

Appendix H

Port noise standard

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H.1 Overview

The purpose of this Standard is to document in a single reference the following outcomes from applying the Port Noise Policy:

- current vessel target noise levels for each berth
- landside noise criteria for the port precinct and individual port users
- map showing berth, user and assessment locations

The criteria in this reference should be used when evaluating measured noise levels for compliance purposes, when reviewing overall port noise levels, when drafting access agreements with operators and to produce noise maps for future scenarios. Future noise maps are based on criteria as in most instances only historical and current noise levels will be known.

These vessel target noise levels and landside criteria have been established under the Port Noise Policy using the Vessel Noise Guideline and the Landside Precinct Noise Guideline. Also included are vessel noise level targets developed under the WBCT Noise Impact Mitigation Strategy so that this single reference contains all noise criteria. The WBCT Noise Impact Mitigation Strategy predates the Port Noise Policy but is broadly consistent with the policy.

The Vessel Target Noise Levels for each berth have been derived using the processes in the Vessel Noise Guideline. This process reviews the noise levels of vessels visiting the port and defines a target level which limits the noisiest vessels from using the port and overtime reduces port noise emissions. The target is set in accordance with this policy and Section 10 of the EPA's Noise Policy for Industry.

The port landside noise criteria were derived from the Landside Precinct Noise Guideline and include:

- **Cumulative Noise Limit.** This sets the ultimate overall noise level that could be produced by the port following successive development from all operators under the EPA's Noise Policy for Industry. Note that for a port with 24/7 operation it is typically the night time noise criteria that limits port operations.
- **Benchmark Noise Level.** This is the currently approved total noise limit from the port and is the sum of noise levels from all landside operations. All feasible and reasonable measures must be undertaken so that it does not exceed the Cumulative Noise Limit or increase, following a new operator or a port redevelopment, by more than permitted under the EPA's Noise Policy for Industry.
- **Maximum Permissible Noise Level.** Each operator is assigned an individual Maximum Permissible Noise Level. The sum of all operator's Maximum Permissible Noise Levels is equal to the Benchmark Noise Level.

For ease of reference this document contains a summary of all sensitive receivers with at-receiver noise mitigation. Receivers which have at-receiver treatment to mitigate noise from the port as a condition of their approval are accounted for separately to receivers that have had at-receiver noise mitigation installed by the port.

The Vessel Target Noise Levels and the landside Benchmark Noise Level have been set independently of noise treatments. The setting of vessel and landside noise criteria are based on what may be achieved on a feasible and reasonable basis at source. Any decision to consider further at-receiver treatments under the Port Noise Policy is based on the resulting noise levels and noise exposure from the port which includes noise from vessels and landside noise sources.

H.2 Berth, user and assessment locations

The figure below shows the location of berths and key receiver locations used for compliance purposes.

Figure 1: Location of berths and nearest receivers to each berth



Source: SixMaps

H.3 Vessel target noise levels

This table includes all berths that are in use at the port. Note that this table differs from the Port Noise Policy as it also includes the noise targets for cruise vessels using White Bay 4 and White Bay 5. These berths are not included in the Port Noise Policy as they are operated under the WBCT Noise Mitigation Strategy predates the Port Noise Policy. However, as the purpose of this Standard is to provide a single point of reference for all criteria at the port, they are included in this table.

The table also includes a Vessel Target Noise Level for White Bay 6. However this berth does not currently (as at 2020) receive any vessels covered by this policy and is assessed as a marina. Marinas in NSW are assessed under standard EPA industrial guidelines which reflects the class and small size of vessels that use marinas. The Vessel Target Noise Level is included for completeness should a future scenario occur where larger vessels once again use this berth.

White Bay 3 is not currently (as at 2020) utilised by vessels frequently and in a number of recent years the number of visits has been zero, so the numbers below do not feature in many noise maps.

Table 1: Vessel Target Noise Levels (external)

Noise target level applied to vessels at berth	Assessment Location	Day ($L_{Aeq, 15hr}$) (7am to 10pm)	Night ($L_{Aeq, 1hr}$) (10pm to 7am)	Night (L_{Amax}) (10pm to 7am)
Glebe Island 1 and 2	The highest noise level experienced at any sensitive receiver measured from each respective berth.	60 dBA	55 dBA	65dBA
Glebe Island 7 and 8		60 dBA	55 dBA	65dBA
White Bay 3		60 dBA	55 dBA	65dBA
White Bay 4 (non-cruise)		60 dBA	55 dBA	65dBA
White Bay 4 (cruise)		58 dBA	58 dBA	65dBA
White Bay 5		58 dBA	58 dBA	65dBA
White Bay 6		60 dBA	55 dBA	65dBA

H.4 Landside precinct criteria

The Cumulative Noise Limit sets the ultimate overall noise level for landside activities that could be produced by the port following successive development from all operators under the EPA's Noise Policy for Industry. Note the daytime noise criterion is higher than current activities or estimates in the future noise maps in Appendix I. For a port with 24/7 operation it is the night time noise criteria which generally constrains overall noise emission.

