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Acoustic Assessment
21-35 Treacy Street, Hurstville

[Rail/Road Traffic Noise Assessment]

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ACOUSTIC ANALYSIS
21-35 Treacy Street, Hurstville
[Rail/Road Traffic Noise Assessment]

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ACOUSTIC ANALYSIS
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[Rail/Road Traffic Noise Assessment]

1.0 INTRODUCTION

Koikas Acoustics Pty Ltd was commissioned by Mr Rusty Moran to undertake an acoustic assessment for the proposed mixed use development at No.21-35 Treacy Street, Hurstville.

The acoustic assessment was required in order to demonstrate the rail related noise and vibration impact to the proposed development from the nearby rail corridor as per the requirements of Issue No.21 "Noise and Vibration Assessment" of the NSW Government Planning's Director-General's requirements, Section 75F of the Environmental Planning Assessment Act 1979.

In additional the road traffic noise along Treacy Street and BCA requirements of sound insulation performance are also considered in this assessment.

Architectural drawings provided by Stanisic Associates Architects:

- Drawing No. CD04 to CD36 and
- Unit Type plans A1 to A4,
  B1 to B7,
  D1,
  E1 to E10,
  F1 to F3,
  F1R and
  H1

for the above mentioned site were used in this assessment.

2.0 SITE DESCRIPTION

The proposed mixed use development is referenced as being four (4) main blocks.

The building includes the following:

- 5 underground car park levels
- on the lower ground level there are 2 commercial tenancies
- on the ground floor level there are 4 tenancies
- 16 residential floor levels consisting of 257 tenancies
- on the 1st floor level there is also 1 commercial premise.

The rear of this multi-storey building adjoins the Illawarra railway corridor.

2.1 SITE ADDRESS

The proposed site is located at 21-35 Treacy Street, Hurstville. The site is currently occupied by a number of commercial premises. See **Appendix A** for details.

2.2 SITE LOCATION OF SOUND SOURCES

The approximate centre-line of the rail corridor is 20 metres from the closest point of the proposed building. The building is approximately 12 metres from the nearest track. The ambient noise profile of the area is dominated by rail noise and road traffic noise along Treacy Street.

3.0 NOISE CRITERIA

The rail noise/vibration and road traffic noise criteria used for this assessment is the NSW Government Department of Planning *Development Near Rail Corridors and Busy Roads - Interim Guidelines December 2008*. The noise and vibration criteria nominated in this document is summarised below.

3.1 RAIL/ROAD TRAFFIC NOISE CRITERION

If the development is for the purpose of a building for residential use, the consent authority must be satisfied that appropriate measures will be taken to ensure that the following L_{Aeq} levels are not exceeded:

- *in any bedroom in the building : 35dB(A) at any time 10pm-7am*
- *anywhere else in the building (other than a garage, kitchen, bathroom or hallway): 40dB(A) at any time.*

It is also stated that if the internal noise levels with windows and doors open exceed the criteria by more than 10dB(A), the design of the ventilation for that space must be such that the windows and doors can remain closed.

The note to Table 3.1 in Section 3.6.1 *Airborne Noise* in the *NSW Government Department of Planning Development Near Rail Corridors and Busy Roads - Interim Guidelines December 2008* states that the airborne noise is calculated as:

$L_{eq\ (9hr)}$	*for nighttime -*	*10pm to 7am, and*
$L_{eq\ (15hr)}$	*for daytime -*	*7am to 10pm.*

In addition to the above, buildings need to be designed and constructed to comply with an ***L_{Amax}*** *ground borne noise limit of* ***40 dBA*** *during the daytime and 35 dB(A) during the night time measured using the Slow-time weighting on a sound level meter.*

3.2 RAIL VIBRATION CRITERION

The rail vibration criteria as stated in the *NSW Government Department of Planning Development Near Rail Corridors and Busy Roads - Interim Guidelines December 2008* states:

Vibration levels such as the intermittent vibration emitted by trains should comply with the criteria in Assessing Vibration: a technical guideline (DECC 2006). Table 2.4 of *Assessing Vibration: a technical guideline (DECC 2006)* outlines the relevant rail noise vibration criterion.

Table 2.4 Acceptable vibration dose values for intermittent vibration ($m/s^{1.75}$) [DECC 2006]

Location	**Daytime**		**Night-time**	
	Preferred value	Maximum value	Preferred value	Maximum value
Critical areas	0.10	0.20	0.10	0.20
Residences	**0.20**	**0.40**	**0.13**	**0.26**
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

3.3 BUILDING CODE OF AUSTRALIA

The objective of Part F5 of the BCA is to safeguard occupants from illness or loss of amenity as a result of undue sound being transmitted between adjoining units, from common spaces to sole occupancy units and from parts of different classifications to sole-occupancy units.

The sound isolation between units is assessed in accordance with the requirements of Part F5 'Sound Transmission and Insulation' of the BCA. It is noted that Part F5 of the BCA does not specify a degree of sound insulation performance between different areas of occupancy, rather it nominates the laboratory acoustic performance of various elements of the building.

Where a building solution is proposed to comply with the Deemed to Satisfy Provisions, Performance Requirements FP5.1 to FP5.6 (of the BCA) will be satisfied by complying with F5.1 to F5.7.

Where a building solution is proposed as an alternative solution to the Deemed to Satisfy Provisions of F5.1 to F5.7, the relevant Performance Requirements must be determined in accordance with A0.10 of the BCA.

The BCA refers to four classes of buildings:

Class 1: Detached house, terrace, villa or small boarding house;
Class 2: Flat or apartments with two or more dwellings (units);
Class 3: Boarding house, hotel or residential part of other buildings;
Class 9c: Aged Care Buildings.

3.3.1 Sound Insulation Ratings of Floors

A floor in a Class 2 or 3 building must have an R_w+C_{tr} (airborne) not less than 50 and an $L_{n,w}+C_i$ (impact) not more than 62 if it separates-

(i) sole-occupancy units; or
(ii) a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification.

3.3.2 Sound Insulation Ratings of Walls

A wall in a Class 2 or 3 building must-

(i) have an R_w+C_{tr} (airborne) not less than 50, if it separates sole -occupancy units; and

(ii) have an R_w (airborne) not less than 50, if it separates a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification; and

(iii) comply with F5.3(b) if it separates:

(A) a bathroom, sanitary compartment, laundry or kitchen in one sole-occupancy unit from a habitable room (other than a kitchen) in an adjoining unit; or

(B) a sole-occupancy unit from a plant room or lift shaft.

F5.3(b) states that:

A wall in a building required to have an impact sound insulation rating must -

(i) for a Class 2 or 3 building be of discontinuous construction

A door may be incorporated in a wall in a Class 2 or 3 building that separates a sole-occupancy unit from a stairway, public corridor, public lobby or the like, provided the door assembly has an R_w not less than 30.

3.3.3 Sound Insulation Ratings of Services

If a duct, soil, waste or water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serves or passes through more than one sole-occupancy unit, the duct or pipe must be separated from the rooms of any sole-occupancy unit by construction with an Rw+Ctr (airborne) not less than-

(i) 40 if the adjacent room is a habitable room (other than a kitchen); or

(ii) 25 if the adjacent room is a kitchen or non-habitable room.

If a storm water pipe passes through a sole-occupancy unit it must be separated in accordance with (i) and (ii) above

4.0 NOISE AND VIBRATION SURVEYS

All noise methodologies and equipment used comply with the following Australian Standards:

- *AS1259.2-1990 "Acoustics - Sound Level Meters - Integrating - Averaging", and*
- *AS1055.1 "Acoustics - Description and measurement of environmental noise".*

4.1 UNATTENDED NOISE SURVEY

Unattended noise monitoring surveys were conducted by Koikas Acoustics at the representative location being the rooftop of No.21-35 Treacy Street, Hurstville with the microphone placed 1.5 meter above the rooftop level.

The survey was conducted from Tuesday 9th to Monday 15th November 2010.

The unattended noise monitoring survey was used to determine the ambient noise conditions pertaining to the area and to calibrate the noise model.

Analysis of the meteorological records (attached in **Appendix C**) and ambient noise trends in the logger graphs suggests that the meteorological conditions over the monitoring period did not influence the noise survey results. There were periods during the night time where significant noise was produced in the early hours of the morning. This is account for by the heavy freight train movements.

All noise level measurements were A-frequency and Fast-time weighted. The details of the unattended noise survey results are attached in **Appendix B**.

4.2 ATTENDED RAIL/ROAD TRAFFIC NOISE SURVEY

The attended rail/road traffic noise survey was undertaken in order to determine how the proposed residential building might be affected from the rail pass-by events of the nearby rail corridor and road traffic along Treacy Street as required by Issue No.21 "Noise and Vibration Assessment" of the NSW Government Planning's Director-General's requirements, Section 75F of the Environmental Planning Assessment Act 1979.

Attended rail/road traffic noise measurements were taken outdoors in free field conditions at the representative locations.

Twenty (20) rail pass-by events were recorded between the hours of 1100 and 1400 on Tuesday 16th November 2010. It is to be noted that during this measurement period there was a mix of both commuter and freight train movements.

From our observations, freight trains use the rail corridor mostly during non peak commuter movements. We have also been advised by Rail Corp that freight train movements are unscheduled and as a result it is difficult to accurately predict the daily number of freight train movements. Koikas Acoustics has however assumed a maximum of 10 (Daytime) and 2 (Night time) freight train movements. These 'assumptions' are generally based on observations from undertaking many other rail surveys of this rail corridor over the past 20 years.

The road traffic noise measurements were taken at approximately 10 meters away from the centre of Treacy Street between 1700 and1730 hours on Tuesday 16th November 2010 with microphone approximately 1.5 metres above the natural ground level.

An aerial photograph showing the assessment site, surrounding premises and monitoring location is attached as **Appendix A**.

4.3 ATTENDED RAIL VIBRATION SURVEY

The rail vibration survey was conducted simultaneous with rail noise survey at the southern end of the proposed development site. The vibration monitoring location was approximately 5 metres below the rail corridor and was considered to be the most appropriate location as it was on the actual assessment site premises.

The rail vibration survey was undertaken to measure the apparent vibration (RMS acceleration) along the z-axis (as defined in BS 6472:1992) that occurs during typical rail movements.

4.4 SURVEY INSTRUMENTATION

Attended rail/road traffic noise measurements were taken with a SVAN 912 Type 1 precision spectrum analyser sound level meter S/N 2066. Rail vibration measurements were taken with a SVAN SV-06A accelerometer connected to a SVAN912AE Type 1 precision spectrum analyser sound level meter/accelerometer S/N 2348.

4.5 CALIBRATION

The Svantek 957 sound level meter currently carries manufacturer's calibration specifications as determined in a NATA certified laboratory.

The SVAN 912AE S/N 2348 and SVAN 912 S/N 2066 currently carry NATA certification and were field calibrated with a reference level of 94 dB at 1 kHz before and after measurements with a BSWA Technology Co. CA106 Sound Level Meter Calibrator S/N44089. No system drift was recorded for the sound level meter.

5.0 NOISE AND VIBRATION SURVEY RESULTS

5.1 UNATTENDED NOISE SURVEY RESULTS

The measured rail and road traffic noise levels obtained from the unattended noise survey are as follows for both the daytime and night-time periods:

Table 1. Rail/Road Traffic Noise levels [dBA]

	Noise Levels Leq [dBA]									
Frequency [Hz]	*31.5*	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
Rail/Road Traffic noise level- Daytime [LAeq, 15 hours]	32	47	52	55	58	61	59	53	42	**65**
Rail/Road Traffic noise level- Night-time [Laeq, 9 hours]	27	43	50	51	55	59	56	49	43	**61**

Attached as **Appendix B** are the complete logger graphs for the entire measurement period including the summary sheet.

5.2 ATTENDED RAIL/ROAD TRAFFIC NOISE SURVEY RESULTS

20 individual attended noise measurements were recorded of the rail pass-by events. 17 rail

noise measurements were of commuter trains and 3 were freight trains. These rail measurements were taken over various distances from each of the rail tracks:

Track 1	-	8 metres
Track 2	-	12.8 metres
Track 3	-	18 metres
Track 4	-	21.8 metres

The calculated SEL (Sound Exposure Level) for each of the events is shown below in Table 2. The sound exposure level is a measure of the acoustic energy of the event expressed over a one (1) second period.

Table 2. SEL for each of the measured rail movements [dBA]

		Sound Exposure Level Rail Noise Levels [dBA]									
No.	*Frequency [Hz]*	*31.5*	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
1	Commuter- Track 1	50	64	77	77	79	77	82	74	69	**86**
2		46	64	78	84	87	86	85	78	76	**93**
3		45	63	76	80	82	80	79	78	72	**88**
4		45	62	81	85	89	91	92	83	78	**97**
5		48	62	80	84	90	92	92	82	74	**97**
6		40	53	68	75	71	77	75	70	60	**81**
7	Commuter- Track 2	44	58	68	75	71	69	72	71	63	**80**
8		43	58	61	58	62	65	64	59	50	**71**
9	Commuter- Track 3	45	61	67	75	73	73	74	64	69	**81**
10		45	57	67	71	73	71	68	65	60	**78**
11		48	62	81	85	91	92	93	84	79	**98**
12		48	62	67	70	73	72	70	65	58	**79**
13		47	60	67	70	75	70	69	65	56	**79**
14		47	62	67	72	73	70	69	65	58	**78**
15	Commuter- Track 4	47	63	71	72	74	73	72	68	60	**80**
16		43	60	66	67	67	68	66	62	55	**75**
17		45	64	68	67	68	66	65	61	52	**75**
18	Freight- Track 1	64	79	90	95	98	99	99	94	88	**105**
19		67	82	93	98	101	102	102	97	91	**108**
20	Freight- Track 2	67	100	94	88	87	91	89	86	80	**102**

Two road traffic noise measurements were taken on Treacy Street for the duration of 15 minutes each. Table 3 shows the quantified results of attended road traffic noise measurements.

Table 3. *Road Traffic Noise levels on Treacy Street [dBA]*

	Noise Levels Leq [dBA]									
Frequency [Hz]	*31.5*	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
Road Traffic noise levels [LAeq, 15 minutes]	32	47	54	56	60	64	62	55	47	**68**
	30	38	47	53	58	63	62	53	46	**67**

5.3 RAIL VIBRATION SURVEY RESULTS

The measured vibration levels (RMS acceleration) obtained during the vibration survey are nominated in Table 4 below. These measured vibration levels were used to determine the Estimated Vibration Dose Value (eVDV) as required for assessing the overall predicted vibration impact.

Table 4. *Vibration level measurements for each rail pass-by*

Pass-By No.	RMS Acceleration: Direction Z [m/s²]	Event Duration [sec]
1	0.0007	22.25
2	0.0015	7.625
3	0.0007	12.625
4	0.0011	15.25
5	0.0012	14.375
6	0.0007	21.375
7	0.0005	30.625
8	0.0014	13.5
9	0.0009	13.75
10	0.0010	11.75
11*	0.0002	103.75
12*	0.0002	42.5

*Pass-By No's 11 and 12 are freight trains

From an average of the above vibration level measurements and the maximum rail pass-by events (as per City Rail's timetable) the calculated eVDV values are:

- DAYTIME 0.0111 $m/s^{1.75}$
- NIGHTTIME 0.0078 $m/s^{1.75}$

Both of the vibration level results are well below the vibration criteria nominated in Section 3.2 *Rail Vibration Criterion*.

6.0 SOURCE SOUND POWER LEVELS

The average of the SEL values at the measurement location provides a measure of the representative SEL spectrum for rail pass-by's.

To determine a sound power level spectrum for daytime and night time rail traffic, City Rail's timetables were referenced to determine how many train movements occur during each of the time periods. These were found to be:

- 322 (312 commuter, 10 freight) during the daytime period, and
- 76 (74 commuter, 2 freight) during the night time period.

The calculated sound power levels for daytime and night time rail traffic and the road traffic noise along Treacy Street are as follows in Table 5.

Table 5. Rail traffic sound power levels [dBA]

FREQUENCY [Hz]		31.5	63	125	250	500	1000	2000	4000	8000	Total A
Track 1 Commuter Train	Day time [Lw,15hr]	31	47	62	66	69	72	72	56	55	77
	Nighttime [Lw, 9hr]	27	43	58	62	65	68	68	52	51	73
Track 2 Commuter Train	Day time [Lw,15hr]	31	46	54	60	56	55	58	56	48	65
	Nighttime [Lw, 9hr]	27	42	50	56	52	51	54	52	44	61
Track 3 Commuter Train	Day time [Lw,15hr]	36	50	63	67	73	74	75	66	61	80
	Nighttime [Lw, 9hr]	32	46	59	63	69	70	71	62	57	76
Track 4 Commuter Train	Day time [Lw,15hr]	35	53	59	59	61	60	59	55	47	67
	Nighttime [Lw, 9hr]	31	49	55	55	57	56	55	51	43	63
Track 1 Freight Train	Day time [Lw,15hr]	45	61	72	77	80	81	81	76	70	87
	Nighttime [Lw, 9hr]	41	57	68	73	76	77	77	72	66	83
Track 2 Freight Train	Day time [Lw,15hr]	44	77	71	65	64	68	66	63	57	79
	Nighttime [Lw, 9hr]	40	73	67	61	60	64	62	59	53	75
Road Traffic along Treacy Street	Day time [Lw,15hr]	42	57	64	66	70	74	72	65	57	78
	Nighttime [Lw, 9hr]	38	53	60	62	66	70	68	61	53	74

***Note: The sound power levels shown in Table 3 are dBA per metre.

7.0 NOISE MODELLING

7.1 CADNA (A) NOISE MODEL

The proposed noise sources (in this case rail/road traffic) were modelled in a computer program called CADNA (A), which is a software package developed by DataKustik. Cadna (A) incorporates a computer aided drafting (CAD) program that utilises the height of the ground, the position of buildings and other structures to run through a set of algorithms and calculate at user defined grid points and user input receiver locations the overall sound pressure level and frequency dependant noise level spectrum. It then interpolates the calculated noise levels at each of the grid points to produce noise level contours.

The noise level calculations take into account the propagation of sound from a sound source as a function of its distance, the shielding effects of barriers and buildings, the attenuation and reflection off the ground and buildings.

Receiver locations were assigned in the computer model at representative positions to determine the resultant rail/road traffic noise levels at each facade and floor level for the proposed residential development. The predicted noise levels at these locations were used to provide recommendations on appropriate building facade construction materials that would achieve the required rail/road traffic noise reductions so as to comply with the nominated indoor noise criterion.

Noise level contours were produced where necessary to illustrate the propagation of sound from the noise sources to the most noise affected areas of the building. The noise level contour maps are attached in **Appendix G**.

7.2 ARCHITECTURAL DRAWINGS PROVIDED

The architectural drawings provided to Koikas Acoustics from Stanisic Associates Architects were:

- CD-04 BUILDING EVELOPE-VIEW 1
- CD-05 BUILDING EVELOPE-VIEW 2
- CD-06 BUILDING EVELOPE-VIEW 3
- CD-07 BUILDING EVELOPE-VIEW 4
- CD-08 BUILDING EVELOPE-VIEW 5
- CD-09 BUILDING EVELOPE-VIEW 6
- CD-10 PLAN-BASEMENTS 4+5
- CD-11 PLAN-BASEMENTS 3
- CD-12 PLAN-BASEMENTS 2
- CD-13 PLAN-BASEMENTS 1
- CD-14 PLAN-LOWER GROUND LEVEL
- CD-15 PLAN-GROUND LEVEL
- CD-16 PLAN-LEVEL 1
- CD-17 PLAN-LEVEL 2
- CD-18 PLAN-LEVEL 3
- CD-19 PLAN-LEVEL 4
- CD-20 PLAN-LEVEL 5

- CD-21 PLAN-LEVEL 6
- CD-22 PLAN-LEVEL 7
- CD-23 PLAN-LEVEL 8
- CD-24 PLAN-LEVEL 9
- CD-25 PLAN-LEVEL 10
- CD-26 PLAN-LEVEL 11
- CD-27 PLAN-LEVEL 12
- CD-28 PLAN-LEVEL 13
- CD-29 PLAN-LEVEL 14
- CD-30 PLAN-LEVEL 15
- CD-31 PLAN-ROOF
- CD-32 ELEVATION-NORTH
- CD-33 ELEVATION-SOUTH
- CD-34 ELEVATION-EAST+WEST
- CD-35 SECTION AA
- CD-36 SECTION BB
- unit type plan A1 to A4
- unit type plan B1 to B7
- unit type plan D1
- unit type plan E1 to E10
- unit type plan F1, F2, F1R and H1

Dated 23 July 2010.

