

Bulk Excavation and Basement Car Park Modification MP10_0023 MOD 3

Submission to the Department of Planning 19 December 2011



CITY OF SYDNEY 
city of villages



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TRIM 2011/371199

19 December 2011

Contents

1.0	Executive Summary	5
2.0	Structure of this submission.....	6
3.0	Finished levels, overland flows and stormwater.....	6
4.0	Traffic and Transport	8
4.1	Driveway locations.....	8
4.2	Management plans	10
4.3	Loss of parking spaces.....	13
4.4	Road layout	13
5.0	Public Domain Issues	13
5.1	Provision for Public Domain over basement slab	13
5.2	Public Domain future ownership	15
5.3	Limited accessible access from Hickson Road to the private development.....	16
5.4	Poor design outcome for Hickson Road	16
5.5	Limited Accessible Access from Shelley Street to the private development.....	18
5.6	Vehicular and Pedestrian Access to Globe Street from the Lime Street extension	19
5.7	Development Specification for Civil Works – Design and Construction	19
5.8	Public access to new road network must be provided (area currently in private ownership)	20
5.9	Development Conditions	20
6.0	Health	22
7.0	Tree Management	22
7.1	Vehicle Access – Hickson Road	22
7.2	Construction Methodology and Environmental Management - Tree Management Plan	23
7.3	Management of the Street Tree Avenue – existing and future.....	23
8.0	Conclusion	26

Attachment 1

City of Sydney letter regarding drainage issues and tree issues

Attachment 2

City of Sydney letter regarding tree issues

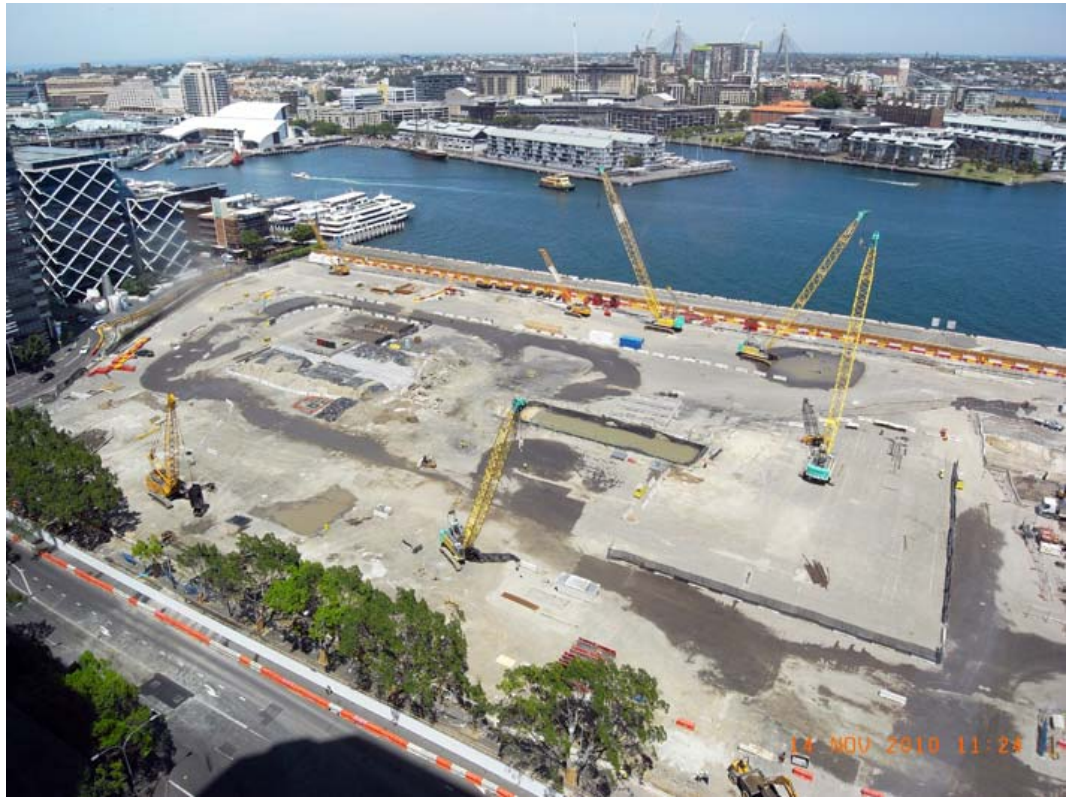


Figure 1. Barangaroo South, 14 November 2011

1.0 Executive Summary

The City of Sydney (the City) has reviewed the Modification Request to MP10_0023 (known as MOD 3) and objects to a number of aspects of the revised proposal unless they are incorporated into a revised design at the PPR stage. These aspects are summarised below and expanded on further in this submission.

The City's key recommendations are that:

- The top of the basement structure be adjusted in height so that it aligns and transitions with existing footpath levels;
- The basement be setback a minimum of 3-4 metres from the street boundary so that the tree alignment Hickson Road boulevard of trees can be retained and preserved and so that the public domain can better transition to building entries including entry grades and access to future commercial development;
- A one metre deep provision is incorporated in the basement ceiling design below future roads to allow for street allow tree planting, future utility upgrades and other public domain planting;
- The site accommodates overland flows for storm events on site rather than via diversion to surrounding streets or through culverts;
- The recommendations of the Barangaroo Independent Review Panel Report and the requirements of SEPP55 be taken into account and applied in the assessment and in the conditions of approval as though this is an undetermined application distinct from pre-existing 'approvals'.

Approval of this modification request would maintain the current poor outcome where the basement level was approved higher than Hickson Road, contrary to the City's recommendation. The proponent's solution to the problem, thus created, is to pipe storm events up to 1 in 100 year events. This work further threatens the Hickson Road avenue of trees.

It is the City's contention that this modification to the design presents a new opportunity to review the known impact of the basement construction to the alignment of the current and future boulevard of trees along Hickson Road. An opportunity exists to require the proponent to setback the basement (designated 'plant area' in order to retain the existing alignment of avenue of trees along Hickson Road. The City has previously suggested that accommodation be made for a utility corridor under City Walk for future services. None have been allowed for here or in Margaret Street West. This is a matter of serious long term concern.

The changes to the carpark entrances appear to function however their placement raises further questions as to how Blocks 1 and 3 might finally be developed.

2.0 Structure of this submission

The Environmental Assessment Report and supporting documentation was referred to various expert units within the City. Their comments are provided in this submission under separate headings:

- Stormwater
- Traffic and Transport
- Public Domain
- Tree Management and Protection

The critical issue of finished levels is the key discussion point and heads this submission.