The Benchmark Noise Level is the sum of all Maximum Permissible Noise Levels. This currently (as at December 2020) exceeds the Cumulative Noise Limit, however the Maximum Permissible Noise Levels are currently set using existing noise limits for operators that predate the Port Noise Policy. In many instances the existing noise limits are higher than existing noise levels from landside activities which indicates there is opportunity to align them with lower noise limits. Under the Port Noise Policy existing noise limits will be reviewed to identify new Maximum Permissible Noise Levels with the goal of meeting the Cumulative Noise Limit.

Table 2: Landside precinct noise criteria

Category	Assessment Location	Day (L _{Aeq, 11hr}) (7am to 6pm)	Evening (L _{Aeq, 4hr}) (6pm to 10pm)	Night (L _{Aeq, 9hr}) (10pm to 7am)
Cumulative Noise Limit				
External environmental criteria applied to the Noise Management Precinct	All residential land near the port	65 dBA	55 dBA	50 dBA
Internal environmental criteria applied to the Noise Management Precinct	Other noise sensitive receivers	Please refer to the NSW EPA's Noise Policy for Industry, Table 2.2		
Benchmark Noise Level				
Cameron Cove, Balmain	All residential land near the port	62	58	53
Grafton St, Balmain		62	58	53
Donnelly St, Balmain		61	58	53
Buchanan St, Balmain		64	59	53
Jacksons Landing, Pyrmont		62	59	53
Oxley St, Glebe		62	56	53

H.5 Landside user and berth maximum permissible noise level

Maximum Permissible Noise Levels will be set during 2021 following a review of current noise limits and actual noise levels generated by the port following commencement of the Port Noise Policy. The outcome of this review will be Maximum Permissible Noise Levels that sum so that the Benchmark Noise Level from all operators is less than or equal to the Cumulative Noise Limit. The following tables in Section H. 5 will be completed following this review.

Table 3: Landside maximum permissible noise level per user and facility

Glebe Island 1 – Hanson’s Batching Plant (proposed development)						
Assessment Location - Jackson’s Landing						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}
Assessment Location – Balmain, Grafton St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}
Assessment Location – Balmain, Buchanan St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}
Assessment Location – Balmain, Donnelly St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}
Assessment Location – Glebe						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Glebe Island 2 – Multi-User Facility – Cumulative from all tenants						
Assessment Location - Jackson's Landing						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Balmain, Grafton St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Balmain, Buchanan St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Balmain, Donnelly St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Glebe						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax

Glebe Island 2 – Multi-user facility – Tenant 1						
Assessment Location - Jackson's Landing						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}
Assessment Location – Balmain, Grafton St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}
Assessment Location – Balmain, Buchanan St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}
Assessment Location – Balmain, Donnelly St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}
Assessment Location – Glebe						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Glebe Island 2 – Multi-user facility – Tenant 2						
Assessment Location - Jackson's Landing						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}
Assessment Location – Balmain, Grafton St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}
Assessment Location – Balmain, Buchanan St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}
Assessment Location – Balmain, Donnelly St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}
Assessment Location – Glebe						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Glebe Island 7

Assessment Location - Jackson's Landing

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Balmain, Grafton St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Balmain, Buchanan St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Balmain, Donnelly St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Glebe

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Glebe Island 7 – GRA

Assessment Location - Jackson's Landing

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Grafton St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Buchanan St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Donnelly St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Glebe

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Glebe Island 7 – Sugar Australia

Assessment Location - Jackson's Landing

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Grafton St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Buchanan St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Donnelly St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Glebe

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Glebe Island 8						
Assessment Location - Jackson's Landing						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Balmain, Grafton St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Balmain, Buchanan St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Balmain, Donnelly St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Glebe						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax

Glebe Island 8 – Cement Australia

Assessment Location - Jackson's Landing

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Grafton St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Buchanan St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Donnelly St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Glebe

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Glebe Island – User 1 without wharf frontage						
Assessment Location - Jackson's Landing						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Balmain, Grafton St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Balmain, Buchanan St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Balmain, Donnelly St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Glebe						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax

Glebe Island – User 2 without wharf frontage						
Assessment Location - Jackson's Landing						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Balmain, Grafton St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Balmain, Buchanan St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Balmain, Donnelly St						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax
Assessment Location – Glebe						
Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax

White Bay 3

Assessment Location - Jackson's Landing

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax

Assessment Location – Balmain, Grafton St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax

Assessment Location – Balmain, Buchanan St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax

Assessment Location – Balmain, Donnelly St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax

Assessment Location – Glebe

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
LAeq, 11hr	LAeq, 15min	LAeq, 4hr	LAeq, 15min	LAeq, 9hr	LAeq, 15min	LAmax

White Bay 3

Assessment Location - Jackson's Landing

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Balmain, Grafton St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Balmain, Buchanan St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Balmain, Donnelly St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Glebe

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

White Bay 4

Assessment Location - Jackson's Landing

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Grafton St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Buchanan St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Donnelly St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Glebe

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

White Bay 4 - Cruise

Assessment Location - Jackson's Landing

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Balmain, Grafton St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Balmain, Buchanan St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Balmain, Donnelly St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Glebe

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

White Bay 5 (White Bay Cruise Terminal)

Assessment Location - Jackson's Landing

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Grafton St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Buchanan St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Donnelly St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Glebe

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

White Bay 6

Assessment Location - Jackson's Landing

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Balmain, Grafton St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Balmain, Buchanan St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Balmain, Donnelly St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

Assessment Location – Glebe

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq} , 11hr	L _{Aeq} , 15min	L _{Aeq} , 4hr	L _{Aeq} , 15min	L _{Aeq} , 9hr	L _{Aeq} , 15min	L _{Amax}

White Bay 6 Bailey's Marina

Assessment Location - Jackson's Landing

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Grafton St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Buchanan St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Balmain, Donnelly St

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

Assessment Location – Glebe

Day (7am to 6pm), dBA		Evening (6pm to 10pm), dBA		Night (10pm to 7am), dBA		
L _{Aeq, 11hr}	L _{Aeq, 15min}	L _{Aeq, 4hr}	L _{Aeq, 15min}	L _{Aeq, 9hr}	L _{Aeq, 15min}	L _{Amax}

H.6 Sensitive receivers with noise mitigation

As outlined in Appendix A of the Port Noise Policy, Glebe Island and White Bay have been home to port activities since the 1900s. Appreciating the current and historical use of this area as critical port operations, a number of noise sensitive receivers have required noise mitigation to take into account the noise from port operations. This includes receivers which were required to have mitigation installed under their planning approval and receivers that were mitigated by the Port Authority following development at the port.

