

# Attachment A: Response to Submissions (RTS) for SSD 9794 Lower Concourse Minor Works and Uses

The RTS is divided into sections based on 'issue' as follows:

- 1. Noise
- 2. Amenity
- 3. Light spill
- 4. Heritage
- 5. Ecologically Sustainable Development (ESD)

Where similar issues have been raised in different submissions, only one response is provided to avoid duplication.

The Opera House acknowledges the public authorities recommended conditions of consent. The recommended conditions are accepted unless a clarification or amendment to the condition has been sought below.

#### Section 1 - Noise

Noise issues were raised by the EPA, City of Sydney (CoS) and in the 5 public submissions. The issues are broad and relate to such matters as noise assessment and compliance, impacts on Bennelong apartment residents, live music, speakers and shade structures, sound barrier removal and complaints.

Issue	Response
Appendix A to the Noise Impact Assessment (NIA) refers to unattended noise measurements being undertaken at four locations, however results for only two locations are presented. The applicant should confirm the extent and nature of background noise monitoring undertaken, or relied upon, for the proposal.	The revised NIA prepared for the RTS (NIA v5) by ARUP, has confirmed that the two locations presented in the publicly exhibited NIA provide the most relevant information to carry out the assessment at the nearest noise sensitive receivers. Appendix A of NIA v5 has been updated to clarify that only two noise monitoring locations have been used for the assessment.
The planning approval should include noise limits for mechanical plant and equipment derived from the provisions in the Noise Policy for Industry (NPfl) (EPA, 2017). The NIA has not established project noise trigger levels (PNTLs) in	The NIA v5 is consistent with the assessment requirements of the NPfl. NPfl criteria is not applicable given the upgrades to the Lower Concourse do not involve changes to industrial noise sources (being the existing mechanical and electrical services.  See section 5.1.1 of NIA v5 which states "No changes to the existing mechanical or electrical services plant equipment servicing the Lower Concourse are expected to take place as part of
	Appendix A to the Noise Impact Assessment (NIA) refers to unattended noise measurements being undertaken at four locations, however results for only two locations are presented. The applicant should confirm the extent and nature of background noise monitoring undertaken, or relied upon, for the proposal.  The planning approval should include noise limits for mechanical plant and equipment derived from the provisions in the Noise Policy for Industry (NPfI) (EPA, 2017). The NIA has not established



	plant and equipment. The NIA should be amended to include the PNTLs together with an evaluation of whether the PNTLs could be satisfied and included as limits in a consent.	No further review of industrial noise sources is considered as part of this assessment."
	The restrictions in the existing NSW liquor licences in terms of hours of operation, restrictions on amplified music and noise limits should be included in the consolidated consent.	The Opera House Agrees the noise restrictions in the Opera Bar liquor licence should be included in the consolidated consent. The trading hours for the venues included in the EIS do not exceed the trading hours in the liquor licences.  It should be noted that the Opera Bar closes much earlier than its licence permits, to ensure compliance with the licence noise limits.
	Both a construction and operational noise management plan should be included in the consent.	Noted. Prior to the use of the new shade structures, the Opera House will prepare a consolidated Operational Noise Management Plan (ONMP) for the Lower Concourse.  The ONMP will note that the proposal does not fundamentally change the existing operation or uses of the Lower Concourse.  Prior to the commencement of any physical work, a Construction Noise Management Plan will also be prepared.
City of Sydney (CoS)	The noise assessment outlines that predicted noise levels at receiver have been assessed internally rather than externally as required by NSW Independent Liquor Gaming Authority condition.	The Opera Bar's liquor licence requires the Opera Bar to be operated in accordance with special noise conditions, and in accordance with the approved Plan of Management.  With regards to the noise assessment for the Bennelong Apartments, the liquor licence requires the noise conditions to be applied 'inside any habitable spaces in the building complex with doors and windows closed and mechanical ventilation in operation', not externally. See section 5.1.2 of the NIA v5.
Public submissions	Noise impacts at Bennelong Apartments  1. Noise is audible within Bennelong Apartment units with the doors and windows closed.	<ol> <li>NIA v5 notes that current activities and noise levels measured from normal uses in the Lower Concourse comply with existing noise restrictions.</li> <li>There are no proposed changes to existing hours of operation or activities on the Lower Concourse. Live music will continue to cease at 10pm. The NIA v5 has assessed compliance</li> </ol>