Recommendations are made throughout and are numbered for ease of reference.

3.0 Finished levels, overland flows and stormwater

In response to the original Project Application and also to MOD 1, the City previously made the submission that (emphasis added):

The design of the basement must ensure the following provisions within the public domain are allowed for:

- Desired finished level of the public domain – grading of streets and footways, at grade planting, drainage;
- Integration between the new public domain and existing public domain infrastructure including junction with Hickson Road, Margaret Road and Lime Street – proposed new road levels must marry into existing road network;
- Adequate drainage of future public domain areas and overland flow provision; and
- Maintain / improved stormwater drainage of surrounding areas including maintaining adequate overland flow from Hickson Road to the harbour.

The DoP granted consent to the basement with a finished level cresting at RL 3.8 and extending full width and length with no exclusion zones for services and overland drainage.

This has caused the proponent to approach the City with a proposal to raise a portion of Hickson Road by up to 1.6 metres so that overland flows of flood water are directed south down Hickson Road to the intersection with Sussex Street, with a proposal to lower a portion of Margaret Street West by almost 1.4 metres so that the water then

travels west to the Harbour though what is being discussed in recent design and transport meetings as 'transport place'. The elevating of Hickson Road and the lowering of Margaret Street West will ensure there is no overland flow in Barangaroo South via the new street network, but rather pushes all flows to outside the site's boundary.

The Proponent's Statement of Commitments includes (emphasis added):

The City of Sydney Council's standards for the design and construction of public domain elements over basement slabs will be considered where appropriate during the ongoing design documentation process, particularly in relation to:

- Minimum soil depths between top of slab and finished levels of public domain and soft landscaping;
- The ongoing management and maintenance of any waterproof membranes to the basement slabs; and
- The need for drainage easements and covenants to cover public domain stormwater infrastructure and other service infrastructure.

The ongoing design documentation process will consider where relevant the following City of Sydney Council policies as relevant to the scope of the Project Application:

- Sydney Streets Design Code;
- Public Domain Manual;
- Exterior Lighting Strategy;
- Sydney Lights Design Code; and
- Development Specification for Civil Works – Design and Construction.

Adequate depths over the basement will be provided for deep soil planting within a continuous trench in the order of 1000-1200mm along Globe and Napoleon Streets.

The Project Application Approval includes various conditions that seek to address the road design and flooding issue created solely by the approval.

The City has been liaising with Lend Lease in an attempt to address the requirements of these conditions. The City's latest response to Lend Lease forms Attachment 1. As can be seen from the letter, the solutions are not simple; however the City is committed to affording the resources required to the project to ensure a satisfactory outcome. It is considered that this time and effort being afforded to what will be a poor solution could be saved with a simpler (and more cost effective) redesign of the basement and its RLs, with changes that are far less extensive than the ones proposed by the proponent in the subject application.

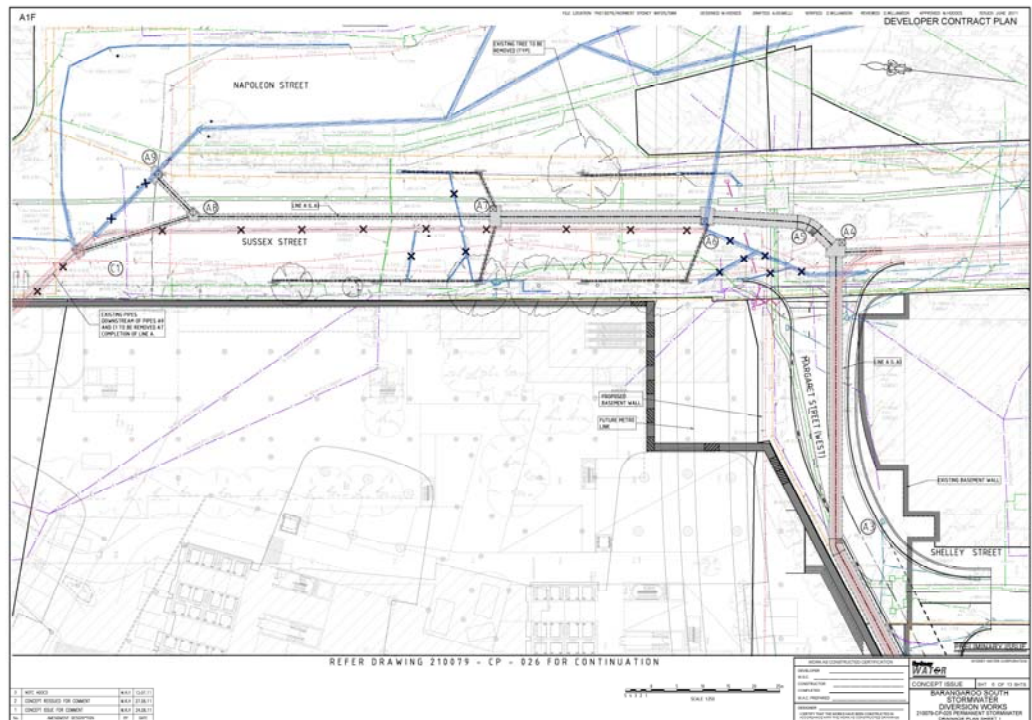


Figure 2 Diagram of stormwater concept from proponents C5 EA which demonstrates the extent of infrastructure now required.

Recommendation 1

The height of this structure and the impact upon the surrounding infrastructure is a fundamental issue that requires resolution prior to the modification being considered by the Department of Planning, and in its current form the application can not be approved.

It is also noted that any lifting or lowering of the existing road network 'requires' the removal of street trees to solve a problem created by the proponent, and this is not acceptable.

4.0 Traffic and Transport

4.1 Driveway locations

The proposal seeks amendments to the location of the driveways into the basement. The approved scheme has 2 separate driveways, one for the all loading and servicing, and the other for all car parking. The two driveways are on opposite sides of the basement. The new proposal provides for 3 driveways, the third being a new, and secondary car park access adjacent to the loading access. The explanation for the new secondary access is that the new car park layout requires it; however the car park layout is described elsewhere in the report as indicative only. The information appears unresolved. While it is considered that the additional access may be required, the information provided makes it hard to assess and to make a well considered response.

The proposed location for the driveway from Lime Street appears to be very close to the proposed realignment of the Margaret Street extension. The driveway must be a minimum of 10m from that future intersection given that this is the primary driveway to a major basement car park. An overlay of the future street network should have been provided with the application to show whether this would be an issue to resolve or not, without the overlay, it is hard to make a fully considered response.