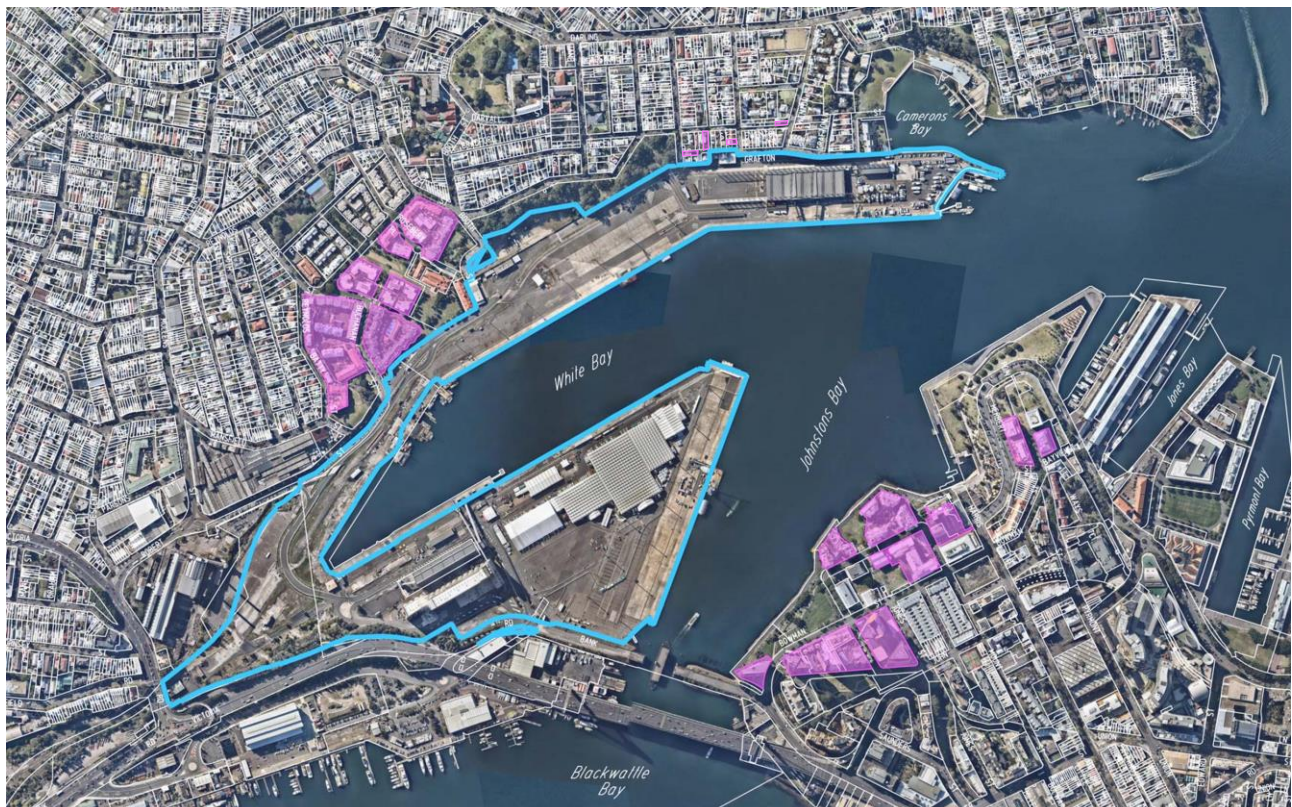
Under the Port Noise Policy all criteria for vessels and landside activities are set based on noise levels that may be achieved at source or with path controls using feasible and reasonable approaches defined in the EPA's Noise Policy for Industry. Noise treatments at receivers are only considered after other forms of noise mitigation are considered to be not feasible and reasonable and where overall port noise and exposure levels result in a significant noise impact at existing sensitive receivers.

Most receivers that have required noise treatment under their planning approval are residential apartment buildings which have encroached on the port and were constructed on land that was previously zoned as for industrial use. Examples include apartments at Jackson's Landing, Pymont and near Buchanan and Reynolds Street, Balmain. A few smaller residential buildings near Grafton Street, Balmain have also been required to include noise mitigation in their planning approval.

6.1 Residences with planning controls

The figure below shows, highlighted in magenta, buildings with planning controls requiring developers to manage noise intrusion from the port.

Figure 2: Locations with noise mitigation



Subsequent sections outline the receivers that have received noise mitigation in further detail.

6.1.1 Jacksons Landing noise attenuation measures

A review of noise treatments in Jacksons Landing was completed in 2012 and again in 2017 by Port Authority. This section summarises the results.

Figure 3: Jacksons Landing study area



6.1.1.1 Urban Development Plan for Ultimo-Pyrmont Precinct

The former Urban Development Plan (UDP) for Ultimo-Pyrmont Precinct (1995 update), prepared in accordance with Sydney Regional Environmental Plan No. 26 (SREP 26), was adopted by the Minister of Urban Affairs and Planning on 23 November 1995. The UDP applied to the Pyrmont area.

The UDP for Ultimo-Pyrmont Precinct was updated in 1999 and adopted by the Minister of Urban Affairs and Planning on 10 June 1999. The UDP included noise attenuation requirements for development near major noise sources such as the port facility and elevated arterial roads:

7.4 Development near major noise sources

Principle: To minimise adverse noise impacts adjoining or near such facilities as elevated arterial roadways, the light rail, the port facility and developments in construction phase, the nature of land use, the siting and form of development and the construction of developments requires careful attention.

Controls:

In relation to residential and other sensitive development in vulnerable locations an acoustic design report shall indicate the noise attenuation measures required to satisfy the following criteria:

(i) the L10 (20 minute) noise level in the unit with windows and external facade doors closed shall be less than 40dB(A);

(ii) the L10 (20 minute) noise level in the unit with windows and façade doors open, taking an aggregate opening or opening size not less than 5% of the floor area of the room (as required as the minimum standard for natural ventilation under clause F4.6 of the BCA) shall be less than 50dB(A).

The assessment shall be between the hours of 6 pm to 8 pm.