7.3 NOISE MODELLING RESULTS AND REQUIRED FACADE NOISE REDUCTIONS

During the daytime hours, the calculated external **rail/road** traffic noise level at the most affected facade is $L_{Aeq,\ 15\ hours}$ **(Daytime) 72 dB(A)**. There is assumed a mix of commuter and freight train movements.

During the night time hours, the calculated external **rail/road** noise level at the most affected facade is $L_{Aeq,\ 9\ hours}$ **(Night) 68 dB(A)**.

Table 6. *Rail Noise Modelling Results, Noise Criteria and Required Noise Reduction* (***Windows Closed***)

	LAeq, Period [dB(A)]					
	Day Time			**Night Time**		
	Outdoor Rail Noise	Noise Criteria	Required Noise Reduction [dB]	Outdoor Rail Noise	Noise Criteria	Required Noise Reduction [dB]
Rail Noise Levels	72	40	32	68	35	33

A typical noise reduction of 10dB(A) has been used for assessing the internal noise levels with windows open. 10dB(A) is commonly considered to be a standard noise reduction for a typical building facade with open windows.

Table 7 shows the maximum calculated indoor noise levels versus the indoor noise criteria. Where the predicted indoor noise levels with windows and doors open exceed the nominated noise criterion shown in Table 7, the design of the ventilation in that space is to be such that

windows and doors can remain closed.

Table 7. *Rail Noise Modelling Results, Noise Criteria and Internal Noise Levels (**Windows Open**)*

	$L_{Aeq, Period}$ [dB(A)]					
	Day Time			**Night Time**		
	Outdoor Rail Noise – Max	Noise Criteria (Windows Open)	Internal Noise Level	Outdoor Rail Noise - Max	Noise Criteria (Windows Open)	Internal Noise Level
Rail Noise Levels	72	50	62	68	45	58

8.0 RECOMMENDATIONS

8.1 SELECTION OF BUILDING MATERIALS

8.1.1 External Walls

The proposed solid masonry wall system with 180 mm of concrete and one layer of 13 mm plasterboard with 28 mm furring channel in the cavity is satisfactory.

8.1.2 Windows/Sliding Doors

The required minimum glazing thickness of the windows and the sliding doors are presented in **Appendix E**. Some of the detailed calculations are shown in **Appendix F**.

The following are noted:

- All glazing systems should be built into a solid frame;
- All open-able windows and glazed door systems should be air tight when closed;
- Acoustic windows/doors do not normally get tested with "weep holes". "Weep holes" will reduce the acoustic attenuation of single glazed systems and to a lesser extent double glazed systems.

It is noted that the building materials shown above are the minimum requirement for achieving the nominated acoustic performance. These materials may be inadequate on account of safety, fire, thermal or any other requirements for the development. Specification of these requirements are to be provided by other specialist consultants.

8.2 MECHANICAL VENTILATION

In order to achieve the indoor design sound levels to habitable spaces from rail/raod traffic noise intrusion, windows/doors will be required to be closed for some of the spaces. Therefore in order to meet the Codes and recommendations of relevant Australian Standards it will be necessary to provide mechanical ventilation to these particular spaces.

It is noted that rail/road traffic noise transmitted into the habitable spaces through the mechanical ventilation duct work should be at least 10 dB less than the recommended indoor

sound level of road noise intrusion through the building envelope. This can be achieved by using internally lined (rigid grade fibreglass batts 50 mm thick)) metal duct work and selecting a quiet fan unit and properly sealed.

The spaces where mechanical ventilation is required are nominated in the **Appendix E** with glazing schedule.

8.3 VIBRATION MITIGATION

As per Section 5.3 *Rail Vibration Survey Results* the measured and predicted vibration levels induced on account of the rail corridor will give rise to a less than 'low probability' of adverse comment from the residents. This is deemed to be consistent with the perceived vibration levels that were observed on-site during the taking of ground induced vibration level measurements.

Furthermore, ground-borne vibrations will not give rise to structure borne noise levels greater than 40 dB(A) L_{Amax}, particularly as the rail corridor is not directly below the subject premises.

8.4 BCA REQUIREMENTS

8.4.1 Walls

Walls in a Class 2 or 3 building must have:

RECEIVER Space (Sole Occupancy Unit)	SOURCE Space (Sole Occupancy Unit)	Rw	Rw + Ctr	Wall Type
Habitable	habitable	50	50	any
habitable *(other than kitchen)*	laundry rooms	50 *(50)*	50 (-)	discontinuous discontinuous
Habitable *(other than kitchen)*	kitchen	50 *(50)*	50 (-)	discontinuous discontinuous
Habitable *(other than kitchen)*	bathroom	50 *(50)*	50 (-)	discontinuous discontinuous
Habitable *(other than kitchen)*	sanitary compartment	50 *(50)*	50 (-)	discontinuous discontinuous
Habitable *(other than kitchen)*	laundry	50 *(50)*	50 (-)	discontinuous discontinuous
any space	lift shaft	50	50	discontinuous
any space	plant room	50	50	discontinuous
habitable & wet areas	stairway	50		
Habitable	public corridor	50		
Habitable	public lobby	50		
door in habitable space		30		
soil and waste services in habitable room			40	
soil and waste in kitchen or non habitable space			25	
storm water pipes in habitable space			40	
storm water pipe in kitchen or non habitable space			25	

As per Table 2 of the BCA 2010 *Acceptable Forms of Construction* the following partition wall systems are recommended. It is noted that the BCA may require multiple different types of partition walls in the one development depending on the use of the rooms which the partition wall separates. These are:

- Habitable room to wet area.
  Wall required to provide an Rw + Ctr of no less than 50 and be of discontinuous construction;

- Habitable room to habitable room
  Wall required to provide an Rw + Ctr of no less than 50;

- Sole occupancy residence and plant room, corridor, lobby etc.
  Wall required to provide an Rw of no less than 50.

Masonry Walls

Masonry wall systems that can achieve:

Rw + Ctr 50 and
<u>discontinuous</u> providing impact rating include the following:

- *two leaves of 110mm thick clay masonry bricks with*
- *cavity not less than 50mm between leaves*
- *13mm thick render on each outside face*
- *the two leaves separated with acoustic wall ties (eg Matrix Industries ph 6553 2577) type MB-01, or polymer Ni-Ties from Vespol Pty Ltd or, not physically connected with any brick ties*

Alternatively,

- *one leave of 110mm thick solid masonry bricks with*
- *64mm minimum width steel studs at 600mm centres,*
- *20mm cavity (discontinuous)*
- *cavity filled with 50mm thick insulation batts 11kg/m^3*
- *13 mm thick plasterboard screw fixed to steel studs on one side and*
- *13 mm thick plasterboard glue fixed to other side of the masonry wall provided that there are no gaps between the two surfaces or 13 mm rendered.*

A masonry wall system recommended for use to achieve:

Rw + Ctr 50
but <u>not</u> require that it is a discontinuous wall type is as follows:

- *single leaf of 220 mm brick masonry with*
- *13 mm thick render on each face.*

A masonry wall system recommended for use to achieve:

Rw 50 is as follows:

- *single leaf of 150 mm brick masonry with*
- *13 mm thick render on each face*

Concrete Walls

Concrete wall systems recommended for use to achieve:

Rw + Ctr 50 and
and be a discontinuous wall type providing impact is as follows:

- *125 mm thick concrete panel*
- *20mm cavity*
- *64mm wide steel studs at 600mm centres*
- *cavity filled with 75mm thick insulation batts 9kg/m^3*
- *13 mm thick plasterboard screw fixed to the steel stud*

A wall system recommended for use to achieve:

Rw + Ctr 50
but not require that it is a discontinuous wall type is as follows:

- *150 mm thick concrete panel with*
- *13 mm thick render on each face.*

A concrete wall system recommended for use to achieve:

Rw 50 is as follows:

- *100mm thick concrete panel with*
- *13 mm thick render on each face*

8.4.2 Timber Entry Doors

For timber doors incorporated into a partition separating a sole-occupancy unit from a common area, hallway or lobby area, that door is required to provide an Rw of not less than 30. A suitable door system for this purpose would be a 40mm solid core timber door with Raven type acoustic seals.

8.4.3 Soil and Waste Pipes

For services and/or waste pipes from one unit that pass through another unit the following noise control measures are recommended:

To achieve an Rw + Ctr not less than 25:

- Minimum of two (2) layers of 13 mm plasterboard are required to partition the services/ waste pipes from any non-habitable room (including the kitchen),

To achieve an Rw + Ctr not less than 40:

- Minimum of two (2) layers of 13 mm plasterboard are required as a partition for the services/waste pipes from a habitable room, and in addition the pipes are to be lagged

with an acoustic lagging material such as Pyrotech's Soundlag 4525C or similar.

Further, an access door or panel must be firmly fixed so as to overlap the frame or rebate the frame by not less than 10 mm, and be fitted with a proper sealing gasket along all edges and constructed of:

- *wood, particle board or block board not less than 38 mm thick; or*
- *compressed fibre reinforced cement sheeting not less than 9 mm thick; or*
- *other suitable material with a mass per unit area not less than 24 kg/m^2.*

Alternative building materials could be considered provided that test certificates are provided as evidence of their performance.

8.4.4 Concrete Sub-Floor Systems

For concrete sub-floor systems the following floor systems have been found to achieve the nominated floor performance ratings in terms of impact sound isolation. Provided a minimum concrete thickness of 150mm, all systems shown below will achieve the desired airborne sound insulation performance.

	$L_{nT,w}+C_I$
• concrete sub base	80
• carpet on ➢ carpet underlay over ➢ concrete sub base	34
• carpet on carpet underlay ➢ concrete sub base ➢ standard mounted plasterboard 100 mm air-gap . . .	33

• tiles over ➢ Acoustamat (www.a1rubber.com.au) over ➢ concrete sub base followed by ➢ resilient clip or channel mounted plasterboard ceiling ➢ 50 mm cavity	62
• tiles over screed over ➢ waterproof membrane over ➢ 10 mm Regupol rubber underlay (www.regupol.com.au) ➢ or the equivalent over ➢ concrete sub base followed by ➢ resilient clip or channel mounted plasterboard ceiling ➢ 50 mm cavity	62
• tiles ➢ over 3 mm Acoustibond (www.constructionchemicals.com.au) over ➢ 225 mm concrete sub base	61

- tiles
  - over 3 mm Acoustibond (www.constructionchemicals.com.au) over
  - 150 mm concrete sub base followed by
  - resilient clip or channel mounted plasterboard ceiling
  - 50 mm cavity 61

- tiles over 25 mm gypsum concrete over
  - 6 mm thick Acousti-Mat (www.maxxon.com/acoustic-mat_ii/data)
  - or the equivalent
  - concrete sub base followed by
  - resilient clip/channel mounted plasterboard ceiling, 50 mm cavity 54

- tiles over
  - 6 mm thick fibre cement panel over
  - Regupol 5 mm rubber underlay over
  - 6 mm thick fibre cement panel over
  - 25 mm rigid grade fibreglass (140kg/m^3) over
  - concrete sub base followed by
  - standard mounted plasterboard ceiling 40

- timber (14 mm thick) tongue and groove over
  - 3 mm thick closed cell foil top underlay over
  - concrete sub base over followed by
  - standard mounted plasterboard ceiling 57

- timber floor over
  - 15 mm timber battons glue fixed to
  - 10 mm Regupol rubber underlay pads
  - cavity filled with 25 mm thick fibreglass batts120 kg/m^3 over
  - concrete sub base followed by
  - standard mounted plasterboard ceiling 40

- Armstrong Cushion Vinyl over
  - concrete sub base followed by
  - standard mounted plasterboard ceiling 57

- Armstrong Cushion Vinyl over
  - 5 mm masonite (hardboard) over
  - 5 mm thick Regupol K225 underlay over
  - concrete sub base followed by
  - standard mounted plasterboard ceiling 45

All of the above floor systems should not make contact with the walls. The gaps could be filled with silicone. The ratings provided are only indicative for the above described floor systems. These impact noise ratings can vary from one building construction to another building construction.

Alternative floor/ceiling systems could be considered provided that the acoustic performance is tested in accordance with the Specification F5.5 Impact Sound - Test of Equivalence or with relevant impact noise testing standards.

Important to note is that these recommendations also need to be considered for outdoor balconies that extend over indoor areas below, as is evident in some areas of this development.

9.0 CONCLUSIONS

- The rail/road traffic noise and vibration assessment has been conducted to demonstrate the predicted rail/road traffic noise and vibration levels for the proposed development referenced to the nominated criteria as stated in the NSW Government Department of Planning *Development Near Rail Corridors and Busy Roads - Interim Guidelines December 2008*.

- Rail/road traffic noise levels at the most noise affected facades and floor levels of the development were found to be 72 dB(A) and 68 dB(A) during the day and night time periods respectively with reference to the $L_{Aeq,\ Period}$ noise levels. The rail noise levels are based on the total train movements during each period as determined from the City Rail timetables and assumptions made on account of freight train movements.

- Recommended construction materials have been nominated in this report and will achieve the desired rail/road traffic noise reductions so as to comply with the nominated noise criterion. Mechanical ventilation system is required in most of the habitable spaces on account of the high rail/traffic noise levels currently pertaining in this area.

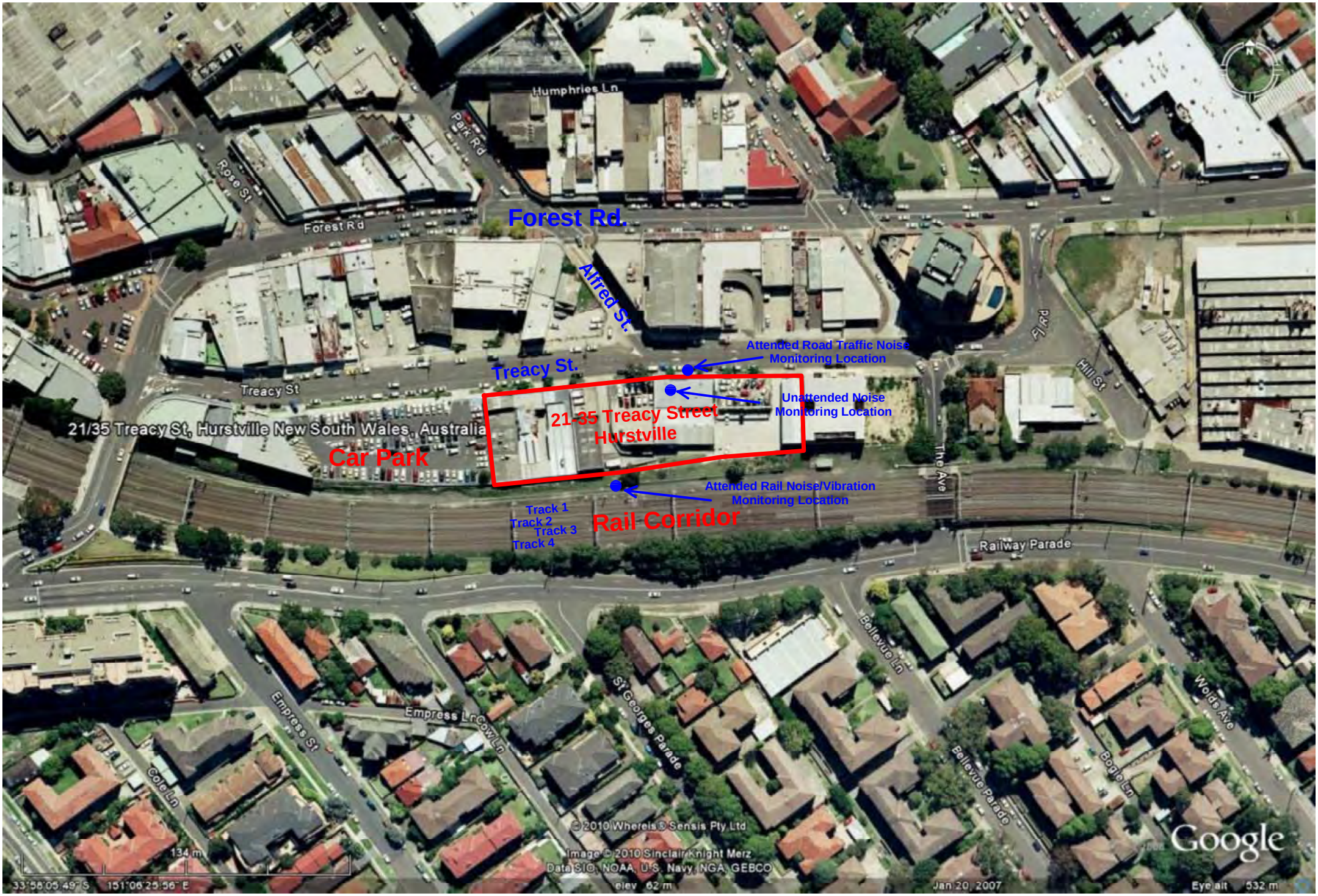
- The predicted vibration levels have been found to have a less than low probability of adverse comment from residents within the proposed development. No vibration amelioration measures are required.

When the recommendations stated in this report are faithfully implemented in the design of the proposed residential development at No. 21-35 Treacy Street Hurstville, the nominated rail/road traffic noise criteria will be achieved, therefore satisfying the requirements of Issue No.21 "Noise and Vibration Assessment" of the NSW Government Planning's Director-General's requirements, Section 75F of the Environmental Planning Assessment Act 1979.

