially unachievable within the building envelopes and were never properly tested. The current application effectively proves this concern. There was no 3D physical model of this application or Consolidated Concept Plan report requirement, leaving it to the redevelopment tender teams to interpret the controls. As history shows, the Proponent's tender selected by the NSW Government does not confine itself to any of these options and reworks the entire proposal.

The background covered in this section has been limited to recent history which is immediately relevant to the consideration of the two requests by the proponent to the Minister for Planning which is the subject of this submission. Those considerations include the expectations and requirements:

- put to the proponent by the NSW Government through its various authorities (SHFA and BDA) in so far as they can be ascertained from material that has been submitted and made public; and
- associated with the now approved Concept Plan Instrument of Approval (CP (Mod 2)) as set out in the *Director General's Environmental Assessment Report* November 2008 and the *Review of Recommendation by the Planning Assessment Commission* February 2009.

3.2 SHFA process for engaging the development proponent

The involvement of a development proponent for Barangaroo stems from an Expression of Interest (EOI) and subsequent Request for Detailed Proposals (RFDP) process initiated by the SHFA. The EOI was released in May 2008 for what was then termed Stage 1 (Barangaroo South) comprising 322,300 m² GFA out of a total of 388,300 m² GFA of

¹³ 2006 Concept Plan Environmental Assessment Report by JBA Urban Planning Consultants

developable area approved in the 2007 Concept Plan. The EOI document anticipated that *‘an additional 50,000 m² – 120,000 m² of additional GFA may be achievable within the approved envelopes’¹⁴*. SHFA also noted in their EOI call that it *‘may as part of the RFDP Process, consider proposals that contemplate increased commercial floor space outside the envelopes approved by the current Concept Plan Approval’*.

The 2008 Stage 1 objectives identified by SHFA in the call for EOIs are as follows:

- *‘create an outstanding new southern development precinct that establishes a world benchmark in waterfront urban design integrating new harbour foreshore public domain with buildings exhibiting design excellence of the highest order;*
- *respond to the increasing demand for commercial workspace that provides for significant floor space for workers of the knowledge economy along with access to significant social and cultural amenities and quality lifestyle opportunities;*
- *provide a development offering of the scale that allows for innovative precinct-wide environmentally sustainable infrastructure to support the twin challenges of reduced potable water demand and reduction in greenhouse gas emissions;*
- *provide a mix of land uses within development blocks 1-4 that support vibrant accessible ground floor and street edge activation that is co-ordinated with adjoining public domain areas and other development blocks;*
- *provide a comprehensive remediation outcome for the southern precinct of Barangaroo and in doing so become a benchmark for the reuse of degraded post industrial landscapes;*
- *work with the foreshore authority and NSW government agencies to provide timely and co-ordinated delivery of social and community infrastructure leveraging benefits from renewal for local communities;*
- *co-ordinate transport and access outcomes to ensure reduced dependency on car travel to the city supported by new and safe pedestrian links to a range of transport modes;*
- *create appropriate cash flows to fund the design and construction by the NSW government of the headland park and allow for the early development by the private sector of the southern precinct of Barangaroo; and*
- *allow for the early delivery of and access to a new public foreshore promenade’¹⁵.*

3.3 BDA ‘Issues of Principle’ tender stage design feedback

In April 2010, design feedback in relation to the public domain was provided to the Proponent by the BDA, and has been recorded in a document entitled *Barangaroo Delivery Authority Requirement - Issues of Principle* recently made available through the

¹⁴ The call for Expressions of Interest document, s 2.2 (b), Sydney Harbour Foreshore Authority, May 2008

¹⁵ Ibid

BDA website. A summary of the feedback as noted in the document are as follows:

Design

- reduce the amount of elevated first floor external space;
- move more visitors from the elevated walkway to the ground plane at the eastern end of Barangaroo;
- improve the activation and quality of the connection between the ferry terminal and the metro entrance transport square. The street connecting transport should have an active and civic quality and not require pedestrians to cross a major car park entry; and
- ensure retail activation of the waterfront promenade and the ground plane under the Shed¹⁶.

Ensure quality and appropriate scale of public spaces

- ensure the ground plane between the two major commercial buildings is generous and civic and perhaps smaller;
- review the height of the Shed (refer previous note) in regard to its function;
- provide a continuity of the width of pedestrian space around and through Globe Harbour to the Stage 1 area and Headland Park;
- provide an effective width of pedestrian waterfront promenade around Globe Harbour – the aggregate width of waterfront pedestrian space is far less than the acceptable minimum; and
- ensure that the use in the base of the hotel pier is open, accessible and will activate the pier – consider other public uses (other than the proposed library) including the uses currently proposed for the open house.

Enhance the mixed use nature of the development

- increase the floor area of residential use integrated into the core office precinct; and
- ensure that the precinct is a vibrant multi-layered multi-use development rather than two distinct areas of use. Ensure both building and streetscape diversity.

Improve the public amenity and views to and from and within the development

- ensure residential buildings have good amenity, natural light, ventilation etc;
- ensure satisfactory solution to wind downdraft generated by tall buildings;
- ensure building locations maximise solar penetration to public spaces in winter and mid seasons;

¹⁶ This refers to the former open canopy building proposed at the tender bid

- minimise overshadowing of public spaces in surrounding areas in winter and at the mid seasons;
- explore a view corridor down Margaret Street east-west; and
- address the impact of the 'open house' on the amenity and views from the 'verandah' and the foreshore promenade. Consider moving the 'open house' beyond Stage 1.

Improve public transport connections

- provide a substantial ferry terminal integrated with the shed structure and activities

3.4 Concept Plan Modification 2 - additional 120,000m² of commercial floor space

In June 2008, as foreshadowed in the May 2008 Call for Expressions EOI document, SHFA lodged an application to modify the Concept Plan (CP Mod 2) with the DoP. The description of the modification was put simply on the June 2008 application:

***"The Sydney Harbour Foreshore Authority is seeking to modify the Concept Plan by increasing the overall maximum gross floor area on the site by up to 120,000 m² to accommodate additional commercial floor space"**¹⁷.*

The *Director-General's Environmental Assessment Report* was completed in November 2008 and approved by the Minister for Planning Kristina Keneally on 16 February 2009 following a 'reasonableness review' by the Planning Assessment Commission¹⁸ (PAC) issued on 6 February 2009. A media release¹⁹ by the NSW Premier Nathan Rees which outlined the NSW Government's perspective of the approved changes is summarized as follows:

- up to 22,000 people will live and work at Barangaroo;
- public transport will be a key feature of Barangaroo;
- a new ferry hub is planned and will increase the number of workers and residents accessing Barangaroo by ferry from 1% up to 10%;
- planning and transport departments will now work on the details of the new ferry hub including construction and operation;
- Minister for Planning is to make construction of the walkway to Wynyard station a priority – needs to coincide with commercial development coming on line;

¹⁷ <http://majorprojects.planning.nsw.gov.au/files/30729/Barangaroo%20Modification%20%20Application.pdf>

¹⁸ Planning Assessment Commission Review of Recommendation, February 2009
[http://majorprojects.planning.nsw.gov.au/files/31100/Planning%20Assessment%20Commission%20report%20-%20Barangaroo%20-%20Modification%20%20\(commercial%20floorspace\).pdf](http://majorprojects.planning.nsw.gov.au/files/31100/Planning%20Assessment%20Commission%20report%20-%20Barangaroo%20-%20Modification%20%20(commercial%20floorspace).pdf)

¹⁹ Media Release by the NSW Premier 25 February 2010
http://www.barangaroo.com/downloads/Media%20releases/090225_More_commercial_floor_space_and_public_transport.pdf

- the increase in floor space to 500,000 m² will take advantage of the transport improvements provided by the CBD Metro with a new station at the eastern edge of Darling Harbour;
- the increase in commercial floor space will not impact on the already approved maximum building heights and widths or the ratio of other uses and open space;
- based on community feedback, clear guidelines have been set to ensure that the increases in total floor space do not adversely affect the surrounding community;
- guidelines will ensure that taller buildings are built alongside the existing CBD with lower buildings at the northern end of the commercial precinct; and
- the increase in floor space is consistent with the Government's objective of creating a world-class city precinct that will contribute to Sydney's future.

The approval of CP (Mod 2) confirmed the increase of GFA precisely as predicted in SHFA's May 2008 EOI documents, with the approval occurring during the tendering process. From media reports, it is understood that the Proponent submitted a development tender which nominally complied with the approved CP (Mod 2) (i.e., without a hotel tower in Darling Harbour, refer Figure 7). Additionally, as the EOI documents allowed for and is the Proponent's stated preference, a non-complying proposal which included a reconfiguration of heights, a tower in Darling Harbour and an increase in GFA was presented to the BDA and is the foundation of these current applications.

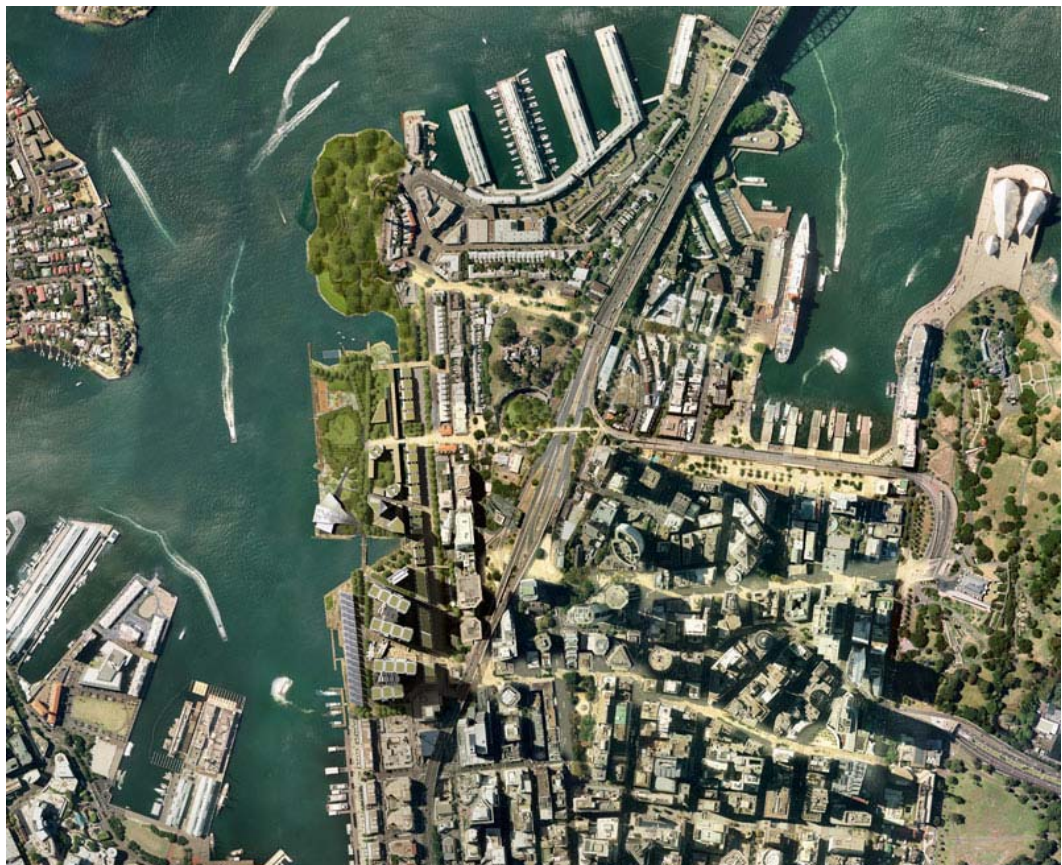


Figure 7. Rogers Stirk Harbour + Partners/Lend Lease proposal without hotel tower in Darling Harbour
(source: from RSH+ P website)

3.5 Planning Assessment Commission ‘Review of Recommendation’ 2009

On 23 January 2009, the Director-General wrote to the Chair of the Planning Assessment Commission (PAC) to undertake a review of the recommendation contained in the *Director-General’s Environmental Assessment Report*. As noted in the review by the PAC²⁰, the justifications for supporting the modification can be summarised as:

- office space is constrained for large floor plates in the Sydney CBD;
- the Concept Plan Approval does not have sufficiently large floor plates;
- the strategic context of Barangaroo has changed since the announcement of the North West Metro (CBD Metro) which includes a rail station close to the site;
- the additional commercial floor space will not affect the accommodation of other land uses; and
- positive social and economic impacts including an increase in employment, meeting demand for premium office space.

The PAC review noted that, if approved, Block 2 would have a development density higher than that currently allowable for the Sydney CBD, and whilst that may be a cause for concern, approval is logical given the access proposed to Wynyard Station and that the Wynyard link be completed prior to occupation of the development on Block 2, 3, 4 and 5. It also noted that:

“the proposed Transport Management and Access Plan needs to be given a high priority. The Commission notes that the Barangaroo development is predicated on a high modal split to public transport and the construction of the CBD metro is very important to secure the modal split targets”

The PAC review also noted in relation to the objectives of making Hickson Road and Globe Street the major public thoroughfares, that the:

“the proposed street walls/podiums should be set as an absolute requirement and alternative pedestrian movements between Blocks 2, 3, 4 and 5 as permitted by the approval, should not occur at the expense of achieving the objectives for Hickson Road and Globe Street and other areas of the public domain”

As previously noted, SHFA’s CP (Mod 2) was approved with an additional amount of commercial floor space being expressed as ‘up to’ 120,000m². Subsequently however, the

²⁰ Planning Assessment Commission Review of Recommendation, February 2009
[http://majorprojects.planning.nsw.gov.au/files/31100/Planning%20Assessment%20Commission%20report%20-%20Barangaroo%20-%20Modification%202%20\(commercial%20floorspace\).pdf](http://majorprojects.planning.nsw.gov.au/files/31100/Planning%20Assessment%20Commission%20report%20-%20Barangaroo%20-%20Modification%202%20(commercial%20floorspace).pdf)

CBD Metro rail project has been abandoned or indefinitely deferred, undermining the justification for the intensification of employment in this location given the predicated modal split and reliance on public transport.

Recommendation 1.

That the Planning Assessment Commission (PAC) is requested by the Minister to:

- review any recommendations by the Director-General associated with this application and the SEPP amendment request, prior to any determination by the Minister of either request. This is entirely consistent with the previous role of the PAC in considering issues, in particular the nexus between committed public transport capacity and the likely trip generation by employment, visitor, retail and residential uses;
- consider this and other submissions by the City of Sydney in reviewing or determining any recommendation by the Director-General; and
- consider the merit of sub-stages to allow sequenced determinations.

4.0 Scope of this submission and relationship to other submissions

4.1 Scope

This submission provides the City of Sydney's response to the modification application by the Proponent (CP Mod 4) to the NSW Minister for Planning to change the planning controls for Barangaroo South; and a request by the Proponent to the Minister to change the State Environmental Planning Policy (Major Projects) 2005 (SEPP) to accommodate these proposed changes. The CP (Mod 4) request can be declined, approved in part, or approved in whole (with or without conditions) by the Minister or his delegates. The SEPP request can be acted upon as the Minister sees fit. The requests are as follows:

MP06_0162 (4) – PART 3A Modification Application to Modify Barangaroo Concept Plan

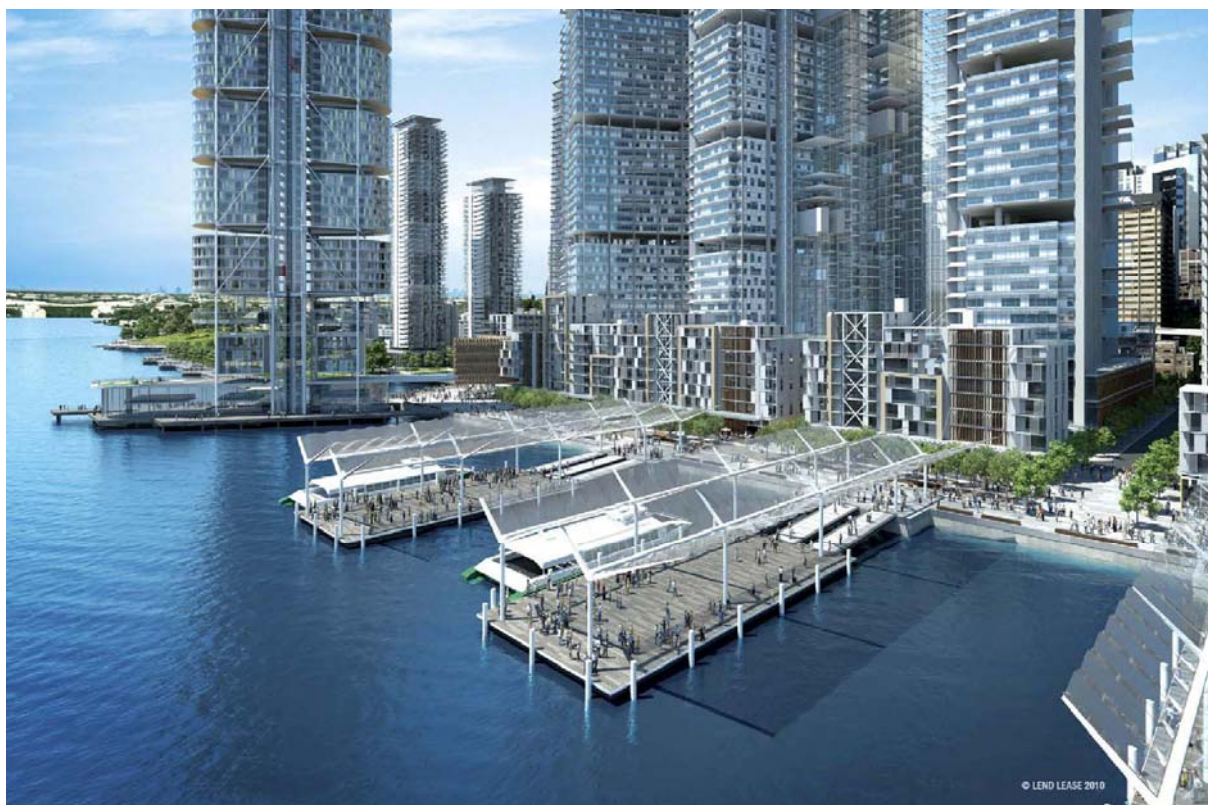
This application is made under s.75W of the EP&A Act (Part 3A). The proposed changes relate to the southern third of the concept plan only, a stage now identified as 'Barangaroo South'. The changes include an increase in GFA from 430,275m² to 490,240m²; removal of the overseas passenger liner terminal and reallocation of its 8,500m² to 'community use'; reduction in the width of the waterfront promenade from 60m to 27m, reconfiguration of blocks 1-4 and associated streets and lanes; the addition of two development Blocks X (Globe Street edge) and Y (projecting tower pier) and the development area associated with them; increase in maximum building height of 18m, 97m and 74m for blocks 1, 3 & 4 respectively; changes to the built-form principles and urban design controls and redistribution of the land use mix.

The Minister can approve or decline the application. There is no merits appeal.

SEPP (Major Projects) 2005 – Request to vary SEPP (Major Projects) 2005

The Proponent has requested the Minister to amend SEPP (Major Projects) 2005 clause 12. to make a series of changes, including: boundary change to include a portion of Darling Harbour for the proposed pier/tower structure (Block Y) including a wide water space (possible marina) to the north of Block Y (all of which will enlarge the Barangaroo project area); change the location and shape of the numbered development Blocks, allow flexible redistribution of the increased maximum GFA of 59,965m² across the Blocks, and extend the development Blocks and the development area to include Hickson Road (owned by the City of Sydney). The inclusion of Hickson Road in the development area as applied for would remove the jurisdiction of Council and the LEP for the length and width of Hickson Road for planning and development approval purposes only (primarily for overpass approvals).

The Minister can implement or not implement the request. There is no merits appeal.



Figures 8 & 9. Rogers Stirk Harbour + Partners/Lend Lease photomontages of the proposed modification scheme

4.2 Related submissions

The Barangaroo Concept Plan, SEPP and SREP are used to assess all Major Project applications, including proposed stages and sub-stages and future modification applications. The Proponent has already sought and obtained Director-General Requirements (DGRs) for two sub-stages of Stage 1 which will guide future Major Project applications under the Concept Plan. These are:

- MP10_0024 – Commercial Building C1, DGRs issued 03 May 2010²¹
- MP10_0025 – Commercial Building C4, DGRs issued 03 May 2010²²

These DGRs do not establish controls such as height and GFA. They require consistency with the approved Concept Plan (as at the time that the subsequent Major Project application is lodged). Any overall requirements (such as GFA, height, approved and prohibited uses, landscape treatments or street widths for example) need to be dealt with at the Concept Plan stage.

4.3 Summary of the proposed changes to the Barangaroo Concept Plan (Barangaroo South)

The Proponent has requested amendments to the approved 2009 Concept Plan for Stage 1 (Barangaroo South) and associated amendments to *SEPP (Major Projects) 2005 – Section 12: Barangaroo* to facilitate a possible increase in GFA, the creation of new development Blocks, inclusion of Hickson Road and the proposed tower/pier and an increase in the maximum permissible height controls. An outline of the amendments includes:

- an increase in the total quantum of GFA within Barangaroo South Mixed Use Precinct from 430,275m² to 490,240m² related to an increase of 45,188m² in residential floor space and an increase of 14,777m² in commercial floor space;
- in addition to the above, reallocation of the 8,500m² GFA allowed for the overseas passenger liner terminal approved under the Concept Plan for 'community uses' such that there is a total of 10,000m²;
- an increase in total 'active' uses GFA by 1500m², to a total of 3000m²;
- a redesign and reconfiguration of the public waterfront promenade (RE1 Public Recreation Zone) including a reduction in the width of the public promenade from a minimum of 60m to a minimum of 27m;
- the reconfiguration of Blocks 1 to 4;
- the establishment of two new Development Blocks within Barangaroo South, being:

²¹ <http://majorprojects.planning.nsw.gov.au/files/51054/Director-General%27s%20Requirements.pdf>

²² <http://majorprojects.planning.nsw.gov.au/files/51055/Director-General%27s%20Requirements.pdf>

- Block X – a new predominantly residential development block located west of Globe Street with a maximum GFA of 18,908m² and a maximum building height of RL41.5; and
 - Block Y – the establishment of a new pier and potential ‘landmark’ building extending into the Harbour with a maximum GFA 33,000m² and a maximum building height of RL170;
- an increase in the maximum building height within the previously described Development Blocks 1, 3 and 4 as follows;
 - Block 1 from RL62 to RL80 (an increase of 18m);
 - Block 3 from RL112 to RL209 (an increase of 97m); and
 - Block 4 from RL100 to a maximum of RL175 in Block 4B (an increase of 75m), noting the approved Block 4 has been split into 3 separate Blocks;
- revisions to the approved Built Form Principles and Urban Design Controls; and a redistribution of the approved land use mix within Barangaroo South. For the entire Barangaroo site, the Concept Plan Modification will result in 563,965m² of mixed use development across the entire Barangaroo site, comprising a maximum of 514,465m² mixed use GFA, including residential, commercial and retail uses which includes:
 - a maximum of 128,763m² of residential uses (a minimum of 99,763m² of which will be in Barangaroo South);
 - a maximum of 50,000m² of tourist uses²³ GFA;
 - a maximum of 39,000m² of retail uses;
 - a maximum of 4,500m² of active uses GFA (3,000m² of which will be in Barangaroo South); and
 - a maximum of 12,000m² of community uses GFA (10,000m² of which will be in Barangaroo South).
- approximately 11ha of new public open space/public domain, with a range of formal and informal open spaces serving separate recreational functions and including a 2.2km public foreshore promenade; built-form principles, maximum building heights and GFA for each development block within the mixed use zone; public domain landscape concept, including parks, streets and pedestrian connections; and alteration of the existing seawalls and creation of a portion of the new shoreline to the Harbour.

²³ Which includes ‘serviced apartments’ as a tourist/visitor use with no restriction on strata sub-division unless in the Block Y tower in the Harbour (Amending Deed 1)

5.0 Assessment of proposed amendments to the Concept Plan

5.1 Introduction

Barangaroo provides a unique opportunity to create a new world-class waterfront public domain in Sydney, without excessive constraints and impacts on existing urban fabric.

Despite this opportunity, the City's assessment concludes that the proposed amendments to the approved Concept Plan as drafted by the Proponent unfortunately result in unacceptable impacts, are without proper planning justification and should not be accepted without significant amendment and/or redesign.

The proposed amendments can be categorised into two separate components of the application:

- increase in GFA by approx 60,000 m² and increased height by up to 97m;
- reconfiguration of the layout and disposition of buildings and harbour features:
 - reconfiguration of all blocks and 2 new blocks (X and Y);
 - change in land use mix; and
 - revised built-form principles.

An assessment of each of these components is covered in this section. The following sections provide an assessment of:

- the proposed changes to the SEPP (Major Projects) 2005 [Section 6];
- the proposed changes to the Instrument of Approval [Section 7]; and
- the acceptability of the proposal against the aims and principles of the SREP (Sydney Harbour Catchment) 2005 [Section 8].

5.2 Disparity in GFA, diagrammatic buildings and Block Envelopes

Significant concern is raised with regard to the proposed increase in GFA and building heights from a number of perspectives including but not limited to urban design/amenity impacts, traffic and public transport.

Issue: Disparity between maximum GFA and diagrammatic building diagrams

Prior to discussing the impacts of proposed GFA and height in detail, it is important to highlight an apparent disparity between the GFA now sought under the amendment to the Concept Plan/Major Projects SEPP with the potential GFA sought under the supporting documents – namely the diagrammatic building mass drawings as shown in the Rogers Stirk Harbour + Partners *Urban Design Statement*. The diagrammatic building mass drawings, which illustrate a simplified distribution of mass within the limits of a proposed Development Envelopes, could nevertheless be used as the basis of comprehensive wind tunnel testing to see the interrelated effects of a the group of buildings. This is essential to the design of each discrete building, and wind testing should not be done in isolation.

As each of these buildings are sufficiently dimensioned with maximum building heights (refer to figure below) it is possible to do a reasonably detailed analysis of the floor space gained within these diagrams – which, according to our assessment significantly exceed the stated GFA yield in most cases (a table of areas can be found at **Appendix C**).

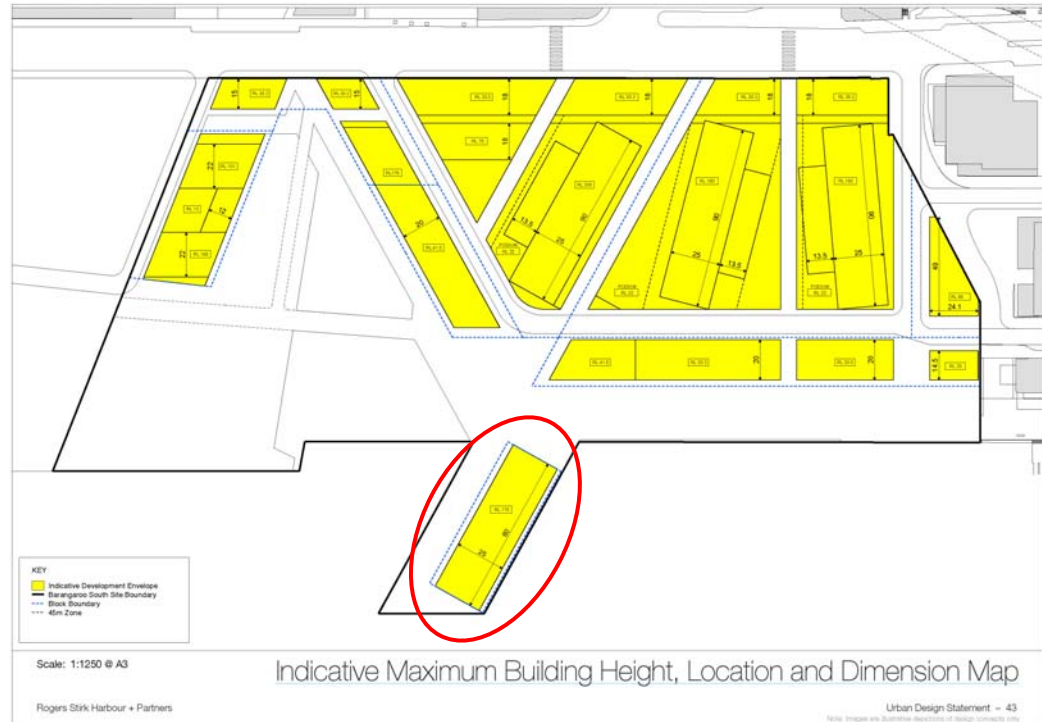
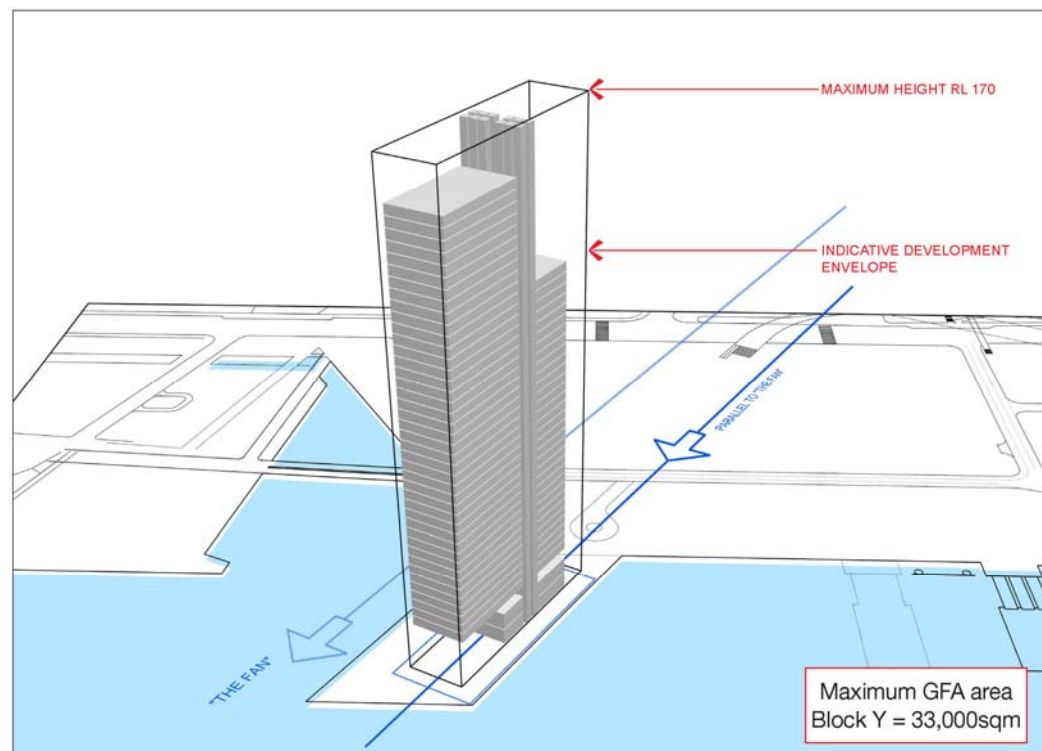


Figure 10. Indicative Maximum Building Height, Location and Dimension Map p.43 of the Rogers Stirk Harbour + Partners Urban Design Statement. Figure 11. (below) Block Y Envelope

The following diagrammatic building mass for Block Y, for example, demonstrates this issue (which states Maximum GFA 33,000m²):



The building is shown to have a height of RL 170 with a length of 80 metres and a width of 25 metres (a potential floor plate of 2000m²). This disparity means the building with a maximum GFA of 33,000m² might only reach a height of approximately 20 storeys (+ the lobby/restaurant/function space on the ground floor + lift overruns) depending on final design, whereas the Development Envelope seeks flexibility for twice this height.

Issue: Disparity between diagrammatic building mass diagrams and Block Envelopes

From the information provided, the diagrammatic building shape proposed within the above diagram is approximately 40+ storeys in height (+ the lobby/restaurant/function space on the ground floor + lift overruns) with a theoretical GFA capacity within the planning control envelope well in excess of 33,000 m² (and upwards of 60,000m²). While the diagrammatic building is much larger than the area sought, and the Block Envelope is again larger than the diagrammatic building. This leads to an unacceptably high level of uncertainty regarding the possible impacts of future Major Project Applications.

A similar scenario can be found with other Block Envelopes including the three major commercial towers (which the City assumes to have a floor to floor height of 3.8 metres).

Recommendation 2:

That the Proponent be requested by the Minister to revise their diagrammatic building shape drawings to more accurately reflect the maximum GFA being sought and, or failing this, to revise the Block Envelopes to more closely match the GFA requested, with a reasonable margin of say 20% (and if amended, the diagrammatic building shapes as well) prior to the determination of the Concept Plan modification or any sub-stage of the application.

5.2.1 Traffic and Public Transport

The applicant's Transport Management and Access Plan (TMAP) dated 03 August 2010, claims that the transport modal split will be largely reliant upon various forms of public transport. The estimated split is as follows:

- 4% car
- 20% bus/light rail
- 63% train
- 1% ferry
- 12% pedestrian, cyclists, motorcycles and taxi.

This is the same modal split forecasted in the proponent's original TMAP (dated September 2008). At the time, the Department of Planning *Director-General's*

*Environmental Assessment Report*²⁴ for MP 06_0162 Mod 2 stated that the achievement of the forecasted modal split is closely related to “the stringent parking controls approved in the Concept Plan” and the ability of the public transport system to accommodate the additional demand generated from the development. In regard to public transport, the *Director-General’s Environmental Assessment Report* states that “the proposed CBD metro will also result in improved access to the site, will provide a catalyst for a pedestrian link between Wynyard and Barangaroo and help achieve the high mode splits to public transport”²⁵.

Issue: Abandonment of CBD Metro rail capacity

Contrary to the 2008 *Director-General’s Environmental Assessment Report* regarding the Mod 2 increase in GFA, the CBD Metro has since been abandoned/deferred by the NSW Government (if deferred, deferred with an uncertain delivery date, at the very least well beyond the timeframe for completion of commercial buildings at Barangaroo South). This decision undermines the previous rationale for approving the extra 120,000 m² GFA of public transport-dependent employment space, and clearly limits any further increase in GFA by the Proponent at this time.

Other causes of concern for the City in relation to public transport are imprecise references within the latest TMAP to the State Government’s Metropolitan Transport Plan ‘*Connecting the City of Cities*’²⁶ which include plans for new rail corridor(s) into the Sydney CBD, upgrade to Wynyard Station, new light rail and NW Metro projects.

At the very least, the City requests that the Department of Planning make a thorough analysis of the likely timing and delivery of such long term public transport improvements in so far as the Government is firmly committed to them, and ensure that the approval and delivery of various buildings within the Barangaroo urban renewal site align with the actual commitment and delivery of those projects, including physical connections to them.

Issue: Increase in Off-Street Car Parking

The proposed amendment includes an increase to the approved car parking numbers from 2,446 spaces to 2,690 spaces (an increase of 244 spaces). Despite the increase in parking spaces, the latest TMAP asserts that the Concept Amendment Plan generates slightly lower traffic volumes to the TMAP September 2008. This, according to the Proponent, is due to residential parking spaces contributing to a lower traffic generation rate in the peak periods than the commercial spaces as well as a reduction in hotel /serviced apartment rooms.