6.1.1.2 Jacksons Landing Master Plan

In May 1996 Lend Lease purchased the former CSR site at Pyrmont and revised the previous CSR Master Plan prepared under the SREP 26 for Jacksons Landing. Following public exhibition and assessment of the submissions, the Master Plan was adopted by the Minister for Urban Affairs and Planning in October 1997. The Master Plan was subsequently amended on a number of occasions. The Master Plan provides criteria for acoustically treated buildings. The Department of Urban Affairs and Planning's (DUAP) development application (DA) 76/97 (dated 23/4/1998) for development in Lend Lease (Pyrmont) site – Waterfront East (Regatta Wharf) refers to the Lend Lease Master Plan 1997 noise criteria as follows:

The Development shall address the noise impacts from traffic and operations of the port. Prior to lodgement of the Building Application a report shall be submitted to City West Planning indicating compliance with the noise attenuation measures required to satisfy the criteria indicated in the Lend Lease Master Plan 1997. This criteria being: (a) That the building will be acoustically treated, such that the mean logarithmic L_{Aeq} (1h) level will not exceed 35 dB(A) in sleeping areas at night time and 40 dB(A) in other internal areas (not including garages, kitchens, bathrooms and hallways) during day time (night time meaning between 10pm and 6am on the following day)

6.1.1.3 Conditions of Approval of Jacksons Landing Buildings fronting Glebe Island

A review of development approval documents for residential buildings in Jacksons Landing identified conditions which specify a minimum standard of noise attenuation. This is consistent with the Plans discussed above.

Conditions imposed on multi-unit developments in the Jacksons Landing area typically involved the following requirements (refer to Table C1) or similar:

1. Requirements to satisfy the recommendations of acoustic reports prepared by acoustic consultants and lodged and approved with the development applications. A review of some of the acoustic reports (Hyder Consulting 21 March 2005 (DA 073-03-05) and Hyder Consulting 10 November 2003 (DA 241-07-2004)) indicate that “a primary acoustic design issue with respect to planning approval is the objective that the completed building will provide an adequate level of residential amenity, particularly when evaluating sound isolation relating to shipping activity noise” and that “the proposed design criteria ...are – interior plant noise levels , 35 dB(A) measured as an L_{eq} – external environmental noise intrusion, 38 dB(A) also measured as an L_{eq} but reference back to the external noise levels given in Table 1’, with “Worst Case” survey noise data in Table 1 (caused by shipping noise) in the northern and north-west facades ranging from 63 – 64 at night. These noise reports indicate that the noise sources affecting the Distillery Hill Stage 3 and Stage 4 are shipping movements – in particular those at Glebe 1 and 2.
2. Building design and construction to address the noise impacts from traffic and operations of the port and compliance with the noise attenuation measures required to satisfy the criteria indicated in the Lend Lease Master Plan 1997, that building will be acoustically treated, such that the mean logarithmic L_{Aeq} (1 hour) level will not exceed 35 dB(A) in sleeping areas at night-time and 40 dB(A) in other internal areas (not including garages, kitchens, bathrooms and hallways) during day time (night-time meaning between 10pm and 6am on the following day).

The following table provides a list of DAs in Jacksons Landing with requirements for noise attenuation in buildings.

Table 4: Register of DAs in Jacksons Landing with noise attenuation in buildings

Suburb/ Local Government Area	Consent authority	Proposal description	DA No.	Original DA consent date	Condition No.	Condition
Pymont / Sydney City	DUAP	Distillery Hill Stage 1A - Erection of Residential tower building and terrace dwellings, removal of trees, commercial floor area for a cafe and strata management office, associated basement car parking areas and landscaping in accordance with the approved Master Plan provisions. Corner of Jones and Bowman Streets, Pymont, Jacksons Landing – Distillery Hill	126-05-2002	23/09/2002	10	The proposed development is required to comply with the Acoustic Report (Report No. Pr.u16901rf03.doc-Issue 3) prepared by RFA Acoustic Design Pty Ltd dated March, 2002. The internal acoustic levels and noise attenuation works are to be completed to achieve the levels as stated within the report.
Pymont / Sydney City	DUAP	Distillery Hill Stage 1B: Erection of residential tower building and terrace dwellings in accordance with the approved Master Plan provisions. Corner of Jones and Johns Streets, Pymont Jacksons Landing – Distillery Hill	230-07-2002	17/01/2003	8	The proposed development is required to comply with the Acoustic Report (Report No. Pr.u16901rf03.doc-Issue 3) prepared by RFA Acoustic Design Pty Ltd dated March, 2002. The internal acoustic levels and noise attenuation works are to be completed to achieve the levels as stated within the report.
Pymont / Sydney City	Sydney Harbour Foreshore Authority	Stage 2 Distillery Hill, Bowman Street, Jacksons Landing, including a 6 storey residential apartment building fronting Bowman St, containing a total of 24 apartments (Stage 2A) and the erection of a 19 storey residential apartment building fronting the	455-12-02	10/01/2004	9	Internal Residential Acoustic Amenity The proposed development is required to comply with the Acoustic Report (Report No. pr_u16903rf) prepared by Hyder Consulting dated 4 October 2002. The internal acoustic levels and noise attenuation works are to be completed to achieve the levels as stated within the report.

