

Hyde Park: Noise and Vibration Assessment

1. Proposal details

1.1 Proposed scope of works

The City of Sydney propose:

- Removal of existing lighting and electrical fixtures
- Installation of new light poles and footings
- Installation of new inground services (cables/conduits)
- Installation of new pits
- Installation of new electrical switchboards, distribution boards and bollards
- Installation of new pavements
- Installation of new soft landscaping.

1.2 Duration of works

Subject to approval, construction is anticipated to commence in mid 2024 and take about 18 months. Additional shifts may be required depending on utilities relocation requirements and wet weather conditions.

1.3 Proposed activities and/or equipment. Identify the noisiest activity/plant

Proposed construction equipment would include, but not limited to:

- Trucks with loading of 8 ton per axel
- Vacuum/sucker truck
- Ditch witch trenching machines – various sizes
- Borers
- Bogies to import soil
- Table tops with cranes – various sizes
- Semi-trailers
- Concrete saw
- Jackhammer
- Hand tools.

The noise assessment will be based on distance based (noisiest plant). *Concrete saw* was selected as a representative noise source.

1.4 Proposed schedule, including out of hours works

Standard construction work hours are as follows:

- Monday to Friday: 7.30am – 6pm
- Saturday: 8am – 1pm
- Sunday, Public Holidays: No work.

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2. Noise estimator input data

2.1 Identify the noise sensitive receivers and the distance to the nearest receivers

The Proposal is located within the City Local Government Area (LGA), within the inner-city suburb of Sydney. The surrounding area are high density residential areas, commercial and retail precincts, and high trafficked roads. The closest sensitive receiver are approximately 20 metres from the proposal site.

2.2 Identify the noise area category (ie R0 – R4). Give reasoning

The noise area category **R5** has been selected as the representative noise area category. The Proposal is located in the Sydney CBD, which is predominantly commercial areas, densely concentrated skyscrapers, and highly trafficked road networks. The nearest traffic counts station located on Bayswater Road indicates 66, 258 AADT.

2.3 Indicate type of noise assessment selected (ie ‘distance based (noisiest plant)’ or ‘distance based (scenario)’). Give reasoning

The ‘distance based (noisiest plant)’ assessment was selected as the construction activity. This noise source would be the noisiest activity and so would present the worst case scenario for noise impacts. A concrete saw was used for this noise assessment as it would be the highest noise generating plant.

2.4 Identify the background noise levels (RBL or L_{A90}) and the noise management levels (NML or $L_{Aeq(15\text{minute})}$)

The table below provides the background noise levels (also referred to as Rating Background Level (RBL)) and noise management levels.

Noise Area Category		R5
RBL or L_{A90}¹ Background level (dB(A))	Day	60
	Evening	55
	Night	50
$L_{Aeq(15\text{minute})}$ Noise Management Level² (dB(A))	Day	70
	Day (OOHW)	65
	Evening	60
	Night	55

Notes: ¹ L_{A90} = Background noise level

² Noise Management Level for works during standard hours = Background level plus 10dB(A)

Noise Management Level (NML) for out of hours works = Background level plus 5dB(A).

2.5 Determine if receivers are in line of sight or behind barrier (noise wall or row of buildings)

During construction, use of equipment including jack hammers, concrete saw and borers would cause construction noise and affect nearby residences. The first row of sensitive receivers is located in line of sight of construction activity. The distance to the nearest sensitive receiver is about 20m. It should be noted that trees are not considered as a noise barrier. For second row of building and all the rows beyond ‘behind the rows of buildings was selected. The outcome of the assessment is recorded in section 3 below.

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3. Noise estimator output data

3.1 Predicted noise levels

The noise estimator tool produced predicted noise levels at different locations for various receivers. To assist with the assessment common residential receivers were grouped into noise catchment areas (NCA) for construction noise assessment. NCAs are the areas that are affected by the same works and located at similar distances from the noise generating activity. For each of the NCA affected distances (or the distances up to which noise levels are expected to exceed the Noise Management Level) are recorded in the table below together with the predicted noise levels.

The results of the construction noise assessment are summarised below.

Catchment distances	NML, dB(A)	Predicted noise levels, dB(A)	Recommended additional mitigation measures
Day			
NCA1 (35m) – in line of sight	60	75	N, PC, RO

[PLACEHOLDER FOR FIGURE].

4. Review of additional mitigation measures

4.1 Review of additional mitigation measures to determine which are feasible and reasonable to apply

- Letterbox drop (**N = notification**) has been recommended for receivers within 35m radius.
- **Phone calls (PC)** detailing relevant information made to identified/affected stakeholders within 35m are not considered practical due to high density of receivers which includes apartment buildings.
- **Respite offer (RO)** should be considered where there are high noise and vibration generating activities near receivers. RO proposes that works should be carried out in continuous blocks that do not exceed 3 hours each, with a minimum respite period of one hour between each block. The purpose of such offer is to provide residents with respite from an ongoing impact.

4.2 Additional mitigation measures that are feasible and reasonable to apply

Based on the review of additional mitigation measures in section 4.1 of this assessment the following additional safeguards are considered feasible and reasonable to implement to the proposal in addition to standard mitigation measures:

1. Letterbox drop (**N = notification**) for receivers within 55m radius. Notifications should be detailing work activities, dates and hours, impacts and mitigation measures and contact telephone number. Notification will be sent a minimum of 7 calendar days prior to the start of works.
2. **Respite offer (RO)** should be considered where there are high noise and vibration generating activities near receivers. RO proposes that works should be carried out in continuous blocks that do not exceed 3 hours each, with a minimum respite period of one hour between each block. The purpose of such offer is to provide residents with respite from an ongoing impact.