

ETHOS URBAN

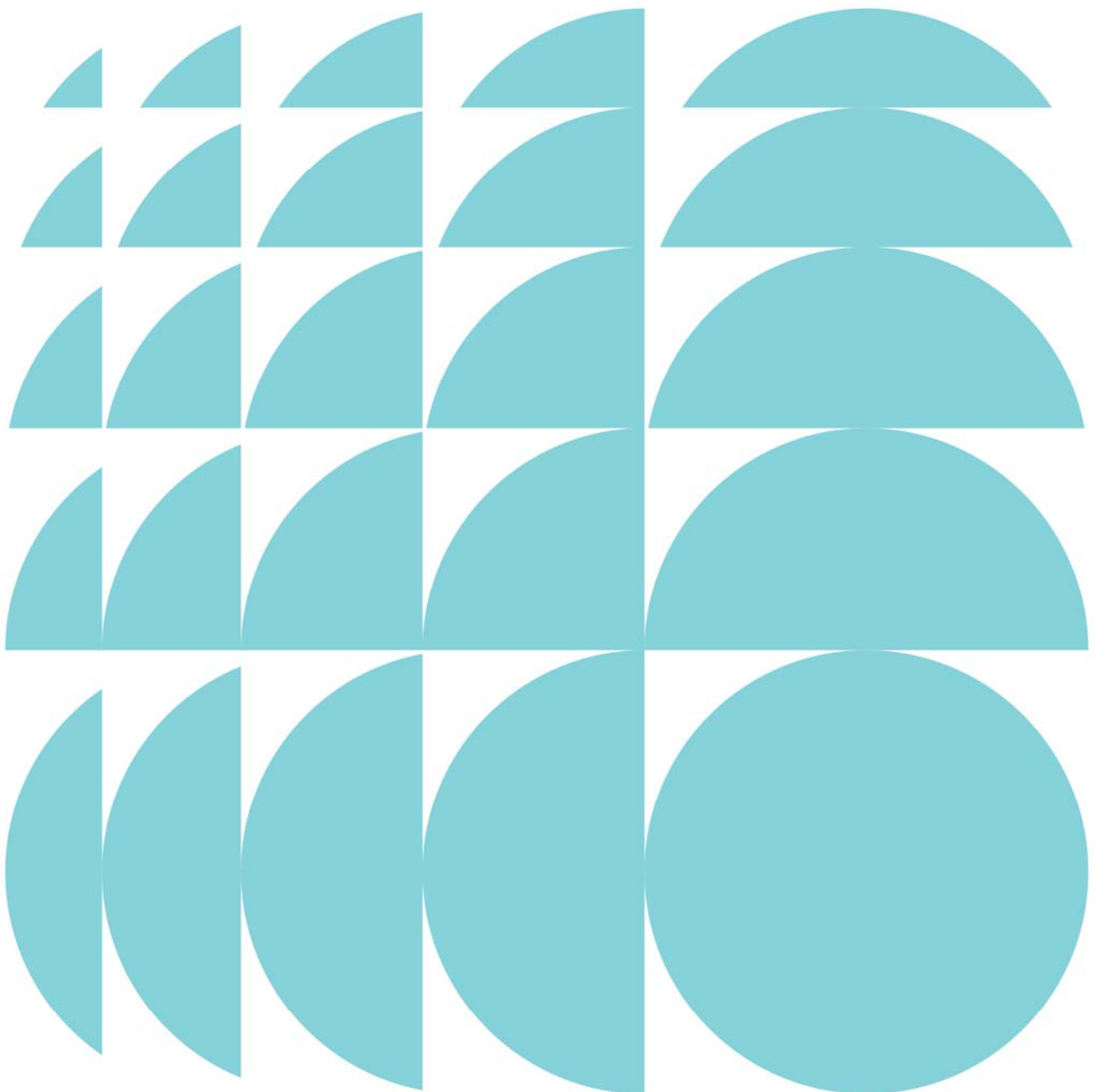
SSD 7388 - MOD 6

The Ribbon - 31 Wheat Road

Submitted to The Department of Planning and
Environment

On behalf of Grocon (Darling Harbour) Developments
Pty Ltd

6 April 2018 | 12255



CONTACT

Jennie Buchanan Associate-Director jbuchanan@ethosurban.com 9956 6962

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This document has been prepared by:

This document has been reviewed by:



Tim Smith

6 April 2018



Jennie Buchanan

6 April 2018

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VERSION NO.	DATE OF ISSUE	REVISION BY	APPROVED BY
3	6 April 2018	JBu	JBu

Ethos Urban
ABN 13 615 087 931 Pty Ltd..
www.ethosurban.com
173 Sussex Street, Sydney
NSW 2000 t 61 2 9956 6952

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1.0 Introduction

On behalf of Grocon (Darling Harbour) Developments Pty Ltd we hereby submit an application pursuant to Section 4.55(2) of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) to modify SSD7388 relating to The Ribbon development (former IMAX site). This modification seeks to modify various elements of the approved development, in order to provide a more efficient and workable building envelope, which reflects the overall design of the building. Additionally, changes have been sought under this application to the construction hours at the site. Specifically, this application seeks the following detailed design modifications to the tower element of the approved building:

- rationalisation of the geometry of the tower envelope;
- reconfiguration of the hotel pool, in order to enable the provision of an open air facility;
- minor changes to the hotel / serviced apartment room dimensions in order to reflect the revised envelope;
- minor changes to the configuration of internal building layout;
- provision of inclined louvres into the eastern and western elevations;
- minor modifications to the northern façade of the approved development;
- provision of external facade lighting;
- incorporation of a BMU rail system;
- amendments to the approved signage strategy; and
- an extension of approved construction hours at the site to the period of between midnight and 6am, six nights per week (not including Sundays).

This application identifies the consent, describes the proposed modifications and provides a planning assessment of the relevant matters for consideration contained in Sections 4.55(2) and 4.15(1) of the EP&A Act. It should be read in conjunction with the Environmental Impact Statement (EIS) prepared by JBA dated December 2015 and Response to Submissions (submitted with the original SSD), as well as the previously approved modification applications, which have been further discussed at **Section 2.0**.

2.0 Background

2.1 SSD 15_7388

Development consent SSD 15_7388 was granted by the Planning Assessment Commission on 28 July 2016 for the redevelopment of the IMAX building, including:

- demolition of the existing IMAX building, tourist office and amenities block;
- construction of a new 25 storey building and separate 2 storey building;
- hotel, serviced apartments, retail and entertainment uses;
- 170 car parking spaces within the podium and 239 bicycle spaces at the ground level;
- Realignment of Wheat Road;
- Upgrade to the surrounding public domain including a new playground and relocation of heritage items; and
- Installation of a City Screen and signage zones.

Five modification applications have been lodged regarding this application to date. The first two modifications (MODs 1 and 2) related to the staging of the conditions of consent and have both been withdrawn prior to determination.

The third modification application (MOD 3) comprised a range of design changes to the development below the tower, within the building podium. This application was approved by the Department on 2 November 2017. It is noted that for

consistency of drawings, although only minor internal layout changes are proposed within the podium of the building (with the exception of signage), a full new set of drawings has been provided under this modification application. This has been proposed to ensure consistency of documentation and ease of assessment for the Department. The specific details regarding MOD 3 have been further discussed at **Section 1.2**.

A fourth modification (MOD 4) was approved by the Department on 10 November 2017, seeking an extension of construction hours at the site. MOD 4 sought the provision of extended construction hours broadly comprising 6.00am to midnight, Monday to Saturday. MOD 4 was approved by the DPE on 10 November 2017.

A fifth modification (MOD 5) was also approved by the Department on 10 November 2017, seeking to reflect an updated room no. configuration, and layout between the serviced apartment and hotel components of the development. The subject modification application has been designed so as to be consistent with the layout proposed under MOD 5, for consistency of assessment.

As discussed above, although the changes sought under this application relate predominantly to the tower element of the building, these changes have been submitted separately. So as to provide a single set of consolidated amended drawings, the proposed Architectural Drawings at **Appendix A** have been designed so as to reflect all proposed above changes, and enable the provision of a single consolidated 'set' of drawings to replace all previously proposed.

2.2 SSDA7388 – MOD 3

As part of the program of changes to The Ribbon, a modification application (known as MOD 3) was approved by the Department, which included the following changes to the development:

- Revised podium envelope.
- Rationalisation of podium tenancies within the revised podium envelope.
- Minor alterations to the approved envelope of the car stacker to accommodate an increased void over the loading dock.
- Relocation of the visitor bicycle parking to the public domain.
- Reconfiguration of bicycle parking and end of trip facilities.

For the purposes of this application, the proposal should be considered to complement MOD 3, by way of providing a similar range of design refinements in the portion of the building envelope predominantly located above the podium, known as the 'tower' portion. The exceptions to this are some internal layout changes at the podium levels, which have eventuated from detailed design development, as well as signage changes which have been proposed at both the podium and tower elements of the development.

3.0 Proposed Modifications to Consent

3.1 Proposed Modifications to Development

The application seeks approval for the following amendments to the approved development.

3.1.1 Refined Tower Envelope

As part of the ongoing design refinement process of The Ribbon, Hassell has undertaken a holistic review of the building and its relationship to the surrounding area. The original DA concept may be interpreted as a vertically curling ribbon (tower) resting upon a horizontally undulating ribbon (podium). The proposed development concept sought strengthens and reinforces this idea further by aligning the geometry of the tower and podium. In this way, the composition may be interpreted as a series of sweeping, dynamic curves that reinterpret the lines of the Western Distributor into a shape that similarly creates a strong focus at its centre (the hotel main lobby and atrium) while reaching out towards the public domain and Darling Harbour beyond. The nested, projecting curves of the podium also cleverly negotiate the complex offsets from the RMS overpass structure, optimising the interior floor area and rationalising the shapes of the rooms and improving their visual connectivity to the harbour.

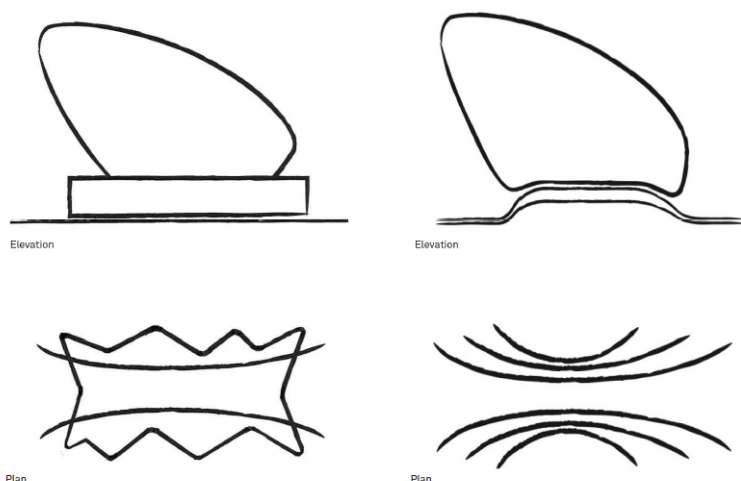


Figure 1 - Comparison of original and proposed DA design concepts.