The car park driveway from Hickson Road is described as a secondary driveway. There appears to be no rationale as to why this would be the case or how the proponent would ensure this was the case. The concerns are that the driveway will have a closer proximity to the main road network and therefore more likely to be the one most drivers gravitate towards.

It is difficult to understand the final form of this driveway once the temporary road is removed. Unanswered questions arise such as - Will this driveway have to be extended north and at what level? Will it be parallel to Shelley Lane, deactivating the lane?

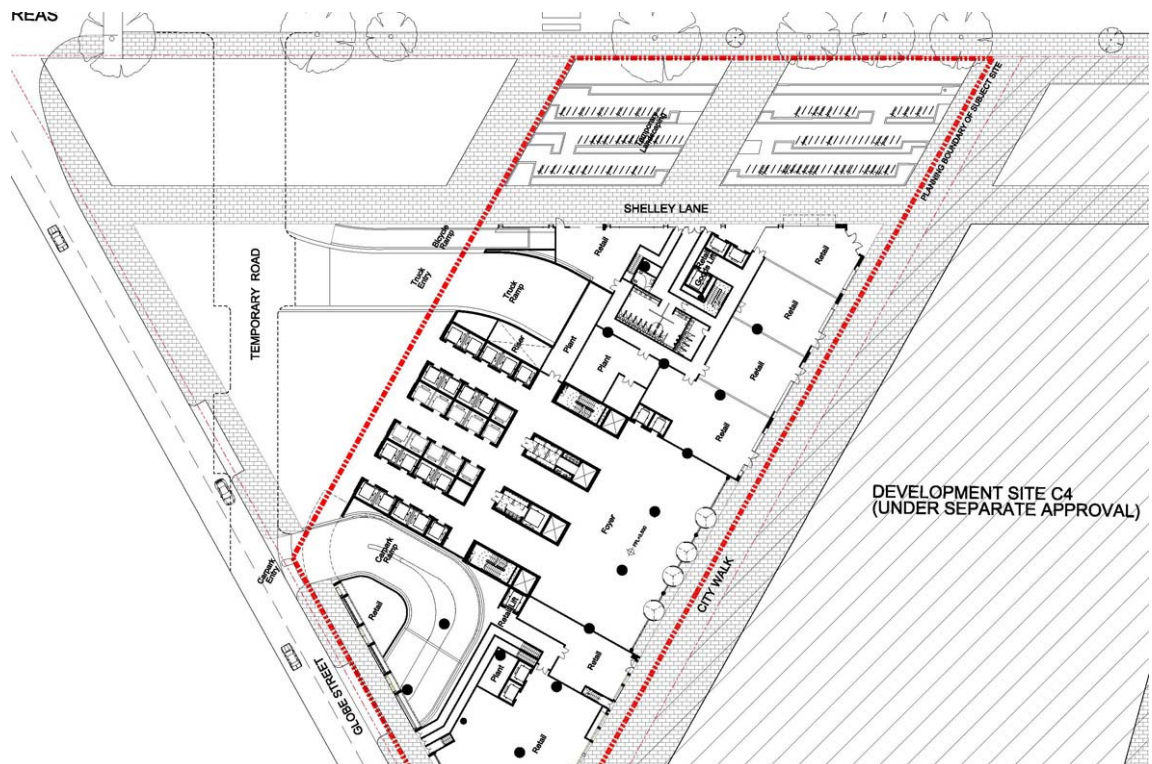


Figure 3 Diagram of driveway extending to the temporary road parallel to Shelley Lane.

This does not indicate future connection once temporary road is removed.

4.2 Management plans

The City has made previous submissions regarding the number of Project Applications made concurrently and the need for a cumulative assessment of particular issues including the Construction Traffic Management Plans, allocation of floor space and remediation plans. The following points have been raised in the City's submission to the other Project Applications previously, and will be raised with each Project Application until resolved.

While each individual project has been assessed, the cumulative impact of all developments occurring at approximately the same time is unclear. This effectively creates confusion and gaps when assessed individually. It appears that no major impacts will result from each project if they ran independently, however when running concurrently the impact will be compounded and will likely lead to negative impacts.

The specific comments provided for this modification application include the following:

- 4.2.1 Construction Traffic Management Plan** 14 October 2011 by ARUP
- being Appendix G to the Environmental Assessment Report (EAR).

Section 1.7

The City has previously recommended that trucks transferring materials from the south to the north of the site remain on site. However this CTMP recommends that the trucks use Hickson Road. While the City recognises that this section of Hickson Road is currently under the control of the Barangaroo Delivery Authority (BDA), the City is concerned over additional truck movements along Hickson Road.

Recommendation 2

That trucks transferring materials from the south to the north of the site only travel on internal routes. In addition, to further minimise the number of trucks accessing and departing the site, the City also recommends that the trucks are stored overnight on site. (This has also been recommended previously).

Section 1.9

Based on the City's observations and previous studies, the City questions the validity of the existing intersection results, particularly at the intersection of Sussex Street and Erskine Street. Queues at this intersection are significant, particularly in the PM peak period.

Recommendation 3

That the data relating to existing intersection traffic results is confirmed and that the assumptions for this analysis are included in the ARUP report.

Section 2.2.3

If possible, the City would prefer to remove the spoil from the site via water routes rather than via roads.

Section 5.5

The CTMP suggests an alternative truck route for trucks from the north during the AM peak period. The City does not support this alternative route as the Wynyard precinct from Grosvenor Street to King Street is heavily congested during the AM peak period. No additional truck traffic should be using York Street until after 9:30AM when the current restriction is removed. In addition the City has concerns over whether the trucks can navigate the right turn movement from Grosvenor Street to Lang Road. Turning movement diagrams will need to be provided.

Section 5.6

The proposed truck holding areas should be clearly identified along with the existing parking restrictions that will need to be changed. There is significant competition for the limited amount of kerb space in the City Centre. The City would prefer trucks to be stored on-site as much as possible.

Section 6.1

The City is concerned that not all trucks will be able to use the roundabout on Hickson Road at Walsh Bay. Truck turning movements should be provided.

Recommendation 4

Truck turning movements should be provided for the roundabout on Hickson Road at Walsh Bay and for the right turn movement from Grosvenor Street to Lang Road.

Section 6.2

The City has concerns over pedestrian safety along Hickson Road. The City would like further information on how pedestrians will be redirected to the eastern side of the road during the construction periods as there are no pedestrian crossing opportunities in the area.

