AON Tower, Level 27, 201 Kent Street
Sydney NSW 2000 Australia
ABN 85 031 302 516

Cameron Sargent
Department of Planning, Industry and Environment
4 Parramatta Square
12 Darcy Street
Parramatta NSW 2150

21/01/2021

Dear Cameron

RE: The new Sydney Fish Market Main Works (SSD-8925) condition B104 Acoustic Impact

Infrastructure NSW (INSW) are writing to the Department of Industry, Planning and Environment (DPIE) to provide evidence that condition B104 of the Main Works SSD-8925 has been complied with. Condition B104 Acoustic Impacts is in relation to 84 Wentworth Park Road:

> *B104. Further consultation shall occur with the Body Corporate of No. 84 Wentworth Park Road, including with involvement of an acoustic expert, seeking to incorporate reasonable acoustic mitigation measures at that property to meet acoustic guidelines (subject to agreement of that property). If either agreement is not reached or the applicant believes suggested measures are unreasonable, written proof of the engagement and situation shall be provided to the Planning Secretary. Prior to the commencement of works, details demonstrating compliance with this requirement shall be submitted to the Planning Secretary and Certifier.*

As per condition B104 INSW have further consulted with the Body Corporate of 84 Wentworth Park Road over the period from February 2020 until now via the following channels:

1. Emails:
   - 6 February 2020 – INSW requested access to units for Acoustic Consultant inspections
   - 10 June 2020 – INSW requested access to units for Mechanical Engineer inspections
   - 21 September 2020 – requested meeting with the Body Corporate
   - 23 September 2020 – Mechanical Ventilation Report sent to Body Corporate
   - 13 November 2020 – SLR Acoustic Assessment sent to Body Corporate
2. Mechanical Ventilation Report by DBS Consulting issued to Graeme Milton, Chair of the Body Corporate on 23 September
3. Meeting held with the Body Corporate on 24 November 2020 with INSW's acoustic expert from SLR Consulting

The meeting of the 24th November included an overview of the approved Noise Impact Assessment, a summary of design initiatives considered and implemented to the loading dock and there was a discussion between the acoustic consultants on the Noise Impact Assessment. Noting that the Body Corporate did not want to discuss any possible at property treatment to their units.

As outlined in the above INSW have made several attempts to discuss at property acoustic treatments with the Body Corporate over the past year, and have provided reports on acoustic mitigation measures and opportunities to discuss these with the acoustic and mechanical ventilation experts. The Body Corporate have consistently stated they do not wish to engage in any discussions on at property treatments, and have maintained instead that the approved design for the new Sydney Fish Market is amended to relocate the driveway or further reduce the source of noise within the loading dock. We have reviewed the potential mitigation measures with the Body Corporate and outlined which measures will be applied (as per the Noise Impact Assessment) and why other measures are not able to be implemented.

As an agreement has not been able to be reached with the Body Corporate, we are providing DPIE with the relevant proof of engagement with the following documents:

- Presentation from meeting on 24 November (Appendix A)
- Minutes from the meeting (Appendix B)
- Follow up email with response to actions from the meeting (Appendix C)
- Acoustic Assessment of Existing Building Fabric of 84 Wentworth Park Road (Appendix D)
- 84 Wentworth Park Road Mechanical Ventilation Options (Appendix E)

INSW will continue consultation with the Body Corporate and tenants of 84 Wentworth Park Road in relation to the acoustic impact to their units, however we believe the requirements of condition B104 have been met and further discussions are beyond the obligation of condition B104.

If you have any questions or require any further information, please contact myself or Jennifer Chang.

Yours sincerely

Humfrey Whitaker

Humfrey Whitaker

Program Director - Blackwattle Bay

Appendix A – Presentation from meeting on 24 November

84 Wentworth Park Road

Acoustic Discussion

NSW GOVERNMENT

AGENDA

PURPOSE In accordance with the new Sydney Fish Market conditions of consent (SSD-8925) INSW are required to discuss with the 84 Wentworth Park Road Body Corporate the acoustic mitigation measures that can be undertaken at the property.

1. Overview of acoustic assessment from new Sydney Fish Market SSDA – initial findings and mitigation in place – 15 minutes
2. Summary of design initiatives considered and implemented on new Sydney Fish Market and a layman's explanation of what this means for residents at 84 Wentworth Park Rd. – 15 minutes
3. Questions from Body Corporate (and their acoustic engineer) on acoustic assessment and recommendations for mitigation measures on the Fish Market site – 20 minutes
4. Questions or comments from SLR on the recommendations from the Body Corporate (and their acoustic engineer) – 15 minutes
5. Investigations on 84 Wentworth Park Road building and potential acoustic treatments – 15 minutes
6. Discussion on next steps – 10 minutes

ATTENDEES

84 WENTWORTH PARK ROAD

Graeme Milton - Owner, Chair and Treasurer SP 75702

Malcolm Morrison - Owner

Gloria Milanovic - Owner, Secretary SP 75702

Catherine Young - Owner/Resident

Matthew Weston - Consultant

Derek McKinstry - Dynamic Property Services

INSFRASTRUCTURE NSW

Humfrey Whitaker - Program Director

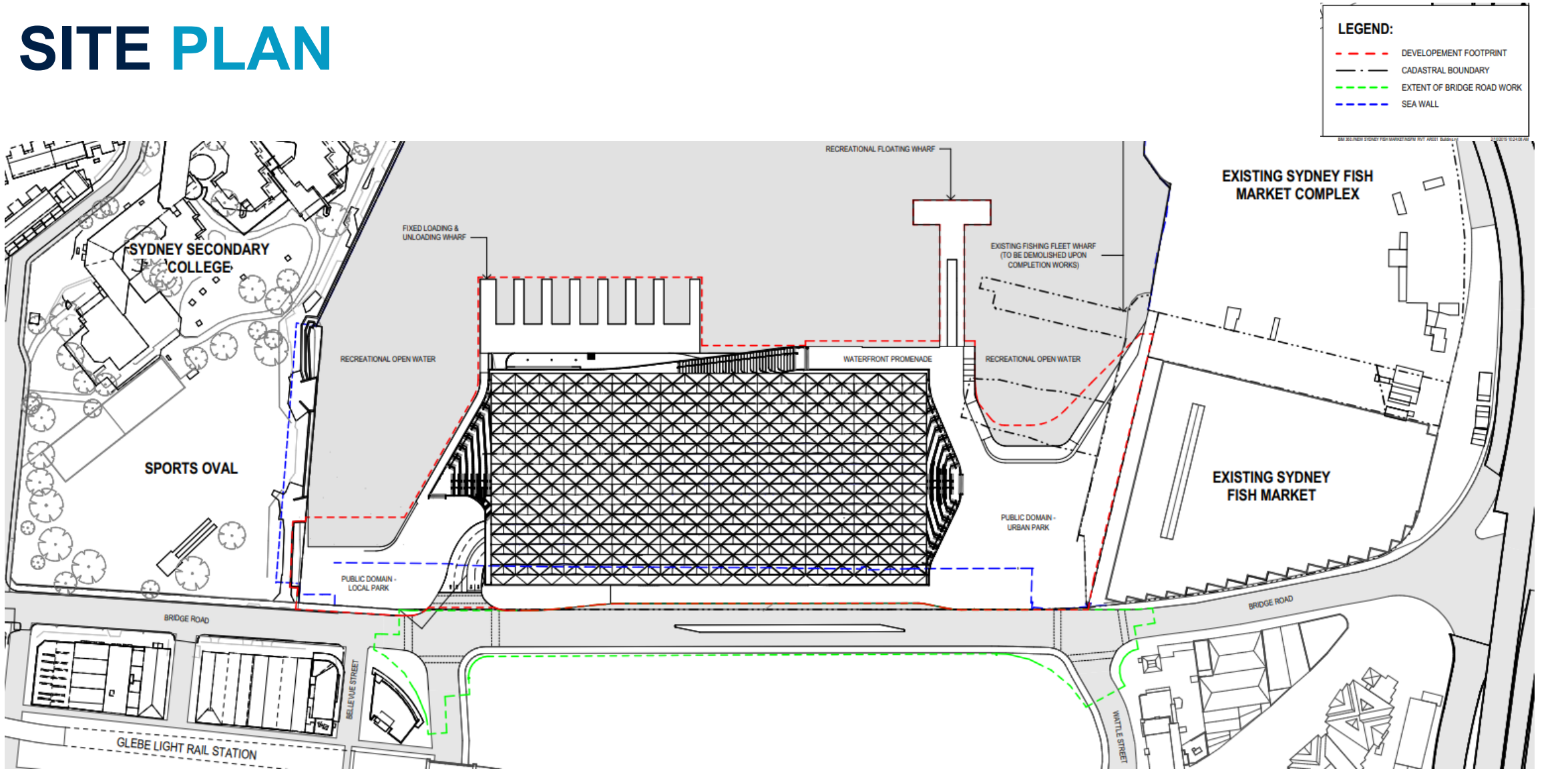
Vlatko Popovski - Senior Communications Manager