Source: Hassell

The submitted Urban Design Report (**Appendix B**) provides the rationalisation of the proposed changes, which can be summarised by way of the following:

- *Rationalisation of the geometry of the tower envelope to consolidate elements that were previously projecting from the curvilinear form.*
- *Incorporation of inclined louvres into the eastern and western elevations to provide for solar shading and privacy to the accommodation space.*
- *Modification of the façade set-out to mitigate the potential for the focusing of solar reflections.*
- *Extension of the uppermost outer edge of the tower form, in compliance with required setbacks from the RMS assets, in order to integrate a BMU rail system.*
- *Alteration of the façade mullion and transom arrangement to the north and south elevations in order to limit the maximum size of glazed units and mitigate risks associated with their replacement.*

Each of these proposed changes has been further discussed below.

Rationalisation of Tower Geometry

The overall shape of the development has been rationalised, with specific revisions sought across the tower element of the proposal. Overall, the proposed revised envelope generally reflects that previously approved, with the intention of ensuring that previously projecting elements of the envelope can instead be incorporated into the building form itself.

Figure 2 below provides a comparison of the development, which demonstrates this minor change.

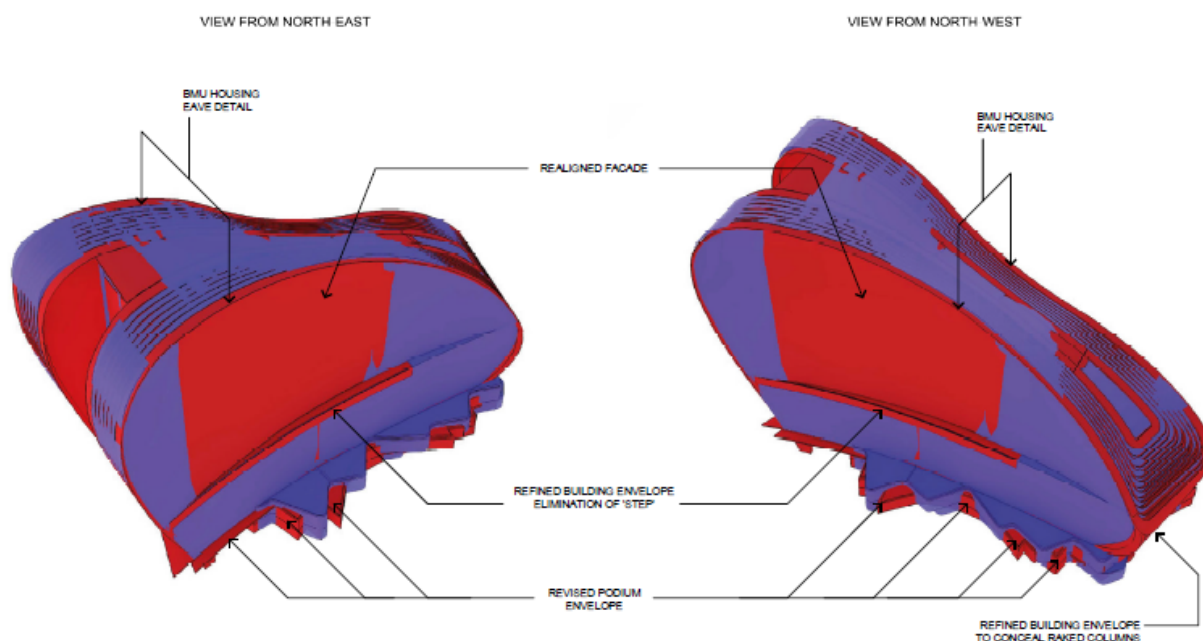


Figure 2- Comparison of the approved (purple) and proposed (red) building envelopes, as visible from the North-Eastern and North-Western building elevations.

Source: Hassell

Inclined Louvres

The proposed modification application includes the provision of louvers along the eastern and western elevations, which have been proposed for the following reasons:

- solar access protection for serviced apartment and hotel rooms from the eastern / western sun;
- provision of additional privacy to the affected rooms; and
- continuity of the design concept in regards to the eastern and western elevations.

These louvers comprise a minor projection from the eastern and western building facades, and will work to improve the presentation of the building as viewed from the surrounding public domain.

Northern Façade Modifications

Minor changes have been proposed to the specific angles of the northern building elevation, with the intention of dispersing reflections from the building façade as much as possible, whilst simultaneously retaining the signature curved façade of the building. Detailed reflectivity analysis will be the subject of further studies as per the requirements of Conditions B21, B22, B43 and E8, and reflectivity statement has been provided by Cundall at **Appendix E**. However, it is considered that the proposed amendment will improve the reflectivity status of the building than that currently approved.

Integration of BMU Rail System

Under this application, the Building Maintenance Unit (BMU) rail system was incorporated into the upper most outer edge of the tower building form. Although always contemplated for the maintenance of the ultimate building form, the system has been incorporated into this modification application for consideration as part of the building itself.

Alteration of Transom and Mullion Pattern

In the previously approved development design, floor to floor glass panels were approved, in order to provide for the 'glass wall' appearance of the overall development. However, in the detailed design work that been undertaken since, it has been determined that floor to floor glass panels should be replaced with 2m x 2m glass panels, in order to

mitigate risk associated with future glass maintenance and replacement. The revised approach will continue to deliver the overall design intent of the building, whilst also significantly improving the longer term safety of the design.

3.1.2 Provision of Rooftop Pool Area

Another key change of this modification application is a reconfiguration of the hotel swimming pool facilities, in order to enable the development to be open to the sky. Previously, Levels 22 and 23 of the development proposed the provision of an indoor Pool and Lounge / Bar, with a Specialty Restaurant above. This arrangement has been redesigned under the proposed modified design, so as to facilitate provision of the following:

- the provision of a larger Hotel / Swimming Pool area, which is open to the air above;
- the provision of a pool lounge / bar area adjacent; and
- the provision of a mezzanine area above the pool.

Additionally, it is proposed that the reconfigured area be revised such that is open to the sky above. As a result of the corresponding mechanical plant area which was previously located above the pool, has been relocated elsewhere throughout the site. This includes the movement of the BMU facilities to another part of Levels 23 and 24. A comparison of the approved and proposed pool areas at level 22 has been provided at **Figure 3** below, which demonstrates the proposed amendment.

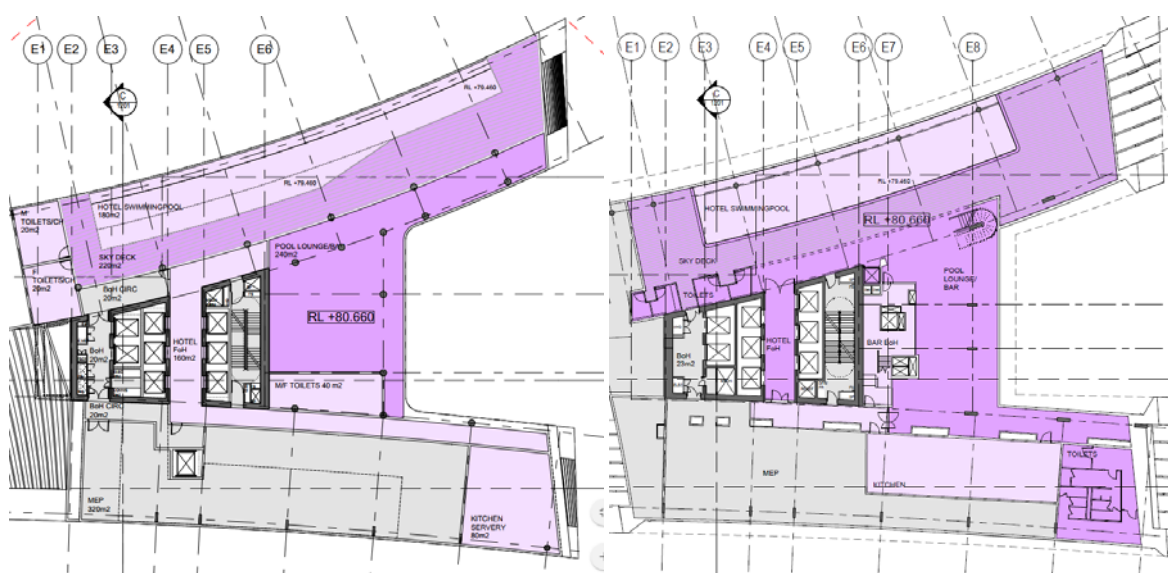


Figure 3 – Comparison of approved (left) and proposed (right) Level 22 floor layouts.

Source: Hassell

3.1.3 Internal Room and Facility Configurations

As a result of the above changes to the envelope of the building, minor changes have also been proposed within each floor of the development. Generally, these changes relate to updates regarding the internal layouts of the lower floors, the provision of revised hallway and updates to room layout dimensions, however the following specific additional changes are noted:

- Minor layout changes throughout the podium levels of the development, generally limited to the detailed internal configuration.
- Provision of a hotel gym facility at Level 06.
- Infill of an approved atrium at Level 07 with a serviced apartment lounge at Level 08.
- Movement of an internal lounge for the use of serviced apartment residents from Level 09 to Level 10.
- Provision of a fire tank at Level 10.
- Provision of a new swimming pool facility for the use of serviced apartment guests at Level 16.

3.1.4 Revised Signage Provision

Under this modification application, it has also been proposed that an additional eight signage zones be included in the development, which comprise:

- CIN-01: Business identification signage for the cinema at the western elevation.
- CIN-02: Business identification signage for the cinema at the western elevation.
- CIN-03: Advertising signage at the western elevation, to be located below the approved 'City Screen'.
- CIN-05: Advertising signage at the southern elevation for the purposes of 'Now Showing' advertisements for the cinema.
- CIN-07: Advertising signage at the southern elevation for the purposes of 'Now Showing' advertisements for the cinema.
- CIN-08: Business identification signage for the cinema at the northern elevation.
- CIN-09: Signage for the primary tenant at the western elevation.
- CIN-10: Signage for the primary tenant at the western elevation.

Details of the proposed signs have been provided within the Architectural Plans at **Appendix A**, and a detailed assessment of the proposed signage has been undertaken at **Section 5.1** of this SEE.

3.1.5 External Façade Lighting

As part of the modification application, it is proposed that the modified development also includes the installation of decorative lighting around the edge of the building. This façade lighting will be at the north-western and south-eastern facades of the development, and is proposed in order to accentuate the key architectural elements of the building. The proposed lighting system comprises a series of 3000K colour temperature white light sources that vary in intensity to create a slow, subtle chase effect around the building. It is noted that all lighting will be shielded, using a perimeter 'eyebrow' façade lighting detail so that the light sources are fully concealed from view in all directions. The proposed lighting approach will result in a visual effect comparable to **Figure 4** below.