²⁴ <http://majorprojects.planning.nsw.gov.au/files/30759/Barangaroo%20-%20Modification%20-%20-%28commercial%20floorspace%29%20-%20DG%20Report.pdf>

²⁵ ibid

²⁶ <http://www.premier.nsw.gov.au/sites/default/files/Metropolitan-Transport-Plan.pdf>

Clearly, further justification of low trip generation rates (despite the significant increase in off-street car parking) should be required prior to any determination of the application to modify the approved Concept Plan.

Issue: Barangaroo Pedestrian Link

The pedestrian links to Wynyard Station are unlikely to cope with future demand caused by the proposal. It is noted that Barangaroo will generate around 33,000 pedestrian users daily. Over the whole year, and allowing for major events, Barangaroo could attract some 11 million people – with the majority of people walking between Wynyard and Barangaroo South.

It is noted that the 2008 *Director-General's Environmental Assessment Report* for MP 06_0162 (Mod 2) recommended that '*details of the proposed improved pedestrian linkages shall be provided with the first Project Application for Block 2 and completed prior to occupation of Block 2*'. Contrary to this recommendation, little or no analysis has been included in the latest TMAP – other than a very basic site plan. It is also noted that the Barangaroo Delivery Authority's (BDA) *Project Development Agreement* with Lend Lease is being progressed primarily by Sydney Metro with input by the BDA and other stakeholders. It is understood that further studies to explore all of the available pedestrian enhancements that may connect Barangaroo to Wynyard Station have yet to be finalised.

In order to support the high public transport modal split travelling from Wynyard Station, it is critical that further resolution and detailed design of this Barangaroo Pedestrian Link be progressed prior to any further approval.

It should also be noted that the existing Kent Street tunnel has a capacity of 5,000 people per hour (PPH). It currently carries 4,000 PPH, which is near capacity. When the Barangaroo Pedestrian Link (BPL) is delivered, Transport NSW (TNSW) estimates that the Kent Street tunnel will need to be closed due to construction and safety issues. Therefore, the BPL must carry the 4,000 PPH to existing developments west of Kent Street plus the forecasted Barangaroo demand. The 'do nothing option' would obviously result in an unacceptable situation from a pedestrian amenity and safety point of view and would be contrary to the documented basis of the existing Concept Plan (Mod 2) approval.

Even the previously approved GFA should be subject to the delivery of a quality pedestrian link between the southern part of the site and Wynyard Station capable of carrying a minimum of 10,000 PPH, with exits to Kent Street to a medium or heavy rail solution.

While the State Government remains publicly committed to delivering the BPL, and it has amended Metro consents to enable its delivery, there is neither a confirmed funding nor delivery mechanism to ensure its realisation. Any GFA increase should therefore be

contingent on the BPL being delivered prior to the completion of identified development stages.

In addition, it has always been assumed that there will be a majority of people using the future tunnel because of the grade differences between Wynyard Station and Barangaroo South. Despite this, there will also be a major increase in the amount of people using Margaret Street. More information about the predicted modal split flows is required with likely footpath widening required in Margaret Street, Erskine Street and Napoleon Street.

In order to cater for the existing pedestrians travelling from Wynyard Station to existing commercial development along Kent Street and King Street Wharf area, upgrades to the footpaths on surface streets such as Erskine Street, Margaret Street and Napoleon Street should be carried out by the proponent through the process of a Voluntary Planning Agreement (VPA). Such works progressed in a VPA should involve the City of Sydney as land owner. This additional focus on footpath widening and improvement to pedestrian amenity is consistent with the recent MOU between the City and State Government.

Issue: Wynyard Station

Wynyard Station is already nearing peak capacity and although proposed changes to the station platform (City One development Major Project reference MP 09_0076) will provide better internal circulation, it is understood they will not provide additional platform capacity.

While the provision of the BPL is fundamental, it should be recognised that the additional user loading into Wynyard once the Barangaroo development is fully populated, is likely to exceed safe operational capacity in the PM peak. Light rail may well relieve a component amount of this 'crush capacity', but the mitigation will be insufficient to relieve unsustainable commuter congestion.

It is noted that both the current State Government and the Opposition are politically supportive of a North-West heavy rail service, either by 2024 or 2017 respectively. In either event, this is likely to bring between four and six additional trains per hour into Wynyard and load/unload between 2,000 and 4,000 additional people per peak hour.

Bus capacity at Wynyard has reached capacity, and the City is working closely with the State to provide some relief. However, additional demand generated by Barangaroo as a whole, will not be able to be absorbed with current service levels. Light rail in George Street may provide some incremental relief by redistributing demand through the city centre, but only if penalty-free transfer fares are available.

Issue: Bus Layover in Hickson Road

The Proponent suggests a bus layover along Hickson Road as documented in the latest TMAP. It is understood that the Minister for Transport and Sydney Buses have previously requested the provision of an off-road layover facility provided within the development for

up to 20 buses, which should preferably be an out-of-sight drive-through at-grade or basement arrangement, preferably integrated into a multi-deck car park²⁷.

The proposed TMAP has stated that *'an on-street layover accommodating up to 7 buses on either or both sides of Hickson Road near Munn Street is recommended on the basis of bus operating cost impacts, space availability and impact on other land uses'*. In other words, the requirement for a bus layover is inconsistent with seeking more floor area (which in turn, increases demand on transport). This is another fundamental transport flaw.

The City is opposed to a bus layover along the surface of Hickson Road. This opposition is compounded by the context whereby the Proponent seeks a further increase in the amount of off-street parking spaces within the basement car park while at the same time seeking to move the required bus layover near existing residents in Millers Point and planned residential development along Hickson Road/Barangaroo Central as well as the amenity of Hickson Road for pedestrians. Hickson Road should be exclusively for footpaths (including outdoor dining), light rail, cycleway corridors, vehicular traffic and casual parking.

Notwithstanding the previous recommendations to provide a bus layover in the Barangaroo site, it is understood that the final decision lay in the hands with Transport NSW (TNSW). Factors that may need to be carefully reconsidered by TNSW include the City's preference for light rail along Hickson Road and the questionable ability for this road and the surrounding road network leading back into the CBD to carry additional bus services.

If TNSW decide to go ahead with a bus layover in Barangaroo then the Proponent should be required to amend their current Project Applications for basement car park in Barangaroo South to accommodate a bus layover. Alternatively if this is not possible within Barangaroo South, the BDA should be made responsible to include the bus layover within the remainder of the Barangaroo site which is yet to be designed in detail.

Issue: Light Rail

The City requests that the Minister require the Proponent to commit to developing a new TMAP based on the outcomes of the yet to be completed light rail study (which includes associated surface transport works along Hickson Road). It is understood that TNSW has recently commenced this study and is due for completion later in 2010. This study will provide information on bus and light rail movements directly affecting Barangaroo.

²⁷ source: Director-General's Environmental Assessment Report, February 2007

Issue: Cycling

Cycling infrastructure is critical and the City requests that the Proponent clarify both its end of trip facilities and how they relate to each building, also how there will be capacity for a public bike hire facility and where it would be located.

Recommendation 3:

The Department of Planning undertake or require, prior to finalisation of the Director-General's Environmental Assessment Report:

- a thorough analysis of the likely timing and delivery of long term public transport improvements including heavy rail into the Central Sydney (Metro projects included), capacity and access upgrade to Wynyard Station and light rail provision and ensure that the approval and delivery of various buildings within the Barangaroo urban renewal site harmonize with those projects;
- further resolution and detailed design of the Kent Street underground link (Barangaroo Pedestrian Link) and along with heavy rail expansion, be contractually committed to prior to any increase in GFA being considered.

Recommendation 4:

That the Proponent is requested by the Minister to:

- commit to upgrades to the footpaths on surface streets such as Erskine Street, Margaret Street and Napoleon Street by the proponent through the process of a Voluntary Planning Agreement (VPA). Such work/VPA should involve the City of Sydney as land owner.
- amend the current Project Application for basement car parking in Barangaroo South to accommodate a bus layover (provided this is in accordance with TNSW agreed requirements). Alternatively, if this is not possible from a structural engineering perspective within Barangaroo South, the Barangaroo Delivery Authority should be made responsible to include the bus layover within the remainder of the Barangaroo site which is yet to be designed in detail.
- commit to developing a new TMAP based on the outcomes of the light rail study (which includes associated surface transport works).

Recommendation 5:

That the Proponent is requested by the Minister to:

- justify the lower trip generation rates (despite the significant increase in off-street car parking). Such justification should be required prior to determination of the application to modify the approved Concept Plan; and
- justify the end of trip facilities and how they relate to each building, but also whether there will be capacity for a public bike hire facility and where it would be located.

Issue: Signal requirements

The Barangaroo TMAP identifies traffic signal requirements at Napoleon Street / Hickson Road / Sussex Street. This intersection currently operates poorly during the peak periods. The City considers that traffic signals should be installed to provide enhanced access for pedestrians and vehicles into the area.

Issue: Trip Generation

Trip generation for the site has been determined by surveys at nearby sites or similar land uses. With the exception of the residential land use, trip generation rates are based on the number of parking spaces that will be provided on the site for each of the proposed land-use. There is no justification about why these are more appropriate measures than recognised trip generation rates including the RTA's Guide to Traffic Generating Developments. The City recognises that the RTA Guide to Traffic Generating developments does not include an appropriate rate for hotels; however, other sources are available including the USA's Institute of Transportation Engineers Guide.

While the use of surveys is considered appropriate for the residential component, the surveys for any hotel and the commercial land uses appear to have been undertaken at single use sites rather than a mixed development. The City is concerned that the trip generation for the site is too low when the number of parking spaces on the site are considered.

Recommendation 6:

The Department of Planning consider the requirement for:

- additional signals at the new Napoleon Street/Hickson Road intersection to facilitate access to the underground car-park. These signal requirements need to be reflected in an amended application; and
- further justification from the Proponent for the low trip generation rates used.

5.3 Revised built-form principles

In general, the proposed revised Built-Form Principles (RSH+P *Urban Design Statement* p.49) are acceptable and many remain unchanged from the approved Concept Plan. In some cases inadequate justification has been provided to support changes to principles, or new principles. While many of the principles are unchanged or acceptable, the amended plan design concept does not always reflect the principle as stated. Issues are outlined in the table below and recommended changes to the Concept Plan are described.

Table 1. Built-Form Principles

Proposed Principle	Comment
1.City's New Western Façade To create an integrated new western frontage to the city centre, the slender ends of buildings (above podium level) are to be oriented to the waterfront to define an open silhouette.	Unchanged – acceptable Note: Principle could be amended to refer to the positive contribution of the new waterfront buildings
2. Hickson Road as a Boulevard To promote the scale of Hickson Road as a grand boulevard, buildings are to provide a consistent street wall and form to Hickson Road and use a palette of consistent and natural materials that are complementary to the sandstone nature of the headland.	Unchanged – acceptable Note: Refer to comments on Building Envelopes – Urban Design Controls (section 5.4) relating to the towers contradict this principle by allowing Towers to sit over Hickson Road buildings
3. Buildings to Define Streets To define the public space of the street, all building facades are to be set to the street alignment with respect to differing characters, scales and activation of the streets.	Unchanged – acceptable Note: The proposed street network and hierarchy does not achieve this principle – refer to comments in section 5.11 <i>Street hierarchy and permeability</i> .
4. North south pedestrian connection To provide for greater pedestrian permeability through the blocks (north-south and east-west) which relate to pedestrian desire lines. On Blocks 2-4 a continuous mid-block pedestrian connection at ground level which is not less than 4m wide and not less than 50% open to the sky.	Changes: The approved principle requires “a continuous mid-block pedestrian connection at ground level which is not less than 20m wide and is a minimum of 7 storeys high (not less than 50% open to the sky). Note: This principle refers to Shelley Street (Lane), an important north-south pedestrian connection through the site. Reducing the width of the street to 4m and removing the criteria for height of overhead connections radically changes the character of the street from an open public space to an enclosed private space. A reduction in width may be acceptable; however 4m is much smaller than typical city laneways, in particular with adjacent buildings over 180m tall. At 50% enclosure with potentially low level roof structures/bridges, this space will feel more like a corridor than a public street. Recommended Principle: <i>To provide for greater pedestrian permeability through the blocks (north-south and east-west) which relate to pedestrian desire-lines. On Blocks 2-4 a continuous north-south mid-block pedestrian connection (Shelley Street) at ground level which is not less than 6m wide (8m preferred) and has a minimum clear height to RL12 (not less than 75% open to the sky, with a limit of one bridge link per commercial building; and a sequence mid-block of north-south pedestrian links at ground level which are not less than 6m wide and have a minimum clear height of RL 12.</i>
5. Reducing form factor according to height To continue a built form dialogue with the adjoining city, building heights across the site are in keeping with the rest of the city, with the highest form at the centre of the scheme.	Changes: The approved principle reads: To continue a built form dialogue with the adjoining city, building heights across the site are to generally taper towards the north, with the highest forms concentrated in the block in front of Napoleon Street. Note:

	<p>This principle is in the current Concept Plan Mod 2, where it was described as “a key component to the design concept”. Departure from this principle reflects a significant move away from the approved concept plan urban form, which with control is unacceptable.</p> <p>Whilst it is recognised that other tall buildings are located across the city in similar northern alignment to the proposed commercial towers, these are primarily located along the two City Centre ridgelines and frame the topography of the city. Locating tall buildings at the northernmost end of the site is inconsistent with this significant element of Sydney’s urban structure.</p> <p>Recommended Principle: <i>Change to the approved principle is not supported.</i></p>
<p>6. Open Space Within Blocks</p> <p>To create hollow blocks permeated with open space, courtyards, walkways and gardens, the central band of the accessible podium roof interrelate with the ground plane and intermediate levels.</p>	<p>Changes: A minor change to the wording.</p> <p>Note: This principle no longer relates to the urban form proposed at Barangaroo South. It is recommended that it is rewritten to relate to the fine grain structure of streets and laneways permeating the blocks, as well as podium level open space.</p> <p>Recommendation: <i>Rewrite principle to more closely reflect the adopted urban strategy.</i></p>
<p>7. View Sharing</p> <p>To promote the equitable access to views towards the harbour, the built form is to be arranged to define the street corridors and to allow view corridors from the existing private buildings to the east.</p>	<p>Unchanged – acceptable</p> <p>Note: Inadequate information has been provided to assess the proposed modifications against this principle. The City of Sydney is preparing a view impact analysis to be submitted following this report. An initial analysis demonstrates that the proposal does not respect view corridors along streets appropriately.</p>
<p>8. Orientation of Buildings</p> <p>To provide optimum orientation and transparency across the site and to create a silhouette of slender towers to Globe Street and the waterfront – the long facades of tower forms are to be oriented to the north. However, on Hickson Road, to define the linear nature of this road, the long facades are to be generally oriented to the east.</p>	<p>Unchanged – acceptable</p> <p>Note: The principle could be amended to more accurately reflect the proposed orientation of foreshore buildings west of Globe Street.</p>

Recommendation 7:

That the Proponent be requested by the Minister to amend built-form principles according to recommendations in **Table 1**.

5.4 Urban design controls

The application proposes a range of Development Envelopes which sit within the Block plan. These Envelopes are loosely defined by street setbacks, through-Block connections and maximum building heights. A range of urban design controls are proposed for each

Block in addition to the Envelope to generate built-form outcomes. The intent of this approach is to allow for *‘innovation, creativity and alternative design solutions to be achieved on each of the Development Blocks’*²⁸. While the Development Envelope approach is generally supported in principle from an urban design perspective, the size of the Development Envelopes are not supported as proposed in the subject application.

Whilst allowing for flexibility and design development, Development Envelopes must also provide a degree of certainty to allow a proper assessment of potential visual and environmental impacts. An appropriate ‘fit’ needs to be demonstrated between the proposed envelope, and the possible built-form outcome having regard to the requested GFA flexibility, height and other urban design controls so that the analysis required under DGRs (2) and (3) can be fulfilled.

As previously stated, the proposed building envelope for Block Y allows for significantly greater GFA than the proposed GFA of 33,000m². Notwithstanding exclusions of GFA calculation under the Standard Template (which potentially translate to a 10-15% decrease in these assumptions) the disparity is still more than 100%, and the impact assessment has to be completed assuming the full extent of the envelope, essentially the ‘worst case scenario’. Provided the envelope is then approved, the proponent has further justification in providing additional GFA if the impacts of the maximum envelope are already accepted as being reasonable.

Two core concerns arise in terms of the proposed Development Envelopes:


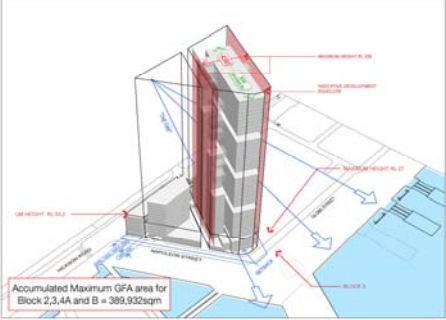
- Development Envelopes significantly exceed the possible building size; and
- Development Envelopes do not reflect key proposed urban design controls.

These issues result in the Envelopes not assisting to provide any real indication of the possible development outcome, and hindering an assessment of the proposed scheme. Specific examples of these issues outlined in the follow table.

Recommendation 8:

That the Proponent be requested by the Minister to amend Block Envelopes to more closely reflect the built-form generated by GFA and other Urban Design Controls to enable an assessment of the proposed Concept Plan amendments as required under DGR (2) Urban design, development controls and land uses, and DGR (3) View Impacts. Block Envelopes should be allocated a maximum GFA.

²⁸ RSH+P *Urban Design Statement* p.55

Block	Proposed Envelope	Envelope Issues
<p>Block 2</p> <p>GFA 209,213m²</p>		<ul style="list-style-type: none"> GFA is allocated to the whole block rather than to individual envelopes. Towers are defined by floor plate depth, length and height controls but it is not possible to assess their approximate location in envelopes that are more than double their size. Podium heights not defined by building envelope. Proposed acceptable height range (min. 1 storey, max. 29m) is too great to make assumptions about the level of visual and environmental mitigation provided by podiums. Controls allow towers to be set back a minimum of 14m from the Hickson Road alignment. This would result in the towers being located over Shelley Street, sitting above the Hickson Road buildings. This is not shown by the indicative development envelope and would have significant impact on Hickson Road and Shelley Street, contradicting Principle 2 above.
<p>Block 3</p> <p>GFA 142,669m²</p>		<ul style="list-style-type: none"> GFA is allocated to the whole block rather than to individual envelopes. The building envelope south of “Napoleon Street” has a height of RL209, whilst the indicative building (reflective of GFA potential) is only shown to RL75 (12 storeys). The discrepancy between building envelope and built-form potential is too great to allow a proper assessment of impacts of the development. The height of the triangular envelope proposed is inappropriate as it creates a crowding of towers with inadequate separation. Tower form floor plates are variously defined as ‘around 25m’ and ‘maximum 25m’ (<i>Urban Design Statement p.68</i>). Podium heights not defined by building envelope. The proposed acceptable podium height range (min. 1 storey, max. 29m) is too great to make assumptions about the level of visual and environmental mitigation provided by podiums. Controls allow towers to be set back a minimum of 14m from the Hickson Road alignment. This results in the towers being located over Shelley Street, sitting above the Hickson Road buildings. This is not shown by the indicative development envelope and would have significant impact on Hickson Road and Shelley Street.

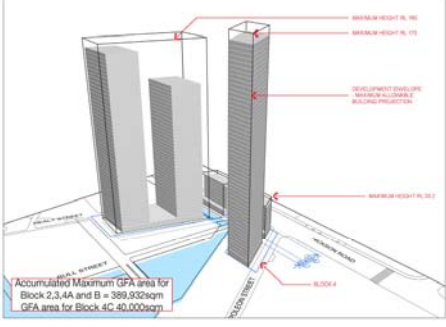
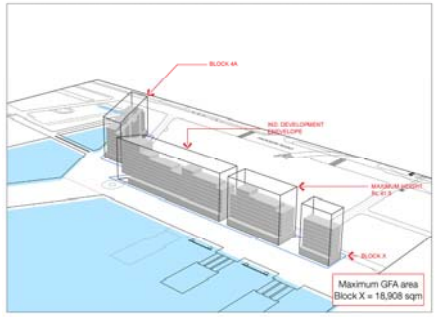
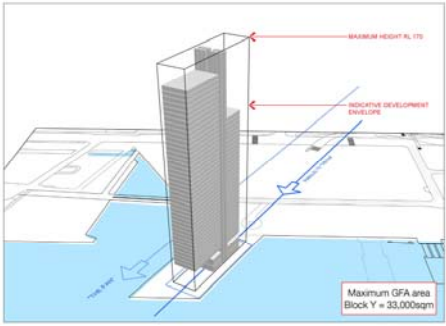
<p>Block 4 (4A,B&C)</p> <p>GFA 4A: 8,150m² 4B: 29,900m² 4C: 39,000m²</p>		<ul style="list-style-type: none"> Block 4C is to be “comprised of two towers separated by a minimum distance of 15m” (<i>Urban Design Statement p.74</i>). The Building Envelope diagram does not show this separation, indicating that the distribution of GFA between the two towers can change. This could significantly vary the tower heights and their visual/environmental impacts.
<p>Block X + 4A</p> <p>GFA (Block X) 18,908m²</p>		<ul style="list-style-type: none"> The proposed envelope for the foreshore residential/mixed use buildings has a uniform maximum height of RL41.5. The ‘Building Mass and Location’ Controls specify that the roof line will be undulating between the maximum RL41.5 and RL20. The GFA allocation reflects this undulation. An undulating form, and predominance of lower scale buildings as shown, is critical. Due to the significance of this part of the site and potential impact on the Harbour, the envelope should be adjusted to a stepped form to more accurately reflect the GFA and Building Mass controls. A uniform height of 41.5m along the length of the foreshore is unacceptable from an urban design perspective.
<p>Block Y</p> <p>GFA 33,000m²</p>		<ul style="list-style-type: none"> The proposed envelope for the Landmark Building greatly exceeds the floor space allocation to Block Y. Proposed ‘Building Mass’ standards for Block Y state that “The maximum footprint for the hotel is not to exceed 2,400sqm on a typical hotel floor” (<i>RSH+P Urban Design Statement p.84</i>). At this floor plate the hotel would achieve the maximum GFA at only 14 storeys (31 floors of full floor plate plus additional part floors are shown indicatively). The maximum floor plate of 2,400m² and envelope width of 30m on p. 84 directly contradicts the dimensioned envelope plan on p. 43 of the Urban Design Statement. This floor plate cannot be achieved within the envelope shown.

Figure 12. Development Envelopes Issues

5.5 Bulk and scale of office towers

The proposal includes three commercial office towers, referred to as C3, C4 and C5. For each tower, the application proposes commercial envelope zones containing a tower of 25m maximum floor plate width plus 13.5m core and structure.

The proposed envelopes and controls allow the towers to extend up to 90m in length, as shown in the “Indicative Maximum Building Height, Location and Dimension Map” (Figure 10) and Block 2 and 3 envelope controls. Towers C4 and C5 have a maximum height of RL180 (indicatively shown at 40 storeys) and tower C3 has a maximum height of RL209 (indicatively shown at 50 storeys).

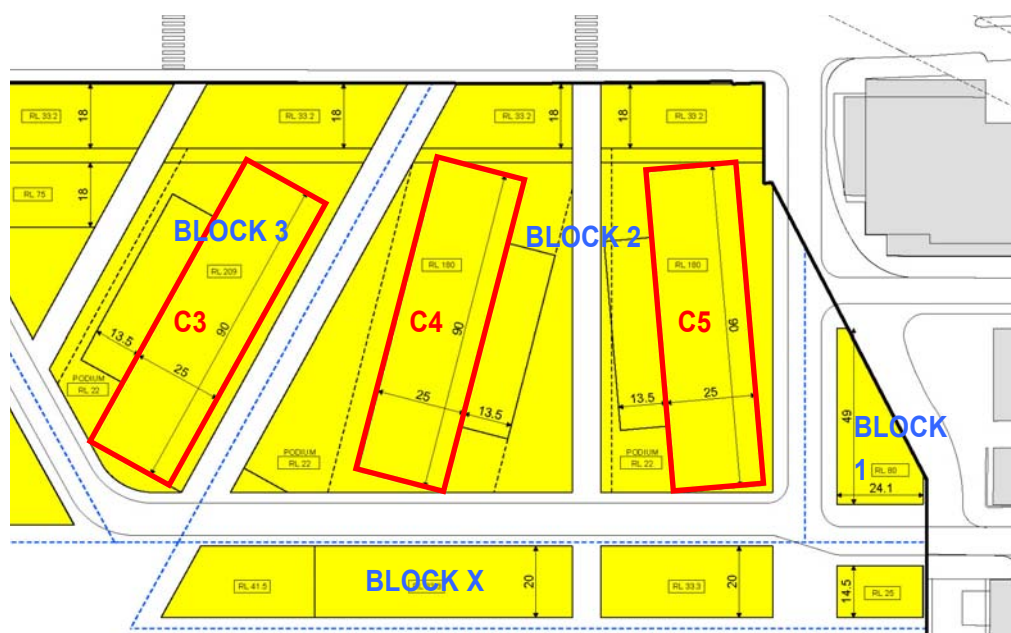


Figure 13. Concept Plan Amendment Application: “Indicative Maximum Building Height, Location and Dimension Map” Rogers Stirk Harbour + Partners *Urban Design Statement* p. 43

The bulk and scale arising from the combination of the proposed length and maximum height of the towers, together with the number of towers, gives rise to several urban design issues:

- massive visual impact of campus-style floor plans in tower forms;
- extensive environmental impacts (wind and overshadowing);
- significant visual impact on the urban form of the City; and
- uninteresting blocky ‘cereal box’ outlines.

Commercial floor plates should not uniformly reflect the largest possible floor area. The vertical extrusion of the largest floor plate from approximately level 3 or 4 to the summit of each high-rise building (over 30 storeys or more) does not exemplify the diversity of tenant areas associated within a financial services hub, and does not produce an acceptable urban design outcome.

5.5.1 Visual impact of tower forms

A precedent analysis has been undertaken of local (Sydney), national and international examples, to provide an understanding of the potential visual impact of the proposed buildings. Buildings with floor plates of similar dimensions to those proposed are typically campus-style commercial buildings. These can be up to 90-100m in length, generating floor plates of up to 3,000m². A range of case studies (sample provided below) illustrates that buildings of this proportion typically do not exceed 14 storeys (60m) in height, limiting their visual and overshadowing impacts.

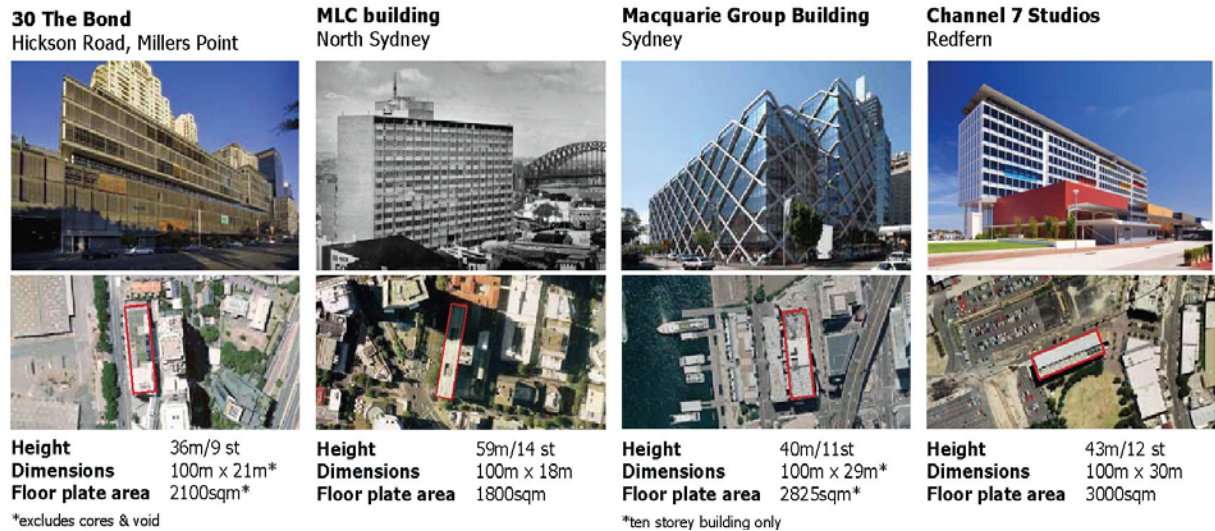


Figure 14. Comparative large floor plate buildings (including voids/atriums) compared to height

Local and national office towers have been analysed and no precedents found for towers of the length and height of the three proposed towers at Barangaroo South. Towers are typically slender buildings, casting a narrow shadow and moderating visual impact. The length (or longest dimension) of a range of case study tower buildings are shown below:

Table 2. Commercial Building Maximum Envelope Lengths

Sydney		Melbourne		Brisbane	
Aurora Place	83m	1 Shell Place	75m	Waterfront Place	82m
Gateway	78m	Southern Cross	74m	Brisbane Square	76m
McKell Building	72m	Rialto Tower	67m		
Deutsche Bank (lower)	67m				
IBM towers	65m				
Hilton	64m				
Remington Centre	63m				
Citigroup Tower	62m				
Ernst & Young	60m				
Governor Philip	54m				
World Tower	54m				
Chifley Tower	53m				
MLC	53m				
Capita	52m				

The combination of multiple towers at similar heights, with very long non-curved elevations creates a very large “wall” effect which is not consistent with the building morphology of the city. It precludes the low angle sky views between buildings that typify the Sydney skyline. As proposed, the towers would have an unprecedented and unreasonable visual impact, particularly when viewed from the south and south-west.

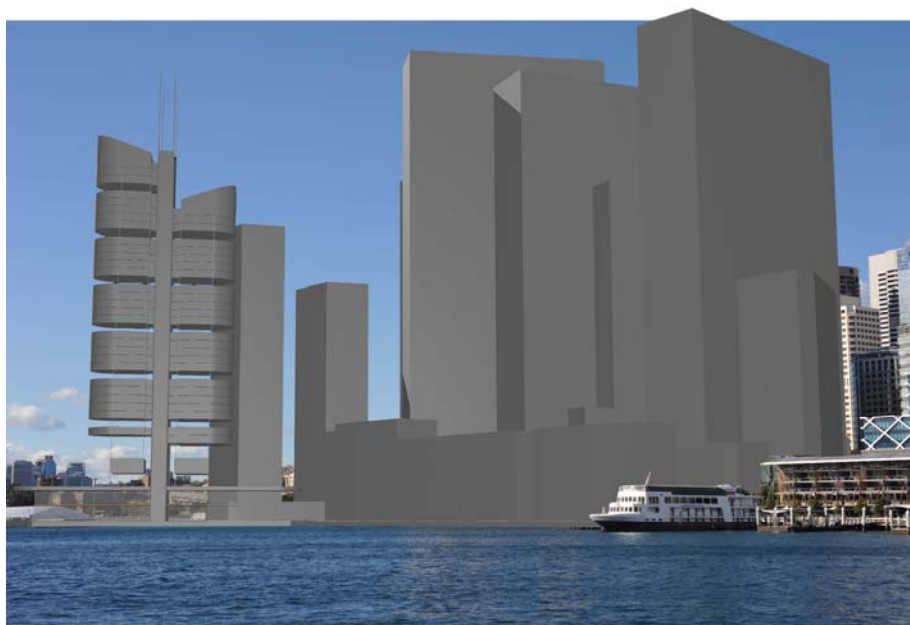


Figure 15. View from Maritime Museum – City of Sydney photomontage of Proponent’s concept outlines (scheme based on “Indicative Maximum Building Height, Location and Dimension Map” p.43 *Urban Design Statement*)

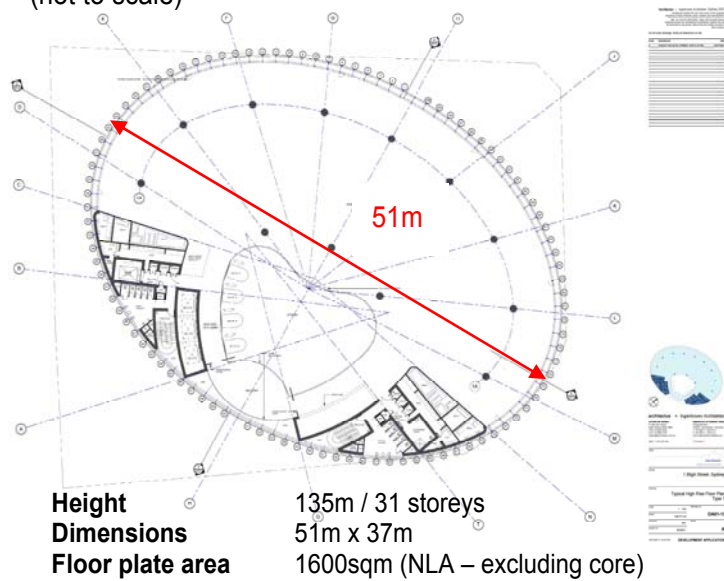
After applying the proposed urban design controls and envelopes, the towers could potentially contain floor plates with a GFA exceeding 2650m² and a length of 90m. They would significantly exceed the stated target of 2000+m² commercial floor plates (*Urban Design Statement* p.24), and do not achieve the objective of consistency with the rest of the city given as a key justification for the amendment is as follows:

“In order for the benefits of the redevelopment of Barangaroo to be fully realised, it is essential that Barangaroo South forms an integrated part of the existing CBD rather than a stand alone development. This requires buildings of a size and scale that are consistent with the rest of the city, with differences in the heights of the buildings to maintain the visual interest of the City skyline.”²⁹

There are several examples of taller buildings in Sydney which illustrate that it is possible to achieve large floor plates (over 1600m² NLA) with more compact building forms, limiting the visual and environmental impact generated by the wide and tall buildings proposed. Examples are shown over the page.

²⁹ RSH+P *Urban Design Statement* p.24 ‘Justification’

1 Bligh St (under construction)
(not to scale)



Westpac Place
(not to scale)

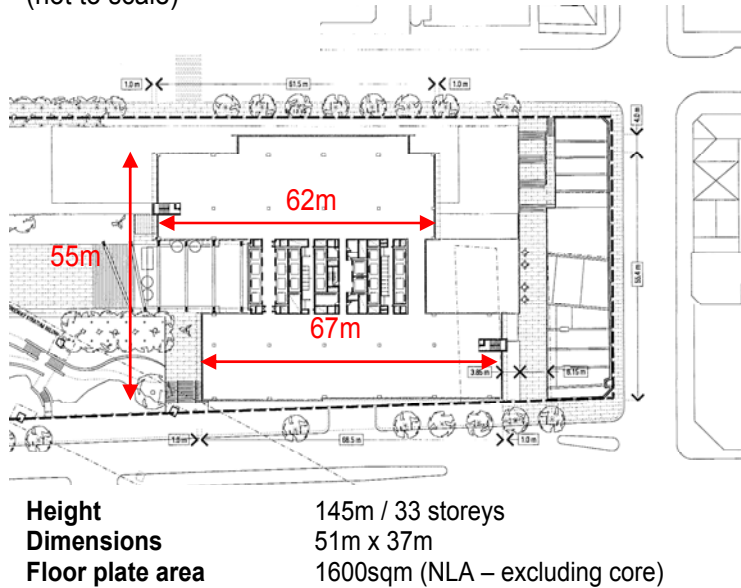


Figure 16. Comparative large floor plate buildings (includes voids/atriums)

In order to reduce the bulk of the proposed commercial towers, the building form could be articulated to reduce bulk at upper levels. This would greatly improve the overshadowing impacts of the towers as bulk could be concentrated to the east at upper levels. Such a strategy would also provide a range of floor plate areas, increasing the diversity of the commercial offer.