4.2.2 Transport Management and Accessibility Plan 7 October 2011 by ARUP - being Appendix F to the EAR.

Section 3.2.1

In general, the recommended walking distance to a railway station is approximately 800m. With the exception of Wynyard all other stations are more than 800m from Barangaroo South. It would be useful if the approximate distances from each of these stations were provided.

Section 4.2

The City understands that there is a proposal for **the closure of Shelley Street** to accommodate the Wynyard Walk Bridge over Hickson Road. This has not been included in the diagram. Additional options should be provided in order to consider the following two scenarios: full closure of Shelley Street; and a partial closure of Shelley Street with one eastbound lane remaining.

Ideally, the City would prefer Globe Street to connect directly to Napoleon Street rather than the creation of a new intersection at this location.

Section 5.2

The proposal to reduce the number of bicycle parking spaces within the basement and relocate the balance to ground level has some merit. The ground level spaces will be more appropriate for visitors to the site. However, the Department needs to ensure that the applicant is providing the required number of bicycle parking spaces.

The applicant is proposing to remove half of the spaces from the basement and move them above ground. The City recognises that high levels of bike parking will be provided on the site. However the actual number of bike parking spaces should be identified.

Recommendation 5

The applicant must undertake a review of this proposal against the NSW Planning Guidelines for Walking and Cycling to ensure the number kept below ground do still meet the minimum requirements for non visitors within the sites.

Section 5.3

The City supports the inclusion of car-share facilities on-site. The proposed number of spaces should be provided. The City has recently updated the Car-Share policy which may provide some guidance on this number.

Section 5.7

To date the proposed light rail route has not been formally announced. While it is expected that it will travel along Hickson Road and Sussex Street, further clarification should be made on the extent of this route.

Recommendation 6

The following issues should be resolved as conditions of consent:

- A route for construction vehicles is to be formulated and adopted for the entire Barangaroo development in conjunction with the City (Traffic Operations and Transport Strategy) and the Roads and Traffic Authority (RTA).
- All construction staff should be encouraged to use public transport to access the area. Secure provision for storage of tools on-site should be recommended in order to further limit the need to drive to the area by construction staff. Any

parking for required vehicles should be catered for on-site.

4.3 Loss of parking spaces

The staged reduction (reallocation) of on site parking spaces is noted.

4.4 Road layout

The plans submitted showing the proposed road layout are indicative only and don't show enough detail for the City to make any detailed comments. The City must be consulted with over the final design of the road alignment and design. The majority of public domain works are indicated as being 'temporary'.

Recommendation 7

That the Department of Planning request the following information be submitted to the City for comment::

- Detailed plan of the road network including the future alignment with the connection to Globe Street;
- Information on priorities and traffic management at intersections; and
- Details to show existing and proposed pedestrian crossings. All proposed crossings must include information relating to the compliance with the RTA warrants for the crossing type.

5.0 Public Domain Issues

It is noted that this application is not for the Public Domain or any of the public spaces at ground level, however the application includes the slab to the top of the car park and its final location adjacent to existing footway and road areas in Hickson Road and Shelley Street.

The City of Sydney infrastructure unit has met regularly with the BDA and Lend Lease to discuss stormwater requirements and Emergency Overland Flow Paths (OFP). These discussions have focused upon the intention of Lend Lease to divert overland flow down Shelley Street which has some impact upon levels and the need to adjust the roadway and frontages to adjacent landowners with potential negative effects.

This application seeks Project Approval for the basement car park for Stage 1 Blocks 1, 2, and 3 (part of the car park may also service Block 4) and associated road works infrastructure. Associated road works includes the extension of Margaret Street, Lime Street and Shelly Street and a private road.

5.1 Provision for Public Domain over basement slab

The approved Concept Master Plan (Mod 4) shows a number of proposed public domain areas located at ground level in this Stage 1 development area over the proposed basement.

These elements include the proposed Margaret Street extension, Napoleon Street extension, Globe Street and possibly parts of the Foreshore Park and second east west road.

It is understood that this application does not seek consent for the design of the public domain areas; however the approval of a basement car park below the public domain will significantly affect the future design, and therefore the approval of the spaces above. It is essential that the design of the basement must consider and allow for the future public domain. The design of the basement must ensure the following provisions within the public domain are allowed for:

- adequate soil depth for street trees and other soft landscaping – at grade
- adequate soil depth for the provision of public domain services and structures including laying of conduits for street lighting, free standing footings for street lights, flag poles, bus stops, retaining walls, seating and similar elements.
- desired finished level of the public domain – grading of streets and footways, at grade planting, drainage.
- integration between the new public domain and existing public domain infrastructure including junction with Hickson Road, Margaret Road and Lime Street – proposed new road levels must marry into existing road network.
- adequate drainage of future public domain areas and overland flow provision.
- maintain / improved stormwater drainage of surrounding areas including maintaining adequate OFP from Hickson Road to the harbour.

Insufficient detail has been provided about the public domain and proposed inclusions to consider if heights are sufficient, though it is noted that FFL of building are proposed to be 3.50m. Top of slab is 3.3m allowing for 200mm of build-up for paving, which is insufficient for services and drainage runs.

A section has been provided indicating the revised design of the basement to include a recess to accommodate a deep soil zone within the Globe Street footway alignment for the future public domain above. This recess will allow for some provision of tree planting, street furniture, lighting and other items which, though not included in this submission will be implemented in the final design.

The information provided in the submission indicates that Globe Street and Napoleon Street are to have areas recessed into the slab where soil depths will allow for services and tree or shrub planting. The City understands that tree planting and vegetation is likely to be limited to Globe Street and the Foreshore Walk only. The Applicant should reconsider the benefits of providing additional soft landscaping in the privately owned publicly accessible pedestrian areas and adjust the design of the slab to facilitate additional soft landscaping as well as allow for furnishings as noted above.

Recommendation 8

The Applicant should be requested to provide the appropriate detail to assess the likelihood that the design of the slab over the car park will provide sufficient flexibility to accommodate a public domain that has yet to be designed and include information detailing how this will be accommodated in future project applications.

5.2 Public Domain future ownership

It is noted in the EAR that covenants or easements are proposed to cover drainage and other service infrastructure and the public domain above. This seems to indicate that access is to be granted for maintenance to the City and service providers.