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	<ol> <li>The proposal will exacerbate existing noise levels at Bennelong apartments.</li> <li>The proposal will exacerbate low- and high-pitched sounds. (Name withheld 1 submission only).</li> </ol>	<ul> <li>with the noise limits in the Opera Bar licence as a result of the proposal. The assessment was calculated:</li> <li>Without the small barrier behind the live performance stage; and</li> <li>With the new shade structures and speakers in place.</li> <li>The noise model results demonstrate the noise level difference is no more than 1dB above current levels (i.e. with the barrier removed and new shade structures), noting that the use of small loudspeakers in the shade structures will help to reduce overall music noise. This noise variation will not be discernible. The noise levels inside the Bennelong apartments are predicted to comply with the internal noise criteria at all times.</li> <li>There are no proposed changes to existing activities on the Lower Concourse. A high-quality sound system will be used which should not distort sound.</li> </ul>
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Public submissions & John Henderson	Noise levels in walkway  Noise levels in the walkway should be controlled to ensure safe decibel levels for the public (particularly children) who need access to the car park and the Opera House.	The noise levels modelled in Section 6.3.2 of the NIA v5 are well below levels that would cause any hearing damage to people within or in the vicinity of the Lower Concourse.
Public submissions	<ol> <li>Shade structures – fabric and PA system</li> <li>Acoustic treatments such as sound absorbing materials or baffles should be integrated into the design of the umbrellas to minimise noise impacts on surrounding residents.</li> <li>The current speakers face away from our residence, but the new speakers are to be located to make the noise worse, a point admitted in the proposal.</li> </ol>	<ol> <li>The new shade structures are intended to be constructed of a heavier material than existing and as such would be marginally better at controlling noise spread from sound generated below them (NIA v5, Section 8.2), noting that many of the tables on the Lower Concourse are and will continue to be unshaded.</li> <li>The upgrade of the shade structures will include an upgrade of the PA systems which will include four loudspeakers per shade-structure. The NIA v5 notes that locating loudspeakers close to patrons reduces noise spillage and creates an even coverage of sound at relatively low speaker settings. The speakers will be aligned and adjusted as required to ensure noise is controlled appropriately and minimises off-site noise spillage from live or recorded music.</li> <li>The Opera House agrees to prepare an ONMP for the Lower Concourse which will require management to ensure noise is controlled appropriately to the specific sound power levels</li> </ol>



	3. The volume of the music played through the speakers needs to be physically restricted at the source, so it is not possible for different people to adjust the music to create offensive noise, near and distant.	for the PA system (for both live and recorded music) identified in Section 6.3.21 of the NIA v5.
Public submissions	Sound barrier removal  Amplified music is currently performed on the stage at the southern end of the Opera Bar which has a vertical noise barrier behind it. This barrier was originally put in place to reduce noise impacts on residents. If this barrier is removed it should be replaced with more suitable noise attenuation measures.	Live entertainment in the form of amplified music (usually consisting of two or three musicians, including a singer) is permitted at the Opera Bar until 10pm. Musicians perform on a small stage with a vertical barrier at the southern end of the Opera Bar. However, as the vertical barrier is considered unsightly and non-compliant with Opera House heritage policies, the proposal seeks to remove this vertical barrier and does not intend to replace it. The existing stage for performers will remain.  The NIA v5 has predicted worse-case noise impacts with the vertical barrier removed and confirms that the removal of the noise barrier will only marginally increase noise by less than 1dBA. Compliance with the noise limits would still be achieved. Identified in <i>Respecting the Vision Sydney Opera House – a Conservation Management Plan Fourth Edition</i> (CMP4) as an intrusive item, the removal of the barrier is supported by the HIS for the proposal as it will have a positive impact on the setting, and therefore values of the Opera House by removing clutter from the Lower Concourse.
John Henderson	Stage Where is the new stage and what will contain the sound?	A new stage is not part of the proposal. Section 6.5 of the NIA v5 details the noise mitigation from the shade structures, and notes that the new shade structures would be equal to or better than the existing shade structures in terms of noise mitigation.
Public submissions	Night club  1. Is a dance floor part of the proposal? This will turn the Opera Bar into the areas' largest outdoor nightclub and subject the Bennelong residents and our neighbours across the Harbour to New Year's Eve level of noise every night of the year.	<ol> <li>There are no proposed changes to existing activities on the Lower Concourse, and a permanent, dedicated dance floor is not proposed. However people are permitted to dance in the food and beverage venues, including in the area of the Opera Bar adjacent to the live entertainment. The live music at the Opera Bar is respectful of the ambience of the venue.</li> <li>The Opera Bar on the Lower Concourse is a 'Food and Drink premises' as per the Dictionary in the Standard Instrument – Principal Environmental Plan. As stated above, this application</li> </ol>



