

Department of Environment and Climate	Change
The preparation of an overarching and strategic acoustic design strategy is highly desirable	 The Concept Plan Modification retains and protects the Statement of Commitments included in the approved Concept Plan (as modified) which requires all future development applications / project applications to be accompanied by a Noise Impact Assessment & Mitigation Measures report.
	The existing, and therefore proposed, Commitments also require:
	 traffic management plans to incorporate strategies that minimise transportation noise levels associated with vehicle movements;
	 the envelope of buildings to be designed to limit sound intrusion from surrounding noise sources;
	 the preparation of plans of management for noise generating community facilities; and
	 the identification and assessment of appropriate of noise emissions from patrons within proposed licensed premises consistent with Liquor Administration Board Guidelines and the preparation of appropriate plans for managing patrons' arrival/departure.
	 Collectively, the Statement of Commitments establishes an appropriate framework for managing acoustic impacts at Barangaroo South.
	 It is considered that this comment has been addressed by the Project Application documentation.
DECCW expects detailed acoustic studies to accompany each project application	 The Concept Plan Modification retains and protects the Statement of Commitments included in the approved Concept Plan (as modified) which already requires all future development applications / project applications to be accompanied by a Noise Impact Assessment & Mitigation Measures report.
	The project applications submitted to the Department of Planning to date, being the Bulk Excavation and Basement Car Parking Project Application, the SISCO Pilot Trials Project Application and the Commercial Building C4 Project Application have been accompanied by Acoustic Assessments for both the construction and operational phases and as such, this comment has been addressed.
An Environmental Protection License (EPL) may be required for any	 The Barangaroo Delivery Authority has confirmed to DECCW and Lend Lease that it will be the licensee for all Environmental Protection Licences (EPLs) within Barangaroo.
cogeneration or tri-generation plant or power plants servicing building clusters.	 A copy of the Barangaroo Delivery Authority's letter to Lend Lease dated September 3, 2010 confirming this arrangement can be provided to DECCW upon request.

RESPONSE TO AGENCY SUBMISSIONS



•	A number of activities on the site will be
	scheduled activities under the POEO Act
	will require an EPL. DECCW
	understands that the Barangaroo
	Delivery Authority will apply for an
	overarching EPL for the Barangaroo site

- The Barangaroo Delivery Authority has confirmed to DECCW and Lend Lease that it will be the licensee for all Environmental Protection Licences (EPLs) within Barangaroo.
- A copy of the Barangaroo Delivery Authority's letter to Lend Lease dated September 3, 2010 confirming this arrangement can be provided to DECCW upon request.

Department of Industry and Investment

- No objection to the proposed Concept Plan modification.
- Recommends mitigation measures in Section 7.2.1 of Marine Ecology, Water Quality and Contaminated Sediment Impact Assessment are to be implemented.
- Noted.
 - Agreed. Lend Lease is committed to implementing all matters cited in the Statement of Commitments, which will ensure that these issues are addressed.
- Questions whether proposed piling for the landmark hotel constitutes reclamation, which is an activity prohibited under the Sydney Harbour REP.
- The Concept Plan Amendment does not propose to undertake reclamation to enable the construction of the landmark building (hotel and pier) and as such this matter is not relevant.
- The redevelopment of Barangaroo presents a unique opportunity to improve currently degraded and reclaimed aquatic and riparian habitat at this location. Whilst environmentally friendly seawall design principles are more practically implemented in the northern Headland and Cove, some features to improve aquatic biodiversity around the Southern Cove should be incorporated
- Lend Lease is committed to adopting best practice in the construction of the Southern Cove and will consider features to improve aquatic biodiversity around the Southern Cove. This will be detailed in a future project application for the Southern Cove.



such as "pots".	
 Requests that access to the waterfront for recreational fishing is permitted across the Barangaroo site. 	 Noted. There is nothing in the proposed SEPP Amendment that precludes recreational fishing to occur along the Barangaroo waterfront and as such this matter has been addressed.
Leichhardt Council	
 The Concept Plan now differs from the award winning design approved in 2007 and this is not supported. 	 The original Barangaroo Concept Plan was based on the design competition winning scheme (as opposed to an award winning scheme) by Hill Thalis et al subject to the imposition of conditions requiring a natural headland and two enlarged coves. These conditions reflect the jury findings of the design competition.
	 As discussed in the subject Concept Plan Amendment application the Concept Plan has been modified three times since it was originally approved in 2007.
	 The subject application is considered to be an amendment under Section 75W of the Environmental Planning and Assessment Act, 1979 and this has been confirmed by the Department of Planning.
 The removal of the cruise passenger terminal and its planned relocation to White Bay is strongly opposed. 	The State Government's proposal to relocate the cruise passenger terminal to White Bay is outside the scope of Lend Lease's Concept Plan Modification. Hence this matter is not relevant to this assessment.
 The proposal includes two east west pedestrian connections through lobby spaces of buildings as well as the north- south mid block connections. All pedestrian networks should be open to the sky and open 24 hours (not pass 	 As outlined in the PPR the concept of the gallerias, being to provide a unique sheltered civic space that could be both a meeting place for workers and visitors as well as a satisfactory access/address points for tenants, has been abandoned. The Gallerias have been replaced with two public streets similar to but smaller in scale than "City Walk", a pedestrian east- west link. They are proposed to have a range of coverings to protect pedestrians from the elements, and will be open 24 hours a day. Hence this comment has been addressed. The Urban Design Report – Streets and Laneways, within Blocks 2 and 3 provides further detail in this respect.
through lobby spaces of buildings).	
 The proposed light rail will be critical to any redevelopment of this site. 	 The PPR includes information provided by the Barangaroo Delivery Authority outlining the Public Transport commitments relevant to Barangaroo. NSW Transport has commissioned a detailed Transport Study to consider alternative light rail routes / services within the CBD which will provide information on services pertinent to Barangaroo.
 There is potential conflict between vehicles and pedestrians along the foreshore walk and proposed vehicle drop of circulation 	As outlined in the PPR, a range of design parameters are proposed for the future design of the landmark hotel drop-off facility including the creation of a safe pedestrian zone immediately in front of the Block X to reinforce pedestrian priority. These parameters will need to be satisfied with the future project application for the landmark hotel building and public pier and are included as a Statement of Commitment.



	 The Urban Design Controls have been amended to require that the hotel drop-off will maintain a minimum uninterrupted waterfront access of 10m to address this issue.
	Given the above, it is considered that this matter has been addressed.
 The height and floor plates of the commercial buildings are significantly larger than existing CBD buildings. The bulk and scale of the buildings is excessive. 	• The proposed height assists in completing the strong city framework of tall buildings, at Circular Quay and adjacent to the Botanical Gardens. Together the towers will establish a rising form from south to north and a strong edge to the open water beyond. This cluster of buildings, which are similar in height to existing tall CBD buildings, completes the city's north-western limit, provides for world class buildings of design excellence, and is a catalyst for the wider regeneration of the area in the future. It will not dominate the City skyline as Barangaroo's tallest building is only the 6th tallest building in Sydney.
	• The proposed heights enable the buildings to contribute to the evolving interest in Sydney's city skyline, with proposed variations in building heights and building designs adding further visual interest.
	• The building heights are also important aspects in delivering improved sustainability outcomes with increased density enabling efficiencies from shared infrastructure. Taller buildings will enable this density to be achieved with a lower concentration of buildings at ground level, improving public realm outcomes and ensuring more equitable sun, shade and view sharing.
	 The commercial tower forms have been reconfigured as part of the PPR.
	 A further discussion on bulk and scale of the commercial buildings is provided in the PPR and in the Supplementary Urban Design Report. The tower forms are considered appropriate in their context as an integral part of Sydney's CBD for the reasons outlined below:
	 Office demand has evolved reflecting the changing global economy;
	o The drive for economies of scale and efficiencies is pushing large multinationals, particularly in the financial services sector, to rationalise their operations in single buildings. This is driving the demand for increasingly large floor plates;
	o In addition to cost efficiencies, large floor plates also offer productivity, communications and cultural gains;
	 Sydney has been left behind in the development of primary office space and has an increasingly aging stock of office buildings;
	 There is a shortage of prime office space in the CBD;
	 The risks of not addressing this shortage is that these businesses move elsewhere (as has occurred in the cases of Canary Wharf, La Defence, Melbourne's Dockland) or worse, away from the city or country altogether;
	 This risk is acknowledged in the report for City of Sydney re Goldfields House redevelopment, however as this development shows, it is difficult to secure appropriate sites within the CBD to develop such prime buildings;
	 Barangaroo provides a rare and unique opportunity to address this shortage and supports Sydney's position as Australia's financial centre and a major regional financial services hub;
	 One aspect of developing prime office space that meets the current and future demands of global businesses is their visual



