



**ENFIELD**  
**ACOUSTICS**  
**NOISE**  
**VIBRATION**

# 1508 CENTRE ROAD, CLAYTON SOUTH

## Acoustic Report

Prepared For

**GOODMAN PROPERTY SERVICES PTY LTD C/- UPCO**

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PLAN**

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**DOC. REF: V1795-01-P ACOUSTIC REPORT (R0)  
7 MARCH 2024**

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Project 1508 Centre Road, Clayton South  
Subject Acoustic Report  
Client Goodman Property Services Pty Ltd c/- UpCo  
Document Reference V1795-01-P Acoustic Report (r0).docx  
Date of Issue 7 March 2024

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## 1 Introduction & Scope

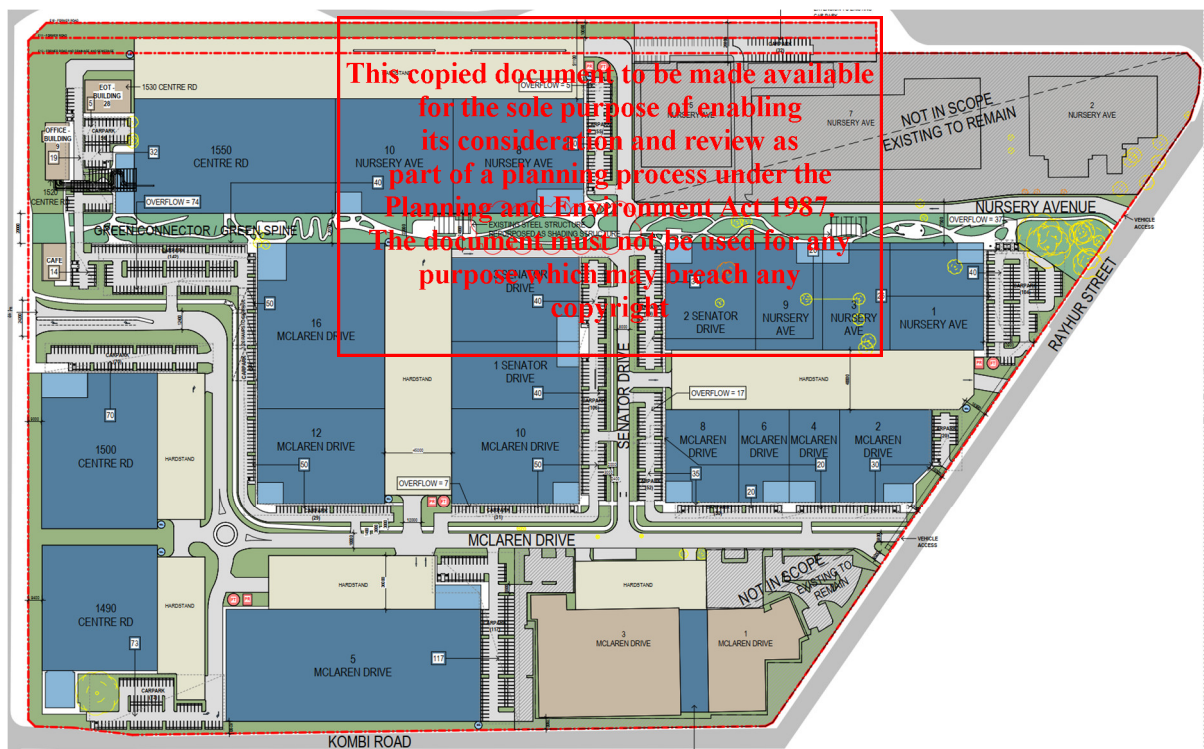
Enfield Acoustics has engaged by Goodman Services Pty Ltd (Applicant) c/- UpCo to assess potential noise impacts relating to the proposed redevelopment of the Clayton Business Park at 1508 Centre Road, Clayton South (Subject Land).

This acoustic report is prepared in reference to Department of Transport and Planning (DTP) RFI dated 13 December 2023, as follows:

8. An acoustic report prepared by a suitably qualified acoustic engineer to address potential noise attenuation issues, noting that a noise attenuation wall is proposed on the western side of the green spine.

We have been instructed that the acoustic wall referenced in the RFI above was an incorrect annotation on the previous plans, which has now been corrected.

A site plan of the proposal is presented below:



The broader redevelopment on the Subject Land is separated into five stages, however our assessment will consider the noise impacts from the completed redevelopment to assess worst-case noise impacts.