APPENDIX A

APPENDIX A

APPENDIX A

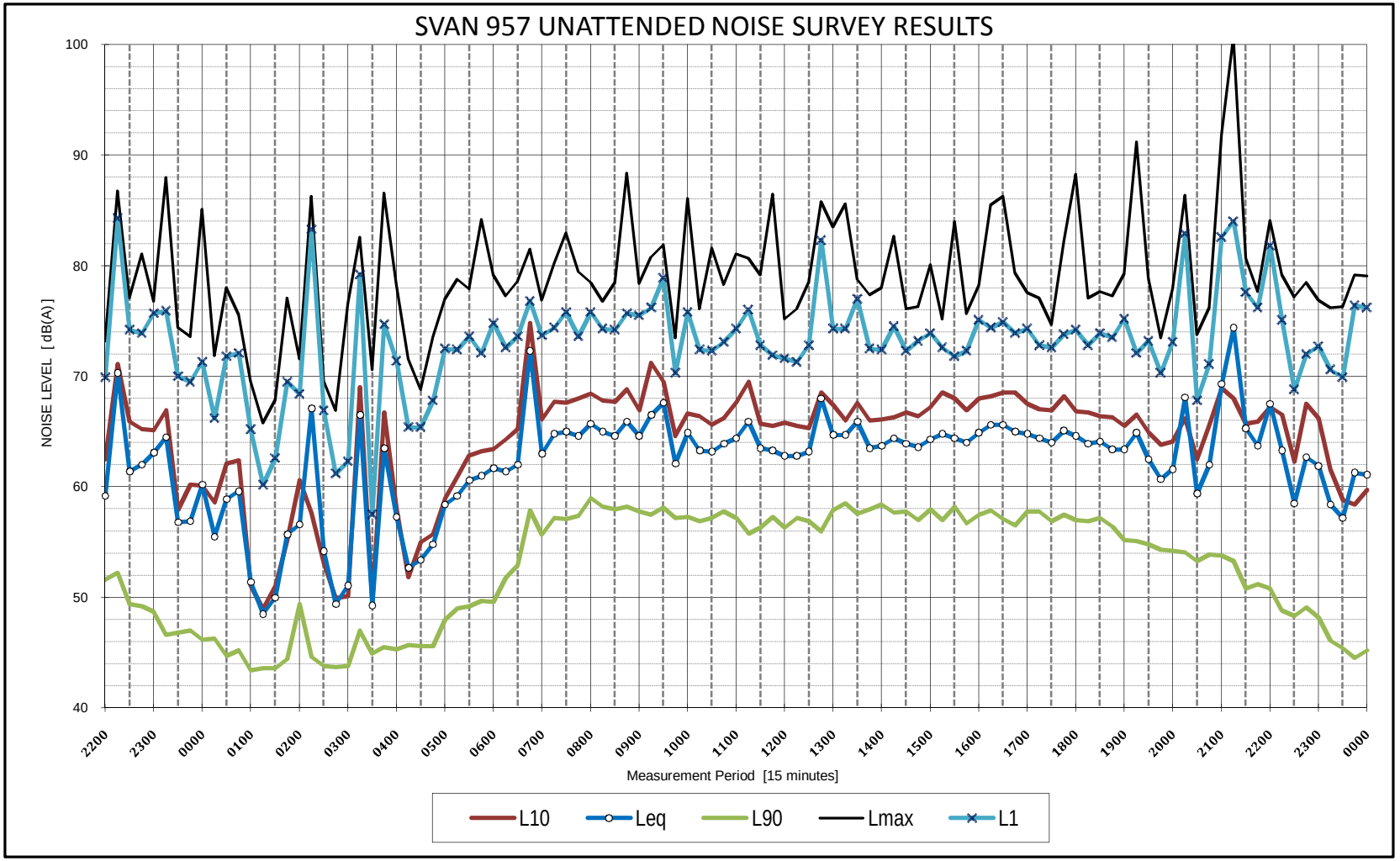

Humphries Ln
Park Rd
Rose St
Forest Rd
Forest Rd.
Alfred St.
Treacy St.
Treacy St
21/35 Treacy St, Hurstville New South Wales, Australia
Car Park
21-35 Treacy Street
Hurstville
Attended Road Traffic Noise
Monitoring Location
Unattended Noise
Monitoring Location
Attended Rail Noise/Vibration
Monitoring Location
Track 1
Track 2
Track 3
Track 4
Rail Corridor
Fl Rd
Hill St
The Ave
Railway Parade
Bellevue Ln
Empress St
Empress Ln
Crow Ln
St Georges Parade
Bellevue Parade
Boggle Ln
Woids Ave
Cole Ln
134 m
© 2010 Whereis® Sensis Pty Ltd
Image © 2010 Sinclair Knight Merz
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
elev 62 m
Jan 20, 2007
Eye alt 532 m
Google

APPENDIX B

APPENDIX B

APPENDIX B

DAY 1 ADDRESS: 21-35 Traacy Street, Hurstville DATE: Tuesday, 9 November 2010



AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
L90 Daytime	0700-1800	56	dB(A)
L90 Evening	1800-2200	52	dB(A)
L90 Nighttime	2200-0700	44	dB(A)
Leq Daytime	0700-1800	65	dB(A)
Leq Evening	1800-2200	66	dB(A)
Leq Nighttime	2200-0700	62	dB(A)

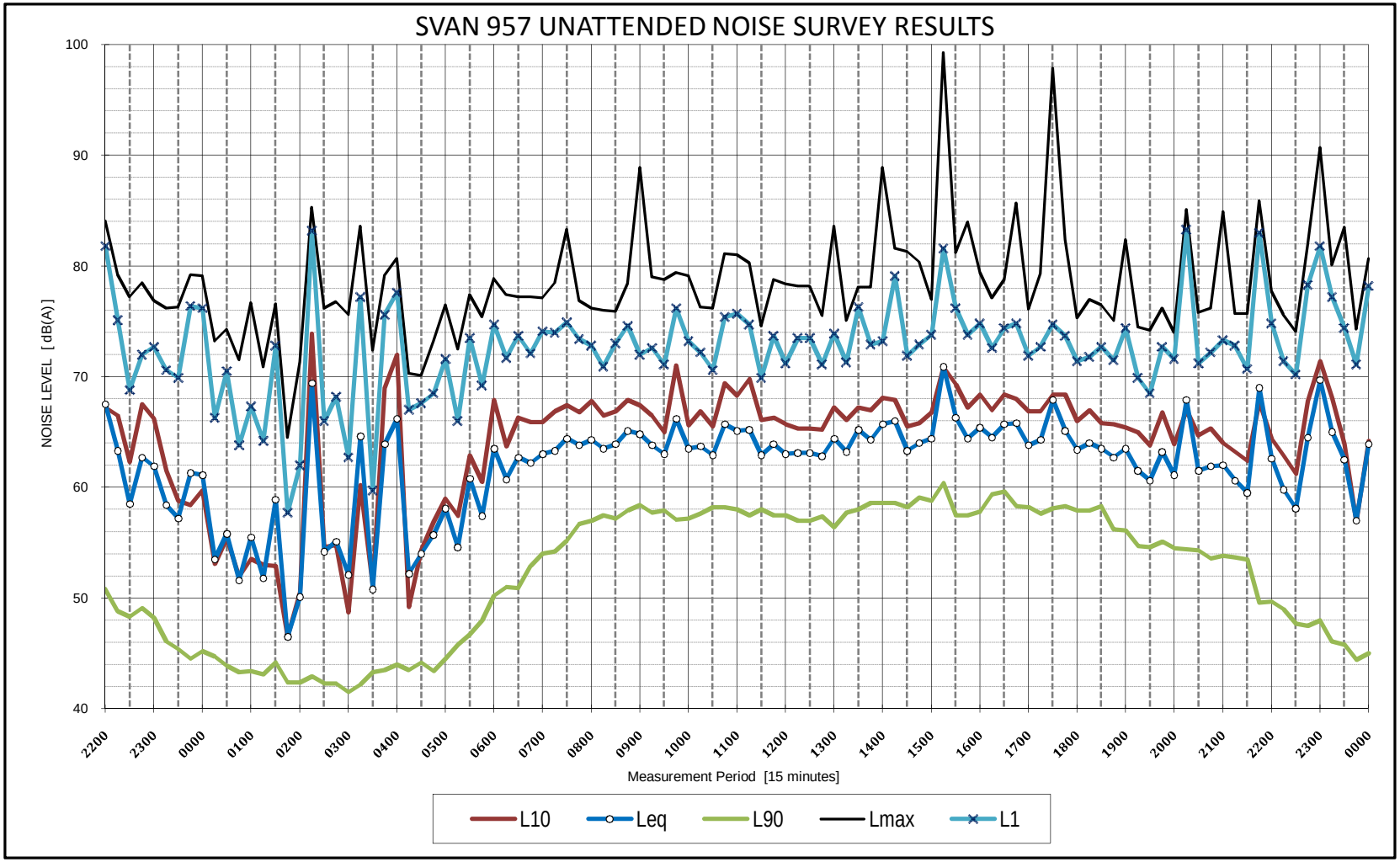
TRAFFIC & MISC. NOISE METRICS

Leq 15 hours	0700-2200	65	dB(A)
Leq 9 hours	2200-0700	62	dB(A)
Leq 24 hours	0000-2400	64	dB(A)
L10 18 hours	0600-2400	67	dB(A)
max Leq 1 hour	0700-2200	70	dB(A)
max Leq 1 hour	2200-0700	67	dB(A)

Maximum noise events as defined in the Envirnmental Noise Management Manual [Lmax - Leq ≥ 15]	33

		Frequency [Hz]									
Descritpor	Period	31.5	63	125	250	500	1000	2000	4000	8000	Total A
10% min L90 Daytime	0700-1800	24	35	42	47	50	51	49	40	27	56
10% min L90 Evening	1800-2200	18	32	39	44	46	47	44	34	22	52
10% min L90 Night	2200-0700	15	25	32	36	37	38	34	26	16	44
10% min L90 Period	0000-0700	14	25	32	36	37	38	34	26	16	44
10% min L90 Period	0700-0000	19	31	37	41	43	45	42	32	20	50
Leq 15 hours	0700-2200	32	47	52	55	58	61	59	53	42	65
Leq 9 hours	2200-0700	27	43	50	51	55	59	56	49	43	62

DAY 2 ADDRESS: 21-35 Traacy Street, Hurstville DATE: Wednesday, 10 November 2010



AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
L90 Daytime	0700-1800	57	dB(A)
L90 Evening	1800-2200	54	dB(A)
L90 Nighttime	2200-0700	42	dB(A)
Leq Daytime	0700-1800	65	dB(A)
Leq Evening	1800-2200	64	dB(A)
Leq Nighttime	2200-0700	61	dB(A)

TRAFFIC & MISC. NOISE METRICS

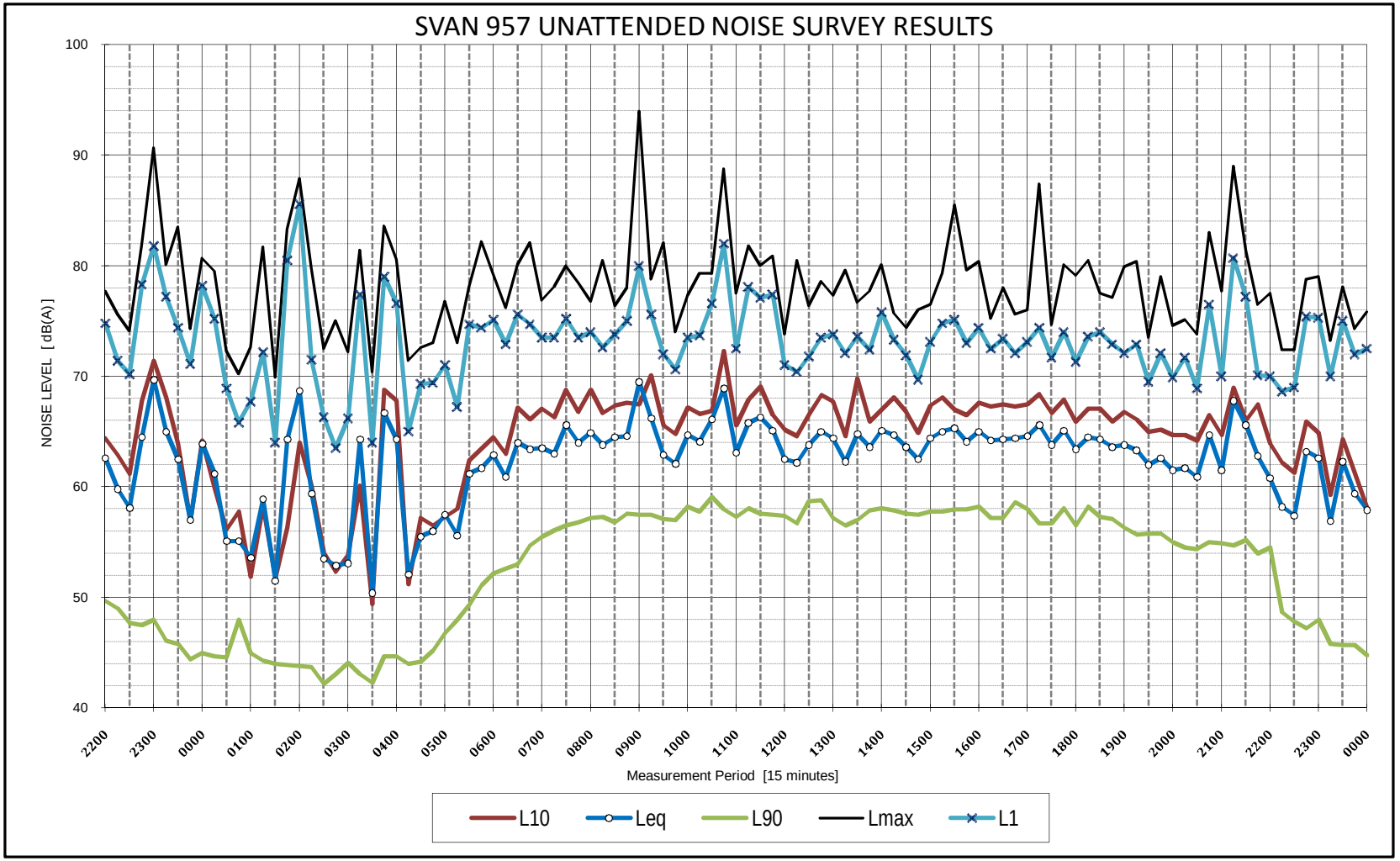
Leq 15 hours	0700-2200	65	dB(A)
Leq 9 hours	2200-0700	61	dB(A)
Leq 24 hours	0000-2400	64	dB(A)
L10 18 hours	0600-2400	66	dB(A)
max Leq 1 hour	0700-2200	67	dB(A)
max Leq 1 hour	2200-0700	64	dB(A)

Maximum noise events as defined in the Envirnmental Noise Management Manual [Lmax - Leq ≥ 15]	34

Frequency [Hz]

Descritpor	Period	31.5	63	125	250	500	1000	2000	4000	8000	Total A
10% min L90 Daytime	0700-1800	23	36	42	47	50	51	48	40	27	57
10% min L90 Evening	1800-2200	17	32	39	45	48	48	46	36	24	54
10% min L90 Night	2200-0700	13	23	30	35	36	37	33	25	16	42
10% min L90 Period	0000-0700	12	22	30	35	36	37	33	25	16	42
10% min L90 Period	0700-0000	15	28	35	39	42	45	42	31	22	49
Leq 15 hours	0700-2200	31	46	52	55	58	60	58	52	41	65
Leq 9 hours	2200-0700	26	45	49	51	55	56	55	49	38	61

DAY 3 ADDRESS: 21-35 Traacy Street, Hurstville DATE: Thursday, 11 November 2010



AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
L90 Daytime	0700-1800	57	dB(A)
L90 Evening	1800-2200	54	dB(A)
L90 Nighttime	2200-0700	43	dB(A)
Leq Daytime	0700-1800	65	dB(A)
Leq Evening	1800-2200	64	dB(A)
Leq Nighttime	2200-0700	62	dB(A)

TRAFFIC & MISC. NOISE METRICS

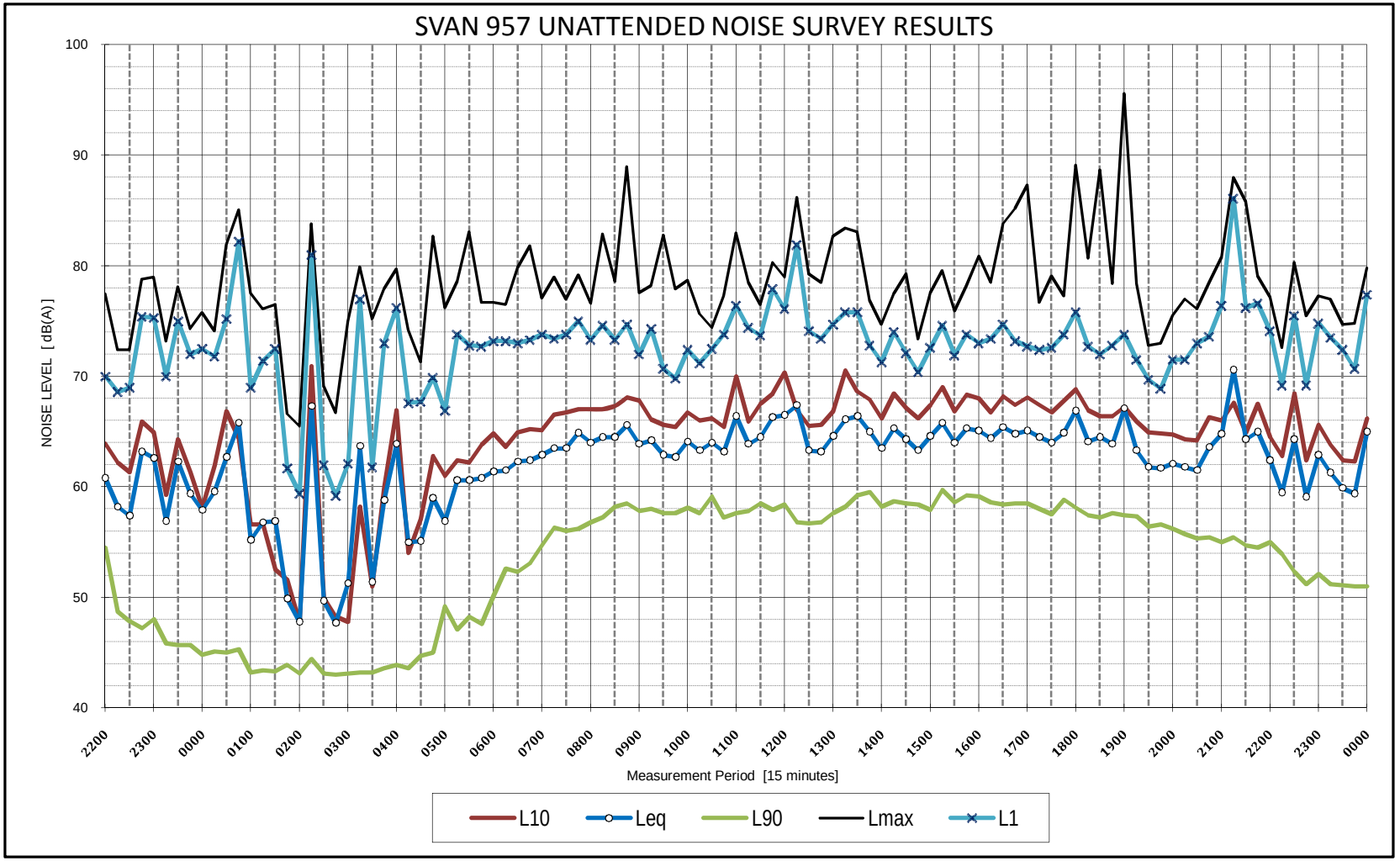
Leq 15 hours	0700-2200	65	dB(A)
Leq 9 hours	2200-0700	62	dB(A)
Leq 24 hours	0000-2400	64	dB(A)
L10 18 hours	0600-2400	66	dB(A)
max Leq 1 hour	0700-2200	66	dB(A)
max Leq 1 hour	2200-0700	66	dB(A)

Maximum noise events as defined in the Envirnmental Noise Management Manual [Lmax - Leq ≥ 15]	36

Frequency [Hz]

Descritpor	Period	31.5	63	125	250	500	1000	2000	4000	8000	Total A
10% min L90 Daytime	0700-1800	22	35	42	47	50	52	49	40	26	57
10% min L90 Evening	1800-2200	18	32	40	46	49	49	47	37	25	54
10% min L90 Night	2200-0700	9	21	29	35	37	38	34	27	17	43
10% min L90 Period	0000-0700	9	21	29	35	37	38	34	26	17	43
10% min L90 Period	0700-0000	16	30	36	41	46	48	44	35	22	52
Leq 15 hours	0700-2200	31	47	51	55	58	60	58	51	40	65
Leq 9 hours	2200-0700	25	42	49	52	56	57	57	51	39	62

DAY 4 ADDRESS: 21-35 Traacy Street, Hurstville DATE: Friday, 12 November 2010



AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
L90 Daytime	0700-1800	57	dB(A)
L90 Evening	1800-2200	55	dB(A)
L90 Nighttime	2200-0700	43	dB(A)
Leq Daytime	0700-1800	65	dB(A)
Leq Evening	1800-2200	65	dB(A)
Leq Nighttime	2200-0700	61	dB(A)