	impact on the surrounding area;
	 The Barangaroo design team has considered this in great detail and has adopted a number of design strategies and features to ameliorate this impact. These strategies include:
	 The orientation and placement of the buildings for optimal solar penetration and view sharing
	 The positioning of lift cores in the centre of the northern elevation to give a more compacted appearance
	 Introduced additional architectural components to articulate and modulate the north and south facades to break up the visual mass of the longer elevations
	Reduction in the length of the floorplate
	Use of horizontal articulation to reduce vertical massing
	 Providing for the use of architectural components such as corner redents to create "prows" at the narrower ends of the buildings
	 An extension of the building podiums to better define the laneway system and areas of public realm and to enhance the human scale environment at ground level
	 Providing for modulation of the mass of the three towers (above RL 160) by reducing the height and/or the floor area in one of the towers, within Concept Plan Amendment building envelope of Block 2
	The above provides a thorough justification of the proposed heights and bulk and scale.
The proposed design results in the overshadowing of buildings and public	 An updated shadow analysis has been provided with the PPR which gives details about the shadow impacts of the revised commercial tower forms. The conclusion of that analysis is that the shadowing impacts are acceptable.
spaces within Pyrmont, Darling Harbour	Overall, it is considered that the shadowing impacts of the Concept Plan Modification are acceptable given that:
and parts of the city. These spaces should not be overshadowed.	 the water of Darling Harbour maintains significant direct daylight hours during the key recreational middle of the day boating period;
	 residential properties to the east and west are largely unaffected and are not expected to experience any more shadowing than envisaged by the approved Concept Plan (as modified) – this assessment takes into account the landmark hotel building;
	 the extent of additional shadowing to properties to the west falls mainly over commercial buildings, does not impact on the Southern Cove (particularly from Block 4C), parks to the west and is for a short period of time between 9am and 10am in mid winter and on March 21;
	 the extent of additional shadowing over CBD buildings from the envelopes has been modelled against the maximum area within which shadows may potentially be cast by buildings within the block control envelopes included in the modified Concept Plan (yellow), which in practice will never be realised. A review of Lend Lease's indicative design shadowing (blue line) reveals that in most instances the real effect of shadowing is generally within the approved shadowing of the existing Concept Plan; and
	o in any case, the expected extent of shadowing does not preclude these areas being well utilised for a range of activities.



	In the context of the Barangaroo South site as well as the entire Barangaroo site, the significant periods of direct sunlight, and noting
	the approved shadow impacts established by the current Concept Plan, the additional shadow impacts are considered acceptable.
 The proposed pier with the private hotel is strongly opposed. Council does not support the privatisation of the harbour. 	 Council's opposition is noted, but appears to reflect different objectives and ambitions for the regeneration of this important part of the CBD.
	The landmark hotel and pier is a core element of the Concept Plan Amendment for Barangaroo South. It helps to define and frame the waterfront public square, which is the key cultural feature and at the heart of the public domain of this western edge of the city. The landmark hotel provides economic and activation benefits that will help attract retail and leisure operators to the area and will enhance vibrancy within the precinct beyond the working day into the evenings and at weekends.
	The landmark hotel will exemplify design excellence and is planned to stand out from other city buildings as an architecturally stunning, iconic structure that makes a bold statement about Barangaroo and its sustainability credentials and that sends a message to the world that Sydney and Australia are innovative and exciting places to visit and do business.
	The existing Barangaroo site is almost entirely man made and consists of reclaimed land and infill between the old piers and wharfs that made up this former working port. The proposed Barangaroo South pier reflects this industrial heritage and reinforces the principal of full public access to the waterfront with a boardwalk around the hotel. The pier projects 85m into the harbour and occupies approximately 4,000 sqm of harbour area. This is offset by the creation of the Northern and Southern Coves, the combined area of which gives back 3.5 hectares of water area to Sydney Harbour (some 7 times the area proposed to be occupied by the pier).
	Lend Lease does not accept that the proposed pier and hotel either sets a precedent or is privatising the harbour. Sydney has a history of public and private wharfs and piers, many of which have been completely appropriated for exclusive private residential apartments, including a number in close proximity to Barangaroo, including Sydney Wharf, Darling Island and Walsh Bay.
	■ Two of Sydney's reclaimed piers contain hotels — at Pier One in Walsh Bay and the Finger Wharf at Woolloomooloo Bay. Whilst privately operated, a hotel is a quasi-public place, with restaurants, bars, function rooms and other facilities designed to attract visitors throughout the day, even more so than buildings recognised public buildings such as theatres, concert halls or museums, which are often only open to ticketholders and at fixed times. At Woolloomooloo, public access is limited to the southern part of the pier that contains the hotel and restaurants and it does not extend to any part of the pier to the north that contains residential apartments.
	 The documentation submitted as part of the Project Application includes a Navigation Report and Visual Impact Assessment which demonstrate that the impacts of the landmark hotel building and public pier are acceptable.
	The Concept Plan Modification is accompanied by an amendment to Part 12 of Schedule 3 of the State Environmental Planning Policy - Major Development (2005) which proposes to amend the Sydney Harbour REP and rezone the area of land proposed to be accommodated by the landmark building to permit the proposed range of uses.
	 Given the above, it is considered that the incorporation of the hotel/public pier is an integral and justifiable component of the overall Concept Plan scheme.
The hotel on the pier will result in	As stated in the application, servicing of the landmark building is proposed by vehicle access through the basement, where all



increased vehicle and pedestrian conflict with taxis, coaches, car drop offs and other vehicles.	movements related to deliveries, garbage collection, laundry collection etc will occur.
	• At ground level, the landmark hotel building arrival will be limited to a vehicular drop-off and pick-up for visitors. This facility will not be utilised for coach drop off, taxi layover or car parking.
	 As outlined in the PPR, a range of design parameters are proposed for the future design of the landmark building drop-off facility including the creation of a safe pedestrian zone immediately in front of Block X to reinforce pedestrian priority. These parameters will need to be satisfied with any future project application for the landmark hotel building and are included as a Statement of Commitment.
	The Urban Design Controls have been amended to require that the hotel drop-off will maintain a minimum uninterrupted waterfront access of 10m to address this issue.
	It is considered that the above measures will appropriately address this issue.
 The hotel will result in an adverse dominant visual impact 	 A Visual Impact Assessment has been submitted as part of the application which concludes that the proposed visual impact of the landmark building is acceptable.
	 The landmark hotel will exemplify design excellence and is planned to stand out from other city buildings as an architecturally stunning, iconic structure that makes a bold statement about Barangaroo and its sustainability credentials and that sends a message to the world that Sydney and Australia are innovative and exciting places to visit and do business.
 Further consideration needs to be given to the retention and enhancement of all existing significant views and need for 	 The submitted Visual Impact Assessment provides a thorough discussion about what has been established as the existing significant views to be retained and protected at Barangaroo. The Assessment concludes that the proposal is able to achieve all relevant and appropriate view, vista, outlook and visual impact objectives.
clear views along the foreshore walk.	 A revised visual impact analysis which reflects the revised tower configuration has been prepared and has been submitted. This report shows that significant existing views will be maintained and enhanced and that views along the foreshore walk will be maintained.
	The Concept Plan Modification seeks to meet a variety of planning and urban design objectives and can therefore be accommodated without resulting in significant view impacts beyond those recognised (and approved) under the approved Concept Plan (as modified). Furthermore, the Supplementary Urban Design Statement (refer to Appendix C of the Concept Plan Modification PPR) seeks to generally retain and strengthen the approved view sharing design principles and urban design controls to ensure the future built form appropriately responds to established views.
	On balance, the proposal is able to achieve all relevant and appropriate view, vista, outlook and visual impact objectives.



NSW Maritime	
 Road and intersection works at Rozelle and White Bay due to the relocation of the Cruise Passenger Terminal to White Bay should be at no cost to NSW Maritime. A road and traffic plan for access to the Glebe Island/White Bay precinct is required. 	The State Government's announcement to relocate the cruise passenger terminal to White Bay is outside the scope of Lend Lease's Concept Plan Modification and hence this matter is not relevant for consideration in this instance.
 Active uses are supported. Office space and amenities for ferry staff at the Barangaroo ferry terminal will be required. The Barangaroo ferry wharves should be moved north to avoid encroachment on the King Street Wharf water area. The cost of the ferry wharves should be included as part of the public transport infrastructure for the development NSW Maritime should be consulted in the design of the ferry terminal 	 The provision for landside ferry facilities is proposed within the 10,000m² community uses that form part of the proposed application. These landside facilities will form part of a future application and will be designed in consultation with the NSW Maritime, Transport NSW and Sydney Ferries. Whilst the proposed Concept Plan Modification facilitates new ferry wharves and an indicative location, construction of the future ferry wharves and associated waterside infrastructure is proposed to be undertaken by others and does not form part of the Concept Plan Modification. The Concept Plan Modification retains and protects the Statement of Commitments approved as part of the existing Concept Plan which requires ongoing consultation with NSW Maritime in relation to the potential to expand ferry and charter boat operations within the redevelopment site, amongst other matters.
The reduction in the width of the promenade will reduce public access and interaction with the Harbour and will be a loss of public amenity The reduction in the width of the promenade will reduce public access and interaction with the Harbour and will be a loss of public amenity.	 The promenade width has been analysed in the subject proposal and a relevant precedent study for promenades of this size has been provided. The precedents illustrate that there are many Sydney and international examples that demonstrate that promenades of this scale and width provide more vibrant and welcoming environments—London's South Bank and Sydney's East Circular Quay are two examples. The width is also of an appropriate scale for the anticipated recreational activities such as cycling and walking as well as café outdoor dining and is a continuation of the scale (albeit some 7 metres wider) of the waterfront space in front of the King Street Wharf buildings. At the southern end of the promenade, the width is also appropriate to cater for the interchange of people moving between proposed transport options including new ferries, taxis, bus and light rail links. Whilst the promenade has been reduced in width, it has been rearranged and extended around the public pier and the Southern