This assessment is also intended as accompanying information for the relevant tenants to understand their obligations to comply with statutory noise requirements, noting that prior to tenancy, we anticipate typical warehouse use (i.e. forklifts, truck deliveries). Our office has not assessed the specific use, including any mechanical plant, machinery or noisy activities that may occur from the Subject Land given noise emission data is unknown at this time.

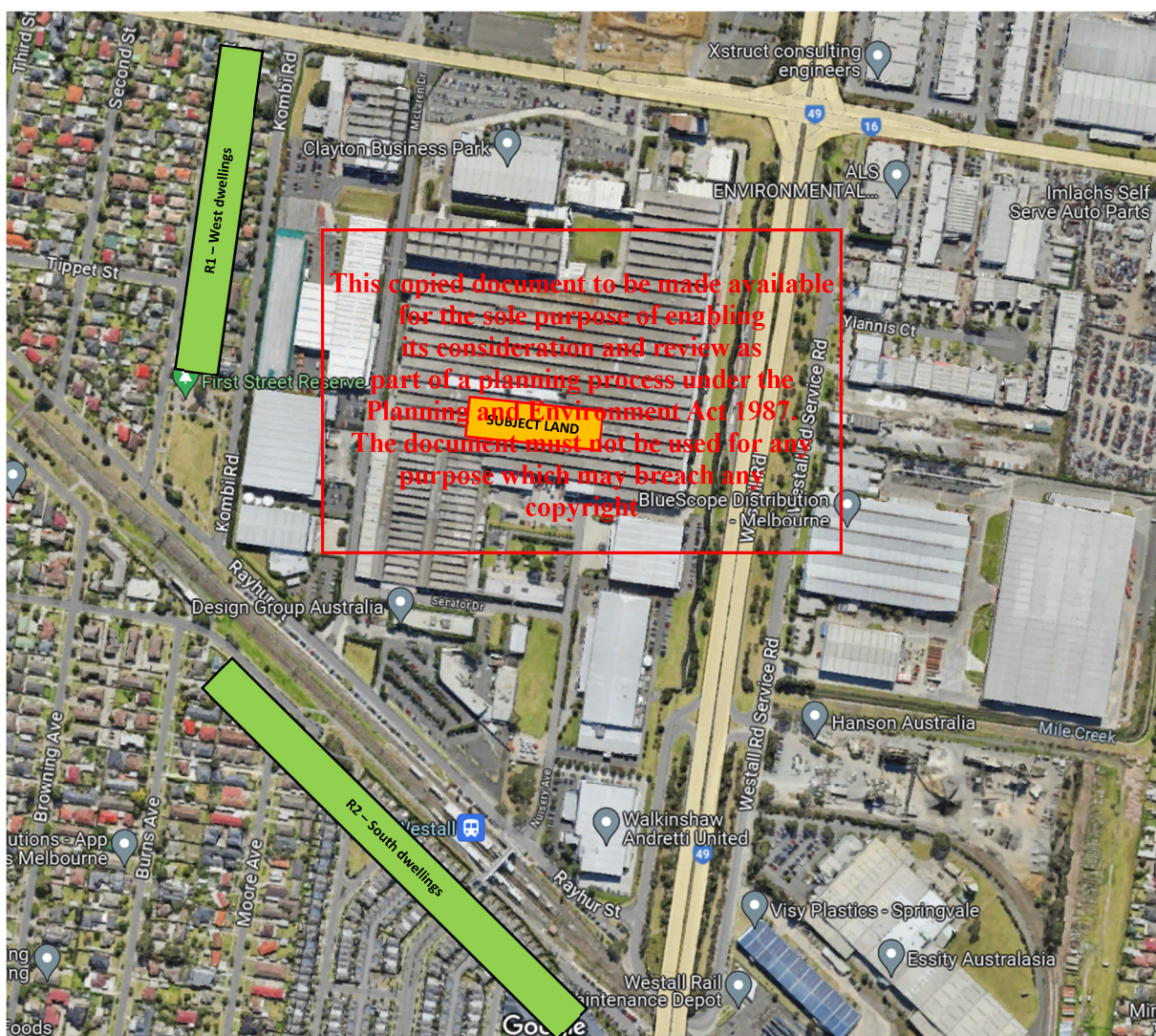
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Our assessment has been conducted with reference to Plans prepared by Group GSA dated 2 February 2023.

## 2 Site Context

Based on information collected through aerial imagery (Google Maps, Nearmap), we have identified the following noise sensitive areas relevant to the Application:



Given that the sensitive uses identified above are the closest to the Subject Land, it is intrinsic that compliance at these locations would also result in compliance at all other possible sensitive uses proximate to the Subject Land.

It is noted that sensitive uses to the north and east are setback >500m from the Subject Land, noting that any noise impacts from the redevelopment are unlikely to be material at such distances.