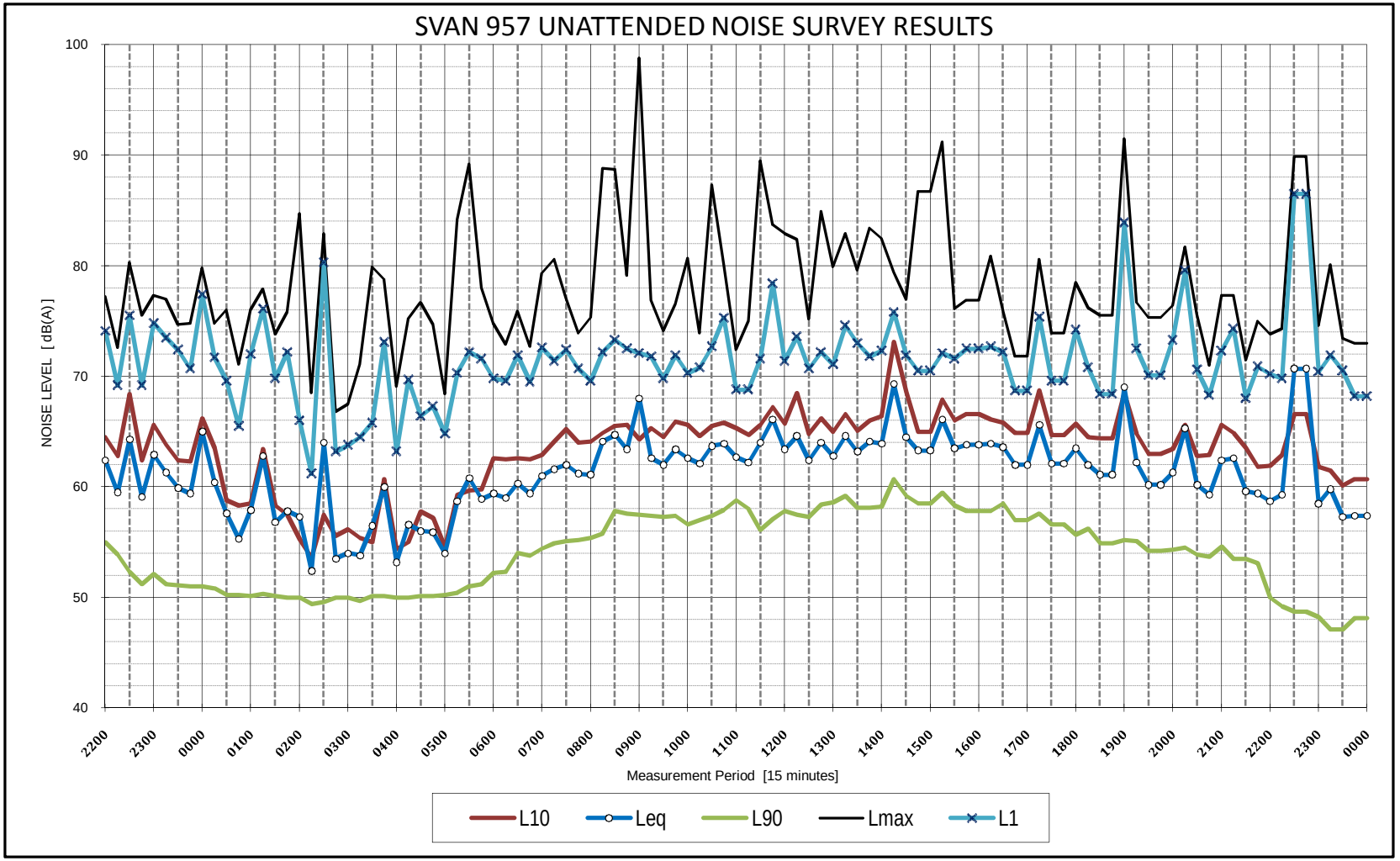
TRAFFIC & MISC. NOISE METRICS

Leq 15 hours	0700-2200	65	dB(A)
Leq 9 hours	2200-0700	61	dB(A)
Leq 24 hours	0000-2400	64	dB(A)
L10 18 hours	0600-2400	66	dB(A)
max Leq 1 hour	0700-2200	67	dB(A)
max Leq 1 hour	2200-0700	63	dB(A)

Maximum noise events as defined in the Envirnmental Noise Management Manual [Lmax - Leq ≥ 15]	33

		Frequency [Hz]									
Descritpor	Period	31.5	63	125	250	500	1000	2000	4000	8000	Total A
10% min L90 Daytime	0700-1800	22	35	43	48	51	51	49	40	28	57
10% min L90 Evening	1800-2200	19	34	42	47	49	49	46	37	26	55
10% min L90 Night	2200-0700	9	21	29	35	37	38	34	26	16	43
10% min L90 Period	0000-0700	9	20	29	35	37	38	34	26	15	43
10% min L90 Period	0700-0000	18	34	41	46	48	48	46	36	25	54
Leq 15 hours	0700-2200	34	47	53	55	58	60	58	52	42	65
Leq 9 hours	2200-0700	24	40	48	51	54	56	55	48	37	61

DAY 5 ADDRESS: 21-35 Traacy Street, Hurstville DATE: Saturday, 13 November 2010



AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
L90 Daytime	0700-1800	55	dB(A)
L90 Evening	1800-2200	53	dB(A)
L90 Nighttime	2200-0700	50	dB(A)
Leq Daytime	0700-1800	64	dB(A)
Leq Evening	1800-2200	63	dB(A)
Leq Nighttime	2200-0700	60	dB(A)

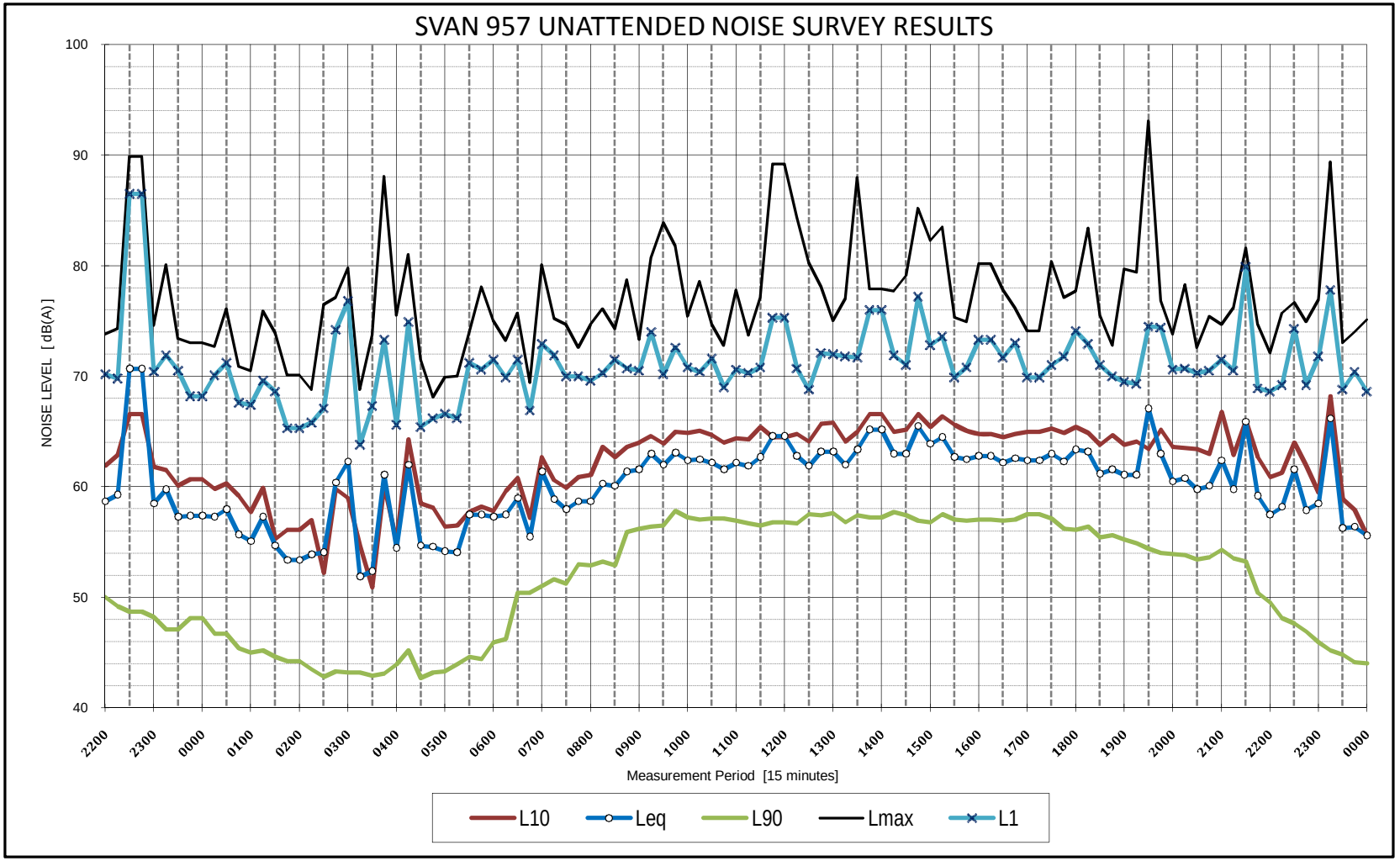
TRAFFIC & MISC. NOISE METRICS

Leq 15 hours	0700-2200	64	dB(A)
Leq 9 hours	2200-0700	60	dB(A)
Leq 24 hours	0000-2400	63	dB(A)
L10 18 hours	0600-2400	65	dB(A)
max Leq 1 hour	0700-2200	66	dB(A)
max Leq 1 hour	2200-0700	62	dB(A)

Maximum noise events as defined in the Envirnmental Noise Management Manual [Lmax - Leq ≥ 15]	25

		Frequency [Hz]									
Descritpor	Period	31.5	63	125	250	500	1000	2000	4000	8000	Total A
10% min L90 Daytime	0700-1800	21	34	42	47	49	50	47	39	26	55
10% min L90 Evening	1800-2200	16	31	40	45	48	48	45	36	25	53
10% min L90 Night	2200-0700	17	32	40	44	43	43	40	31	21	50
10% min L90 Period	0000-0700	17	32	40	44	43	42	40	30	21	50
10% min L90 Period	0700-0000	15	29	36	40	42	45	42	32	24	50
Leq 15 hours	0700-2200	32	44	50	54	57	59	57	53	42	64
Leq 9 hours	2200-0700	26	44	47	50	53	55	53	47	37	60

DAY 6 ADDRESS: 21-35 Traacy Street, Hurstville DATE: Sunday, 14 November 2010



AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
L90 Daytime	0800-1800	56	dB(A)
L90 Evening	1800-2200	53	dB(A)
L90 Nighttime	2200-0800	43	dB(A)
Leq Daytime	0800-1800	63	dB(A)
Leq Evening	1800-2200	63	dB(A)
Leq Nighttime	2200-0800	61	dB(A)

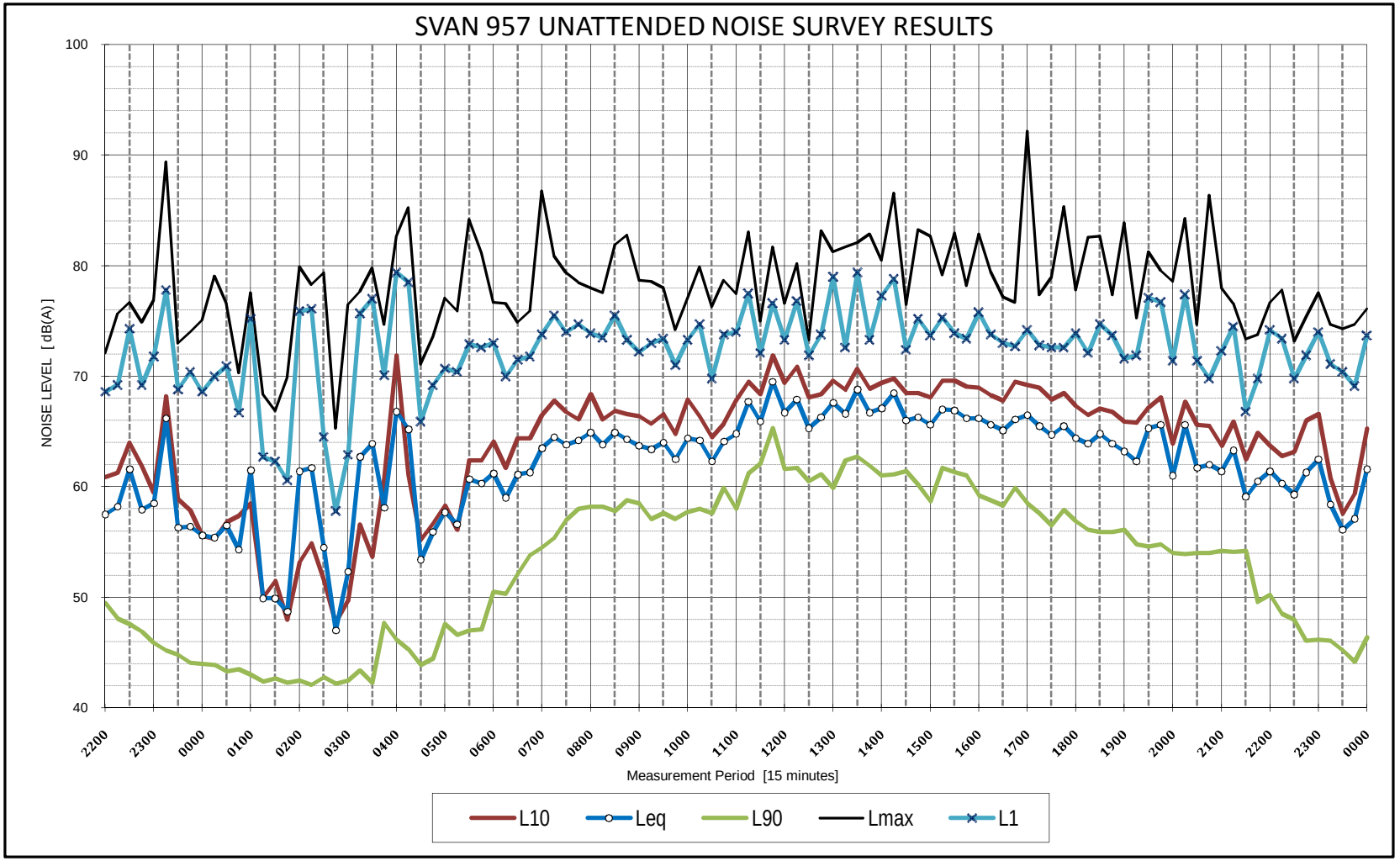
TRAFFIC & MISC. NOISE METRICS

Leq 15 hours	0700-2200	63	dB(A)
Leq 9 hours	2200-0700	61	dB(A)
Leq 24 hours	0000-2400	61	dB(A)
L10 18 hours	0600-2400	64	dB(A)
max Leq 1 hour	0700-2200	64	dB(A)
max Leq 1 hour	2200-0700	68	dB(A)

Maximum noise events as defined in the Envirnmental Noise Management Manual [Lmax - Leq ≥ 15]	33

		Frequency [Hz]									
Descritpor	Period	31.5	63	125	250	500	1000	2000	4000	8000	Total A
10% min L90 Daytime	0800-1800	14	28	38	43	47	47	46	38	26	53
10% min L90 Evening	1800-2200	16	31	39	44	48	48	45	36	25	53
10% min L90 Night	2200-0800	8	21	30	35	37	38	34	26	16	43
10% min L90 Period	0000-0700	8	21	30	35	37	38	34	26	16	43
10% min L90 Period	0700-0000	13	26	35	40	42	44	42	32	24	49
Leq 15 hours	0700-2200	30	44	50	54	56	58	55	51	40	63
Leq 9 hours	2200-0700	21	37	46	49	54	57	54	47	36	61

DAY 7 ADDRESS: 21-35 Traacy Street, Hurstville DATE: Monday, 15 November 2010



AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
L90 Daytime	0700-1800	57	dB(A)
L90 Evening	1800-2200	54	dB(A)
L90 Nighttime	2200-0700	42	dB(A)
Leq Daytime	0700-1800	66	dB(A)
Leq Evening	1800-2200	63	dB(A)
Leq Nighttime	2200-0700	60	dB(A)

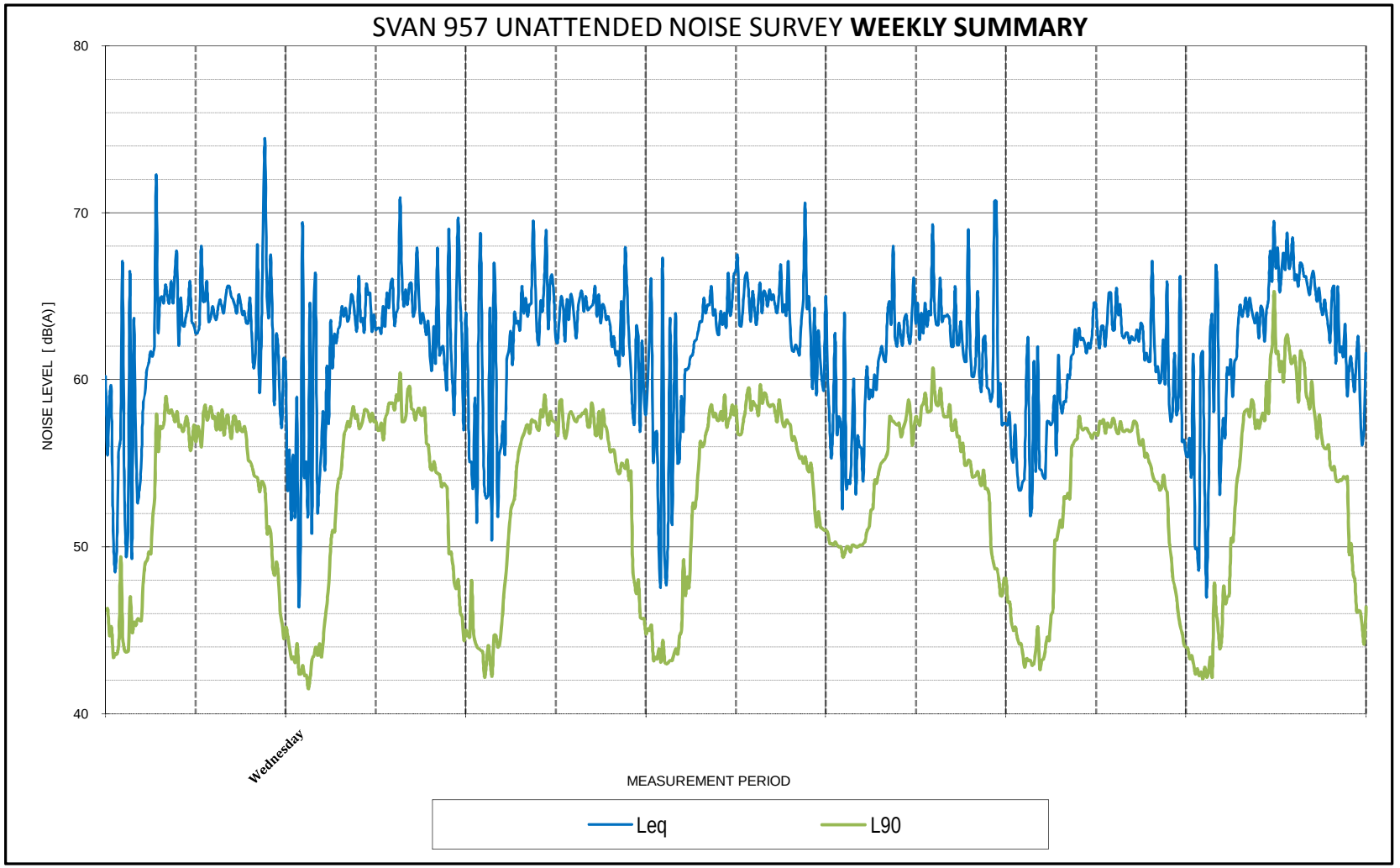
TRAFFIC & MISC. NOISE METRICS

Leq 15 hours	0700-2200	65	dB(A)
Leq 9 hours	2200-0700	60	dB(A)
Leq 24 hours	0000-2400	64	dB(A)
L10 18 hours	0600-2400	67	dB(A)
max Leq 1 hour	0700-2200	68	dB(A)
max Leq 1 hour	2200-0700	63	dB(A)

