

The NSW Environment Protection Authority (EPA) regulates noise from licensed industrial premises to ensure that noise from industry doesn't impact surrounding residents and businesses.

Opal Paper & Recycling's Botany Mill operates under an Environment Protection Licence issued by the NSW EPA. The licence provides limits on noise levels from our Botany Mill site as listed in the table:

| Location | Day $L_{Aeq,15min}, dB(A)^*$ | Evening $L_{Aeq,15min}, dB(A)$ | Night $L_{Aeq,15min}, dB(A)$ | Night $L_{Amax}, dB(A)^-$ |
|---|---------------------------------|-----------------------------------|---------------------------------|------------------------------|
| Corner of McCauley Street and Australia Avenue (R1) | 46 | 45 | 43 | 55 |
| Australia Avenue (R2) | 45 | 45 | 43 | 55 |
| Murrabin Avenue (R3) | 46 | 45 | 43 | 55 |
| Partanna Avenue (R4) | 42 | 41 | 41 | 55 |
| Corner of Partanna Avenue and Moorina Avenue (R5) | 42 | 42 | 39 | 55 |
| Moorina Avenue (R6) | 43 | 43 | 39 | 55 |

* L_{Aeq} is the equivalent A-weighted sound level. It is the sound level that would be produced by constant noise with the same amount of energy as the varying noise during the same period of time

- L_{Amax} is the maximum sound level produced during the time period



Noise monitoring at these locations is performed quarterly, with reports available on the Opal website:

<https://opalanz.com/sustainability/sustainability-performance/>



Understanding noise levels

The following diagram¹ (right) provides the typical sound levels associated with commonly heard sounds.

85dB

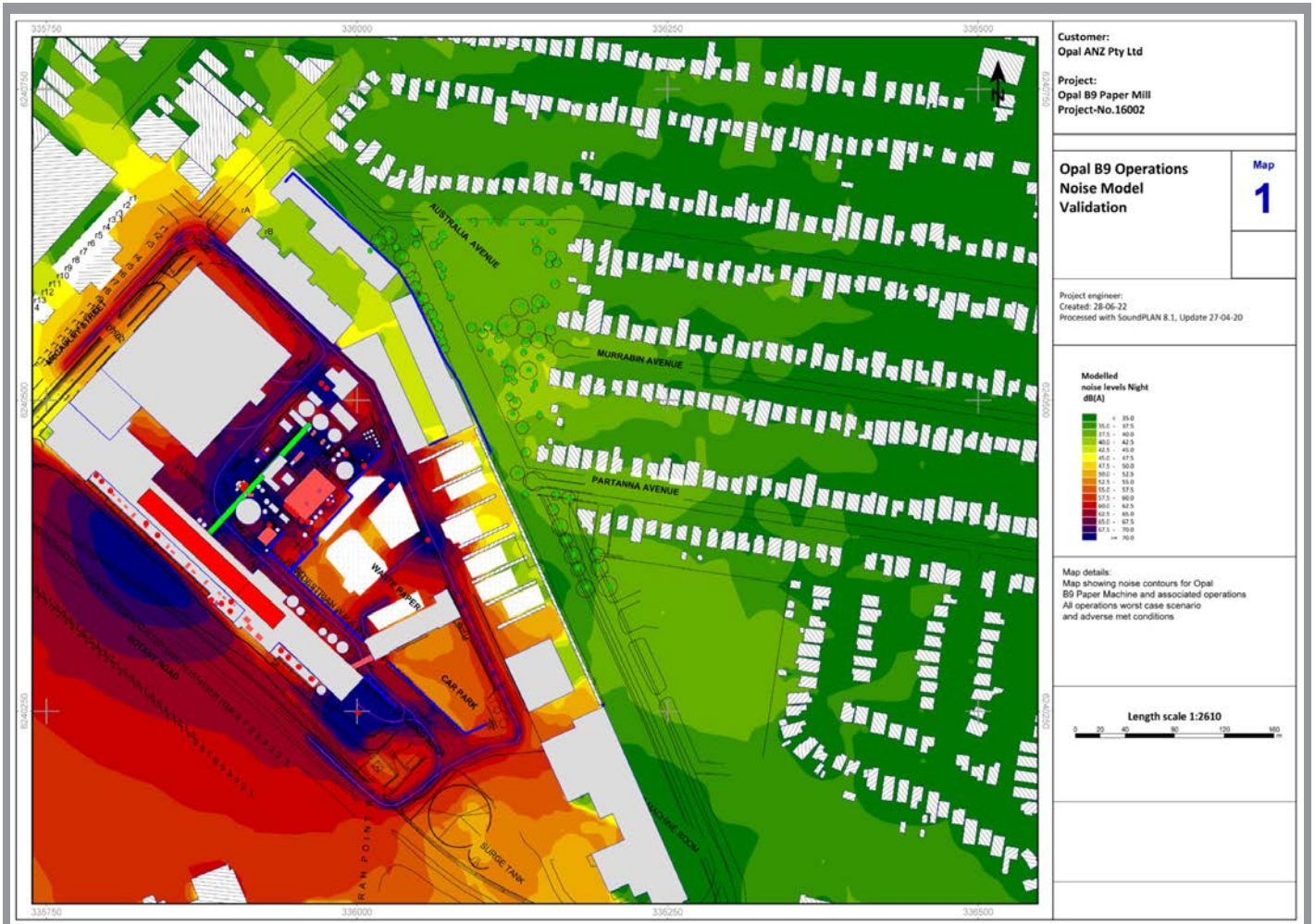
Prolonged exposure to any noise at or above this level can cause hearing loss

110dB

110dB Regular exposure of more than 1 minute risks permanent hearing loss

1. <http://hearingsense.com.au/causes-of-hearing-loss/>

| | | |
|------------------------------|------------------|---|
| Eardrum Perforation Possible | 160 | Pistol shot |
| | 150 | Fireworks display |
| Painful Acoustic Trauma | 140 | Shotgun blast |
| Painfully Loud | 130 | Jet engine 25m away, motor racing |
| | 120 | Rock concert, thunder |
| Extremely Loud | 110 | Car horn, snowblower, Pneumatic Hammer |
| | 100 | Blow dryer, subway, helicopter, chainsaw |
| PROTECT YOUR EARS | 90 | Motorcycle, lawn mower, convertible ride on highway |
| Very Loud | 80 | Factory, noisy restaurant, vacuum, screaming child |
| Loud | 70 | Car, alarm clock, city traffic |
| Botany Mill Range | 60 | Conversation, dishwasher |
| | 50 | Moderate rainfall |
| | 40 | Refrigerator |
| | 30 | Whisper, library |
| | 20 | Watch ticking |
| | dB levels | |



Predicted noise levels at the Botany Mill

The Botany Mill has modelled the noise levels from the site operations as shown in the diagram above in order to ensure the site is below the noise levels set out by EPA NSW. The modelling demonstrates that noise from the site is below the licenced Noise Level limits.

Opal Paper & Recycling - Botany Mill

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