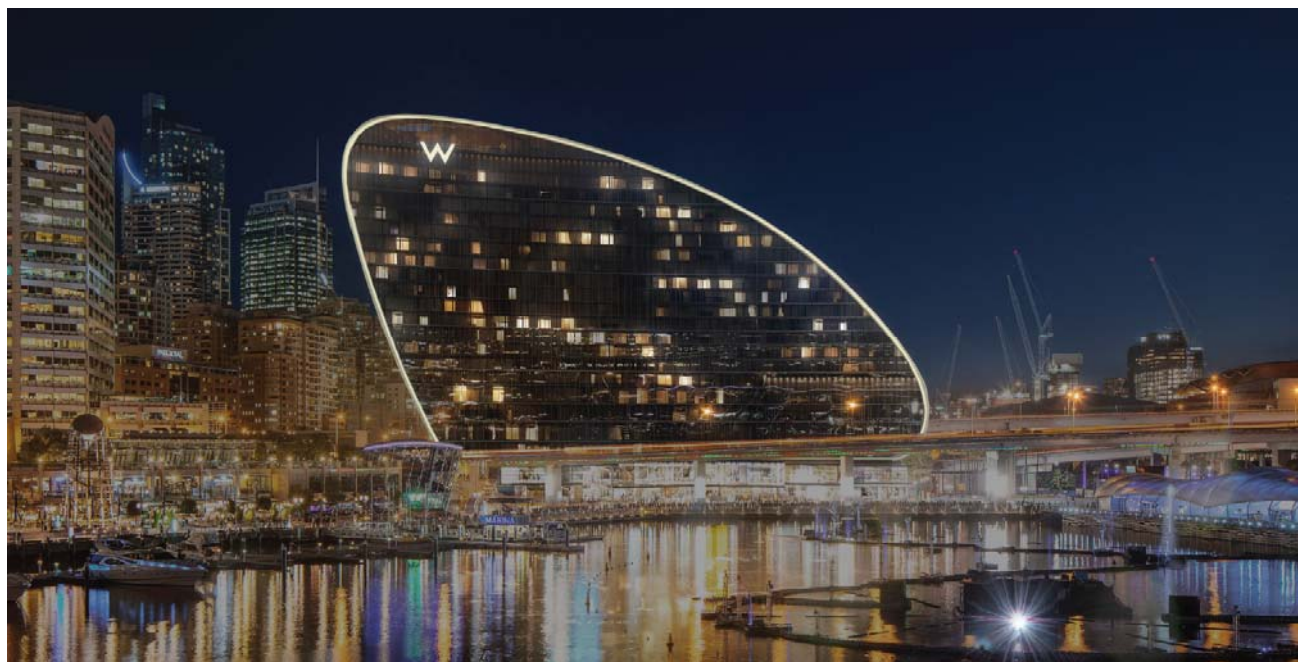


Figure 4 – Photomontage of the development, including the proposed decorative lighting

It is proposed that the development will comprise a subtle 'chase' effect around the perimeter lighting each night between dusk and 12.00am, with the lighting proposing to then remain static for the curfew period between 11.00pm and 6.00am. A full assessment of the proposed illumination has been undertaken at **Section 5.6**.

3.1.6 Proposed Modified Construction Hours

The proposed modification to the development consent comprises an extension of the approved construction hours, in order to permit limited construction works between midnight and 6.00am, from Monday to Saturday. The proposed conditions have also been modified in order to enable the delivery of materials to the site during the night time period. It is noted that no changes will be sought regarding the provision of deliveries or collection of waste from the site in the nighttime period until 12 midnight (i.e. deliveries and waste collection will continue to be precluded in accordance with Condition D2).

3.2 Proposed Modifications to Conditions

The proposed modifications described above necessitate amendments to the consent conditions which are identified below:

A2. The Applicant shall carry out the project generally in accordance with the:

- a) Environmental Impact Statement (EIS) prepared by JBA Urban Planning Consultants dated December 2015;*
- b) Response to Submissions (RtS) and Amendments to Proposed Development prepared by JBA Urban Planning Consultants Pty Ltd, dated March 2016;*
- c) Additional information submitted subsequent to the RtS;*
- d) Plan of Management dated 26 April 2016;*
- e) S96 Application dated April 2017;*
- f) S96 Application dated June 2017;*
- g) S96 Application dated August 2017;*
- h) S4.55 Application dated April 2018; and***
- f) The following drawings, except for:*
 - i) any modifications which are Exempt or Complying Development;*
 - ii) otherwise provided by the conditions of consent.*

Architectural (or Design) Drawings prepared by Hassell			
Drawing No.	Revision	Name of Plan	Date
ARC-HSL-DD-1052	R	GFA Area Schedule	05.04.18
ARC-HSL-DD-1060	G	Draft Lease Plan	12.04.18
ARC-HSL-DD-1078	L	Lease Line Relationship Plans – Sheet 1	05.04.18
ARC-HSL-DD-1079	H	Lease Line Relationship Plans – Sheet 2	26.03.18
ARC-HSL-DD-1079.1	G	Lease Line Relationship Plans – Sheet 3	26.03.18
ARC-HSL-DD-1080	H	Demolition Plan	30.03.16
ARC-HSL-DD-1090	N	Lower Site Plan	05.04.18
ARC-HSL-DD-1091	G	Upper Site Plan	26.03.18
ARC-HSL-DD-1100	R	GA Plans – Ground Floor	05.04.18
ARC-HSL-DD-1101	P	GA Plans – Podium L01	05.04.18
ARC-HSL-DD-1102	N	GA Plans – Podium L02	05.04.18
ARC-HSL-DD-1103	L	GA Plans – Podium L03	05.04.18
ARC-HSL-DD-1104	L	GA Plans – Podium L04	05.04.18
ARC-HSL-DD-1105	L	GA Plans – Hotel and Serviced Apartments L05 and L06	26.03.18
ARC-HSL-DD-1106	J	GA Plans – Hotel and Serviced Apartments L07 and L08	26.03.18
ARC-HSL-DD-1107	J	GA Plans – Hotel and Serviced Apartments L09 and L10	26.03.18
ARC-HSL-DD-1108	J	GA Plans – Hotel and Serviced Apartments L11 and L12	26.03.18
ARC-HSL-DD-1109	J	GA Plans – Hotel and Serviced Apartments L13 and L14	26.03.18
ARC-HSL-DD-1110	J	GA Plans – Hotel and Serviced Apartments L15 and L16	26.03.18
ARC-HSL-DD-1111	J	GA Plans – Hotel and Serviced Apartments L17 and L18	26.03.18

Architectural (or Design) Drawings prepared by Hassell			
ARC-HSL-DD-1112	J	GA Plans – Hotel and Serviced Apartments L19 and L20	26.03.18
ARC-HSL-DD-1112.1	F	GA Plans – Hotel and Serviced Apartments L21 and L22	26.03.18
ARC-HSL-DD-1112.2	F	GA Plans – Hotel and Serviced Apartments L23 and L24	26.03.18
ARC-HSL-DD-1113	J	GA Plans – Roof	23.10.17
ARC-HSL-DD-1130	K	Building 2 GA Plans	19.02.16
ARC-HSL-DD-1150	L	GA Elevations – Sheet 1	26.03.18
ARC-HSL-DD-1151	J	GA Elevations – Sheet 2	23.10.17
ARC-HSL-DD-1152	K	GA Elevations – Sheet 3	26.03.18
ARC-HSL-DD-1153	K	GA Elevations – Sheet 4	26.03.18
ARC-HSL-DD-1154	E	GA Elevations – Building 2	21.03.16
ARC-HSL-DD-1200	L	GA Sections – Sheet 1	26.03.18
ARC-HSL-DD-1201	L	GA Sections – Sheet 2	26.03.18
ARC-HSL-DD-1202	M	GA Sections – Sheet 3	26.03.18
ARC-HSL-DD-1203	M	GA Sections – Sheet 4	26.03.18
ARC-HSL-DD-1204	M	GA Sections – Sheet 5	26.03.18
ARC-HSL-DD-1350	E	Section Details	23.10.17
ARC-HSL-DD-1930	F	Materials and Finishes Palette	23.10.17
ARC-HSL-DD-1950	F	Artist's Impression 1	23.10.17
ARC-HSL-DD-1951	F	Artist's Impression 2	23.10.17
ARC-HSL-DD-1952	F	Artist's Impression 3	23.10.17
ARC-HSL-DD-005.1	D	Schedule of Accommodation Hotel Rooms	23.10.17
ARC-HSL-DD-005.2	D	Schedule of Accommodation Serviced Apartments and Retail	23.10.17
SK-029	F	Loading Bay: Refuse Areas	05.04.18
SK-030	G	Refuse Areas Detail	05.04.18
SK-530	-	Eastern Pedestrian Clear Widths	26.03.18
Public Domain/Landscape Drawings prepared by Aspect Studios			
Drawing No.	Revision	Name of Plan	Date
12023-LDA01	G	Public Domain Context Plan	15.12.16
12023-LDA04	G	Playground Detail Plan	15.12.16
12023-LDA06	G	Public Domain Planting Plan	15.12.16
12023-LA-105	B	Allocated Bike Parking	22.03.16
SK-0235.1	-	Harbour Street Pedestrian Path	28.06.16
12023-S96 01	A	Public Domain Plan	05.17
12023-S96 02	A	Public Domain Sections	05.17
12023-S96 03	A	Eastern Public Domain Detail Plan	05.17
12023-S94_04	A	Allocated Bike Parking	05.17
RMS Clearance Diagrams prepared by Hassell			
Drawing No.	Revision	Name of Plan	Date
ARC-HSL-DD-1070	L	Ground Floor Proposed Clearances to RMS Roadway Structures	06.04.18
ARC-HSL-DD-1071	G	Podium Level Proposed Clearances to RMS Roadway Structures	26.03.18

Architectural (or Design) Drawings prepared by Hassell			
ARC-HSL-DD-1072	F	Hotel Level Proposed Clearances to RMS Roadway Structures	26.03.18
ARC-HSL-DD-1073	H	Proposed Clearances to RMS Roadway Structures	26.03.18
ARC-HSL-DD-1074	F	Temporary Construction Proposed Clearances to RMS Roadway Structures	26.03.18
ARC-HSL-DD-1075	H	Temporary Construction Proposed Clearances to RMS Roadway Structures	26.03.18
ARC-HSL-DD-1076	F	Upper Hotel Levels Cantilever over RMS Roadway	26.03.18
ARC-HSL-DD-1077	F	Proposed Cantilever over RMS Roadway	23.10.17
Signage Zone Plans prepared by Hassell			
Drawing No.	Revision	Name of Plan	Date
	G	Signage Matrix	12.10.17
SK026.1	B	Signage Types & Locations South Elevation	18.09.17
SK026.2	B	Signage Types & Locations East Elevation	18.09.17
SK026.3	B	Signage Types & Locations West Elevation	18.09.17
SK026.4	B	Signage Types & Locations North Elevation	18.09.17
SK026.5	E	Signage Types & Locations Building 2 Elevations	18.04.16
General Building Envelope Materials and Finishes Plans prepared by Hassell			
	C	General Building Envelope Materials Matrix	23.10.17
SK027.1	A	Materials and Finishes View from North-West	23.10.17
SK027.2	A	Materials and Finishes View from South-West	23.10.17
SK027.3	A	Materials and Finishes View from South-East	23.10.17
SK027.4	C1	Materials and Finishes View from North	20.10.17

Reason: To reflect the updated design submitted under this Section 4.55 Modification Application.