	Cove as it travels north, resulting in a more diverse and interesting promenade with harbour water extending further into the site. This also results in parts of the public promenade now having a northerly aspect including the waterfront square which will add to public amenity. • Furthermore, the proposed width of the promenade at 30 metres is wider than the existing section of the waterfront promenade in front of King Street Wharf. As such, it is considered that the proposed width of the promenade is appropriate.
 The new Block Y which extends into the Harbour has the potential to increase navigation risks to the Southern end of Darling Harbour. Agreement needs to be reached with NSW Maritime in relation to commercial land tenure arrangements over Sydney Harbour before approval can be granted for the project. 	 A comprehensive Navigation Report has been prepared in consultation with both NSW Maritime and the Harbour Master of Port of Sydney and submitted as part of the Project Application. This report concludes that the landmark building and public pier would not adversely impact on navigation and the movement of vessels in Darling Harbour. Lend Lease has made an application for landowner's consent from Maritime NSW which will be provided to the Department of Planning under separate cover. Barangaroo Delivery Authority is currently in negotiation with NSW Maritime regarding relevant issues including tenure of the water area associated with the proposed public pier and the additional water area created as part of the Coves.
 The Southern Cove should be configured to allow berthing for short periods for private craft. 	 The Southern Cove will be the subject of a separate Project Application. The detailed design of the cove will be prepared in consultation with NSW Maritime and based on the functional requirements of this water body. As such, it is considered that this matter has been satisfactorily addressed at this stage.
Formal consultation is required with NSW Maritime before any jetties and other structures over the Harbour are considered. Agreement with NSW Maritime is required in relation to navigation issues and commercial land tenure arrangements.	 The Concept Plan Modification retains and protects the Statement of Commitments included as part of the approved Concept Plan (as amended) which require ongoing consultation with NSW Maritime in relation to: any proposal that has the potential to impact upon navigational safety; the potential to expand ferry and charter boat operations within the redevelopment site; on-going maintenance of seawalls, launching and berthing facilities. proposed encroachments into NSW Maritime's land at Darling Harbour; the development of the proposed coves and inlets which will become part of the navigable waters of Sydney Harbour; other issues which will inevitably arise from the interface with NSW Maritime's land; and Port Security matters. Lend Lease will work closely with NSW Maritime during the design development stage to address navigational issues. Barangaroo Delivery Authority is currently consulting with NSW Maritime regarding land tenure arrangements for the proposed public pier / hotel. The above will ensure that the matter of consultation with NSW Maritime is addressed.

RESPONSE TO AGENCY SUBMISSIONS



National Trust

- Objects to the proposed hotel on the grounds that: it intrudes into the Harbour; is visually intrusive; represents privatisation of open space; conflicts with the planning principles in the Sydney Harbour REP; creates an unwelcome precedent; and compromises future maritime opportunities.
- The proposed hotel is against the spirit and intent of the Sydney Harbour REP, represents an undesirable precedent and is poorly justified.

- The National Trust's opposition is noted, but appears to reflect different objectives and ambitions for the regeneration of this important part of the CBD.
- The landmark hotel and pier is a core element of the Concept Plan Amendment for Barangaroo South. It helps define and frame the waterfront square, which is the key cultural feature and is at the heart of the public domain of this western edge of the city. The landmark hotel provides economic and activation benefits that will help attract retail and leisure operators to the area and will retain vibrancy in the precinct beyond the working day, into the evenings and at weekends.
- The landmark hotel will exemplify design excellence and is planned to stand out from other city buildings as an architecturally stunning, iconic structure that makes a bold statement about Barangaroo and its sustainability credentials and that sends a message to the world that Sydney and Australia are innovative and exciting places to visit and do business.
- The existing Barangaroo site is almost entirely man made and consists of reclaimed land and infill between the old piers and wharfs that made up this former working port. The proposed Barangaroo South pier reflects this industrial heritage and reinforces the principal of full public access to the waterfront with a boardwalk around the hotel. The pier projects 85m into the harbour and occupies approximately 4,000sqm of harbour area. This is offset by the creation of the Northern and Southern Coves, the combined area of which gives back 3.5 hectares of water area to Sydney Harbour (some 7 times the area proposed to be occupied by the pier).
- Lend Lease does not accept that the proposed pier and hotel either sets a precedent or is privatising the harbour. Sydney has a
 history of public and private wharfs and piers, many of which have been completely appropriated for exclusive private residential
 apartments, including a number in close proximity to Barangaroo, including at Sydney Wharf, Darling Island and Walsh Bay.
- Two of Sydney's reclaimed piers contain hotels at Pier One in Walsh Bay and the Finger Wharf at Woolloomooloo Bay. Whilst privately operated, a hotel is a quasi-public place, with restaurants, bars, function rooms and other facilities designed to attract visitors throughout the day, even more so than buildings recognised public buildings such as theatres, concert halls or museums, which are often only open to ticketholders and at fixed times. At Woolloomooloo, public access is limited to the southern part of the pier that contains the hotel and restaurants and it does not extend to any part of the pier to the north that contains residential apartments.
- The documentation which accompanies the Project Application includes a Navigation Report and a Visual Impact Assessment which demonstrate that the impacts of the landmark hotel building and public pier are acceptable.
- The Concept Plan Modification is accompanied by an amendment to Part 12 of Schedule 3 of the State Environmental Planning
 Policy Major Development (2005) which proposes to amend the Sydney Harbour REP and rezone the area of land proposed to be
 accommodated by the landmark building to permit the proposed range of uses.
- Any consideration of additional GFA in Barangaroo South should be contingent upon development controls being
- The proposed Concept Plan Amendment does not include any modifications to Barangaroo Central and as such this is not relevant.



imposed to prohibit further floor space and height increases at mid Barangaroo (Central).	
NSW Transport – Sydney Ferries	
 Request that the Concept Plan be modified to include a ferry terminal. Ferry wharves and ferry transportation should be included as an integral part of the Public Transport Plan 	 The provision for landside ferry facilities is proposed within the 10,000m² community uses that form part of the proposed application. These landside facilities will form part of a future application and will be designed in consultation with the NSW Maritime, Transport NSW and Sydney Ferries. Whilst the proposed Concept Plan Modification facilitates the future provision of new ferry wharves and provides an indicative location, construction of the future ferry wharves and associated waterside infrastructure will be undertaken by others and does not form part of the Concept Plan Modification. The Concept Plan Modification retains and protects the Statement of Commitments included as part of the approved Concept Plan (as modified) which requires ongoing consultation with NSW Maritime in relation to the potential to expand ferry and charter boat operations within the redevelopment site, amongst other matters.
Sydney Ports	
 Requests that consultation with Sydney Ports and the Harbour Master be incorporated into the Statement of Commitments. 	The Concept Plan Modification retains and protects the Statement of Commitments included as part of the approved Concept Plan (as modified) which require ongoing consultation with Sydney Ports.
 Requests that the Major Development SEPP be amended in a number of instances to facilitate ongoing Port facilities related to existing assets, including the Harbour Control Tower and Moores Wharf facility. 	Whilst Lend Lease raises no objection to the proposed amendments, it should be noted that they do not form part of this Concept Plan Amendment.
 Notes that Sydney Ports is the landowner of Lot 2 DP 876514 and Lot 4 876514 not the Maritime Ministerial Holding Corporation. Therefore land owners consent is required from Sydney Ports prior to the determination of the 	 Noted and the Land Ownership Plan provided within the Concept Plan Amendment acknowledges this. Lend Lease will seek landowner's consent from Sydney Ports, which will be provided to the Department of Planning under separate cover prior to determination in accordance with the Environmental Planning and Assessment Regulation, 2000. As such, this comment is addressed.



application.	
Sydney Water	
 A Water Servicing Coordinator should be engaged by the developer to assist in obtaining a Section 73 Certificate from Sydney Water. The proponent must fund any adjustments to Sydney Water infrastructure required as a result of the development. 	 Agreed. Lend Lease is committed to engaging a Water Servicing Coordinator for individual Project Applications and has committed to same through the first Project Application being the Bulk Excavation and Basement Car Parking PA1 – MP10_0023 (refer to Preferred Project Report) to address this comment. Noted
 Approval is required from Sydney Water for discharge of wastewater into its system. Additional information needs to be provided to Sydney Water in relation to the operations of the proposed Blackwater Treatment Plant 	 Noted. Lend Lease will continue working closely with Sydney Water during the detailed design of the blackwater treatment plant during the preparation of the relevant Project Application to address this comment.
 Lend Lease will need to enter into a Trade Waste Agreement with Sydney Water for the disposal of any treated wastewater from onsite remediation activities. Sydney Water requests ongoing consultation regarding remediation activities including review of remediation plans prior to commencement of any works. 	 Noted. Lend Lease will continue working closely with Sydney Water to enter into the required Trade Waste Agreement for relevant future Project Applications. The Concept Plan Modification retains and protects the Statement of Commitments included as part of the approved Concept Plan (as modified) which requires ongoing consultation with Sydney Water. Lend Lease will work closely with Sydney Water during the design development stage to address remediation activities and issues associated with Sydney Water owned land and assets. As such, this comment has been addressed.
 Sydney Water does not support the proposed ownership of water infrastructure as outlined in the Infrastructure Concept Plan. The ownership of water related infrastructure 	 Noted and Lend Lease will work closely with Sydney Water regarding this issue and notes that it is expected that Sydney Water would continue to act as provider and distributor of potable water.