		planned extension of Refinery Drive containing a total of 114 apartments (Stage 2B)				
Pymont / Sydney City	Sydney Harbour Foreshore Authority	Stage 3 Distillery Hill. Erection of a 20 level residential tower consisting of 118 dwellings a 4 level low rise apartment block of 14 dwellings and car parking, landscaping and associated works.	241-07-2004	31/01/2005	B13	Internal Residential Acoustic Amenity The proposed development is required to comply with the Acoustic Report (Report No. pr_u19901rf01) prepared by Hyder Consulting dated 10 November 2003. The internal acoustic levels and noise attenuation works are to be completed to achieve the levels as stated within the report.
Pymont / Sydney City	Sydney Harbour Foreshore Authority	Stage 4 Distillery Hill - 2 Distillery Drive - Construction of 2 residential apartment buildings, including an 18 level residential tower and a four level low rise apartment building comprising a total of 101 apartments and 120 'basement' carparking spaces.	073-03-05	28/08/2006	B13	Internal Residential Acoustic Amenity The proposed development is required to comply with the Acoustic Report (Report No. pr_x05401rf01) prepared by Hyder Consulting dated 21 March 2005. The internal acoustic levels and noise attenuation works are to be completed to achieve the levels as stated within the report.
Pymont / Sydney City	DUAP	Waterfront East - Generally site WE2 as identified in the Lend Lease Pymont Site Master Plan: Residential development comprising 144 residential units in four buildings with associated landscaping, underground car parking and commercial space.	76/97	23/04/1998	18	The Development should address the noise impacts from traffic and operations of the port. Prior to lodgement of the Building Application a report should be submitted to City West Planning indicating compliance with the noise attenuation measures required to satisfy the criteria indicated in the Lend Lease Master Plan 1997. This criteria being: (a) That the building will be acoustically treated, such that the mean logarithmic L_{Aeq} (1 hour) level will not exceed 35 dB(A) in sleeping areas at night-time and 40 dB(A) in other internal areas (not including garages, kitchens, bathrooms and hallways) during day time (night-time meaning between 10pm and 6am on the following day).

Pyrmont / Sydney City	DUAP	Stage 1 - Redevelopment / adaptive reuse of Boiler House and environs at the above site. Redevelopment involving: provision of 44 residential units, approx. 500sqm of ground floor business floorspace; 2 levels of underground parking for 120 vehicles; part demolition of adjoining Engineer's Store and workshop; landscaped courtyard; service entrance through Engineer's Store. Stage 2 - Adaptive reuse of adjoining Rum Store building for 13 residential units. Land generally bounded by John St, Harris St and Johnston's Bay	70/97	22/02/1998	34	The Development should address the noise impacts from traffic and operations of the port. Prior to lodgement of the Building Application a report should be submitted to City West Planning indicating compliance with the noise attenuation measures required to satisfy the criteria indicated in the Lend Lease Master Plan 1997. This criteria being: (i) That the building will be acoustically treated, such that the mean logarithmic L _{Aeq} (1 hour) level will not exceed 35 dB(A) in sleeping areas at night-time and 40 dB(A) in other internal areas (not including garages, kitchens, bathrooms and hallways) during day time (night-time meaning between 10pm and 6am on the following day).
Pyrmont / Sydney City	Sydney Harbour Foreshore Authority	Stage 5. Erection of 13 storey residential apartments consisting of 50 dwellings and provision of associated car parking, landscaping, private recreation facilities and associated bulk earthworks.	240-05-03	10/01/2004	Condition No. 11 (as modified by MOD 240-05-03(2) dated 24/3/06	The building will be acoustically treated, such that the mean logarithmic L _{Aeq} (1 hour) level will not exceed 35 dB(A) in sleeping areas at night and 40 dB(A) in other internal areas (not including garages, kitchens, bathrooms, and hallways during the day time (night-time meaning between 10pm and 6pm the following day). (a) The requirements above should apply to all habitable rooms and should be met by provision of natural ventilation. If the requirement cannot be met then a special acoustic design and an energy efficiency mechanical system may be considered. (b) All residential building and serviced apartments are to be designed and constructed in accordance with the above criteria. The