Jennifer Chang - Development Manager

Alex Campbell - Acoustic Consultant, SLR

NSW GOVERNMENT

SITE PLAN


LEGEND:
DEVELOPEMENT FOOTPRINT
CADASTRAL BOUNDARY
EXTENT OF BRIDGE ROAD WORK
SEA WALL
RECREATIONAL FLOATING WHARF
FIXED LOADING & UNLOADING WHARF
EXISTING FISHING FLEET WHARF (TO BE DEMOLISHED UPON COMPLETION WORKS)
EXISTING SYDNEY FISH MARKET COMPLEX
SYDNEY SECONDARY COLLEGE
RECREATIONAL OPEN WATER
WATERFRONT PROMENADE
RECREATIONAL OPEN WATER
SPORTS OVAL
EXISTING SYDNEY FISH MARKET
PUBLIC DOMAIN - URBAN PARK
PUBLIC DOMAIN - LOCAL PARK
BRIDGE ROAD
BRIDGE ROAD
BELLEVUE STREET
WATTLE STREET
GLEBE LIGHT RAIL STATION

SSDA ASSESSMENT

- **Loading Dock noise primary source of exceedance at 84 Wentworth Park Road.**
- **Calculations based on building design and vehicle movements in each time period.**
- **Pre-mitigation noise levels:**

NCA	Nearest Receiver Location	Period	$L_{Aeq(15minute)}$ Noise Level (dBA)			Compliance?
			Project Noise Trigger Level	Predicted	Exceedance	
NCA3	Corner of Wentworth Park and Bridge Road, Glebe	Day	63	64	1	No
		Evening	56	61	5	No
		Night	52	61	9	No
		Morning	57	61	4	No

SSDA ASSESSMENT

Mitigation Considered:

Location	Mitigation Measure	Potential Reduction	Discussion
Source	Provide absorption to Loading Dock area to reduced reverberant noise build up	-3 dBA	Adopted. Considered feasible and reasonable. This mitigation measure will be adopted and absorption is to be applied to the entire underside of the soffit of the Loading Dock area
Source	Remove the need for reversing alarms within the Loading Dock	-2 dBA	Not Adopted. Not considered feasible on the grounds of safety in the Loading Dock.
Source	Management measure to permit only vehicles with broadband reversing alarms to use the Loading Dock	-2 dBA	Adopted. Considered feasible and reasonable. UrbanGrowth NSW have confirmed that a management policy will be in place to only permit vehicles with broadband reversing alarms in the Loading Dock
Source	Remove the 'airbrake' noise source contribution	-1 dBA	Not Adopted. Not considered feasible. It is not believed Semi's can operate without this gas release.
Path	Break line-of-sight from Loading Dock to 84 Wentworth Park Road	-5 dBA	Not Adopted. Not considered feasible. This was investigated with numerous sightline studies performed by the design team. It is not believed that line-of-sight can be broken to the receivers due to the need to access the Loading Dock from the road junction in its current location.
Path	Acoustically rated Roller Door on Loading Dock	-15 to -20 dBA	Not Adopted. Not considered feasible. Due to the volume of traffic entering the facility from this entrance (including smaller vans accessing basement, etc.) the roller door would be open for the vast majority of the time. Further, additional noise from semi's and other vehicles stopping to wait outside while the door opens, along with the noise of the door itself, will likely mean that potential noise reductions would be much lower than the theoretical potential
Receiver	Provide "at-property" treatments to 84 Wentworth Park Road to reduce internal noise impacts	TBA	Considered, see **Section 5.3.6**.

SSDA ASSESSMENT

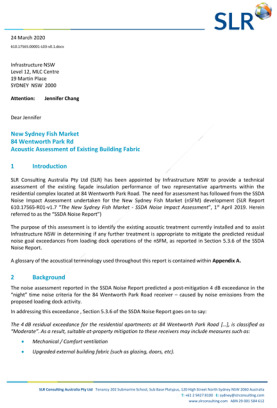
Post-mitigation noise levels:

NCA	Nearest Receiver Location	Period	LAeq(15minute) Noise Level (dBA)			Compliance ?
			Project Noise Trigger Level	Predicted	Exceedance	
NCA3	84 Wentworth Park Road - Corner of Wentworth Park and Bridge Road, Glebe	Day	63	59	-	Yes
		Evening	56	56	-	Yes
		Night	52	56	4	**No**
		Morning	57	56	-	Yes

Note that whilst in excess of (NSW *Noise Policy for Industry*) criteria, the predicted noise levels of 56 dBA $L_{eq,15min}$ at night are significantly lower than the prevailing current traffic noise at night (60-65 dBA $L_{eq,15min}$).

AT-PROPERTY REVIEW

- **Glazing (in line with prior DA) already high performing. Current levels of sound insulation of the building façade are 5-10 dB better than average properties.**
- **Biggest issue with noise ingress is the requirement to open windows to achieve fresh air.**
- **Hence, providing the ability to have fresh air whilst keeping windows closed will result in significant (20 dB) improvements in internal noise levels**



24 March 2020

Infrastructure NSW
Level 12, MLC Centre
19 Martin Place
SYDNEY NSW 2000

Attention: Jennifer Chang

Dear Jennifer

New Sydney Fish Market
84 Wentworth Park Rd
Acoustic Assessment of Existing Building Fabric

1 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been appointed by Infrastructure NSW to provide a technical assessment of the existing façade insulation performance of two representative apartments within the residential complex located at 84 Wentworth Park Road. The need for assessment has followed from the SSDA Noise Impact Assessment undertaken for the New Sydney Fish Market (nSFM) development (SLR Report 610.17565-R01-v1.7 "*The New Sydney Fish Market - SSDA Noise Impact Assessment*", 1st April 2019. Herein referred to as the "SSDA Noise Report")

The purpose of this assessment is to identify the existing acoustic treatment currently installed and to assist Infrastructure NSW in determining if any further treatment is appropriate to mitigate the predicted residual noise goal exceedances from loading dock operations of the nSFM, as reported in Section 5.3.6 of the SSDA Noise Report.

A glossary of the acoustical terminology used throughout this report is contained within **Appendix A.**

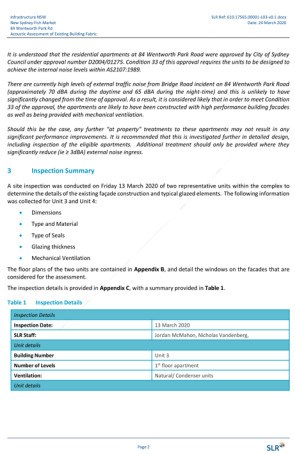
2 Background

The noise assessment reported in the SSDA Noise Report predicted a post-mitigation 4 dB exceedance in the "night" time noise criteria for the 84 Wentworth Park Road receiver – caused by noise emissions from the proposed loading dock activity.

In addressing this exceedance , Section 5.3.6 of the SSDA Noise Report goes on to say:

The 4 dB residual exceedance for the residential apartments at 84 Wentworth Park Road […], is classified as "Moderate". As a result, suitable at-property mitigation to these receivers may include measures such as:

- *Mechanical / Comfort ventilation*
- *Upgraded external building fabric (such as glazing, doors, etc).*



It is understood that the residential apartments at 84 Wentworth Park Road were approved by City of Sydney Council under approval number D2004/01275. Condition 33 of this approval requires the units to be designed to achieve the internal noise levels within AS2107:1989.

There are currently high levels of external traffic noise from Bridge Road incident on 84 Wentworth Park Road (approximately 70 dBA during the daytime and 65 dBA during the night-time) and this is unlikely to have significantly changed from the time of approval. As a result, it is considered likely that in order to meet Condition 33 of the approval, the apartments are likely to have been constructed with high performance building facades as well as being provided with mechanical ventilation.

Should this be the case, any further "at property" treatments to these apartments may not result in any significant performance improvements. It is recommended that this is investigated further in detailed design, including inspection of the eligible apartments. Additional treatment should only be provided where they significantly reduce (ie ≥ 3dBA) external noise ingress.

3 Inspection Summary

A site inspection was conducted on Friday 13 March 2020 of two representative units within the complex to determine the details of the existing façade construction and typical glazed elements. The following information was collected for Unit 3 and Unit 4;

- Dimensions
- Type and Material
- Type of Seals
- Glazing thickness
- Mechanical Ventilation

The floor plans of the two units are contained in **Appendix B**, and detail the windows on the facades that are considered for the assessment.

The inspection details is provided in **Appendix C**, with a summary provided in **Table 1**.