needs to negotiated with Sydney Water prior to development occurring.	
 Works to sewage pumping stations SP0014 and SP1129 will be required as a result of the development. The full cost of any works required to SP0014 are to met by the developer. Sydney Water requires that the operation, maintenance and location of SP1129 is not impacted on or compromised in any way. 	 No modifications or otherwise are proposed to SP0014 as part of the works contemplated under Lend Lease's Concept Plan Modification. Modifications to SP0014 are proposed under the Barangaroo Delivery Authority's Headland Park Early Works MP 10_0047.
The proposed deviation/adjustment to Sydney Water's city Area Stormwater Channel is not supported. An alternative design solution is required.	 The proposed deviation of a part of the existing stormwater system has been presented to Sydney Water in concept form and is consistent with project sustainability aspirations, which includes the diversion of stormwater towards the parkland for irrigation purposes. This stormwater is a valuable asset that is currently wasted as it flows directly into the harbour. As included in the Statement of Commitments, Lend Lease proposes that the details of this diversion will be agreed with Sydney Water as the design of this element is progressed. The development of the approved Concept Plan (as amended) for Barangaroo relies on the relocation of this stormwater infrastructure as it currently conflicts with a significant element of basement and below ground infrastructure. Lend Lease believes that a suitable design solution can be developed that diverts the necessary flows to the south and north of the proposed development site. Sydney Water has not indicated the extent of its concerns to date, and Lend Lease will continue to liaise with Sydney Water in order to identify and agree an appropriate solution.
 Sydney Water strongly supports the Water Sensitive Urban Design initiatives and seeks further discussions regarding potential treatment measures 	 Noted. Lend Lease will continue working closely with Sydney Water during the design development stage of the proposed WSUD measures to address this comment.
 A Stormwater Harvesting and Reuse Agreement will be required between Sydney Water and the harvester for any proposed use of stormwater harvested from Sydney Water's stormwater system. 	 Noted. Lend Lease will continue working closely with Sydney Water to enter into the required Stormwater Harvesting Reuse Agreement for relevant future Project Applications to address this comment.

RESPONSE TO AGENCY SUBMISSIONS



CITY OF SYDNEY

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 the sub-stages to allow sequenced determinations.

Noted however one of the primary reasons for the Director General referring an application to the PAC for review is in instances

as such does not trigger the need for the Minister to delegate powers and functions to a PAC.

where Proponent's have made disclosures about political donations. Lend Lease does not provide donations to political parties and

The proposed Concept Plan Amendment does not seek a staged consent. By its very nature the Part 3A planning process effectively stages development - once a Concept Plan is determined, project applications for detailed designs can be submitted for assessment and determination.

Recommendation 2

That the Proponent be requested by the Minister to revise their diagrammatic building shape drawings to more accurately reflect the maximum Gross Floor Area (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 this

- The indicative design illustrated and discussed in the submitted Urban Design Statement and the Environment Assessment outlines a development option for Barangaroo South which utilises the proposed GFA within the proposed Height controls and Block envelopes. The GFA and Height definitions utilised for this development option are those relevant to the site.
- The Built Form Principles and Urban Design Controls provide massing forms to illustrate the intent of the principles and controls and to guide future design and development of buildings. These forms are not indicative design.
- This method of illustrating design controls and built form principles reflects the methodology utilised in the approved Concept Plan (as modified) as this is an amendment
- In this regard it is not necessary to revise the GFA or the building envelope.

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application.

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 assess 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

- The NSW Government and the City of Sydney Council are committed to delivering a City Centre that is integrated and connected through effective public transport, pedestrian, cycling and road links.
- Growth and development in the central part of Sydney is supported by a comprehensive planning framework, whereby land use and transport planning is integrated. This framework comprises:

NSW State Plan - updated in 2010 and supported by detailed delivery plans, the State Plan includes targets to achieve better transport and liveable cities by 2016.

Metropolitan Strategy and supporting draft Sydney sub-regional strategy.

Metropolitan Transport Plan – released in February 2010, provides a 25 year vision for transport and land use planning for Sydney and includes a 10 year fully funded package of transport infrastructure to support it. Projects supporting the City Centre include:

- An expanded light rail service for the inner city;
- New and enhanced railway lines into the City Centre, enabling increased services from Western Sydney and additional capacity at key city stations;
- Better bus connections, including the delivery of 1,000 new buses, supporting public transport information and priority measures and depot facilities;
- Sydney Metropolitan Strategic Cycle Network;
- Improved ferry services including the delivery of six new ferry vessels at a total cost of \$709 million;
- Enhanced road and freight network;
- Improved customer service initiatives including improved passenger information, electronic ticketing, station enhancements and additional rolling stock; and
- Long term planning to support future capacity requirements, including corridor protection through the CBD and across the harbour.

Mode strategies, commencing with the release of the NSW BikePlan in May 2010. Mode strategies for rail, bus, ferry and freight are proposed to be released by TNSW for public consultation in late 2010

City Centre Access Plan, which will be conducted on an 'all modes-all trips' basis across the short (to 2016), medium (to 2021)



	and long (to 2036) term taking into account current and future projects and growth resulting from development such as Barangaroo. The Plan will cover pedestrians, cyclists, public transport (including rail, light rail, buses and ferries) and traffic (that is, all road going modes, such as cars, taxis, trucks and couriers) at all times of day including weekends. The Access Plan is due for competition in early 2011.
	Memorandum of Understanding with the City of Sydney Council, which includes a package of short term bus enhancements in the Wynyard Precinct
	Wynyard Precinct Master Plan, being undertaken by TNSW and informed by RailCorp's Wynyard Station Plan
	Sydney CBD Coach Strategy, prepared by TNSW and released in October 2009.
	 Planning for Barangaroo is being undertaken within the framework of the Barangaroo TMAP whereby mode split to private vehicles is nominated as 4%. All concept and individual project applications are being over seen by a Transport Working Group comprising Barangaroo Delivery Authority, City of Sydney, Transport NSW and Lend Lease.
	This Transport Working Group will oversee the development of a new Barangaroo TMAP in mid 2011 based on the outcomes of the various transport studies currently being undertaken as outlined above.
 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. 	The Barangaroo Pedestrian Link has already been approved as part of the Part 3A Project Approval for the CBD Metro.
Recommendation 4 That the Proponent is requested by the	 Ancillary and necessary road works including the provision of signal and road and footpath upgrades will be the subject of future project applications not the subject Concept Plan Amendment application.
Minister to:	 The Project Application for the Bulk Excavation and Basement Car Parking has been approved by the Minister for Planning.
 Commit to upgrades to the footpaths on surface streets such as Erskine Street, 	 This Concept Plan Amendment does not seek to alter the location of the Bus Layover as stated in the TMAP that accompanies the approved Concept Plan (as amended).
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 landowner;	 Noted. The TMAP is a document that will evolve with the development of Barangaroo and it will be regularly updated to reflect additional public transport commitments.
Amend the current Project Application	

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for basement car parking in Barangaroo South to accommodate a bus layover (provide this is in accordance with the 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 offstreet 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.
- All assumptions from TMAP September 2008 and MWT Modified Concept Plan Transport Report, July 2008 including traffic (or trip) generation rates and parking ratios have remained the same for the TMAP Supplementary analysis (as submitted with the Concept Plan Amendment). There has been no change in trip generation rates. The increase in car parking is primarily associated with the increase in the number of residential units. The provision of these residential spaces at the appropriate rates does not necessarily mean that these cars will undertake daily commuter trips. Car ownership in this location does not necessarily correlate with use of these vehicles for peak hour trips. The application of the same traffic generation rates as used in the TMAP 2008 has resulted in a similar number of peak hour trips when all uses are combined (please refer to Section 4.1.1 of the TMAP Supplementary for the Concept Plan Amendment).
- Each of the buildings will have access to bicycle parking and onsite facilities for commuter cyclists, i.e. showers, changing rooms, lockers. A minimum of 5% of building occupants will be provided with a bicycle parking space which aligns with the mode share target of 4% of journey to work by bicycle. Current planning for the basement has adopted a 10% target for bicycle parking spaces which is in excess of the mode share target and will allow for growth in this mode of travel as the cities bicycle facilities improve.
- There is nothing in the current planning that would preclude the provision of a public bike hire facility. Ideally this would be provided as a component of a Central Sydney bike hire scheme but could in the early stages be provided as a stand alone facility servicing the local foreshore recreational demands.
- It is considered that the above points provide adequate justification of the issues raised.

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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.

- Ancillary and necessary road works including the provision of signal and road and footpath upgrades will be the subject of future
 project applications not the subject Concept Plan Amendment application. In accordance with the recommendations of the TMAP
 upgrading works (signalisation) will be implemented at the intersection of Sussex and Napoleon Streets.
- All assumptions from TMAP September 2008 and MWT Modified Concept Plan Transport Report, July 2008 including traffic
 generation rates and parking ratios have remained the same for the TMAP Supplementary analysis. These rates have remained
 unchanged and hence are not lower than those used previously.

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.

New Built Form Principles have been prepared based on the new, commercial tower configuration and these accompany the PPR. In response to the recommendations by the Council, Principles 1, 4, 6 and 8 have been amended. These will supersede those submitted as part of the original Project Application. Hence this comment has been addressed.

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.