						completed work must comply with the above conditions prior to issuing an Occupation Certificate.
Pyrmont / Sydney City	Sydney City Council	Construction of a residential flat building to accommodate 43 residential units, a community room and basement car parking for 57 vehicles. Additional works include the extension of Distillery Hill Park with urban bushland to the western escarpment, creation of pedestrian circulation routes, an interpretive garden and 12 space car park off Distillery Drive.	D/2008/21 35/A	23/11/2009	6	The Principal Certifying Authority should ensure that a statement from an accredited acoustic consultant certifying that the acoustic mitigation measures identified in the Acoustic Report prepared by Renzo Tonin and Associates dated 6 August 2009 (Report No. TE198-01F02, Rev. 3) are suitably incorporated into the development and the noise criteria in the subject report have been met prior to the issue of an occupation certificate.
Pyrmont / Sydney City	DUAP	Residential development comprising 78 apartments in 2 buildings with associated landscaping and carparking.	93-03-00	Unknown	28	The development should address the noise impacts from traffic and operations of the port, particularly its night-time activity. Prior to lodgement of the application for Construction Certificate under the Environmental Planning and Assessment Act 1979, a report should be submitted to the Director-General indicating compliance with the noise attenuation measures required to satisfy the following criteria: That the building will be acoustically treated such that the mean logarithmic L_{Aeq} (1 hour) level will not exceed 35 dB(A) in sleeping areas at night-time (meaning between 10pm and 6am) and 40 dB(A) in other internal areas (not including garages, kitchens, bathrooms and hallways) during day time.
Pyrmont / Sydney City	DUAP	Residential development comprising 48 units with associated facilities and parking for	48/97	23/10/1997	2(a)	The design of the buildings should incorporate the applicable recommendations of the: - Acoustic Report at Appendix H to the DA and titled "Acoustic Assessment, Residential

		87 cars. Point and Herbert Streets, Pyrmont				Apartments at Site D - Point Street, Pyrmont" prepared by Wilkinson Murray Pty Limited and dated September 1996 and revised advice dated 3 June 1997.
Pyrmont / Sydney City	DUAP	4 residential buildings (Buildings known as B1, B2/B3, E & F) with associated car parking and recreational facilities: public car park under Giba Park (Building known as B4); and completion of Giba Park and Mill Street.	325-09-00	18/12/2000	28	Acoustic treatment of the buildings, as outlined in the Acoustic Assessment Report lodged at Appendix 5 of the Statement of Environmental Effects should generally be implemented and maintained.
					29	The residential buildings should be acoustically treated, such that the mean logarithmic L _{Aeq} (1 hour) level will not exceed 35 dB(A) in sleeping areas at night-time and 40 dB(A) in other internal areas (not including garages, kitchens, bathrooms and hallways) during day time (night-time meaning between 10pm and 6am on the following day).
Pyrmont / Sydney City	DUAP	Stage 1- Fleetview residential development comprising 150 dwelling units with associated landscaping and car parking. Stage 2 - Adaptive re-use of Tablet House as a residential building.	40-09-98	13/02/1999	41	The design of the building should incorporate the applicable recommendations of the: (a) Acoustic Assessment at Appendix 4 to the DA and titled <i>Fleetview - Development Application Acoustics</i> prepared by Richard Heggie Associates Pty Limited and dated 28 September 1998. In particular the development should address the noise impacts from traffic and operations of the port by complying with the noise attenuation measures required to satisfy the criteria listed in the Lend lease Master Plan 1997.

6.1.2 Balmain Noise Attenuation Measures

6.1.2.1 Planning controls applied to residences fronting Glebe Island and White Bay

A review of noise treatments in Balmain was completed in 2012 (*James Rose Consulting*). This section summarises that review.

Figure 4: Balmain study area



Some single residential dwellings in Balmain have noise requirements. The typical requirements or similar are:

- Consideration to be given to the ability of construction materials to insulate from noise.
- Internal noise levels in the dwelling not to exceed the maximum recommended noise levels set out in AS2107-200: Acoustics – Recommended Design Sound Levels and Reverberation Times for Building Interiors, based on the future predicted levels of the White Bay port.
- Applicant to review the NSW Industrial Noise Policy (EPA, 2000) and the assessment of future noise provided in the Glebe Island / White Bay Development Control Plan with respect to guidance on appropriate building design in order to mitigate noise impacts associated with the nearby port facilities.

Conditions imposed on multi-unit developments in Balmain typically involve the following requirements or similar:

Requirements to satisfy the recommendations of acoustic reports prepared by acoustic consultants and lodged and approved with the development applications.