Buildings of the scale of those proposed require careful design, modulation and articulation to reduce their perceived bulk and visually break up large facades. The Lumiere Tower in Sydney provides a successful example of the use of architectural articulation to break down the visual bulk of a tower building. Deep vertical reveals are used to break the façade into smaller components.

Figure 17. Lumiere, Sydney manages in envelope length with effective vertical articulation

The 'Indicative Design' includes façade studies showing how articulation of the proposed towers may be achieved:

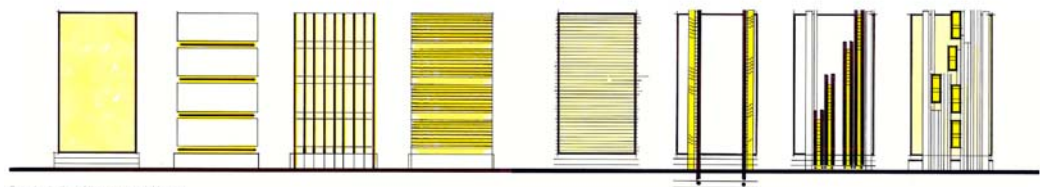


Figure 18. Façade Studies (Urban Design Statement p.95)

These approaches are generally supported; however they are not reflected in the proposed urban design controls. The urban design controls incorporated in the Concept Plan are not robust and clear enough ensure these outcomes will be achieved – particularly where buildings may be designed by different architects over a long period of time. In their current form, the urban design controls are inadequate. The controls do not clearly define desired outcomes and best practice urban design strategies to achieve the stated objectives; rather they are either too vague or overly specific with regard to architectural resolution, and lack clarity. An example of this is the proposed controls for Block 2 which read as follows:

Block 2 Urban Design Controls:

Control 3 - Building Articulation

“To reduce the impact of the building’s mass, the envelope and floor plates are to be articulated.”³⁰

Control 7 – Facades

“Facades longer than 60m are to be modulated above podium level by distinctive architectural elements eg as vertical villages, cores or external staircases, in the vertical plane.”³¹

5.5.2 Wind impact

A Wind Impact Assessment Report (WI Report) has been provided with the Concept Plan amendment application. The WI Report uses the indicative design drawings provided in the *Urban Design Statement* at pp.106-113 to assess the wind conditions on site.

The Central Sydney DCP contains controls addressing wind impacts. These controls were informed by a comprehensive wind study of the entire city which concluded that podiums and tower setbacks are essential measures to mitigate accelerated downdrafts, wind shear and other induced impacts. The minimum podium height of 20 metres with towers set back an average of 8 metres above is a most important control to mitigate against negative wind effects. The same or similar controls should also apply to Barangaroo.

It is also important to note that no wind tunnel testing has been carried out to determine the likely pedestrian level conditions. It is both problematic and unacceptable that the wind impact assessment has been provisional and based on an indicative scheme rich with assumptions and which could vary dramatically within the proposed urban design envelopes. On the other hand, the Proponent has actually developed a reasonably detailed proposal for the entire development (which has not been submitted) and which should be subject to wind tunnel testing so that the predicted conditions around each building can be analysed.

Wind impacts include:

- Due to the inadequacy of building envelope definition, a high level of variation is possible within the proposed envelopes. The wind impacts of an alternate but complying scheme could greatly differ and result in compromised outcomes for the public domain.
- The large south-facing façade of Building C5 is likely to create a significant “downwash” effect due to strong southerly winds channelled along north-south aligned streets in the vicinity of the site. This preliminary assessment already

³⁰ Rogers Stirk Harbour + Partners *Urban Design Statement*

³¹ Ibid

indicates that devices such as awnings, screens, roof structures and revolving doors will be required to mitigate the wind effects on internal laneways. It is likely that these elements will require an increased level of enclosure to public lanes which are already marginalised in the proposed design (refer to *Street hierarchy and permeability*). The form of proposed tower and podium envelopes should be designed to generate appropriate pedestrian level wind conditions, rather than requiring retrofitting of mitigation devices and enclosure of the public domain. Refer to podium height comments and recommendations in *Scale and character of streets*.

- The WI Report notes that podium levels could be effective in diverting the wind away from pedestrians, however no certainty is provided in the urban design controls with regard to podium heights or tower setbacks above podiums. Standards state that “*podiums are to be a minimum of 1 storey in height and a maximum of RL27*”. A one storey podium would have little mitigating effect on downwash from the commercial towers.
- Several of the urban design controls may actively worsen wind impacts in narrow north-south streets and lanes, for example the requirement for “*at least one of the façades of the tower to extend to the ground plane and be expressed as a separate element from the podium*” (urban design controls Blocks 2 and 3).

5.5.3 Overshadowing impact

The combination of the large commercial floor plates and high building forms results in significant overshadowing of the existing foreshore promenade south of the site, towards the King Street Wharf precinct. This can be seen on shadow animations affecting the public domain between approximately 10am and 11.30am at 21 June.

The Envelope of the approved Concept Plan Blocks shows a similar impact, however the distribution of the floor space into three bulky towers has maximised the possible impact within the Block Envelope. Given the form of the proposed buildings, a reduction in height and reconsideration of form to mitigate the morning overshadowing impacts on the foreshore public domain is warranted.

5.5.4 Floor Plate controls and podium heights

Having regard to the high visibility of the proposed commercial towers, it recommended that towers are effectively tapered in form with a distributed floor plate control, similar to the tower controls in Central Sydney DCP 2005. Towers C3, C4 and C5 should taper in some fashion (reduce in length as they increase in height), with the bulk reduction on their narrow western elevation where the maximum reduction in overshadowing will be achieved. At the same time podiums around these towers (with some breaks for variation acceptable) should be increased to no less than RL25 to mitigate wind downdrafts, consistent with provisions in the Central Sydney DCP 2005.

Recommendations 9:

That the Minister require redesign or condition any approval to:

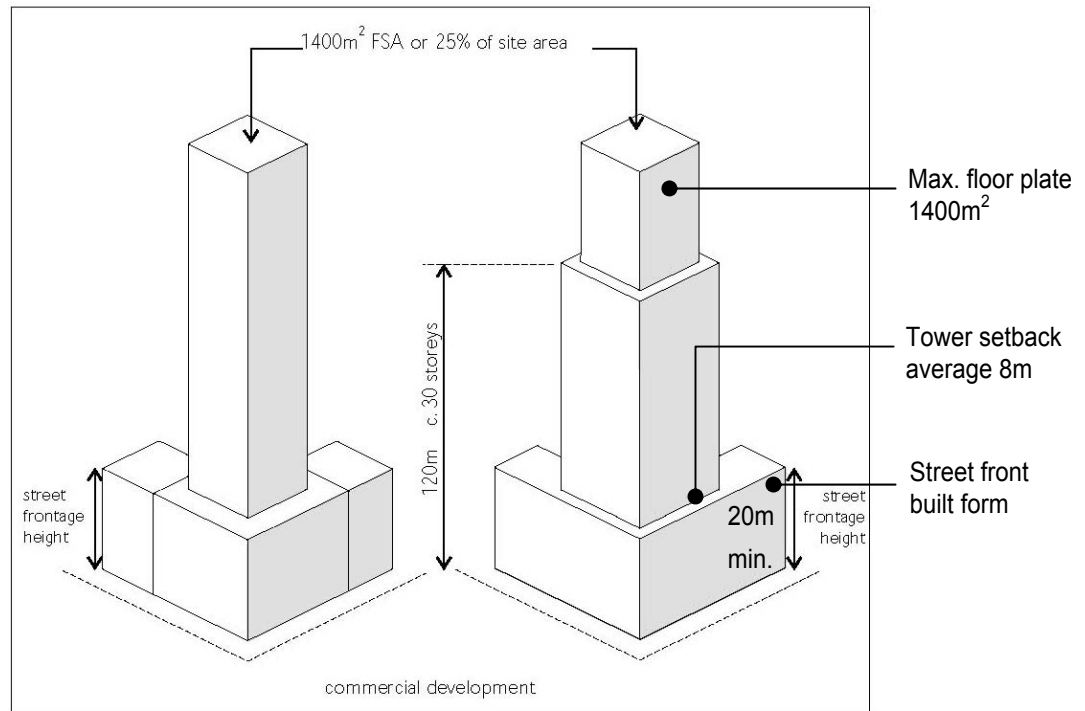
- reduce the visual and environmental (wind and overshadowing) impact of all buildings over 45m high and which exceed 60m in length. Any amendment to the concept plan should be conditioned to require towers to:
 - provide an average 8m setback from streets above podiums as outlined in *scale and character of streets*;
 - provide an elegant building form. This may be achieved by modulation in floor plate area with a form that reduces in bulk as height increases, for example based on 25m wide floor plate (excluding core areas):
 - up to RL60 maximum wall length 80m;
 - from RL60 – RL120 maximum wall length 60m;
 - from RL120 and above maximum wall length 50m and maximum FSA of 1400m² per floor.

Recommendation 10:

That the Minister require redesign or condition any approval to:

- increase minimum podium height consistent with Central Sydney DCP requirements to ensure that wind impacts of tall buildings are mitigated. The Central Sydney DCP requires podiums to provide a street wall height of 20m – 45m. Podium heights should be established at a datum of approximately RL25 to relate to the scale of the streets and surrounding buildings. Refer to *Scale and character of streets* for recommendations on specific podium and building heights.

Central Sydney DCP 1996



Design options for tower buildings to reduce building bulk.

Figure 19. Generic tower built form controls – Central Sydney DCP

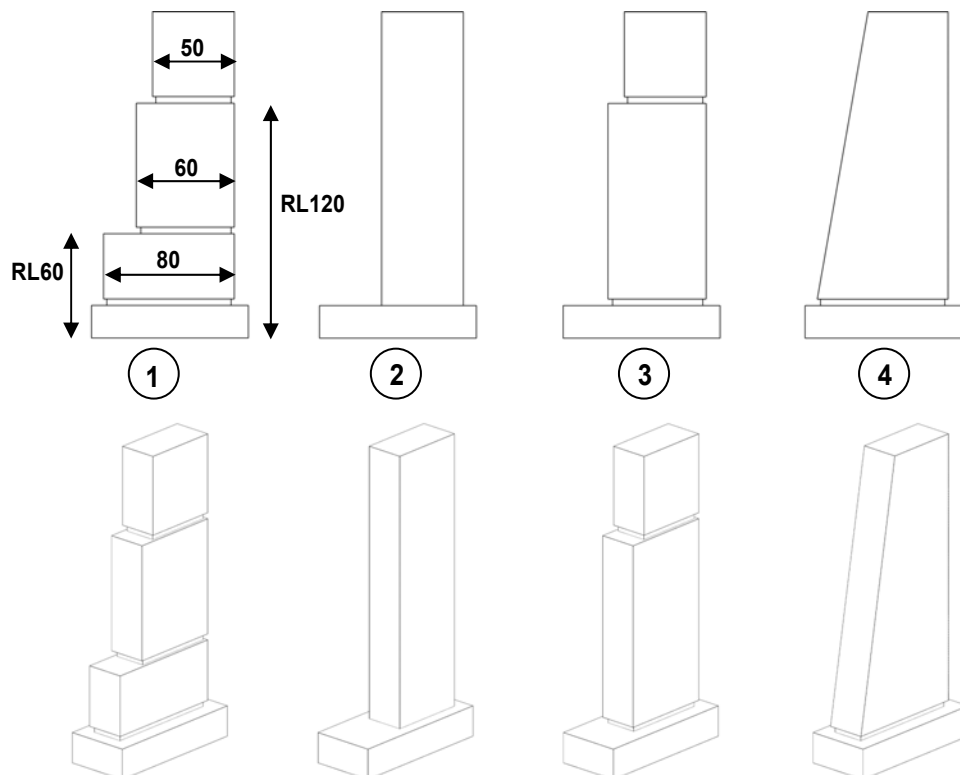


Figure 20. Interpretation of built form controls for Barangaroo

Recommendation 11:

That the Minister require a redesign or condition any approval in relation to the commercial towers to:

- achieve an increased variation in height between the three towers to reduce the overall bulk of their combined form and provide a variety to the skyline consistent with that of the existing city context; and
- amend the distribution of height to reduce the height of the southernmost commercial tower to improve sunlight access to the King Street Wharf precinct as set out in Table 3.

Recommendation 12:

The Department of Planning consider the requirement for:

- more robust urban design controls to ensure adequate articulation of large buildings, particularly where elevations are visible for long distances such as the southern elevation of building C5; and
- more detailed building envelopes; a wind tunnel assessment for the entire Barangaroo South development should be provided before finalizing the Preferred Project Report. This assessment should amend the revised envelopes and ensure that the appropriate environmental quality of new public domain areas is able to be obtained without relying on intrusive architectural elements such as screens, roof structures and revolving doors.

5.6 Building height modifications

The concept plan modification seeks to vary maximum block heights across the site. The city's proposed changes, and urban design comments, are provided in Table 3:

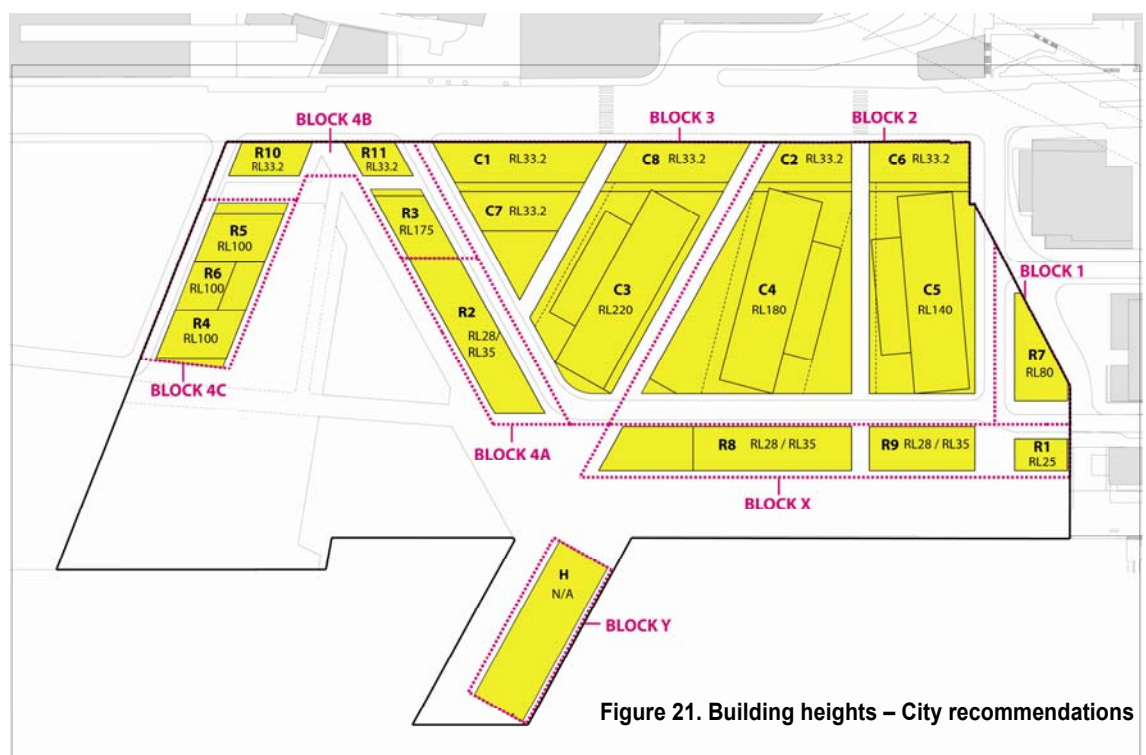


Figure 21. Building heights – City recommendations

Table 3. Building Height Recommendations

Block	Approved	Lend Lease Request	City Recommendation	Comment & Recommendations
1	RL62	RL80	RL80	No objection raised: The increase in maximum height is generally acceptable from an urban design perspective provided that the height is distributed to preserve sunlight access to surrounding buildings and spaces. Issues arise with the form of the proposed envelope and site boundary conditions – refer to Public Domain Definition for comment.
2	RL180	RL180	RL180 C2: 33.2m C6: 33.2m <u>Diminishing floor plates:</u> C4:180m (envelope) C4:173m (roof) C5:140m (envelope) C5 133m (roof)	Recommended changes: No increase is proposed, however due to the increased length of the proposed buildings (reflecting an increase in overall GFA), the impact of the buildings is increased. A reduction in height to building C5 to RL140 is required to reduce its overshadowing and amenity impacts on surrounding foreshore and wharf development. Subject to a reduction in height of C5, the max envelope height of C4 can be RL180. All towers are to reduce in floor area as height increases with a maximum FSA of 1400m ² above RL120
3	RL113	RL209	RL220 C1: 33.2m C7: 33.2m C8: 33.2m <u>Diminishing floor plate:</u> C3:220m (envelope) C3:213m (roof)	Recommended changes: Provided hotel is removed, C3 could be an alternative landmark (but only with a tapering profile) and be increased by 11 metres to max envelope of RL220, roof RL213. Podium to RL25, wall length no greater than 80m to RL60, wall no greater than 60m to RL120, no greater than 50m above RL120 or 1400m ² FSA. C7 to be reduced in height to RL33.2 to preserve views.
4A	RL100	RL41.5	R2: 28m (predominant) R2: 35m (for 25% of footprint area)	Not supported: The heights proposed for foreshore buildings are inappropriate to the scale of the foreshore public domain and surrounding buildings. A reduction in the <i>maximum</i> height to RL35, with a predominant height of approximately RL28 is recommended for Blocks X and 4A (heights excluding plant etc). Refer to Scale and character of streets for comment.
4B	RL100	RL175	R3: 175m R11: 33.2m R10: 33.2m	Recommended changes: Subject to further design work on forms and height distribution north of Globe Street. The maximum height in Block 4B should be less than the height of the commercial tower C3 in Block 3 in order to provide transition in building height downwards to the north.
4C	RL100	RL160	R4, R5, R6: 100m	Not supported: A 60m increase in height is proposed north of the cove. This is inconsistent with the approved Built-Form Principles for the site and results in an urban form inconsistent with the form of the City. The proposed height increase results in an unacceptable increase in overshadowing to the southern cove foreshore public domain. Refer to Amenity of waterfront public space for comment.
X	-	RL41.5	R1: 25 R8: 28m (part floor) R8: 35m (for 25% of footprint area) R9: 28m (part floor) R9: 35m (for 25% of footprint area)	Not supported: The heights proposed for foreshore buildings are inappropriate to the scale of the foreshore public domain and surrounding buildings. A reduction in the <i>maximum</i> height to RL35, with a predominant approximate height of RL25 and a part level (75% footprint) to RL28 is recommended for Blocks X and 4A (heights excluding plant etc). Refer to Scale and character of streets for comment.
Y	-	RL170	NA	Not supported: Based on the urban design impacts of development in the proposed Block Y. Refer to Amenity of waterfront public space for comment.

Recommendation 13:

That the Proponent be requested by the Minister (in relation to all buildings) to amend maximum building and block heights to reflect changes outlined in **Table 3. Building Height Recommendations**, in the City of Sydney submission.

5.7 View impact analysis

A JBA *View Impact Analysis* (VI Report)³² has been provided at Appendix N to the Concept Plan amendment application. This VI Report is considered inadequate in addressing the Director-General's Requirements (DGRs) and does not enable the obligations of a proper visual impact assessment of the proposal to be carried out. The VI Report is inadequate in terms of the:

- number and location of vantage points provided; and
- methodology and quality of the images.

Of the views listed in the relevant DGRs (those relating to view impacts), views from Darling Harbour and Millers Point have not been addressed. The views that have been provided have the following deficiencies which limit their usefulness in assessing the proposal:

- photomontage camera focal length used is too short and the angle of the view too wide to accurately reflect human eye perception – this has the effect on exaggerating the distance and scale of the background compared to the foreground;
- many of the images are not shot horizontally, creating perspective distortion in the vertical plane which results in an incorrect perception of building/envelope volumes; and
- lack of any useful comparative analysis comparing the views provided with the approved concept plan to the new scheme.

As a thorough and rigorous visual impact assessment is central to assessing the proposed modifications to the concept plan on such a large and highly visible site, the City is undertaking an internal view impact study to inform comments. This will be provided to the Department of Planning in accordance with the late submission timeframe agreed, however a thorough view impact analysis prepared by the proponent is essential to inform the Department's assessment. For example, the proponent's view from the Maritime Museum appears to use a 24mm lens with an angle of view of around 85 degrees. The resulting image is an unrealistic panorama.

³² Appendix N, Revised Environmental Report, JBA 2010 – Concept Plan Modification 4 application



Figure 22. Location of view point

Figure 23. The Proponent's view from the Maritime Museum

On the following page is the same view (without the proposal), re-shot with a 50mm lens and an angle of view of 46 degrees. These dimensions are considered to be close to the human eye's perspective and are the accepted criteria by the NSW Land and Environment Court for visual impact assessment.

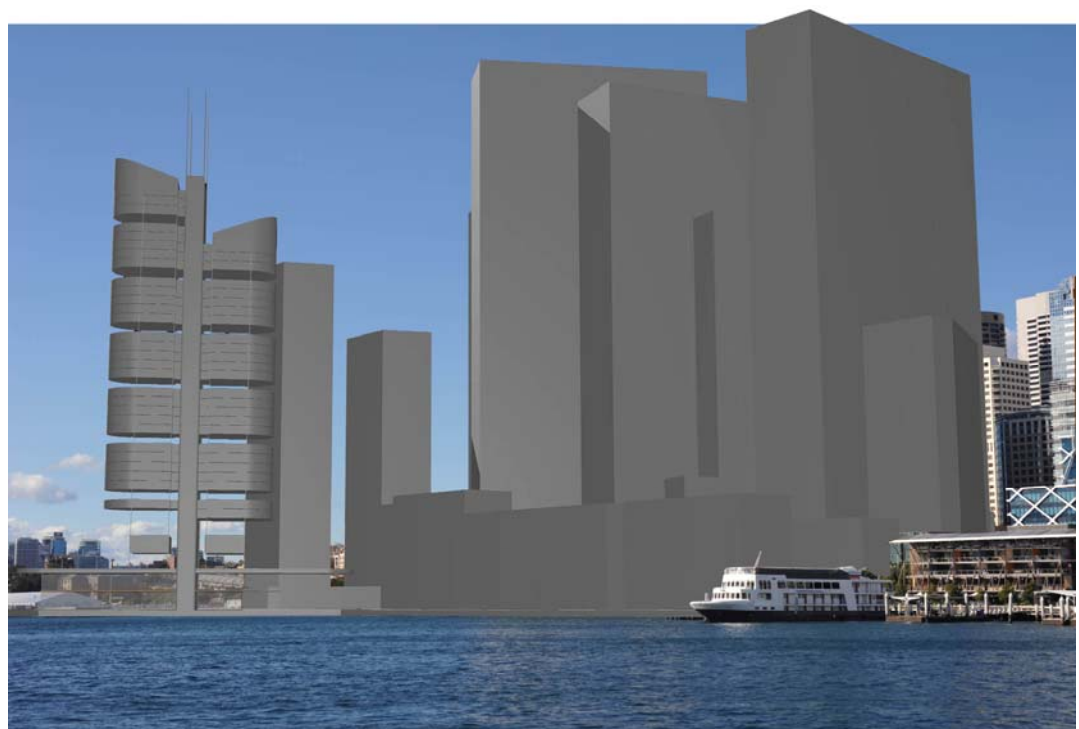


Figure 24. Existing view from the Maritime Museum with a 50mm lens

Figure 25. View of the proposal from the Maritime Museum with a 50mm lens

The two images can now be objectively compared. In addition to these issues, the Proponent's report fails to include photos of the existing situation, or the currently approved built form. This means that absolutely no comparison can be made. A comparison of 'before' and 'after' is fundamental to a visual impact assessment. To assist the Proponent in preparing a proper View Impact Analysis, the City has provided the Department of Planning a copy of the Chatswood Transport Precinct Visual Impact Assessment which is considered to be a comprehensive visual analysis.

In addition to the views identified in the DGRs, the impact of the proposal on significant view corridors along streets will be considered. An initial review of the proposal highlights the following negative issues:

- Block 2 – the alignment of Margaret Street West and proposed rotation and alignment of the southern tower (C5) unnecessarily impacts on an important view west along Margaret Street to Darling Harbour;
- Block 3 – the height of the proposed envelope containing buildings C1 and C7 (RL209), as well as the indicative height of building C7 (RL75) block a potential Grosvenor Street view corridor. Future redevelopment of a site at 189 Kent Street provides a unique opportunity to open up this corridor to low angle sky views towards Darling Harbour. This opportunity should be preserved in the Concept Plan.
- Block Y – the tower from is highly visible from the major public vantage points of Darling Harbour, Pyrmont Bridge and Darling Harbour.

These view alignments are illustrated on the plan below:

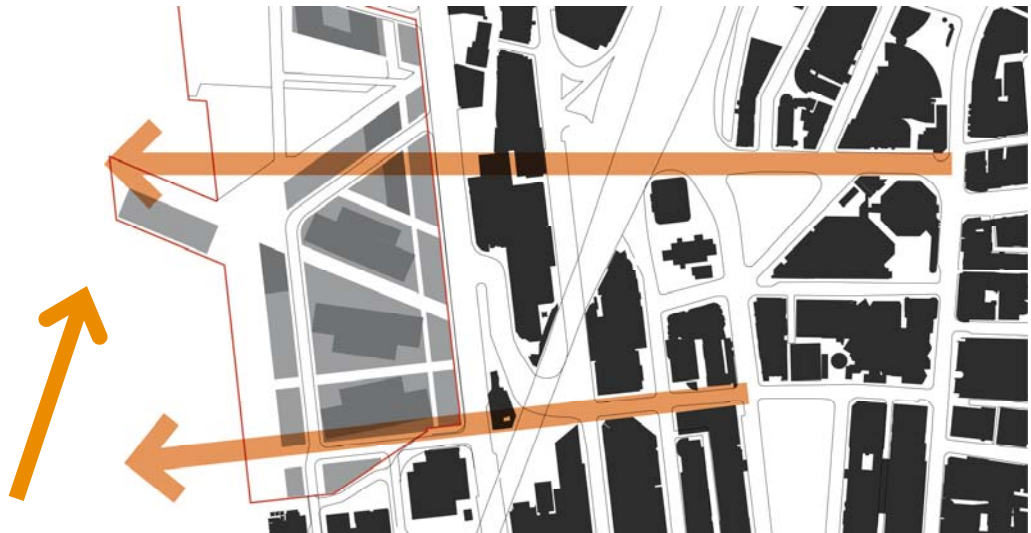


Figure 26. Plan indicating Margaret Street and Grosvenor Street view corridors.

Recommendation 14:

That the Minister condition any approval to preserve Margaret Street and Grosvenor Street view corridors. These recommendations will be confirmed pending completion of City of Sydney's view impact analysis, but may include:

- reducing heights of building C7 to max RL33.2 to preserve a future view corridor from Grosvenor Street to the west;
- realigning Margaret Street West to match the existing Margaret Street; and
- rotating commercial tower C5 on its southeast corner to align parallel with Margaret Street West to preserve the street-width view corridor.

The Proponent should be required to provide an adequate view impact assessment to support their proposal. An example of an acceptable view impact report has been provided to the Department of Planning for reference in guiding these requirements.

Briefly, a variety of view points should be assessed from long range, medium range and short range locations. Photomontages should be done with 50mm focal length (not wide angle lens) and 46° angle of view. Photomontages should be assessed with respect to visibility, visual absorption capacity and visual impact rating.

The City's forthcoming view impact assessment should also be considered in assessing the proposed concept plan modification. The City's view impact study considers:

- height, bulk and scale of buildings and envelopes;
- key view corridors including Margaret Street, Grosvenor Street, and King Street Wharf view north;
- additional vantage points highlighted consistently in City of Sydney submissions to the Department of Planning but not included in the DGRs including views from King Street Wharf precinct, the Opera House, Bradfield Highway, Pyrmont Bridge and South Darling Harbour public waterfront.

Recommendation 15:

That the Minister require the Proponent to provide an adequate view impact assessment using human eye focal lengths (50mm at 35mm FX format and 46° angle of view) from long range, medium range and short range positions so that they can be assessed with respect to visibility, visual absorption capacity and visual impact rating.

5.8 Preliminary view impact assessment

A preliminary view impact assessment identifies a number of critical issues. The conclusions are subject to further investigation and refinement in the supplementary visual impact assessment. The view analysis provided by the Proponent is limited to only five locations – from one location each in Pyrmont, East Balmain, Gas lane, Pyrmont Bridge and Observatory Hill, whereas the impact on views within these areas is far more extensive. The *Darling Harbour Wharves Site Study* prepared on behalf of the City by Hill Thalys Architecture + Urban Projects Pty Ltd and referred to in the modification application, identified significant local views to, within and across the Barangaroo site and resulted in the following planning principles relating to views and view sharing as being appropriate to guide the future redevelopment opportunities for the overall Barangaroo site:

- retain significant views across the site to the waterfront;
- allow for public views across the Harbour from Millers Point (the northernmost part of the site) and Observatory Hill;

- consider the high visibility of the site from public places including the waterway, harbour edge parks, Sydney Harbour Bridge and Anzac Bridge;
- protect local views to the site and adjoining waterway from public domain areas in Millers Point and the western side of the city;
- place highest importance on axial views along streets to the waterfront; and
- allow views from the site and adjoining waterway to natural features including the High Street / Hickson Road cliff faces and retaining walls.

Important views to the site were established by City Plan Heritage in its Report³³ (March 2007) including:

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

A view analysis undertaken by the City finds that the conclusions of the JBA VI Report in respect of impact upon 'heritage views' are either understated or are incorrect. For example, the report states that:

*"the impact on the scenic, environmental and cultural qualities of the area and its adjacent Millers Point Conservation Area and individual heritage items is not diminished by the proposal as the most significant heritage and conservation values are to be found towards the north of the Barangaroo site (i.e., outside of Barangaroo South). It is from this northern part of the site and from the Millers Point area and Observatory Hill that the most significant views to and of heritage and conservation areas are able to be enjoyed. The current proposal will largely preserve heritage views and views to heritage precincts"*³⁴.

Contrary to this self-assessment by the Proponent, the City considers that the proposed modifications to the development will have very high impacts upon the national cultural significance of the Millers Point Conservation Special Area and significant points within the city centre area. The main considerations in respect of view loss and view encroachment are:

- increase in the height of Block 4 from RL100 to a maximum of RL175, an increase of 75m, or a 75% increase in height; and
- establishment of the new tower/pier to a height of RL170 (Block Y) extending into the Harbour will be substantial, and
- creation of 90 metre long envelopes full height to commercial Blocks 2 and 3.

³³ East Darling Harbour Concept Plan Heritage Impact Statement, City Plan Heritage, 23 March 2007

³⁴ 010 JBA View Impact Analysis Report

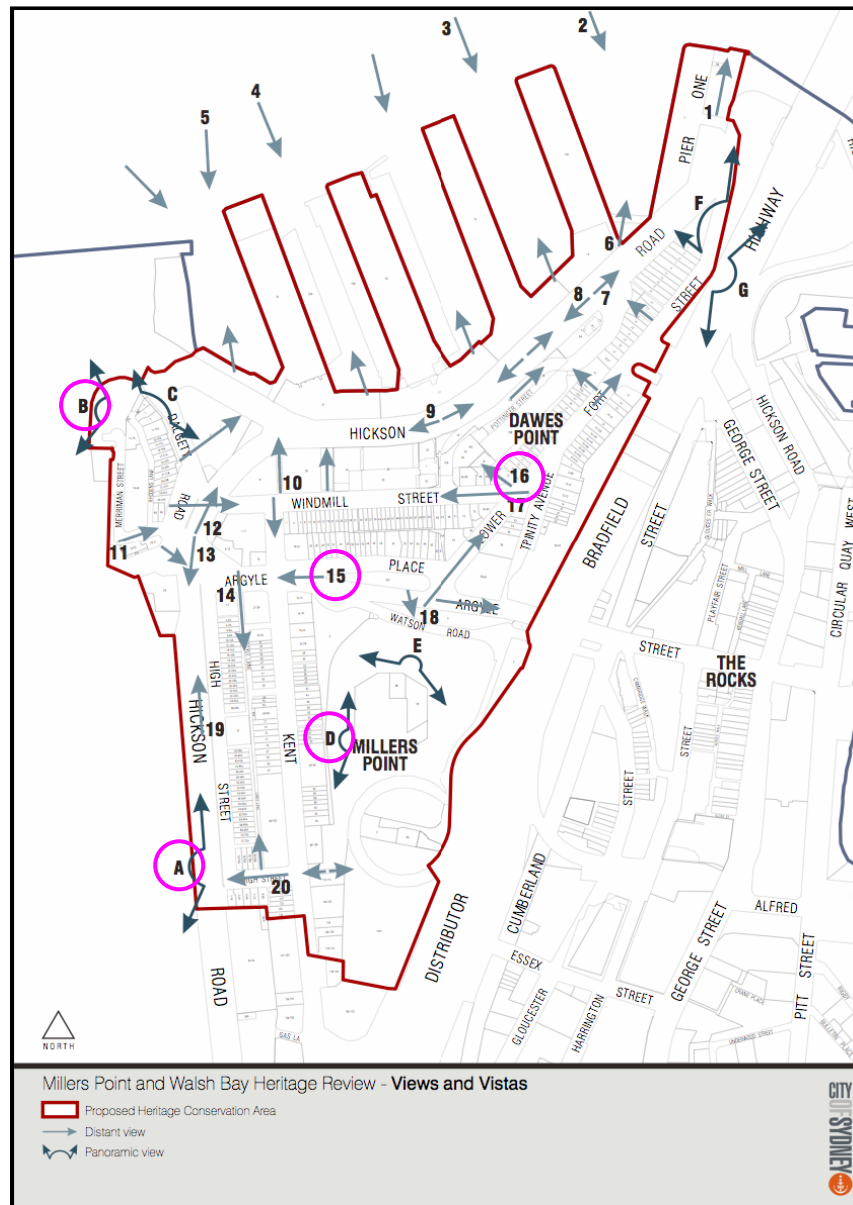


Figure 27. Map 9 Views and Vistas – Millers Point and Walsh Bay Heritage Review

5.8.1 Impact upon views from the Millers Point Conservation Special area

A key recommendation of the *Millers Point and Walsh Bay Heritage Review* prepared by Paul Davies for the City of Sydney relates to conservation of significant views:

'The variety, complexity and scale of views are important in defining the character of the area. It is important to be able to see out to the Harbour from the identified major panoramic view locations, to maintain views to the wharves ...and to the distant shore to retain the setting of the Heritage Conservation Area' and 'the views available from these locations [from the parks, the Observatory and from the approaches to the bridge] are dramatic expansive and impressive and reflect the historical views and setting (less the pollution) seen in early photographs. The views from the Observatory are significant for the purposes of astronomy and vital astronomical sightlines'³⁵.