Maximum noise events as defined in the Envirnmental Noise Management Manual [Lmax - Leq ≥ 15]	33

		Frequency [Hz]									
Descritpor	Period	31.5	63	125	250	500	1000	2000	4000	8000	Total A
10% min L90 Daytime	0700-1800	22	36	44	48	51	52	50	41	28	57
10% min L90 Evening	1800-2200	16	30	39	45	48	48	46	37	24	54
10% min L90 Night	2200-0700	8	20	29	35	36	37	33	25	18	42
10% min L90 Period	0000-0700	8	20	29	34	36	37	33	25	18	42
10% min L90 Period	0700-0000	16	28	34	39	42	45	42	32	19	49
Leq 15 hours	0700-2200	31	49	51	54	58	60	60	55	46	65
Leq 9 hours	2200-0700	24	39	46	50	53	55	55	48	38	60

WEEKLY SUMMARY ADDRESS: 21-35 Traacy Street, Hurstville PERIOD: 9th to 15th November 2010



SUMMARY OF AMBIENT NOISE LEVELS

	L90 Daytime	*L90* Evening	*L90* Nighttime
Day 1	56	52	44
Day 2	57	54	42
Day 3	57	54	43
Day 4	57	55	43
Day 5	55	53	50
Day 6	56	53	43
Day 7	57	54	42
RBL	57	54	43

	Leq Daytime	*Leq* Evening	*Leq* Nighttime
Day 1	65	66	62
Day 2	65	64	61
Day 3	65	64	62
Day 4	65	65	61
Day 5	64	63	60
Day 6	63	63	61
Day 7	66	63	60
Average	65	64	61

SUMMARY OF TRAFFIC & MISC. NOISE LEVELS

Leq 15 hrs	0700-2200	64	dB(A)
Leq 9 hrs	2200-0700	61	dB(A)
Leq 24 hrs	0000-2400	63	dB(A)
L10 18 hrs	0600-2400	66	dB(A)
max Leq 1 hr	0700-2200	67	dB(A)
max Leq 1 hr	2200-0700	65	dB(A)

Maximum noise events as defined in the Envirnmental Noise Management Manual 7 day average - [Lmax - Leq ≥ 15]	32.4285714

WEEKKLY SUMMARY

		Frequency [Hz]									
Descritpor	Period	31.5	63	125	250	500	1000	2000	4000	8000	Total A
10% min L90 Daytime	0700-1800	22	35	42	47	50	51	49	40	27	57
10% min L90 Evening	1800-2200	17	32	39	45	48	48	46	36	25	54
10% min L90 Night	2200-0700	9	21	30	35	37	38	34	26	16	43
10% min L90 Period	0000-0700	9	21	30	35	37	38	34	26	16	43
10% min L90 Period	0700-0000	16	29	36	40	42	45	42	32	22	50
Leq 15 hours	0700-2200	32	47	51	55	57	60	58	53	42	64
Leq 9 hours	2200-0700	25	42	48	51	54	57	55	49	39	61

APPENDIX C

APPENDIX C

APPENDIX C

Sydney Airport, New South Wales
November 2010 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Mo	17.6	18.5	0	6.6	0.1	S	52	07:52	18.0	83	7	S	41	1014.9	18.1	82	7	S	39	1012.2
2	Tu	11.5	18.0	38.8	3.8	1.7	SW	67	04:58	13.8	82	4	W	28	1012.2	16.4	69	7	S	31	1013.3
3	We	11.5	22.6	0	4.0	11.9	SE	43	15:30	17.9	59	1	WNW	15	1018.3	20.8	52	2	SE	26	1016.6
4	Th	14.5	17.8	1.2	5.4	2.8	SE	56	18:58	14.7	80	8	SSW	26	1022.5	16.7	72	7	S	28	1020.7
5	Fr	13.0	18.2	36.6	8.4	2.7	SSE	48	23:14	16.0	56	7	SSE	31	1024.0	16.9	55	7	SSE	31	1022.5
6	Sa	13.8	18.7	5.4	4.8	2.5	SE	46	06:25	14.7	89	8	SSE	22	1024.0	16.1	84	7	SSE	15	1022.1
7	Su	13.4	23.6	6.4	3.6	10.9	E	41	13:03	18.3	69	1	NW	9	1021.3	21.5	55	1	E	31	1018.0
8	Mo	16.2	27.9	0.2	5.8	7.9	WSW	76	19:34	23.6	58	3	NNE	13	1017.1	24.9	44	7	NE	41	1014.7
9	Tu	16.4	22.7	28.8	11.2	7.0	SSE	41	06:31	19.1	82	7	SE	28	1025.3	20.1	82	7	S	13	1024.4
10	We	18.1	27.9	0	3.2	6.0	NNE	52	16:34	22.7	73	5	NW	13	1021.8	26.9	56	6	ENE	30	1016.7
11	Th	19.6	29.6	11.8	7.2	9.3	ENE	37	13:49	20.5	68	6	S	17	1016.9	28.0	37	3	ENE	28	1011.8
12	Fr	19.7	29.2	0	9.0	12.6	NE	54	15:09	25.5	58	2	WNW	9	1014.0	27.5	45	2	NE	39	1011.5
13	Sa	19.9	32.3	0	8.6	10.3	NNE	57	16:25	27.3	54	3	N	11	1014.9	29.7	51	3	NE	33	1013.1
14	Su	21.3	32.5	0	9.0	10.2	NE	54	14:29	28.4	56	3	NNE	13	1015.5	28.2	53	6	NNE	41	1012.4
15	Mo	21.7	21.7	0	10.4	0.0	S	39	10:21	21.7	87	7	S	24	1013.2	19.1	96	8	SSE	9	1012.7
16	Tu	17.5	21.2	19.0	1.0	7.9	S	41	09:54	18.2	87	7	SSW	24	1013.6	20.5	76	3	S	26	1011.7
17	We	16.4	22.1	0.6	6.6	4.2	SSE	33	23:08	17.6	85	7	S	20	1017.3	20.2	62	5	SSE	17	1015.8
18	Th	16.7		0.2	3.6					22.1	60	7	N	15	1015.3						
Statistics for the first 18 days of November 2010																					
	Mean	16.6	23.8		6.2	6.4				20.0	71	5		19	1017.9	21.9	63	5		28	1015.9
	Lowest	11.5	17.8		1.0	0.0				13.8	54	1	#	9	1012.2	16.1	37	1	SSE	9	1011.5
	Highest	21.7	32.5	38.8	11.2	12.6	WSW	76		28.4	89	8	S	41	1025.3	29.7	96	8	#	41	1024.4
	Total			149.0	112.2	108.0															

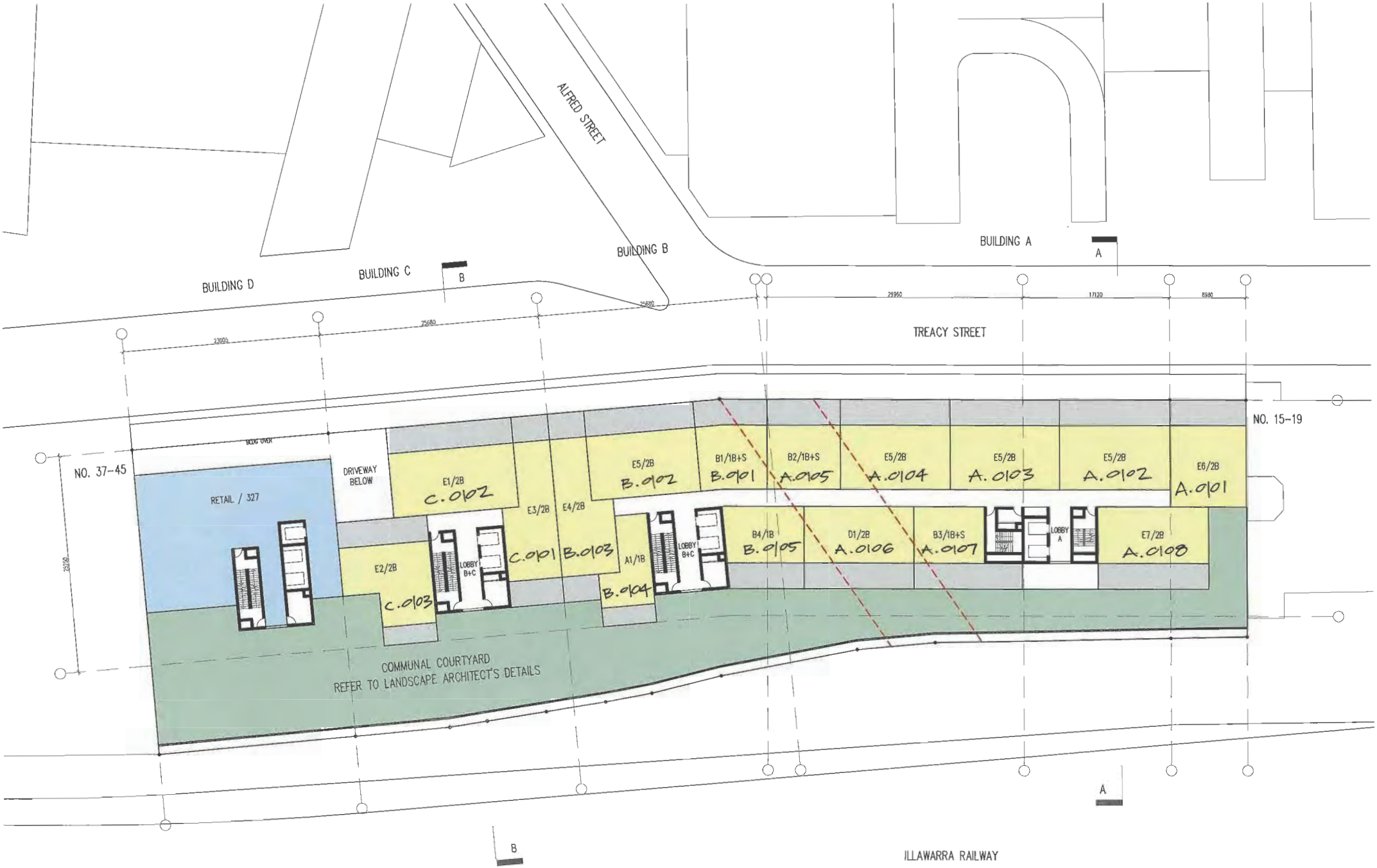
Observations were drawn from Sydney Airport AMO {station 066037}

IDCJDW2125.201011 Prepared at 23:42 GMT on 17 Nov 2010

APPENDIX D

APPENDIX D

APPENDIX D



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PROJECT	CLIENT	No.	DATE	REVISION / ISSUE DETAILS	DRAWING TITLE	SCALE: 1:400@A3	DATE: 29.11.10	DRAWN: JN DZ
21-35 TREACY STREET HURSTVILLE NSW	EARLJEST PTY LTD ATF HURSTVILLE UNIT TRUST	-	29.11.10	CONCEPT PLAN	RL 67.50 LEVEL 1	PROJECT NUMBER: 10 011	DRAWING NUMBER: CD15	REVISION: -

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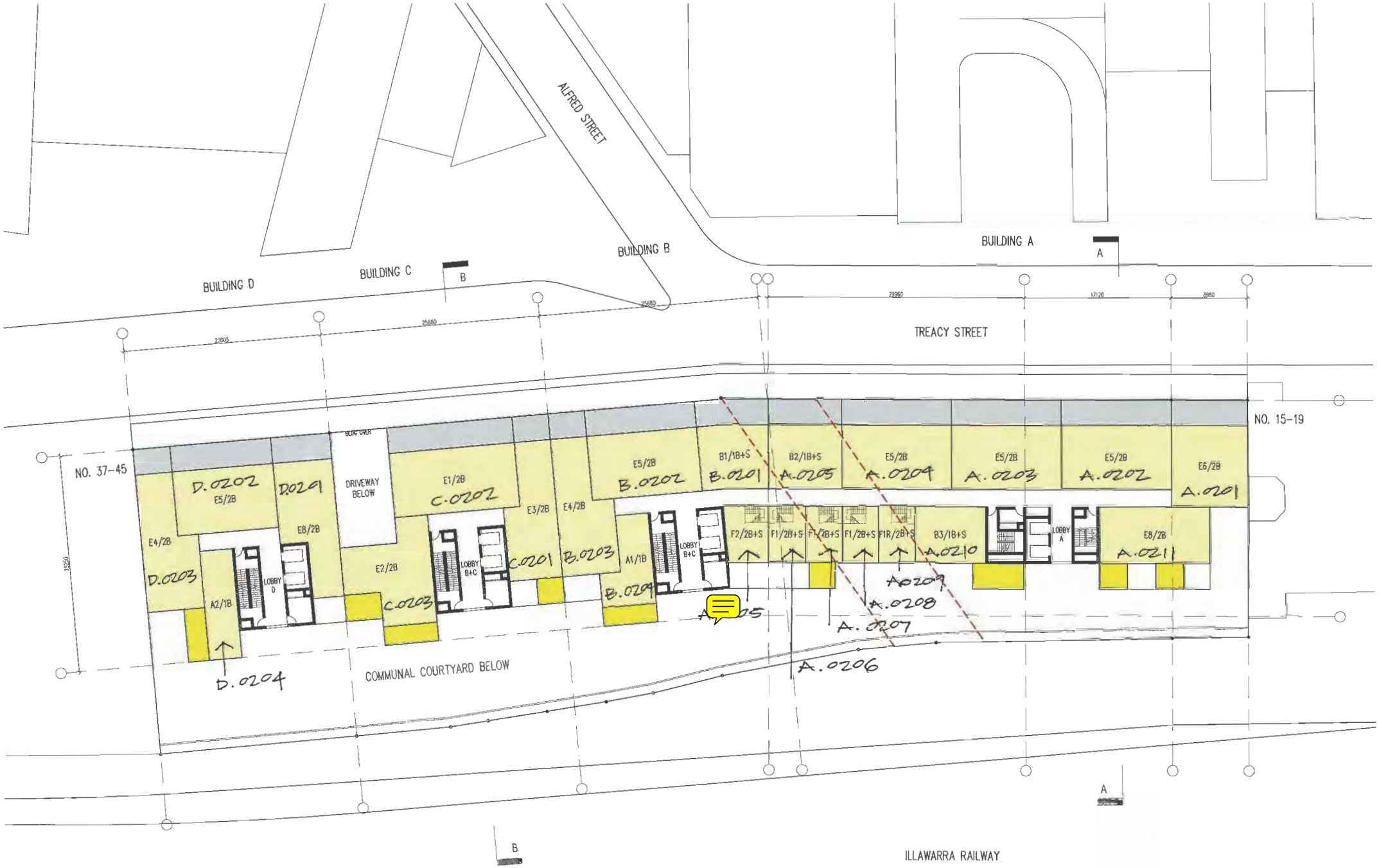

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21-35 TREACY STREET HURSTVILLE NSW	EARLJEST PTY LTD ATF HURSTVILLE UNIT TRUST	-	29.11.10	CONCEPT PLAN	RL 70.55 LEVEL 2	PROJECT NUMBER: 10 011	DRAWING NUMBER: CD16	REVISION: -

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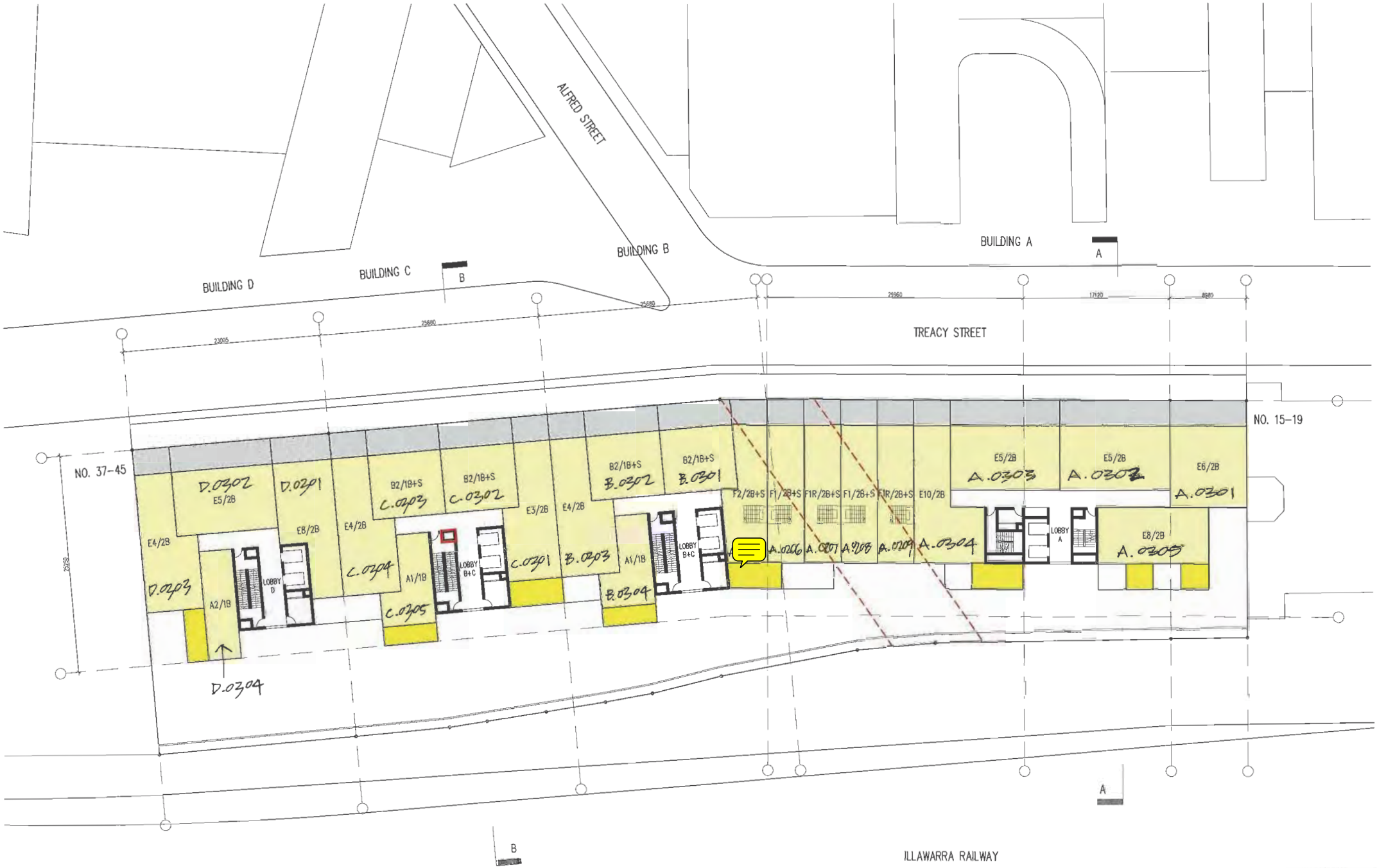

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21-35 TREACY STREET HURSTVILLE NSW	EARLJEST PTY LTD ATF HURSTVILLE UNIT TRUST	-	29.11.10	CONCEPT PLAN	RL 73.60 LEVEL 3	PROJECT NUMBER: 10 011	DRAWING NUMBER: CD17	REVISION: -