	2. The application for the Opera Bar will make it basically a night club in the Forecourt of the Opera House located in a concrete bowl which causes distorted sound (it doesn't resemble music) to reverberate out and disturb the entire area, including the residential buildings of Bennelong and nearby neighbours.	is not seeking changes to the existing activities on the Lower Concourse such as installing a new 'nightclub in the Forecourt of the Opera House'.  With regards to sound distortion, the new PA system will provide the Lower Concourse with a quality sound system, which includes new loudspeakers located very close to patrons. These loudspeakers will be carefully orientated to face patrons and can operate at a relatively low output level because of their proximity to the listeners. This will limit any distortion of the sound and by careful orientation, will also limit, as far as is practicable, sound spillage out from the space through reflections from hard surfaces."
John Henderson	Forecourt noise restrictions  The Opera House Forecourt must comply with sound level restrictions. Do those sound restrictions apply to the Opera Bar, if not, why not?	Section 5.1.2 of the NIA v5 outlines the existing noise limits for the uses and activities on the Lower Concourse. No changes are being proposed to the uses or existing noise limits. These noise limits provide an appropriate balance between achieving an acceptable level of patron experience and protecting the amenity of adjoining residents.  The Opera House Forecourt events are typically infrequent, large, live amplified music performances with significant infrastructure. The noise levels for Forecourt events are permitted to be louder than normal operations on the Lower Concourse because of the inherent nature and limited number of the performances, and a larger audience size. Accordingly, the sound level restrictions for Forecourt performances would not be applicable to or appropriate for the Lower Concourse.
Public submissions	Complaints  Who will control the noise level and who do we complain to? Will there be a fine for loud music? If not, it will continue to disturb the Bennelong residents.	The food and beverage operators (currently Opera Bar and Opera Kitchen) are responsible for controlling noise levels from their venues. Complaints can be received by both the operators.  The Opera Kitchen's contact details are <a href="https://www.operakitchen.com.au/contact/">https://www.operakitchen.com.au/contact/</a> The Opera Bar's contact details are 02 8587 5900 and email <a href="mailto:operabar@solotel.com.au">operabar@solotel.com.au</a> Feedback can also be given directly to the Opera House via the Opera House (main switch) (02) 9250 7111 or online via this form: <a href="https://form.jotform.co/80367717861869">https://form.jotform.co/80367717861869</a> In addition, Bennelong Apartments residents may contact the Building Operations team directly on (02) 9250 7979. This number is attended 24 hours per day.



		Bennelong Residents are also invited to attend briefings with Opera House management.
John Henderson	Wind direction  When the wind is blowing in our direction (towards Bennelong Apartments) the noise becomes significantly worse. Will wind direction be considered when setting noise limits?	The ONMP for the Lower Concourse may consider whether wind is a feature affecting noise levels at Bennelong Apartments. An ONMP would consider a range of weather conditions to establish an acceptable noise level for the Lower Concourse that meets the noise criteria from the consent conditions.



## Section 2 – Amenity

Amenity concerns were raised in the public submissions and relate to capacity, security and congestion within the Lower Concourse.