³⁵ Millers Point and Walsh Bay Heritage Review, Paul Davies, March 2007, for City of Sydney

The view analysis undertaken by the City has shown that there will be a negative impact on the significant views identified by the Report as being essential to conserving the character of the area (as noted on Map 9, Figure 27):

These significant views include:

- View A: the view from High Street and the elevated south western edges, west over Darling Harbour to Ultimo, Pyrmont, Balmain and White Bay;
- View B: the view southwest from Merriman Street and Clyne Reserve;
- View D: the extensive view from Observatory Hill Park that extends from the Harbour Bridge to Darling Harbour; and
- View locations 15 to 16 looking south-west, including views from Argyle Place.

5.8.2 Impacts upon panoramic View A - from High Street and the elevated south western edges of the Millers Point Conservation Special Area

The previously noted, the *Millers Point and Walsh Bay Heritage Review* states that *'one of the most striking attributes of the [High Street] streetscape is its expansive and open views to the Harbour'*.³⁶ Even when Hickson Road was aligned with early twentieth century warehousing, the views from this high point remained expansive and panoramic, providing a visual connectivity between Millers Point and the remainder of Darling Harbour. This is particularly relevant to such historic places as the preserved area of Millers Point, unique in the southern hemisphere.

The JBA VI Report asserts that *'similarly, the residential towers (R3, R5, and R7) located in Blocks 4A, 4B and 4C and Block X will also blend into the city skyline. The buildings will be viewed as a new addition to the existing CBD tower context and backdrop.'* However, contrary to this assertion, the City's conclusion is that the proposal does not *'retain established views and vistas from Hickson Road and High Street, and from the elevated pedestrian bridges along Munn Street [or] from Agar Steps'* and public domain views to the water, and views beyond will be severely interrupted.

The City's preliminary view analysis indicates that from these key public domain points along the south-western edges of Millers Point, that the tower/pier and the Block 4 commercial towers will be excessively large, observed at short range with little foreground.

It is the City's preliminary assessment that rather than blending into the city skyline in views from Millers Point as asserted, the tower/pier (Block Y) and the Block 4 buildings will occupy a large proportion of the extant views to the south and south-west, altering the area's significant character and effectively building a wall at relatively close range. These blocks will geographically isolate the south-western edge of Millers Point from the remainder of Darling Harbour to the south and south-west.

³⁶ ibid

5.8.3 Impact on View B: view south-west from Merriman Street and Clyne Reserve

The impacts upon View B are similar to those on View A, except that the angle of view and the distance differs slightly. No further elaboration is required, although this view is still highly relevant.

5.8.4 Impact on View D: views from Sydney Observatory and Observatory Hill

The *Millers Point and Walsh Bay Heritage Review* describes the location of Observatory Hill as ‘iconic in Sydney’. The review’s Statement of Significance for Millers Point states:

‘The Observatory Hill Park is of outstanding historical significance and is 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 flag staffs, first semaphore and first electric telegraph connection); astronomy, meteorology and time keeping.’

The proposed increase in height of Block 4 from RL100 to a maximum of RL175 in Block 4B (an increase of 75m) will result in restriction of significant views across Darling Harbour from Observatory Hill. The photomontages submitted as part of the project application clearly shows that the proposed increase in height of Block 4 results in a large reduction of the views of the sky and horizon from Observatory Hill, views which are intrinsically significant to the setting of the Sydney Observatory.

The JBA VI Report simply discounts any impacts and notes: *‘It is from this northern part of the site and from the Millers Point area and Observatory Hill that the most significant views to and of heritage and conservation areas are able to be enjoyed. The current proposal will largely preserve heritage views and views to heritage precincts’*. Contrary to this, the submitted photomontage image from Observatory Hill clearly indicates a significant intrusion upon the distant views from Observatory Hill.

At night, the internal lights of residential apartments in the proposed residential towers of 4C may severely detract from the setting of 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 existing encroachments in terms of light spill are few and include the Sydney Harbour Bridge. This is because the city high-rise development is 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.

5.8.5 Impact on Views 15 to 16 from within Argyle Place Millers Point

The impacts on views within the centre of the Millers Point village have not previously been considered at threat. Being located below the crown of Observatory Hill, the city skyline does not bear upon these views and is defined by the landscape of the Hill and Victorian and Federation development fronting Argyle Place and Kent Street.

Conclusion:

The City's preliminary view analysis concludes that the proposed 75% increase (above RL100) in height of the Block 4 residential towers is such that these towers will now be highly visible from within the centre of Argyle Place appearing as a backdrop above the lower scale development fronting Argyle Street and Kent Street, significantly altering the character of the urban centre of Millers Point.

The proposed amendments result in a severe intrusion upon significant views identified by the *Millers Point and Walsh Bay Heritage Review*³⁷ as being essential in defining the character of this nationally significant area. The JBA VI Report concedes that '*some views to the south-west from Millers Point will be altered when compared to the original scheme, principally due to the proposed location of the landmark building*'. This is a misleading under statement, and contrary to this report's conclusion, significant views to the water and beyond from Millers Point will be severely interrupted.

Figure 20 of the VI Report, the photomontage of the view from the Hickson Road bridge is also misleading, representing the impacts by superimposing the towers in a much lighter tone than existing towers so that they appear to be recessive compared with the existing residential towers in Kent Street. In fact the proposed Hotel tower/pier and Block 4 residential towers will:

- occupy a large portion of the sky view;
- sever visual connections between Millers Point and other parts of Darling Harbour;
- severely diminish the sky component characteristic to all views; and
- limit panoramic views from Millers Point of Darling Harbour and beyond.

These views have historically allowed an appreciation of the geographical understanding of the area. They will also alter the historic character of views from within the centre of Millers Point, and in areas closest to Block 4, the proposed residential towers to RL175 will dominate and overbear culturally significant historical development.

Development within the outlook of the Observatory Hill Park area should be amended so as to not interrupt or remove views west across Darling Harbour to Pyrmont, Balmain and White Bay and there should be minimal impact upon views from within the urban centre of Millers Point from Argyle Place.

³⁷ Millers Point and Walsh Bay Heritage Review, Paul Davies, March 2007, for City of Sydney

5.8.6 Impact on views to the Millers Point Conservation Special Area

The *Millers Point and Walsh Bay Heritage Review* summarises the significant and unique nature of views from the harbour and opposite shorelines as:

'The study area is unique within the harbour setting. The juxtaposition of Victorian and Edwardian residential development set within the city area, and on the escarpment edge is sharply defined by rock faces, concrete walls and vertical barriers that separate it from the waterfront... It is as if the area has been carved out and set apart from the port below. The result for much of the area is that the residential buildings are clearly seen from the harbour and from distant vantage points, set above the port buildings and cranes. ...'The views available to these locations provide a softer more landscaped character of trees and foliage sitting over the harder denser development below. It is the extent, the expansiveness, the change of view of individual buildings as the viewer moves around the water that gives the place distinction and significance. Unlike much of the city where views to it are two dimensional as a result of the large scale and density of the development, at Millers Point views are constantly varying'.³⁸

The JB VI Report relies on two photomontages, (figures 26 from Pyrmont and figure 28 from Pyrmont Bridge)³⁹ to analyse the impacts of views from other parts of Darling Harbour and Pyrmont. Both these photomontages show clearly the significant and potentially detrimental impacts upon the historic views described above. This includes the visual alienation of Millers Point from the remainder of Darling Harbour and the loss of *'the expansiveness, the change of view of individual buildings as the viewer moves around the water that gives the place distinction and significance'*, and especially when viewed from the Harbour, the visual complexity and character of the Millers Point precinct is removed.

5.8.7 Impact on views from Gas Lane and Jenkins Lane

The photomontages Figures 24 and 25 in the VI Report⁴⁰ provide evidence that contrary to the report's conclusions, existing views down Gas Lane and from Jenkins Lane will not be preserved. By projecting the line of Gas Lane to align with the northern frontage of the frontage of the residential towers of Block 4, these towers will impinge upon the expansion of views westwards down Gas Lane.

Recommendation 16:

That the Minister require the Proponent to redesign the development on Block 4 so that development be kept close to Hickson Road and located as far east and south as feasible to control impacts on existing views, and any development should not exceed RL100 north of the Southern Cove, so as to control the impact on the historic views from the public domain in Millers Point Conservation Area.

³⁸ Millers Point and Walsh Bay Heritage Review, Paul Davies, March 2007, for City of Sydney

³⁹ Appendix N, Revised Environmental Report, JBA 2010 – Modification 4 application

⁴⁰ 2010 JBA View Impact Analysis Report

5.8.8 Impacts views from Darling Harbour

Generally, the proposal rises sharply and steeply from the harbour, in contrast to the pattern of historic development on Millers Point promontory to the north, and the alignment and scale of the foreshore buildings lacks integration with the remainder of the Darling Harbour edge to the south, imposing further restrictions of views in and out of the harbour.

The proposed new tower/pier (Block Y) extending into the harbour with a maximum GFA 33,000m² and a maximum building height of RL170, imposes an extensive and over-scaled element in Darling Harbour that weakens the western edge of the compact high-rise city and the distinctive peninsula land form and imposes severe limitations on views into, out of and within, Darling Harbour.

The design philosophy for providing lower-scale development and a gradation in scale away from the foreshore alignment being one that provides a more articulated foreshore alignment typical of the pattern of the former historic wharf development, has been entirely missed.

Recommendation 17:

That the Minister disapprove the proposed tower/pier building (Block Y) on the basis of its impact upon the natural landscape qualities of Darling Harbour and non-compliance with Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005.

5.8.9 Impact on views down Margaret Street West

The proposed creation of Margaret Street West is supported; however the street will be too narrow to effectively retain the full angle of views from the existing public domain of Margaret Street. This will form an extended tunnel and only a narrow view of the water will be visible at its western end. Visual connectivity with the water will be too remote and too limited. In addition, the proposed orientation of building C5 at a southerly angle unnecessarily diminishes the view down Margaret Street West which could be easily rectified. It is important that a low angle view to the sky is retained for the width of Margaret Street.

Recommendation 18: (relates to Recommendation 14)

That the Minister condition any approval so as to align Margaret Street West with Margaret Street (including matching width) and to rotate the commercial building C5 on Block 2 to be parallel with the street.

5.9 Public Domain definition

Public spaces are defined by their edges – typically public domain edges are created by built form, and the legibility of a space is largely a result of the consistency of the edges

that frame the space. Several key elements of the public domain are poorly defined in the amended Concept Plan proposal, or require further detailed consideration. These include:

- Waterfront Promenade & Globe Street;
- Shelley Street; and
- Globe Square & Block 1
- 'City Walk' and Napoleon Street
- Hickson Road

5.9.1 Waterfront Promenade & Globe Street

The waterfront promenade is a continuation of the foreshore area at King Street Wharf, connecting Darling Harbour to Millers Point. The proposed addition of edge buildings on the western side of Globe Street facing the waterfront promenade is generally a positive contribution to the definition of this important foreshore place. However, the currently proposed height and misalignment of these foreshore buildings detracts from their potential contribution to the harbour front and requires amendment.

As proposed in the application, foreshore buildings (Block X and 4A) have a maximum envelope height of RL41.5, with an assumption of height modulation between 7 and 11 storeys shown indicatively within the envelope. A predominant height of RL33.3 is shown on the Indicative Maximum Building Height - Location and Dimension Map (*Urban Design Statement* p.43).

Both the envelope height, and the indicative building height, greatly exceeds the height of existing King Street Wharf buildings (with a height at approximately RL18). The King Street Wharf buildings are 4 storeys, whilst the proposed new foreshore buildings reach up to 11 storeys in height.

This proposed height is considered unacceptable with regard to the existing foreshore building context (in terms of adjacent sites as well as wharf buildings across the harbour), as well as the scale of the foreshore space proposed. At the rear of the buildings, a reduction in height would improve the streetscape and amenity of Globe Street and allow a better relationship with podium heights in Blocks 2 and 3.

A reduction to the maximum building height is recommended. A reduction in the *maximum* height to RL35, with a parapet height to RL25 and a predominant height of approximately RL28 (one floor setback and 75% area of the floor below it) is recommended for Blocks X and 4A. Assuming retail at the ground floor and residential above as proposed, this would allow for buildings with a street wall height of 6 storeys with an additional part-floor providing modulation, with taller corner elements to a height of 8 storeys with an additional part-floor (maximum 9 storeys).

Recommendation 19:

That the Minister condition any approval so as to reduce the building envelope heights for Blocks X and 4A to allow a parapet height of RL25 with a setback floor above it for 75% of the area of the floor below to RL28 (6 + 1 storey) and a maximum height for articulation of RL35 (8+1 storeys) which is no greater than 25% of the building footprint area. Heights exclude roof plant etc.

The alignment of the foreshore buildings also defines the space and contributes to the integration with the existing city. As proposed, the waterfront edge of the foreshore buildings is set back 6m from the existing King Street Wharf buildings. This creates an ambiguous edge to the foreshore zone and erodes the visual continuity of the space.



Figure 28. View southwest towards King Street Wharf showing approximate indication of proposed buildings and envelopes (NB to be finalized following completion of City of Sydney view analysis)

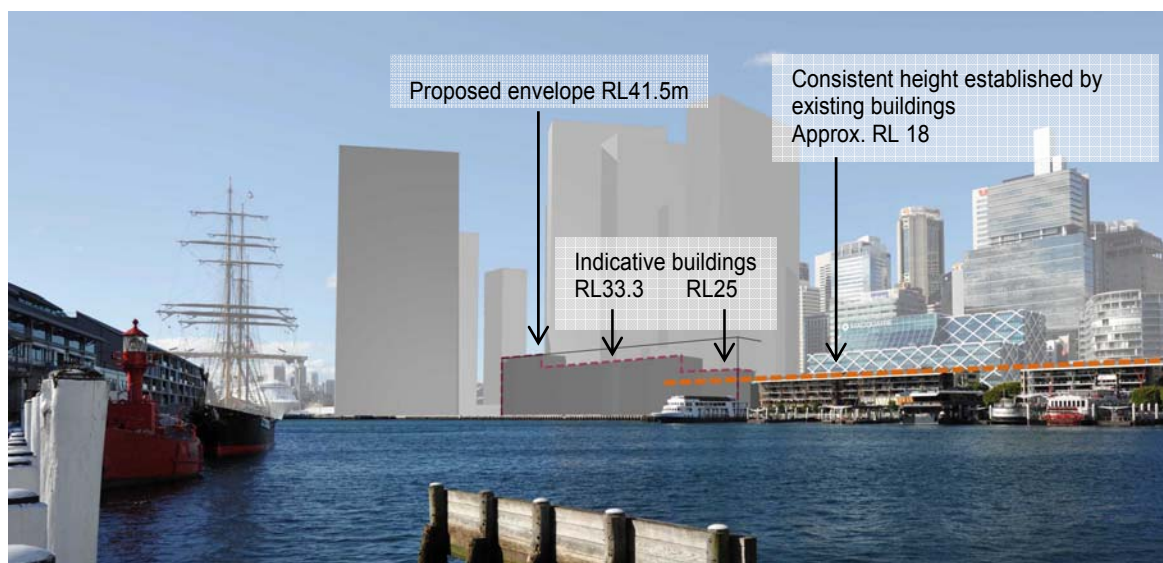


Figure 29. View northeast towards King Street Wharf showing 'Indicative maximum building heights'

Aligning the new buildings with the existing building line would create a more seamless transition, knitting the new development into the existing city fabric, including widths of footways, tree planting to both sides of the street and the like. The alignment of Globe Street would also be improved with this change, creating a straight street providing a better north-south view corridor into the site. The proposal focuses all activity at ground level on the waterfront side, essentially treating Globe Street as a 'rear lane'. Consideration should be given to more activation of all ground floor frontages. The recommended building alignment is shown on the plan below (Figure 30).

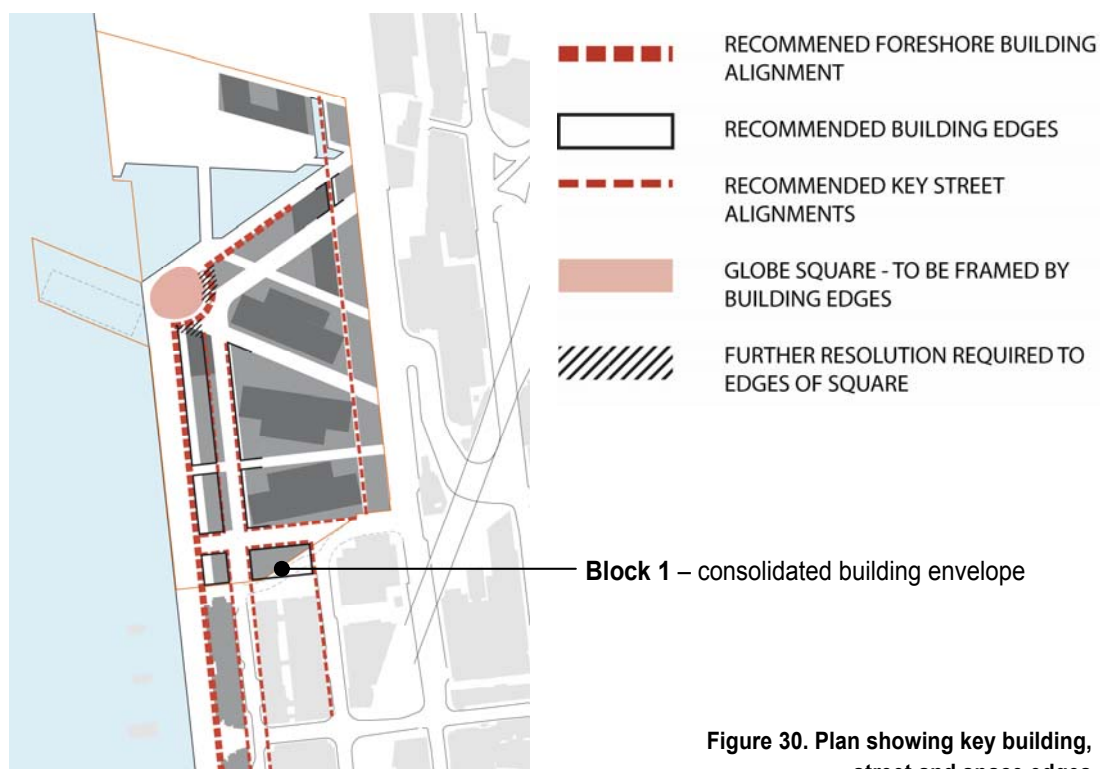


Figure 30. Plan showing key building, street and space edges

5.9.2 Shelley Street (Lane)

As proposed, Shelley Street (Lane) does not have a continuous alignment between Blocks 3 and Block 4. This alignment is important to provide a view corridor north-south towards the enlarged Southern Cove. It is recommended that buildings R3 and R11 be amended or set back to provide a continuous alignment along Shelley Street (Lane).

5.9.3 'Globe Square'

The proposal provides an open waterfront square at the junction between 'City Walk' and the waterfront promenade. The potential of this space to form a vibrant and lively waterfront destination is recognized and supported by the City, however in the modification as proposed several issues stand in the way of this outcome:

- the proposed 'cultural centre' in its current form;
- built form geometry and edges;
- interface with streets and intersections; and
- the hotel tower/pier and porte-cochere.

As proposed, the 'Globe Square' contains a 'cultural centre' element which detracts from the legibility of the space and weakens its connection with 'City Walk'. The space is poorly defined with the narrow ends of two foreshore buildings framing the south and northeast, and an intersection of streets on the east. It is recommended that the 'cultural centre' be deleted as an 'object' building from the proposal to unify the space of the square. It is also recommended that additional design consideration be given to the built-form edges to the square, to create a strongly defined locale. The edges of these buildings could have a cultural or community use to ensure public engagement and activation of the space. Refer to Figure 30. However, the City strongly supports a National Centre for Indigenous Art and Culture in a more appropriate location within the overall Barangaroo site. A possible location is the former 'innovation centre' site on the northern edge of the Southern Cove.

5.9.4 Block 1

Further resolution is required to the proposed R7 residential building block and envelope at Block 1. The envelope is awkwardly shaped and provides a compromised building form resulting from the Barangaroo site boundary running at an angle across the eastern edge of the envelope. A preferred outcome would be to provide a consolidated and regularly shaped development site including land to the east of the current Block 1. The building could then form the northern end of the block framed by Lime and Shelley Streets.

5.9.5 'City Walk' + Napoleon Street

The proposed 'City Walk' connection and associated stairs from Napoleon Street has an inadequate level of detail to fully assess the possible impacts upon the sandstone retaining wall that is listed as part of SLEP Schedule 8 Part 3 item No 60. The proposal should minimise interference with the wall and avoid any loss or obscuring of this significant feature.

5.9.6 Hickson Road

It is proposed to create a consistent street wall along Hickson Road to a maximum envelope height RL 33.20 approaching a kilometre in length. Although the notion of uniformity of scale and height is supported, there are no cross sectional details or RLs to indicate whether this height responds appropriately to the established or the historic context such as the former Grafton Bond Store (SLEP Schedule 8 Part 1 Item No 174) or to the height of the Hickson Road rock-face wall.

Prior to the demolition of the finger wharves, the historic Hickson Road buildings presented a similar urban statement through a lengthy brick arcade. They had a substantial visual impact by the nature of their length and uniformity and the solidity of materials. However the height of the buildings to RL 33.20 is far in excess of the former historic finger wharf development and heritage items within the immediate context including the former Moreton's Hotel, the former Grafton Bond Store and the Hickson Road rock-face wall further to the north, and should be regarded as an absolute maximum only, with diversity and breaks lower than this maximum RL.

The proposed colonnade beneath the building frontage some five metres in height, is generally supported provided the frontage adopt a vertical rhythm commensurate with structural bays of early twentieth century wharf buildings. The suggestions of a classical style boulevard and similarities to East Circular Quay are not supported and the arcade should be obviously contemporary in nature, albeit utilising materials historically associated with wharf construction. As this proposed colonnade approximates closely to the shoreline as first found by the European settlers and to the location of former nineteenth century finger wharves, the colonnade area is an ideal location for interpretation and display of archaeological findings, historical information about the development of nineteenth century wharfage and information about the natural history of this section of the harbour foreshore and early modifications made to the shoreline. Refer to Figure 31.



Figure 31. Early 20th Century wharf building along Hickson Road

Recommendation 20:

That the Minister conditions any approval so as to:

- amend the proposal to ensure that buildings in Block X align with the east and west edges of existing King Street Wharf buildings. This requires the proposed building envelopes to move approximately 6m towards the foreshore;
- amend the alignment of Globe Street to continue in a straight alignment from Lime Street; and
- provide a continuous alignment for Shelley Lane by amending the setback/location of buildings R3 and R11.

Recommendation 21:

That the Minister requests the Proponent to:

- delete the proposed 'cultural centre' in 'Globe Square' and further develop the building edges framing the square; and
- investigate a suitable site for a National Centre for Indigenous Art and Culture involving consultation with the Aboriginal Cultural Centre Working Group; and
- negotiate the proposed Block 1 building and site boundary conditions to provide a regular building form. This may require a joint venture or site amalgamation strategy.

5.10 Amenity of waterfront public space

The proposal includes several key waterfront public spaces including:

- waterfront promenade;
- 'Globe Square';
- Southern Cove; and
- Bull Street.

KEY PLAN - PUBLIC PLACES

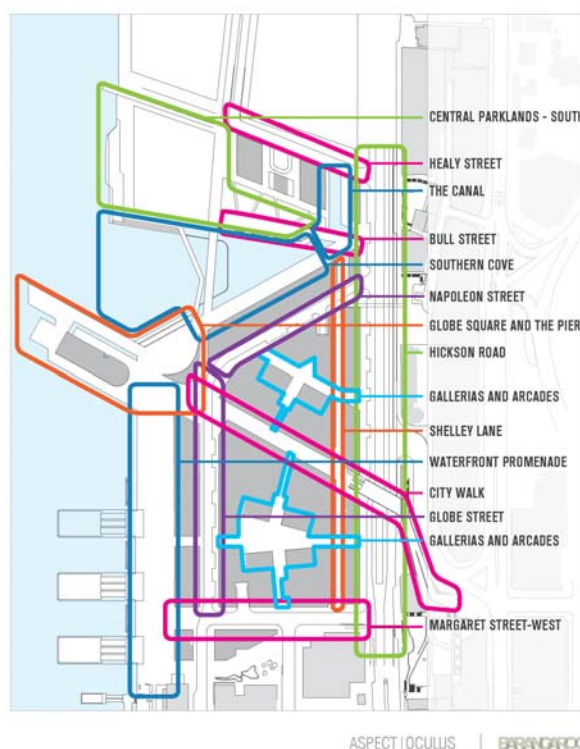


Figure 32. Plan showing public domain and key places

These are identified in the *Aspect/Oculus Streetscape and Public Domain Report* (Appendix J of the application), and can be seen in Figure 32. The objectives and aspirations for the quality and character of these spaces are articulated in this report, and are supported in principle. The public domain at Barangaroo South is intended to become:

“a ‘must see’ destination for Sydneysiders and visitors; a dynamic and vibrant waterfront precinct, fully connected to the CBD and designed to celebrate the harbour. It will become part of Sydney’s heritage and a valuable legacy for future generations”⁴¹

Importantly, the waterfront public domain also forms part of a continuous sequence of paths and spaces around Sydney Harbour. The City’s long term strategy is to connect these to form a continuous foreshore walk around the harbour, as part of the Liveable Green Network and Cultural Ribbon, articulated in *Sustainable Sydney 2030*.

In order to achieve these shared objectives and meet the relevant DGRs, it is critical that a high level of amenity is provided for the waterfront public domain. Solar access, and pedestrian priority & safety will be key factors in creating this amenity, and are discussed in detail below with regard to the proposal.

5.10.1 Solar Access

Solar access is a critical factor in determining the success of public spaces, and is required to be considered under DGR (2). The Central Sydney LEP recognizes the importance of solar access to key public spaces by providing specific sun access planes to prevent overshadowing for major parks and community places during prime usage periods of the day. As a major development of public foreshore land, it is critical that solar access to newly created public spaces at Barangaroo is protected with similar rigour.

The shadow analysis shows that the tower/pier (Block Y) will overshadow significant foreshore areas of Pyrmont and its shadow will move across large areas of Darling Harbour until 1pm, 365 days of each year.

The articulation and scale of the foreshore development requires reconsideration in respect of missed opportunities for interpretation and its response to the scale of development established further south. Central Sydney DCP restricts the shadowing effects of new buildings on publicly accessible space between the hours of 12 noon and 2.00pm between 14 April and 21 June and also requires consideration of shadow impacts on public spaces outside these times.

An analysis of the shadow diagrams provided with the application has been carried out focusing on these hours and on the Key Public Places within the proposal as identified in the *Aspect/Oculus Streetscape and Public Domain Report* (Appendix J).

Overshadowing impacts are quantified in Table 4.

⁴¹ Aspect/Oculus *Streetscape and Public Domain Report* p.6

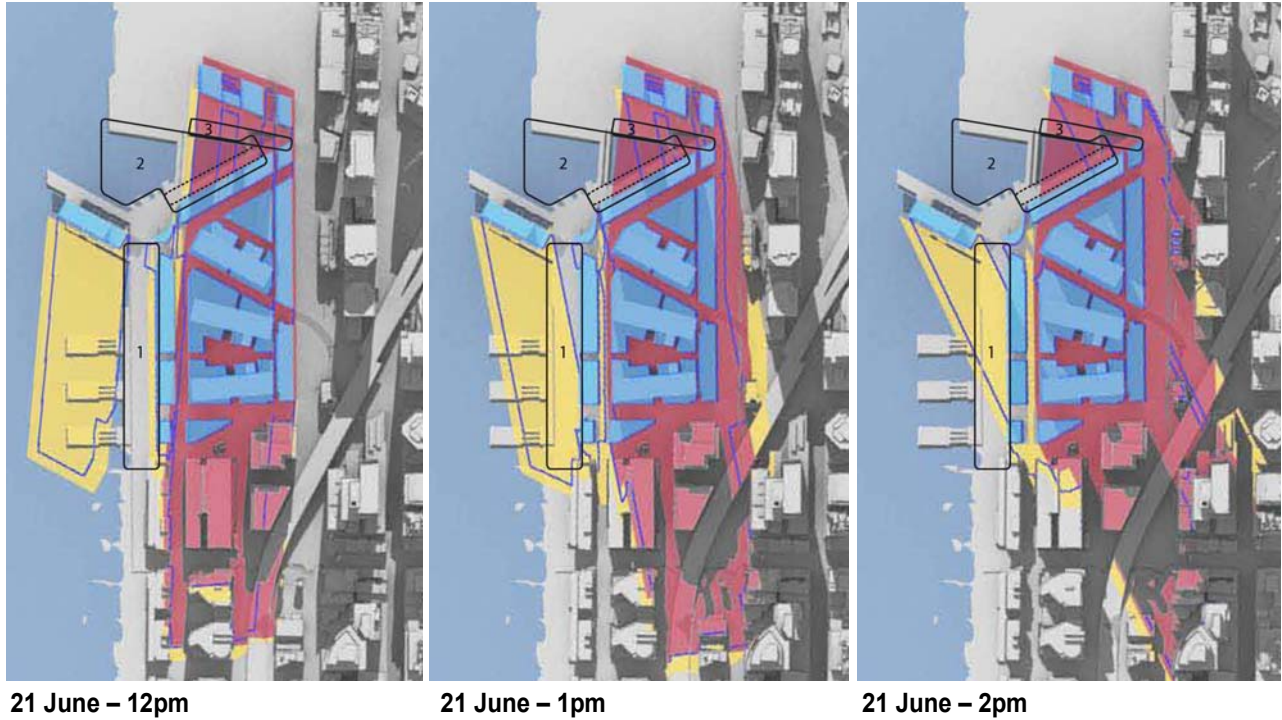


Figure 33. Proponent's shadow diagrams + 'Public Places' (Streetscape & Public Domain Report)

Table 4. Overshadowing factors

1 Waterfront Promenade

% of space in shadow	21 June			21 March		
	12pm	1pm	2pm	12pm	1pm	2pm
Shadows generated by building envelopes	14%	75%	75%	84%	10%	43%
Shadows generated by indicative buildings	4%	75%	66%	49%	1%	34%

2 Southern Cove (excluding water)

% of space in shadow	21 June			21 March		
	12pm	1pm	2pm	12pm	1pm	2pm
Shadows generated by building envelopes	91%	62%	43%	70%	79%	50%
Shadows generated by indicative buildings	45%	44%	37%	23%	44%	39%

3 Bull Street

% of space in shadow	21 June			21 March		
	12pm	1pm	2pm	12pm	1pm	2pm
Shadows generated by building envelopes	100%	82%	67%	100%	100%	50%
Shadows generated by indicative buildings	50%	52%	55%	80%	57%	55%

The proposal results in significant overshadowing of several key public areas. The tower/pier envelope significantly overshadows the waterfront promenade during lunchtime between April and June (critical times under the Central Sydney DCP – the overshadowing impacts extend beyond these months, beginning in March through to September as indicated in the documentation provided). The envelope shadow covers approximately 75% of the waterfront promenade area between 12.30pm and 2.00pm in winter. At the equinox, the hotel shadow moves across the waterfront promenade between 1.00pm and 2.00pm. The proposed envelope at Block 4C overshadows up to 90% of the southern cove foreshore public domain between March and September. The proposal to extend the site into the harbour and create development parcel 'Block Y', which will overshadow the new waterfront promenade public domain, is unacceptable and is not supported. The urban form proposed for Block 4C also has unacceptable overshadowing impacts and should be amended to minimise overshadowing of the Southern Cove public domain.

5.10.2 Wind Impacts

The Wind Impact Assessment provided with the application (Appendix O) outlines predicted wind effects of the proposed hotel (tower/pier) on the waterfront promenade space. Winds from the south will generate downwash from the hotel, increasing wind speed near the south-east corner of the building. This area is where the waterfront promenade meets 'Globe Square' – a pivotal and important part of the new public domain.

Adequate wind tunnel testing has not been provided to quantify the extent of wind impacts on the public domain, however the report notes that mitigation elements such as awnings, planting and ground plane wind breaks and screens may be required to provide additional shelter for pedestrians in the new public domain. Elements such as these may detract from the landscape design of the waterfront promenade, obstructing pedestrian movement and generating clutter. At the concept plan stage, the primary urban form should be designed to enhance rather than detract from environmental conditions. Given such a large development, it is reasonable that wind tunnel testing of the indicative building designs be carried out before finalising the Preferred Project Report.

Recommendation 22:

That the Minister disapproves the following modifications (and requires a new design solution) for the:

- proposed tower/pier in the Harbour, due to unacceptable overshadowing, wind impacts (and visual impacts) on the waterfront promenade. Alternative locations for a hotel use should be considered within the existing site area; and
- proposed Block 4C which is unacceptable due to the overshadowing impact on the Southern Cove. The proposal should be amended to locate taller development closer to Hickson Road, minimising afternoon shadows on the Southern Cove public domain.

5.10.3 Pedestrian priority and safety

The proposal includes a vehicular drop off and pick up point for the hotel (tower/pier) accessed from Globe Street with a turning circle driveway and porte-cochere extending across the waterfront promenade. It is proposed to establish the driveway area as a 'shared way'. The waterfront promenade public domain materials are proposed to continue across the driveway with paving inserts, signage and markers used to demarcate the 'shared zone'. The hotel driveway is proposed to be accessed via Globe Street, through an undercroft space under the northern end of the R8 residential building.

The proposal for vehicular access across the waterfront promenade is unacceptable due to the following significant issues including the:

- arrangement which creates a serious conflict between pedestrians/cyclists and vehicles in the primary foreshore public open space. This compromises the amenity and useability of the space and creates a potential safety risk;
- proposal undermines the intent of the waterfront promenade to provide continuous pedestrian and cycle access around Sydney's foreshore as part of the Sustainable Sydney 2030 Vision for a Liveable Green Network (*City of Sydney Sustainable Sydney 2030: The Vision*)
- proposal results in unacceptable outcomes for the public domain, with markers and signage creating visual clutter in a premier foreshore location;
- proposal results in unacceptable built-form outcomes, with a driveway undercroft space facing the foreshore and visible from the Harbour; and
- proposed drop off loop is in direct conflict with the foreshore promenade. The porte-cochere projecting into the promenade area would effectively create the illusion if not the reality of privately controlled space, making the general public potentially uncomfortable in passing this area.