B26. Prior to the issue of the Construction Certificate for Stage 2, detailed design documentation demonstrating compliance with the recommendations of the Disability Access Review Report as amended by the access statement prepared by Morris Goding dated April 2017, and the Access Statement prepared by Morris Goding dated July 2017 submitted with this EIS and subsequent modification applications shall be submitted. The building must be designed and constructed to provide access and facilities for people with a disability in accordance with the Building Code of Australia. The Certifying Authority must ensure that evidence of compliance with this condition from an appropriately qualified person is provided and that the requirements are referenced on the Construction Certificate drawings.

Reason: This condition has been amended to reflect the updated Accessibility Statement submitted under this application.

B29. The air intakes for all mechanical ventilation systems ~~shall be situated below a height of 60 metres above ground level. The air intakes~~ are to be positioned following further assessment on the most appropriate location using Computational Fluid Dynamics modelling prior to issue of a Construction Certificate for Stage 2.

B30. No balconies, terraces or operable windows shall be incorporated within the building above a height of 60 metres above ground level.

Reason: To reflect the updated Wind Analysis, which has determined the 60m control to no longer be required at the site. This has been further discussed at **Section 5.12**.

(D1) All work, including demolition, excavation and building work, and activities in the vicinity of the site generating noise associated with preparation for the commencement of work (eg. loading and unloading of goods, transferring of tools, etc) in connection with the proposed development must only be carried out:

vi) works are carried out during the period of 12 midnight and 6:00am, Monday to Saturday ('the further extended hours of construction') subject to the requirements of Condition D1C.

(D1B) If investigation of complaint(s), through appropriate noise testing, establishes that offensive noise has occurred or works have been carried out during the extended construction hours outlined in Condition D1(d)(v) or **Condition D1(d)(vi)** in breach of the conditions of approval, and the complaint is justified, then the Department may require by notice to the Applicant, owner or developer, that the construction hours be restricted or revert to the approved construction hours of the original consent.

(D1C) During the further extended hours of construction outlined in Condition D1(d)(vi), the following requirements must be met:

- a) works shall be undertaken in accordance with the Acoustic Assessment prepared by Acoustic Logic, titled Extended Hours Construction Noise Assessment (midnight to 6am) and dated 23 November 2017**
- b) construction works shall exclude the use of high noise generating appliances, including the following tools:**
 - i) hydraulic hammers**
 - ii) piling**
 - iii) rock sawing**
 - iv) use of earth moving equipment**
 - v) any other tools that generate a noise level equal to, or louder than, any of the above listed tools**
- c) all workers are to be appraised of the following requirements, and the builder is to ensure the following practices are adhered to:**
 - i) access to the site during the extended hours is restricted to the site personnel, or deliveries / waste removal specific to the development only**
 - ii) workers entering the site during the extended hours are to take care not to speak in raised voices, talk on mobile phones, use any radio including car radio, cause noise disturbance through the transportation of tools or other activity**
- d) all construction works shall be carried out in accordance with the requirements of Conditions C5, C6, D20 to D25**

(D2) Internal works may be undertaken outside the approved extended hours of construction in Condition D1(d)(v), only after the completion of the external shell and the sealing of the entire floor, during the following hours:

- a) between 12 midnight and 7:00am, Mondays to Fridays inclusive; and**
- b) between 12 midnight and 7:00am, Saturdays, subject to:**
 - c) no work is to be undertaken externally without the prior consent from the Secretary;**
 - d) no material delivery or removal of waste must take place during the extended hours; and**
 - e) approval is not given for the use of any high noise intrusive plant and equipment other than hand operated power tools.**

Reason: To reflect the proposed changes to the construction hours sought under this application.

4.0 Substantially the Same Development

Section 4.55(2) of the EP&A Act states that a consent authority may modify a development consent if "it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all)".

The proposed development remains substantially the same as that originally approved by way of the following:

- The proposed modification proposes changes which have generally resulted from more detailed design work which has been undertaken since the approval of SSDA7388.

- The proposed development does not seek to vary the uses of the development originally approved, continuing to provide a mixed use retail, entertainment and temporary accommodation development at the site.
- The proposal maintains the same design intent of a podium / tower form development, and maintains the originally proposed 'Ribbon' design motif.
- The environmental impacts of the modified development are substantially the same as the approved development in terms of operation, traffic generation, waste management and the like. Where there have been differences in the impacts, these have been assessed at **Section 5.0** below.
- The proposed modified construction hours will not result in any physical changes to the site, and will assist in the prompt delivery of the final approved building.

5.0 Assessment of Environmental Impacts

Section 4.55(3) of the EP&A Act requires a consent authority to take into consideration such of the matters referred to in Section 4.15(1) as are of relevance to the development the subject of the application. The planning assessment of the proposed modified development remains generally unchanged with respect to the above matters. The following matters however warrant further assessment.

5.1 Environmental Planning Instruments

The Environmental Impact Statement (EIS) submitted with the original SSDA addressed the development's level of compliance against the relevant environmental planning instruments, which include:

- *State Environmental Planning Policy (State and Regional Development) 2011*;
- *State Environmental Planning Policy (Infrastructure) 2007*;
- *State Environmental Planning Policy No. 55 – Remediation of Land*;
- *State Environmental Planning Policy No. 64 (Advertising and Signage)*;
- *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*; and
- Darling Harbour Development Plan No. 1.

This application seek approval for minor modifications to the tower element as a result of detailed design development to the tower element of The Ribbon since the approval of SSD 7388. The proposed modifications do not alter the level of compliance of the development with the above relevant planning instruments. **Table 1** below provides a summary overview of the continued compliance with the relevant planning instruments demonstrated in this proposed modification application.

Table 1- Compliance of the proposal against the relevant plans and policies.

Instrument / Strategy	Comment
State Environmental Planning Policy (State and Regional Development) 2011	The proposed development is within the Darling Harbour Precinct which is identified as a State Significant Site in Schedule 2 of the <i>State Environmental Planning Policy (State and Regional Development) 2011</i> (Regional Development SEPP). As the proposed modified development continues to have a Capital Investment Value of more than \$10 million and is listed in Schedule 2, the modified development continues to be State Significant for the purposes of the Act.
State Environmental Planning Policy (Infrastructure) 2007	The proposed modified tower envelope maintains consistency with the requirements of the <i>State Environmental Planning Policy (Infrastructure) 2007</i> , as well as the conditions of consent imposed by the Roads and Maritime Services (RMS). The proposed revised tower envelope has been specifically designed with regards to the minimum clearance requirements set by the RMS in regards to the Western Distributor. This has been further discussed at Section 5.5 below.

Instrument / Strategy	Comment
State Environmental Planning Policy No. 55 – Remediation of Land	No further assessment of the site in accordance with <i>State Environmental Planning Policy No. 55</i> is required in the case of this modification application.
State Environmental Planning Policy No. 64 – Advertising and Signage	Signage zones have been proposed under this modification, with an assessment against the <i>State Environmental Planning Policy No. 64 – Advertising and Signage</i> (SEPP 64) below.
Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005	The proposed development is consistent with the aims and objectives of the <i>Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005</i> (SREP). In particular: • public access along the foreshore will be maintained; • there will not be any adverse impacts on the scenic quality of the waterway or the foreshore area; • no adverse view loss will occur to and from the public domain around the Sydney Harbour foreshore; and • the building will continue to help define the southern foreshore edge of Darling Harbour. Visual impact of the proposed modified development has been further discussed at Section 5.3, and a more detailed assessment of specific provisions of the SREP have been detailed below.
Sydney Harbour Foreshores and Waterways Area Development Control Plan 2005	The Sydney Harbour Foreshores and Waterways Area Development Control Plan 2005 relates predominantly to development which directly interferes with the foreshore. The proposal is consistent with the design guidelines in that it maintains foreshore access and is of a high quality built form that complements the highly urbanised character of the locality.
Darling Harbour Development Plan No. 1	The proposed modified development is permissible with consent under Clause 6 of the Darling Harbour Development Plan No. 1 (Darling Harbour Plan). No other provisions of the Darling Harbour Plan apply to the site.
Sydney Development Control Plan 2012	The proposed development continues to achieve the aims of the Sydney Development Control Plan 2012 (DCP), by way of the following: • The proposed development continues to respond to its context, and continues to be compatible with the built environment and public domain around the site. • The proposal continues to reflect the developing character of the Darling Harbour area. • The proposal continues to enhance the public domain experience through Darling Harbour.

State Environmental Planning Policy No. 64 – Advertising and Signage

SEPP 64 applies to all signage that, under another environmental planning instrument that applies to the signage, can be displayed with or without development consent and is visible from any public place or public reserve, except as otherwise provided in that policy. Under this application, a range of minor changes to the signage have been included to reflect the updated podium design, as well as reflect the provision of eight additional new signs at the site.

The proposed additional signage comprises a mix of different signage zones, with specific signs sought under this application comprising the following:

- CIN-01: Business identification sign;
- CIN-02: Business identification sign;
- CIN-03: Advertisement;
- CIN-05: Advertisement;
- CIN-07: Advertisement;
- CIN-08: Business identification sign;
- CIN-09: Secondary tenant sign; and
- CIN-10: Secondary tenant sign.

Pursuant to clause 8 of SEPP 64 only the objectives of SEPP 64 and the criteria in Schedule 1 – Assessment Criteria of SEPP 64 are required to be considered in the assessment of the majority of the proposed signs. This assessment has been provided, as relevant, in the following paragraphs. The remaining signs comprise ‘advertisements’ under the provisions of SEPP 64. In the case of signs CIN-03, CIN-05 and CIN-07 these have been proposed to contain “Now Showing” movie advertisements, which although not technically defined as ‘business identification signage’ are commonplace in the context of cinemas.