- The indicative design illustrated and discussed in the submitted Urban Design Statement and the Environment Assessment outlines a development option for Barangaroo South which utilises the proposed GFA within the proposed Height controls and Block envelopes. The GFA and Height definitions utilised for this development option are those relevant to the site.
- The Built Form Principles and Urban Design Controls provide massing forms to illustrate the intent of the principles and controls and to guide future design and development of buildings. These forms are not indicative design.
- This method of illustrating design controls and built form principles reflects the methodology utilised in the approved Concept Plan (as modified) as this is an amendment. Furthermore this is a methodology commonly used by planning authorities in formulating development controls – indeed, the Central Sydney DCP adopts a similar hierarchy of strategy, objectives and provisions.
- The Built Form Principles and Urban Design Controls have been amended to reflect the new tower configuration within Blocks 2 and 3 and the proposed articulation and modulation.
- Blocks 1, X and Y have a maximum GFA. Blocks 2, 3 and 4 (A, B and C) have a combined maximum GFA. This is consistent with the GFA allocation set out in the approved Concept Plan (as modified). A combined GFA for these blocks allows for the reallocation of GFA between the commercial towers and retail podiums and for flexibility during the detailed design stage. The proposed height

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Recommendation 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.

controls, Built Form Principles and Urban Design Controls provide further regulation over the mass and form of these towers and podiums.

- Definitive controls from the generic DCP are not suited to the proposed Concept Plan Amendment however the intent of these controls is applicable. A DCP Compliance table has been prepared to demonstrate consistency with the intent of the controls.
- The design controls for Blocks 2 and 3 require a podium and setback of the tower forms in consideration of future pedestrian amenity, wind amelioration, the creation of views to the sky and daylight access. Strict compliance with this control is not warranted given that this is a site specific design solution and the intent of the control can be achieved.
- Further to this, Lend Lease has deliberately included a Building Legibility Control which requires the tower to be legible at the base and at least one of façades of the tower is to extend to the ground plane and be expressed as a separate element to the tower. This is specific design outcome desired for the commercial buildings of Barangaroo South. The Barangaroo Design Excellence Review Panel has specifically influenced this design outcome.
- Lend Lease does not consider that the specific controls for floor plate tapering are appropriate for Barangaroo South. As set out in the PPR, in both the Supplementary Urban Design Statement and the Jones Lang LaSalle letter and report, it is critical for Sydney to underpin its future economic growth by creating more suitable and relevant office stock to accommodate this demand trend for large floor plates in excess of 2000m².
- However, an additional urban design control has been added to the Urban Design Controls for Block 2 to ensure that there is a reduction in the height and/or a reduction in the floor area above RL 160 on one of the commercial towers.
- An elegant building is a subjective argument. Lend Lease has gone to great lengths to express the constituent elements of the tower forms which will result in articulated and modulated building forms (as illustrated in the Project Application documentation for C4 submitted to the Department on 5 November 2010). This is further explained in the PPR in the Supplementary Urban Design Report and the Urban Design Controls.
- It is considered that the above points address the comments raised.

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Recommendation 10

That the Minister require redesign or condition any approval to:

- Increase minimum podium height consistent with the 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.
- Such definitive controls from the generic DCP are not suited to the Barangaroo proposed Concept Plan Amendment however the
 intent of these controls is applicable. A DCP Compliance table has been prepared to demonstrate consistency with the intent of the
 controls.
- The proposed podium heights as set out in the Urban Design Controls will improve the ambient light within the proposed street and laneway system and wind amelioration can be achieved through a variety of measures including podium elements. The scale of the tower forms is modulated by the Hickson Road and waterfront ribbon buildings which are higher than the podia when viewed from the east and west.
- The Urban Design Report Streets and Laneways within Blocks 2 and 3 (appended to the PPR) provides future detail on the podium strategy for these blocks. It states that the design intent for the podium levels is to provide a strong cohesive environment to enhance the pedestrian experience, to ensure a high level of articulation to the street frontages, and to ensure an armature of masonry elements gives definition and substance to the architecture. It provides further detail in this regard.

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

- An additional urban design control has been added to the Urban Design Controls for Block 2 to ensure that there is a reduction in the height and/or a reduction in the floor area above RL 160 on one of the commercial towers. This will create increased variation in the height of the commercial towers and increase variety of the skyline.
- Additional shadow drawings have been prepared to reflect the revised tower forms and these are appended to the PPR. The shadow
 analysis demonstrates that the likely shadow impacts are within acceptable limits.
- Extensive analysis of the proposed building heights was submitted with the Project Application. Lend Lease does not propose to reduce the building heights as suggested by the Council because it is considered that the heights as proposed are appropriate.



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. 	 As discussed in the Supplementary Urban Design Statement prepared by RSHP, the configuration of the commercial tower forms has been amended to reduce their bulk when viewed for long distances. The Built Form Principles and the Urban Design Controls have also been amended to reflect this amendment and include requirements for articulation and modulation. A desk top Wind Impact Assesment was provided with the subject application as the proposal is at concept plan stage and the design provided is only indicative. It concluded that wind amelioration measures would be required to be incorporated into the design at detailed design (and as such, Project Application) stage. In addition a Wind Tunnel Assessment is being undertaken and is based on the Indicative Design which is updated as part of this PPR. The Wind Tunnel Assessment will be submitted under separate cover when complete.
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	 Extensive detail was submitted in the Project Application in support of the building heights proposed. Lend Lease does not intend on modifying the proposed heights in the envelopes but has included a control to modulate heights of buildings in Block 2.

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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 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.

- As noted by Council in its submission on the Project Application for the Bulk Excavation and Basement Car Parking, the alignment of Margaret Street West is preferred as it enhances the Margaret Street view corridor. The future C5 tower form has been rotated to match the alignment of Margaret Street but has been moved further to the south to maximise the physical separation between C4 and C5. The result is that C5 now frames this view corridor along Margaret Street towards the water.
- As this point in time, the Grosvenor Street view corridor does not exist. The creation of the Grosvenor Street view corridor will require
 the partial demolition of the building at 189 Kent Street. When this view corridor is created Lend Lease will consider the opportunities
 for enhancing this view.

Recommendation 15

That the Minister require the Proponent to provide an adequate view impact assessment using human eye focal lengths (50mm at 35mm FX forma at 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.

- Lend Lease and its legal advisors do not accept that the use of a 50mm lens and an angle of view of 46 degrees is "the accepted criteria" by the Land & Environment Court for visual impact assessment as suggested by the City of Sydney submission.
- Virtual Ideas has provided further discussion on this topic, a copy of which is appended to the PPR and set out below:
- The intention of a photomontage rendering is to visually communicate how proposed built form sits in respect to its surroundings. To achieve this, a digitally rendered image from a digital 3D model is superimposed into a digital photograph to provide an accurate representation in terms of light, material, scale, and form.
- Camera lens selection also plays an important part in creating a photomontage that communicates visual impact. There are several
 things to consider with respect to lens selection.

Field of View of the Human Eye

This is a topic that varies depending on the source of information. In many cases the field of view of the eye is stated to be 17mm. Other sources of information on the web say that it is more like 22-24mm. Whichever the case it is clear that the human eye has quite a wide field of view and when we stand close to a subject (say a building) we have quite a lot of vision towards the top, sides and

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bottom. In addition to this the human eye can change focus and target direction extremely quickly allowing us to view a large structure in a very short period of time, effectively making our perceived field of view even larger.

The Perspective of the Human Eye

- It is difficult to accurately reproduce what the human eye sees by the means of a printed image. As the back of the human eye is curved and the sensors on cameras are flat the perspective of a photograph can look quite different to how we see things in the real world, especially with a larger field of view, or wider lens.
- In digital photography circles it is commonly stated that using a longer lens (approx 50mm) reduces the amount of perspective in an image and therefore looks more like the human eye would see reality, but this is talking about perspective only, and does not consider the field of view of the eye. If you take a photo using a 50mm lens, print the photo, and hold the print out against the actual view in the same location the photo was taken from, it becomes very clear that the human eye can see much more of the surrounding information than what is shown on the print out.

Changing the FOV on a digital camera

- The main difference in using a longer lens vs. a wider lens is the amount of information that is displayed at the edges of the subject. Changing the lens to a smaller FOV produces the same result as cropping in on the wide angle image, providing that the position and the angle of the camera remains constant while taking the photographs. In short, a lens with a wider FOV does not create an image that has incorrect perspective it simply means that the perspective is extended at the edges of the image showing more of the surrounds in the images.
- What all of this means for visual assessment is that there is no "one fits all" solution for lens selection. If we follow the opinion that a longer lens produces images that are closer to the perspective of the human eye, we will inevitably be in the situation where we cannot show the entirety of our subject and enough of the surrounds that it resides in. Also if we strictly stick to a 17mm lens we will have situations where the subject is far away and looks very small in the image, again making it difficult to assess visual impact. For these reasons we have taken the view that we can never totally represent what the human eye will see on a piece of paper, and for visual impact photomontages we should select lenses that strike a balance between the two and can accurately display the built for in its surroundings.
- The most effective way to accurately gauge visual impact and get a "real world" feeling for scale would be to take prints of the photomontages to the exact site photography locations and compare the prints with the scale of the existing built form.
- As discussed with the Department of Planning, new photomontages are being prepared which illustrate the approved Block Envelopes as per the approved Concept Plan (as modified), the proposed Block Envelopes as per the Concept Plan Amendment and the proposed Block Envelopes and Indicative Design utilising the methodology discussed above.
- An amended Visual Impact Assessment has been prepared and has been submitted to address visual impact issues.

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Recommendation 16

That the Minister require the Proponent to redesign the development on Block 4 so that the 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.

- A more detailed View Impact Analysis for the building envelopes proposed within Block 4, with particular regard to the impact on residential units in Kent Street (Stamford on Kent, Highgate, Stamford Marque and the Georgia) is submitted with the PPR and it concludes that a view sharing outcome is achieved.
- This report will provide further detail to the Visual Impact Assessment submitted with the application which concluded that as with the approved Concept Plan Amendment, a view sharing outcome is achieved for apartments with a western outlook from these residential buildings.
- Extending the city's north-west orientated grid will reinforce the already establish the east-west linkages.