Recommendation 23:

That the Minister disapproves the following modifications:

- private vehicular access across the waterfront promenade; and
- driveway undercroft space at the northern end of building R8.

5.11 Street hierarchy and permeability

The proposal includes significant departures from the street hierarchy and structure approved under the Concept Plan, as shown below:

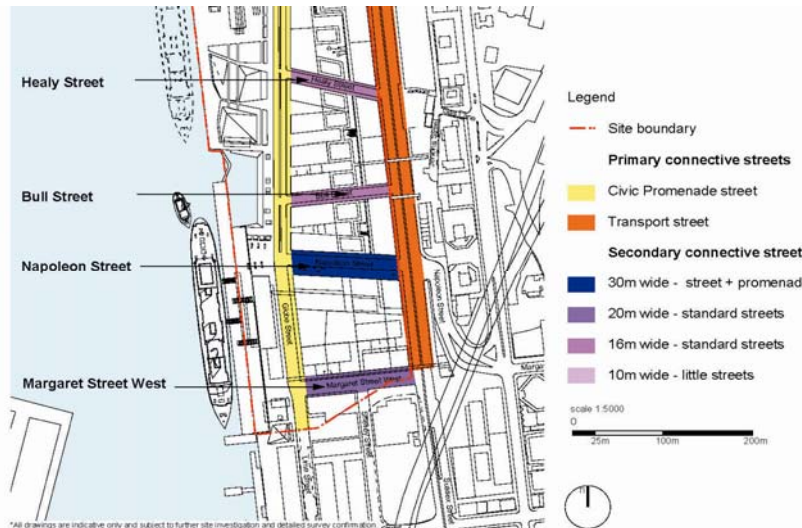


Figure 34. Approved Concept Plan
Street Hierarchy



Figure 35. Proposed amendment

The proposed amendment retains but realigns the primary north-south street of Globe Street, and provides the off-set north-south link of Shelley Lane as a pedestrian connection.

A key issue is the number of east-west streets proposed, and the overall width-capacity these streets to accommodate pedestrian movement between Hickson Road and the waterfront promenade.

The City has consistently reiterated the importance of a robust, connected and open street and lane network, to ensure that the precinct is well connected to the city and to maximize accessibility to new foreshore public domain areas within the site. The original concept plan had four east-west streets providing a total width capacity of 82m for east-west pedestrian movement. The proposed Concept Plan modification retains four east-west streets with the role of additional streets such as Bull Street somewhat ambiguous. All streets are reduced in width, resulting in reduced width capacity of 63m for east-west movement. The ability of the street network to accommodate peak pedestrian flows and provide for a variety of alternative routes is compromised in the proposal. This permeability is key to the long-term success of the new public domain at Barangaroo South.

This is illustrated in the diagrams below, and compared to the recommended street widths included in the following section *Scale and character of streets*.

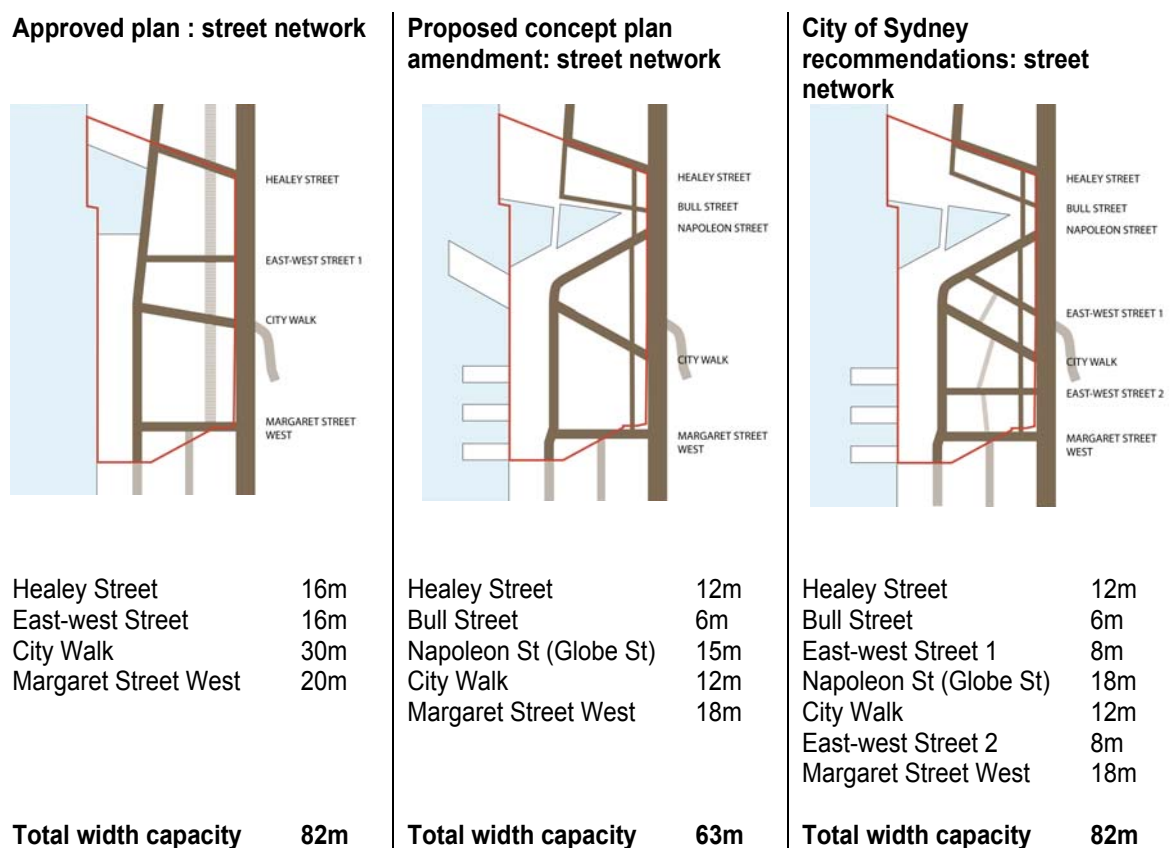


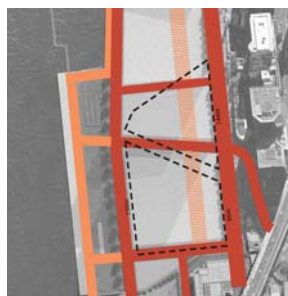
Figure 36. East-west street capacity comparison

The approved Concept Plan established a general framework for development; however additional fine-grain connections would be required to achieve a well connected public domain. The Concept Plan amendment provides an opportunity to achieve this additional layer of permeability; however the proposal as drawn does not achieve this.

At Barangaroo South it is possible to achieve a highly permeable street and lane network due to the single land ownership and lack of existing built-form constraints. The need for a high level of east-west connectivity is heightened by the waterfront nature of the site, where multiple and varied connection opportunities both within the site and from surrounding areas are desirable. It would be expected that a fine-grain, more permeable outcome could be achieved in this location on a scale comparable to the recently approved Alfred, Pitt, Dalley & George Street Master Plan (Figure 37), which involved retrofitting an existing city block and consolidating/negotiating with a range of landowners.

In order to better understand the proposed grain of the street network, a scaled comparison of the approved and proposed Barangaroo South plans compared to other block patterns in Sydney (refer to Figure 37).

**Approved plan:
Barangaroo South**



- EW streets aligned with surrounding streets and view corridors
- NS zone of secondary streets identified (broken line)

**Proposed plan:
Barangaroo South**



- Only one public mid-block EW link: "City Walk"
- Internal EW links are private lobby and galleria spaces
- 85m & 145m long blocks on Hickson Road
- 150m long block on Globe Street

**Proposal similar to:
World Square
Goulburn Street Sydney**



- Long, unbroken street blocks (135m)
- Internal network of private 'publicly accessible' arcades and malls
- Low permeability and legibility

**Better practice:
Alfred, Pitt, Dalley &
George Street Approved
Master plan**



- A retrofit of an existing city block to provide a network of fine grain, public lanes and pedestrian links.

 PUBLIC STREET
 PUBLIC LANE / PUBLIC PEDESTRIAN WAY

Figure 37. Block pattern comparison

The primary concerns regarding the proposed street hierarchy and permeability are:

- lack of east-west public connections – the proposed lobby/galleria connections through Blocks 2 and 3 should be public lanes, open to the sky and accessible 24 hours a day. These provide important alternative pedestrian route options between Hickson Road and the foreshore, easing congestion and increasing variety;
- the widths of the through site connections are very narrow considering the height of the adjacent buildings and should be increased;
- insufficient vegetation has been included in the internal connections;
- the legibility of the internal connections could be problematic – the galleria/arcade links don't necessarily guide people through the site in a logical manner; and
- the lack of permeability through very long building blocks – long, continuous building edges are proposed around the foreshore at Block X and Block 4A. These forms limit the potential for pedestrian permeability and the creation of a variety of fine-grain circulation experiences within the development.

Recommendation 24:

That the Minister conditions any approval so that:

- the lobby/galleria connections through Blocks 2 and 3 are public pedestrian lanes, open to the sky and accessible 24 hours a day;
- additional pedestrian through-site links should be provided through buildings R2/R3 (Block 4A), and building R8 (Block X); and
- the east-west pedestrian link through Block 3 should move northwards to provide more space (and podium) around C3, and continue on a straight alignment through to the waterfront promenade and Southern Cove.

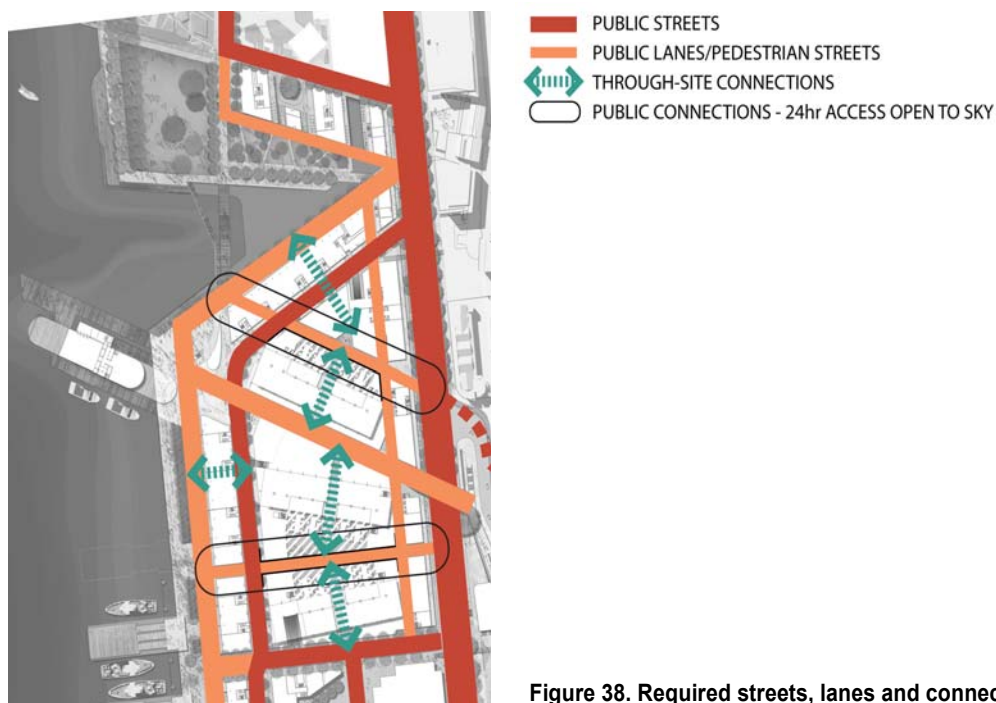


Figure 38. Required streets, lanes and connections

5.12 Scale and character of streets

The proposal significantly varies the width of streets approved in the Concept Plan. Urban design issues arise in relation to the scale and character of proposed streets and lanes, particularly with regard to the combined impacts of:

- street/lane dimensions;
- proposed urban form and building heights;
- lack of clarity around podium heights; and
- proposed basement parking under streets and promenades.

Several of these issues are illustrated well in the following indicative section:

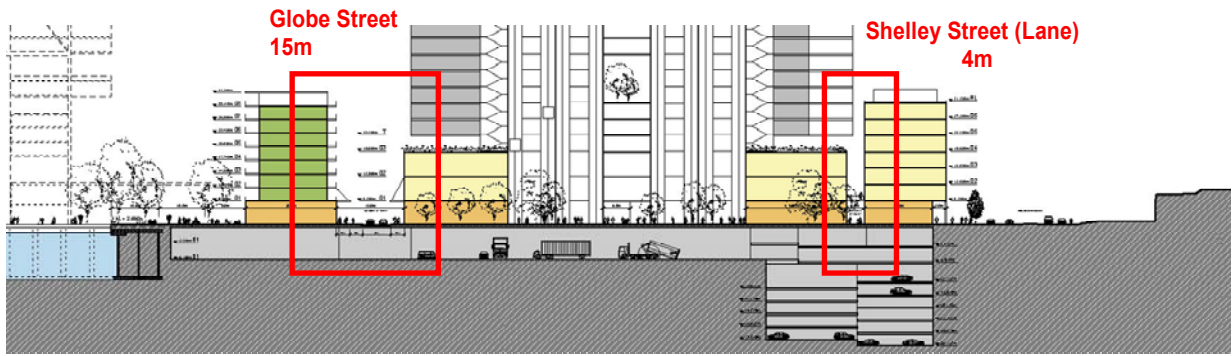


Figure 39. Indicative Design: Site Section AA *Urban Design Statement* p.112

Table 5. Street Width Analysis & Recommendations

Street	Required	Proposed	Discussion
Globe Street	20m	15m	<p>The proposed street width of 15m is inadequate to create a shared, pedestrian scale public domain. There are no examples in the Sydney City Centre of streets of this scale. Small streets outside central Sydney are typically framed by lower scale buildings to generate well proportioned street spaces. The smallest streets within the Sydney City Centre have a width of 18m. Examples of 18m wide streets include:</p> <ul style="list-style-type: none"> • Kent Street • Pitt Street • Castlereagh Street • Erskine Street • Bligh Street • Phillip Street <p>These are all narrow streets which serve a circulation function for vehicles and pedestrians, as well as providing an address for tall buildings. Recommendation: Increase width to 18m.</p>
City Walk	30m	15m	<p>The capacity of 'City Walk' is greatly reduced in the proposal. Some reduction may be acceptable from an urban design perspective subject to East-west links through Blocks 2 and 3 being provided as public pedestrian streets with a minimum width of 8m as recommended below. A reduction the width of City Walk can only be supported if alternate public walking routes are provided through the site between Hickson Road and the foreshore. Recommendation: Increase width to 15m.</p>
Shelley Street (Lane)	20m	4m	<p>Shelley Street (Lane) is provided as a lane rather than a street. In terms of the proposed street hierarchy this is acceptable; however the proportions of the space are too narrow to comfortably accommodate pedestrian activity and movement (narrower than almost any existing lane in the City). Recommendation: Increase width to 6m minimum, 8m preferred.</p>

East-west lanes through Blocks 2 & 3	-	8m	<p>These pedestrian lanes are intended to complement the street hierarchy and provide alternate routes for public access linking Hickson Road to the foreshore.</p> <p>Recommendation: Increase width to 8m.</p> <p>These connections should be shown as pedestrian streets, and provided as public routes with a width of 8m minimum (10m preferred). Note the lanes should be moved northward to allow better setbacks to towers above podiums.</p>
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5.12.1 Podium heights

In addition to the width of proposed streets, their character and scale will be defined by the height and setback of buildings framing the street. Central Sydney DCP establishes a street wall height control of 20-45m. This range is intended to allow development to respond to both the width of the street and the scale of surrounding buildings. Above the street wall (podium) height, taller towers are required to be set back an average of 8m from the street. Where necessary this can be reduced to 6m, but a predominant setback of 8m is required above the street wall. These controls are effective in maintaining a human scale for city streets, as well as mitigating environmental impacts of tall buildings such as wind downdrafts and overshadowing. It is recommended that the height of podiums to the commercial towers (Blocks 2 and 3) be established with reference to these controls, and that 8m setbacks be required for the commercial towers above.

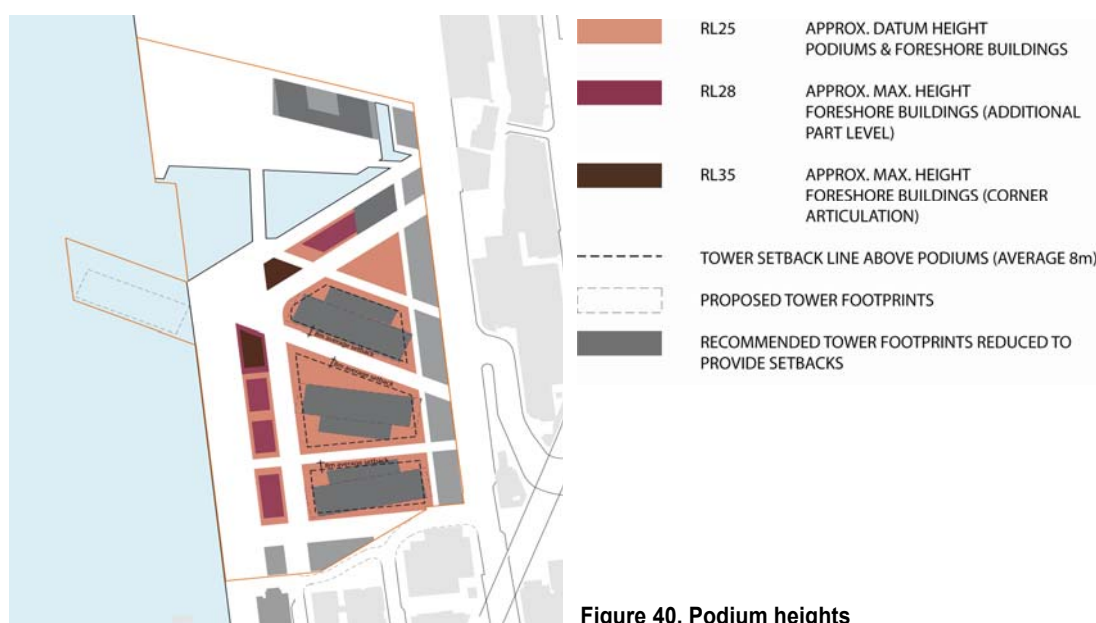


Figure 40. Podium heights

In terms of developing a site-specific approach to podium heights, it is recommended that a datum height be established by the predominant height of the foreshore buildings in Blocks X and 4A (refer to further comments in *Public domain definition* regarding the height of these buildings). A generally consistent podium height at approximately RL25 to align with the recommended street wall/parapet height of foreshore buildings is recommended throughout the development, consistent with City of Sydney controls.

5.12.2 Extent of basement area

Landscaping and street trees importantly contribute to the character of streetscapes. The City has raised several major concerns with the proposal to create a continuous basement under the majority of the Barangaroo South (refer to CoS submission to the Department of Planning on the early works Project Application MP10_0023).

These concerns are reiterated in relation to this Concept Plan amendment application. Basement parking and truck servicing should be contained beneath blocks, with deep soil corridors retained along streets for services and planting of street trees now and in the future. Where connectivity beneath blocks (between basements) is desirable to minimize above ground vehicular circulation, tunnels may be provided connecting discrete basement areas. Tunnels should be set down beneath the finished ground level to provide a 1.5m minimum soil zone for services and tree planting, as illustrated below:

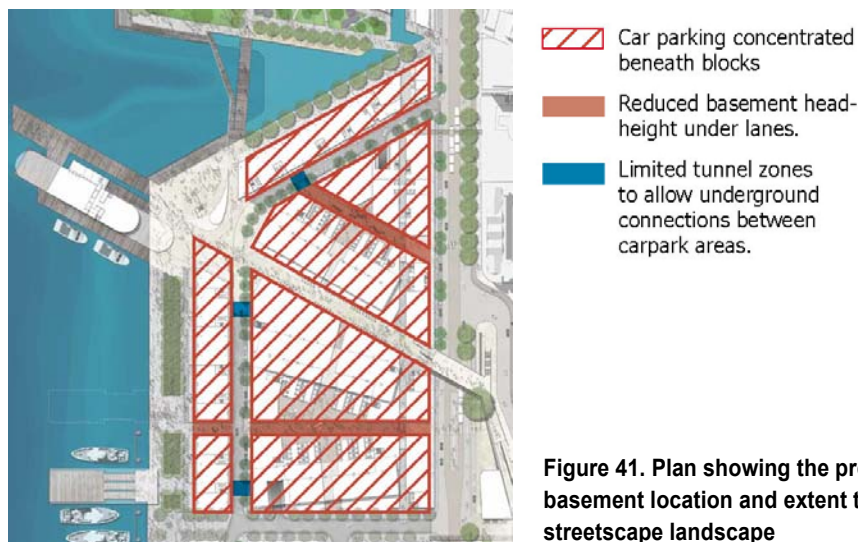


Figure 41. Plan showing the preferred basement location and extent to preserve streetscape landscape

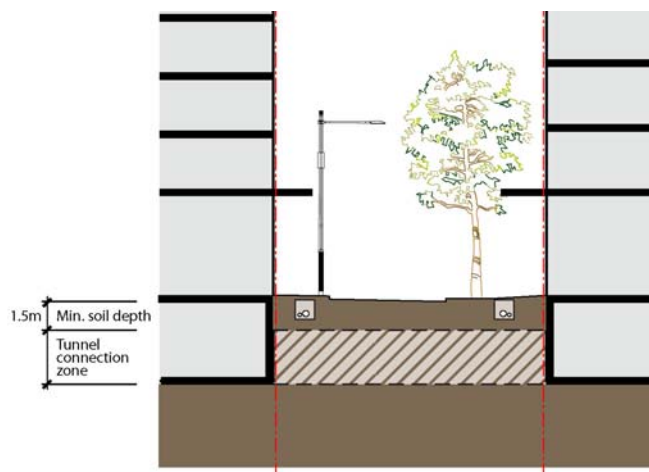


Figure 42. Globe St Section showing 1.5m set down & reduced head height to accommodate services/planting

In its current form, the application provides inadequate information to demonstrate the benefits of extending the basement beyond

street blocks and under streets, and unsatisfactory resolution landscaping & depth of soil for trees; stratum division; and easements for infrastructure and requires amendment.

Recommendation 25:

That the Proponent be requested by the Minister to require streets widths as set out in Table 6:

- increase the width of Globe Street from 15m to 18m;
- increase the width of Shelley Lane from 4m to 6m minimum (8m preferred);
- ensure that the public pedestrian routes east-west through Blocks 2 and 3 have a minimum width of 8m and increase the width of 'City Walk' from 12m to 15m
- ensure generally uniform podium heights are established at approximately RL25 where podiums form the base to towers (Blocks 2 and 3), consistent with the City street wall controls;
- ensure that the three commercial towers are generally set back an average of 8m and a minimum of 6m from podium edges; and
- basements are contained beneath street blocks, but may be connected by tunnels for circulation. Tunnels connections should be set down 1.5m below the finished ground level.

Table 6. Street Width Recommendations

Reservation Width	Approved	Proposed	Recommended
Margaret Street West	20m	18m	18m
Napoleon Street	20m	15m	18m
City Walk	30m	12m	15m
Globe Street	20m	15m	18m
Healey Street	16m	12m	12m
Bull Street	N/A	6m	6m
East West Streets / lanes	16m	-	8m x 2 pedestrian lanes
Public Waterfront	Min. 60m	27m	24m approx (to align with King Street Wharf, refer to Part 2.8) and allow for timber boardwalk up to 6 metres
Shelley Street (Lane)	20m zone	4m	6m (8m preferred)

5.13 Hickson Road Boulevard Trees

The proposal states *‘Hickson Road is one of Sydney’s great city boulevards. It is the main artery and address to Barangaroo’*. The proposal goes on to state *‘Hickson Road will be one of the City’s most exciting ‘liveable green networks’*. Part of the development requirements is for the enhancement of the Hickson Road streetscape.

A major amenity component included along Hickson Road is fig trees. It is noted that no trees are shown on the plans along the western side of Hickson Road. It is not clear if a documentation error has occurred and the trees have not been shown on the plan, or if the trees are proposed for removal. This needs to be confirmed as soon as possible, as these Council owned street trees form a prominent avenue and their management on the site must be clearly detailed (including details of building setbacks from trees shown on all plans and documentation).

In the event that these trees are being considered for removal by the applicant, and should the City agree to their removal, it is recommended that replacement trees be planted along the western side of Hickson Road to soften the development and the impact of the proposed line of buildings.

It is noted that the proposal also includes planting native trees along the eastern side of the road which are also on Council owned land. This proposed planting is complimentary and additional to the existing avenue along the western side. This is not considered to be a replacement for any proposed removal of the existing avenue of Hills Figs.

Recommendation 26:

That the Proponent is requested by the Minister to:

- clarify retention of the Fig Trees along the western side of Hickson Road; and
- incorporate the retention of the Fig tree avenue, and enhancement of pedestrian and bicycle movements thorough widening of footways and introduction of bicycles paths wherever possible.

5.13.1 Tree Management Plan

Large sections of the development site contain tall buildings which cast large shadows, narrow laneways that potentially result in wind tunnels and building awnings that limit the natural development of canopy growth, all of these provide a challenging environment for tree growth.

The applicant should engage the services of a qualified Arborist with a minimum Australian Qualification Framework (AQF) of Level 5 to develop a Tree Management Plan for the site.

The purpose of a Tree Management Plan is to provide the site owners with the necessary specifications and guidelines to ensure trees are appropriately selected and successfully maintained in the landscape.

Recommendation 27:

That the Proponent be requested by the Minister to prepare a Tree Management Plan which must include the following:

- an assessment of the final design of the development;
- identify constraints and new planting opportunities for tree planting (and retention);
- consider the impacts of the design including the areas use (park vs street), views, built form constraints (including awnings), soil type and the availability of root zone growth, to determine a preliminary tree species palette;
- prepare a tree supply contract to ensure stock quality, timing and availability with nursery. Trees must be grown to NATSPEC Guidelines for Specifying Trees to ensure quality trees and more successful establishment;
- provide a final proposed planting palette. The final proposed palette should then be referred to the City team for review and approval;
- tree planting specification – incorporating best practice planting techniques (e.g. continuous trenching, Water Sensitive Urban Design etc);
- prepare a tree establishment and maintenance specification (including irrigation during establishment and the implementation of a programmed maintenance schedule to ensure trees are regularly assessed by qualified staff to the very best arboricultural standards); and
- criteria for relocating existing healthy trees.

5.13.2 Views

The waterfront promenade and Southern Cove will be tree lined to provide the public with shade from the western sun. Directly adjacent to the avenue of trees are restaurants and residential apartments with balconies that open to views of the harbour.

It is noted that in this area, scenic views and views of sunsets are important. Therefore, in an effort to avoid future conflict, consideration must be given to selecting tree species with an 'open canopy' to allow for filtered views. The City does not support pruning trees for views, and the use of 'topping' is not supported in the Australian Standard for the Pruning of Amenity Trees. Therefore the selection of the tree species should be based on appropriate tree characteristics, and not damaging tree maintenance practices.

5.13.3 Tree Planting Considerations

Where trees are planted above basement areas, the detail designs should include the use of continuous trenches for tree pits and the installation of all services to be underground.

Special consideration should be given to soil depth and quality for tree planting. The following are minimum soil volume requirements for successful long-term tree establishment:

- Large Trees (canopy diameter of up to 16m at maturity) require a minimum soil volume of 150m³, minimum soil depth of 1.5m and minimum soil area 10m x 10m, however it is preferable to have no structure beneath large street trees;
- Medium Trees (canopy diameter of up to 8m at maturity) require a minimum soil volume of 35m³, minimum soil depth of 1.2m and minimum soil area 6m x 6m; and
- Small Trees (canopy diameter of up to 4m at maturity) require a minimum soil volume of 9m³, minimum soil depth of 1.2m and minimum soil area 4 metres x 4 metres.

5.14 East-west connections over Hickson Road

The east-west connections are an essential component of the scheme as it provides pedestrian connectivity to Wynyard Station in an area where existing pedestrian connections are at capacity. In order to maximise connectivity between the existing city and Barangaroo South, the number of pedestrian connections should be maximised. In addition to 'City Walk', several other connections are discussed in the proposal.

Table 7. East-West Connections over Hickson Road (Hungry Mile)

Connection	Strategic Role	Recommendation
189 Kent Street pedestrian bridge	Opportunity to provide a visual and physical connection between the site (near building C1) and Grosvenor Street via the existing Kent Street underpass.	The opportunity for this connection should be preserved in the concept plan. Building heights at the north end of Block 3 may need to be revised to provide the view corridor – pending completion of City of Sydney view analysis.
Connection	Strategic Role	Recommendation
Margaret Street West pedestrian bridge & Wynyard Link	Approved as part of the CBD metro this bridge links Barangaroo directly with Westpac Place and the proposed new pedestrian tunnel to Wynyard.	<p>This is an essential piece of pedestrian infrastructure providing a direct connection for workers arriving at the southern commercial towers from Wynyard. Further investigation is required to determine the appropriate landing location of the bridge due to the following issues with the currently proposed location:</p> <ul style="list-style-type: none"> ▪ Inadequate footpath width south of Margaret Street West to land the bridge ▪ Margaret Street West functions as a major vehicular access point to the basement car park. Pedestrian safety, flow and access issues arise through the requirement to cross Margaret Street West. A preferred scenario may be to land the bridge on the northern side of Margaret Street West within the Barangaroo site. This should be considered in the Preferred Project Report.

Recommendation 28:

That the Proponent is requested by the Minister to:

- preserve the opportunity for a connection from Barangaroo through to Grosvenor Street via the Kent Street underpass (at 189 Kent Street) should be preserved in the concept plan. Building heights at the north end of Block 3 may need to be revised to provide the view corridor; and
- ensure that the Margaret Street West pedestrian bridge is delivered to connect workers arriving at the southern end of the site to the new Wynyard tunnel, and carry out further investigation to determine the appropriate landing location of this bridge.

5.15 Public domain plan

A *Streetscape and Public Domain Report* has been provided with the application (Appendix J) to provide a general response to DGRs addressing these areas. A Public Domain Plan for Barangaroo South has been provided as an appendix to the *Streetscape and Public Domain Report*. A public domain plan for the whole Barangaroo site is required under the Proponent's approved Statement of Commitments. This has not been provided, and the report addresses Barangaroo South only.

As a member of the Public Domain Technical Working Group, representatives of the City have had the opportunity to review both the *Public Domain Plan: Barangaroo South*, and a draft Public Domain Plan for the whole Barangaroo site (not submitted with this application).

It is critical that any public domain sub-plan for individual precincts be provided with reference to the overarching Public Domain Plan to ensure that whole-of-site strategies are adopted and delivered effectively across this large site. This is particularly important given the staged nature of the project. The need for a whole of site Public Domain Plan is expressly articulated in the Statement of Commitments and should be provided prior to any approval of amendments to the public domain.

Detailed comments on the Barangaroo South Public Domain Plan as provided to the Technical Working Group have been attached to this report at **Appendix B**. It is noted that these comments are not reflected in Appendix J of the subject application.

Recommendation 29:

That the Proponent is requested by the Minister to:

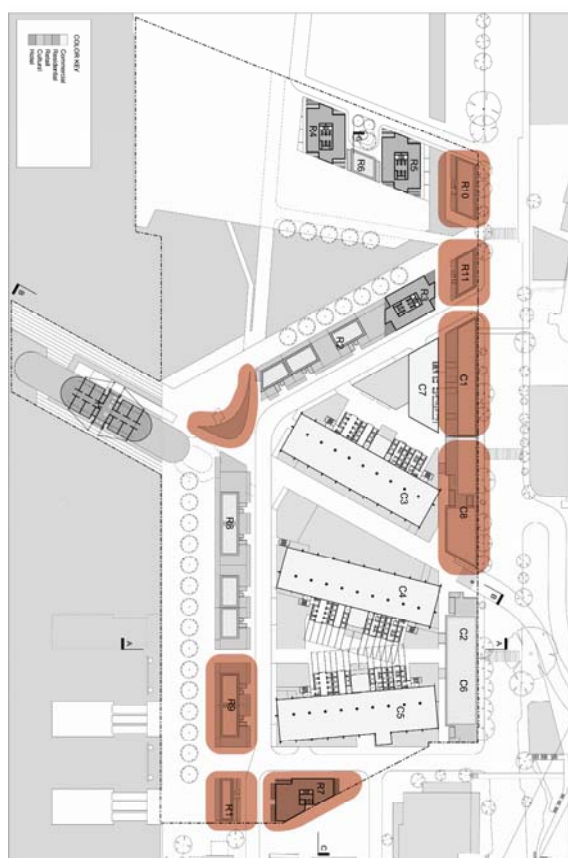
- prepare a whole-of-site Public Domain Plan which is to be lodged together with the Barangaroo South Public Domain Plan, to ensure that objectives and strategies are coordinated across the site; and
- ensure that the Barangaroo South Public Domain Plan be amended to reflect the City's comments (Refer to **Appendix B** to this report).

5.16 Design excellence

A Design Excellence Strategy has not been submitted with the application, as required by the Statement of Commitments.

The existing Instrument of Approval specifies that design excellence competitions are to be held for the following development:

- a) any development comprising the erection of a building exceeding 55m in height
- b) any development of land exceeding 1,500 square metres in area, and
- c) each block where this is not covered by (a) or (b) above.



than 55m but located along the foreshore will have a prominent impact on views to and within the site, but may not be captured by the design excellence provisions. It is appropriate that a range of processes be employed to deliver design excellence at Barangaroo South, depending on the nature and impact of individual buildings.

Recommendations for design excellence process for individual buildings:

5.16.1 Design competitions

It is critical that the highest level of design quality is achieved for buildings fronting onto Sydney Harbour. To achieve this, a full design competition process as per the Central Sydney DCP Part 12.2 should be undertaken for the following groups of buildings as nominated in the above plan.

- R4, R5 (or any building in this location), R6 and R10
- R1, R2, R3 and R11
- R8 and R9

To achieve design diversity within each group of buildings, each competition brief must require entrants to form design consortiums, comprising a minimum of two (2) design firms working in association/collaboration.

The three office towers will also have a significant impact due to their height, form and location. It is recognised that the concept plan reflects a specific design vision for each of these buildings, therefore should the Proponent elect not to nominate Rogers Stirk Harbour + Partners as the architects, a full design competition process as per the Central Sydney DCP Part 12.2 should be undertaken for:

- C3
- C4
- C5

If the Minister approves the concept of a building in the harbour, it should also be subject to a competition (whether in a tower form or not). Design competitions are also recommended for smaller elements within the public domain, to allow emerging design culture to contribute to Barangaroo. A full design competition process as per Central Sydney DCP Part 12.2 (Attachment A), should be undertaken for:

- the proposed bridge across the Southern Cove; and
- small buildings in the public domain area north of the Southern Cove in Stage 1.

5.16.2 Alternative design solutions

To achieve high quality design through the generation of alternative design solutions, a competitive design alternatives process as per Central Sydney DCP Part 12.3 should be undertaken for:

- R7
- Ferry wharves

5.16.3 Nominated architects

Architects for the buildings listed below may be nominated by the Proponent. Design excellence will be achieved through an ongoing process of reporting and sign-off with the Design Excellence Review Panel, and the oversight of the Master Architect (Richard Rogers et al).