Clause 3 states the aims and objectives of SEPP 64 which are:

- (a) to ensure that signage (including advertising):
 - (i) is compatible with the desired amenity and visual character of an area, and
 - (ii) provides effective communication in suitable locations, and
 - (iii) is of high quality design and finish, and
- (b) to regulate signage (but not content) under Part 4 of the Act, and
- (c) to provide time-limited consents for the display of certain advertisements.
- (d) to regulate the display of advertisements in transport corridors, and
- (e) to ensure that public benefits may be derived from advertising in and adjacent to transport corridors.

All proposed signs are consistent with the above objectives, in that the development has been designed in order to provide a compatible and coordinate delivery of signage at the site which is acceptable in the visual context of Darling Harbour. The proposed signage seeks to effectively communicate the IMAX theatre at suitable locations at the site (including ‘now showing’ movies), and will be designed to a high quality design and finish.

An assessment of signs CIN-03, CIN-05 and CIN-07 in accordance with the relevant provisions of SEPP 64 has been undertaken at **Table 2** below.

Table 2 – Assessment under Schedule 1 of SEPP 64

Clause	Comment
9. Advertisements to which this Part applies	Signage zones CIN-03, CIN-05, and CIN-07 are required to be assessed under this Part.
10. Prohibited Advertisements	The site does not fall under any of the specified zones, and as such the signs are permissible with development consent.
13. Matters for Consideration	All relevant matters for consideration have been addressed throughout this section, except where further discussed at Clauses 19 and 22 below.
17. Advertisements with Display Area Greater than 20m² or Higher than 8m	All signage zones required to be assessed under this Part trigger the requirements of this Clause, with the exception of CIN-03. On this basis, the DA is advertised development, and a copy of the application will need to be provided by the RMS at the same time the application is advertised.
18. Advertisements Greater than 20m² and within 250m of, and Visible from a Classified Road	This Clause does not apply as the Minister for Planning is the consent authority.
19. Advertising Display Area Greater than 45m²	Signage zones CIN-05 and CIN-07 include an area of greater than 45m ² , and in accordance with Clause 19 it is typically a requirement that a Development Control Plan be prepared as an advertising design analysis for the relevant area or precinct. However, in accordance with Clause 11 of the <i>State Environmental Planning Policy (State and Regional Development) 2011</i> , Development Control Plans do not apply to State Significant Development, which comprises the DA being sought to be modified under this application. We therefore consider that the DPE can approve the signage in the absence of a DCP.
21. Roof or Sky Advertisements	No additional roof or sky advertisements have been proposed for this application.
22. Wall Advertisements	In accordance with Clause 22, SEPP 64 states that only one wall advertisement may be displayed per building elevation. Two exceedances are noted in regards to this control, comprising: - the provision of two wall advertisements at the southern building elevation; and - the provision of a wall advertisement at the western elevation, which although permissible in regards to the number of wall advertisements permitted, does not comply with Clause (2)(g) as business identification signage is proposed on the same elevation.

Clause	Comment
	A variation to this development standard is considered acceptable for the reasons outlined below: Southern Elevation Signage The proposed signage at the southern elevation is considered acceptable, given that: - the signage is located below the Western Distributor, roadway, in a visually very separated portion of the site from the remainder of the building above the roadway; - the signage does not obscure any important visual elements of the base building; - the signage complies with, or is capable of complying with the dimension requirements contained under Clause 22 (with the exception of (2)(g)); and - the proposed signage will not result in any adverse visual impacts, and will continue to achieve the objectives of SEPP 64. Western Elevation Signage The proposed signage at the southern elevation comprises a “now showing” animated advertisement, to be located below the previously approved ‘City Screen’. This sign is considered acceptable on the basis of the following: - the signage is located significantly below the Western Distributor, and will not be visible to passing vehicles; - the signage respects and enhances important architectural elements of the building, and has been designed in a coordinated manner with the base building; - the sign will present as a short, but wide strip underneath the ‘City Screen’, and is seen to be an innovative signage form for the use of the IMAX theatre. - The proposed signage is compliant, or capable of compliance with provisions (2)(a) to (2)(f) of Clause 22 of SEPP 64.

Schedule 1 of SEPP 64 contains a range of assessment criteria which are matters for consideration by the consent authority in assessing applications for signage. The compliance of the proposed signs with the assessment criteria is set out in **Table 3** below:

Table 3 – Assessment under Schedule 1 of SEPP 64

Assessment Criteria	Comments	Compliance
Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located?	The proposed signage zones are generally consistent with the future character of the Darling Harbour precinct, which will see Sydney as the major events and business venue in the Asia Pacific region.	Y
Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?	There is no particular theme for signage in the locality. However, the proposed signage will be of a very high architectural quality and will be sympathetic and integrated with the building design.	Y
Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?	The proposal does not detract from the visual quality of the area and is not within any environmentally sensitive, natural, conservation, open space, waterway, rural landscape area, nor is in direct proximity to residential development.	Y

Assessment Criteria	Comments	Compliance
Does the proposal obscure or compromise important views?	As the proposed signage will be fully integrated into the design of the building, they will not protrude and therefore will not obscure or compromise important views.	Y
Does the proposal dominate the skyline and reduce the quality of vistas?	The proposed signage zones are fully integrated into the built form of the development, and will therefore not dominate the skyline or unduly impact on vistas.	Y
Does the proposal respect the viewing rights of other advertisers?	The proposed signage will not impact on the viewing rights of any surrounding signage.	Y
Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape?	The proposed signage zones are appropriate for their setting in regards to scale form and proportion. The proposed zones are seen to contribute appropriately to the streetscape, providing information regarding the various uses of the building, including the IMAX cinema.	Y
Does the proposal contribute to the visual interest of the streetscape, setting or landscape?	The proposed signage contributes to the visual interest of the site, communicating the uses of the site whilst also ensuring that the impacts of the development are not adverse in nature.	Y
Does the proposal reduce clutter by rationalising and simplifying existing advertising?	N/A	N/A
Does the proposal screen unsightliness?	N/A	N/A
Does the proposal protrude above buildings, structures or tree canopies in the area or locality?	The proposed signage will not protrude above buildings, structures or tree canopies in the area or locality.	Y
Is the proposal compatible with the scale, proportion or other characteristics of the site or building, or both, on which the proposed signage is to be located?	The proposed signage has been designed in a coordinated manner alongside the revised scope of the base building.	Y
Does the proposal respect important features of the site or building, or both?	The proposed signage zones are respectful in their design, and have been designed by HASSELL in a coordinated manner which will integrate with The Ribbon development.	Y
Does the proposal show innovation and imagination in its relationship to the site or building, or both?	The proposed signage has been designed in an integrated manner as part of The Ribbon development, and will result in a positive relationship between the building and its surrounding context.	Y
Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?	Any supporting elements of the proposed signs will be integrated into their design and that of the surrounding building fabric.	Y
Would illumination affect safety for pedestrians, vehicles or aircraft?	Due to the height, location and scale of the proposed signs, the proposal will not reduce the safety of pedestrians, vehicles or aircraft. The location of signage which is visible from the Western Distributor has been designed such that will not distract drivers.	Y

Assessment Criteria	Comments	Compliance
Would illumination detract from the amenity of any residence or other form of accommodation?	By virtue of the location of the signage and the orientation of the signage, the signage will not detract from the amenity of any residence or other form of accommodation.	Y
Can the intensity of the illumination be adjusted, if necessary?	The intensity of the illumination can be controlled if necessary.	Y
Is the illumination subject to a curfew?	The illumination of the signage is not proposed to be subject to a curfew.	Y
Would the proposal reduce the safety of any public road?	The proposed signage has been designed so as to minimise any adverse impacts to the Western Distributor, or any other surrounding roads. CIN-03, as an animated advertisement, has been designed such that it is not visible from any public road including the Western Distributor.	Y
Would the proposal reduce safety for pedestrians / cyclists?	The proposal will not reduce pedestrian or cyclist safety.	Y
Would the proposal reduce safety for pedestrian, particularly children, by obscuring sightlines from public areas?	The proposed signage will not obscure sightlines from public areas and will not unreasonably protrude from the proposed built form.	Y

Sydney Harbour Catchment Regional Environmental Plan

The site is identified within the 'Foreshores and Waterways Area' of Sydney Harbour, and accordingly is subject to the provisions of the Sydney Harbour Catchment REP. Part 3, Division 2 of the REP refers to matters which are to be taken into consideration by consent authorities before granting consent for development. **Table 4** provides a breakdown of the application of each matter, as relevant to the proposed modifications.

Table 4 – Assessment of the proposal against the Sydney Harbour Catchment REP

Clause	Comment
21. Biodiversity, Ecology and Environment Protection	The proposal relates only to modifications at the tower portion of the site, and will not adversely impact on the surrounding natural environment.
22. Public Access to, and Use of, Foreshores and Waterways	The proposed modifications occur above the ground level plane of the site, and accordingly will not result in any restriction on access for the general public to the waterways of Sydney Harbour.
23. Maintenance of a Working Harbour	The proposal does not affect the provision of a working harbour in Sydney, or 'Working Waterfront' land.
24. Interrelationship of Waterway and Foreshore Uses	The proposal doesn't affect access to or uses within the waterway.
25. Foreshore and Waterways Scenic Quality	The impact of The Ribbon development on the scenic qualities of Sydney Harbour was previously assessed under SSDA7388. Visual impacts of the proposed modified development have been further discussed at Sections 5.2 and 5.3 below.
26. Maintenance, protection and Enhancement of Views	View impacts of the revised design have been specifically discussed at Section 5.2 below.
27. Boat Storage Facilities	The proposal will have no impact on boat storage facilities.

5.2 Urban Design and Density

Urban Design Rationale and Design Excellence

The proposed modifications seek to amend the building envelope above the podium to consolidate and rationalise the tower form and design elements. The proposal will improve the building envelope by refining building elements that were previously projecting from the curvilinear form, and providing a more consolidated tower form to compliment the

previously submitted design changes to the podium levels (currently being assessed under MOD 3). In line with the base SSDA 7388, the minimisation of impacts as a result of the building form, and preservation of sight lines were considered in the designing of the refined tower envelope. This modification does not seek to alter any envelope changes in relation to the podium which was the subject of the previous (then) Section 96 Modification Application.

Hassell's Urban Design Report (**Appendix B**) outlines that the revised design responds to the key issues relevant to the site, including compliance with the previously established setback requirements from the RMS, minimisation of overshadowing to Tumbalong park, and preservation of view corridors through the site. In effect, the proposal has been reversed engineered to minimise the impact of the area south of the proposed development.

Generally, the height and scale of the modified building is substantially the same as that which was originally approved. The revised design seeks to rationalise the built form and create a more workable building form for the use of future operators. Overall, the proposal is considered a positive response to the building's unique geometry and urban setting through architectural articulation and engineering improvements.