It is concluded from this that the end owner responsible for the proposed new public domain areas including the new streets, parks and the foreshore promenade is to be the Applicant, though planned ownership and dedication boundaries have not been explicitly stated. In the event that the City will inherit care, management or ownership of any of these public domain assets, then the City standards for design and construction of public domain elements over basement slabs must be adhered to including:

- minimum soil depth between top of slab and finished level of public domain and soft landscaping
- private owner to remain responsible for waterproof membrane to the basement slabs
- drainage easements and covenants may be required to cover public domain stormwater infrastructure and other service infrastructure.
- materials, surface finishes, furnishings, lighting, etc are all to be selected from the City of Sydney's standard palette found in the Street Design Code

Note: it would be preferable for the public domain to be clear of any below ground structures, rather than be managed via a strata arrangement.

Note: the waterproof membrane associated with the basement must be retained in private ownership and must not be dedicated to the City. Any future strata subdivision plans must consider this requirement.

The applicant has not committed to adhering to the City's policies and standards for areas to be dedicated to the City (only noting consideration to be given). It is noted that the Barangaroo Delivery Authority is developing a set of Guidelines for the Public Domain in consultation with the City of Sydney that may include approved variations to the standard palette.

In addition, the design level of the proposed basement structure would require substantial amendment (lowering) to allow the City's standards and policies to be adhered to. The current level of the slab is set too high to allow the standard City details to be installed above.

Recommendation 9

The applicant must commit to adhering to the City's policies and standards especially for areas to be dedicated to the City.

Works proposed to the existing public domain including the Margaret Street extension, Shelly Street connection, and Lime Street extension are to be designed and constructed in accordance with the City Standards, including standards for road, drainage, street lighting, footways, alignment levels and similar. Relevant City Policies must be adhered to including:

- Sydney Streets Design Code
- Public Domain Manual
- Exterior Lighting Strategy
- Sydney Lights Design Code

5.3 Limited accessible access from Hickson Road to the private development

The proposed basement slab extends to the property boundary along the Hickson Road frontage of the site. The top of the basement slab is shown approximately 400mm higher than the existing footway along Hickson Road. This excludes additional build up to the final level of the public domain, expected to be an additional 200mm minimum.

Concern is raised that the level change from the existing footway to the top of the basement slab will limit the provision of accessible access from the street to the private development areas and will require construction of this provision outside of the property boundary on public land.

The Applicant should be reminded that all ramps, stairs, tactile paving, handrails and other supporting accessories for accessible access are to be contained wholly within the property boundary.

5.4 Poor design outcome for Hickson Road

The proposed location and level (+400mm) of the basement slab in relation to the existing Hickson Road will restrict building / entry setbacks, at grade soft landscaping at the street edge, possible footway widening or similar pedestrian friendly design treatments for the ground level building and landscape design along this street frontage.

It is suggested that the current basement design does not allow for the pedestrian friendly tree lined boulevard that was envisaged for Hickson Road in the approved Concept Master Plan – Governing Principles for Public Domain.

Recommendation 10

It is suggested a basement setback of 4m, a set down or reduction in the level of the top of slab is required to allow flexibility in providing accessible access and a pedestrian friendly design outcome for Hickson Road as a boulevard given the uncertainty of the future treatment of Hickson Road and the location of the light railway.

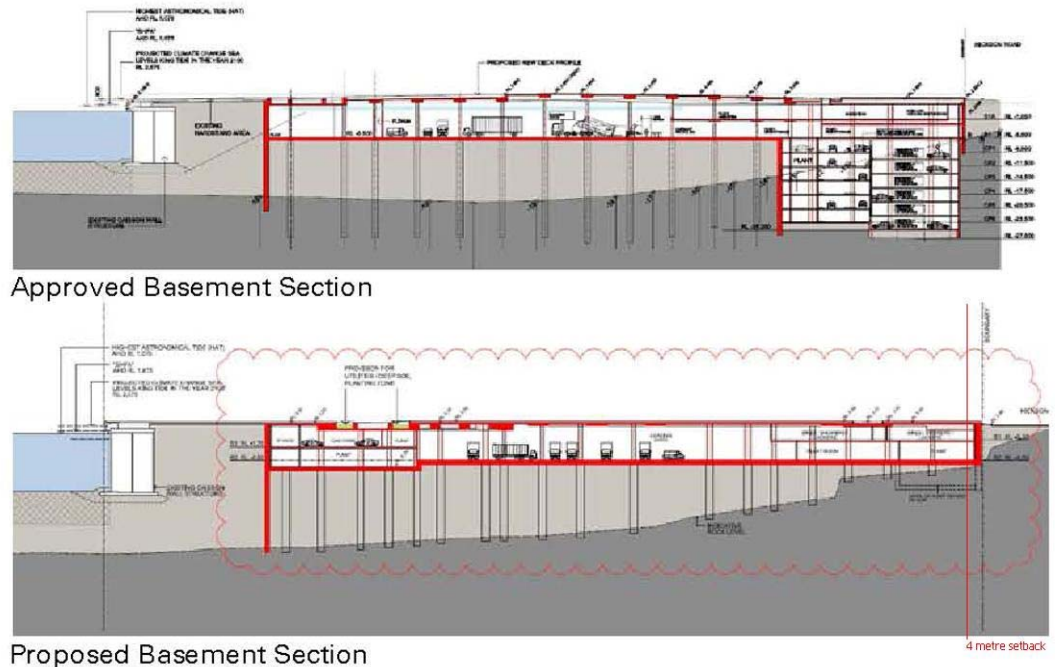


Figure 4 Cross section of the basement showing the approved and modified levels

Figure 4 Diagram demonstrates how a 4 metre set back can be achieved. It is noted that this will impact on plant areas only.