- C1, C2, C6, C7, C8; and
- C3, C4 and C5: the Proponent may nominate Rogers Stirk Harbour + Partners as the architects, as an alternative to undertaking a full design competition process as per the Central Sydney DCP Part 12.2 for one or all of these buildings.

Recommendation 30:

That the Minister require by condition of approval that:

- all foreshore and/or residential buildings other than R7 be the subject to design competitions conducted in accordance with Central Sydney DCP (or its successor);
- the Ferry Wharves are the subject of an alternative design solution process;
- the commercial towers C3, C4, and C5 may be excused from the requirement for a competition provided they are designed and detailed by Rogers Stirk Harbour + Partners; and
- the Director of Planning at the City of Sydney is consulted on all competition/competitive process briefs and procedures prior to their release.

5.17 Housing affordability

Access to secure, appropriate and affordable housing is not only a basic requirement for all people, but also an essential component of an inclusive, dynamic and sustainable city.

In recent decades, housing in the City has become increasingly unaffordable. The cost of housing in the City of Sydney Local Government Area largely precludes very low, low and moderate income households from accessing housing appropriate to their needs and their income.

The shortage of affordable accommodation in the City:

- creates an undesirable social mix, where enclaves of advantage and disadvantage form with an absence of moderate income households;

- affects the economic viability of the City as employers struggle to attract 'key workers' who are vital to the functioning of the City such as bus drivers, teachers, nurses and hospitality staff; and
- has a significant negative impact on both public transport and the environment as people have to travel greater distances to get to and from work.

In 2006, Sydney Harbour Foreshore Authority (SHFA) commissioned Professor Bill Randolph, from City Futures Research Centre at the University of New South Wales to prepare a study titled: *The East Darling Harbour and the Intermediate Housing Market*. This study looked at the future housing demands of the City and made recommendations about the types of housing that should be located in East Darling Harbour (Barangaroo).

The study concluded that:

- A key component of the social mix argument lies in the need to provide a range of housing product, some of which would be affordable to a broader range of households than would be accommodated in a site of this significance and location if left entirely to market processes to determine;
- Evidence reviewed for the Millers Point area showed that households in a broad middle income range and households with children were notably underrepresented in the areas adjacent to the East Darling Harbour (EDH) site (Millers Point and Walsh Bay);
- The EDH renewal offers the possibility of building social bridges between the two socially disparate communities in the area by re-introducing sections of the wider Sydney community currently largely excluded from the area;
- The provision of a mix of housing types, size and price point's assists in the creation of a more diverse community, from which greater prospects of social cohesion may flow;
- Planning outcomes for EDH should consider the broader economic well-being of the central city area and in particular the affordable housing needs of low and moderate income earning 'key workers'; and
- EDH offers a substantial opportunity to deliver affordable outcomes and should look to international models such as in New York where the Lower Manhattan renewal area is scheduled to include up to 20% of the new units affordable to people who couldn't otherwise live in market-priced housing and London where the Greenwich Peninsular redevelopment on the Millennium Dome site will include a 38% affordable housing component.

Sustainable Sydney 2030 (SS2030) which was developed by the City of Sydney in collaboration with local and international experts, and as a result of extensive community consultation, identifies the need for more affordable housing as a key area for action. In a SS2030 survey, 74% of respondents agreed that affordable housing should be distributed

across the City of Sydney. In turn SS2030 establishes a goal that by 2030, fifteen per cent of all housing in the City will be affordable, comprising of seven and a half per cent of social housing and seven and a half per cent of affordable housing.

In December 2009, Council endorsed the *City of Sydney Affordable Rental Housing Strategy 2009-14*, which outlines a variety of actions to achieve the affordable housing goals identified in SS2030. This includes the specific action: 'Advocate for affordable housing in State controlled urban renewal sites'. The Strategy identifies the need to build 8,000 new affordable housing dwellings over the next 20 years in order to achieve the SS2030 target, and outlines a range of methods in which this could be achieved. One method is through affordable housing being provided in key urban renewal sites in the City including RWA, Barangaroo as well as the former Carlton United Brewery site at Broadway. Through these urban renewal sites it is estimated that 350 units or 4% of the total units required by 2030 could be generated.

The revision to the 'Barangaroo - Statement of Commitments' states that:

“34. Within Barangaroo South up to 2.3% of all approved residential GFA will be provided as key worker housing”

The 'Barangaroo Community Plan' states that Lend Lease proposes to:

‘Deliver intermediate housing for essential and key workers employed within the Barangaroo precinct and the wider Sydney CBD area via the Australian Affordable Housing Partnership (AAHP) which is a collaborative partnership between Lend Lease and the public, private and community sectors. The AAHP delivers affordable housing across the inner and middle rings of Australia’s major cities. Lend Lease’s intermediate housing component will offer a range of tenures including rentals and sales delivered via the AAHP. Lend Lease and the Barangaroo Delivery Authority will continue to explore opportunities for the provision of additional Key Worker Housing created by the redevelopment of Barangaroo.’

Based on a residential GFA of 99,763 m², Lend Lease estimate that the total number of units that will be constructed in Stage 1 to be 775-800. Based on the commitment of 'up to' 2.3% of residential GFA, and using the unit projections provided by Lend Lease, this would translate into approximately 18 units.

Barangaroo represents one of the last remaining renewal opportunities in the City, where vacant land is available to achieve a desirable and sustainable social mix. A maximum of 18 affordable housing units (bearing in mind the commitment is only expressed as 'up to'), which at best could accommodate between 18-54 people, across a 22 hectare area does not realise the potential of the site and is an unacceptable housing outcome.

Typically a tenant of an affordable housing development pays 30% of their household income in rent. People who pay more than this figure are considered to be in 'housing stress'. The average rent for a 2 bedroom unit in the City of Sydney LGA is \$550.00 per week. This figure is likely to be substantially higher in a premium, harbour-side location such as Barangaroo. Comparable 2 bedroom apartments in locations such as Walsh Bay, CBD North and Circular Quay are achieving rents of between: \$800 - \$1500 per week (based on current market assessment).

Based on a figure of \$550.00 per week, a household income of \$95,333 before tax would need to be earned by a household to ensure affordability (30% of household income). Using the likely higher rate of rental return achieved in comparable neighbouring locations, a household income of between \$139,000 and \$260,000 would have to be realised by occupants to ensure affordability.

In 2010, the following key workers (by industry) earned the following incomes:

Industry Sector	Average Annual Wage/ affordable rent pw
Construction	\$65,816 / \$379
Wholesale Trade	\$62,452/ \$360
Retail Trade	\$48,703/ \$280
Accommodation, Cafes and Restaurants	\$46,306/ \$267
Transport and Storage	\$60,018/ \$346
Property and Business Services	\$63,175/ \$364
Administrative and Support Services	\$62,884/ \$362
Education	\$68,921/ \$397
Health and Community Services	\$62,036/ \$357
Cultural and Recreational Services	\$56,971/ \$328

Based on these figures, no key worker who was living in a single person household could afford to rent a 2 bedroom unit in City of Sydney, let alone in the Barangaroo area. In addition to this, no couple household which was comprised of key workers could afford to rent a 2 bedroom property in Barangaroo or the surrounding area either. If left to the market, none of the housing in Barangaroo will be affordable for key workers. The only way to secure an affordable housing outcome is through the dedication of floor space or a financial commitment for the housing to be delivered on site.

Conclusion

The target of 'up to' 2.3% of residential GFA is grossly inadequate and fails to realise the potential of Barangaroo to deliver a socially, economically and environmentally sustainable outcome for Sydney. If left to the market, Barangaroo will not provide any housing which could be categorised as 'affordable'. The only way for an affordable housing outcome to be

achieved in Barangaroo is through the dedication of residential floor space/ units and this will need to be supported by all parties to the *Project Development Agreement*.

In order to achieve the City's affordable housing targets, at least 10%, but preferably 20% of new residential development at Barangaroo should be affordable. The key reasons for this are:

- Barangaroo is one of the few urban renewal sites in the Sydney that is able to deliver an affordable housing outcome for the City, and is required for the City to achieve its target of new dwellings as outlined in the *Affordable Rental Housing Strategy 2009-14*;
- Whilst there is a substantial stock of public housing in Millers Point, the rest of the private rental housing in the area surrounding Barangaroo is already highly unaffordable for key workers;
- Barangaroo is a publicly-owned site and an affordable housing outcome should not be compromised in order to deliver greater rates of private, high end housing;
- Barangaroo has ideal proximity to the CBD where the demand for key workers is at its greatest.

Recommendation 31:

That the Minister condition any approval requiring that a minimum of 10%, but preferably 20% of all new housing should be affordable housing across the site, and the location of all affordable housing should be nominated at the Concept Plan stage. Building C1 on Hickson Road is recommended for this use.

5.18 Community facilities

Key requirements

For the purposes of planning of community infrastructure and services, Council has divided the City into Village Centres. Barangaroo falls within the Harbour Village Centre.

Council has recently undertaken extensive planning work with regards to community facility and service provision in the LGA to 2030. This work has centred on understanding the demographic patterns and trends and the needs of current and future populations. The key document which has been developed through this process is the draft *Integrated Community Facilities Plan* that seeks to provide a sustainable and equitable network of multipurpose community facilities located in strategic and accessible locations across the LGA. It has adopted 7 principles to guide the plan with community facilities to be:

- sustainable;
- multipurpose and flexible;
- accessible;
- equitably located across the LGA ;

- safe and high quality
- provided and managed in partnership and consultation with key stakeholders and communities; and
- promote a positive local identity.

To supplement the analysis of the draft *Integrated Community Facilities Plan*, the City commissioned Heather Nesbitt Planning to prepare the report entitled: *Asset Assessment and Development Plan for Community Facilities in Harbour Village Centre* in June 2010. This report was prepared by nationally recognised experts in community facility planning. The projected resident, worker and visitor population of Barangaroo will create increased demand for community infrastructure and facility provision. Both the draft *Integrated Community Facilities Plan* and the *Asset Assessment and Development Plan for Community Facilities in Harbour Village Centre* conclude that the following community facilities will be required in Harbour Village Centre by 2030:

Facility	Indicative Area
Multipurpose Community Centre	1,200m ²
New Indoor recreation centre (brief could include associated outdoor activities)	4,000m ²
Community Offices (6 offices and shared meeting space)	230m ²
Youth and Children's informal recreation facilities	4 facilities
Work based childcare	As per DCP
Integrated children and families centre with childcare	(65 centre place, offices, activity room)
Public outdoor gathering and meeting spaces with WiFi	As required

Proposal

The Concept Plan Modification includes provisions for 10,000m² of community uses GFA within Barangaroo South which includes:

- provision of the 'Cultural Centre' that forms the core cultural infrastructure and will feature public entertainment and leisure spaces facing the water;
- a potential gallery or similar facility within the base of the landmark building;
- flexible outdoor venues for city-scale events and activities such as outdoor performance, cultural events, outdoor exhibitions, fresh food markets, sport telecasts and events;

- public art will be a defining part of the environment giving the area a distinctive cultural identity and establishing Barangaroo South as an iconic and highly enjoyable city destination;
- multipurpose community hub and entertainment facilities, including uses such as a medical centres, child care facilities, early learning centres, a wellness centre and the like;
- a mix of open space, cultural spaces and community facilities which will allow individual cultural based recreational activities to become part of the way the area is experienced.

Conclusion

Whilst the square metre floor space allocation for community uses overall in Barangaroo is sufficient the proposal has the following key deficiencies:

- it does not provide an allocation for an indoor recreation facility;
- it proposes a large scale, iconic cultural facility to be located on site however there has been no actual analysis done to determine whether such a facility is actually needed or what its end use might be;
- the proposal includes a floor space allocation for community uses but has not actually provided indicative building envelopes for such spaces; and
- the proposal indicates that the community uses will be concentrated in Barangaroo South. This would impact significantly on the activation of the rest of the site and fails to take into consideration the needs of surrounding resident populations.

Recommendation 32:

That the Minister conditions any approvals so that:

- 1200m² (minimum) of the total proposed allocation of community GFA is allocated to providing a new integrated community facility to service the needs of existing and new residents, workers and visitors affected by the development. The current preferred location is at the existing site in Millers Point;
- 4,000m² of the total proposed allocation of community GFA be allocated to providing a new indoor recreation facility in either the Headland Park or Barangaroo Central to ensure complimentary use and activation of these spaces;
- 230m² of the total proposed allocation of community GFA be allocated to providing Community Offices (6 offices and shared meeting space);
- 1 children and family centre be provided that provides space for 65 children, offices and associated activity rooms;
- work-based childcare be provided in accordance with the CoS Childcare DCP;
- informal child and youth recreation spaces (4) be provided across the site; and
- Wi-Fi access is provided across the site.

5.19 Cultural facilities

A further cultural facility may be needed in Barangaroo and which has not been identified; however, the 'Cultural Centre' is not an agreed location or function.

Recommendation 33:

That the Proponent is requested by the Minister to:

- prepare a comprehensive audit of existing cultural facilities and identified future needs to ensure the facilities appropriateness and ongoing viability of any future planned cultural facility; and
- specifically allow for the inclusion, at a future stage, of a site for A National Museum of Indigenous Art and Culture north of the Southern Cove.

5.20 Sustainability

The City's commitment to Ecologically Sustainable Development (ESD) and its *Sustainable Sydney 2030* strategy has consistently informed previous submissions and discussions with the BDA and the Proponent regarding required sustainability outcomes at Barangaroo.

The City seeks a commitment from the State Government and the Proponent to work with the City, and potential partnering organisations, to deliver ESD outcomes.

Given that Barangaroo presents a key opportunity to become an international example of Sydney's commitment to environmental sustainability, and the limited potential of current officer level Technical Working Groups to deliver required outcomes, it is recommended that a leadership group be convened comprising representatives of the City, energy, water and waste authorities and the Department of Premier and Cabinet to deliver sustainability as a key outcome of the Barangaroo redevelopment.

The City specifically seeks the Proponent's commitment to deliver compatibility with, and the capacity to interconnect to, precinct scale:

- low carbon and renewable energy systems; and
- advanced waste and water collection and treatment systems.

Barangaroo is integral to the proposed low carbon zone in the City's northern CBD and should therefore have the ability to interconnect with any nearby city based decentralised utility scheme. The City requires the Proponent's commitment to provide an appropriate area in a basement location as district hub or base for green infrastructure including tri-generation, evacuated waste and water related infrastructure, and the commitment must be documented at the Concept Plan stage through approval conditions or other means.

Recommendation 34:

That the Minister conditions any approvals so that:

- the development has compatibility with, and the capacity to interconnect to, precinct scale low carbon and renewable energy systems, and advanced waste and water collection and treatment systems; and
- an appropriate area in a basement location as district hub or base for green infrastructure including tri-generation, evacuated waste and water related infrastructure is provided.

Recommendation 35:

That the Proponent is requested by the Minister to:

- address low carbon decentralised energy supply through establishment of a tri-generation district energy system capable of also supplying adjacent areas to the site and/or connection to one or more of the City's Low Carbon Zones tri-generation systems;
- identify how the development will supply 100% of its electricity requirements from local low carbon and renewable generation in accordance with Sustainable Sydney 2030;
- identify how the development will reduce CO₂ emissions by 70% in accordance with Sustainable Sydney 2030, or appropriate alternative provisions;
- identify how the development will incorporate ESD principles in the design, construction and ongoing operation phases of the development;
- address street and public domain LED lighting throughout the development;
- address water management for the site by including an "Integrated Water Management Plan" that achieves the objectives of water conservation through options that have the lowest carbon footprint. The plan should include the establishment of a non potable water network interconnected to one or more of the City's Low Carbon Zones non potable water networks, proposed end uses of potable and non-potable water, demonstration of water sensitive urban design and any water conservation measures;
- at least 20% of the development's operational greenhouse gas emissions (after reductions from energy efficiency or ESD measures and tri-generation) should be provided by onsite renewable energy; and
- address waste through the establishment of a segregated automated waste system interconnected to one or more of the City's Low Carbon Zones automated waste systems.
- identify the different proportions of recycled and non recycled waste and how waste will be utilised as a resource, particularly as a renewable gas resource to supply the tri-generation system(s).

6.0 Assessment of proposed amendments to the SEPP

The proposed amendments to the Concept Plan also require amendments to SEPP (Major Projects) 2005, the legislative framework within which this site falls under. An assessment of the proposed amendments follows:

Amendments to the following clauses are generally acceptable:

- Clause 2 – to the extent that it amends ‘*block of land*’, and inserts ‘*foreshore public domain works*’ and ‘*road infrastructure facilities*’;
- Clause 8 – Additional prohibited use included in the Mixed Use (B4) Zone: ‘*offensive storage establishments*’;
- Clause 9 – Additional permissible uses included in the Public Recreation (RE1) Zone: *business identification signage; filming; flood mitigation works; foreshore public domain works; moorings; passenger transport facilities; water bodies; water recreation structures*;
- Clause 11 – Amended reference to reflect current Exempt and Complying legislation (previously nominated the Council’s DCP), in line with current legislative requirements; and
- Clauses 1, 3-6, 12-17 and 19-21 which are not proposed to be amended.

However, the following proposed amendments are opposed:

1. Addition of a definition for remediation in clause 2

The proposed wording of this definition is:

remediation means:

(a) removing, dispersing, destroying, reducing, mitigating, containing or testing the contamination of any land, or

(b) eliminating or reducing any hazard arising from the contamination of any land (including by preventing the entry of persons or animals on the land).

The definition for remediation is normally held within *SEPP 55 – Remediation of Land*, and is almost identical to that proposed with the exception of the phrase ‘or testing’ proposed by the applicant.

Council opposes the inclusion of the phrase ‘or testing’ being included in the definition, because the testing of soils and ground water that is suspected of being contaminated should be included in any investigation phases of the site assessment process, and the information obtained used to prepare a remediation strategy for the site, not form the remediation of the site.

Where a complete clean up of the site is not feasible or on site containment of contamination is proposed, the need for carrying out a testing program should be part of an Environmental Management Plan (EMP), which will address the testing measures for

soil and ground water throughout an existing or proposed land use, by detailing the proposed monitoring strategy parameters to be tested, testing locations, frequency of monitoring and reporting required.

It is not sufficient that 'testing' for contamination is accepted as satisfaction of, or substitute for, actual 'remediation' of contamination.

The City also opposes the inclusion of the words "(including by preventing the entry of persons or animals on the land)", because the effect of the words is that remediation could be successfully undertaken by the applicant through the applicant simply erecting a fence to prevent persons or animals onto the contaminated land. It is the City's opinion that this is not an adequate measure to undertake and complete remediation, and therefore the words should be deleted.

2. Addition of a subclause 3, to Clause 7

Currently clause 7 (Land use zones) states:

(1) For the purposes of this Policy, land within the Barangaroo site is in a zone as follows if the land is shown on the Land Zoning Map as being within that zone:

(a) Zone B4 Mixed Use,

(b) Zone RE1 Public Recreation.

(2) The consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.

The proposed addition is:

(3) Notwithstanding clause 3 in Division 1 of this Part and subject to clause 10 in Division 3 of this Part, the provisions of Sydney Local Environmental Plan 2005 will continue to apply to that part of the Barangaroo site identified as Hickson Road within the Land Zoning Map. For the purposes of this clause, in the event of an inconsistency between any part of this Policy and Sydney Local Environmental Plan 2005, this Policy prevails to the extent of the inconsistency.

The City does not support the enlargement of the SEPP coverage to include Hickson Road, especially given the implication that planning jurisdiction will be transferred to the Minister under Part 3A rather than the local consent authority - the City of Sydney Council.

3. Additional permitted uses (c-f) in clause 10

Despite any other provision of this Policy, development for the following purposes on the following land may be carried out with development consent:

(c) road infrastructure facilities over Hickson Road that support and facilitate pedestrian access across Hickson Road.

(d) development for the purpose of remediation of land over Hickson Road and within the RE1 Public Recreation Zone.

As above, the City does not support the enlargement of the SEPP coverage to include Hickson Road.

(e) provision of porte-cochere, driveways and vehicular drop off facilities within the RE1 Public Recreation zone of part Lot 5 DP 876514, between Blocks X and Y for the purpose of servicing the functions of any tourist and visitor accommodation.

As discussed previously in this report, the provision of a porte-cochere and vehicular facilities between Block X and Y provides for unacceptable pedestrian conflict and poor urban design outcomes, and is not supported.

(f) canopies, wind amelioration and sheltering structures which may be attached to buildings located within the B4 Mixed Uses Zone and which extend into the RE1 Public Recreation Zone.

No specific concerns are raised to (f) above.

4. Amendment of clause 18 to reflect new block numbers

Clause 18, subclause (2) is proposed to read:

(2) Despite subclause (1), the total gross floor area of all buildings on a Block of Land marked "2", "3", "4a", "4b" and "4c" may exceed the gross floor area shown for that block on the Gross Floor Area Map if the total gross floor area of all buildings on those blocks combined does not exceed 428,932 square metres (being the sum of the gross floor areas shown for those blocks on that map).

The particular amendment is not opposed as it replaces an existing clause to the same effect. However attention is drawn to the possible outcome that a number of Blocks may be developed beyond their allocated GFA, but not to an amount greater than allowed by this clause, and then undeveloped Blocks have insufficient GFA to adequately satisfy the urban design controls. Each Block, and indeed each building within each Block, should be allocated a GFA without the possibility of GFA distribution. This unnecessarily leads to further confusion of the actual outcome from the suite of controls.

7.0 Assessment of proposed changes to the Instrument

The proposed Concept Plan amendments also require amendment to the Instrument of Approval (essentially the 'conditions of consent'). The proposed changes are assessed below:

Amendments to following conditions are acceptable:

- Condition A1 and A2 – to the extent that it amends drawing/document references to form part of the consent (notwithstanding that there are concerns about the proposed amendments themselves);
- Condition A4 – being the deletion of an irrelevant reference to a previously deleted clause;
- Condition B4 – to the extent that the additional definitions are inserted in accordance with the definitions under SEPP (Major Development);
- Condition B6 – being the confirmation that tourist uses are allowable up to a maximum of 50,000m², as previously required;
- Condition B7 – given it allows for community uses (up to 12,000m²) to be within mixed uses precinct or within the public domain and retains the minimum 2000m² of community uses to Block 6;
- Condition C1 – being the amendment of Block reference numbers and removal of obsolete references to the enlarged southern cove;
- Condition C3 – being the amendment of Block reference numbers only;
- Condition C5 – deletion of the requirement to provide a consolidated concept plan, as one has already been prepared; and
- Conditions A3, B1, B2, B3, C2, C4, C6, and C7 which are not proposed to be amended.

However concerns are raised to the following amendments:

- Condition A1 and B4 – the proposed increases to the GFA which are not supported for the reasons already expressed;
- Condition B4 – the amendments to clause 6 and 7 are only acceptable on the basis that the provisions are transferred to Condition B5, as proposed. This will ensure that the Built-Form Principles are referenced in the Instrument. Notwithstanding, the proposed Urban Design Controls themselves are not acceptable;
- Condition B5 – the removal of the requirement to amend the Concept Plan to provide greater pedestrian permeability and replace this with merely providing a comparison to the Urban Design Principles is not acceptable. For reasons already expressed, the amended Concept Plan does not provide adequate pedestrian permeability and this component of the amendment requires further resolution;

- Condition B8 – being an amendment to ‘not prohibit’ future Hickson Road pedestrian bridges. As above, The City does not support the enlargement of the SEPP coverage to include Hickson Road and the previous wording of B8 is acceptable;
- Condition B9 – the amendment to subclause 2 to the prohibition of connections between towers, currently prohibited over ‘public streets’ and proposed to be prohibited only over ‘primary public streets including Globe St, Margaret St West and ‘City Walk’’. This submission makes recommendations about these links and amended urban design principles should be required;
- Condition B9 – deletion of subclause 4 which currently requires podiums to be green and accessible. The deletion of this condition is without planning justification, is contrary to the fundamental principles of *Sustainable Sydney 2030*, and unacceptable; and
- Condition B9 – the amendment to subclause 5 seeks to delete previously approved allowance of a 10% variation to specific numerical controls from:
 - The maximum horizontal dimension of a tower fronting Globe Street and Hickson Road not exceeding 25m on Block 2;
 - The maximum horizontal dimension of a tower fronting Globe Street and Hickson Road not exceeding 20m on Block 3-4; and
 - The maximum horizontal dimension of a tower fronting Napoleon Street, Bull Street and Healy Street not exceeding 60 m on Block 3-4;... and transferring this allowance of a 10% variation to the full suite of controls, including podium heights, street wall heights, setbacks and tower separation to Block 5, to be assessed on merit subject to Block 5 incorporating a signature building arising out of international best practice, is not acceptable. Further variations to already inconsistent building envelope controls and desired GFA outcomes adds to the uncertainty of the outcomes of this proposal; and

In addition, it should be an absolute expectation that all buildings arise out of international best practice and no further variations should be provided as an incentive:

- Condition B10 – proposed to be renumbered to B9 as an administrative renumbering exercise. The renumbering is not required.

8.0 Assessment against SREP (Sydney Harbour Catchment)

In accordance with Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (SREP), the land located adjacent to Barangaroo is zoned W1 Maritime Waters.

The intended use of Lot Y (which will occupy the W1 Maritime Waters zone) is to erect a 40 storey hotel tower/pier with a ground floor restaurant, bar, hotel lobby and public gallery. In accordance with the SREP, the hotel would be defined as a ‘tourist facility’ and the ground floor restaurant/bar would be defined as a ‘water-based restaurants and entertainment facilities’. The definitions of each of these uses in the SREP are as follows:

tourist facility means a building or place, such as a hotel or motel, used by tourists or holiday-makers for the purposes of holiday accommodation, sport or recreation, and includes:

- (a) shops attached to or incorporated within the building or located at the place, and
- (b) other facilities serving the needs of tourists and holiday-makers using the building or place, but does not include a caravan park.

water-based restaurant and entertainment facility means a vessel or structure that floats on, or is fixed in, the waterway, that is used as a club or restaurant or for entertainment (on a commercial basis) and that has a direct structural connection between the foreshore and the waterway.

In accordance with Clause 18(1)(c) of the SREP, the proposed hotel with ground floor restaurant/bar are prohibited uses (indicated by the letter ‘N’) as outlined in the following extract:

18 Development control in the waterways

(1) Except as otherwise provided by this plan, in relation to land within a zone to which a column of the Table to this clause applies:

- (a) the development (if any) that may be carried out without development consent is indicated by the letter “P”, and
- (b) the development (if any) that may be carried out only with development consent is indicated by the letter “Y”, and
- (c) the development (if any) that is prohibited is indicated by the letter “N”.

Table

	W1	W2	W3	W4	W5	W6	W7	W8
Tourist facilities	N	N	N	N	N	N	N	N
Water-based restaurants and entertainment facilities	N	N	N	N	N	N	N	N

On the basis of Clause 18(1)(c), the proposed amendment to the Concept Plan to allow Lot Y to be built for the purpose of a hotel use with ground floor restaurant and bar are prohibited by the SREP and should not be approved.

The intended use of proposed Lot Y (as a tower hotel with ground floor restaurant and bar) is also contrary to the following aims of the SREP Sydney Harbour Catchment:

(a) to ensure that the catchment, foreshores, waterways and islands of Sydney Harbour are recognised, protected, enhanced and maintained:

- (i) as an outstanding natural asset, and*
- (ii) as a public asset of national and heritage significance,*
for existing and future generations,

(b) to ensure a healthy, sustainable environment on land and water,

(c) to achieve a high quality and ecologically sustainable urban environment,

(e) to encourage a culturally rich and vibrant place for people,

(f) to ensure accessibility to and along Sydney Harbour and its foreshores,

The new lot is to occupy what is currently a public asset of national and heritage significance and is proposed primarily to house a privately operated hotel. While a part of the new lot will be a public pier, most of the ground level will be occupied by a commercial restaurant/bar. The Rogers Stirk Harbour + Partners *Indicative Design – Ground Level* refers to the ground floor as a ‘cultural space’ whilst at the same time their accompanying written document states that the ground floor will contain a ‘new public gallery area, a lobby bar and all-day dining restaurant’ which is inconsistent.

The City strongly contests the assertion that such uses are predominately for a genuine cultural use as opposed to a private commercial venture. The City also strongly contests that a 40 storey hotel, casting extensive shadows upon the harbour foreshore at critical times of the day/year and an associated vehicular drop and pick up zone that protrudes into a busy pedestrian promenade, can generate a high quality and ecologically sustainable urban environment.

The proponent’s justification for Lot Y and associated private hotel/restaurant does not address the aims and zoning controls of the SREP in anyway - nor does it does it address the following principles that enable the aims to be achieved, namely:

(a) Sydney Harbour is to be recognised as a public resource, owned by the public, to protected for the public good;

(b) The public good has precedence over the private good whenever and whatever change is proposed for Sydney Harbour or its foreshores;

(c) Protection of the natural assets of Sydney Harbour has precedence over all other interests.

9.0 Recommendations

Planning Assessment Commission 'Review of Recommendation' 2009

Recommendation 1.

That the Planning Assessment Commission (PAC) is requested by the Minister to:

- review any recommendations by the Director-General associated with this application and the SEPP amendment request, prior to any determination by the Minister of either request. This is entirely consistent with the previous role of the PAC in considering issues, in particular the nexus between committed public transport capacity and the likely trip generation by employment, visitor, retail and residential uses; and
- consider this and any other submission by the City of Sydney in reviewing or determining any recommendation by the Director-General;
- consider the merit of sub-stages to allow sequenced determinations.

Disparity in GFA, diagrammatic buildings and Block Envelopes

Recommendation 2:

That the Proponent be requested by the Minister to revise their diagrammatic building shape drawings to more accurately reflect the maximum GFA being sought and, or failing this, to revise the Block Envelopes to more closely match the GFA requested (and if amended, the diagrammatic building shapes) prior to the determination of the Concept Plan modification or any sub-stage of the application.

Traffic and public transport

Recommendation 3:

The Department of Planning undertake or require, prior to finalisation of the Director-General's Environmental Assessment Report:

- a thorough analysis of the likely timing and delivery of long term public transport improvements including heavy rail corridors into the Central Sydney (Metro projects included), capacity and access upgrade to Wynyard Station and light rail provision and ensure that the approval and delivery of various buildings within the Barangaroo urban renewal site harmonize with those projects; and
- further resolution and detailed design of the Kent Street underground link (Barangaroo Pedestrian Link) and along with heavy rail expansion, be contractually committed to prior to any further increase in GFA being granted.

Recommendation 4:

That the Proponent is requested by the Minister to:

- commit to upgrades to the footpaths on surface streets such as Erskine Street, Margaret Street and Napoleon Street by the proponent through the process of a Voluntary Planning Agreement (VPA). Such work/VPA should involve the City of Sydney as land owner;
- amend the current Project Application for basement car parking in Barangaroo South to accommodate a bus layover (provided this is in accordance with TNSW agreed requirements). Alternatively, if this is not possible from a structural engineering perspective within Barangaroo South, the Barangaroo Delivery Authority should be made responsible to include the bus layover within the remainder of the Barangaroo site which is yet to be designed in detail; and
- commit to developing a new TMAP based on the outcomes of the light rail study (which includes associated surface transport works).

Recommendation 5:

That the Proponent is requested by the Minister to:

- justify the lower trip generation rates (despite the significant increase in off-street car parking). Such justification should be required prior to determination of the application to modify the approved Concept Plan; and
- justify the end of trip facilities and how they relate to each building, but also whether there will be capacity for a public bike hire facility and where it would be located.

Recommendation 6:

The Department of Planning consider the requirement for:

- additional signals at the new Napoleon Street/Hickson Road intersection to facilitate access to the underground car-park. These signal requirements need to be reflected in an amended application; and
- further justification from the Proponent for the low trip generation rates used.

Revised built-form principles

Recommendation 7:

That the Proponent be requested by the Minister to amend the built-form principles according to recommendations in **Table 1** of the City of Sydney submission.

Urban design controls

Recommendation 8: (extension of Recommendation 2)

That the Proponent be requested by the Minister to amend Block Envelopes to more closely reflect the built form generated by GFA and other Urban Design Controls to enable

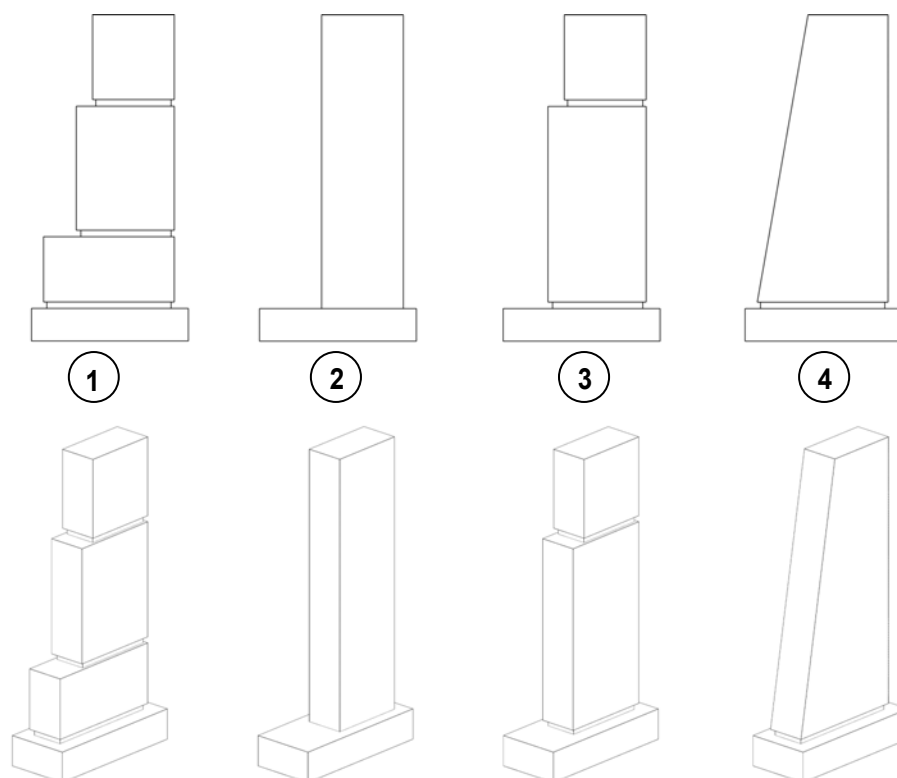
an assessment of the proposed Concept Plan amendments as required under DGR (2) Urban design, development controls and land uses, and DGR (3) View Impacts. Block Envelopes should be allocated a maximum GFA.

Bulk and scale of office towers

Recommendations 9:

That the Minister require redesign or condition any approval to:

- reduce the visual and environmental (wind and overshadowing) impact of all buildings over 45m high and which exceed 60m in length. Any amendment to the concept plan should be conditioned to require towers to:
 - provide an average 8m setback from streets above podiums as outlined in *scale and character of streets*;
 - provide an elegant building form. This may be achieved by modulation in floor plate area with a form that reduces in bulk as height increases, for example based on 25m wide floor plate (excluding external core area):
 - up to RL60 (above ground) maximum length 80m;
 - from RL60 – RL120 (above ground) maximum length 60m;
 - from RL120 and above maximum length 50m and max 1400m² FSA per level.