Submitter	Issue	Response
John Henderson	Capacity  Will capacity be constrained and controlled?	There are no proposed changes to the existing capacity constraints on the Lower Concourse. Maximum capacity on the Lower Concourse is limited to 2700 persons as outlined in Section 2.3.7 of the EIS.  The capacity by existing operating area is:  • 1800 for the Opera Bar (including 400 internally);  • 570 for the Opera Kitchen; and  • 330 for other areas such as in and around the Welcome Centre.  Patron numbers within licenced premises are managed in accordance with the venue liquor licences and management plans.  The licensees and lease boundaries of the Food and Beverage venues on the Lower Concourse may be changed, reviewed and adjusted from time to time depending on the requirements of the Sydney Opera House Trust (SOHT). Accordingly, it is requested that the consolidated consent limit overall capacity to 2700 for the Lower Concourse (including a maximum of 400 in the internal bar area currently occupied by the Opera Bar). Limits which focus on the current lease areas of the Opera Bar and Opera Kitchen would not provide future flexibility for the SOHT.  Should changes be made to operational areas on the Lower Concourse, these changes will be made in accordance with any new or amended liquor licence requirements (should one be required) and any other relevant safety and security requirements.
John Henderson	Security  Will security be increased? We have a problem with drunks disturbing the peace late at night, loitering around Macquarie Street, particularly at the round-about at the northern end of the street.	The Opera House acknowledges the need to effectively manage patron behavior through adequate security measures. There are no proposed changes to activities on the Lower Concourse, therefore it is not proposed to increase security. Security arrangements currently include a combination of Opera House security measures, as well as contracted security guards and RSA marshals engaged by the venue operators (detailed in Section 2.3.6, page 30 & 31 of the EIS).



		In Section 2 of the NIA v5, ARUP points to the need to remove overlap between the areas covered by a development consent which includes licensed premises and matters covered in a liquor license, "for example, conditions that relate to the responsible service of alcohol, requirements to have security guards and requirements to have closed circuit televisions operating".  The PoM's for each venue cover management measures for general amenity, noise controls, complaints and incidents, signage, security, fire safety and responsible service of alcohol.
Public submissions	Congestion and public access through the Lower Concourse	The Lower Concourse provides sheltered access from near the end of Macquarie Street to the Opera House below the western edge of the Forecourt.
	Currently access to the Wilson Opera House parking garage is heavily congested when the Opera Bar is busy, which is most evenings. Will the new proposal alleviate that congestion? I fear it will get worse, making it more dangerous for people with children, people with disabilities.	The liquor licence for the Opera Bar requires the licensee to ensure patrons do not congregate or obstruct the public access areas of the licensed premises, and to ensure the public thoroughfares through the licensed areas remain free flowing. Likewise, the liquor licence for the Opera Kitchen requires the licensee to ensure patrons do not crowd or loiter in the vicinity of the premises in such manner that pedestrian movement is obstructed or hindered.  The liquor licence is an appropriate place to regulate patron behaviour. Refer to ARUP's appropriate about the intersection of liquor licence and development consent conditions in
	with children, people with disabilities, and other patrons of the Opera House to get through.	comments about the intersection of liquor licence and development consent conditions in section 2 of NIA v5.
	Past experience has shown that when live bands play, the walkways around the Opera Bar become clogged with	Unobstructed public access and egress through the Lower Concourse must also be maintained, in accordance with the discussion and policies in CMP4 (in particular Sections 4.5, 4.6 and 4.77).
	people congregating and dancing which is a potential hazard and public safety risk.	With regard to the revised glazing line near the Opera Bar, the Heritage Council has noted "the proposed realignment of the existing glazing line to the north of the Opera Bar modifies the geometry of the arc of the existing tenancy frontage, improving the width and clarity to the pedestrian circulation in that area".
	3. A walkway should be secured, separating the Opera Bar patrons from the access to ensure the safety of the public. Access to the Opera House from the parking garage, and especially during inclement weather, is	While there is no proposed change to existing activities on the Lower Concourse, and despite the access improvements that the proposal will provide, the Opera House acknowledges that in wet weather and at busy times, the sheltered pedestrian routes to and from the Opera House may still become congested.
	difficult on busy nights due to the Opera Bar crowds blocking access.	The Opera House is committed to reviewing the operational areas (including loose furniture and other infrastructure) and where necessary revise them when the opportunity arises to improve public circulation and access through the Lower Concourse. Furniture positioning in



the Opera Bar to create a natural barrier to separate patrons from the walkway is one such example of a past revision that has improved pedestrian flow. It is agreed that any revisions and ongoing management will be in accordance with CMP4 policies (or the edition current at the time).