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 noncompliance with Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (REP).

- Council's opposition is noted, but appears to reflect different objectives and ambitions for the regeneration of this important part of the CBD.
- The landmark hotel and public pier is a core element of the proposed Concept Plan Amendment for Barangaroo South. It helps define and frame the waterfront square, which is a key cultural feature at the heart of the public domain of this western edge of the city. The landmark hotel provides economic and activation benefits that will help attract retail and leisure operators to the area and will retain vibrancy beyond the working day, into the evenings and at weekends.
- The landmark hotel will exemplify design excellence and is planned to stand out from other city buildings as an architecturally stunning, iconic structure that makes a bold statement about Barangaroo and its sustainability credentials and that sends a message to the world that Sydney and Australia are innovative and exciting places to visit and do business.
- The existing Barangaroo site is almost entirely man made and consists of reclaimed land and infill between the old piers and wharfs that made up this former working port. The proposed Barangaroo South pier reflects this industrial heritage and reinforces the principal of full public access to the waterfront with a boardwalk around the hotel. The pier projects 85m from the current harbour's edge and occupies approximately 4,000sqm of harbour area. This is offset by the creation of the Northern and Southern Coves, the combined area of which gives back 3.5 hectares of water area to Sydney Harbour (some 7 times the area covered by the pier).
- Lend Lease does not accept that the proposed pier and hotel either sets a precedent or is privatising the harbour. Sydney has a history of public and private wharfs and piers, many of which have been appropriated for exclusive private residential apartments, including a number in close proximity to Barangaroo, including at Sydney Wharf, Darling Island and Walsh Bay.
- Two of Sydney's reclaimed piers contain hotels at Pier One in Walsh Bay and the Finger Wharf at Woolloomooloo Bay. Whilst privately operated, a hotel is a quasi-public place, with restaurants, bars, function rooms and other facilities designed to attract visitors



	 throughout the day, even more so than buildings recognised public buildings such as theatres, concert halls or museums, which are often only open to ticketholders and at fixed times. At Woolloomooloo, public access is limited to the southern part of the pier that contains the hotel and restaurants and it does not extend to any part of the pier to the north (harbour side) that contains residential apartments. The landmark hotel building will include public facilities at both ground level and at the top of the building. With regard to the REP the Concept Plan Modification is accompanied by an amendment to Part 12 of Schedule 3 of the State Environmental Planning Policy - Major Development (2005) which proposes to amend the Sydney Harbour REP and rezone the area of land proposed to be accommodated by the landmark building to permit the proposed range of uses.
Recommendation 18 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 street.	 As noted by Council in its submission on the Project Application for the Bulk Excavation and Basement Car Parking, the alignment of Margaret Street West is preferred as it enhances the Margaret Street view corridor. The C5 tower envelope has been rotated to match the alignment of Margaret Street but moved further south to maximise the physical separation between towers C4 and C5. The result is that the C5 tower now frames this view corridor along Margaret Street. The proposed width of Margaret Street West is considered to be adequate for its purpose being a public street, accommodating two way traffic and which incorporates landscaping.
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 Urban Design Controls for Blocks X and 4A include appropriate controls to modulate height and to provide articulation within these Blocks such that the waterfront ribbon of development is designed with an appropriate relationship to the waterfront promenade which is 27 metres in width.

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Recommendation 20

That the Minister condition any approval to:

- Amend the proposal to ensure that buildings in Block C 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.

- The alignment of the waterfront ribbon development does not align with the King Street Wharf Buildings as it is set further back from the waterfront at 27m and as such the Globe Street road reservation does not align directly with Lime Street. This greater setback is the result of extensive discussions with the Barangaroo Delivery Authority and its advisors. It has also been concluded that the scale of the proposed waterfront buildings warrants a greater setback from the waterfront. Furthermore the anticipated programme of activity and events along the waterfront dictates the provision of a wider promenade.
- The junction between Globe Street and Lime Street can be appropriately designed in accordance with Australian Standards.
- To add interest and diversity, the Shelley Lane alignment does not continue for this width where it is adjacent to Southern Cove.

Recommendation 21

That the Minster request 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 Centre Working Group; and
- Negotiation 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.

- The waterfront square will be immeasurably enhanced by the inclusion of the cultural centre given the anticipated benefits of activity and interest.
- In any case any future building located within the waterfront square will be the subject of rigorous design in conjunction with the
 design resolution of the landmark hotel and pier and Southern Cove but the inherent opportunity is for a framed open space.
- As discussed in detail below, it is not appropriate to commit to specific facilities at this point in time until appropriate consultation and research has been undertaken.
- The inclusion of this land is outside of the scope of the Concept Plan Amendment at this point in time and hence this is not a matter for consideration with this PPR.

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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.

- As discussed in PPR the shadowing impacts on the promenade and Southern Cove have been quantified and are considered to be acceptable.
- The Visual Impact Analysis submitted with the application considers that the landmark hotel is a key response to the requirements of the approved Concept Plan (as modified) to "celebrate the water theme" and is located to assist in a sense of arrival and to locate the approach to the destination.
- The location of the building will assist in creating the new edge of the new grid to the CBD that completes the CBD framework in this location. There will be key views past the building as suitable physical separation will be achieved. There will be ample sky and view corridor space to allow visual access to other directional and place-markers in either direction along the foreshore and beyond.
- A further Visual Impact Analysis has been prepared and has been submitted to address visual impact issues raised.
- Lend Lease does not propose to amend the location of the landmark hotel on Block X or the residential buildings within Block 4C.

- Recommendation 23
- That the Minister disapproves the following modifications:
- Vehicular access across the waterfront promenade; and
- The driveway under croft space at the northern end of building R8.
- As stated in the application, servicing of the landmark hotel building is proposed by vehicle access through the basement, where all
 movements related to deliveries, garbage collection, laundry collection etc will occur.
- At ground level, the landmark hotel building arrival will be limited to a vehicular drop-off and pick-up for visitors. This facility will not be utilised for coach drop-off, taxi layover or car parking.
- As outlined in the PPR, a range of design parameters are proposed for the future design of the landmark building drop off facility including the creation of a safe, pedestrian zone immediately in front of the Block X to reinforce pedestrian priority. These parameters will need to be satisfied with the future project application for the landmark hotel building and are included as a Statement of Commitment.
- It is considered that the above points address the issues raised.

Recommendation 24

That the Minister condition any approval so that:

The lobby/galleria connections through

- As outlined in the PPR the concept of the gallerias, being to provide a unique sheltered civic space that could be both a meeting place for workers and visitors as well as a satisfactory access / address points for tenants, has been abandoned. These are replaced with two public streets similar to but smaller in scale than "City Walk", the primary east- west pedestrian link. They are proposed to have a range of coverings and will be publicly accessible 24 hours a day.
- The Urban Design Report Streets and Laneways within Blocks 2 and 3 provides further detail about the finer grain of pedestrian

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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.

connections.

The pedestrian laneway has been extended through to the Southern Cove through Block 4A.

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 tower

- The Urban Design Report Streets and Laneways within Blocks 2 and 3 provides a response to Council's concerns regarding street widths.
- Shelley Lane has been increased to 6m and the gallerias have been replaced with public laneways.
- City Walk is 12 metres wide as set out in the Urban Design Report.
- Basements are not proposed to be contained within the proposed blocks. The provision of a single basement will maintain maximum flexibility with respect to the potential options for the detailed design and distribution of above ground floor space (commercial, residential, community and retail).



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.	
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 through widening of footways and introduction of bicycles paths wherever possible.	 The proposed Concept Plan Amendment does not alter the location or height of the Hickson Road buildings. These buildings are proposed to be built directly adjacent to Hickson Road. If the Fig Trees are proposed to remain within Hickson Road and as works progress adjacent, an Arborist Monitoring Programme will be implemented to monitor the health and stability of the trees. The Concept Plan Amendment does not include Hickson Road however the Public Domain Design Team engagement includes consideration of Hickson Road which will be discussed with Council at the Public Domain Technical Working Group.
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	 The Public Domain Plan for Barangaroo South and submitted with the exhibited EAR details the proposed public domain and open space strategy for Barangaroo South, including a proposed planting palette. As required by the Statement of Commitments attached to the approved Concept Plan (as modified) the Council, with NSW Maritime and the Barangaroo Delivery Authority and Lend Lease have membership in a Public Domain Technical Working Group. The Public Domain Plan was prepared in consultation with this Technical Working Group prior to its lodgement. The Technical Working Group is aware that the Barangaroo South Public Domain Plan is a sub-plan to an overarching "whole of site" Public Domain Plan being prepared PWP Landscape and Johnson Pilton Walker. Lend Lease will continue to work with the Barangaroo Delivery Authority, the Council and NSW Maritime through the Technical Working Group to provide details of further design as it is resolved in consultation with the Barangaroo Delivery Authority and its advisors PWP Landscape and Johnson Pilton Walker.

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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 arboriculture standards); and
- Criteria for relocating existing healthy trees.

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
- The proposed Concept Plan Amendment does preserve future bridge crossings over Hickson Road including a pedestrian bridge linking 189 Kent Street to Barangaroo South.
- As previously discussed, the preservation of the Grosvenor Street view corridor is not contemplated as part of this Concept Plan Amendment. Once the Grosvenor Street view corridor is created, Lend Lease will consider opportunities to enhance this view.
 - The Margaret Street West pedestrian bridge forms part of the Barangaroo Pedestrian Link, which was approved as part of the Part

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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 works 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. 3A Project Approval issued in respect of the CBD Metro.