Table 1 Inspection Details

Inspection Details	
Inspection Date:	13 March 2020
SLR Staff:	Jordan McMahon, Nicholas Vandenberg,
Unit details	
Building Number	Unit 3
Number of Levels	1st floor apartment
Ventilation	Natural/ Condenser units
Unit details	

Figure 1 Site Plan

Figure 2 Measurement Locations – Unit 3 and Unit 4

Table 3 Summary of Results

Unit Number	Room	Test Number	Source	External Level (dBA)	Internal Level (dBA)	Weighted Noise Reduction, dB $D_{n,w}$	Observations
Unit 4	Living Room	1	Pink Noise	94	66	32	Sliding door sealing well Bookcase along internal wall – 6.38mm glass
		2	Ambient	64	34	33	
	Bedroom 1	3	Ambient	68	40	29	Awning window not sealing well – 10.5mm glass
		4	Ambient	69	41	29	
Unit 3	Living Room	5	Pink Noise	94	66	32	Sliding door sealing well - 6.38mm glass
		6	Pink Noise	93	66	31	
		7	Ambient	67	39	30	
	Bedroom 1	8	Pink Noise	95	62	33	Awning window not sealing well, Sliding door sealing well – 10.5mm glass
		9	Ambient	70	42	30	
		10	Pink Noise	88	58	29	

SSDA ASSESSMENT

- Logger 04 used to determine background noise levels at all properties fronting Bridge Rd
    - Not impacted by Hanson which would have given false-high reading at 84 Wentworth Park Rd
    - L07 used to determine background noise in NCA 3 for properties not on Bridge Rd.
- Levels measured at Location 04 validated as suitable for this use though noise model, calculation and short term attended measurements along Bridge St

NSW GOVERNMENT

Questions

Appendix B - Minutes from the meeting

Minutes of Meeting
84 Wentworth Park Road Acoustic Assessment Meeting

24 November 2020

84 Wentworth Park Road Acoustic Assessment Meeting

Minutes of a meeting held on Tuesday 24 November 2020 held on Microsoft Teams.

Present	Apologies
Graeme Milton (GM)	Gloria Milanovic
Malcolm Morrison (MM)	Catherine Young
Matthew Weston (MW)	
Derek McKinstry (DK)	
Iris Chau (IC)	
Humfrey Whitaker (HW)	
Vlatko Popovski (VP)	
Jennifer Chang (JC)	
Alex Campbell (AC)	

Item	Action	Due Date
Turntable	HW to review the viability of a turntable within the loading dock to remove the need for large trucks to reverse into the docks.	01/12/2020
Noise monitor	MM to confirm potential locations at 84 Wentworth Park road with 24-hour access for noise monitoring equipment to be located.	11/12/2020
Noise impacts	HW will consider what other actions INSW can take to provide the residents/owners comfort around noise concerns from construction and operation of the new SFM.	01/12/2020

Purpose

In accordance with the new Sydney Fish Market conditions of consent (SSD-8925) INSW are required to discuss with the 84 Wentworth Park Road Body Corporate the acoustic mitigation measures that can be undertaken at the property.

Minutes and Actions Arising

1. **Welcome and acknowledgement of country**
   - » HW welcomed all participants, noted apologies and made an acknowledgement of country.

2. HW showed a site plan and discussed the location of the new Sydney Fish Market, noting the loading dock on Bridge Rd at intersection of Wentworth Park Road is the only vehicular access to the building.

3. **Overview of acoustic assessment from new Sydney Fish Market SSDA**
   - » AC provided the background of the project Noise Impact Assessment for the SSDA
     - > Explained that SLR worked with the Design Team to work through the list of possible mitigation measures
   - » GM asked if INSW had looked at the driveway at the middle of the site
     - > HW explained that INSW looked into that option during the design phase however RMS (now Transport for NSW) said they would not support that option due to the close proximity to two other established intersections.
   - » AC explained that the noise assessment have to be done for the realistic worst-case 15 minutes in any time period (Day / Evening / Night / Morning). Night time assessment is for a 15 min period when there is a truck movement, but that there will only be four of these movements between 11pm-7am (covering Night and Morning periods)
   - » AC explained that logger 4 was used to set criteria at 84 Wentworth Park Rd as it was determined through measurement and modelling that this is representative of the prevailing background (L_{90}) levels for all properties fronting Bridge Rd.

4. **Summary of design initiatives considered and implemented on new Sydney Fish Market**
   - » AC explained what mitigation measures have been designed into the loading dock and which items had been considered but deemed not feasible.
   - » GM asked if a turntable was considered in the loading dock
     - > HW said he is not sure if a turntable can take an articulated vehicle and that the trucks would still need to reverse into the loading bay and that would create noise
     - > **ACTION:** HW will ask the design team if the turntable was considered and confirm if feasible.
   - » MM asked why early works construction noise monitoring was not being measured at 84 Wentworth Park Rd
     - > HW advised that the monitoring was not done at 84 Wentworth Park Road as the contractor did not have unfettered access to the property which is required to collect the data.

5. **Questions from Body Corporate (and their acoustic engineer)**
   - » MM asked if they will not be able to use their balconies

- AC confirmed that's not the case and reiterated that the current traffic noise levels on Bridge Rd are higher than the projected noise levels from the loading dock. AC said if residents are happy with the existing noise levels, they will be able to continue using outdoor areas as they currently do.

- MW asked why logger 4 was used instead of logger 7 as the traffic conditions on Wattle Street is different
  - AC explained that logger 7 isn't comparable because it is significantly set back from Bridge Road and has partial screening by the light rail via duct. SLR had conducted hand held checks along Bridge road along with noise modelling based on traffic flow data to confirm that the background noise environment was similar at 84 Wentworth Park road and the location of logger 4.
- MW asked if the noise assessment took into account the sixty SRV trucks from 5am-7am
  - AC explained that they are light vehicle movements and that the majority of the SRVs will be going into the basement carpark rather than the loading dock. Also, the larger trucks will make more noise. Assessing the realistic worst-case 15min period, truck noise is dominant with SRV noise not forming a significant contribution.
- MW asked why a roller door was not implemented
  - AC explained that there is single access to both the loading dock and basement carpark, the roller door would have to be at the main entrance to the car park so would have many more vehicle movements through it than just the heavy vehicles. Therefore it was expected the door would likely be open for most of the time and would generate noise when opened and closed continuously. There will also be noise from trucks idling while waiting for it to open.
- GM asked if the roller door can be put on the loading dock entrance
  - HW explained that due to the angle that the trucks enter the loading dock after the basement traffic is diverted down it would be a very wide door and was not considered feasible.
- MM asked if a noise logger can be put at 84 Wentworth Park Road now
  - **ACTION:** MM can provide potential locations and 24-hour access then INSW will provide those details to Multiplex for them to consider during Main Works
- MM asked if traffic noise health advice from WHO was considered
  - AC confirmed they work to NSW policy
- DM asked if there was a way to measure the noise currently created at the existing Sydney Fish Market loading dock during the night and early morning to provide the residents comfort around the level of noise.
  - AC explained that the current loading dock is outside and there is too much background noise that it would be hard to determine the noise created by the movements in isolation.
  - **ACTION:** HW will consider if there is any other things INSW can do to give the residents/owners comfort around noise concerns from construction and operation of the new SFM
- MW said the DA says noise assessment can be done indicatively, however the acoustic assessment report identified 84 Wentworth Park Rd as the most sensitive receiver. MW asked why doesn't that trigger a greater investigation.
  - HW confirmed the DA reports were placed on public exhibition for agency and public comment through the standard process. Some comments received from other agencies on the noise from the loading dock. All were responded to in the Response to Submissions and some triggered further action in the conditions of consent. No submissions were received from residents.
- GM said that MW is suggesting actual exceedances are greater than those in the acoustic assessment report.

- HW thanked GM for his comment, however confirmed that INSW and SLR disagree with that assessment as outlined in earlier points.

6. **Next Steps**

- HW confirmed the actions
- HW asked if the Body Corporate would be willing to discuss the potential acoustic treatment to 84 Wentworth Park Road as presented in the report provided
  - MM confirmed that it would not be considered at this point

Appendix C - Follow up email with response to actions from the meeting

Jennifer Chang

From: Humfrey Whitaker
Sent: Tuesday, December 1, 2020 5:11 PM
To: Graeme Milton
Cc: Jennifer Chang; Malcolm Morrison | Morrison Solutions; Vlatko Popovski; gloriamilanovic@gmail.com; Catherine Young
Subject: RE: 84 Wentworth Park Road Acoustic Assessment Meeting

Hi Graeme,
Further to the minutes issued by Jen please find below my responses to actions from our meeting last week.

1. **Viability of a turntable within the loading dock.**
   a) I have confirmed with the design team and project engineers that a turntable was not investigated in any detail during the design process. They have advised that this would not be a feasible solution to remove the need for the trucks to reverse.