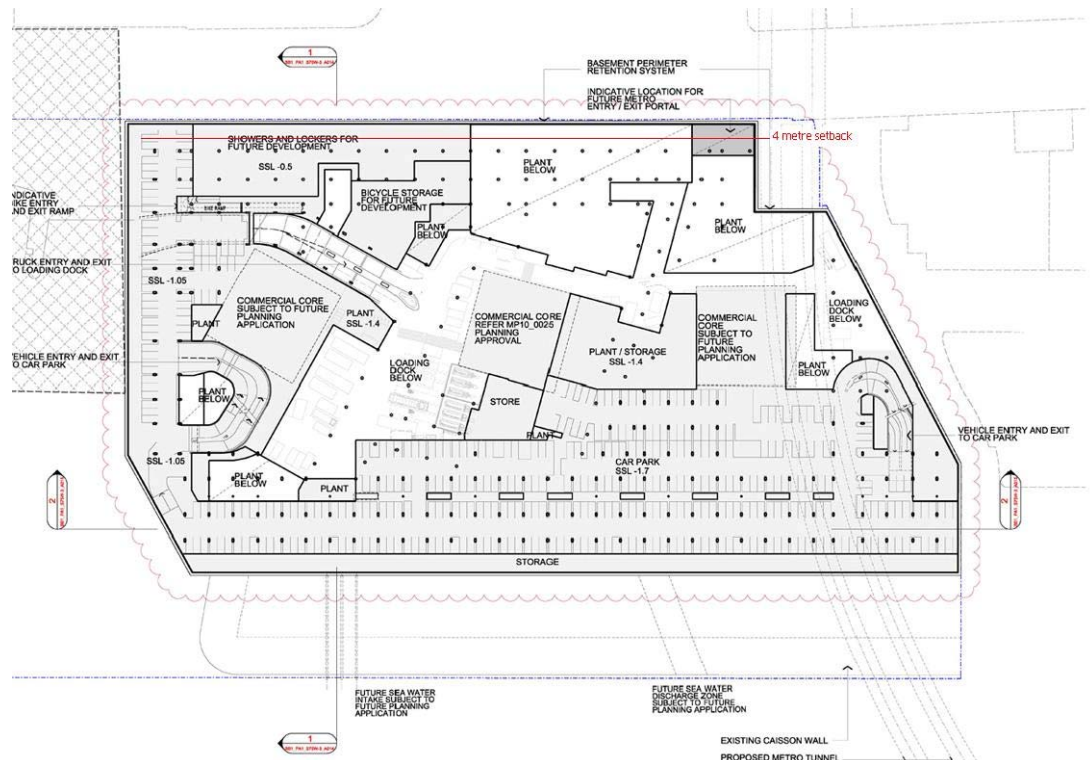


Figure 5 Diagram demonstrates how a 4 metre set back can be achieved. It is noted that this will impact on plant areas only.

It is noted from discussions about the OFP that current options for drainage in the road reserve include, among the various options, one scenario for an extensive drainage system to be built along the western side of Hickson Road, adding pressure to the Applicant's ability to deliver a quality public domain along Hickson Road.

Although such a proposal would not limit provision of access to the podium, it may impact on the ability to provide soft landscaping at the street edge as noted above.

The constraints posed by the need to accommodate various infrastructure for the wider development of Barangaroo, along with the Applicants proposal to build the basement up to the site boundary limit the ability and tests the commitment to deliver an acceptable streetscape along Hickson Road.

Recommendation 11

The Applicant should consider a 4m setback or other alternatives to provide flexible opportunities for an improved design outcome along Hickson Road

5.5 Limited Accessible Access from Shelley Street to the private development

The proposed basement slab extends to the property boundary along the Shelley Street frontage of the site. The top of the basement slab varies in height above the existing footway along Shelley Street by approx. 400mm near Hickson Road, 200mm near the Macquarie

Bank Building and 900mm near Lime Street. This excludes additional build up to the final level of the public domain, expected to be an additional 200mm minimum.

It is noted that the OFP for stormwater is also proposed to be along Shelley Street which will lower levels near the Macquarie Bank building by as much as 250mm.

It is expected that this will be one of the main pedestrian routes along Margaret Street West from Hickson Road to the Foreshore Walk during peak periods and major events.

Any height change including ramps or stairs will have significant impacts to access for the large volumes of people that will use this route.

Concern is raised that the level change from the existing footway to the top of the basement slab will limit the provision of accessible access from the street to the private development areas.

Recommendation 12

It is suggested that the Applicant considers lowering the slab level along the Shelley Street frontage as far north as the Margaret Street extension to facilitate public access across a level grade and to allow the Overland Flow Path to pass through the site rather than down Shelley Street.

5.6 Vehicular and Pedestrian Access to Globe Street from the Lime Street extension

It is expected that the height difference between Lime Street and Globe Street will be up to 1100mm. The distance from the property boundary at Lime Street to the entrance of the proposed residential car park entry appears to be only slightly more than 12.0m. While the grade of the ramp up onto the podium may be sufficient for vehicle access the pedestrian footway would be unlikely to meet AS 1428.

Recommendation 13

The Applicant is requested to ensure that accessible access is considered in designing the footways beside the Lime Street extension towards Globe Street.

5.7 Development Specification for Civil Works – Design and Construction

City standard minimum (or greater) footway, and road widths are to be provided to the Margaret Street extension, Shelly Street connection, and Lime Street extension.

No detail is given as to the proposed widths of the new roads and road realignment works or footway works. These critical dimensions should be addressed in the application to ensure compliance with City standards.

5.8 Public access to new road network must be provided (area currently in private ownership)

The proposed works to Margaret Street, Shelly Street and Lime Street, realigns the existing public road network to land which is currently in private ownership.

Recommendation 14

The City needs assurance that public access will be provided over the land currently in private ownership (which shows the Margaret Street extension and associated works) before the current Shelley Street / Margaret Street road connection is approved for modification. Right of Public Access, or Dedication may be required prior to acceptance of the works by the City or OC whichever is earlier.

In the event the Department wishes to determine the current application without addressing the outstanding issues above, the following conditions of consent are recommended.

5.9 Development Conditions

(1) ASSOCIATED ROADWAY COSTS

All costs associated with the construction of any new road works including kerb and gutter, road pavement, drainage system and footway shall be borne by the developer. The new road works must be designed and constructed in accordance with the City's "Development Specification for Civil Works Design and Construction".

(2) PUBLIC DOMAIN PLAN - MARGARET STREET EXTENSION, SHELLEY STREET REALIGNMENT AND LIME STREET EXTENSION

Three copies of a detailed Public Domain Plan must be prepared by an architect, urban designer or landscape architect and must be lodged with Council's Public Domain Section and approved by Council prior to a Construction Certificate being issued for any new building work excluding approved preparatory, demolition or shoring work. It is recommended that draft plans should be submitted for comment prior to formal submission for approval.

The Public Domain Plan must be prepared in accordance with the City of Sydney's Public Domain Manual. The works to the public domain are to be completed in accordance with the approved plan and the Public Domain Manual before any Occupation Certificate is issued in respect of the development or before the use commences, whichever is earlier.

Note: A security deposit will be required for the public domain works, in accordance with the City of Sydney's adopted fees and charges. You should contact Council to determine deposit amount prior to payment.