- Transport NSW is responsible for the delivery of the Barangaroo Pedestrian Link. Lend Lease, the Barangaroo Delivery Authority and Transport NSW (Sydney Metro Authority) have been working together to ensure that the Barangaroo Pedestrian Link is delivered prior to the occupancy of the first building at Barangaroo and that it is appropriately located.
- It should be noted that Condition B22 of the Project Approval issued in respect of MP10_0023 provides that:

 "Additional analysis and design work is required to ensure that the Barangaroo Pedestrian Link (BPL) bridge can be accommodated on the western side of Hickson Road, whilst maintaining adequate space for pedestrian movement at ground level around the bridge landing.

Pedestrian safety is also to be demonstrated in relation to pedestrian access to the site from Margaret Street West and the BPL, with regard to footpath widths, potential crossing locations and expected vehicular movements in and out of the car park / loading entry. In this regard, documentation is to be provided to show an annotated and dimensioned path of pedestrian travel from the BPL into the site, and around the base of the bridge landing on Hickson Road / Margaret Street West.

The required design analysis is to be submitted for approval for the Director General prior to a Construction Certificate being issued for the Margaret Street West road and public domain works."

Recommendation 29

That the proponent is requested by the Minster 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 coordinate 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)

- The Public Domain Plan for Barangaroo South and submitted with the exhibited EAR details the proposed public domain and open space strategy for the whole of the Barangaroo South site, including connections and linkages to sites surrounds.
- As required by the Statement of Commitments included as part of the approved Concept Plan (as modified) the Council, with NSW Maritime and the Barangaroo Delivery Authority and Lend Lease have membership in a Public Domain Technical Working Group. The Public Domain Plan was prepared in consultation with this Technical Working prior to its lodgement. The Technical Working Group is aware that the Barangaroo South Public Domain Plan is a sub-plan to an overarching "whole of site" Public Domain Plan that is currently being finalised by Peter Walker Landscape Architecture and Johnson Pilton Walker on behalf of the BDA. Once completed, this Plan will be submitted to the Department of Planning as part of the BDA's PA for the Headland Park main works.
- Once this whole-of-site Plan is in place, the Barangaroo South sub-Plan will sit under to provide the greater level of detail for this component of the overall site.
- Lend Lease will continue to work with the Barangaroo Delivery Authority, their consultants, the Council and NSW Maritime through the Technical Working Group to provide details of further design as contemplated by the Statement of Commitments.
- The Concept Plan Modification retains and protects the Statement of Commitments included as part of the approved Concept Plan (as modified) which requires all future project applications for built form to be accompanied by a Public Domain Plan/s.

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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 and alternative design solution process
- The commercial towers C3, C4 and C5 may be excused from the requirement for a completion provided that they are designed and detailed by Rogers Stirk Harbour + Partners.

- As required by the Statement of Commitments included as part of the approved Concept Plan (as modified) a Design Excellence Strategy is required to be submitted with the first relevant project application which is the C4 Commercial Building application.
- The Design Excellence Strategy submitted with that project application does include a range of buildings for future design competitions.
- The Ferry Wharves do not form part of the Concept Plan Amendment application and hence this is not relevant for discussion in this
 report.

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.

- Lend Lease has committed to delivering intermediate housing for essential and key workers employed within the Barangaroo South precinct and the wider Sydney CBD area via the Australian Affordable Housing Partnership (AAHP).
- Lend Lease's intermediate housing component will offer a range of tenures including rentals and sales to households with incomes ± 50% of median income via the AAHP.
- Lend Lease proposes to provide 2.3% of the total proposed residential GFA as intermediate housing.
- Future dwelling typologies will cater for a broad cross section of the community including singles, couples and small families, and will be targeted at households with incomes ± 50% of median income (\$30k-\$90k). This level of household income falls within the income bracket of essential and key worker households within Barangaroo and the wider Sydney CBD.
- Whilst specific buildings have not been earmarked for affordable housing at this stage, the product offerings may include 1-bedroom and 2-bedroom apartments with shared community access to the precinct and building facilities.

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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;

- In accordance with the existing relevant Statement of Commitments (18 and 19), a Community Plan has been prepared and accompanies the subject application. The Community Plan has been jointly prepared with the Barangaroo Delivery Authority in consultation with the Technical Working Group which includes Council. The Community Plan will be developed through an inclusive process that engages all relevant stakeholders; this exercise can also facilitate discussions about the future of the community, enabling local people (and those that represent them) to consider and define their needs and priorities. As a project of local, metropolitan, State and National significance Barangaroo presents a multilayered stakeholder environment including:
 - Surrounding residents;
 - o Groups with known links to Barangaroo such as Unions, Indigenous peoples, NSW Housing tenants; and
 - o other diverse communities of interest.
- Potential partners involved in the creation of facilities and amenities and the delivery of services and programs including (but not limited to) City of Sydney Council, relevant State and Federal Government agencies, the Sydney Harbour Foreshore Authority and relevant non-government organisations.
- In addition to existing stakeholders, the Community Plan will also aim to address the evolving needs of the emerging community who will make Barangaroo 'their place'.
- The Barangaroo Community Plan will be developed through an iterative and incremental process, consistent with best practice community development principles. This will result in the Plan being a 'living document' which will be continually reviewed as the wellbeing of the community is monitored and measured over time responding to their changing needs, drivers and aspirations.
- In this regard it is not appropriate to commit to specific community facilities in the absence of a community plan which will determine the community needs and aspirations.
- The City of Sydney recommendations are informed by a draft Integrated Community Facilities Plan supplemented by the preparation of an "Asset Assessment and Development Plan for Community Facilities in Harbour Village Centre" prepared by Heather Nesbitt Planning and subject to consultation. This plan has been referenced as a document informing the Barangaroo Community Plan.
- Work-based childcare centres will be provided within Barangaroo South. The PA for the first commercial building (C4) includes an 1870m2 childcare centre within the podium.
- Wi-fi will be provided across the site.





and	
 Wi-Fi access is provided across the site. 	
Recommendation 33	Communities NSW has commissioned an audit of cultural facilities in Sydney which will be used to help inform the type and location
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.	of cultural facilities within Barangaroo. The project is being overseen by a Steering Group comprising Greater Sydney Partnership, City of Sydney and government agencies including the Barangaroo Delivery Authority.
Recommendation 34	The sustainability outcomes for the project have been the subject of significant detailed planning and agreement with the Barangaroo
That the Minister conditions any approvals so that: The development has compatibility with	Delivery Authority during the tender process and subsequent finalisation of the Project Development Agreement. This agreement establishes the requirements for a world leading sustainability outcome that will provide significant outcomes that support the Sustainable Sydney 2030 strategy. In particular, Barangaroo will be the first green precinct within the City of Sydney that operates with carbon neutral, water positive and zero waste outcomes.
and the capacity to interconnect to precinct scale low carbon and renewable energy systems, and advanced waste and water collection	It is not sensible or appropriate to duplicate the significant commitments related to these sustainability outcomes that have already been made in the Project Development Agreement. These commitments are extensive, complex and have their own binding legal requirement established through the agreement.
 and treatment systems; and An appropriate area in a basement location as district hub or base for green 	 These outcomes have also been described in the various technical reports lodged with the application and confirm that the project will significantly exceed all the sustainability obligations that were included in the approved Concept Plan (as modified) Statement of Commitments.
infrastructure including tri-generation, evacuated waste and water related infrastructure is provided.	 Lend Lease will continue to liaise with the City of Sydney to explore the opportunities to connect Barangaroo to city based district infrastructure. The options for this will depend upon the speed at which this infrastructure is delivered and the commercial proposition developed for its use.
Recommendation 35	Noting the comments made above, Lend Lease makes the following specific comments in relation to the detailed points below. There
That the Proponent is requested by the Minister to:	has been significant presentation and communication to various City of Sydney Council representatives; however it appears that the issues raised below do not reflect the objectives of the Barangaroo Sustainability Strategy.
Address low carbon decentralised energy supply through establishment of a tri-generation district energy system	The City is developing a decentralised low carbon energy master plan that includes the CBD north precinct including Barangaroo. This master plan is only just being finalised and will require extremely large purpose-built generation facilities (for in excess of 130MW). Barangaroo will consider the connection to these district-based systems as the detail is released by the City. Barangaroo is to be a zero carbon precinct predicated on efficiency and renewable energy. The city's proposed tri-generation proposal is not a

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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;

zero carbon technology it is recognised as a transitional technology.

- Identify how the development will supply 100% of its electricity requirements from local carbon and renewable generation in accordance with Sustainable Sydney 2030.
- Barangaroo is committed to achieving a carbon neutral outcome, ie there are zero net carbon emissions from the Barangaroo precinct. This outcome exceeds the Sustainable Sydney 2030 target (of 70% reduction) and will be achieved by a combination of initiatives that include 80% emission reduction from on site initiatives and 20% emission reduction from off site initiatives.

- 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.
- Address street and public domain LED lighting throughout the development:

construction and ongoing operation

phase of 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 City's Low Carbon Zones non potable

- The emission reduction of 100% will be achieved by building energy demand reduction, efficient precinct based infrastructure and both on and off site renewable energy generation.
- This requirement has been outlined in the ESD plan and various infrastructure plans submitted for the application. There are significant design, construction and operation commitments included in the Project Development Agreement.
- LED lighting will be considered for all public domain uses.
- A detailed water management plan is being developed for the precinct and is described in the various technical reports submitted with the application. The precinct will generate and export more recycled water than the amount of potable water it consumes – making it water positive. This will be achieved by a significant on site blackwater treatment plant that will treat sewer generated from the site. The recycled water exported from the site could be linked into a future City of Sydney recycled water network.