2. **Other actions INSW can take to provide residents/owners comfort around noise**
   a) Following our meeting I have checked again with our acoustic consultants SLR on their confidence that the noise logger used (logger 4) for assessment of background noise on Bridge road is representative of the conditions at 84 Wentworth Park road. They have confirmed this and also cross checked with a separate consultant Aecom who did some hand held assessments along Bridge Road which confirmed the same.

   b) A key point made by SLR is that the predicted noise level from the loading dock is less than the current traffic noise on Bridge Road. I believe this point should provide the residents/owners some context of the noise levels that are outlined within the report.

   c) I am willing to recommend to the main works contractor (Multiplex) that they locate a noise monitor at 84 Wentworth Park Road for the duration of their works. The final location of the noise monitor will need to be subject to their acoustic advisor and any security and access requirements. I will put the recommendation to them, and advise of the final decision. If it can't be located at 84 Wentworth Park Road I'll advise why. If you or Malcolm can provide details of accessible locations (ideally off the ground floor to prevent vandalism) that would assist in this regards.

   d) I would also like to reach out to the tenants of your building and organise a check in for them to let us know what issues they are experiencing during construction. Noise, dust, traffic, etc. This would be an opportunity for them to provide frank and open feedback for us to then consider if there is any actions we can take to mitigate the impacts. I can't make any promises to make changes only to listen at this stage and then assess what we can do. Let me know if you have any thoughts on the best timing to hold this session.

I haven't included your consultants on this email, will leave to you to forward as required.

Could you please advise if you now wish to discuss the report we have provided into mechanical ventilation options at 84 Wentworth Park Road and how these works could be implemented or if this is not something the body corporate wishes to proceed with.

Thanks,

Humfrey Whitaker
Program Director, Projects NSW

P 02 9216 5941
E humfrey.whitaker@infrastructure.nsw.gov.au | www.insw.com

Level 27, 201 Kent Street Sydney NSW 2000

I acknowledge and pay my respects to the traditional owners and custodians on whose land I walk, work and live.

From: Jennifer Chang <Jennifer.Chang@infrastructure.nsw.gov.au>
Sent: Monday, 30 November 2020 11:59 AM
To: Graeme Milton <gmil8639@bigpond.net.au>; Malcolm Morrison | Morrison Solutions <Malcolm@morrisonsolutions.co.nz>; Matthew Weston <mw@acousticdynamics.com.au>; DerekM@dynamicproperty.com.au; Iris Chau <Iris.Chau@dynamicproperty.com.au>; Humfrey Whitaker <Humfrey.Whitaker@infrastructure.nsw.gov.au>; Vlatko Popovski <Vlatko.Popovski@infrastructure.nsw.gov.au>; Alex Campbell <amcampbell@slrconsulting.com>; gloriamilanovic@gmail.com; Catherine Young <mail@cefy.onmicrosoft.com>
Subject: 84 Wentworth Park Road Acoustic Assessment Meeting

Hi all,

Please see attached the minutes and presentation from last week's meeting.

Please let me know if you have any questions.

Regards,
Jen

Jennifer Chang
Development Manager

P 02 9216 5790 M 0447 419 962
E jennifer.chang@infrastructure.nsw.gov.au | www.insw.com
Level 27, AON Tower, 201 Kent Street, Sydney NSW 2000

Appendix D - Acoustic Assessment of Existing Building Fabric of 84 Wentworth Park Road

24 March 2020

610.17565.00001-L03-v0.1.docx

Infrastructure NSW
Level 12, MLC Centre
19 Martin Place
SYDNEY NSW 2000

Attention: Jennifer Chang

Dear Jennifer

New Sydney Fish Market
84 Wentworth Park Rd
Acoustic Assessment of Existing Building Fabric

1 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been appointed by Infrastructure NSW to provide a technical assessment of the existing façade insulation performance of two representative apartments within the residential complex located at 84 Wentworth Park Road. The need for assessment has followed from the SSDA Noise Impact Assessment undertaken for the New Sydney Fish Market (nSFM) development (SLR Report 610.17565-R01-v1.7 "*The New Sydney Fish Market - SSDA Noise Impact Assessment*", 1st April 2019. Herein referred to as the "SSDA Noise Report")

The purpose of this assessment is to identify the existing acoustic treatment currently installed and to assist Infrastructure NSW in determining if any further treatment is appropriate to mitigate the predicted residual noise goal exceedances from loading dock operations of the nSFM, as reported in Section 5.3.6 of the SSDA Noise Report.

A glossary of the acoustical terminology used throughout this report is contained within **Appendix A.**

2 Background

The noise assessment reported in the SSDA Noise Report predicted a post-mitigation 4 dB exceedance in the "night" time noise criteria for the 84 Wentworth Park Road receiver – caused by noise emissions from the proposed loading dock activity.

In addressing this exceedance , Section 5.3.6 of the SSDA Noise Report goes on to say:

The 4 dB residual exceedance for the residential apartments at 84 Wentworth Park Road […], is classified as "Moderate". As a result, suitable at-property mitigation to these receivers may include measures such as:

- *Mechanical / Comfort ventilation*
- *Upgraded external building fabric (such as glazing, doors, etc).*

It is understood that the residential apartments at 84 Wentworth Park Road were approved by City of Sydney Council under approval number D2004/01275. Condition 33 of this approval requires the units to be designed to achieve the internal noise levels within AS2107:1989.

There are currently high levels of external traffic noise from Bridge Road incident on 84 Wentworth Park Road (approximately 70 dBA during the daytime and 65 dBA during the night-time) and this is unlikely to have significantly changed from the time of approval. As a result, it is considered likely that in order to meet Condition 33 of the approval, the apartments are likely to have been constructed with high performance building facades as well as being provided with mechanical ventilation.

Should this be the case, any further "at property" treatments to these apartments may not result in any significant performance improvements. It is recommended that this is investigated further in detailed design, including inspection of the eligible apartments. Additional treatment should only be provided where they significantly reduce (ie ≥ 3dBA) external noise ingress.

3 Inspection Summary

A site inspection was conducted on Friday 13 March 2020 of two representative units within the complex to determine the details of the existing façade construction and typical glazed elements. The following information was collected for Unit 3 and Unit 4:

- Dimensions
- Type and Material
- Type of Seals
- Glazing thickness
- Mechanical Ventilation

The floor plans of the two units are contained in **Appendix B**, and detail the windows on the facades that are considered for the assessment.

The inspection details is provided in **Appendix C**, with a summary provided in **Table 1**.

Table 1 Inspection Details

Inspection Details	
Inspection Date:	13 March 2020
SLR Staff:	Jordan McMahon, Nicholas Vandenberg,
Unit details	
Building Number	Unit 3
Number of Levels	1st floor apartment
Ventilation:	Natural/ Condenser units
Unit details	

Building Number	Unit 4
Number of Levels	2nd floor apartment
Ventilation:	Natural/ Condenser units

4 Façade Noise Reduction

Acoustic measurements were conducted on a sample of rooms to determine the sound insulation performance of the existing facades. This was done by generating noise outside where possible and simultaneously measuring the internal and external noise levels. Where it was not possible to generate noise outside, ambient traffic noise levels were used.

The octave band level differences between the internal and external measurements is then used to calculate the weighted noise reduction (Dw) of the facade. The noise reduction measurements were conducted in general accordance with the following standards and documents:

- Australian Standard AS ISO 140.5:1998 Acoustics – Measurement of sound insulation in buildings and of building elements Part 5: Field measurements of airborne sound insulation of façade elements and facades.
- Australian Standard AS/NZS ISO 717.1:2004 Acoustics – Rating of sound insulation in buildings and of building elements Part 1: Airborne sound insulation.

The equipment used for testing is detailed in **Table 2**. All equipment meet the Class 1 requirements of AS/NZS IEC 61672.1:2019 *Electroacoustics-Sound level meters Part 1: Specifications*. Microphones were fitted with windshields. Reference field checks of calibration were performed prior to and following the measurements, with the drift in calibration not exceeding ±0.5 dB (as required by AS 1055). All equipment used carried appropriate and current NATA calibration certificates.

Table 2 Test Equipment

Equipment	Serial Number
Bruel & Kjaer 2250 Sound Level Meter	3011830
Bruel & Kjaer 2270 Sound Level Meter	3027586
Calibrator	279303
Signal Generator	-

The overall positioning of these buildings in relation to the site is identified in **Figure 1**. The sound insulation performance was measured in various rooms within the two buildings as identified in **Figure 2**.

The tests were conducted on facades facing Bridge Road that are deemed to be most exposed to noise from the the nSFM proposed site.

The sound insulation performance results of the tests conducted are summarised in **Table 3**.

