

Project: Waterloo Over Station Development (Southern Precinct) **Project No:** 46198
To: Patrick Garland **Date:** 5 February 2020
From: Brandon Notaras

RE: Response to Submissions – City of Sydney – Items 29 - 33

The purpose of this technical memorandum is to respond to the City of Sydney comments on the SSD DA submission for SSD-10437 (Southern Precinct). Specifically, this memo responds to items 29 to 33 of the City of Sydney submission.

The responses have been tabulated on the next page for each corresponding item.

Yours sincerely

Stantec Australia Pty Ltd



Brandon Notaras
Associate – Acoustics, Noise & Vibration

Item No.	Description	WL Developer Response	Relevant Section & Page within Noise & Vibration Impact Assessment
29	<p>Objective 3B-1 of the ADG requires all habitable rooms to be naturally ventilated. Objective 4J-1 requires development in noisy or hostile environments to minimise the impact of external noise and pollution through the careful siting and layout of buildings. The applicant has identified apartments within the central and southern precincts as being noise affected and requiring acoustically attenuated natural (non-mechanical) ventilation systems to meet these objectives.</p>	<p>The building has been sited and layouts designed to minimize the impact of external noise and pollution to the most sensitive spaces such as bedrooms.</p> <p>The WL Developer has identified apartments within the southern precinct as being noise affected and requiring an alternative means of ventilation that meets the requirements of the <i>Building Code of Australia</i> (mechanical or natural). The <i>ISEPP 2007</i> and <i>DPIE Development Near Rail Corridors and Busy Roads – Interim Guideline</i> states “if internal noise levels with windows or doors open exceed the criteria by more than 10dBA, the design of the ventilation for these rooms should be such that occupants can leave the windows closed, if they so desire, and also to meet the ventilation requirements of the Building Code of Australia”. The WL Developer has integrated an alternative means of natural ventilation within the proposed development’s design in-line with the site’s sustainability targets, and to offer enhanced benefit and living to the occupants of the apartments.</p>	<p>Section 10.2.1 and Pages 64 & 65</p>
30	<p>City staff are concerned that the acoustic report has not sufficiently assessed the performance of the building to mitigate road noise, and the application has not adequately demonstrated compliance with Clause 102 of the State Environmental Planning Policy (Infrastructure) (ISEPP).</p>	<p>Road noise from Botany Road has been measured both before and during COVID-19. The monitor on Botany Rd was installed in a location similar to that of SLR’s monitoring location for the Concept SSD DA. Comparing the $L_{Aeq,15h}$ (day) and $L_{Aeq,9h}$ (night) noise data from both periods, the traffic noise emissions measured during COVID-19 are 1 dB(A) larger and 2 dB(A) smaller than that prior to, respectively. Given this conclusion, the higher of the two noise levels for each period was used to calibrate the road noise emissions model for Botany Rd. Extensive noise monitoring studies were conducted to carefully quantify the magnitude of noise emissions from Botany Rd.</p>	<p>Noise monitoring data – Sections 8.1 & 8.2, Pages 29 – 40</p> <p>Road noise emissions model – Section 10.2.1 and Page 64</p> <p>Road noise emissions results – Section 15.2</p> <p>Acoustic performance of building elements – Section 12.1 and Pages 93 & 94</p>