DPIE should note that the licensees and lease boundaries of the food and beverage venues on the Lower Concourse may be changed, reviewed and adjusted from time to time depending on the requirements of the Sydney Opera House Trust (SOHT). Conditions which focus on the current lease areas of the Opera Bar and Opera Kitchen would not provide the requisite level of flexibility for the SOHT and may hinder future improvements.



# Section 3 - Light spill

CoS recommended a quantitative analysis of upward light spill through the new shade structures.

Submitter	Issue	Response
CoS	CoS noted that all light spill from upward directed umbrella lighting must be fully captured by umbrella fabric.	The lighting proposed for the new shade structures is fully dimmable, strip LED up-lighting, fitted closely to the underside of the shade structure fabric, within aluminium housing with integrated acrylic diffusers to effect even distribution of light over the underside of the canopy.
	A quantitative analysis of upward light spill through the shade structure fabric is recommended in order to satisfy AS4282	The visual impact study prepared for the EIS concluded that the new shade structures provide 'an improved architectural and functional response without any detrimental visual impact'.
	(control of the obtrusive effects of outdoor lighting).	The lighting design statement prepared for the EIS, noted "the visible light transmission characteristics of the shade fabric matches existing umbrellas and effectively reflects most of the light downwards minimising upward spill".
		The transmission of light through existing shade structures can be seen in the photograph below, copied from the Architectural Design Statement prepared for the EIS. There is currently negligible upward light spill and the up-lit shade structures generate a low-glare, gentle ambient light. The proposal will ensure the shade structure fabric and LED lighting is equal to or an improvement on the existing and therefore the proposed effect is expected to be similar.
		The photo demonstrates the unlikely outcome of obtrusive light spill from the new shade structures because:
		<ul> <li>of existing high levels of lighting in the vicinity of the Lower Concourse 'i.e. the louvred light fittings within the Lower Concourse, the Hall's Ball's and flood lighting on the Forecourt and the Opera House itself; and</li> </ul>
		the proposed lighting design is like the existing design which does not detract from the Opera House.
		Given these conclusions, the SOHT does not consider that a quantitative analysis is necessary.





Photo of existing Lower Concourse lighting. Source: Architectural Design Statement, H&E Architects

Attachment A: SSD 9794 Response to Submissions prepared by Sydney Opera House Trust February 2020



#### Section 4 - Heritage

The Heritage Council of NSW (Heritage Council) generally supports the proposed improvements to the Lower Concourse. The recommended conditions of consent primarily relate to detailed design and use issues and such detail will be provided to the Heritage Division as part of the s60 application under the *Heritage Act 1977*. The Opera House has provided additional comments and responses below on the matters of use/access through the Lower Concourse and the removal of an original louvred light fitting.

CoS also recommended conditions of consent relating to access and fabric colour and sought clarification on the number of shade structures proposed.

Submitter	Issue	Response
Heritage Council	It appears an existing louvred disc light fitting will be removed as part of the works. Opportunities to relocate this significant light fixture should be explored.	The updated HIS dated 29 January 2020 clarifies that the proposal includes the 'removal and storage of one existing original louvred circular ceiling light close to the existing fire exit'. The HIS proposes that the fitting is carefully stored and used for maintenance of the remaining original fittings.  The updated HIS is at <b>Attachment E</b> .
CoS Heritage Council Public submissions (this issue is also addressed in <b>Section 2</b> - Amenity).	Public access through the Lower Concourse  CoS and Heritage Council support the key recommendation of the HIS which requests the review and where necessary, revisions to the current furniture and infrastructure placement to minimise any encroachments onto public walkway and circulation	The Lower Concourse provides sheltered access from near the end of Macquarie Street to the Opera House below the western edge of the Forecourt. The Heritage Council noted 'the original intent of the Lower Concourse was to provide covered access and facilities supporting the SOH. The proposed changes do not impact this original intent'.  The liquor licence for the Opera Bar requires the licensee to ensure patrons do not congregate or obstruct the public access areas of the licensed premises, and to ensure the public thoroughfares through the licensed areas remain free flowing. Likewise, the liquor licence for the Opera Kitchen requires the licensee to ensure patrons do not crowd or loiter in the vicinity of the premises in such manner that pedestrian movement is obstructed or hindered.  Unobstructed public access and egress through the Lower Concourse must also be maintained, in accordance with the discussion and policies in CMP4.
	spaces and retain the intended open and uncluttered character of the Lower Concourse.	With regard to the revised glazing line near the Opera Bar, the Heritage Council noted "the proposed realignment of the existing glazing line to the north of the Opera Bar modifies the geometry of the arc of the existing tenancy frontage, improving the width and clarity to the pedestrian circulation in that area".