(3) ALIGNMENT LEVELS - MARGARET STREET EXTENSION, SHELLEY STREET REALIGNMENT AND LIME STREET EXTENSION

- (a) Prior to a Construction Certificate being issued, footpath alignment levels for the development must be submitted to Council for approval. This submission must be accompanied by a plan prepared by a Registered Surveyor showing the existing location, size and levels (AHD) of all service covers, trees, poles and*

*street furniture, kerb, gutter and alignment levels of 10m cross sections, **the depth and width of the Emergency Overland Flow Path and indicative extent of 1:20year and 1:100 year flood depths**, alignment levels at proposed and existing vehicular and/or pedestrian entrances within the footway adjacent to and extending 20 metres past either side of the site **and up to and including the building facades of building on the south side of Shelley Street.***

- (b) *These alignment levels, as approved by Council, are then to be incorporated into the plans submitted with the application for a Construction Certificate, excluding a Construction Certificate for approved preparatory, demolition or shoring work.*

(4) DESIGN PROVISIONS FOR FUTURE PUBLIC DOMAIN AND SITE LANDSCAPING

Prior to a Construction Certificate being issued, detailed design documentation demonstrating how the future public domain areas located within the Stage 1 site including Globe Street, Napoleon Street and the Foreshore Park have been considered and designed for. Detailed documentation to be submitted and approved by Council prior to issue of Construction Certificate. The detailed submission must illustrate the following;

- (a) *How the new public domain roads marry into the existing public domain of Hickson Street and Lime Street*
- (b) *Detail how accessible access from Hickson Road in to the private development area will be achieved*
- (c) *Adequate provision for soft landscaping including street trees – at grade.*
- (d) *Detail street tree locations and numbers*
- (e) *Adequate provision for public domain services and streetscape elements including laying of conduits, free standing footings for street lighting, flag poles, bus stops, traffic signage, retaining walls seating and similar.*
- (f) *Details of the proposed finished level within the public domain – grading of streets, footways, drainage lines*
- (g) *Details of earthworks including mounding and retaining walls and planter boxes (if applicable);*
- (h) *Details of drainage and overland flow requirements*

6.0 Health

AECOM have reviewed the proposed changes to the stage 1 basement designs and have concluded within the submitted advisory letter (19 October 2011) that the amended RAP does not require revision and that it is appropriate in managing the changed excavation works.

Recommendation 15

This view, that the amended RAP does not require revision and that it is appropriate in managing the changed excavation works, should be endorsed by the Site Auditor and to ensure that no amendments to the approved RAP are considered necessary.

7.0 Tree Management

Two elements of the proposal directly relate to the street trees located along the Hickson Road boundary of the site. The relevant sections are as follows:

7.1 Vehicle Access – Hickson Road

A street tree located adjacent to the site is proposed for removal to allow for a new vehicle crossing. A second street tree is also likely to be removed due to its proximity to the new crossing.

The Barangaroo Development Authority (BDA) is currently the Roads Authority for Hickson Road and therefore owner of the street trees; consent from Council is not required.

It should be noted however that a 'Statement of Commitments' made by Lend Lease (Schedule 3 of the Minister's Project Approval) to manage and minimise potential impacts arising from the development includes the following:

Lend Lease commits to the implementation of an Arborist monitoring programme for the duration of the works to monitor the health and stability of the adjacent Hickson Road street trees. Should the works result in either a significant impact on the health of the trees or compromise their structural integrity to the point where they represent a risk to public safety, they will be replaced with suitably advanced specimen of the same species.

Recommendation 16

Replacement tree planting must be carried out to comply with the above Statement. The planting details must be provided and include details of tree species, size, location and timing of when the tree will be planted.

7.2 Construction Methodology and Environmental Management - Tree Management Plan

Immediate impact to existing trees

A review of this proposal notes that there are no modifications to the construction methodology. However, an addendum to the Tree Management Plan dated November 2011 was submitted to Council (for review) to support the current approved bulk excavation works.

The Bulk Excavation includes excavation to the site perimeter for the Basement Car Parking for Stage 1 of the Barangaroo development. This process involves construction techniques such as trenching down to rock with drilling rigs and then installing a waterproof concrete perimeter.

Approximately 20 street trees are located along the boundary of the development site and the roots and canopy of the trees extend into the site.

The TMP Addendum includes tree protection measures and also recommends pruning to the canopy of ten (10) street trees, with extensive canopy reduction (up to 50-70% canopy loss) proposed to five (5) street trees.

The TMP Addendum has also identified a number of potential issues relating to the proposed pruning; importantly it notes that 'the removal of the branches can lead to an uneven weight distribution with the remaining tree canopy', but has not provided recommendations on how the risk should be managed and tree removal has not been proposed. A letter from the City to the BDA and Lend Lease has been sent to address these issues. The City's latest response to Lend Lease forms Attachment 2.

The City considers that the amount of pruning proposed to five street trees will have a significant impact on the health and vigour of the trees and significantly alter the trees form. The pruning is limited to the western side of the canopy and this is likely to adversely effect the weight distribution and load of the canopy on the trees and could result in them becoming unstable.

Recommendation 17

If the basement is constructed to the eastern boundary, the BDA should undertake measures to avoid the risk to public safety.

7.3 Management of the Street Tree Avenue – existing and future

The Council's Tree Management unit have been involved with the Barangaroo development proposal since July 2010 and have repeatedly raised concerns that

undertaking construction works to the boundary line of the site could significantly affect the health and stability of the Hill's Fig trees and may ultimately require their removal.

The City is concerned that construction will proceed as per the current design, and will leave no choice but the forced and somewhat ad hoc removal of public trees to enable the construction of the development. This reactive removal does not consider the long term appropriate streetscape design.

There is also a perception by Lend Lease that it will be an easy task to replace the existing trees. The above and below ground requirements for establishing a large avenue of trees requires careful planning, to ensure there is sufficient soil volume, and to minimise impacts from the usual urban infrastructure including underground utilities. Replacing trees in the middle of an avenue increases the difficulty in healthy tree establishment. This lack of overall vision for either retaining the existing or establishing a new tree boulevard within Hickson Road is hampered by the unknown design outcomes for other assets within the street.

The possibility of light rail, changes to road heights, stormwater design, location of existing or new utilities and changes to parking all have large impacts on the existing avenue, and the placement of a new avenue. Further, the alignment of the new buildings and the location of the basement car parking will adversely impact the existing and the new tree's ability to grow (above and below ground).

Therefore, at this stage, the most conservative option is to ensure that the existing alignment is maintained. This provides flexibility in regards to the retention of healthy trees, allowing poor trees or those that are a risk to safety being removed, and new trees to be planted within the same alignment. Further, it mitigates the increasing risk of replacement trees not being able to be planted due to high competition for streetscape space.

The best method to achieve this is to provide a setback of the proposed buildings that would be required along the length of Hickson Road. The setback includes the above and below ground components. This provides existing and future tree canopies the required space to grow, and the below ground setback allows a sufficient root zone to support tree stability and long term health. This is consistent with Tree Management unit comments to date.