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PROJECT	CLIENT	No.	DATE	REVISION / ISSUE DETAILS	DRAWING TITLE	SCALE: 1:400@A3	DATE: 29.11.10	DRAWN: JN DZ
21-35 TREACY STREET HURSTVILLE NSW	EARLJEST PTY LTD ATF HURSTVILLE UNIT TRUST	-	29.11.10	CONCEPT PLAN	RL 85.80 LEVEL 7	PROJECT NUMBER: 10 011	DRAWING NUMBER: CD21	REVISION: -

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21-35 TREACY STREET HURSTVILLE NSW	EARLJEST PTY LTD ATF HURSTVILLE UNIT TRUST	-	29.11.10	CONCEPT PLAN	RL 88.85 LEVEL 8	PROJECT NUMBER: 10 011	DRAWING NUMBER: CD22	REVISION: -

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PROJECT	CLIENT	No.	DATE	REVISION / ISSUE DETAILS	DRAWING TITLE	SCALE: 1:400@A3	DATE: 29.11.10	DRAWN: JN DZ
21-35 TREACY STREET HURSTVILLE NSW	EARLJEST PTY LTD ATF HURSTVILLE UNIT TRUST	-	29.11.10	CONCEPT PLAN	RL 99.90 LEVEL 9	PROJECT NUMBER: 10 011	DRAWING NUMBER: CD23	REVISION: -

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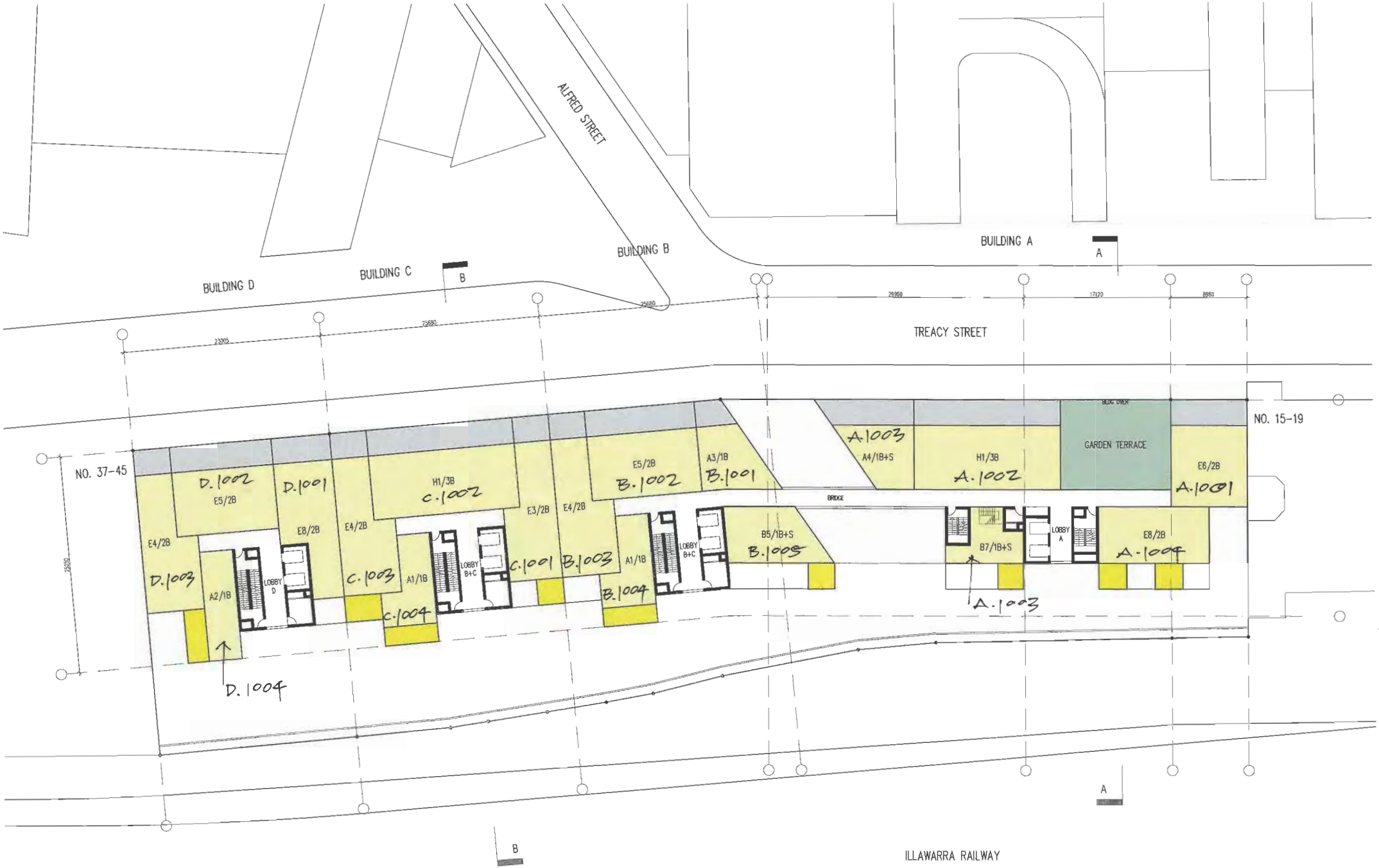

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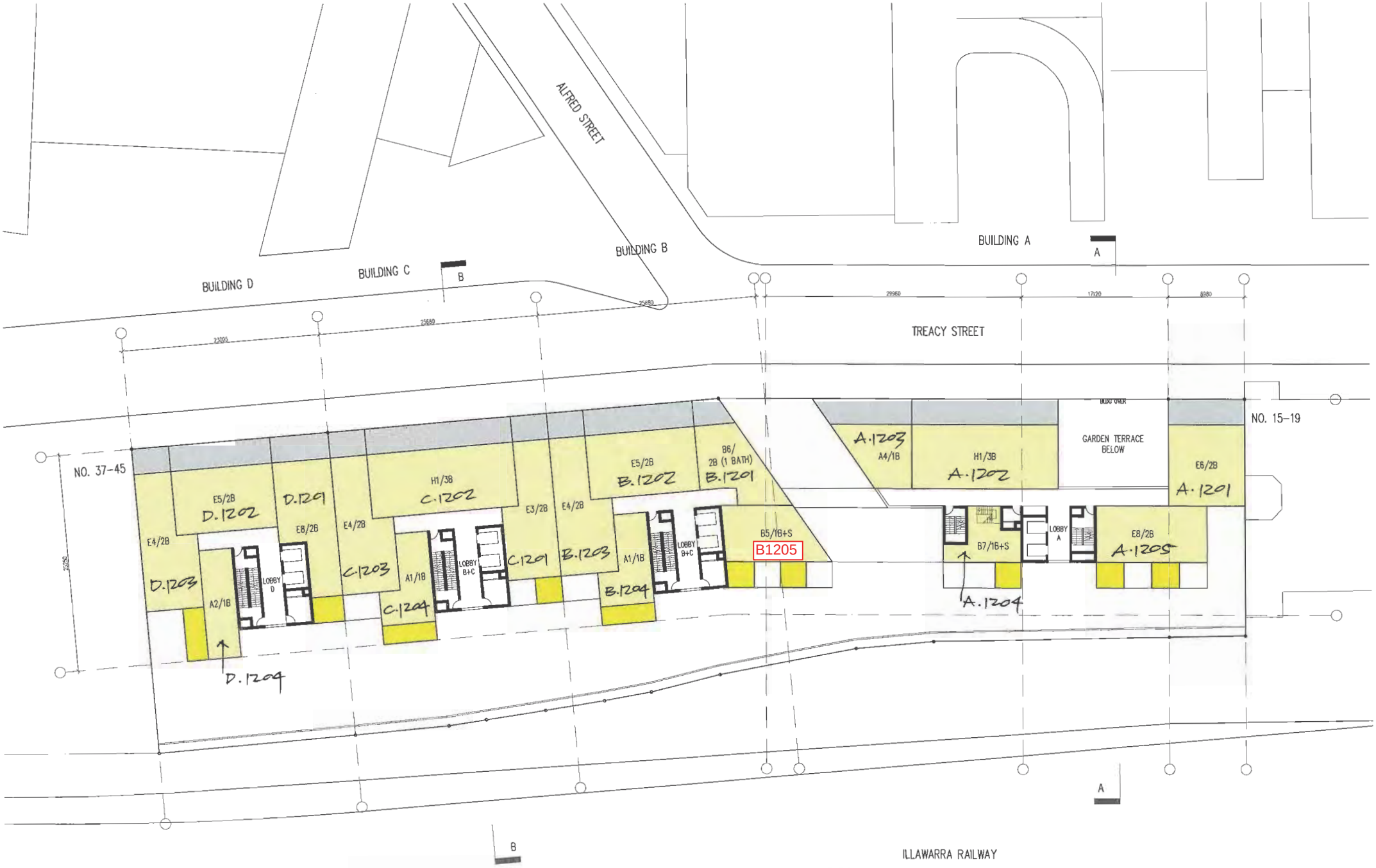

STANISIC ASSOCIATES ARCHITECTS LEVEL 3, 346 KENT STREET SYDNEY NSW 2000 T. 02 9299 7871 F. 02 9299 7872 E. info@stanisic.com.au www.stanisic.com.au	PROJECT 21-35 TREACY STREET HURSTVILLE NSW	CLIENT EARLJEST PTY LTD ATF HURSTVILLE UNIT TRUST	No. -	DATE 29.11.10	REVISION / ISSUE DETAILS CONCEPT PLAN	DRAWING TITLE RL 101.05 LEVEL 12	SCALE: 1:400@A3 PROJECT NUMBER: 10 011	DATE: 29.11.10 DRAWING NUMBER: CD26	DRAWN: JN DZ REVISION: -

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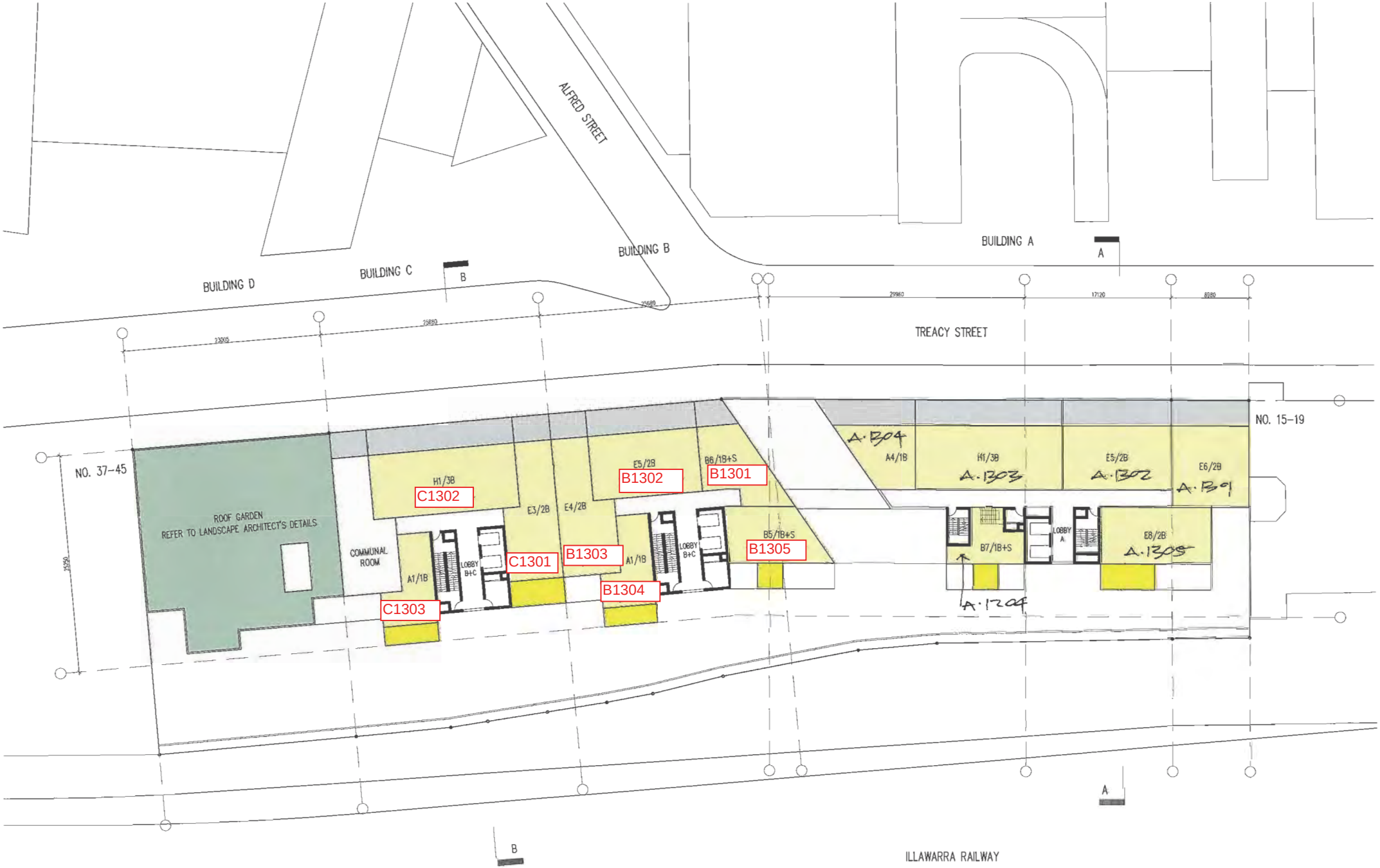

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PROJECT	CLIENT	No.	DATE	REVISION / ISSUE DETAILS	DRAWING TITLE	SCALE: 1:400@A3	DATE: 29.11.10	DRAWN: JN DZ
21-35 TREACY STREET HURSTVILLE NSW	EARLJEST PTY LTD ATF HURSTVILLE UNIT TRUST	-	29.11.10	CONCEPT PLAN	RL 107.15 LEVEL 14	PROJECT NUMBER: 10 011	DRAWING NUMBER: CD28	REVISION: -

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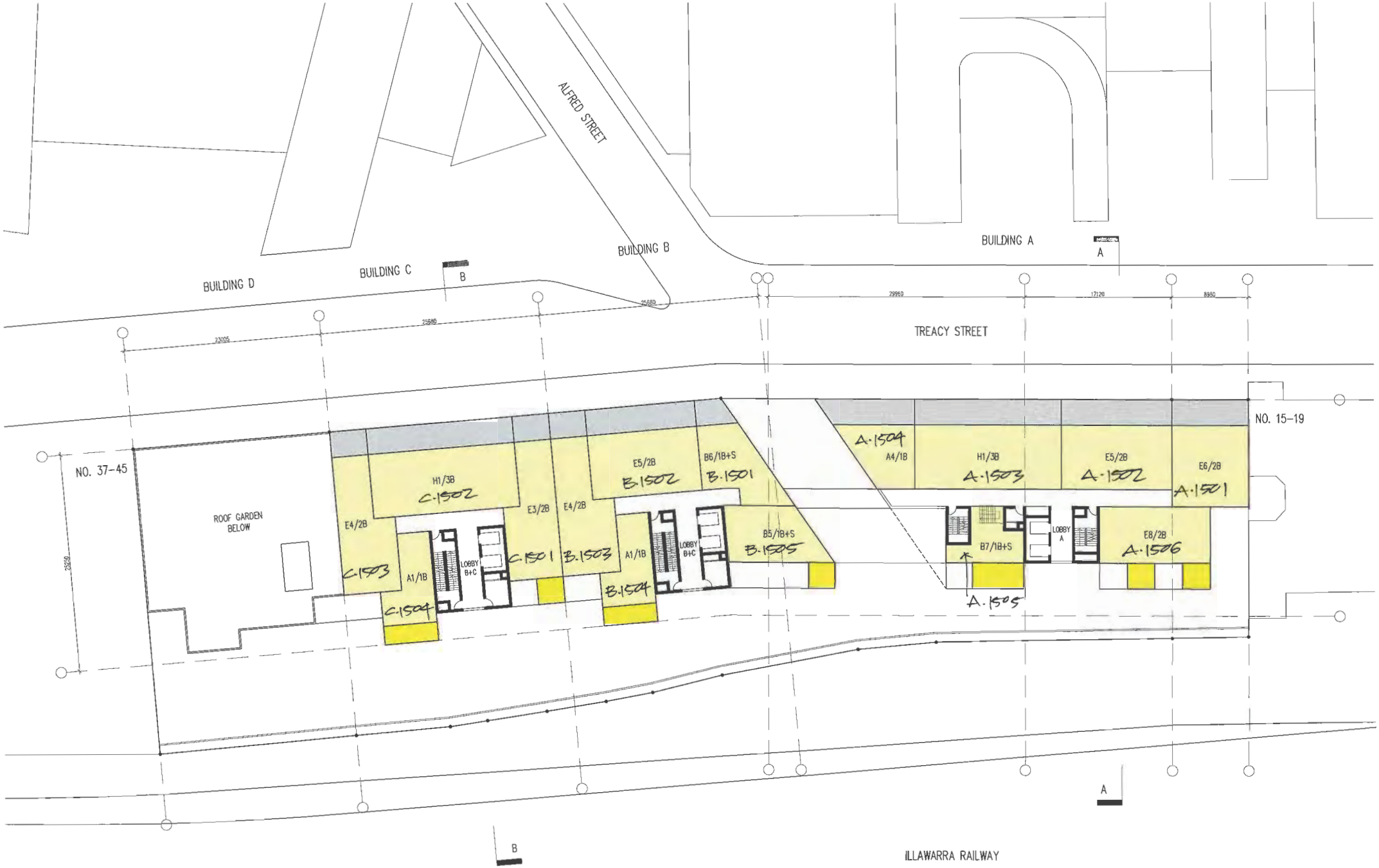

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APPENDIX E

APPENDIX E

APPENDIX E

BLOCK A

MINIMUM GLAZING THICKNESS AND MECHANICAL VENTILATION REQUIREMENTS

Unit	Habitable Space	Minimum Glazing Thickness	Mechanical Ventilation Requirement
A0101 / A0201 / A0301	B1/B2	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
A0701 / A0801 / A0901 / A1001 / A1101 /1201	B1/B2	10.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
A1301 / A1401 / A1501	B1/B2	6.38 mm laminated	No
	L/D	5 mm	No

Unit	Habitable Space	Minimum Glazing Thickness	Mechanical Ventilation Requirement
A0102 / A0103 / A0104 / A0202 / A0203/ A0204	B1/B2	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
A0302 / A0401 / A0501 / A0303 / A0402 / A0502	B1/B2	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
A0601 / A0702 / A0602 / A0703	B1/B2	10.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
A0802 / A0902 / A0803 / A0903	B1/B2	6.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
A1002 A1102 A1202	B1/B2/B3	6.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
A1303 / A1403 / A1503	B1/B2/B3	5 mm	No
	L/D	5 mm	No

Unit	Habitable Space	Minimum Glazing Thickness	Mechanical Ventilation Requirement
A0403 / A0503	B1/B2	12.38 mm laminated	Yes
	L/D- Sliding doors	12.38 mm laminated	Yes
	L/D Window	10.38 mm laminated	
A0603 / A0704	B1/B2	10.38 mm laminated	Yes
	L/D- Sliding doors	10.38 mm laminated	Yes
	L/D Window	10.38 mm laminated	
A0804 / A0904	B1/B2	6.38 mm laminated	Yes
	L/D- Sliding doors	6.38 mm laminated	Yes
	L/D Window	10.38 mm laminated	
A1003 / A1103 / A1203	B1	10.38 mm laminated	Yes
	L/D- Sliding doors	6.38 mm laminated	Yes
	L/D Window	10.38 mm laminated	
A1304 / A1404 / A1504	B1	6.38 mm laminated	Yes
	L/D- Sliding doors	5 mm	Yes
	L/D Window	10.38 mm laminated	

Unit	Habitable Space	Minimum Glazing Thickness	Mechanical Ventilation Requirement
A0105 / A0205	B1	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes

Unit	Habitable Space	Minimum Glazing Thickness	Mechanical Ventilation Requirement
A0106 / A0107	B1/B2	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes

Unit	Habitable Space	Minimum Glazing Thickness	Mechanical Ventilation Requirement
A0210	B1	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D	12.38 mm laminated	Yes

Unit	Habitable Space	Minimum Glazing Thickness	Ventilation requirement
A0304	B1/B2	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes

Unit	Habitable Space	Minimum Glazing Thickness	Ventilation requirement
A0404 / A0604 / A0805 / A1003 / A1204 / A1405	L/D	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B1/ST	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes

Unit	Habitable Space	Minimum Glazing Thickness	Mechanical Ventilation Requirement
A0206 / A0207 /A0208 / A0209	B1	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes

Unit	Habitable Space	Minimum Glazing Thickness	Mechanical Ventilation Requirement
A0108	B1/B2	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
A0211	B1/B2	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
A0305 / A0405 / A0504 / A0605 / 0705 / A0806 / A0905 / A1004 / A1104 / A1205 / A1305 / A1406 / A1506	B1/B2	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes

BLOCK B

MINIMUM GLAZING THICKNESS AND MECHANICAL VENTILATION REQUIREMENTS

Unit	Habitable Space	Minimum Glazing Thickness	Mechanical Ventilation Requirement
B0101 / B0201 / B0301 / B0401 / B0501	B1	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
B0601 / B0701	B1	10.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
B0801 / B0901 / B1001 / B1101 / B1201	B1	6.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
B1301 / B1401 / B1501	B1	5 mm	Yes
	L/D	5 mm	Yes

Unit	Habitable Space	Minimum Glazing Thickness	Mechanical Ventilation Requirement
B0102 to B0502	B1/B2	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
B0602 / B0702	B1/B2	10.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
B0802 to B1202	B1/B2	6.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
B1302 / B1502	B1/B2	5 mm	No
	L/D	5 mm	No

Unit	Habitable Space	Minimum Glazing Thickness	Mechanical Ventilation Requirement
B0103	B1	12.38 mm laminated	Yes
	B2	6.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
B0203	B1	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	6.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
B0303 to B0503	B1	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	6.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
B0603 to B0903	B1	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	6.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
B1003 to B1503	B1	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	6.38 mm laminated	Yes
	L/D	5 mm laminated	No

Unit	Habitable Space	Minimum Glazing Thickness	Mechanical Ventilation Requirement
B0104	L/D- Sliding doors	10.38 mm laminated	Yes
	L/D- Window	6.38 mm laminated	Yes
B0204	L/D- Sliding doors	12.38 mm laminated	Yes
	L/D- Window	6.38 mm laminated	Yes
B0304 to B1504	L/D- Sliding doors	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D- Window	10.38 mm laminated	Yes

Unit	Habitable Space	Minimum Glazing Thickness	Mechanical Ventilation Requirement
B0105	B1	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
	K	10.38 mm laminated	Yes
B0205	B1	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
B0405 / B0505 / B0605 / B0705 / B0805 / B0905 / B1005 / B1105 / B1205 / B1305 / B1405 / B1505	B1	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D/K	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	Study	10.38 mm laminated	Yes

BLOCK C

MINIMUM GLAZING THICKNESS AND MECHANICAL VENTILATION REQUIREMENTS

Unit	Habitable Space	Minimum Glazing Thickness	Ventilation requirement
C0101	B1/B2	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
C0201	B1/B2	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
C0301 to C0501	B1/B2	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
C0601 to C1201	B1/B2	10.38 mm laminated + 150 AG + 10.38 mm	Yes
	L/D	6.38 mm laminated	Yes
C1301 to C1501	B1/B2	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D	5 mm	No

Unit	**Habitable Space**	**Minimum Glazing Thickness**	**Ventilation requirement**
C0102 / C0202 / C0302 / C0303 / C0403 / C0402 / C0503	B1/B2	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
C0602 / C0603	B1/B2	10.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
C1002 to C1202	B1/B2/B3	6.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
C1302 / C1502	B1/B2	5 mm	No
	L/D	5 mm	No

Unit	Habitable Space	Minimum Glazing Thickness	Ventilation requirement
C0103	B1/B2	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
C0203	B1	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
C0304 / C0404 / C0504	B1	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	10.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
C0604	B1	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	10.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
C0702 / C0802 / C0902	B1/B2	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
C1003 / C1103 / C1203	B1	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	10.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
C1403 / C1503	B1	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	10.38 mm laminated	Yes
	L/D	5 mm	No

Unit	Habitable Space	Minimum Glazing Thickness	Ventilation requirement
C0305 to C0605	L/D- Sliding doors	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D- Window	10.38 mm laminated	Yes
C1004 to C1504	L/D- Sliding doors	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D- Window	10.38 mm laminated	Yes

BLOCK D

MINIMUM GLAZING THICKNESS AND MECHANICAL VENTILATION REQUIREMENTS

Unit	Habitable Space	Minimum Glazing Thickness	Ventilation requirement
D0201	B1/B2	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
D0301 / D0401 / D0501	B2	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B1	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
D0601 / D0701	B2	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B1	10.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
D0801 / D0901 / D1001 / D1101 / D1201	B2	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B1	6.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes

Unit	Habitable Space	Minimum Glazing Thickness	Ventilation requirement
D0202 / D0302 / D0402 / D0502	B1/B2	12.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
D0602 / D0702	B1/B2	10.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
D0802 to C1202	B1/B2/B3	6.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes

Unit	Habitable Space	Minimum Glazing Thickness	Ventilation requirement
D0203	B1	12.38 mm laminated	Yes
	B2	6.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
D0303 to D0503	B1	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	6.38 mm laminated	Yes
	L/D	10.38 mm laminated	Yes
D0603 to D0903	B1	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	6.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes
D1003 to D1203	B1	10.38 mm laminated + 150 AG + 10.38 mm laminated	Yes
	B2	6.38 mm laminated	Yes
	L/D	6.38 mm laminated	Yes

Unit	Habitable Space	Minimum Glazing Thickness	Ventilation requirement
D0204	L/D	10.38 mm laminated	Yes
D0304 to D1204	L/D	6.38 mm laminated + 150 AG + 10.38 mm laminated	Yes

APPENDIX F

APPENDIX F

APPENDIX F

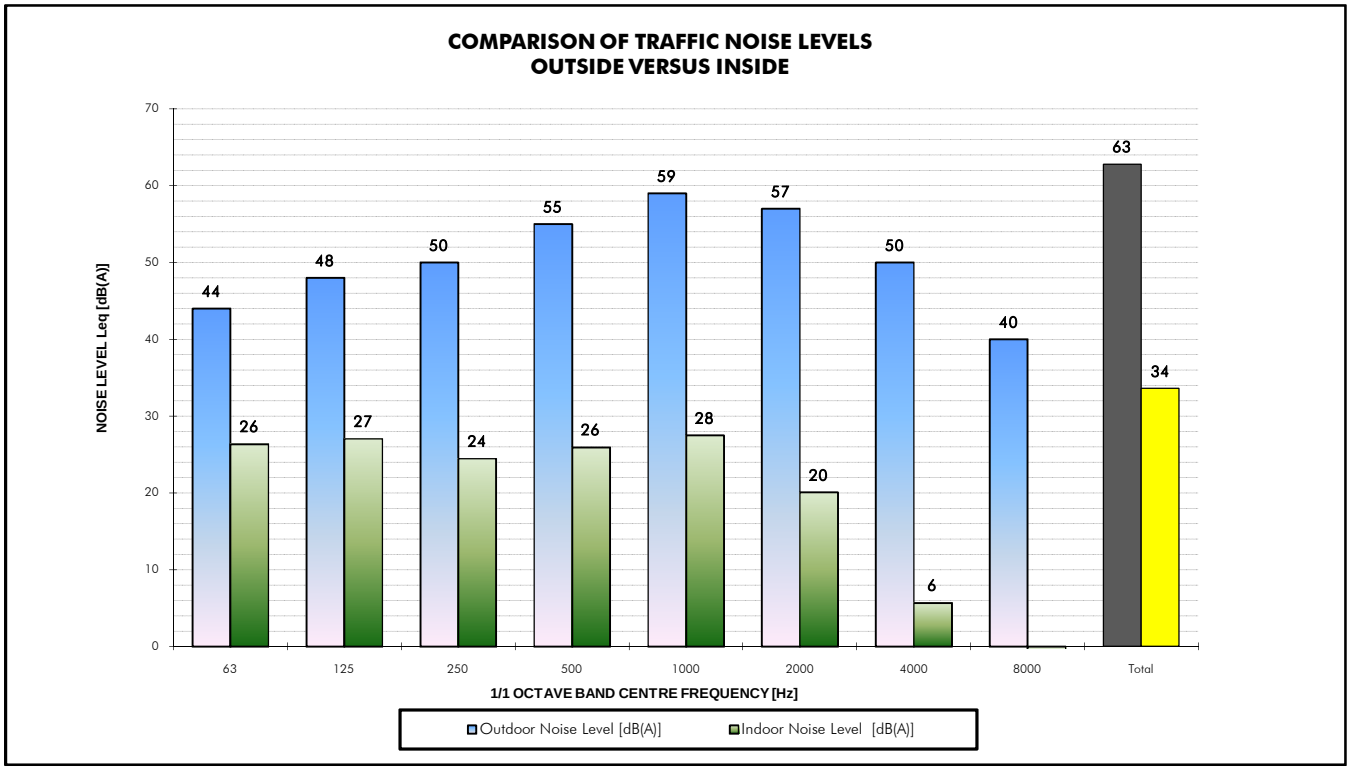
DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

Unit Type E 5

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - A0102A0202 A0103A0203 A0104A0204-B1/B2								
ROOM DIMENSIONS	Height	2.7	Width	3.5	Length	4	Surface	68.5	Volume	37.8
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
TYPICAL BEDROOM	*0.4*	10	11	12	14	15	17	18	18	

EXTERNAL ELEMENTS	STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID **west facade**									
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade	0									9.0
Noise Transmitted Through Facade		-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID **south facade**									
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade	0									9.0
Noise Transmitted Through Facade		-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID **east facade**									
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade	0									9.0
Noise Transmitted Through Facade		-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - D	ID **north facade**									
** 12 mm laminated glazing perfect sealing **	277 37	24	27	31	34	36	41	48	50	10.8
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*24.0*	*27.0*	*31.0*	*34.0*	*36.0*	*41.0*	*48.0*	*50.0*	*10.8*
Noise Level Spectrum for THIS Facade	0	44	48	50	55	59	57	50	40	62.8
Noise Transmitted Through Facade		26.4	27.1	24.5	26.0	27.5	20.1	5.7	-6.3	33.6
Facade Description - E	ID **Roof**									
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade	0									9.0
Noise Transmitted Through Facade		-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0

Total Surface Area Exposed to Noise.....	.....								10.8
Composite Transmission Loss	24.0	27.0	31.0	34.0	36.0	41.0	48.0	50.0	
Indoor Noise Level	**26.4**	**27.1**	**24.5**	**26.0**	**27.5**	**20.1**	**5.7**	**-6.3**	**33.6**



MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

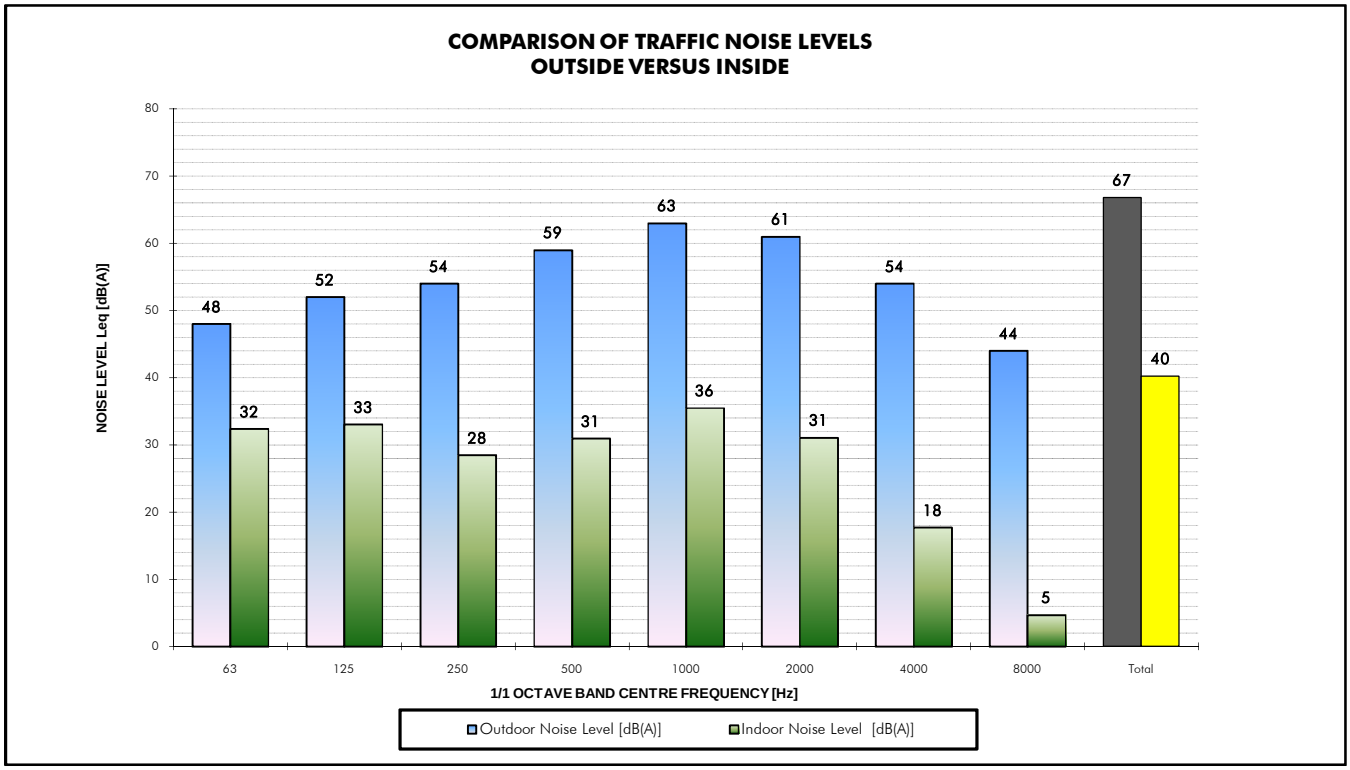
DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

Unit Type E5

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - A0102/A0202 A0103/A0203 A0104/A0204-L/D								
ROOM DIMENSIONS	Height 2.7	Width 3.5	Length 4	Surface 68.5	Volume 37.8				
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
TYPICAL BEDROOM	*0.4*	10	11	12	14	15	17	18	18	

EXTERNAL ELEMENTS	STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID **west facade**									
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade	0									9.0
Noise Transmitted Through Facade		-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID **south facade**									
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade	0									9.0
Noise Transmitted Through Facade		-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID **east facade**									
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade	0									9.0
Noise Transmitted Through Facade		-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - D	ID **north facade**									
** 10.38 mm lam Al sliding door, Q-lon seals - Architectural Window Systems P/L **	486 34	22	25	31	33	32	34	40	43	10.8
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*22.0*	*25.0*	*31.0*	*33.0*	*32.0*	*34.0*	*40.0*	*43.0*	*10.8*
Noise Level Spectrum for THIS Facade	0	48	52	54	59	63	61	54	44	66.8
Noise Transmitted Through Facade		32.4	33.1	28.5	31.0	35.5	31.1	17.7	4.7	40.3
Facade Description - E	ID **Roof**									
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade	0									9.0
Noise Transmitted Through Facade		-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0

Total Surface Area Exposed to Noise.....	.....								10.8
Composite Transmission Loss	22.0	25.0	31.0	33.0	32.0	34.0	40.0	43.0	
Indoor Noise Level	**32.4**	**33.1**	**28.5**	**31.0**	**35.5**	**31.1**	**17.7**	**4.7**	**40.3**



MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

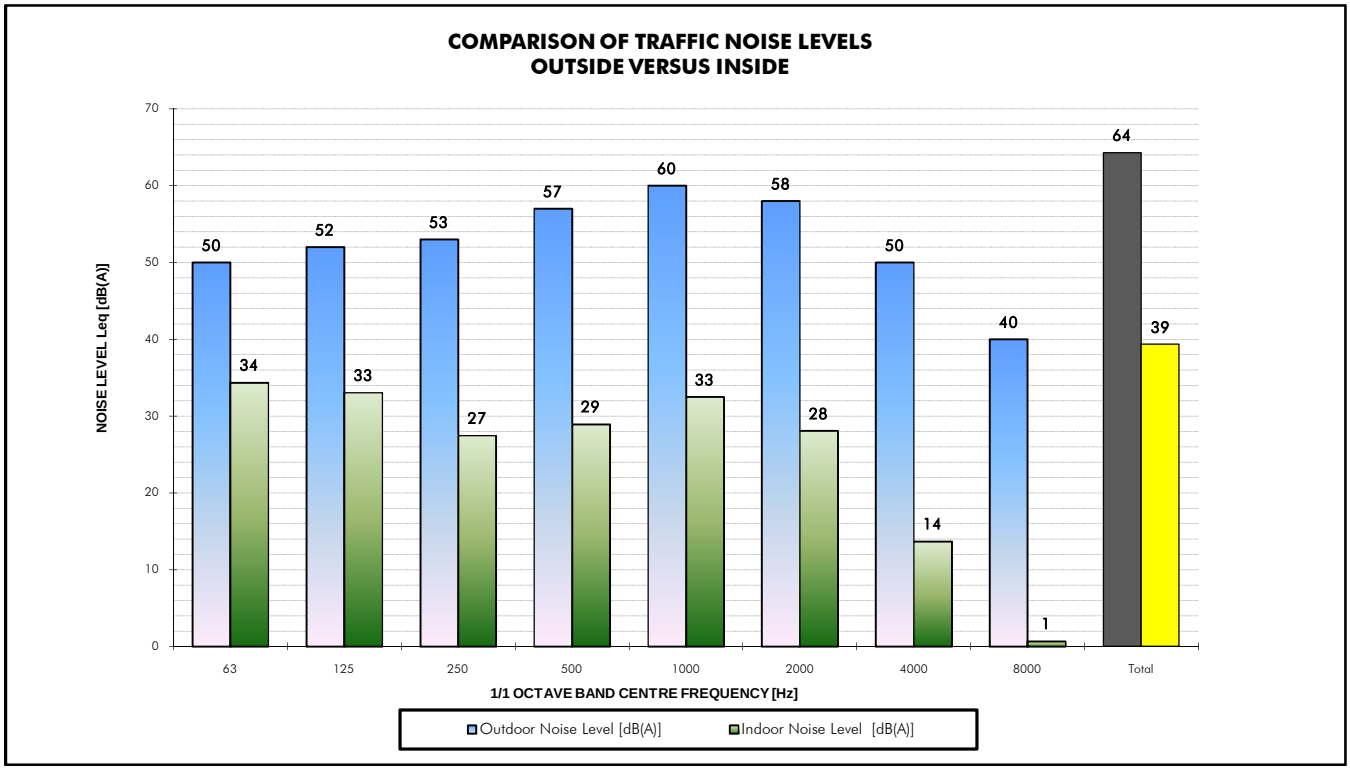
DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

Unit Type E5

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - A0302 A0401 A0501 A0303 A0402 A0502-L/D								
ROOM DIMENSIONS	Height 2.7	Width 3.5	Length 4	Surface 68.5	Volume 37.8				
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
TYPICAL BEDROOM	*0.4*	10	11	12	14	15	17	18	18	