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		Despite the access improvements that the proposal will deliver, the Opera House acknowledges that in wet weather or at busy times, the sheltered pedestrian routes to and from the Opera House may still become congested.  The Opera House is committed to reviewing the operational areas (including loose furniture and
		other infrastructure) and where necessary revise them when the opportunity arises to improve public circulation and access through the Lower Concourse. Furniture positioning in the Opera Bar to create a natural barrier to separate patrons from the walkway is one such example where a past revision has improved pedestrian flow. It is agreed that any revisions and ongoing management will be in accordance with CMP4 policies (or the edition current at the time).
		DPIE should note that the licensees and lease boundaries of the food and beverage venues on the Lower Concourse may be changed, reviewed and adjusted from time to time depending on the requirements of the SOHT. Conditions which focus on the current lease areas of the Opera Bar and Opera Kitchen would not provide the requisite level of flexibility for the SOHT and may hinder future improvements.
CoS	Clarification of the number of umbrellas proposed.  The HIS report noted three	The HIS report prepared for the EIS has been updated to reflect the intention of the proposal, which is to replace the existing four shade structures at the Opera Kitchen with four new shade structures.
	shade structures would replace the existing four shade structures at the Opera Kitchen.	The updated HIS is at <b>Attachment E</b> .
CoS	Colour selection of the shade structures  CoS requested that if the colour has not already been	The colour of the shade structure fabric is proposed to be as close as possible to colour Dulux 'coconut husk' which is part of the approved colour palette outlined in the Sydney Opera House Outdoor Event Guide. This colour will not contrast with the natural palette of the existing external materials.
	approved by the consent authority a colour fabric sample should confirm the colour of the shade structures.	The fabric will be selected by the project managers in collaboration with the Opera House heritage architect and the Opera House Design Advisory Panel (DAP).
CoS	Logos CoS prefers no logos on shade structures.	The Opera House agrees that signage and branding is not appropriate on the shade structures.



## Section 5- ESD

The CoS requested further information relating to the principles of ESD.

Submitter	Issue	Response
CoS	ESD  1. Has consideration been given to environmental aspects of the new shade structures in terms of material used?  2. Alignment with Opera House policies* on sustainability and environmental action, including procurement procedures to assessment of whole of life.  *SOH Environmental Sustainability Policy & SOH Environmental Action Plan 2020-23.	The Opera House is committed to reducing the impact of procuring goods and services by making responsible (economic, environmental, and social) purchasing decisions.  The Opera House Environmental Action Plan 2020-23 includes a commitment to achieve an 80% waste diversion rate across all construction and demolition projects.  As is the process for all projects, existing infrastructure and materials will be assessed for potential to salvage, repurpose and recycle where possible.  Suppliers are required to demonstrate their commitment to sustainability as part of a competitive tender process and new products are assessed against sustainability criteria including life span, warranty, location of manufacture, recycled content or third-party certification (where applicable) and end of life disposal.  Shade structures  The disposal of the existing shade structures will involve recycling as much material as possible (at least 80% in line with action plan targets).  The proposed shade structures have an expected life span of around 25-30 years. They can separate into components (steel, PVC and cables) and will be recycled at the end of their life.  When a supplier is selected for the shade structures, the Opera House will seek to establish an end of life product stewardship agreement for the shade structures.  Glazing line works  With regards to the glazing line works, the Opera House intends to reuse salvaged pink granite floor panels from external spaces and cut down to fit the revised configuration. Where possible, glass and bronze components will also be salvaged and reused.



One leaf of the original bronze fire doors that are fitted between the Meat and Cheese room and the existing glazing line of the main bar is proposed to be reused in the new exit location. The remainder will be placed in storage.
One original louvered circular light fitting will be removed and placed in storage.
All salvage and reuse of materials will be supervised by the Opera House heritage consultant.