Recommendation 18

To enable the adequate protection of the existing trees and ensure the successful establishment of future replacement tree plantings, the City supports a minimum setback be created of three - four (3-4) metres from the Hickson Road property boundary.



Figures 5, 6, 7 & 8 Hickson Road Fig trees. The red arrows indicate the extent of canopy removal currently required

8.0 Conclusion

The fundamental concerns relating to the levels of the basement and the interface with Hickson Road are significant and must be resolved prior to any consideration of this request by the Department.

It is further recommended that the Department seek clarification and additional information on the other matters identified in this submission.

The City will assist the Department with any further comments when requested.

END OF SUBMISSION

Attachment 1

City of Sydney Letter regarding drainage issues

City of Sydney
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5 October 2011

Our Ref: 2011/264485

Stewart Verity
Manager Planning Barangaroo South
Lend Lease
30 The Bond, 30 Hickson Road
Millers Point NSW 2000

By Email: Stewart.Verity@lendlease.com

CC: Colin Sargent, Barangaroo Delivery Authority

Dear Stewart,

Barangaroo South Development Stormwater Management System

Further to your letter dated 21 September 2011, the City can provide the following feedback in relation to your queries:

The City concurs to the piping of the 1:100 year ARI event and the provision of an overland flow path system to take the emergency event equivalent to 50% of the 1:100 year ARI flow subject to the following:

- All risk management objectives being met by way of the design of safe inlet conditions at Hickson Road and the design of safe overland flow paths to the harbour
- No increase in water level (from current levels) or adverse impacts on adjoining or downstream properties resulting from the provision of overland flow paths.
- Demonstration by way of plans and sections that current levels of street tree amenity will be retained and light rail to Hickson Road (in both a centre or kerbside location) and acceptable disabled access at entry points into Barangaroo South and to uses along Hickson Road can be accommodated.

Prior to our meeting of 20 September 2011, we had noted the sea wall height adjacent Bungalow 8 needs to take into account the 2100 requirement of RL 2.575 in all flood modelling. As discussed, it must be demonstrated how an overland flow path down Shelley Street will not adversely impact on Bungalow 8 by way of increased flooding and will maintain pedestrian and cyclist amenity in the public domain with the sea wall adjacent to Bungalow 8 at both the current seawall height and for the 2100 requirement of RL 2.575.

You have requested a reduction the capacity of proposed emergency overland flow from 50% of the 100 year to the difference between the 20 year and 100 year flows. For Council to consider this further, a sensitivity analysis of the effects on flooding

city of villages

and public domain amenity impacts along Shelley Street would need to be submitted.

The City has provided the following additional feedback on the overland flow path discussions:

- The City will not accept changes to Shelley Street levels if there will be adverse impacts on adjacent properties (i.e. additional flooding risk, increased flooding depth, reduced access or amenity on a public domain frontage).
- The City will generally not accept the use of mitigation measures in the form of permanent structures to divert stormwater away from adjacent properties.
- Shelley Street and Globe Street levels are to be co-ordinated with the Barangaroo South car park entry and an emergency strategy for the car park entry for PMF events.
- Margaret Street West and Globe Street levels are to be coordinated with Shelley Street such that there are no steps in the pedestrian connections.

The City requests that Lend Lease formally engage their public domain consultant to work with their engineering consultant, Cardno, to resolve the above in an integrated approach for the site and surrounds and to attend future meetings on stormwater and public domain. This integrated approach should deal with stormwater, public domain design, transport links and pedestrian circulation, wind mitigation and the car park entries/exits.

We look forward to continuing our work with Lend Lease to resolve this complex issue.

Yours sincerely



KIM WOODBURY
Chief Operating Officer

Attachment 2

City of Sydney letter regarding tree issues

City of Sydney

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2 December 2011

Our Ref : 2011/336346
File No : S093236

Mr John Tabart
Chief Executive Officer
Barangaroo Development Authority
PO Box N408
Grosvenor Place NSW 1220

Dear Mr Tabart,

Barangaroo South – Stage 1 (PA1) Tree Management Plan

By letter dated 6 September 2011, the City was provided with a copy of the proposed tree management plan for Barangaroo South – Stage 1.

The City contacted Alisa Curson of Lend Lease and directly raised concerns as to the adequacy of the detail in that document. A meeting was subsequently arranged and held 29 September 2011 attended by Alisa Curson and other representatives from Lend Lease, Tony Watson (BDA), City Planner Paul Cashel and Tracey Funnell and Karen Sweeney from Arboricultural Services at which the City's staff outlined issues of concern.

The City subsequently received an addendum report from Mr. Jackson dated 3 November 2011 which has also been reviewed by City staff.

It is the view of the City's arborists that the proposed pruning of trees adjacent to the Barangaroo South – Stage 1 works will have a significant impact on the health, vigour, form and stability of some of the trees and they will become unstable and potentially dangerous. Mr. Jackson himself identifies that the proposed pruning may lead to an uneven weight distribution impacting on the stability of the tree.

We also note that conditions D6 of the Minister's approval to MP10_0023 requires trees to be protected during construction in accordance with Council's Tree Preservation Order and for any trees that are removed or damaged during construction to be replaced.

We ask that the proposed plan be reviewed so as to address and manage the safety risks. In this regard, we note the Lend Lease Project Management and Construction "Statement of Commitment" whereby Lend Lease committed to replacement of trees on the footpath where works result in either a significant impact on the health of the trees or compromise their structural integrity. This is consistent with condition D6.

The risk identified is likely to arise throughout the development. It is the City's view that a comprehensive approach to tree management/replacement (including public consultation), and landscaping around the buildings be developed as a matter of priority and forwarded to the City. If these issues can now be addressed it will allow for appropriate staging of works rather than for these concerns to repeatedly arise and be addressed in a reactionary manner.

Finally, we note that the Barangaroo Development Authority is now the Roads Authority for Hickson Road and as such is the owner and caretaker of the affected trees on the footpath. The City seeks to alert the Authority as the responsible authority, to the potential public safety risk that is likely to result from the proposed pruning.

Should you wish to speak with a Council officer, please contact Karen Sweeney, Arboricultural Services Manager by telephone on 9265 9333 or by email at ksweeney@cityofsydney.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'P. M. Barone', followed by a long horizontal flourish.

Monica Barone
Chief Executive Officer

Cc: Alisa Curson, Lend Lease
By email: Alisa.Curson@lendlease.com