Figure 1 Site Plan

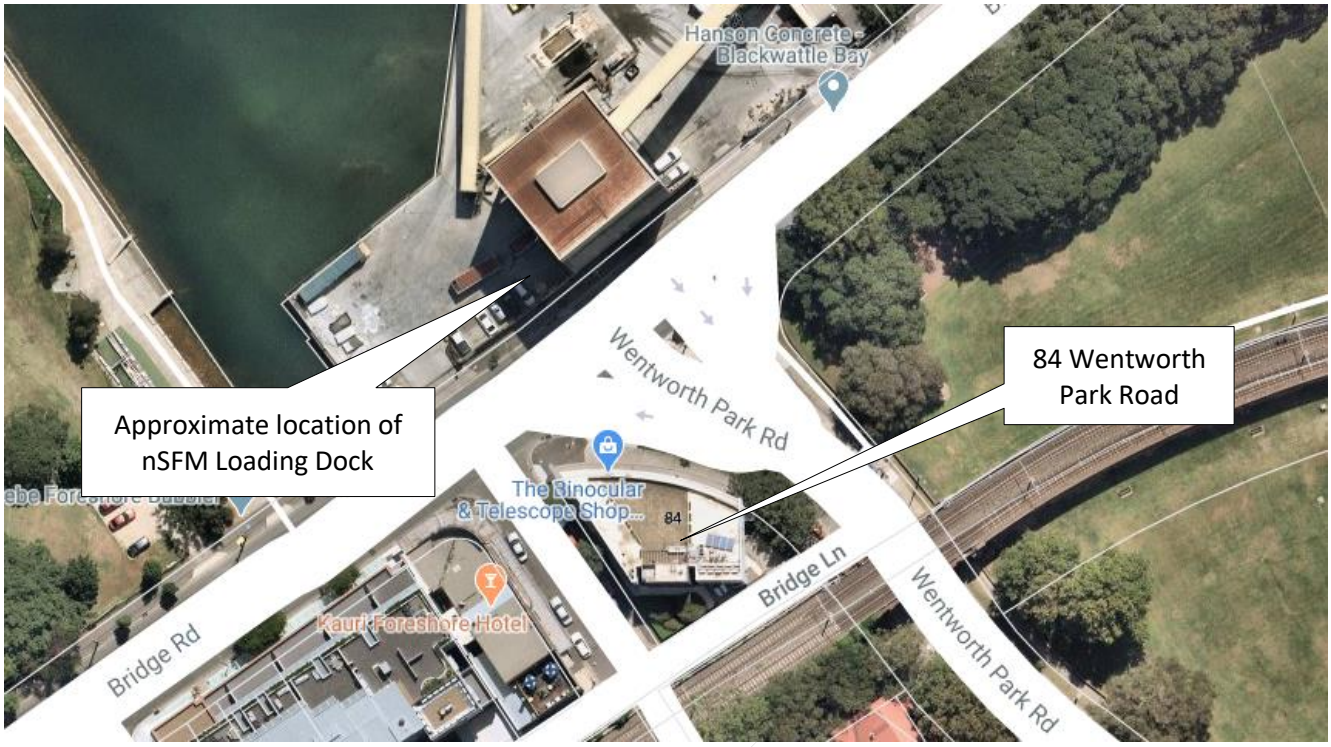


Figure 2 Measurement Locations – Unit 3 and Unit 4

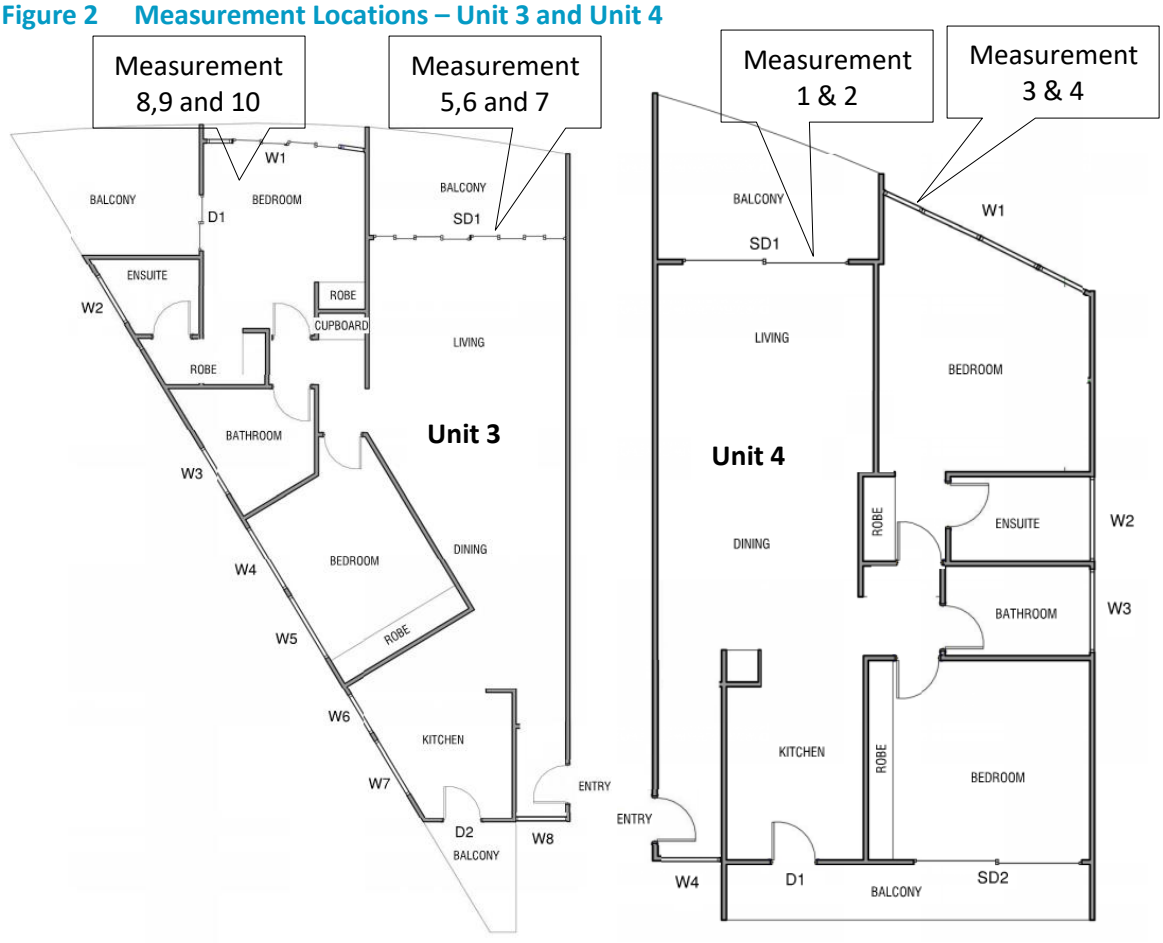


Table 3 Summary of Results

Unit Number	Room	Test Number	Source	External Level (dBA)	Internal Level (dBA)	Weighted Noise Reduction, dB D_w	Observations
Unit 4	Living Room	1	Pink Noise	94	66	32	Sliding door sealing well
		2	Ambient	64	34	33	Bookcase along internal wall – 6.38mm glass
	Bedroom 1	3	Ambient	68	40	29	Awning window not sealing well – 10.5mm glass
		4	Ambient	69	41	29	
Unit 3	Living Room	5	Pink Noise	94	66	32	Sliding door sealing well – 6.38mm glass
		6	Pink Noise	93	66	31	
		7	Ambient	67	39	30	
	Bedroom 1	8	Pink Noise	95	62	33	Awning window not sealing well, Sliding door sealing well – 10.5mm glass
		9	Ambient	70	42	30	
		10	Pink Noise	88	58	29	

5 Discussion

Based on assessment above, the following observations can be made:

- There is no mechanical ventilation currently provided to the units. Fresh air provision is only through openable windows.
- The glazing installed in habitable rooms on the façade facing Bridge Road/Wentworth Park Road is typical for high performance glazing – and when windows and doors are sealed and closed appropriately, provides high levels of sound insulation.
- With all awning windows correctly closing and sealed – noise ingress from the surrounding Bridge Road and other sources would likely comply with the internal noise levels given in AS2107:1989, as required by Condition 33 of the original City of Sydney Council approval D2004/01275.
- With windows open to provide ventilation in line with BCA requirements, noise ingress from the surrounding ambient environment would exceed the internal noise levels given in AS2107:1989.

In terms of considering potential improvements to the building fabric to address the predicted residual exceedances in the SSDA Noise Report, the following advice applies:

- Due to the apartment configurations with glass sliding doors in places and 10.5mm laminate glass windows, any upgrade to glazing will not yield a significant (≥3 dBA) improvement in noise ingress.
- Upgrading / repairing window seals where required and maintenance of windows to ensure they are closing fully will yield a significant improvement in reducing noise ingress.
- No form of fresh air ventilation is currently being provided to the units other than open windows. Fresh air ventilation is required to enable the residents to keep windows and doors closed during noisy periods and still have sufficient ventilation. Such treatment may require an Aeropac ventilator or similar.

We trust the above report meets your current requirements. Should you have any questions or require any additional information, please contact me on 02 9427 8100.