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; 	•	This requirement for 20% onsite renewable energy has not been included in any previous condition of consent and is not viable to achieve given the proposed development on the southern, central and northern parts of the site. We will generate onsite renewable energy at Barangaroo South using photo voltaic (PV) panels located on roof tops that have appropriate solar access.
 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 		A detailed waste management plan has been developed for Barangaroo that involves waste minimisation, on site segregation and offsite advanced waste treatment to recover resources, produce energy and reduce any residual streams going to landfill.
 Identify the different proportions of recycled and no recycled waste and how waste will be utilised as a resource, particularly as a renewable gas resource to supply the tri-generation system(s). 	•	The organic bio-degradable waste from Barangaroo will be used to produce methane that will power co-generation facilities located at the advanced waste treatment plant.
Comments on the SEPP	•	The intent of the changes to the SEPP are outlined in detail in the EA.
	•	The inclusion of Hickson Road for the purposes of the future provision of a pedestrian bridge has been discussed with Council officers and no objections were raised at the time. On this basis, it is proposed that the SEPP be amended to provide for the future provision of the pedestrian bridges.

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NSW Transport

- Construction aspects for the delivery of the Barangaroo development need to be addressed through a Construction Traffic Management Plan and a Vehicle Management Plan.
- The size of construction vehicles accessing the site should be size limited to rigid single-tray trucks for spoil removal.
- No Stop/slow traffic control on adjacent roads should be permitted for any reason during construction, including site access and egress, between 7am to 9am and 4pm to 7pm, Monday to Friday.
- Construction vehicle movements must be staged and coordinated to prevent trucks circling CBD streets whilst awaiting access to site. During construction, there should be holding areas outside the CBD on the fringes or sufficient space within the site to store trucks and heavy vehicles that are associated with construction of the site.
- To minimise impacts on public transport, it is requested that trucks associated with Barangaroo construction not be permitted to use York Street and Clarence Street to

- Detailed construction management plans are being prepared and submitted with individual Project Applications that propose construction within the Barangaroo South site.
- The Construction Traffic Management Plans address the cumulative construction traffic impacts and are prepared in consultation
 with relevant stakeholders prior to being approved by the Department of Planning at the Construction Certificate stage.
- As outlined in Lend Lease's Preferred Project Report for the now approved Bulk Excavation and Basement Car Parking Project Application, the Construction Traffic Management Plans will continue to be reviewed and refined (with future amendments as required) at the Construction Certificate stages of individual Project Applications to ensure they appropriately satisfies relevant stakeholders.
- Lend Lease has met with NSW Transport regarding these requirements during the assessment phase of the Bulk Excavation and Basement Car Parking Project Application and as such conditions of consent have been imposed that reflect these requirements. Lend Lease anticipates similar conditions on relevant project applications.
- The Construction Traffic Reports submitted to date consider and make provision for pedestrian and cyclist conflicts.



	access or egress the development site between 6am to 10am and 2pm to 8pm Monday to Friday. This should be addressed in the Vehicle Management Plan and Construction traffic Management Plan. Consideration should also be given to managing cyclists and pedestrians	
•	during construction. Traffic signal design plans of proposed new or modified signalised intersections will need to be submitted to and approved by the RTA prior to modifications of intersections commencing and prior to intersections being used for access to the development site. All costs associated with the implementation and maintenance of Traffic Control Signals will need to be covered by the applicant.	 Noted and Lend Lease will continue to work with all relevant State agencies to secure any necessary approvals and licences under all applicable legislation. Ancillary and necessary road works including the provision of signal and road and footpath upgrades will be the subject of future project applications not the subject Concept Plan Modification application. In accordance with the recommendations of the TMAP, upgrading works (signalisation) will be implemented at the intersection of Sussex and Napoleon Streets, which was identified as having insufficient capacity to accommodate forecast demand at an acceptable level of service without any improvements. Lend Lease will fund costs associated with the adjustments required to the Traffic Control Systems (i.e. signals) and associated infrastructure in accordance with RTA standard requirements.
•	The gross floor area (GFA) figures differ between the (EA) and Table 3 of the supplementary Transport Management and Accessibility Plan (TMAP) report.	A minor typographical error has occurred in the TMAP Table 4 in relation to Blocks 2 and 3 for Commercial GFA. However the overall commercial GFA is correct and therefore there is no material impact on the findings of the report. There is also a double count of the community uses (of 2000m²) in the total GFA (a function of the previous consent conditions) which has been omitted correctly in the EA GFA total but not in the TMAP GFA total. Again this has no material impact on the findings of the TMAP.
•	The EA indicates that the foreshore promenade will be a combined pedestrian and cycle path, however the Streetscape and Public Domain report indicates that the promenade will be	 To clarify the foreshore promenade will be a combined and pedestrian and cycle path. The detail will be provided as future project applications. A range of design parameters are proposed for the future design of the landmark hotel building drop-off facility including the creation of a safe pedestrian zone immediately in front of Block X to reinforce pedestrian priority: it is proposed to establish the landmark hotel building's driveway area as a shared way, with a 10km/hr speed limit for



pedestrian only. TNSW recommends
the promenade be open to both cyclists
and pedestrians and be addressed in
detail

- permitted vehicles, as is the case in other shared way zones in the CBD. Specifically, this shared way zone will not permit car or taxi parking;
- o a taxi waiting zone will be provided in the adjacent Globe Street and taxis will be called on by the hotel on an 'as required basis'. Coach and bus drop off will occur in the adjacent Globe Street or alternatively in the basement zone;
- the paving materials on the foreshore zone are intended to be continuous across the entire width and length of the waterfront promenade, including in front of the hotel, to reinforce pedestrian priority;
- demarcation of the foreshore zone shared way will be made by paving inserts, landscape elements, traffic calming devices, and appropriate signage and markers. The defined drop off access route will be designed to ensure pedestrians have clear sight lines and can easily see vehicles entering and departing the foreshore zone at all times;
- emergency vehicles may need selected access to the wharf pier at ground level on occasion. Further discussions will be required with the various authorities to determine the most appropriate method for accessing the hotel for the variety of emergency scenarios (e.g. fire, ambulance etc). The function and form of these access facilities has not been finalised, however their relationship to the waterfront promenade and in particular the north-south pedestrian desire lines will require careful consideration; and
- the landmark hotel building will be serviced by vehicle access through the basement, where all truck movements related to deliveries, garbage collection, laundry collection, etc will occur below ground level. A loading dock and basement access corridor will facilitate the servicing of the hotel at this level. There is also the potential to include a guest-only connecting lift from the basement to help provide guests with direct access to the hotel lobby from the basement car park level.
- These design parameters will key to ensuring appropriate and safe management of the proposed hotel vehicular access.
 They will need to be included with any future project application for the landmark hotel building and are included as a Statement of Commitment.
- o It is considered that the above points provide adequate justification of the issues raised.
- TNSW notes the commitment in the revised TMAP for end of trip facilities for cyclists and pedestrians. TNSW requests that the TMAP identify the quantum and location of bicycle parking facilities for visitors. Such facilities should be prioritised in convenient locations that are well lit, sheltered and secure. The Department's Planning
- Each of the buildings will have access to bicycle parking and onsite facilities for commuter cyclists, i.e. showers, changing rooms, lockers. A minimum of 5% of building occupants will be provided with a bicycle parking space which aligns with the mode share target of 4% of journey to work by bicycle. Current planning for the basement has adopted a 10% target for bicycle parking spaces which is in excess of the mode share target and will allow for growth in this mode of travel as the cities bicycle facilities improve.
- There is nothing in the current planning that would preclude the provision of a public bike hire facility. Ideally this would be provided as
 a component of a Central Sydney bike hire scheme but could in the early stages be provided as a stand alone facility servicing the
 local foreshore recreational demands.
- The Department's Planning Guidelines for Walking and Cycling (2004) and the NSW Bike Plan (2010) will be considered during detailed design of these facilities.



	Guidelines for Walking and Cycling (2004) and the NSW Bike Plan (2010) provide relevant context and specifications.	•	It is considered that the above points provide adequate justification of the issues raised.
•	TNSW notes the inclusion within the revised TMAP of the provision for 16 car share spaces. TNSW requests that provision for car share spaces and for the preparation of a Travel Access Guide for visitors, and Workplace Travel Plans for employees be included in the final Statement of commitments.		The commitment to develop Work Travel Plans and travel access guides will be included in future project applications. It should be noted that the Director General's Requirements for the commercial buildings on the site includes the need to provide a Travel Demand Management Plan which must include the provision for a Work Place Travel Plan. The provision of a Green Travel Plan for the precinct is a requirement of the Project Delivery Agreement between Lend Lease and Barangaroo Delivery Authority.
•	The TMAP supplementary report adopts the assumption that the employment population generated by the commercial floor space will be at the rate of one person per 20m². The proponent should include details of the research that formed the basis for this assumption. TNSW's primary concern is that this rate may underestimate the population generation potential of the development and may have an impact on the urban design aspects adopted in any future Wynyard – Barangaroo Pedestrian Link.	•	All assumptions from TMAP September 2008 and MWT Modified Concept Plan – Transport Report, July 2008 including population rates, traffic (or trip) generation rates and parking ratios have remained the same for the TMAP Supplementary analysis (as submitted with the Concept Plan Amendment). There has been no change to the population rates.