## 3 Policy Requirements

### 3.1 Noise Protocol – Part I

Noise from any Commercial, Industrial or Trade (CIT) premises must comply with the *Environment Protection Regulations 2021* and *Publication 1826: Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment Venues* (Noise Protocol – Part I).

In particular, the Noise Protocol – Part I applies to the following noise sources on the Subject Land:

- Deliveries and waste collection, including commercial vehicles
- All mechanical plant items
- Noise from any commercial activities occurring within specific tenancies

Note that noise from passenger vehicles is not considered as a scheduled noise source under the Noise Protocol, and is therefore not part of a planning assessment.

Zoning levels at identified sensitive uses have been calculated in accordance with the methodologies under the Noise Protocol, as follows:

#### Receiver R1 & R2

Zoning levels and noise limits at surrounding sensitive uses have been calculated in accordance with the methodologies under the Noise Protocol, as follows:

Period	Zoning Level	Background noise level measured	Estimated Noise Limit
<b>'Day' Period</b> 7am to 6pm (Monday to Saturday)	57 dB(A)	Assumed Neutral	57 dB(A)
<b>'Evening' Period</b> 6pm to 10pm (Monday to Saturday) 7am to 10pm (Sundays)	51 dB(A)		51 dB(A)
<b>'Night' Period</b> 10pm to 7am (All days)	46 dB(A)		46 dB(A)

The above noise limits are considered as an estimate only for a sensitivity analysis, however in our experience, background noise environments within developed areas are likely classified as 'neutral' or 'high' and unlikely to be classified as 'low'. This means that the above noise limits are considered reasonable and suitable for a sensitivity analysis.

The Noise Protocol considers 30-minute average energy noise emissions, meaning that the relevant assessment metric being considered is  $L_{Aeq-30min}$ , dB(A).

## 4 Assessment

### 4.1 Loading and Deliveries

To assess noise emissions from loading and deliveries, we have assumed the following Sound Power Levels (SWL):

Noise Source	Assumptions	Sound Power Level
Semi-trailer delivery trucks	Occurring on proposed roads and hardstand areas	103 dB(A) $L_{max-passby}$
Loading activity noise including forklift use	Occurring at all hardstand areas and warehouses, including existing loading areas to be retained.	90 dB(A) $L_{eq-30min}$ <i>per warehouse</i>
Notes:	SWL's derived from benchmark noise emissions conducted at other similar CIT premises, business parks and carparks.	

Overall, we consider the assumptions above to be conservative as loading and delivery noise emissions from all warehouses are assumed to occur within the same 30-minute period. In effect, the noise model conservatively considers cumulative noise impacts from multiple tenancy operations that are unlikely to occur at the same time in practice, especially during the 'Night' period where loading activities will be infrequent or occurring at all.

Further, we have also assumed that all deliveries are occurring externally with a forklift, which is also a conservative assumption based on observations from other business parks.

Based on the assumptions above, 3D noise computational model has been generated using the software package CadnaA. The model considers acoustic propagation factors including attenuation from screening and buildings. The propagation distances here are too short that weather effects do not require consideration.

The 'worst-case' noise levels modelled at identified sensitive uses are modelled as follows:

Location	Effective Noise Level $L_{Aeq}$	Noise Protocol Noise Limit	Exceedance/comply?
R1	41 dB(A) ^	57 dB(A) 'Day' 51 dB(A) 'Evening' 46 dB(A) 'Night'	✓ At all times
R2	43 dB(A) ^		✓ At all times
Notes:	^Includes +2dB(A) tonality adjustment from forklift and truck reverse alarms		

A map of the noise model is presented in Appendix A.

The results of our noise modelling indicate that deliveries, loading and waste collection are expected to comply with the Noise Protocol by a reasonable margin at all times, indicating a satisfactory outcome.

This is not a surprising result given that sensitive uses are setback >50m from all hardstand areas, which is considered reasonable.

Overall, we assess that noise from loading and deliveries are likely to comply with the Noise Protocol at all times, and under conservative assumptions. To that end, we are satisfied that no further mitigation and/or controls are required.

## 4.2 Mechanical Plant Noise

Various forms of mechanical plant and/or equipment will be required for the overall development, however, exact plant selections can only be confirmed after tenancies are leased and fitted out. Warehouse uses are inherently variable, although any mechanical plant noise is considered a controllable impact based on our observations at other business and industrial parks that are similar in scale.