Yours sincerely

NICHOLAS VANDENBERG

SENIOR PROJECT CONSULTANT

Checked/
Authorised by: AMC

APPENDIX A

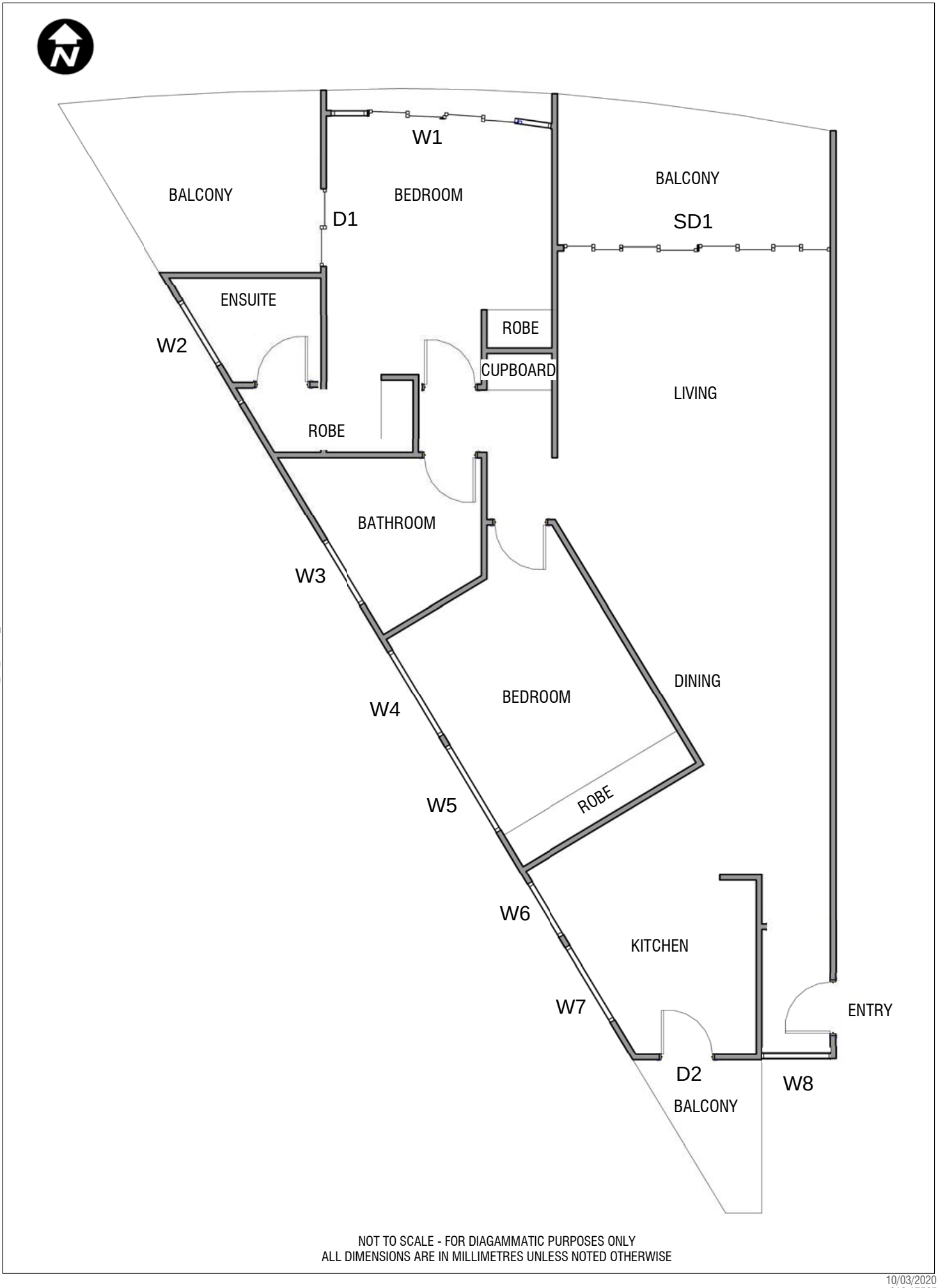
Acoustic Terminology

'A' Weighted	Frequency filter applied to measured noise levels to represent how humans hear sounds.
Ambient Sound	Of an environment: the all-encompassing sound associated sound associated with that environment., being a composite of sounds from many sources, near and far. Usually taken to mean the LAeq Value.
Background Sound Low	The average of the lowest levels of the sound levels measured in an affected area in the absence of noise from occupants and from unwanted, external ambient noise sources. Usually taken to mean the LA90 value
Ctr	A frequency adaptation term applied in accordance with the procedures described in ISO 717.
dB (A)	'A' Weighted overall sound pressure level
Decibel, dB	Unit of acoustic measurement. Measurement of power, pressure and intensity may be expressed in dB relative standard reference levels.
Dw	Dw is the weighted level difference between the two rooms and is calculated by subtracting the noise level
L90, L10 etc	A statistical measurement giving the sound pressure level which is exceeded for the given percentile of an observation period, ie L90 is the level which is exceeded for 90 percent of an observation period. L90 is commonly referred to as a basic for measuring the background sound level.
LAeq, T	Equivalent continuous A-weighted sound pressure level. The value of the A-weighted sound pressure level of a continuous steady sound that, within a measurement time interval T, has the same A-weighted sound energy as the actual time-varying sound.
Noise Reduction	The difference in sound pressure level between any two areas. The term "noise reduction" does not specify any grade or performance quality unless accompanied by a specification of the units and conditions under which the units shall apply
NR Noise Rating	Single number evaluation of the background noise level. The NR level is normally around 5 to 6 dB below the "A" weighted noise level. The NR curve describes a spectrum of noise levels and is categorised by the level at 1000 Hz ie the NR 50 curve has a value of 50 dB at 1000 Hz. The NR rating is a tangential system where a noise spectrum is classified by the NR curve that just encompasses the entire noise spectrum consideration.
Rw	Weighted Sound Reduction Index - Laboratory test measurement procedure that provides a single number indication of the acoustic performance of a partition or single element. Calculation procedures for Rw are defined in ISO 140-2:1991 "*Measurement of Sound Insulation in Buildings and of Building Elements Part 2: Determination, verification and application of precision data*".
R'w	Field obtained Weighted Sound Reduction Index - this figure is generally up to 3-5 lower than the laboratory test determined level data due to flanked sound transmission and imperfect site construction.
Sound Isolation	A reference to the degree of acoustical separation between any two areas. Sound isolation may refer to sound transmission loss of a partition or to noise reduction from any unwanted noise source. The term "sound isolation" does not specify any grade or performance quality and requires the units to be specified for any contractual condition
Sound Pressure Level, LP dB	A measurement obtained directly using a microphone and sound level meter. Sound pressure level varies with distance from a source and with changes to the measuring environment. Sound pressure level equals 20 times the logarithm to the base 10 of the ratio of the rms sound pressure to the reference sound pressure of 20 micro Pascals.
Sound Power Level, Lw dB	Sound power level is a measure of the sound energy emitted by a source, does not change with distance, and cannot be directly measured. Sound power level of a machine may vary depending on the actual operating load and is calculated from sound pressure level measurements with appropriate corrections for distance and/or environmental conditions. Sound power levels is equal to 10 times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power of 1 picoWatt
Speech Privacy	A non-technical term but one of common usage. Speech privacy and speech intelligibility are opposites and a high level of speech privacy means a low level of speech intelligibility. It should be recognised that acceptable levels of speech privacy do not require that speech from an adjacent room is inaudible.
Transmission Loss	Equivalent to Sound Transmission Loss and to Sound Reduction Index in terminology used in countries other than Australia. A formal test rating of sound transmission properties of any construction, by usually a wall, floor, roof etc. The transmission loss of all materials varies with frequency and may be determined by either laboratory or field tests. Australian Standards apply to test methods for both situations.