Although the *Sydney Local Environmental Plan (LEP) 2012* does not apply to the site, the design excellence provisions can provide a guideline as to what exhibits design excellence, and accordingly consideration against these provisions has been detailed at **Table 5** below. This exercise demonstrates that the proposed modified development continues to achieve design excellence.

Table 5 – Assessment of the proposal against Clause 6.21 of the Sydney LEP 2012.

Provision	Response
<i>(a) whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved,</i>	Architectural design quality was a key issue considered as part of this application, and has been addressed throughout this report, as well as in the Urban Design Report provided at Appendix B . A high standard of architectural design merit has also been specifically demonstrated throughout the assessment undertaken in this table.
<i>(b) whether the form and external appearance of the proposed development will improve the quality and amenity of the public domain,</i>	In preparing the design of the revised development (including the podium and tower elements), Hassell notes that <i>"the proposal also improves the building's relationship to its context."</i> Principally, the relationship of the building envelope to the public domain at the podium levels has been covered by the previous podium modification application (MOD 3), however the proposed revised tower envelope will work to reduce overshadowing and reflectivity impacts and accordingly improve the amenity of the public domain.
<i>(c) whether the proposed development detrimentally impacts on view corridors,</i>	The preservation of view corridors from the tower modification compared to that currently approved has been confirmed at Section 5.3 below. Generally, the revised tower envelope will have a very similar impact to that previously approved.
<i>(d) how the proposed development addresses the following matters:</i> <i>(i) the suitability of the land for development,</i>	The site has been considered suitable for hotel / serviced apartment / cinema development, as considered by the DPE in SSD 7388. Site suitability has also been considered at Section 5.15 , with specific regard to this modification application.
<i>(ii) the existing and proposed uses and use mix,</i>	The proposed land use mix has been established and is not proposed to change under this modification.
<i>(iii) any heritage issues and streetscape constraints,</i>	The proposal does not affect any heritage item and streetscape constraints have been addressed in MOD 3.
<i>(iv) the location of any tower proposed, having regard to the need to achieve an acceptable relationship with other towers (existing or proposed) on the same site or neighbouring sites in terms of separation, setbacks, amenity and urban form,</i>	The site is located in a unique position, whereby it is reasonably distanced to all other surrounding buildings. The nature of the revised tower form is considered appropriate within its context.
<i>(v) the bulk, massing and modulation of buildings,</i>	The bulk of the façade element of the building will not drastically change under this modification application, with minor detailed changes proposed to result in a more workable tower form, which more effectively represents the 'Ribbon' design intent of the building.
<i>(vi) street frontage heights,</i>	The site is relatively unique by virtue of its separation from most of the surrounding streets, and its location in the context of the Western

Provision	Response
	Distributor. However, the revised podium envelope design is subject to separate assessment under MOD 3.
<i>(vii) environmental impacts, such as sustainable design, overshadowing and solar access, visual and acoustic privacy, noise, wind and reflectivity,</i>	Environmental impacts of the proposal have been previously assessed under the SEEs for SSDA 7388, as well as through this modification application. Specifically, the following is noted: • Sustainable design has been discussed at Section 5.11, and it has been determined by Hassell that the proposed development would not result in any change to the environmental sustainability of the development. • Overshadowing and solar access has been further discussed at Section 5.7. • The proposed development, by virtue of its unique location, will not result in any adverse visual or acoustic impacts. • Acoustic impact has been further discussed at Sections 5.8 and 5.9. • Wind impacts have been further discussed at Section 5.12. • Reflectivity of the proposed modified development has been further discussed at Section 5.11.
<i>(viii) the achievement of the principles of ecologically sustainable development,</i>	Discussion regarding Ecologically Sustainable Development (ESD) has been undertaken as part of SSD 7388. ESD has been further addressed in relation to this specific modification application at Section 5.11 .
<i>(ix) pedestrian, cycle, vehicular and service access and circulation requirements, including the permeability of any pedestrian network,</i>	The proposed modifications to the building envelope at the podium level have been separately assessed under MOD 3. The proposed changes to the tower form will not have any further impacts on the pedestrian network.
<i>(x) the impact on, and any proposed improvements to, the public domain,</i>	The proposed modifications to the surrounding public domain have been separately assessed under MOD 3.
<i>(xi) the impact on any special character area,</i>	N/A – The site does not affect any nominated special area.
<i>(xii) achieving appropriate interfaces at ground level between the building and the public domain,</i>	The ground level interface between the development and the surrounding public domain has been previously assessed under MOD 3. The tower form will not adversely affect this relationship.
<i>(xii) excellence and integration of landscape design.</i>	In accordance with the originally approved Development Application, the proposed modified landscape plans continue to provide a high quality landscape design at the site.

Building Density

As a result of the proposed design changes at the site, there has been a set of corresponding changes to the GFA of each use of the building. Overall, it is apparent that the revised building envelope results in a lower GFA than that currently approved, which is considered an acceptable outcome at the site, and will result in similar or lesser impacts than that currently existing. It is noted that a minor increase is proposed to the Hotel and Retail GFAs, however these are more than offset by a reduction in the serviced apartment and cinema GFAs at the site.

The approved and proposed GFA mixes have been visually demonstrated at **Table 6** below.

Table 6 – Comparison of approved and proposed Gross Floor Area across the development site.

Use (GFA)	Approved	Proposed
Hotel	31,990m ²	32,416m ²
Serviced Apartment	17,352m ²	13,775m ²
Retail	1,799m ²	1,875m ²
Cinema	3,217m ²	2,300m ²
SHFA Offices / Public Amenities	367m ²	365m ²
Total	54,877m²	50,731m²

5.3 Visual Impact

Building Bulk

As part of the documentation prepared for this modification application, a Visual Impact Analysis has been prepared in order to compare the approved building envelope (including both the podium and tower elements) to the proposed amended design.

As demonstrated in the elevation comparison in the Urban Design Report, the modified building is very similar to the approved built form, bulk and scale of the building that has already been assessed and found to be acceptable on this site. The minor extension of the tower outer edge to integrate a BMU rail system is generally indiscernible from public domain. In particular, the proposal is to consolidate the upper building envelope due to engineering requirements and will not impede the views to the water from pedestrian points and will not be readily discernible from the public domain or surrounding area compared to the development which was originally approved.

A comparison perspective, which highlights the existing envelope (green) against the proposed envelope (pink) has been provided in the Visual Impact Assessment (**Appendix C**), and a perspective which highlights additional bulk at the tower portion of the site as viewed from the public domain walkway to the north of the site has been reproduced at **Figure 5** below. Overall, the proposed revised tower envelope will continue to be of a high quality design and demonstrate design excellence.

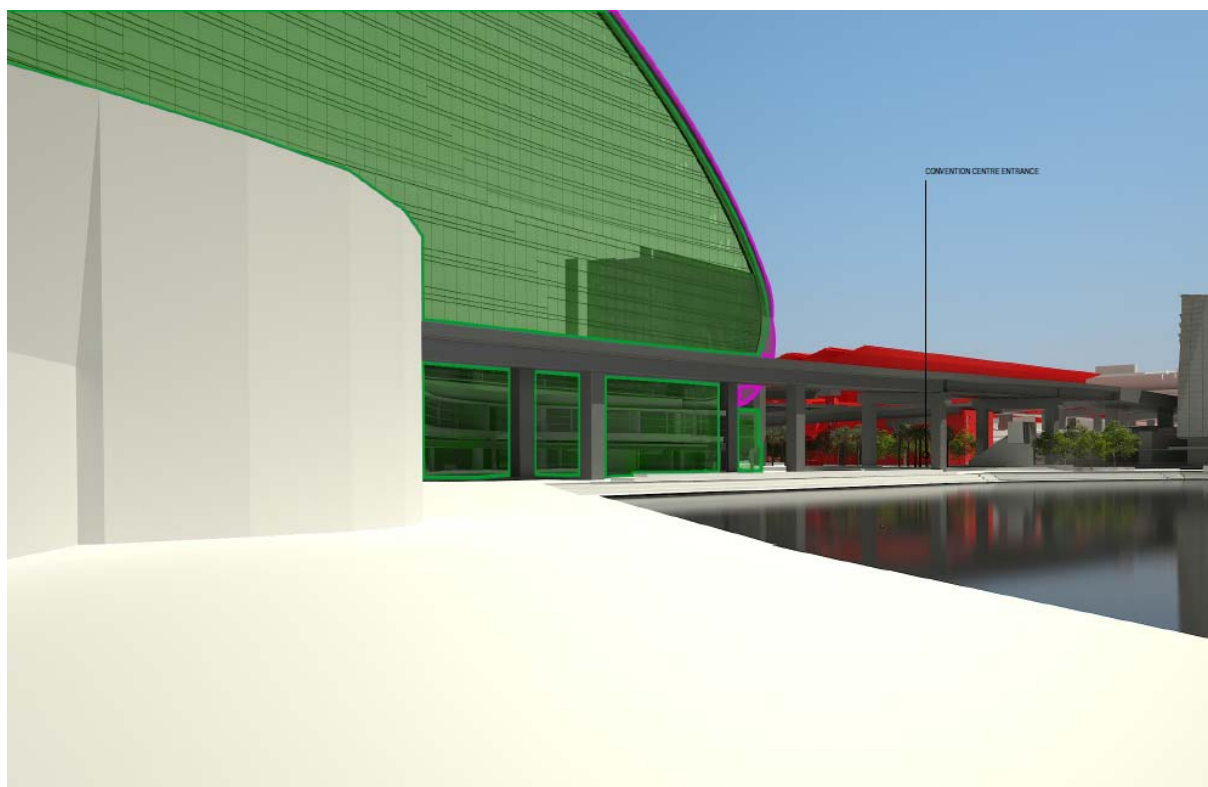


Figure 5 – Comparison of approved (green) and proposed (pink) tower envelopes at the site.

Proposed Lighting

The proposed decorative lighting discussed at **Section 3.1.5** will also not result in any adverse visual impacts at the site, on the basis of it comprising a softly lit white light, which works to highlight the architectural features of the development, whilst not exposing viewers of the building façade to direct light. In effect, the proposed lighting scheme will provide a 'halo' effect, which will highlight the design edge of the development, demonstrating the 'ribbon' design in a generally subtle manner. Examples of similar design techniques used have been identified at **Figure 6** below, which demonstrates that the proposed lighting works will not result in the provision of visually adverse lighting. Rather, the proposed lighting will contribute to the overall visual design quality of the development.

It is noted that a specific technical assessment of the luminosity of the proposed lighting has been undertaken at **Appendix K**, and has been further discussed at **Section 5.6** below.