Generally, our view is that noise from mechanical plant and equipment presents as low risk in terms of adverse noise impacts, for the following reasons:

- The proposal is for warehouse use, noting that the planning scheme already restricts the activities that could occur, which would not include heavy manufacturing
- The setback distances to sensitive uses are considered appropriate.
- Mechanical plant and/or equipment that is located internally (e.g. for warehouse uses) are appreciably mitigated by the development of the building envelope construction.
- There are sufficient opportunities to mitigate mechanical plant noise as part of the fit out requirements undertaken by tenants, as follows:
  - Installation of duct attenuators
  - Localised plant screening
  - Selection of quieter equipment
  - Effective positioning of equipment (where screened by the built form)

The Applicant / Developer can also draft suitable conditions on lease agreements, requiring tenants to control their respective noise emissions in compliance with the Noise Protocol. This would provide an additional layer of control beyond the planning permit, but practically forwards some of the compliance responsibility onto respective tenants given they will be responsible for specific uses and fitouts.

Ultimately, all mechanical plant and equipment must comply with the Noise Protocol and is enforceable by the EPA, regardless of planning controls.

Appropriately, specific assessments can be carried out during later stages once tenancies are leased out and mechanical plant and equipment requirements are known.

We also understand that the Subject Land was previously used by industry which would have been more likely to generate mechanical noise impacts. Based on this, we expect that the noise impacts under this proposal would be less than what previously occurred.



## 4.3 General Environmental Duty (GED)

Under the *Environment Protection Act 2017* (EP Act), any industry is required to fulfill their *General Environmental Duty* (GED). In effect, the GED requires that environmental impacts and the risk of harm are minimised by reasonable and practicable means, however the GED does not set out prescriptive or objective targets.

Under the GED, CIT premises are required to have reasonable knowledge about the risks the proposed activities posed. Ultimately, on-going compliance with the GED requires operators to take reasonable, proactive steps and employ good environmental work practices.

The implementation of GED is typically administered by operational management plans for respective uses, which typically involves controls such as:

- Turning off engines when vehicles are not in use
- Optimising truck paths to minimise reversing
- Limiting and/or scheduling noisy activities (including deliveries) during less sensitive 'Day' and 'Evening' hours, though only where practicable and not an impost to the business
- Turning off equipment when not in use

The above is considered general guidance to further minimise the risk of harm, however as above, the practicality of the implementation of the above recommendations is outside the scope of an acoustic expert as it may result in unsatisfactory operational constraints, especially in planning stages.

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## 4.4 Low Frequency Noise

Regulation 120 of the EP Regulations includes frequency spectrum as a prescribed factor when assessing noise from commercial, industrial and trade premises. The frequency spectrum from 10Hz to 160Hz must be used to assess whether low frequency noise (LFN) could be considered as unreasonable under the EP Act.

Low frequency noise is often described as rumbling or droning noise. It can be generated by machinery such as pumps, compressors, diesel engines, fans, generators and boilers.

The following LFN thresholds are prescribed by Publication 1996:

**Table 3: Outdoor one-third octave low frequency noise threshold levels from 10 Hz to 160 Hz**

Outdoor one-third octave low frequency noise threshold levels													
One-third Octave (Hz)	10	12.5	16	20	25	31.5	40	50	63	80	100	125	160
L <sub>eq</sub> (dB)	92	89	86	77	69	61	54	50	50	48	48	46	44

As above, any assessments of LFN impacts can be assessed during later stages when tenant requirements are known.

From a risk perspective however, LFN noise impacts in business parks are generally limited to regular commercial plant where there are sufficient opportunities for noise mitigation, unlike for example, quarries or other heavy industries that contain heavy machinery that may emit material LFN impacts.

## 5 Conclusion and Recommendations

Enfield Acoustics has assessed potential noise impacts from the proposed redevelopment of the business park at 1508 Centre Road, Clayton South and is satisfied that the Application can be approved.

Overall, the siting of a business park on the Subject Land is considered appropriate, given that:

- Sensitive use interfaces are reasonably setback from the development
- The zoning levels (and resulting limits) are considered high given the land use zoning being industrial
- The Subject Land is already an existing industrial use

We assess that noise from loading and deliveries are likely to comply with the Noise Protocol under conservative assumptions for all hours, meaning that specific acoustic screening is not required for the redevelopment.

We note that there is typically insufficient detail during planning stages for a meaningful and/or accurate assessment of mechanical plant, however, we assess that this is considered low-risk given that there are sufficient opportunities to mitigate plant and equipment noise emissions.

It is inherently the responsibility of future tenants to operate within the requirements of the Noise Protocol and EP Regulations, and that the EPA may enforce more specific controls and/or mitigation to specific tenancies in the event of any non-compliance.