Recommendation 10:

That the Minister require redesign or condition any approval to:

- increase minimum podium height consistent with Central Sydney DCP requirements to ensure that wind impacts of tall buildings are mitigated. The Central Sydney DCP requires podiums to provide a street wall height of 20m – 45m. Podium heights for commercial buildings C3, C4 and C5 should be established at a datum of approximately RL25 to relate to the scale of the streets and surrounding buildings. Refer to *Scale and character of streets* for recommendations on specific podium and building heights.

Table 3. Building Height Recommendations

Block	Approved	Land Lease Request	City Recommendation	Comment & Recommendations
1	RL62	RL80	RL80	No objection raised: The increase in maximum height is generally acceptable from an urban design perspective provided that the height is distributed to preserve sunlight access to surrounding buildings and spaces. Issues arise with the form of the proposed envelope and site boundary conditions – refer to Public Domain Definition for comment.
2	RL180	RL180	RL180 C2: 33.2m C6: 33.2m <u>Diminishing floor plates:</u> C4: 180m (envelope) C4: 173m (roof) C5: 140m (envelope) C5 133m (roof)	Recommended changes: No increase is proposed, however due to the increased length of the proposed buildings (reflecting an increase in overall GFA), the impact of the buildings is increased. A reduction in height to building C5 to RL140 is required to reduce its overshadowing and amenity impacts on surrounding foreshore and wharf development. Subject to a reduction in height of C5, the max envelope height of C4 can be RL180. All towers are to reduce in floor area as height increases with a maximum FSA of 1400m ² above RL120
3	RL113	RL209	RL220 C1: 33.2m C7: 33.2m C8: 33.2m <u>Diminishing floor plate:</u> C3: 220m (envelope) C3: 213m (roof)	Recommended changes: Provided hotel is removed, C3 could be an alternative landmark (but only with a tapering profile) and be increased by 11 metres to max envelope of RL220, roof RL213. Podium to RL25, wall length no greater than 80m to RL60, wall no greater than 60m to RL120, no greater than 50m above RL120 or 1400m ² FSA. C7 to be reduced in height to RL33.2 to preserve views.
4A	RL100	RL41.5	R2: 28m (predominant) R2: 35m (for 25% of footprint area)	Not supported: The heights proposed for foreshore buildings are inappropriate to the scale of the foreshore public domain and surrounding buildings. A reduction in the <i>maximum</i> height to RL35, with a predominant height of approximately RL28 is recommended for Blocks X and 4A (heights excluding plant etc). Refer to Scale and character of streets for comment.
4B	RL100	RL175	R3: 175m R11: 33.2m R10: 33.2m	Recommended changes: Subject to further design work on forms and height distribution north of Globe Street. The maximum height in Block 4B should be less than the height of the commercial tower C3 in Block 3 in order to provide transition in building height downwards to the north.
4C	RL100	RL160	R4, R5, R6: 100m	Not supported: A 60m increase in height is proposed north of the cove. This is inconsistent with the approved Built-Form Principles for the site and results in an urban form inconsistent with the form of the City. The proposed height

				increase results in an unacceptable increase in overshadowing to the southern cove foreshore public domain. Refer to <i>Amenity of waterfront public space</i> for comment.
X	-	RL41.5	R1: 25 R8: 28m (part floor) R8: 35m (for 25% of footprint area) R9: 28m (part floor) R9: 35m (for 25% of footprint area)	Not supported: The heights proposed for foreshore buildings are inappropriate to the scale of the foreshore public domain and surrounding buildings. A reduction in the <i>maximum</i> height to RL35, with a predominant approximate height of RL25 and a part level (75% footprint) to RL28 is recommended for Blocks X and 4A (heights excluding plant etc). Refer to <i>Scale and character of streets</i> for comment.
Y	-	RL170	NA	Not supported: Based on the urban design impacts of development in the proposed Block Y. Refer to <i>Amenity of waterfront public space</i> for comment.

Recommendation 11:

That the Minister require a redesign or condition any approval in relation to the commercial towers:

- achieve an increased variation in height between the three towers to reduce the overall bulk of their combined form and provide a variety to the skyline consistent with that of the existing city context; and
- amend the distribution of height to reduce the height of the southernmost commercial tower to improve sunlight access to the King Street Wharf precinct as set out in **Table 3. Building Height Recommendations**.

Recommendation 12:

The Department of Planning consider the requirement for:

- more robust urban design controls to ensure adequate articulation of large buildings, particularly where elevations are visible for long distances such as the southern elevation of building C5; and
- more detailed building envelopes and a wind tunnel assessment for the entire Barangaroo South development should be provided before finalizing the Preferred Project Report. This assessment should amend the revised envelopes and ensure that the appropriate environmental quality of new public domain areas is able to be obtained without relying on intrusive architectural elements such as screens, roof structures and revolving doors.

Building height modifications

Recommendation 13:

That the Proponent be requested by the Minister (in relation to all buildings) to amend maximum building and block heights to reflect changes outlined in **Table 3. Building Height Recommendations**

View impact analysis

Recommendation 14:

That the Minister condition any approval to preserve Margaret Street and Grosvenor Street view corridors. These recommendations will be confirmed pending completion of City of Sydney's view impact analysis, but may include:

- reducing heights of building C7 to max RL33.2 to preserve a future view corridor from Grosvenor Street to the west;
- realigning Margaret Street West to match the existing Margaret Street; and
- rotating commercial tower C5 on its southeast corner to align parallel with Margaret Street West to preserve the street-width view corridor.

Recommendation 15:

That the Minister require the Proponent to provide an adequate view impact assessment using human eye focal lengths (50mm at 35mm FX format and 46° angle of view) from long range, medium range and short range positions so that they can be assessed with respect to visibility, visual absorption capacity and visual impact rating.

Preliminary view impact assessment

Recommendation 16:

That the Minister require the Proponent to redesign the development on Block 4 so that development be kept close to Hickson Road and located as far east and south as feasible to control impacts on existing views, and any development should not exceed RL100 north of the Southern Cove so as to control the impact on the historic views from the public domain in Millers Point Conservation Area.

Recommendation 17:

That the Minister disapprove the proposed tower/pier building (Block Y) on the basis of its impact upon the natural landscape qualities of Darling Harbour and non-compliance with Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005.

Recommendation 18: (relates to Recommendation 14)

That the Minister condition any approval so as to align Margaret Street West with Margaret Street (including matching width) and to rotate the commercial building C5 on Block 2 to be parallel with the street.

Public domain definition

Recommendation 19:

That the Minister condition any approval so as to reduce the building envelope heights for Blocks X and 4A to allow a parapet height of RL25 with a setback floor above it for 75% of the area of the floor below to RL28 (6 + 1 storey) and a maximum height for articulation of

RL35 (8+1 storeys) which is no greater than 25% of the building footprint area. Heights exclude roof plant etc.

Recommendation 20:

That the Minister condition any approval so as to:

- amend the proposal to ensure that buildings in Block X align with the east and west edges of existing King Street Wharf buildings. This requires the proposed building envelopes to move approximately 6m towards the foreshore;
- amend the alignment of Globe Street to continue in a straight alignment from Lime Street; and
- provide a continuous alignment for Shelley Lane by amending the setback/location of buildings R3 and R11.

Recommendation 21:

That the Minister requests the Proponent to:

- delete the proposed 'cultural centre' in 'Globe Square' and further develop the building edges framing the square; and
- investigate a suitable site for a National Centre for Indigenous Art and Culture involving consultation with the Aboriginal Cultural Centre Working Group; and
- negotiate the proposed Block 1 building and site boundary conditions to provide a regular building form. This may require a joint venture or site amalgamation strategy.

Amenity of waterfront public space

Recommendation 22:

That the Minister disapproves the following modifications and requires a new design solution for:

- the proposed tower/pier in the Harbour due to unacceptable overshadowing, wind impacts (and visual impacts) on the waterfront promenade. Alternative locations for a hotel use should be considered within the existing site area; and
- Block 4C which is unacceptable due to the overshadowing impact on the Southern Cove. The proposal should be amended to locate taller development closer to Hickson Road, minimising afternoon shadows on the Southern Cove public domain.

Recommendation 23:

That the Minister disapproves the following modifications:

- vehicular access across the waterfront promenade; and
- the driveway undercroft space at the northern end of building R8.

Street hierarchy and permeability

Recommendation 24:

That the Minister condition any approval so that:

- the lobby/galleria connections through Blocks 2 and 3 be public pedestrian lanes, open to the sky and accessible 24 hours a day;
- additional pedestrian through-site links should be provided through buildings R2/R3 (Block 4A), and building R8 (Block X); and
- the east-west pedestrian link through Block 3 should move northwards to provide more space (and podium) around C3, and continue on a straight alignment through to the waterfront promenade and Southern Cove.

Scale and character of streets

Recommendation 25:

That the Proponent be requested by the Minister to require street widths as in Table 6:

- increase the width of Globe Street from 15m to 18m;
- increase the width of Shelley Lane from 4m to 6m minimum (8m preferred);
- ensure that the public pedestrian routes east-west through Blocks 2 and 3 have a minimum width of 8m and 'City Walk' from 12m to 15m;
- ensure generally uniform podium heights are established at approximately RL25 where podiums form the base to towers (Blocks 2 and 3), consistent with the City street wall controls;
- ensure that the three commercial towers are generally set back an average of 8m and a minimum of 6m from podium edges; and
- basements are contained beneath street blocks, but may be connected by tunnels for circulation. Tunnels connections should be set down 1.5m below the finished ground level.

Table 6. Street Width Recommendations

Reservation Width	Approved	Proposed	Recommended
Margaret Street West	20m	18m	18m
Napoleon Street	20m	15m	18m
City Walk	30m	12m	15m
Globe Street	20m	15m	18m
Healey Street	16m	12m	12m
Bull Street	N/A	6m	6m

East West Streets / lanes	16m	-	8m x 2 pedestrian lanes
Public Waterfront	Min. 60m	27m	24m approx (to align with King Street Wharf, refer to Part 2.8) and allow for timber boardwalk up to 6 metres
Shelley Street (Lane)	20m zone	4m	6m (8m preferred)

Hickson Road Boulevard Trees

Recommendation 26:

That the Proponent is requested by the Minister to:

- clarify retention of the Fig Trees along the western side of Hickson Road; and
- incorporate the retention of the Fig tree avenue, and enhancement of pedestrian and bicycle movements thorough widening of footways and introduction of bicycles paths wherever possible.

Recommendation 27:

That the Proponent be requested by the Minister to prepare a Tree Management Plan which must include the following:

- an assessment of the final design of the development;
- identify constraints and new planting opportunities for tree planting (and retention);
- consider the impacts of the design including the areas use (park vs. street), views, built form constraints (including awnings), soil type and the availability of root zone growth, to determine a preliminary tree species palette;
- prepare a tree supply contract to ensure stock quality, timing and availability with nursery. Trees must be grown to NATSPEC Guidelines for Specifying Trees to ensure quality trees and more successful establishment;
- provide a final proposed planting palette. The final proposed palette should then be referred to the City team for review and approval;
- tree planting specification – incorporating best practise planting techniques (e.g. continuous trenching, Water Sensitive Urban Design etc);
- prepare a tree establishment and maintenance specification (including irrigation during establishment and the implementation of a programmed maintenance schedule to ensure trees are regularly assessed by qualified staff to the very best arboricultural standards); and
- criteria for relocating existing healthy trees.

East-west connections over Hickson Road

Recommendation 28:

That the Proponent is requested by the Minister to:

- Preserve the opportunity for a connection from Barangaroo through to Grosvenor Street via the Kent Street underpass (at 189 Kent Street) should be preserved in the concept plan. Building heights at the north end of Block 3 may need to be revised to provide the view corridor.
- Ensure that the Margaret Street West pedestrian bridge is delivered to connect workers arriving at the southern end of the site to the new Wynyard tunnel, and carry out further investigation to determine the appropriate location of this bridge.

Public domain plan

Recommendation 29:

That the Proponent is requested by the Minister to:

- prepare a whole-of-site Public Domain Plan which is to be lodged together with the Barangaroo South Public Domain Plan, to ensure that objectives and strategies are coordinated across the site; and
- ensure that the Barangaroo South Public Domain Plan be amended to reflect the City's comments (Refer to **Appendix B** to this report).

Design Excellence

Recommendation 30:

That the Minister require by condition of approval that:

- All foreshore and/or residential buildings other than R7 be the subject to design competitions conducted in accordance with Central Sydney DCP (or its successor)
- The Ferry Wharves are the subject of an alternative design solution process
- The commercial towers C3, C4, and C5 may be excused from the requirement for a competition provided they are designed and detailed by Rogers Stirk Harbour + Partners

Housing Affordability

Recommendation 31:

That the Minister condition any approval requiring that a minimum of 10%, but preferably 20% of all new housing should be affordable housing across the site, and the location of all affordable housing should be nominated at the Concept Plan stage. Building C1 on Hickson Road is recommended for this use.

Community facilities

Recommendation 32:

That the Minister conditions any approvals so that:

- 1200m² (minimum) of the total proposed allocation of community GFA be allocated to providing a new integrated community facility to service the needs of existing and new residents, workers and visitors affected by the Barangaroo development;
- 4,000m² of the total proposed allocation of community GFA be allocated to providing a new indoor recreation facility in either the Headland Park or Barangaroo Central to ensure complimentary use and activation of these spaces;
- 230m² of the total proposed allocation of community GFA be allocated to providing Community Offices (6 offices and shared meeting space);
- a children and family centre be provided that provides space for 65 children, offices and associated activity rooms;
- work based childcare be provided in accordance with the City of Sydney Childcare DCP;
- informal child and youth recreation spaces (4) be provided across the site; and
- Wi-Fi access is provided across the site.

Cultural facilities

Recommendation 33:

That the Proponent be requested by the Minister to prepare a comprehensive audit of existing cultural facilities and identified future needs to ensure the facilities appropriateness and ongoing viability of any future planned cultural facility.

Sustainability

Recommendation 34:

That the Minister conditions any approvals so that:

- the development has compatibility with, and the capacity to interconnect to, precinct scale low carbon and renewable energy systems, and advanced waste and water collection and treatment systems; and
- an appropriate area in a basement location as district hub or base for green infrastructure including tri-generation, evacuated waste and water related infrastructure is provided.

Recommendation 35:

That the Proponent is requested by the Minister to:

- address low carbon decentralised energy supply through establishment of a tri-generation district energy system capable of also supplying adjacent areas to the site and/or connection to one or more of the City's Low Carbon Zones tri-generation systems;

- identify how the development will supply 100% of its electricity requirements from local low carbon and renewable generation in accordance with Sustainable Sydney 2030;
- identify how the development will reduce CO₂ emissions by 70% in accordance with Sustainable Sydney 2030, or appropriate alternative provisions;
- identify how the development will incorporate ESD principles in the design, construction and ongoing operation phases of the development;
- address street and public domain LED lighting throughout the development;
- address water management for the site by including an “Integrated Water Management Plan” that achieves the objectives of water conservation through options that have the lowest carbon footprint. The plan should include the establishment of a non potable water network interconnected to one or more of the City’s Low Carbon Zones non potable water networks, proposed end uses of potable and non-potable water, demonstration of water sensitive urban design and any water conservation measures;
- at least 20% of the development’s operational greenhouse gas emissions (after reductions from energy efficiency or ESD measures and tri-generation) should be provided by onsite renewable energy;
- address waste through the establishment of a segregated automated waste system interconnected to one or more of the City’s Low Carbon Zones automated waste systems; and
- identify the different proportions of recycled and non recycled waste and how waste will be utilised as a resource, particularly as a renewable gas resource to supply the tri-generation system(s).



Appendix A

Chronology of Development Events – Barangaroo

Chronology of Development Event – Barangaroo

2005	An international urban design competition for the East Darling Harbour site (now known as Barangaroo) was held, attracting 139 entries from around the world.
March 2006.	The winning design by Hill Thalys Architecture + Urban Projects, Paul Berkemeier Architects and Jane Irwin Landscape Architecture was announced, and jury comments about changes needed recorded.
27 March 2006	Date Declared Potential State Significant Site
30 June 2006	DGRS Issued for a Concept Plan for Barangaroo
19 Oct 2006	Exhibition of the Concept Plan (MP06_0162)
9 Feb 2007	<p>Concept Plan Approval (MP06_0162)</p> <p>The Barangaroo Concept Plan (based on the winning Hill Thalys scheme) was prepared by the Sydney Harbour Foreshore Authority and approved by the Minister for Planning. The Concept Plan, as originally approved on 9 February 2007, was subject to conditions and allowed for:</p> <ul style="list-style-type: none">- a mixed use development involving a maximum of 388,300m² gross floor area (GFA), contained within 8 blocks on a total site area of 22 hectares, comprising of:- a maximum of 97,075 m² and a minimum of 58,245 m² residential GFA;- a maximum of 50,000m² GFA for tourist uses;- a maximum of 39,000m² GFA for retail uses; and- a minimum of 2,000m² GFA for community uses;- a maximum of 8,500m² GFA for a passenger terminal and a maximum of 3,000m² GFA for active uses that support the public domain within the public recreation zone;- approximately 11 hectares of new public open space/public domain, with a range of formal and informal open spaces serving separate recreational functions and including a 1.4km public foreshore promenade;- maximum building heights and maximum GFA for each development block within the mixed use zone; and- public domain landscape concept, including parks, streets and pedestrian connections. <p>A condition of approval of the original Concept Plan approval also required two enlarged water intrusions into the Barangaroo site, one at the northern end and one at the southern end and the creation of a natural northern headland.</p>

9 Aug 2007	Concept Plan Modification 1 request
25 Sept 2007	Concept Plan Modification 1 approval (MP06_0162 MOD 1) which corrected a number of minor typographical errors.
12 Oct 2007	Land rezoned to facilitate its redevelopment and Approval of Barangaroo Schedule 3 listing
15 Nov 2007	Approved granted for demolition of existing structures on Barangaroo
April 2008	The Barangaroo South bid - Stage 1 Expression of Interest released
25 June 2008	Concept Plan Modification 2 – DGRs issued (MP06_0162 MOD 2) Concept Plan Modification 2 – Lodgement of application
September 2008	The Barangaroo South bid - Shortlist of 3 proponents (including Lend Lease) announced and invited to participate in the Stage 1 Request for Detailed Proposals (RFDP)
October 2008	Concept Plan Modification 2 – Preferred project report prepared (MP06_0162 MOD 2)
16 Jan 2009	Concept Plan Modification 3 – Lodgement of application
16 Feb 2009	Concept Plan Modification 2 approval (MP06_0162 MOD 2) The approved Concept Plan (as modified) allowed for a mixed use development involving a maximum of 508,300m ² of gross floor area (GFA) contained within 8 blocks on a total site area of 22 hectares.
7 Sept 2009	Concept Plan Modification 3 – Preferred project report prepared (MP06_0162 MOD 3)
11 Nov 2009	Concept Plan Modification 3 approval (MP06_0162 MOD 3) (Headland Park and Northern Cove) The Minister for Planning approved Modification No. 3 to the Concept Plan to allow for a modified design for the Headland Park and Northern Cove. The approved Concept Plan (as modified) allowed for a mixed use development involving a maximum of 489,500m ² of gross floor area (GFA) contained within 7 blocks on a total site area of 22 hectares. The 22 hectare Barangaroo site has been divided into three distinct redevelopment areas (from north to south) – the Headland Park, Barangaroo Central (i.e.: Blocks 5, 6 and 7) and Barangaroo Stage 1 (also known as Barangaroo South).

24 Nov 2009	Approval of Part 4 Development application (DA 109-11-2009) for Temporary Walkway, Amenities and Signage
20 Dec 2009	The Barangaroo South bid - Lend Lease successfully appointed as the preferred proponent to develop Barangaroo South
19 Feb 2010	Request for the issue of DGRs for 5 major project applications: <ul style="list-style-type: none"> • MP10_0026 - Remediation and land forming works - DECCW declared area • MP10_0025 - C4 Commercial Building • MP10_0022 - Demolition and site establishment works • MP10_0024 - C1 Commercial Building • MP10_0023 - Bulk excavation and basement car parking - Blocks 1-3
23 March 2010	DGRs Issued: <ul style="list-style-type: none"> • MP10_0026 - Remediation and land forming works - DECCW declared area • MP10_0025 - C4 Commercial Building • MP10_0022 - Demolition and site establishment works • MP10_0024 - C1 Commercial Building • MP10_0023 - Bulk excavation and basement car parking - Blocks 1-3
6 May 2010	DGRs Issued: <ul style="list-style-type: none"> • MP10_0047 - Headland Park and Northern Cove - Early Works; and • MP10_0048 - Headland Park and Northern Cove - Main Works
2 July 2010	DGRs issued MP06_0162 MOD 4 (Hotel development, additional GFA and Height)
7 July 2010	Exhibition of MP10_0023 - Bulk excavation and basement car parking - Blocks 1-3
14 July 2010	Exhibition of MP10_0047 – Headland Park Early works
11 Aug 2010	Exhibition of MP06_0162 MOD 4 (Hotel development, additional GFA and Height)
<hr/>	
As of 15 September 2010	MP10_0023 - Bulk excavation and basement car parking - Blocks 1-3 - Proponent Reviewing Submissions
	MP10_0047 - Headland Park and Northern Cove - Early Works Proponent Reviewing Submissions
	MP06_0162 MOD 4 (Hotel development, additional GFA and Height) Exhibition



Appendix B

Barangaroo Public Domain Plan July 2010

BARANGAROO PUBLIC DOMAIN PLAN (JPW / PWP) July 2010

General Comments

- A public domain plan is required under Commitment 7. The document provided is structured as a “Response to Statement of Commitments”. It is understood that this initial document will require development as the design process continues, however a Public Domain Plan for the whole site is required at this stage. It should capture broad vision statements and whole-of-site strategies at this early stage, which can be developed and filled out with more detail as the project continues.
- The Vision statement (page 4) only addresses the Headland Park. This statement should articulate the vision for the whole site, its relationship with the city and the harbour, the relationship between open space and built form, the three precincts, the naturalised headland, etc. The vision statement should refer to the visioning process initiated by BDA at the start of the Barangaroo project.
- The plan needs to articulate public domain strategies for the whole site, not excluding Barangaroo South. Whilst additional detail is provided in the Barangaroo South sub-plan, this document needs to outline whole-of-site strategies and explain how they are implemented in each of the three precincts.
- The Public Domain Plan includes the “Governing Principles” but does not provide any response to how these principles are achieved in the plan – an important part of explaining the overall public domain design intent. Diagrams and text are required to illustrate how each of the Governing Principles is to be achieved on a whole-of-site basis.
- The Public Domain Plan should provide the framework for a coordinated approach to public domain design across the site (including materials, fixtures, planting) to provide for manageable ongoing maintenance of the site.
- An Access Strategy needs to be incorporated in the Public Domain Plan, ensuring adequate and equitable access across the site.
- There is a lack of consistency internally in the document, and between the Barangaroo Public Domain Plan and the Barangaroo South Public Domain sub-Plan, eg. The description of Shelly Street – this document calls it “Shelly Street” and describes it as a “pedestrian walk”, a “pedestrian promenade” and “pedestrian laneway”. The Barangaroo South Public Domain plan calls it “Shelly Lane” and describes it as a “retail pedestrian laneway”.
- The two documents do not reflect each other in structure – the overall Public Domain Plan should identify whole-of-site strategies, and the sub-plans should refer to these and explain their implementation in terms of specific spatial elements.
- The Statement of Commitments (14) requires the Public Domain Plan to incorporate a Public Art Strategy. This draft of the Public Domain Plan refers to a separate Public Art Strategy document but does not reflect any intention for the integration of public art in the design of the public domain. This approach undermines the purpose of Commitment 14 and does not reflect Governing Principle 12.0 *Public art and heritage interpretation* which requires “that the design and location of public art and heritage interpretation are

incorporated in the overall public domain design approach to produce a cohesive experience of the place”.

- The Public Domain Plan makes no reference to heritage interpretation or Indigenous culture and does not reflect Governing Principles (12), which requires public art and heritage interpretation to be addressed as an integrated strategy, and requires liaison with “the City of Sydney Public Art Committee and the ATSI (Aboriginal and Torres Strait Island) Advisory Panel in the development of public art and interpretation strategies and designs.
- The plan includes indicative levels for the Headland Park as required under Commitment 13. The levels indicate that Headland Park will rise to 4m above the existing ground level at Merriman Street – precluding views from the existing public domain across the headland. This is inconsistent with Director General’s Requirements for the Headland Park (DGR 4 requires “views over the Headland Park are to be maintained, particularly from adjacent streets and public open spaces”).

With the concept plan modification application imminent, clearly many of the issues above will not be able to be adequately addressed in the submitted document. Where further input or work is required it is suggested that the document include a heading, and reference to the future input. We recognise that a proper Public Domain Plan/ Strategy is required, the framework for this document should be provided to the Technical Working Group for review as soon as possible. A Public Domain Plan/Strategy for the whole site would demonstrate how Barangaroo is integrated with the adjacent precincts and the City, including open space, pedestrian and cycle links, public art and heritage interpretation, materials and vegetation.



Appendix C

Indicative Floor Area Analysis

Floor Area Analysis

The following table compares the floor areas (GFA) stated in the proponent's reports with the areas shown in their drawings as well as the area which could potentially be achieved within the Block Envelopes for which approval is sought.

Methodology

The Stated Maximum GFA figures are taken from the proponent's report, Section 5.2.6 Gross Floor Area Table 3 pg.50.

The Indicative Building GFA figures are taken from measuring the drawings and counting the floors shown in the 3D drawings which appear in the Urban Design Statement.

The Block Envelope GFA uses the Block plans (Figure 13, pg 34) and the maximum RLs and road alignments shown in the Urban Design Statement.

Block	Block Area (Site Area)	Indicative Floor Plate Area ⁽¹⁾	Maximum RL ⁽²⁾	Stated Maximum GFA ⁽³⁾	Indicative Building GFA ⁽⁴⁾	Discrepancy Between Stated and Indicative ⁽⁵⁾	Block Envelope GFA ⁽⁶⁾	Discrepancy Between Stated and Block Envelope ⁽⁷⁾
1	1,710	755	80	9,400	12,680 ⁽⁸⁾	135%	15,545	165%
2	17,480	12,320	33.2 in part 180 in part	209,213	224,040	107%	300,000 ⁽⁹⁾	143%
3	11,395	8,050	33.2 in part 209 in part	142,669	155,590	109%	215,870	151%
4A	2,630	1,610	41.5	8,150	11,590 ⁽⁸⁾	142%	15,180	186%
4B	3,175	1,525	33.2 in part 175 in part	29,900	34,920 ⁽⁸⁾	117%	34,920 ⁽¹⁰⁾	117%
4C	3,170	2,355 podium 705 per tower	160	39,000	49,160 ⁽⁸⁾	126%	155,330 ⁽¹¹⁾	398%
X	5,175	3,490	41.5	18,908	24,110 ⁽⁸⁾	128%	30710	162%
Y	2,400	2,000	170	33,000	80,000	242%	120,000	363%

Notes:

1. Calculated from the dimensions on the Indicative Maximum Building Height, Location and Dimension Map on pg 43 on the Urban Design Statement.
2. As stated on pg 43 on the Urban Design Statement.
3. As stated in Table 3, pg 50 of the Environmental Assessment Report.
4. The Indicative Building GFA refers to the grey building blocks shown in the Urban Design Statement.
5. This percentage shows how much the Indicative Building GFA exceeds the Stated Maximum GFA from Table 3, pg 50 of the Environmental Assessment Report.

6. The Block Envelope GFA is based on the area of the block (minus road reserves), the nominated maximum RL, the nominated floor heights and any controls stipulated (eg. Maximum floor plate depth or setbacks). All buildings have an assumed 5.7m ground floor height.
7. This percentage shows how much the Block Envelope GFA differs from the Stated Maximum GFA in Table 3, pg 50 of the Environmental Assessment Report.
8. All residential area calculations are based on 80% of the Indicative Building GFA. This allows for areas such as balconies and stairwells which are not normally considered in GFA calculations.
9. It is possible to design a building with twin floor plates and a central core in place of building C4. This building would be within the Block Envelope and controls but provides almost doubles the GFA.
10. In the absence of controls, it is possible to substantially increase the GFA, but no increase has been made in this calculation.
11. This calculation uses the whole block area as there are no controls on the location of Healy Street. Healy Street could be pushed into Barangaroo Central and access to 4B could be from Hickson Road.

Conclusion

The table demonstrates two things;

- 1 – There appears to be a significant discrepancy between the stated GFA figures and the Indicative Buildings that have been drawn. The proponent should verify these figures or explain their calculations.
- 2 – The Block Envelopes contain very substantial amounts of additional area. The City recognises that a certain amount of flexibility within the envelopes is necessary for the design development process, but considers that the envelopes as documented are too loose and provide little certainty for parties who may be impacted by this development. There is also the potential that following approval of the Block Envelopes, application for further increase in GFA may be mooted.



Appendix D

Selected References



NSW PLANNING ASSESSMENT COMMISSION

6 February 2009

Review of Recommendation in the DG's report Modifications to Concept Plan for Barangaroo

On 23 January 2009, the Director General of the Department of Planning wrote to the Chairman of the Planning Assessment Commission (PAC) advising that the Minister for Planning has requested the PAC to undertake a review of the recommendation of the Department of Planning's Assessment Report (DG's report) for the modification to the Concept Plan approval for the development of the Barangaroo site.

The terms of review are:

- 1. The Planning Assessment Commission is to review the reasonableness of the recommendation of the Director-General's report.*
- 2. The Review is to be undertaken and reported to the Department at the earliest opportunity.*
- 3. The Planning Assessment Commission is not required to hold a public hearing in relation to this Review.*
- 4. The Planning Assessment Commission is not required to consult with persons who made submissions in relation to the application to modify the Concept Plan approval.*
- 5. Appropriate staff of the Department of Planning will brief members of the Planning Assessment Commission appointed to the review, if required.*
- 6. The Planning Assessment Commission shall be constituted by at least 2 members.*

The Commission consisted of Ms Gabrielle Kibble (Chairman of the PAC) and Mr Lindsay Kelly (Member of the PAC). The Commission was briefed by senior staff of the Department. The Commission also viewed the model of the development which sets the site in the context of the Sydney CBD.

The approved Concept Plan for the Barangaroo site provides for a mixed use development involving a maximum of 388,300m² of gross floor area for commercial, residential (min 58,245m² to max 97,075m²), tourist (max 50,000m²), retail (max 39,000m²) and community (min 2,000m²) uses. The application to modify the approved Concept Plan seeks approval to increase the allowable commercial floor space for Blocks 2, 3, 4 and 5 by 50,000m² to 120,000m² GFA. No changes are being sought to the approved floorspace for other land uses, ie, residential, retail, tourist and community. The modification, if approved, will result in an increase to the approved total GFA on the site from 388,300m² to 508,300m².

According to the Environmental Assessment (June 2008), justifications for the modification include:

- Office space development in the Sydney CBD is constrained, particularly for offices offering large floorplates as potential development sites consist of small contiguous properties that will require consolidation.

- The approved concept provides for buildings with relatively small and disconnected floorplates. These configurations do not meet commercial tenant demand for large contiguous spaces;
- The strategic context of Barangaroo has changed since the announcement of the North West Metro (now referred to as the CBD metro) which includes a station close to the site. Other possible transport initiatives include light rail system along Hickson Road, a ferry hub or wharf;
- The proposed additional commercial floorspace will not affect the site's suitability to accommodate the land uses approved in the concept plan; and
- Positive social and economic impacts including increase employment opportunities, meeting demand for premium office space and strengthening Sydney's role as a global city.

The Department's assessment focused on the key issues raised in submissions and identified during the assessment process. These include:

- Economic and public benefits
- Relationship to the CBD Metro
- Urban design and built form
- Increase in Gross Floor Area (GFA)/density
- Traffic and public transport
- Expansion/increase in commercial uses on the site
- Social impacts
- Consistency with the design principles of the approved concept plan
- Other issues include overshadowing, wind impacts, views and view corridors, heritage and demand on utilities, services and infrastructure.

Commission Assessment

The Planning Assessment Commission has been asked to review the reasonableness of the recommendation of the DG's Report. The Commission believes that the assessment and recommendation of the DG's Report is reasonable, but makes the following observations.

1. The DG's report concludes that the additional commercial GFA is generally acceptable and the impacts of the proposed development will be addressed via a range of additional built form controls, changes to the compliance documentation and through the design competition process required by the SEPP. The Commission notes that this approval essentially deals with floorspace increase and concept for development of the site. Future project applications for individual buildings will need to address the built form design principles and controls and it is imperative that these applications be assessed in detail.

Whilst the proposed increase in GFA is very significant, the Commission considers the increase is an appropriate response to the strategic importance of the Barangaroo development to the future of Sydney.

2. The proposed increase in the GFA to 211,907 m² for Block 2 will create a high development density (higher than that currently allowable for the Sydney CBD). Whilst this may cause some public concern, Block 2, with its access to Wynyard Station is the logical location for a substantial part of the additional GFA and it can be achieved within the currently approved development envelope.

Whilst the DG's Report permits a redistribution of the GFA between Blocks 2, 3, 4 and 5, the GFA of 211,907 m² on Block 2 should be capped due to its already very high level of development. The total approved GFA for Blocks 2, 3, 4 and 5 can be redistributed between the blocks, but should not exceed the total approved GFA and no increase to be allowed on Block 2.

3. To ensure appropriate infrastructure is in place to support the increase in the commercial activity, the Commission supports the Department's recommendation that the Wynyard link should be completed prior to occupation of Block 2. The Commission is also of the view that the link should be built prior to the completion of any commercial developments on Blocks 3, 4 and 5.
4. The implementation of the key components of the proposed Transport Management and Access Plan need to be given a high priority.

The Commission notes that the Barangaroo development is predicated on a high modal split to public transport and the construction of the CBD metro is very important to secure the modal split targets.

5. To achieve the objectives of making Hickson Road and Globe Street the major public thoroughfares, the proposed street walls/podiums should be set as an absolute requirement and alternative pedestrian movements between Blocks 2, 3, 4 and 5 as permitted by the approval should not occur at the expense of achieving the objectives for Hickson Road and Globe Street, and other areas of the public domain.
6. The Minister's approval will incorporate the original approval, aspects of a number of documents submitted by the proponent (the Environmental Assessment and Appendices for the Modification June 2008 and the preferred project report and its addendum October 2008) and the Department's response to those documents. As the built form controls in these documents form a significant part of the Director General's Report and his recommendations, the Commission's interpretation of these controls has informed its advice to the Minister.

The prevailing document on built form controls (in the event of inconsistencies) will be the Minister's Instrument of Approval, and specifically within that Instrument, the Statement of Commitments in Schedule 3 and Parts B & C in Schedule 2.