		<p>The noise emissions model used to calculate the incident noise levels on the façade of Building 2 was created within SoundPLAN, a model recognized by DPIE for use for projects of this scale and complexity. The modelling provided the incident noise levels on the façade for use when calculating the resultant internal noise level within the space, applying the transmission loss associated with the components making up the building envelope (glass, solid wall, etc.)</p> <p>The required acoustic performance of the two types of elements making up the building envelope has been provided to demonstrate compliance with Clause 102 of the ISEPP 2007, showing the development will comply with the noise criteria applied to bedrooms and anywhere else within the development, which is:</p> <ul style="list-style-type: none"> (a) in any bedroom in the residential accommodation—35 dB(A) at any time between 10 pm and 7 am, (b) anywhere else in the residential accommodation (other than a garage, kitchen, bathroom or hallway)—40 dB(A) at any time. <p>Compliance with the requirements of this clause has been stated, so long as the acoustic performances outlined in the report are implemented.</p>	
31	<p>The report focuses on the incorrect measure for assessing acoustic privacy with windows open, which under the Development Near Busy Roads & Rail Corridors - Interim Guideline is the criteria under Clause 102(3) + 10dB.</p>	<p>The measure for which acoustic privacy was assessed with windows open was using the criteria outlined within the Sydney DCP 2012, presented in Table 13 of the report. This is in-line with the requirements of the Waterloo Metro Quarter Design & Amenity Guidelines, which is the governing guideline for the assessment of traffic noise impacts on the residential spaces.</p>	Section 9.2.1 and Page 45
32	<p>Where windows are required to be closed and an alternative ventilation strategy proposed, the development must</p>	<p>If an occupant chooses to operate/open another natural ventilated opening within the façade to provide natural ventilation within the space (for example, through an</p>	Section 9.2.1 and Page 46

	<p>demonstrate that the criteria under Clause 102 (3) is met without the 10dB variance.</p>	<p>acoustically attenuated opening such as the acoustic ventilator), it is reasonable to assign a criteria similar to what a naturally ventilated opening would be required to achieve. That is, 102(3) + 10 dB(A).</p> <p>If the alternative means of ventilation integrated within this design was mechanical, then it is reasonable to assume the fan will supply air into the noise-affected space and also meet criteria under Clause 102 (3) without the 10dB(A) variance.</p> <p>It is not reasonable to force a direct natural ventilation opening in a façade (window or acoustic ventilator) to perform identically to a solid pane of glass, particularly the glass types and performances nominated facing Botany Road. The ventilation rates modelled through each apartment have been designed to meet the <i>Building Code of Australia</i>, together with the <i>City of Sydney's Draft Alternative natural ventilation of apartments in noisy environments – Performance Pathway Guideline</i>.</p> <p>The points above show how we have derived the criteria for the naturally ventilated opening being in the open position, and why it is reasonable to assume an opening/hole directly exposed in the façade should not perform similar to that of a solid façade element such as a solid wall or glass lite.</p>	
33	<p>Compliance with Clause 102(3) is a precondition to development consent. The acoustic report has not used the correct criteria to demonstrate compliance with this provision. The City notes that the following information is pertinent to demonstrating compliance with the standard and must be forthcoming in the Report</p> <ul style="list-style-type: none"> (a) The road traffic noise levels through noise monitoring, noting that traffic volumes may currently be depressed due to the pandemic. (b) The relevant materials and finishes of the building, both internal and external. 	<p>Road traffic noise level data has been provided within the report, both prior to COVID-19 and during the COVID-19 pandemic. Please see response to Item 30 for more information.</p> <p>Materials and finishes of the building have been provided for the building envelope, in order to demonstrate compliance with Clause 102(3) of the ISEPP 2007. This has been provided in the form of glazing type acoustic performance and solid façade type acoustic performance.</p>	<p>Road Traffic Noise Monitoring - Sections 8.1 & 8.2, Pages 29 – 40</p> <p>Materials & Finishes – Section 12.1 and Pages 93 & 94</p> <p>Windows/Doors - Section 10.2.3 and Page 65.</p>

	<p>(c) Whether the windows or doors can be open or are required to be closed.</p>	<p>Windows and doors shall have the ability to be operable where required for functionality and design, to meet the requirements of the ADG or BCA. The occupant will choose to open the window, door or acoustic ventilator to provide natural ventilation to the apartment. The report also outlines the spaces within apartments where the occupant should not have to rely on opening a window or door to provide natural ventilation to the apartment, and instead be provided with an alternative means of ventilation. These spaces have been noted as “noise-affected”, and have been identified for relevant apartments within the Southern precinct.</p>	
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