- Buildings to be designed and constructed to achieve a mean logarithmic $L_{eq}(1 \text{ hour})$ level of 30dB(A) for sleeping areas at night time and 40dB(A) for other internal living areas, excepting garages, kitchens, bathrooms and hallways.

Table 5: Register of DAs in Balmain with noise attenuation in buildings

Address	Proposal Description	Condition (summarised)
10 Vincent St, Balmain	Alterations and additions to existing dwelling including ground and first floor addition, carport, removal of trees and new front fence to Vincent and lane. Additional windows to kitchen and orientation of windows in Master Bedroom toward the south east. New concealed high level window in roof.	Development must be acoustically designed and constructed to meet relevant provisions of Australian Standard AS 2107:2000.
31 Adolphus St, Balmain	Alterations and additions to existing ground floor and first floor addition plus replace doors at front elevation and privacy screens.	Applicant to review NSW Industrial Noise Policy (EPA, 2000) and assessment of future noise provided in the Glebe Island / White Bay Development Control Plan with respect to guidance on appropriate building design to mitigate noise impacts associated with nearby port facilities.
7 Ewenton St, Balmain	Section 96 application to modify D/2004/353 which approved alterations and additions to existing semidetached dwelling, including garage and swimming pool. Modification seeks to stage the development consent.	Recommended that internal blinds be installed on affected windows and double glazing used and that construction techniques effectively seal air gaps around doors and windows. Consideration be given to ability of construction materials to insulate from noise. Internal noise levels in the dwelling should not exceed the maximum recommended noise levels set out in AS2107-2000.
38 Stephen Street, Balmain	Alterations and additions to an existing dwelling.	Recommended that construction methods to reduce the potential impact of port activities be investigated and if deemed appropriate, implemented.
1 Buchanan Street, Balmain	Erection of 82 dwellings comprising 8x1 bedroom, 54x2 bedroom and 17x3 bedroom and 3x3 bedroom with loft studio with 100 parking spaces provided in a basement carpark. (Unilever site)	Dwellings to be designed and constructed to achieve a mean logarithmic (1 hour) level of 30dB(A) for sleeping areas at night time and 40dB(A) for other internal living areas, excepting garages, kitchens, bathrooms and hallways during the daytime.

Address	Proposal Description	Condition (summarised)
1 Buchanan Street, Balmain	Modify the building approval No. BA.98/643 issued on 21 April 1999	Requirements outlined in report compiled by Acoustic Logic Consultancy dated 3 November 1997 shall be incorporated in construction. Certificate to be submitted certifying that the effected units achieve the criteria outlined in condition 33 of Development consent 566/97.
2-18, 20, 22, Buchanan Street, Balmain 85 Reynolds Street, Balmain 2-28, 30 Reynolds Avenue, Rozelle	Construction of 138 residential and 30 commercial units with 222 carparking spaces comprising 176 private spaces located in basements and garages, and 46 on street spaces designated for commercial and residential visitors at Batty, Robert and Buchanan Streets, Balmain (former Ampol site - Land bound by Batty, Roberts and Buchanan Streets)	Dwellings to be designed and constructed to achieve a mean logarithmic (1 hour) level of 30dB(A) for sleeping areas at night time and 40dB(A) for other internal living areas, excepting garages, kitchens, bathrooms and hallways during the daytime.
1 & 2 Roseberry Place, Balmain 77-85 Palmer St, Balmain	Erection of 106 dwellings comprising 6x1 bedroom, 8x2 bedroom and 14x3 bedroom and 4x3 townhouses and 140 parking spaces located in a basement carpark. (Precincts 9, 10 & 11 Vanadi site)	Dwellings to be designed and constructed to achieve a mean logarithmic (1 hour) level of 30dB(A) for sleeping areas at night time and 40dB(A) for other internal living areas, excepting garages, kitchens, bathrooms and hallways.

6.2 Treatments installed by Port Authority

6.2.1 White Bay Cruise Terminal Noise Mitigation Strategy

The Port Authority's White Bay Cruise Terminal Noise Mitigation Strategy commenced in 2018. This Strategy was developed to provide feasible and reasonable noise mitigation for cruise ship noise in accordance with the planning conditions.

Under the Noise Mitigation Strategy, a number of receivers have been offered at-receiver noise treatment to reduce noise from cruise vessels using berths White Bay 4 and 5. To qualify for an offer of treatment noise levels from vessels must exceed 55dBA at night. Receivers that have been offered noise treatment are indicated below in Figure 5.

Figure 5: Residences where noise treatment has been offered by the Port Authority