The Statement of Commitments in Schedule 3 requires that the future development of Blocks 2, 3, 4 and 5 have to be consistent with the urban design controls in Table 1 to Section 2.1.1 of the PPR (proponent's response to issues raised in submissions to the EA) dated October 2008 (pages 7-9). Table 1 uses Block 3 for illustrative purposes only, and therefore it requires some level of interpretation for Blocks 2, 4 and 5. It is noted that the urban design controls in Table 1 may be viewed as guidelines, allowing for innovation and flexibility to assist in achieving an improved outcome, but are also viewed as minimum requirements to ensure that the primary urban design objectives and design excellence are achieved. In addition, the final designs for each development block will be subject to an approved "Design Excellence Strategy".

Parts B & C in Schedule 2 of the recommended Minister's Instrument of Approval partially modifies Table 1, and where it is not modified, Table 1 establishes the urban design and built form controls.

Conclusion

The Commission has reviewed the Director General's Assessment Report for the proposed modification and associated recommended conditions of approval, the Environmental Assessment Report, the PPR (proponent's response to submissions to EA) and the Addendum to the PPR.

The Commission considers the DG's report provides a comprehensive assessment of key issues and the recommendation is reasonable given the importance of providing for the expansion of Sydney CBD with a site which will allow large commercial floorplates to be developed. The Commission also notes that a considerable amount of work will be required and must be continued on the design of individual buildings at the project application stage that meets the design principles.



Gabrielle Kibble
Chairman



Lindsay Kelly
PAC member

Department of Planning

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Instrument of Delegation

I, the Minister for Planning and the Minister administering the Environmental Planning and Assessment Act 1979 (“EP&A Act”), pursuant to section 23 of the EP&A Act, delegate to the Planning Assessment Commission (“the Commission”), the powers and functions listed in Schedule 1 to this Instrument in relation to project applications specified in Schedule 2 of this Instrument, subject to the terms, limitations and restrictions specified in Schedule 3 to this Instrument.

Dated this 18th day of November 2008.

The Hon. KRISTINA KENEALLY, M.P.,
Minister for Planning

SCHEDULE 1

My powers and functions under section 75J and 75JA of the EP&A Act.

SCHEDULE 2

Project applications lodged before or after the date of this Instrument:

1. in relation to which a statement has been made disclosing a reportable political donation; or
2. that relate to the carrying out of development within the boundaries of the State electoral district represented by the Minister for Planning (where the Minister is a member of the Legislative Assembly); or
3. that relate to the carrying out of development in which the Minister for Planning has a pecuniary interest; other than a project application for an infrastructure project where the proponent is a public authority, other than a local authority.

SCHEDULE 3

Where the Commission proposes to impose a condition on an approval which would require a proponent to enter into a voluntary planning agreement to which the Minister for Planning or the Corporation is a party, the Commission must consult with the Minister for Planning in relation to any such condition before determining the project application.

Definitions:

Corporation is the corporation sole incorporated under section 8 of the EP&A Act.

Electoral district is the relevant district as proclaimed under section 15 of the Parliamentary Electorates and Elections Act 1912.

Major infrastructure development has the same meaning as in section 75A of the EP&A Act.

Pecuniary interest is an interest that the Minister is required to, or otherwise discloses in a primary, ordinary or discretionary return made under the Constitution (Disclosures by Members) Regulation 1983.

Project applications are applications made under section 75E of the EP&A Act.

Proponent has the same meaning as in section 75A of the EP&A Act.

Public authority has the same meaning as in section 4 of the EP&A Act.

Statement is statement of a disclosure required to be made under section 147(3)(a) of the EP&A Act required to be made in accordance with section 147(6) of the EP&A Act.

Note:

This instrument of delegation does not apply to:

- concept plan applications, or
- project applications for project that has been declared to be a critical infrastructure project, as provided by section 23(8) of the EP&A Act.

Barangaroo Stage 1

First Deed of Amendment to Project Development Agreement

Barangaroo Delivery Authority
Authority

Lend Lease (Millers Point) Pty Limited
Developer

Lend Lease Corporation Limited
Guarantor

Clayton Utz
Lawyers
Levels 19-35 No. 1 O'Connell Street Sydney NSW 2000 Australia
PO Box H3 Australia Square Sydney NSW 1215
T +61 2 9353 4000 F +61 2 8220 6700

www.claytonutz.com

Our reference 15266/15661/80104595

Legal\301948372.4

Deed made at

Sydney on 8 June 2010

Parties

Barangaroo Delivery Authority ABN 94 567 807 277, a NSW government agency constituted under the Barangaroo Delivery Authority Act 2009 (NSW) (Authority)

Lend Lease (Millers Point) Pty Limited ABN 15 127 727 502 (Developer)

Lend Lease Corporation Limited ABN 32 000 226 228 (Guarantor)

Background

- A. The parties have entered into the Project Development Agreement and the Project Management Agreement.
- B. The Authority never intended that any part of the Hotel could be used for Residential Purposes.
- C. The Developer intended part of the Hotel might be used for Residential Purposes.
- D. The Developer has agreed not to include Residential Purposes within the Hotel on the basis the Authority agrees to enter into this deed.
- E. The parties have agreed to amend the Project Development Agreement on the terms of this deed.

Operative provisions

1. Interpretation

1.1 Definitions

In this deed:

Project Development Agreement means the "Barangaroo Stage 1 – Project Development Agreement" dated 5 March 2010 between the Authority, the Developer and the Guarantor, as varied by the Project Management Agreement.

Project Management Agreement means the agreement so named and dated 1 April 2010 between the Authority, the Developer and the Guarantor, in respect of the Temporary Cruise Terminal Works.

Unless the contrary intention appears, words and phrases which are not defined in this deed have the meanings given them in the Project Development Agreement.

1.2 Interpretation

Clauses 1.2 to 1.6 (Interpretation) and 57 (General) of the Project Development Agreement apply to this deed as if they were contained in this deed.

2. Amendment

On and from the date of this deed, the Project Development Agreement is amended by:

- (a) inserting the following new definitions in clause 1.1:

"Authority Payment means for each of the two Authority Payments an amount determined in accordance with the following formula:

$$\text{\$AP} =$$

where:

$$\begin{aligned}\text{\$AP} &= \text{the amount determined for the purposes of this definition; and} \\ &= \end{aligned}$$

PROVIDED THAT the quantum of each Authority Payment must be reduced where necessary to ensure that the Total Fixed Payment Amount after deducting the quantum of both Authority Payments is never less than less the Total Fixed Payment Refund Amount paid and payable by the Authority to the Developer pursuant to clause 21.2(a).

Public Recreation Zone means RE1 Public Recreation Zone shown in State Environmental Planning Policy (Major Development) 2005 Amendment No. 18 - "Barangaroo Zoning Map".

Residential Purposes includes without limitation use by any person as a residence, but does not include use as a Serviced Apartment.

Serviced Apartments means a building or a part of a building providing self contained tourist and visitor accommodation that is:

- (a) regularly serviced or cleaned by the owner or manager of the building or part of the building or the owner's or manager's agents; and
- (b) which provides short term accommodation for travellers, business persons or tourists,

but does not include a backpackers hostel or boarding house.";

- (b) inserting a new clause 4.5A as follows:

"4.5A Authority Payments

- (a) The Authority must pay two Authority Payments to the Developer.
- (b) The Authority must pay to the Developer the first Authority Payment at the same time as the Developer pays the Authority the third Fixed Payment Amount Instalment referred to in clause 4.2(a).

- (c) The Authority must pay to the Developer the second Authority Payment at the same time as the Developer pays the Authority the fourth Fixed Payment Amount Instalment referred to in clause 4.2(a).
- (d) The obligation of the Authority to pay each Authority Payment will be taken to be fully satisfied by the Developer reducing each of the amounts otherwise payable by it to the Authority in respect of that third Fixed Payment Amount Instalment and that fourth Fixed Payment Amount Instalment by an amount equivalent to each relevant Authority Payment.
- (e) This clause 4.5A only applies if there is a Hotel located within Sydney Harbour or the Public Recreation Zone included in the Developer's Modification Approval. If no such Hotel is included in the Developer's Modification Approval, no Authority Payments are payable.";

(c) inserting new clauses 10A and 10B as follows:

"10A No Residential in Hotel and Public Recreation Zone

Notwithstanding any provision of this deed and other than as contemplated by the Revised Refined Proposal, the Developer agrees it will not make any request to the Authority or the Management Committee, and agrees that the Authority and the Management Committee have no obligation, to approve any draft Significant Application which contemplates Residential Purposes within either the Hotel or any part of the Site located within Sydney Harbour or the Public Recreation Zone.

10B Hotel

The Developer acknowledges that at the date of this deed and subject to the provisions of this deed, it is its intention to develop the Hotel but this intention may change over time having regard to commercially relevant factors (including Changed Market Conditions).";

(d) inserting a new paragraph (c) in clause 29.1 (Lease term) as follows:

"(c) The form of any Long Term Lease in respect of the Hotel must include provisions satisfactory to the Authority, acting reasonably, to the effect that any parts of the Hotel which include any dwelling or accommodation intended to be used as Serviced Apartments, must not be subdivided under the Strata Leasehold Act nor be capable of being used in any way, through any legal arrangement, for Residential Purposes."; and

(e) by deleting each reference to "+R7":

- (i) from each drawing comprising the Preferred Drawings (Version A1) in Annexure G (Agreed Design Documents) containing such a reference;
- (ii) from the plan in Annexure R (Plan showing location of Nominated Pedestrian Connections); and
- (iii) from item 1.1(i) of Part A of Annexure S (Authority Requirements (Principles)).

3. Confirmation

3.1 Project Development Agreement

Subject to the amendments set out in clause 2, the parties confirm the terms of the Project Development Agreement.

3.2 Ratification by Guarantor

The Guarantor separately confirms and ratifies each of its obligations under the guarantee and indemnity contained in clause 49 of the Project Development Agreement notwithstanding the amendments made by this deed.

4. Counterparts

This deed may consist of a number of counterparts and the counterparts taken together constitute one and the same instrument.

Executed as a deed.

The seal of Barangaroo Delivery Authority
is affixed in the presence of:



Signature of witness

Signature of Chief Executive Officer

Name of witness

Name of Chief Executive Officer

**Executed by Lend Lease (Millers Point)
Pty Limited ABN 15 127 727 502** in
accordance with section 127 of the Corporations
Act by or in the presence of:

Signature of Secretary/other Director

Signature of Director

Name of Secretary/other Director in full

Name of Director in full

**Executed by Lend Lease Corporation
Limited ABN 32 000 226 228** in accordance
with section 127 of the Corporations Act by or in
the presence of:

Signature of Secretary/other Director

Signature of Director

Name of Secretary/other Director in full

Name of Director in full

Executed as a deed.

The seal of Barangaroo Delivery Authority
is affixed in the presence of:

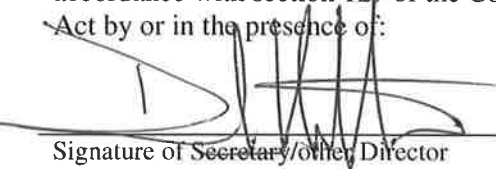
Signature of witness

Signature of Chief Executive Officer

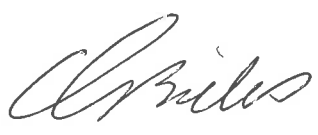
Name of witness

Name of Chief Executive Officer

**Executed by Lend Lease (Millers Point)
Pty Limited ABN 15 127 727 502** in
accordance with section 127 of the Corporations
Act by or in the presence of:



Signature of Secretary/other Director



Signature of Director

DAVID STEWART HUTTON

Name of Secretary/other Director in full


GAVIN JOHN BILES

Name of Director in full

**Executed by Lend Lease Corporation
Limited ABN 32 000 226 228** in accordance
with section 127 of the Corporations Act by or in
the presence of:



Signature of Secretary/other Director



Signature of Director

WILLIAM HARA

Name of Secretary/other Director in full

Stephen McCann

Name of Director in full

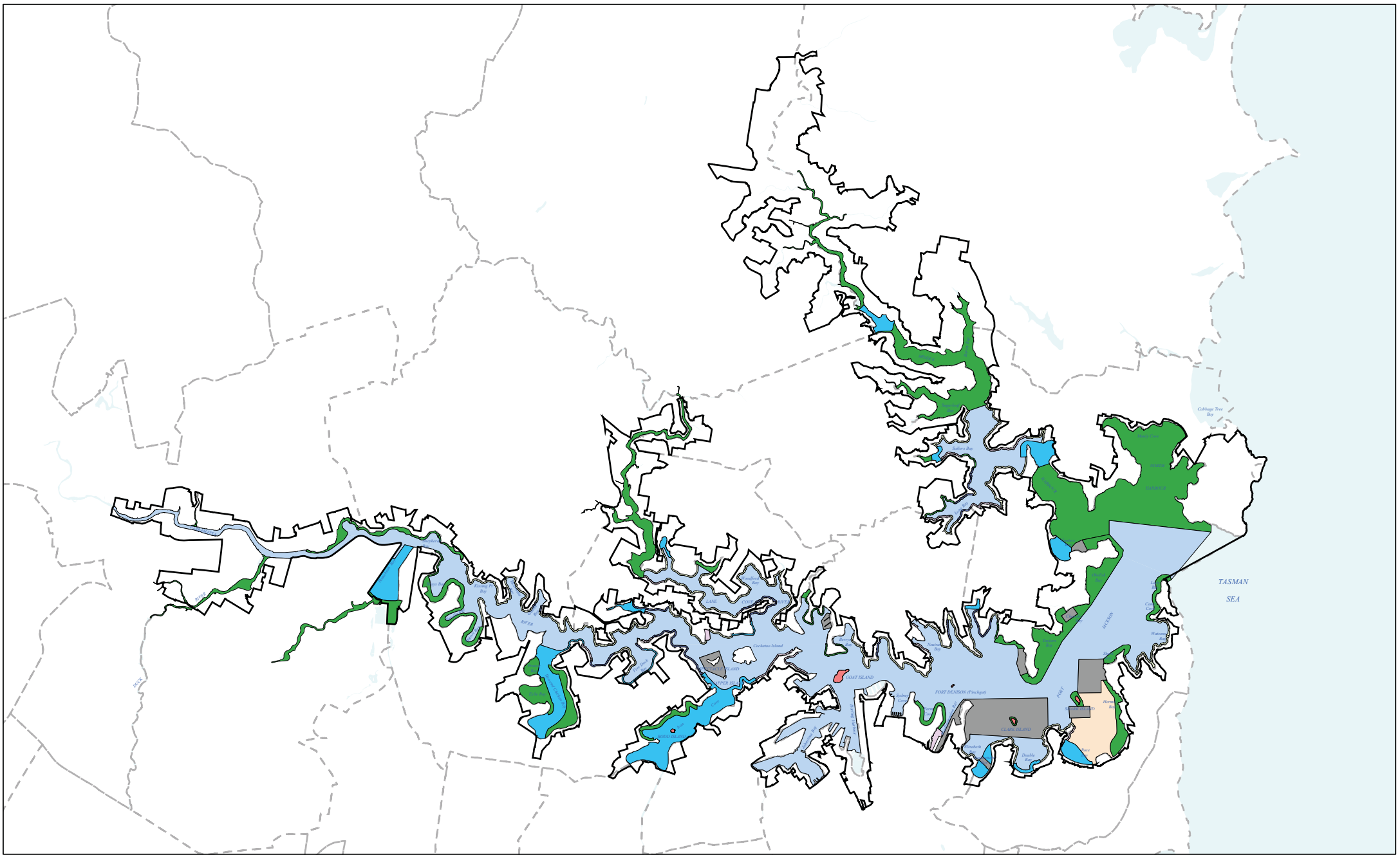
18 Development control in the waterways

- (1) Except as otherwise provided by this plan, in relation to land within a zone to which a column of the Table to this clause applies:
 - (a) the development (if any) that may be carried out without development consent is indicated by the letter “P”, and
 - (b) the development (if any) that may be carried out only with development consent is indicated by the letter “Y”, and
 - (c) the development (if any) that is prohibited is indicated by the letter “N”.
- (2) Despite subclause (1), development not referred to in the Table to this clause may be carried out with development consent, but only if the consent authority is satisfied that the development:
 - (a) is not inconsistent with the aims of this plan or the objectives of the zone in which it is proposed to be carried out, and
 - (b) is not inconsistent with any other environmental planning instrument that applies to the land, and
 - (c) will not otherwise have any adverse impacts.

Table

	W1	W2	W3	W4	W5	W6	W7	W8
Advertisements	N	N	N	N	N	N	N	N
Advertising structures	N	N	N	N	N	N	N	N
Aids to navigation	P	P	P	P	P	P	P	P
Aviation facilities	Y	N	Y	Y	N	N	N	N
Boat launching ramps (Public)	Y	Y	Y	Y	Y	Y	Y	Y
Boat lifts (other than boat lifts for storage of vessels above water)	Y	N	Y	Y	Y	Y	Y	Y
Boat lifts for the storage of vessels above water	N	N	N	N	N	N	N	N
Boat repair facilities	Y	N	Y	Y	Y	Y	Y	Y
Boat sheds (private)	N	N	N	N	N	Y	N	N
Charter and tourism facilities	Y	N	Y	Y	Y	Y	N	N
Commercial marinas	Y	N	N	Y	Y	Y	N	N
Commercial port facilities	Y	N	Y	Y	N	N	N	N
Community facilities	Y	Y	Y	Y	Y	Y	Y	Y
Demolition (other than demolition of a heritage Item)	P	P	P	P	P	P	P	P
Dredging	Y	Y	Y	Y	Y	Y	Y	Y
Flora and fauna enclosures	Y	Y	P	P	P	P	P	P
General restoration works	P	P	P	P	P	P	P	P
Houseboats	N	N	N	N	N	N	N	N

Intertidal dredging	N	N	N	N	N	N	N	N
Maintenance dredging	P	Y	P	P	P	P	P	P
Mooring pens	N	N	N	N	N	Y	N	N
Naval activities	P	P	P	P	P	Y	Y	Y
Private landing facilities	N	N	N	N	N	Y	Y	N
Private landing steps	Y	Y	Y	Y	Y	Y	Y	Y
Private marinas	N	N	N	N	N	Y	N	N
Public boardwalks	Y	Y	Y	Y	Y	Y	Y	Y
Public water recreational facilities	Y	Y	Y	Y	Y	Y	Y	Y
Public water transport facilities	Y	Y	Y	Y	Y	Y	Y	Y
Reclamation works	N	N	N	N	N	N	N	N
Recreational or club facilities	Y	Y	Y	Y	Y	Y	Y	Y
Residential development	N	N	N	N	N	N	N	N
Single mooring (other than associated with a commercial marina or a boating industry facility)	P	P	P	P	P	P	P	P
Skids	Y	N	N	N	Y	Y	Y	Y
Slipways	N	N	N	N	N	Y	Y	Y
Swimming enclosures (private)	N	N	Y	Y	N	Y	Y	N
Swimming pools	N	N	N	N	N	N	N	N
Telecommunications facilities	Y	Y	Y	Y	Y	Y	Y	Y
Tourist facilities	N	N	N	N	N	N	N	N
Uses and activities prohibited under the <i>Control of Naval Waters Act 1918</i> of the Commonwealth	n/a	n/a	N	n/a	n/a	n/a	n/a	n/a
Water-based restaurants and entertainment facilities	N	N	N	N	N	N	N	N
Waterfront access stairs	N	N	N	N	N	N	N	N

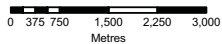


ZONE NAME

- W1 Maritime Waters
- W2 Environmental Protection
- W3 Naval Waters
- W4 Aviation
- W5 Water Recreation
- W6 Scenic Waters Active Use
- W7 Scenic Waters Casual Use
- W8 Scenic Waters Passive Use
- 8a National Parks

Legend

- Foreshores and Waterways Area Boundary
- Local Government Area



ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

**SYDNEY REGIONAL ENVIRONMENTAL PLAN
(SYDNEY HARBOUR CATCHMENT) 2005
ZONING MAP**



Department of
Infrastructure, Planning and Natural Resources

NSW MARITIME
AUTHORITY

Drawn by :
G.I.S. Dwg. No.
Department file No.
Planning Officer:
Manager G.I.S.
County:
Parish:
L.G.A.
Date:
Locality:
Catalogue.

N. Chand
0402
.....
U. Williamson
.....
Cumberland
Various
27-06-2005
Various
.....

Modification to a Major Projects application

URBAN ASSESSMENTS
RECEIVED



NSW GOVERNMENT
Department of Planning

Date received: 25 JUN 2008

Modification Application No. MP06-0162
MOD2

1. Before you lodge

Under section 75W of the *Environmental Planning and Assessment Act, 1979* (the Act) this form is required to apply for the modification of an approval of the Minister to carry out a Project to which Part 3A of the Act applies.

Before lodging this application, it is recommended that you first consult with the Department of Planning (the Department) concerning your Project.

To ensure that your application is accepted as being duly made, you must:

- complete ALL parts of this form, and
- submit all relevant information required by this form.

All applications must be lodged with the Director-General, by courier or mail:

Ground floor, 23-33 Bridge Street, SYDNEY NSW 2000

GPO Box 39, SYDNEY NSW 2001

t: 02 9228 6111

f: 02 9228 6455

2. Details of the proponent

Company/organisation/agency

Sydney Harbour Foreshore Authority

ABN

51 437 725 177

☒ Mr ☐ Ms ☐ Mrs ☐ Dr ☐ Other

First name

Todd

Family name

Murphy

STREET ADDRESS

Unit/street no.

66

Street name

Harrington Street

Suburb or town

The Rocks

State

NSW

Postcode

2000

POSTAL ADDRESS (or mark 'as above')

PO Box N408

Suburb or town

GROSVENOR PLACE

State

NSW

Postcode

1220

Daytime telephone

(02) 9240 8854

Fax

(02) 9271 5274

Mobile

0407 283 669

E-mail

todd.murphy@shfa.nsw.gov.au

3. Identify the land you propose to develop

STREET ADDRESS

Unit/street no.

"Barangaroo"

Street or property name

Hickson Road

Suburb, town or locality

Millers Point

Postcode

2000

Local government area

City of Sydney

REAL PROPERTY DESCRIPTION

Lots 1 to 6 DP 876514; Lot 7 DP 43776; Lot 100 DP 838323; Lots 6&7 DP 869022

OR detailed description of land attached: ☐

The real property description is found on a map of the land or on the title documents for the land. If you are unsure of the real property description, you should contact the Department of Lands.

Please ensure that you place a slash (/) to distinguish between the lot, section, DP and strata numbers. If the Modification applies to more than one piece of land, please use a comma to distinguish between each real property description.

4. Details of the original Major Project

Describe what the original consent allows

(1) 11 hectares of foreshore promenade and public domain, including new

Headland Park;

(2) 388,300 sqm of mixed use floorspace comprising commercial, residential, tourist and community uses

What is the Project
Application no.?

07-0077

06_0162

What is the date of
consent?

9 February 2007

What was the original estimated
cost of the project (incl GST)

\$1.5 billion

5. Describe the modification you propose to make

The Sydney Harbour Foreshore Authority is seeking to modify the Concept Plan by increasing the overall maximum Gross Floor Area on the site by up to 120,000 sqm to accommodate additional commercial floorspace.

6. Application fee

For development that involves a building or other work, the fee for your modification application is based on the estimated cost of the original development.

Estimated Project Cost

Total fees lodged

\$209,905 (Refer DoP letter 26/5/08)

7. Signatures

The owner(s) of the land being developed must sign the application.

If you are not the owner of the land, you must ask the owner(s) of the land to sign the application. If the land is Crown land, an officer of the Department of Lands must sign the application.

Signature

Application by public authority -

Owner's consent not required. (Cl8F of EP&A Regs)

Name

Date

Signature

Name

Date

8. Proponent's Signatures

As the proponent(s) of the proposed Major Project and in signing below, I/we hereby declare that all information contained within this application is accurate at the time of signing.

Signature

Name

Date

If not Proponent, in what capacity are you signing

Name, if you are not the proponent

More commercial floor space and public transport to get Barangaroo moving

25 February, 2009

Additional commercial floor space has been approved for the Barangaroo precinct and a new ferry hub is planned to provide transport to the more than 22,000 people who will live and work there.

While speaking at the City of Sydney's Business Forum today Premier Nathan Rees announced plans which will get the Barangaroo precinct moving and ensure it is a key part of Sydney's economic future.

"Public transport will be a key feature of Barangaroo, which when completed will be a significant commercial, residential and recreational precinct for Sydney," Mr Rees said.

"A new ferry hub is planned for Barangaroo. Ferry services will help keep residents and workers out of their cars and on public transport.

"The introduction of a ferry wharf at Barangaroo will increase the number of workers and residents accessing Barangaroo by ferry from 1% up to as high as 10%.

"Planning and transport departments will now work on the details of the new ferry hub, including the number of wharves needed, construction and operational start times.

"In addition, I have asked the Minister to ensure the construction of the walkway to Wynyard station is a priority. I want to make sure it is available simultaneously with the commercial precinct coming on line."

Mr Rees said a proposal to increase the amount of office space at Barangaroo by 120,000 square metres and help lure some of the world's leading businesses to set up Sydney headquarters has been approved by Planning Minister Kristina Keneally.

"This takes the total commercial floor space to more than 500,000 square metres of floor space built in the new city precinct – equivalent to just over six Chifley Square buildings," Mr Rees said.

"Finance, business services and global corporations are looking for large office spaces to establish new headquarters, and Barangaroo is the last site in Sydney's CBD where an expansion of this size is possible.

"The additional 120,000 square metres of floor space will provide a boost to the economy, with construction costs expected to increase from \$2.5 to \$3 billion, generating more than 4,000 construction jobs.

“The increase in floor space will take advantage of the transport improvements provided by the CBD Metro, which was announced by the Government earlier this year and includes a new station on the eastern edge of Darling Harbour.

“Importantly, the change can happen without impacting the already-approved maximum building heights and widths, or the ratio of retail, tourist, residential or public open space planned for the site.”

The proposed increase in commercial floor space was placed on public exhibition in mid-2008 and community feedback was considered during the assessment process.

“Based on this feedback, clear guidelines have been set to ensure that the increases in total floor space do not adversely affect the surrounding community,” Mr Rees said.

“These guidelines will ensure that taller buildings are built alongside the existing CBD, with lower buildings at the northern end of the commercial precinct.

“The increased floor space is consistent with the Government’s objective of creating a world-class city precinct that will contribute to Sydney’s future.”

Director General's Requirements

Section 75F of the *Environmental Planning and Assessment Act 1979*

Application number	MP10_0024 & MP10_0025
Project	(MP10_0024) C1 Commercial Building & (MP10_0025) C4 Commercial Building
Location	Hickson Road, Barangaroo, Sydney
Proponent	Lend Lease Development Pty Ltd
Date issued	3 May 2010
Expiry date	If the environmental assessment is not exhibited within 2 years after this date, the applicant must consult further with the Director General in relation to the preparation of the environmental assessment.
Key issues	<p>The Environmental Assessment (EA) must address the following key issues:</p> <ol style="list-style-type: none"> 1. Relevant EPI's, policies and guidelines <ul style="list-style-type: none"> • Planning provisions applying to the site, including permissibility and the provisions of all plans and policies including: <ul style="list-style-type: none"> ○ State Environmental Planning Policy (Major Development) 2005; ○ State Environmental Planning Policy 55 - Remediation of Land; ○ State Environmental Planning Policy (Infrastructure) 2007; ○ Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005; ○ Sydney Harbour Foreshores and Waterways Area Development Control Plan 2005; ○ NSW State Plan, Sydney Metropolitan Strategy and the draft Sydney City Subregional Strategy; and ○ An outline of the nature and extent of any non-compliance with relevant environmental planning instruments, plans and guidelines and justification for any non-compliance. 2. Concept Plan <ul style="list-style-type: none"> • The EA shall demonstrate consistency with the terms of approval of Concept Plan MP06_0162 (as amended), and justify any areas of inconsistency. 3. Urban Design and Built Form <ul style="list-style-type: none"> • Demonstrate how the proposed development will achieve design excellence including: <ul style="list-style-type: none"> ○ The design process leading to the proposal; ○ A high standard of architectural design, materials and detailing appropriate to each building and its location; ○ The form and external appearance of the proposed buildings and how it will improve the quality and amenity of the public domain; ○ The sustainable design principles incorporated into the development in terms of sunlight, natural ventilation, wind, reflectivity, visual and acoustic privacy, safety and security, resources, and water and energy efficiency; ○ Detailed plans, elevations and sections; ○ A view analysis is to be undertaken inclusive of photomontages and perspectives of key elements and views of the development from key locations (including, but not limited to, from Hickson Road, Kent Street, Shelley Street, Lime Street, Pyrmont and East Balmain, Darling Harbour, Blues Point and Millers Point); ○ Impacts on key views from within the Barangaroo site; ○ A materials/finishes sample board and detailed elevations confirming the application of materials and finishes for the development; ○ 3D modelling and a physical model of the proposed development in accordance with the City of Sydney requirements; and

- Shadow diagrams.

4. Public Domain and Public Access

- Design quality with specific consideration of the massing, waterfront interface, setbacks and visual impacts of any proposed structures, including views.
- Identify proposed open space, public domain and linkages with and between other public domain spaces, including the waterfront.
- Details on the interface between the proposed uses, public domain, and the relationship to, and impact upon, the existing public domain, including demonstration of means of activating the public domain.
- Address existing and future opportunities for public access to and along the foreshore.
- Demonstrate that basement car parking and basement areas are to be contained beneath building blocks to provide public streets with a high quality landscaped public domain.
- Demonstrate how the entry and exit to basement car parking will not have a detrimental impact upon visual amenity and pedestrian safety.

5. Land Use

- Demonstrate that the proposed development will not impede the metro rail corridor or affect the future operations of the metro project.
- Identify proposed staging and timing for the delivery of the development and land uses and activities.
- Table listing different land uses, a floor by floor breakdown of GFA, total GFA, and site coverage as relevant to each stage and with reference to the overall concept plan.

6. Transport and Accessibility Impacts

- Justification of proposed quantum of on-site car parking for the proposal having regard to the Concept Plan Approval (as amended), RTA guidelines and accessibility of the site to public transport, including the proposed light rail expansion.
- Transport Management and Accessibility Plan with particular regard to:
 - transport and traffic management within the overall Barangaroo precinct, including the demonstration of a minimalist approach to car parking provision;
 - pedestrian and cycle access/circulation to meet the likely future demand within the precinct and connections to the external networks;
 - measures to promote public transport usage and pedestrian and bicycle linkages.
- Daily and peak traffic movements likely to be generated by the proposed development, including modelling and assessment of the performance of key intersections providing access to the site, and any upgrades (road/intersections) required as a consequence of the proposal.
- Identification of Travel Demand Management (TDM) measures that will optimise the opportunity provided by the project site's proximity to public transport, including the preparation of a Work Place Travel Plan.
- In relation to construction traffic:
 - Cumulative impacts associated with other construction activities on the Barangaroo site;
 - Details of anticipated truck movements to and from the site;
 - Details of access arrangements for workers to/from the site, emergency vehicles and service vehicle movements;
 - Impacts on the temporary cruise ship terminal; and
 - Details of any proposed transportation of waste materials via the Harbour and proposed locations for handling materials.

7. Drainage, stormwater and groundwater

- Prepare a Stormwater and Drainage Assessment.
- Assess the impacts of the proposal on surface and groundwater hydrology and quality.

8. Air, Noise and Odour Quality

- Address potential air quality, noise and odour impacts, in particular during the construction and operation of the development and appropriate mitigation measures.
- In particular the following must be addressed:

Air and Odour

The Environmental Assessment must include an Air Quality Impact Assessment that is prepared strictly in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales 2005*, available at:

<http://www.environment.nsw.gov.au/resources/air/ammodelling05361.pdf>.

The Air Quality Impact Assessment must also make appropriate reference to the *Assessment and Management of Odour from Stationary Sources in NSW: Technical Framework 2006* and *Assessment and Management of Odour from Stationary Sources in NSW: Technical Notes 2006*, available at: <http://www.environment.nsw.gov.au/air/odour.htm>.

The key air quality issues for the proposal will depend on the methods used to manage and remediate the contaminated material. Potential matters that must be covered in the Air Quality Impact Assessment include, where applicable:

- the identification of the pollutants of concern, including individual toxic air pollutants, dust and odours;
- the identification and assessment of all relevant fugitive and point source emissions;
- appropriate coverage of all aspects of the remediation, including the excavation, storage, transport and treatment of contaminated material; and
- proposed air quality management and monitoring procedures during remediation.

The Air Quality Impact Assessment must consider the requirements of the *Protection of the Environment Operations (Clean Air) Regulation 2002*.

Noise

The Environmental Assessment should include an assessment of noise and vibration impacts, prepared in consultation with DECCW. All feasible and reasonable noise impact mitigation measures should be implemented. The assessment should be prepared in accordance with the NSW government's *Interim Construction Noise Guideline*, *Industrial Noise Policy and Application Notes*, *Environmental Criteria for Road Traffic Noise* and *Assessing Vibration: A Technical Guide*, as appropriate, available at <http://www.environment.nsw.gov.au/noise/>.

9. Climate Change and Sea Level Rise

- An assessment of the risks associated with sea level rise on the proposal as set out in the *draft NSW Coastal Planning Guideline: Adapting to Sea Level Rise*.

10. Heritage

- An assessment of the likely impacts of the proposal on any heritage and archaeological items and outline mitigation and conservation measures.

11. Infrastructure Provision

- Detail the existing infrastructure on site and identify possible impacts on any such infrastructure from the proposal.
- Detail measures to mitigate the impacts of the proposal on any infrastructure items, including proposed relocation.

12. Ecologically Sustainable Development (ESD)

- Identify how the development will incorporate ESD principles in the design, construction and ongoing operation phases of the development.

	<ul style="list-style-type: none"> • Address water quality management for the site including an “<i>Integrated Water Management Plan</i>” to include any proposed alternative water supply, proposed end uses of potable and non-potable water, demonstration of water sensitive urban design and any water conservation measures. • Operational waste management and reduction measures. <p>13. Contamination</p> <ul style="list-style-type: none"> • Demonstrate compliance with the requirements of SEPP 55. <p>14. Planning Agreements / Developer Contributions</p> <ul style="list-style-type: none"> • Scope and justification for any planning agreement / developer contributions proposed. <p>15. Environmental, Construction and Site Management Plan</p> <p>The EA shall provide an Environmental and Construction Management Plan for the proposed works, and is to include:</p> <ul style="list-style-type: none"> • Community consultation, notification and complaints handling; • Impacts of construction on adjoining development and proposed measures to mitigate construction impacts; • Noise and vibration impacts on and off site; • Air quality impacts on the neighbourhood; • Odour impacts; • Water quality management for the site; and • Waste and chemical management. <p>16. Staging</p> <ul style="list-style-type: none"> • Details regarding the staging of the proposed development. <p>17. Consultation</p> <ul style="list-style-type: none"> • Undertake an appropriate and justified level of consultation in accordance with the Department’s Major Project Community Consultation Guidelines October 2007.
Deemed refusal period	60 days