On this basis, it is usually sufficient at this stage to approve a planning permit for the overall redevelopment to the following conditions:

1. Noise emissions from the Subject Land shall comply with *EPA Publication 1826 – Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment Venues* at all times.

It is also in the interest of the Applicant or Developer to draft suitable conditions on lease agreements, requiring tenants to control their respective noise emissions in compliance with the Noise Protocol.

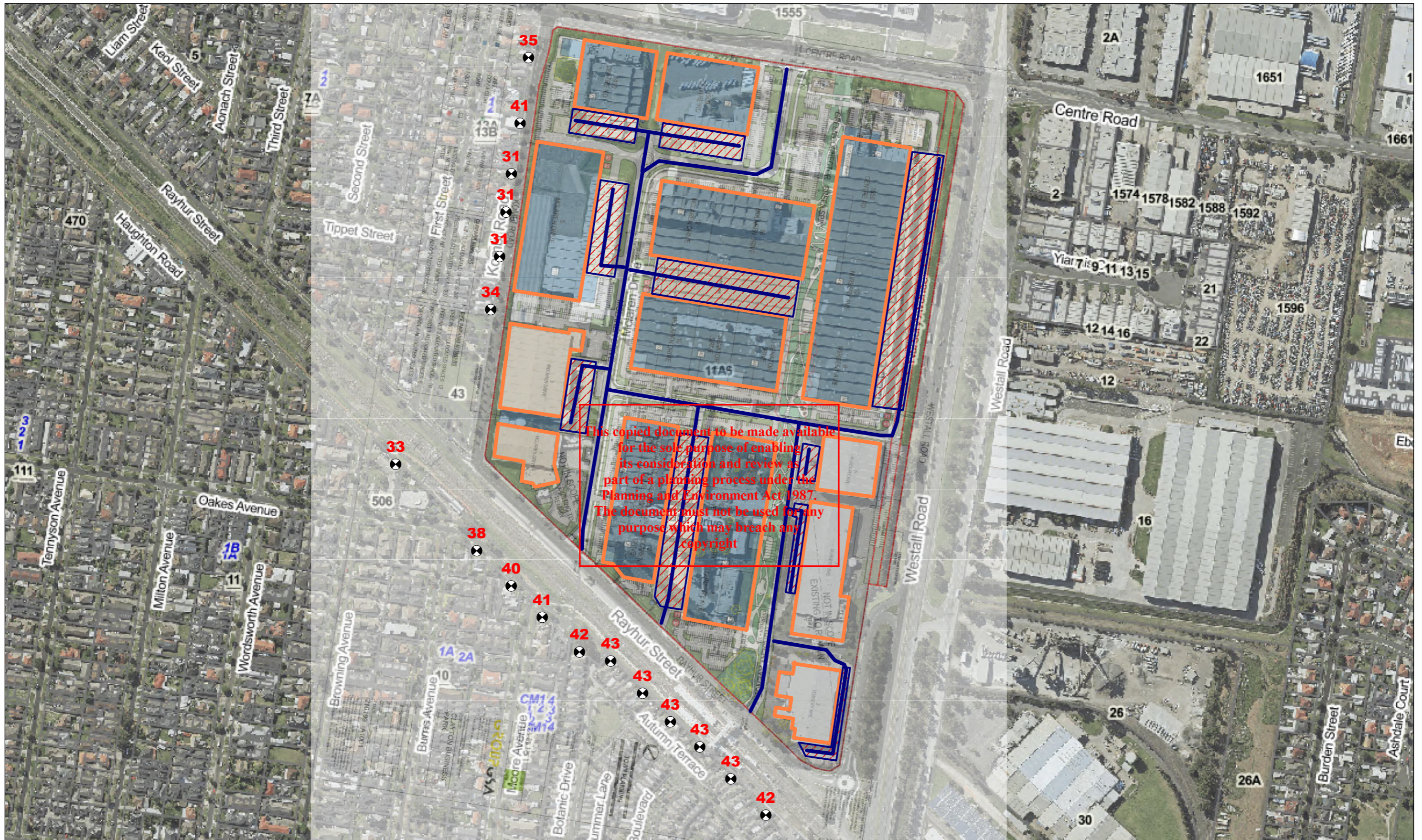
To that end, Enfield Acoustics is satisfied that the Application can be approved.

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## Appendix A: Noise Modelling Map

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Legend:

- North
- Point Source
- Line Source
- Area Source
- Building
- Receiver
- Building Evaluation

Scale: 1: 4114 @ A3

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**Noise emission levels from LOADING AND DELIVERIES**

LAeq-30min Noise Levels  
Noise Protocol Assessment

Project No: V1540

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NOTES:

\*Propagation in accordance with ISO9613