Figure 6 – Examples of façade lighting similar to that proposed under this Modification Application

Source: Electrolight

5.4 Air Quality

Due to the proximity of the site to the Cross City Tunnel ventilation stack, air quality has been an identified area of potential impact on any future development of the site, through the assessment process. In the Department's Assessment Report for SSD 7388, the following air quality conclusions were provided:

"The applicant has undertaken an Air Quality Assessment given the proximity of the building to the Cross City tunnel stack plume. This assessment notes the stack plume does not cause air quality risks at levels below 60 metres (above ground level). Above 60 metres, the air quality is reduced as a result of the stack plume. It is therefore not appropriate to locate any balconies, terraces, operable windows or air intakes for the building above a height of 60 metres."

From this assessment, the Department then recommended that the proposed control in the submitted Air Quality Assessment be adopted, whereby it be conditioned that air intake units and open areas are restricted to areas below 60 metres (Conditions B29 and B30). This recommendation was directly adopted by the Department in the drafting of Conditions B29 and B30, which directly reflect the findings of the submitted Air Quality Assessment.

However, as part of this analysis a review of the previous dispersion modelling and CFD analysis has been undertaken by Pacific Environment at **Appendix D**. In effect, the attached study has recommended a refined, quantitative assessment approach, and has determined that previous assumptions in the planning of the Cross City Tunnel had resulted in a conservative estimate of NO_x emissions for traffic through the tunnel. Factors which have changed since that time have included lower predicted vehicle emissions from 2017 onwards, a lower than predicted proportion of HRV vehicles using the Cross City Tunnel, and conservative assumptions from previous studies of the future potential emissions levels. In light of this, a refined quantitative assessment has been undertaken at **Appendix D**, which demonstrates that the risk of exceedances of the NSW EPA ambient air quality criteria associated with the operation of the Level 29 pool area is minor.

These findings are reiterated in the submitted Air Quality Assessment at **Appendix D**. On the basis of this revised assessment, it is considered that the proposal can achieve the appropriate air quality standards, and therefore the

Hotel Pool facilities are capable of featuring an 'open air' design. Amendments to Condition B29 and removal of Condition B30 has thus been proposed under this modification application.

5.5 Relationship to the Western Distributor

A key consideration in the revised design of the building envelope was that it would need to continue to comply with the relevant minimum clearances from the Western Distributor. This includes a minimum 2000mm horizontal clearance up to 5.5m above the roadway, and a minimum 1000mm horizontal clearance above 5.5m above the roadway. Additionally, a minimum 2000mm vertical clearance has been maintained between the development and the Western Distributor. **Figure 7** below provides a floor plan excerpt which demonstrates the maintenance of the 1000mm minimum horizontal clearance, and demonstrates that for the majority of the building envelope the envelope exceeds the minimum clearance area.

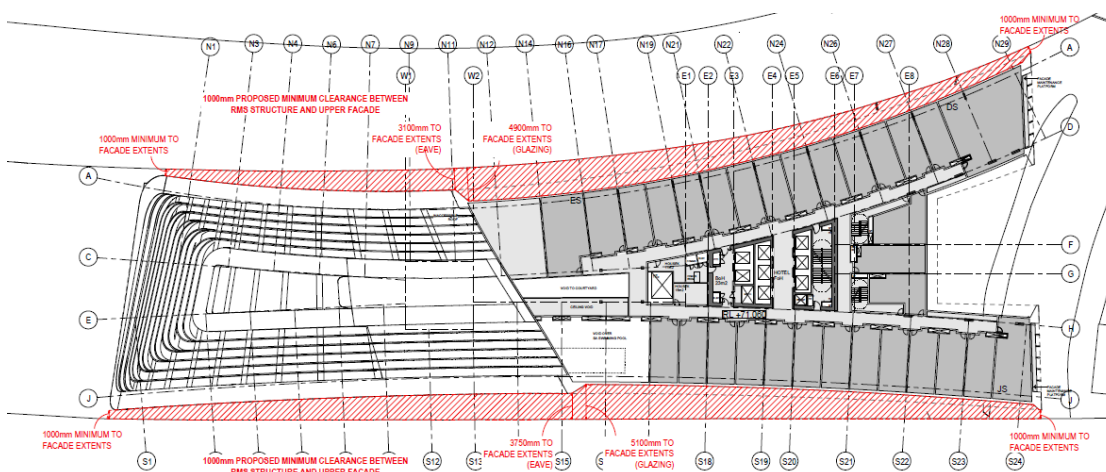


Figure 7 – Minimum clearances maintained between the proposed development and the Western Distributor.

Source: Hassell

The proposed clearances under this modification application do not include any change from those previously approved under the base building DA. On this basis, the proposed revised tower envelope is considered to be acceptable in the context of the site, and will provide adequate clearance for RMS assets.

5.6 Lighting Impact

As part of the assessment for this application Electrolight has prepared an assessment of the proposed lighting, which has been provided at **Appendix K**. This assessment has been undertaken in order to determine the acceptability of the lighting works, and ensure that the works do not result in any adverse impacts to the surrounding area. Principally, this assessment relies on Australian Standard AS/NZS 4282 – 'Control of the Obtrusive Effects of Outdoor Lighting', which Electrolight notes as being the most relevant standard to lighting of this nature. The relevant metrics of AS4282 are:

- Vertical Illuminance (the amount of light entering residential dwellings);
- Luminous Intensity (brightness caused by viewing a light source directly); and
- Threshold Increment (glare to road users caused by bright light sources).

Due to the location of the site in a commercial area, or boundary of commercial and residential areas, and due to the proposed lighting being operated throughout the night, the following are the relevant parameters for lighting operation:

- Illuminance: 4 lux at the relevant residential boundary;
- Luminous Intensity: 2,500 cd; and
- Threshold Increment: 20% (adaptation illuminance 10cd/m2).

Electrolight notes that the proposed lighting complies with all three of the above thresholds, and is therefore in accordance with the provisions of AS4282.

Additionally, Electrolight has undertaken an astronomical assessment, in order to confirm any impacts from the site on the Sydney Observatory. Electrolight confirmed that *“the proposed façade lighting at the Ribbon is very subtle, restrained and utilises indirect or fully shielded light sources of low intensity”*. Given this, and the context of the Sydney CBD, Electrolight considers that *“it is unlikely that the impact of any potential spill light from the proposed façade lighting would be detectable at the Sydney Observatory”*.

On the basis of the above, it is considered that the proposed development does not result in any adverse lighting impacts.

5.7 Overshadowing

A comparison of the overshadowing impacts of the approved and proposed building forms at the site has formed part of the documentation at **Appendix A**. Specifically, it is noted that the revised tower form will work to reduce overshadowing impacts to the playground at certain times of year. **Figure 8** below provides an excerpt to this respect, demonstrating the additional solar access that the revised design will provide to the playground at 11.00am on 21 June.

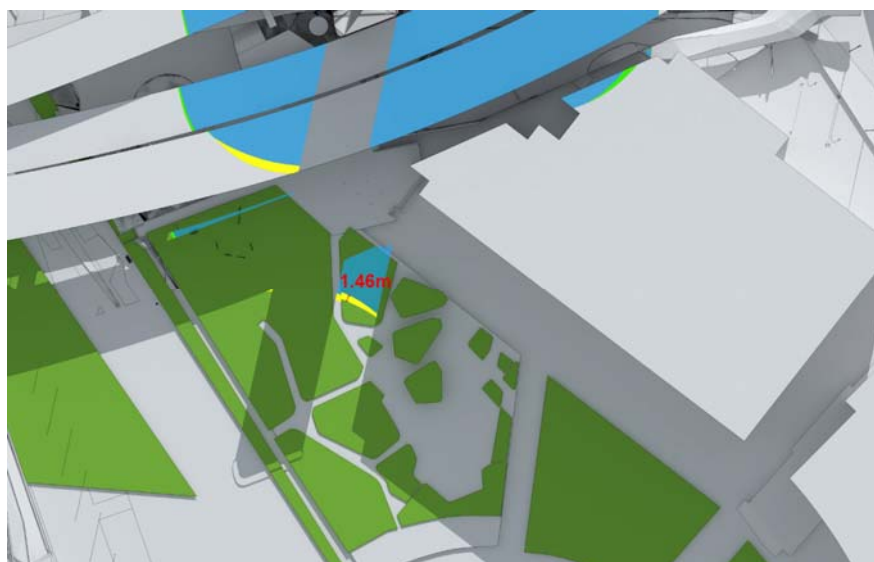


Figure 8 – Comparison of additional (green) and reduced (yellow) overshadowing to the playground at Tumbalong Park as a result of the proposed modified development.

Source: Hassell

Although it is noted that some spaces will result in negligible additional shadowing as part of the revised building envelope, the vast majority of the additional overshadowing will be onto the roof of the Commonwealth bank building, or on to the Western Distributor. Overall, it is considered that the revised building envelope will result in a minor positive net impact on the surrounding area, by comparison to that currently approved.

5.8 Construction Acoustic Impact

An Acoustic Assessment specific to the proposed additional construction hours has been prepared by Acoustic Logic, which has been submitted as part of this application at **Appendix L**. This assessment addresses noise impacts associated with the subject further extended hours of construction in accordance with the relevant criteria contained under the City of Sydney Council's *“Construction Hours / Noise Within the Central Business District – Code of Practice (1992) Guideline”* (Guideline). The proposed additional construction hours all fall within ‘Category 4’ period outlined within the Guideline, meaning that any works undertaken in this period are required to comply with the noise criteria of ‘Background +0dB(A)’, as measured at the closest affected receiver. In the case of the site, the nearest potentially affected noise receivers are:

- commercial areas within Darling Harbour;
- the Parkroyal Hotel (approximately 105m from the site); and

- the Millennium Apartments (approximately 130m from the site).

In order to ensure compliance with this noise criteria, a program of limited construction works has been proposed, which will ensure that the loudest noise producing activities are not undertaken at the site during the proposed additional hours periods. The works proposed have been detailed at **Figure 9** below, and do not include louder activities such as hydraulic / pneumatic hammering, rock / concrete sawing and earth moving equipment.

CONSTRUCTION ACTIVITY	EQUIPMENT /PROCESS	SOUND POWER LEVEL - dB(A)
Construction	Hoist	112
	Angle Grinders	114
	Electric Saw	111
	Drilling	94
	Hammering	110
	Concrete Vibrator	100
	Cement Mixing Truck	105
	Concrete Pumps	107
	Crane	105

Figure 9 – Sound Power levels of works proposed during the extended hours period

Source: Acoustic Logic

On the basis of the above, works, the measured background levels at different times of the night at the closest sensitive receiver have been reproduced at **Figure 10** below.

Time of Day	Measured Background Noise Levels dB(A) L_{90}
19.00 – 23.00	64
23.00 – 24.00	64
24.00-6.00	58
6.00 – 7.00	58

Figure 10 – Measured background noise levels at the site

Source: Acoustic Logic

On this basis, the maximum noise level for works at the site is 58dB(A) during the subject period of midnight to 6:00am. **Figure 11** demonstrates that the proposed construction activities will be capable of complying with the above set criteria.