APPENDIX B

Floor Plans

SLR Consulting Australia Pty Ltd Tenancy 202 Submarine School, Sub Base Platypus, 120 High Street North Sydney NSW 2060 Australia
T: +61 2 9427 8100 **E:** sydney@slrconsulting.com
www.slrconsulting.com ABN 29 001 584 612



NOT TO SCALE - FOR DIAGAMMATIC PURPOSES ONLY
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE

10/03/2020
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LEGEND:

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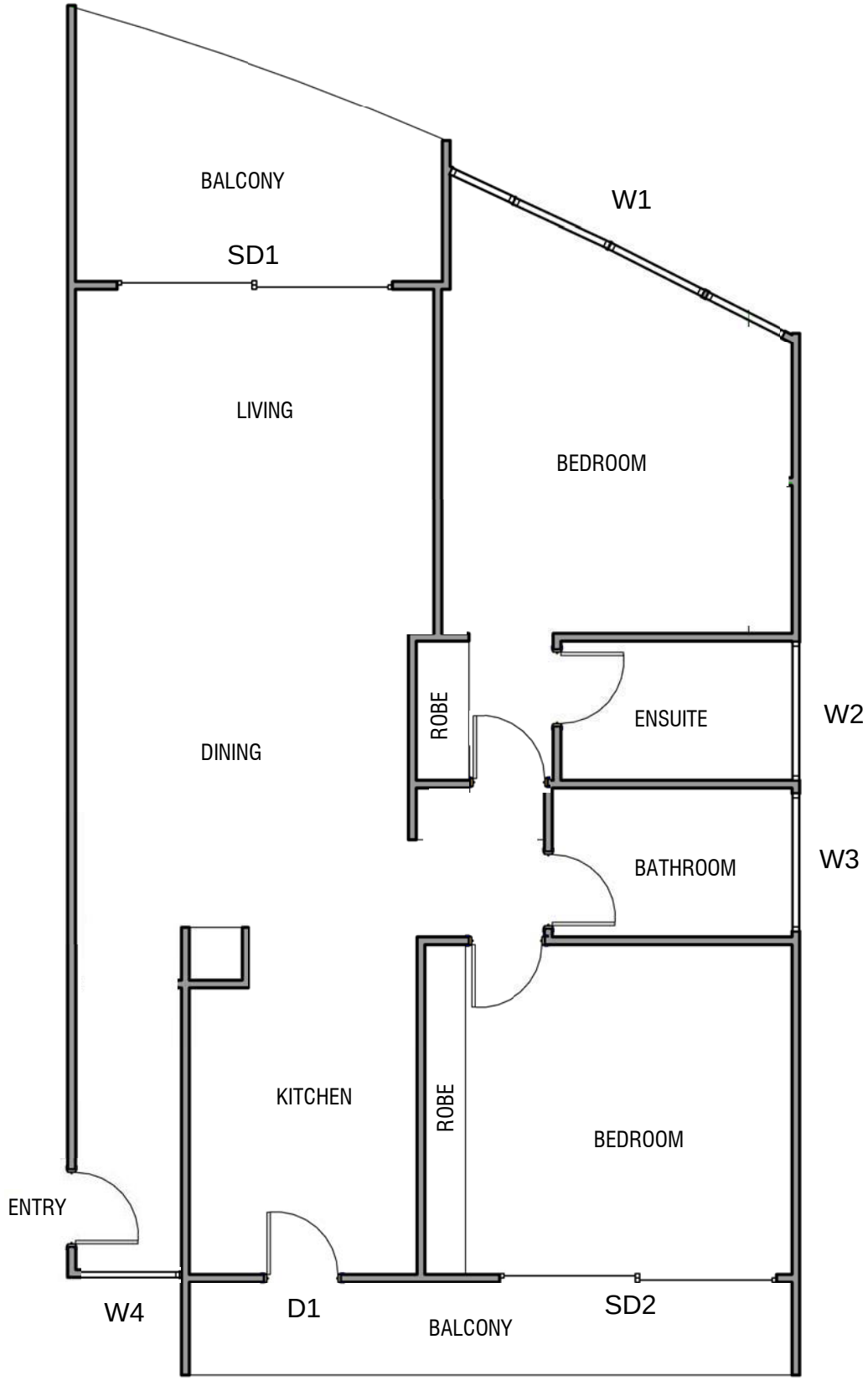
Unit 3 Floor Plan

84 Wentworth Park Road, Glebe

FIGURE 1



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RED TEXT INDICATES BUILDING ELEMENTS SELECTED FOR TREATMENT

Sheet Size: A4

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Unit 4 Floor Plan

84 Wentworth Park Road, Glebe

FIGURE 1

APPENDIX C

Results from Site Inspection

REMOVED - CONTAINED PHOTOGRAPHS

Photos of internal unit spaces removed for privacy

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Appendix E - 84 Wentworth Park Road Mechanical Ventilation Options

MECHANICAL VENTILATION OPTION REPORT

84 Wentworth Park Road, Sydney, NSW

MECHANICAL SERVICES REPORT

Mechanical Ventilation Option Report

PREPARED FOR

SLR

PREPARED BY	REVIEWED BY	DATE ISSUED
Alekz Piekarski	**Darren Beaver**	**24 September 2020**

REVISION HISTORY

Revision	Revision date	Details	Name	Position
01	19 August 2020	Draft For Review	Alekz Piekarski	Associate
02	31 August 2020	Draft For Review	Alekz Piekarski	Associate
03	15 September 2020	Final Draft	Alekz Piekarski	Associate
04	24 September 2020	Final Draft	Alekz Piekarski	Associate

CONTENTS

1. INTRODUCTION

1.1 Report Aim

84 Wentworth Park Road, Sydney is an apartment block of six apartments located opposite the proposed development for the new Sydney Fish Markets.

SLR has been engaged on behalf of Infrastructure NSW to review options to incorporate reasonable acoustic mitigation measures as outlined in the DA condition B104. They have been requested to appoint a mechanical consultant to develop a strategy for providing fresh air to the apartments within the building without the need to open the windows to reduce the potential noise impact from the fish markets and Bridge Road.

The purpose of this report is to outline options for ventilation and to provide a recommendation.

1.2 Information

The report is based on the following information:

- Acoustic Report (610.17565.00001-L03-v0.1) undertaken by SLR dated 24th March 2020
- Site visit to apartments 3, 4 and 5 on 28th and 31st July 2020
- Desktop research into available options

1.3 Limitations

We note that limited as-built mechanical services drawings are available and the architectural as-built drawings provided are not entirely reflective of the current installation.

We also note that apartments 3 (first floor), 4 and 5 (second floor) were inspected. We have assumed that the apartments on subsequent floors match the layouts.

2. VENTILATION OPTIONS

2.1 Option 1 – In-Wall Ventilator

An in-wall ventilator solution comprises of a wall mounted unit with an internal fan that draws outside air in through a PVC/steel pipe through the external wall. A typical unit has interchangeable filters and requires a power supply. The power usage is approximately 5W to 30W (for comparison a halogen light bulb is approximately 70W and a new LED bulb around 10W). An in-wall ventilator would be required in each of the bedrooms and lounge rooms. See Appendix A for suggested locations of the in-wall ventilator.

An example of this solution is the Acoustica AeroPac. The ventilator requires a power supply and the manufacturer notes that the maximum cable length is 4.5m. The device requires a hole in the external wall for air intake via an Ø80mm PVC pipe.

Acoustica AeroPac

The unit has interchangeable filters that can be replaced by the end user. The two types of filters include the following:

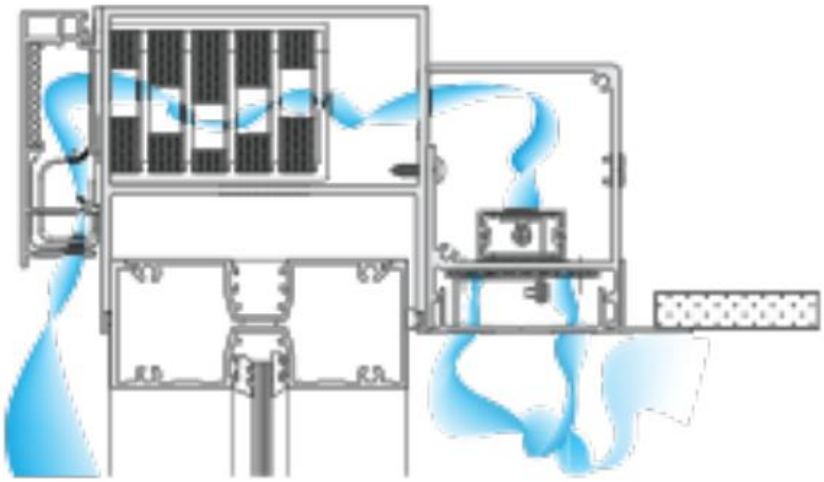
- Activated carbon filter for exhaust fumes and odours
- Carbon impregnated dust filters for pollen and fine dust

DBS Assessment:

This option provides a relatively simple solution with minimal builder's work requirements. There are suitable wall locations for the units in most of the rooms inspected. Power requirements to the units will need to be investigated to ensure there is a suitable power supply close to the suggested location as well as sufficient overall power to each apartment.

2.2 Option 2 – Trickle Ventilation

A trickle vent is an opening in the frame of a window that can be manually or automatically opened and closed to allow for the natural ventilation of a space without compromising the acoustic integrity of the façade. An example of a trickle vent solution is the AWS Trickle Vent.