Activity	Predicted Noise Level dB(A) $L_{10\ 15min}$	Construction Noise Criteria dB(A) $L_{10\ 15min}$	Complies
General Construction Activities*	56	58	Yes

*Note: Construction activities conducted during category 3 and 4 periods are to exclude any hydraulic/pneumatic hammering, rock/concrete sawing and earth moving equipment.

Figure 11 – Predicted Construction Noise Levels – Park Royal Hotel (nearest receiver)

Source: Acoustic Logic

It is noted that the above additional hours of construction fall under the same noise period (in accordance with Category 4) as the 6.00am to 7.00am component of the construction hours approved under MOD 4. This period was determined by the DPE to be acceptable on the basis of acoustic impact, and it is proposed that these additional hours will be similarly capable of complying with the Category 4 period noise restrictions.

On the basis of the above, Acoustic Logic determines in their assessment that the proposed development is acceptable on the grounds of acoustic impact. Recommended management controls by Acoustic Logic during the proposed additional hours comprise:

- *Construction activities conducted during category 4 periods are to exclude any hydraulic / nematic hammering, rock / concrete sawing and earth moving equipment.*
- *No radios (cars or otherwise) are to be played external to the building envelope.*

Additional Impacts from Deliveries

Additionally, it is noted that the proposed modification seeks to enable the night time delivery of materials, and removal of waste from the site in the midnight to 6.00am period. Given the unique context of the site in close proximity to the Western Distributor, Acoustic Logic considers that additional deliveries in the night time period will not result in any material change to the surrounding acoustic receivers based on the existing traffic numbers on the Western Distributor. On the basis of the deliveries not resulting in any adverse acoustic impacts, the quiet movement of deliveries vehicles to and from the site in the 12 midnight to 6.00am period is seen as an ideal outcome at the site, given that it enables the movement of vehicles when surrounding roads are quietest and best suited to such movements.

On this basis, the proposed vehicle movements are considered an acceptable outcome during the late night period.

Relationship to Construction Noise Guideline

It is also noted that the Interim Construction Noise Guideline (Guideline) prepared by the Office of Environment and Heritage is a relevant consideration as part of this application, with Section 2.3 of particular relevance. Section 2.3 states as follows:

2.3 CONSTRUCTION OUTSIDE THE RECOMMENDED STANDARD HOURS

The five categories of works that might be undertaken outside the recommended standard hours are:

- *The delivery of oversized plant or structures that police or other authorities determine require special arrangements to transport along public roads.*
- *Emergency works to avoid the loss of life or damage to property, or to prevent environmental harm.*
- *Maintenance and repair of public infrastructure where disruption to essential services and / or consideration of worker safety do not allow work within standard hours.*
- *Public infrastructure works that shorten the length of the project and are supported by the affected community.*
- *Works where a proponent demonstrates and justifies a need to operate outside the recommended standard hours.*

In the case of the proposed modification, it is considered that the last two categories are relevant to the proposal. Therefore, it is required that a clear justification be provided for the extended construction hours, other than convenience. In this case, the locational context of the site is a relevant consideration, being bounded by a number of public assets which include:

- RMS assets, including the Western Distributor and a number of key arterial roads;
- Ausgrid Assets;
- Cross City Tunnel (CCT) Assets;
- Sydney Water Assets; and
- Property NSW Assets, including the public domain of the Darling Harbour Foreshore.

Noting this context, the proposed construction hours are considered to be acceptable in nature on the basis of the following key reasons:

- The site is within very close proximity of a number of key government assets, which are of importance to the functioning of Sydney's Central Business District. Whilst reasonable mitigating measures will continue to be considered and implemented, the risk of adverse impacts upon these public assets remains for as long as construction is being undertaken at the site. In effect, the most appropriate measure to mitigate this risk is to work towards minimising the period of construction in the vicinity of these assets, and utilisation of the extended construction periods in the manner proposed is considered the most effective manner of achieving this.
- The land owner of the site, and affected government body, Property NSW, has provided their endorsement and support of the proposed extended construction hours through the land owner's consent submitted as part of this modification application.
- By allowing for appropriate construction activities to be undertaken in the extended periods, the overall duration of works at the site can be minimised, which will in turn minimise the duration of risk for surrounding assets.
- The approved construction site continues to have a substantial hoarding impact on the Darling Harbour area, which is required to be maintained around the construction site for the duration of the construction works. This area is substantially larger than the final envelope of the building, given the larger area required to enable construction of the building, as well as the approved upgrades to the public domain which are being undertaken at the site. At the completion of works, the upgraded public domain area will be returned to public use, however for as long as construction lasts at the site, this option is not available. Given that this comprises one of the key public domain areas in the functioning of Darling Harbour as a tourist precinct, it is important that this area be returned to public use as soon as possible. On this basis, there is a substantial public benefit in returning the upgraded area to public use as soon as possible.
- An extensive program of feasible and reasonable site management measures, consistent with that approved under MOD 4, continue to form part of the management system for construction at the site, including:
 - Continued compliance and amendment of the Noise Management Plan required under SSD 7388 in order to capture alternative work methods to minimise noise impacts.
 - Provision of additional management controls, including the prohibition of certain activities in the proposed additional hours, in order to mitigate the risk of noise exceedance.
 - Continued notification of the work processes in accordance with the requirements of SSD 7388, including communication of the status of the project to the surrounding project via a project specific website (<http://theribbon.com.au>).
 - Continued provision of a specific complaints handling construction hotline and contact email address.
 - Monitoring of equipment utilisation by Grocon during the construction period to ensure that machinery is operating in accordance with its intended manner, and is in working order.

Further discussion to this regard, including a detailing of the various measures proposed, has been discussed at **Appendix M**. Overall, the proposed hours are considered acceptable in the context of the substantial importance of the development located at the site being promptly completed.

5.9 Operational Acoustic Impact

The proposed revised tower envelope has additionally been assessed by Acoustic Logic (**Appendix G**), who have confirmed that there will be no change to the acoustic requirements for the built form components of this modification application, and as such the previously conducted acoustic assessment at the site will continue to be relevant to the proposed modified envelope.

5.10 Accessibility

An Accessibility Statement has been prepared by MGAC (refer to **Appendix F**) in regard to the proposed modifications to the tower portion of the building. The statement concludes that the proposed design changes can achieve

reasonable access provisions for people with disabilities as set out in the requirements of the DDA Premises Standards, BCA and AS1428.1-2009.

The Accessibility Statement also made recommendations for ongoing design requirements to ensure compliance with the relevant Access Standards and Codes, which will be implemented in the future development stage. Broadly, these recommendations relate to the following issues:

- ensuring all doorways required to be accessible are detectable and compliant with the relevant standards;
- ensuring distribution of the proposed SOU serviced apartments is representative of a range of locations;
- ensuring ongoing internal design of the proposed SOU serviced apartments complies with the relevant Australian Standards; and
- ensuring access to and within all common-use areas to meet the relevant requirements.

5.11 Reflectivity and Ecologically Sustainable Development

As part of this modification application, a statement has been prepared by Cundall (**Appendix E**) with regards to the proposed changes to the tower envelope. This statement confirms Cundall's professional opinion that *"the proposed tower envelope changes will not have a significant impact on the achievement of the project ESD commitments, specifically the Green Star Design & As-Built, NABERS Energy and Water, reflectivity and NCC Section J commitments."*

In accordance with the above statement, it can be confirmed that the proposed development will not result in any adverse reflectivity or ESD impacts. The previously approved consent conditions will ensure that no adverse reflectivity or ESD impacts arise through the detailed design development.

In addition to the above, it is noted that one key element of the proposed changes has been to help ameliorate potential reflectivity impacts, with specific regard to traffic along the Western Distributor (as discussed at **Section 3.1.1**).

5.12 Wind Impact

A statement has been prepared by MEL Consultants, and provided at **Appendix H**, which confirms that the proposed development will not adversely affect the ground level wind conditions around the proposed development. It is further noted that a detailed wind assessment is also to be prepared for the development under Conditions B6 and B7. This information has been submitted to the DPE under separate cover.

5.13 Fire Safety

A Fire Engineering Statement has been provided at **Appendix I** which confirms that the proposed development will not result in any adverse impacts on Fire Engineering at the site.

5.14 Social / Economic Impacts

The proposal will have the positive economic impacts of providing an appealing, more workable building design for the future serviced apartment, hotel and cinema operators. Specifically, the proposed changes, between this application and the previously submitted podium modification (MOD 3) will result in the provision of an economically workable building design, which will have corresponding positive economic impacts.

The proposed revised tower envelope will also seek to reduce the level of overshadowing to Tumbalong Park, which is seen to have a corresponding positive social impact through an increase in the level of solar access which the public open space receives.

5.15 Site Suitability / Public Interest

The proposed development is suitable in the context of the site, by way of the following:

- The site has long been associated with tourist uses, and the proposed modified development continues to provide this relationship.
- The proposed tower envelope is of a very similar height, bulk and scale to that previously found suitable for the site by the Department, and will be largely imperceptible from the public domain.
- The proposed revised tower envelope, when considered in the context of the previously submitted podium envelope amendments, provides an overall building design which better relates to the surrounding public domain area, and provides a different, interesting building form in the Darling Harbour precinct.
- The proposed internal layout changes will not result in any adverse impacts on the surrounding area, and will be largely imperceptible from the public domain.
- The proposed decorative lighting will assist in contributing to the overall character of Darling Harbour as an interesting precinct for visitors, and is accordingly complementary to other uses in the precinct.
- The proposed additional construction hours will shorten the overall period of construction by approximately 8-12 weeks. This will enable the substantial public benefits of the overall development to be realised sooner, whilst also minimising the overall duration of construction activities at the site.

The provision of additional tourism related uses in Darling Harbour is in the interests of the public as it will strengthen the role of the tourism precinct within the wider context of Sydney and Australia. The proposed modification does not inhibit the ability of the development or the precinct to fulfil this tourism role.

6.0 Conclusion

This Section 4.55 modification application comprises the tower element of an ongoing program of detailed design changes to The Ribbon development in Darling Harbour. These amendments seek to provide a more workable, useable building envelope, which when considered within the context of the recently approved podium envelope modifications (specifically MOD 3 and MOD 5), will result in a development that responds better to the surrounding area.

In accordance with Section 4.55(2) of the EP&A Act, the Minister or their delegate may modify the consent, given that:

- the consent, as proposed to be modified, is substantially the same development as that originally approved; and
- the building's compliance with the key statutory plans and controls remains consistent with the originally approved SSD.

In light of the merits of the proposed development and in the absence of any significant environmental impacts, it is without hesitation that we respectfully recommend this application for development consent.

We trust that this information is sufficient to enable assessment of the proposed modification application. Should you have any queries regarding this matter, please do not hesitate to contact either jbuchanan@ethosurban.com, or tsmith@ethosurban.com, as well as 9956 6962.