AWS Trickle Vent above a window with SoundOUT Diffuser fitted

AWS Trickle Vent above a window with SoundOUT Diffuser fitted

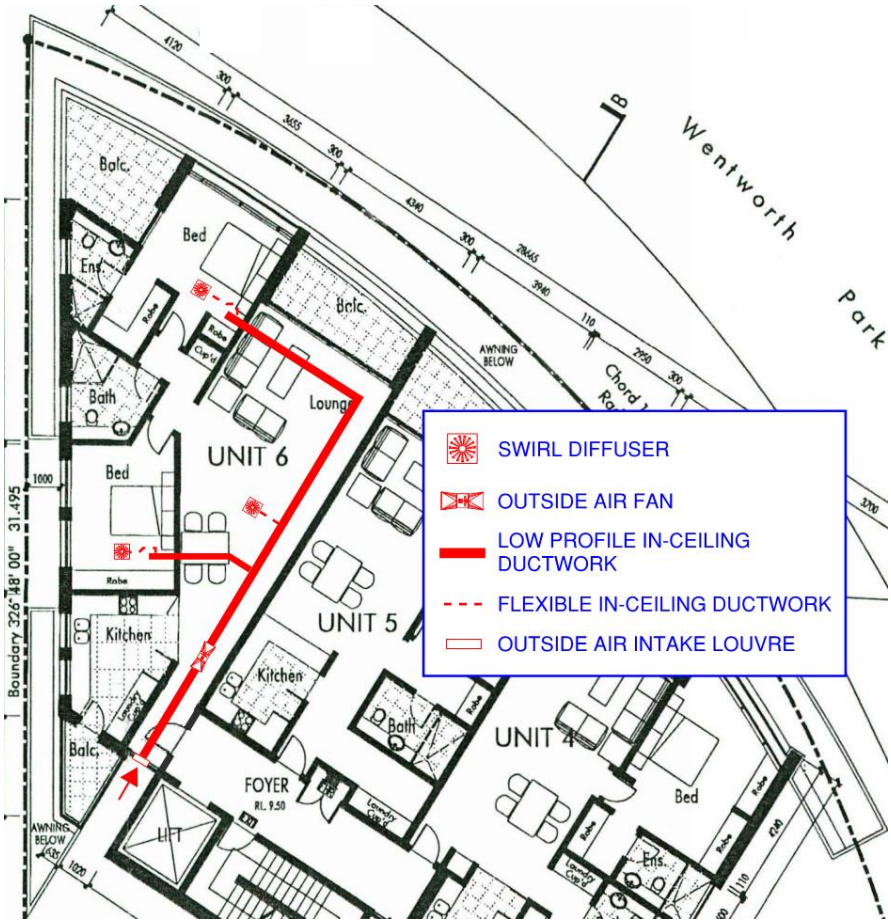
The trickle vent provides natural ventilation, allowing air to enter the room passively without the requirement for an electrical supply. The vents have various filter options as well as versions that provide additional acoustic properties. One of which is the AWS SoundOUT Diffuser which diffuses sound whilst not obstructing airflow. This option has minimal impact on the usable space in the room when compared to the in wall ventilator in Option 1, however typically requires installation when the façade is being constructed.

DBS Assessment:

This option is more suitable for new developments where the trickle vents be installed as part of the new façade and glazing system. As such, this option is not recommended for this project.

2.3 Option 3 – Mechanical Ventilation

A mechanically ventilated solution would require new outside air louvres, outside air fans for each floor or apartment, in-ceiling ductwork and supply air grilles to each space. The solution would require large parts of the ceiling to be removed to be able to install the new infrastructure and likely a development application for any new external louvres. An alternative solution would be to install new outside air fans on the roof and run new risers through the building to each apartment. This would impact on the floor area of each apartment and result in major structural works. There would also be a higher operational costs than option 1 due to the larger mechanical equipment.



Single Line Ductwork and Fan Layout For Mechanical Ventilation for Single Apartment

DBS Assessment:

Due to the large costs and required demolition and builders work, this option is not recommended for this project.

3. RECOMMENDATION

Following the assessment of options to provide ventilation to the apartments at 84 Wentworth Park Road, Sydney we recommend the installation of in-wall ventilators.

This option is low in capital and operational costs, has minimal associated construction works and the product is available within Australia. We believe that this meets the project requirements, DA conditions and will be a suitable solution.

We note that the in-wall ventilators must be powered from the same apartment that they are serving and investigation works will need to be conducted on the location of suitable power supplies and the availability of spare power.

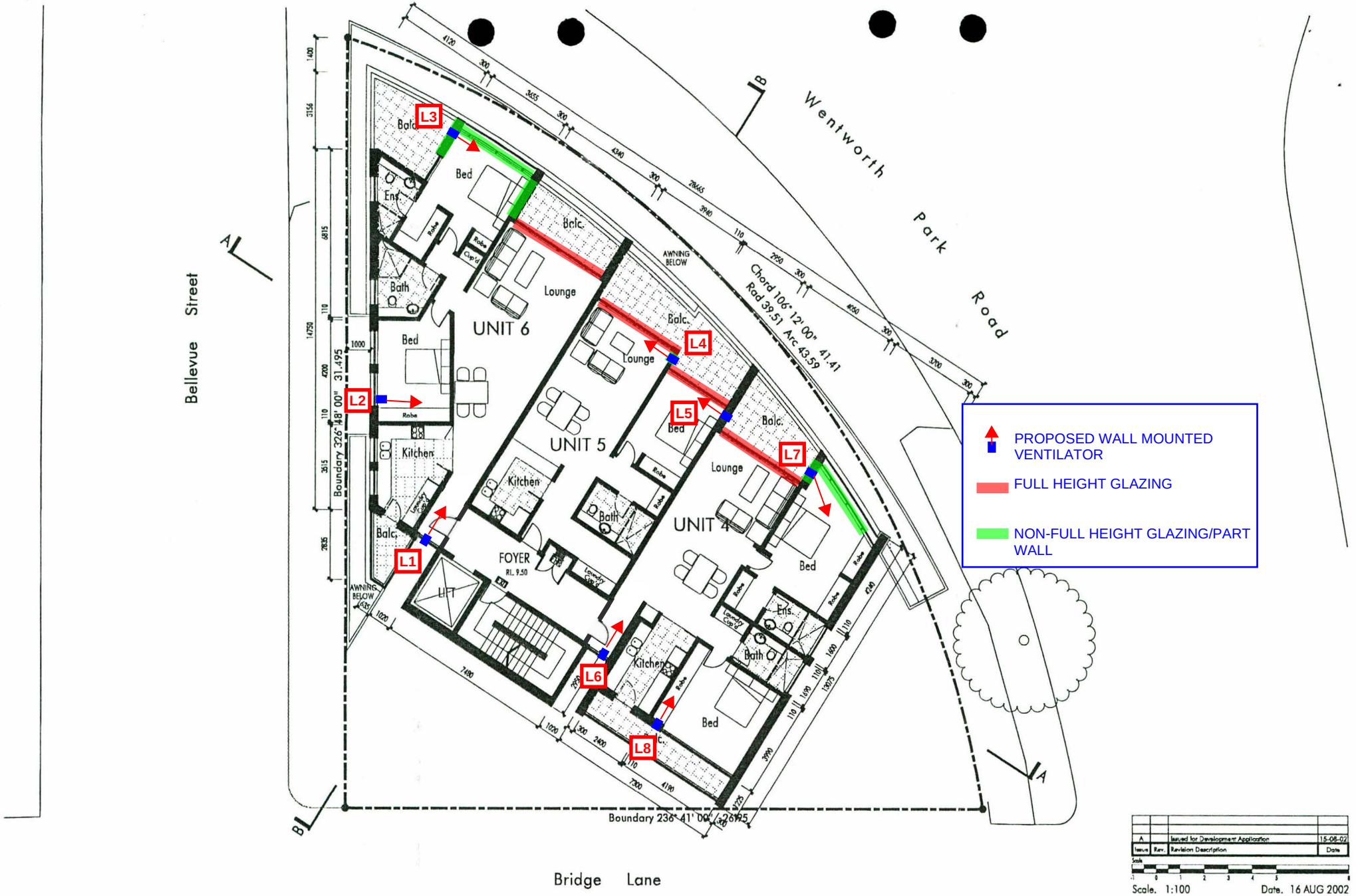
Appendix A provides an indication of suitable locations.

We note that there is no suitable location for an in-wall ventilator for the bedrooms in apartment 2 and 5 unless the air is supplied from the adjacent tenant's balcony (which would require an 80mm diameter hole for a ventilation pipe). We recommend that the body corporate confirm whether this is acceptable. If this is not possible and ventilation is required to these rooms then the replacement of a windowpane maybe required which would result in a larger cost and a planning application.

Appendix

Appendix A – Sketch of Approximate Proposed Locations

- *Note – Apartments 3 (first floor), 4 and 5 (second floor) were inspected. We assume that the apartments on subsequent floors match each other's layout.*



PROPOSED MIXED USE DEVELOPMENT

at No.84 WENTWORTH PARK ROAD GLEBE

for BERKELEY COMMERCIAL Co.

Issue	Rev.	Revision Description	Date
A		Issued for Development Application	15-08-02

Scale. 1:100 Date. 16 AUG 2002

PROPOSED SECOND FLOOR PLAN

DA 005/A Job No. 02102

LEVEL 10 No 53 WALKER STREET NORTH SYDNEY NSW 2060
TELEPHONE (02) 9929 8999 FACSIMILE (02) 9954 4535