EXTERNAL ELEMENTS	STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID **west facade**									
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade	0									9.0
Noise Transmitted Through Facade		-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID **south facade**									
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade	0									9.0
Noise Transmitted Through Facade		-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID **east facade**									
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade	0									9.0
Noise Transmitted Through Facade		-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - D	ID **north facade**									
** 10.38 mm lam Al sliding door, Q-lon seals - Architectural Window Systems P/L **	486 34	22	25	31	33	32	34	40	43	10.8
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*22.0*	*25.0*	*31.0*	*33.0*	*32.0*	*34.0*	*40.0*	*43.0*	*10.8*
Noise Level Spectrum for THIS Facade	0	50	52	53	57	60	58	50	40	64.3
Noise Transmitted Through Facade		34.4	33.1	27.5	29.0	32.5	28.1	13.7	0.7	39.3
Facade Description - E	ID **Roof**									
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
----------	632 0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A		*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade	0									9.0
Noise Transmitted Through Facade		-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0

Total Surface Area Exposed to Noise.....	.....								10.8
Composite Transmission Loss	22.0	25.0	31.0	33.0	32.0	34.0	40.0	43.0	
Indoor Noise Level	**34.4**	**33.1**	**27.5**	**29.0**	**32.5**	**28.1**	**13.7**	**0.7**	**39.3**



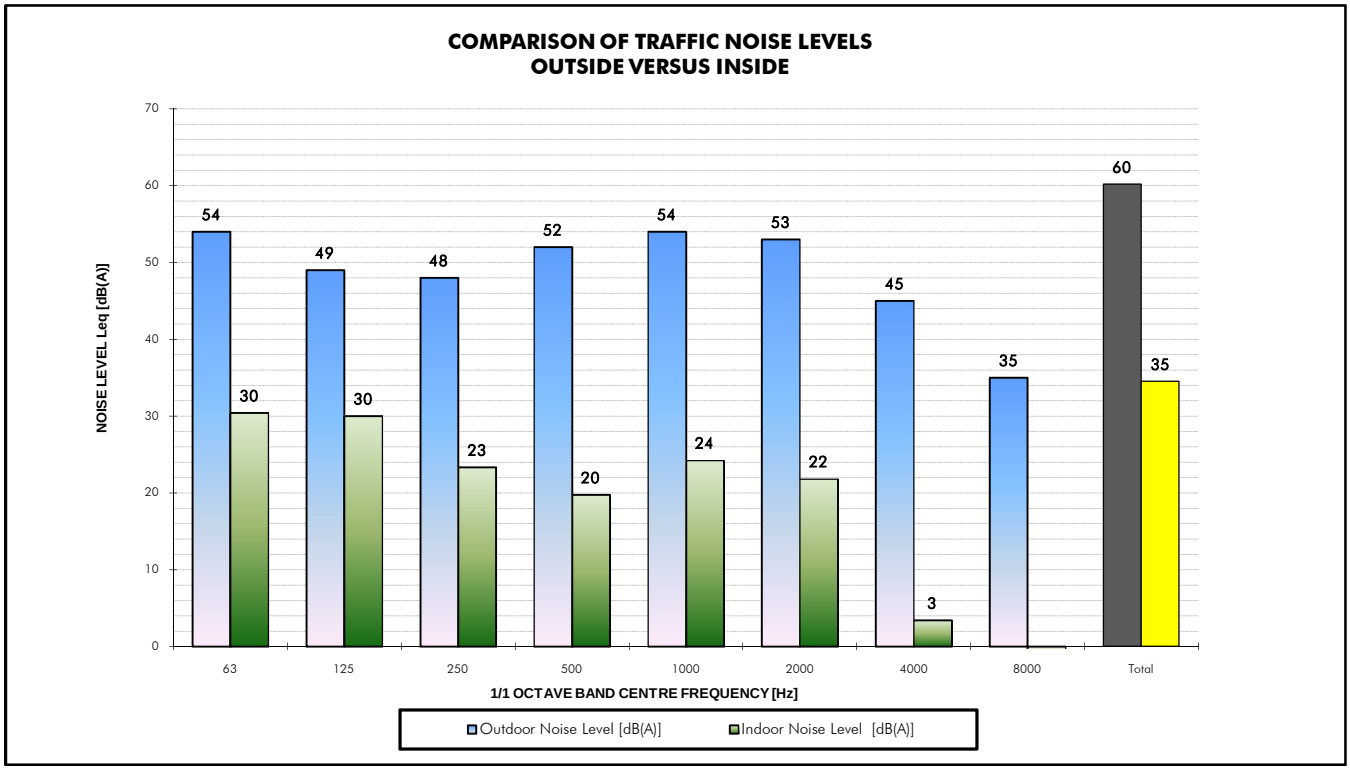
MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

Unit Type E 5

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - A0601 A0702 A0602 A0703-B1-B2								
ROOM DIMENSIONS	Height 2.7	Width 3.2	Length 3.7	Surface 60.9	Volume 32.0				
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
TYPICAL BEDROOM	*0.4*	8	9	10	12	13	14	15	15	

EXTERNAL ELEMENTS		**STC/Rw**	**TRANSMISSION LOSS [dB]**								Area [m2]
Facade Description - A	ID	**west facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID	**south facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID	**east facade**									
180 concrete - 28mm cavity with furring channels - 13mm PB	182	57	42	38	45	55	68	76	83	86	9.99
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*42.0*	*38.0*	*45.0*	*55.0*	*68.0*	*76.0*	*83.0*	*86.0*	*9.99*
Noise Level Spectrum for THIS Facade		0	54	49	48	52	54	53	45	35	60.2
Noise Transmitted Through Facade			18.8	17.4	8.9	2.4	-9.1	-18.5	-33.9	-46.9	21.5
Facade Description - D	ID	**north facade**									
** 10.38 mm lam awning Al window - Architectural Window Systems P/L **	274	36	21	23	30	37	35	35	45	47	10.8
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*21.0*	*23.0*	*30.0*	*37.0*	*35.0*	*35.0*	*45.0*	*47.0*	*10.8*
Noise Level Spectrum for THIS Facade		0	44	46	47	51	54	52	44	34	58.3
Noise Transmitted Through Facade			30.1	29.8	23.2	19.7	24.2	21.8	3.4	-8.6	34.3
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Total Surface Area Exposed to Noise.....											20.8
Composite Transmission Loss			23.8	25.7	32.7	39.8	37.8	37.8	47.8	49.8	
Indoor Noise Level			**30.4**	**30.0**	**23.4**	**19.8**	**24.2**	**21.8**	**3.4**	**-8.6**	**34.5**



MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

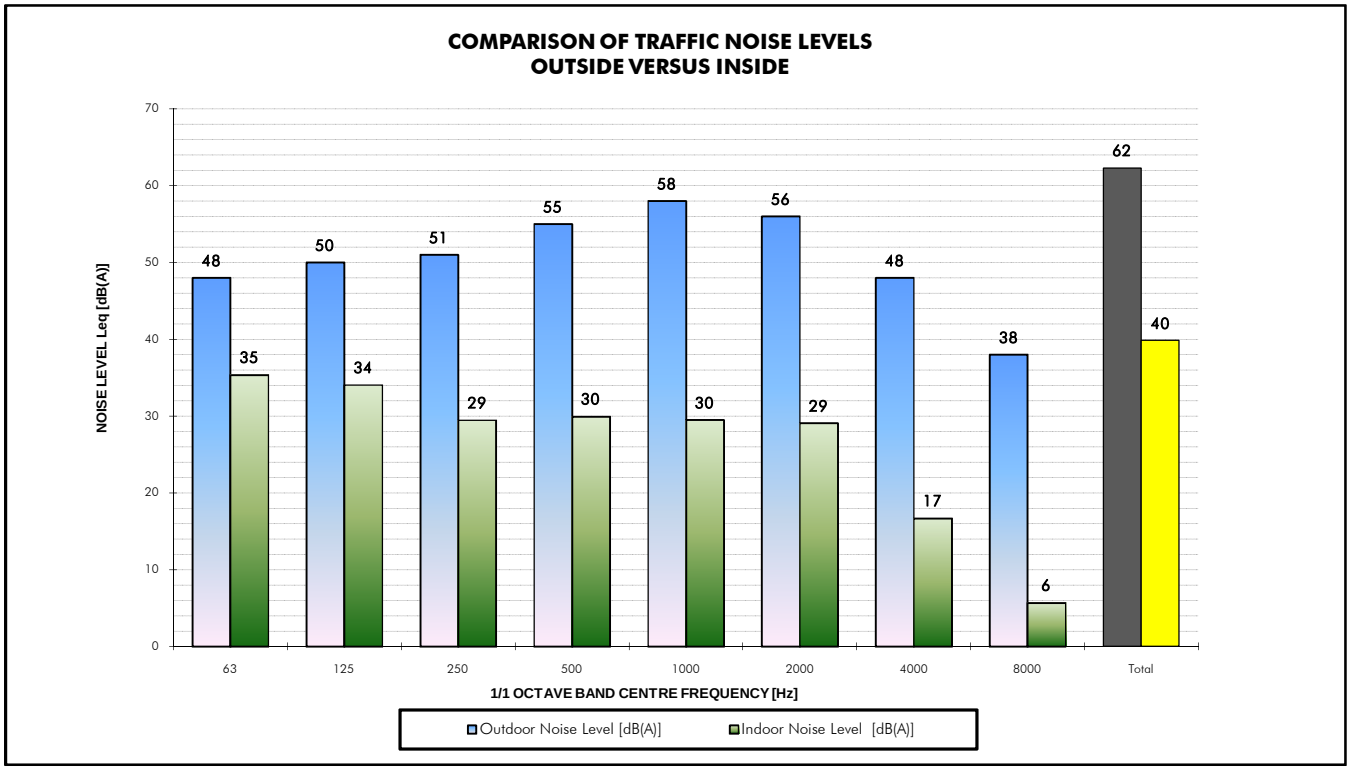
DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

Unit Type E5

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - A0601 A0702 A0602 A0703-L/D								
ROOM DIMENSIONS	Height	2.7	Width	3.5	Length	4	Surface	68.5	Volume	37.8
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
TYPICAL BEDROOM	*0.4*	10	11	12	14	15	17	18	18	

EXTERNAL ELEMENTS	ID	STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID	**west facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID	**south facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID	**east facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - D	ID	**north facade**									
** 6.38 mm lam Al sliding door, Q-lon & Mohair seals **	478	32	19	22	27	30	33	31	35	36	10.8
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*19.0*	*22.0*	*27.0*	*30.0*	*33.0*	*31.0*	*35.0*	*36.0*	*10.8*
Noise Level Spectrum for THIS Facade		0	48	50	51	55	58	56	48	38	62.3
Noise Transmitted Through Facade			35.4	34.1	29.5	30.0	29.5	29.1	16.7	5.7	39.8
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0

Total Surface Area Exposed to Noise.....	.....								10.8
Composite Transmission Loss	19.0	22.0	27.0	30.0	33.0	31.0	35.0	36.0	
Indoor Noise Level	**35.4**	**34.1**	**29.5**	**30.0**	**29.5**	**29.1**	**16.7**	**5.7**	**39.8**



MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

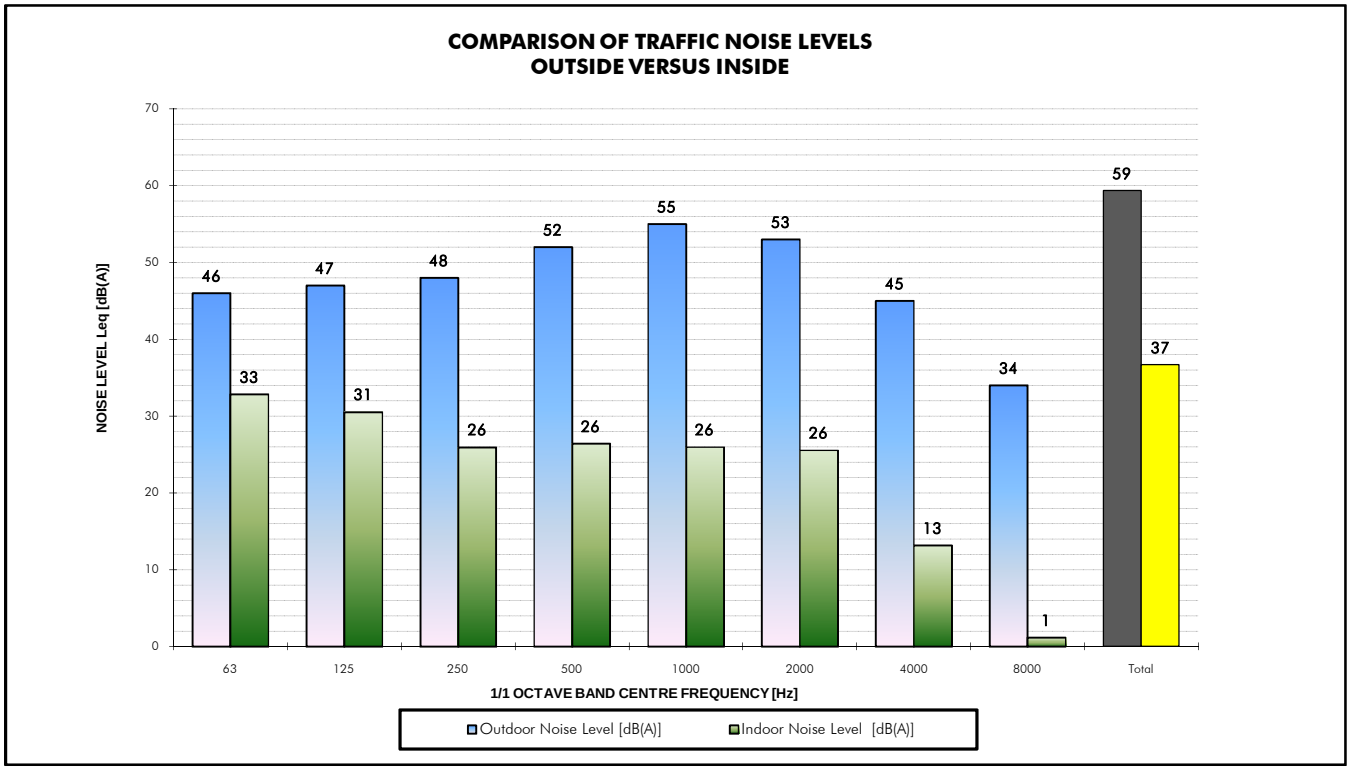
DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

Unit Type H1

DESCRIPTION		21-35 Treacy Street, HURSTVILLE - A1002 A1102 A1202-L/D								
ROOM DIMENSIONS	Height	2.7	Width	4.7	Length	6.3	Surface	118.6	Volume	79.9
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
LOUNGE/DINING	*0.6*	14	15	17	19	21	24	26	26	

EXTERNAL ELEMENTS		**STC/Rw**	**TRANSMISSION LOSS [dB]**								Area [m2]
Facade Description - A	ID	**west facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID	**south facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID	**east facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - D	ID	**north facade**									
** 6.38 mm lam Al sliding door, Q-lon & Mohair seals **	478	32	19	22	27	30	33	31	35	36	13.5
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*19.0*	*22.0*	*27.0*	*30.0*	*33.0*	*31.0*	*35.0*	*36.0*	*13.5*
Noise Level Spectrum for THIS Facade		0	46	47	48	52	55	53	45	34	59.4
Noise Transmitted Through Facade			32.9	30.5	26.0	26.4	26.0	25.6	13.2	1.2	36.7
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0

Total Surface Area Exposed to Noise.....	.....								13.5
Composite Transmission Loss	19.0	22.0	27.0	30.0	33.0	31.0	35.0	36.0	
Indoor Noise Level	**32.9**	**30.5**	**26.0**	**26.4**	**26.0**	**25.6**	**13.2**	**1.2**	**36.7**



MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

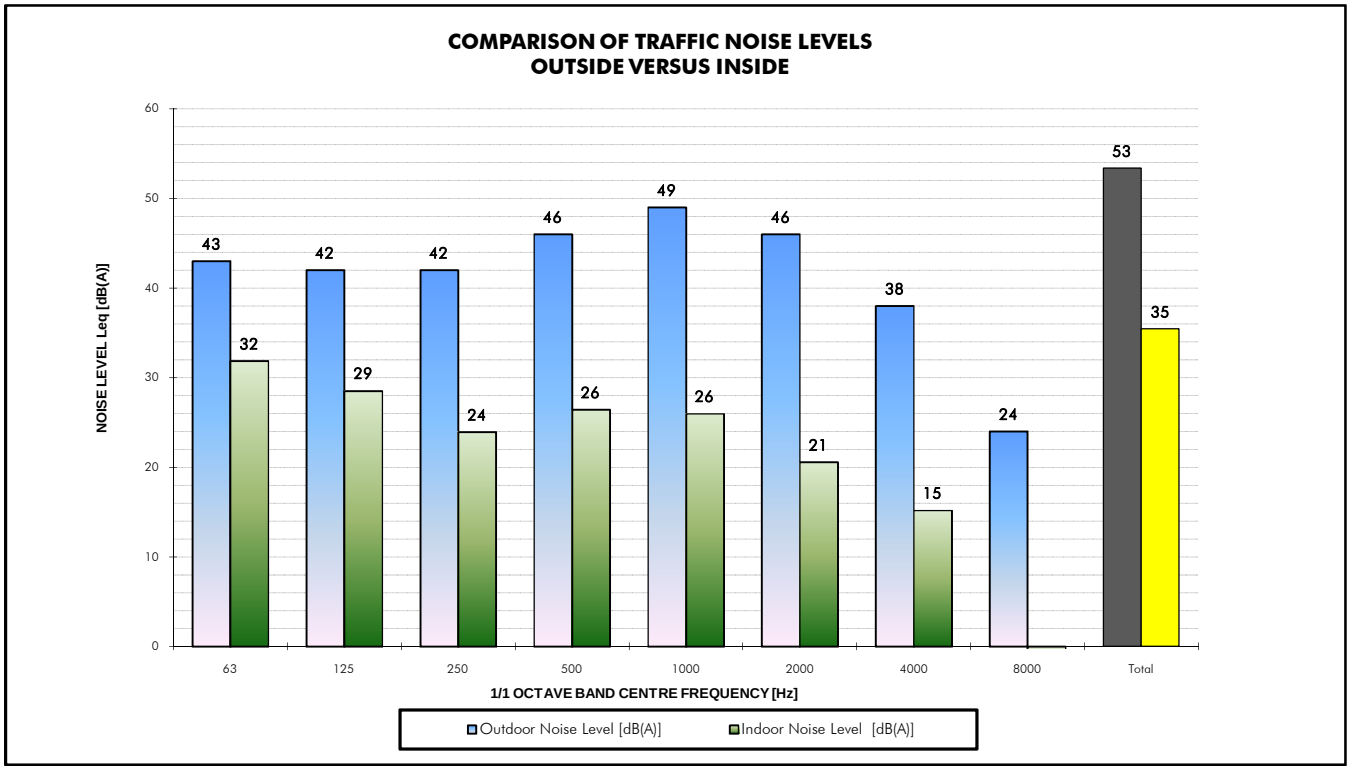
DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

Unit Type H1

DESCRIPTION		21-35 Treacy Street, HURSTVILLE - A1303 A1403 A1503-L/D								
ROOM DIMENSIONS	Height	2.7	Width	4.7	Length	6.3	Surface	118.6	Volume	79.9
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
LOUNGE/DINING	*0.6*	14	15	17	19	21	24	26	26	

EXTERNAL ELEMENTS		STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID	**west facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID	**south facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID	**east facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - D	ID	**north facade**									
** 4 mm toughened Al sliding door, Mohair seals - **	474	27	17	19	23	24	27	29	26	30	13.5
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*17.0*	*19.0*	*23.0*	*24.0*	*27.0*	*29.0*	*26.0*	*30.0*	*13.5*
Noise Level Spectrum for THIS Facade		0	43	42	42	46	49	46	38	24	53.4
Noise Transmitted Through Facade			31.9	28.5	24.0	26.4	26.0	20.6	15.2	-2.8	35.4
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0

Total Surface Area Exposed to Noise.....	.....								13.5
Composite Transmission Loss	17.0	19.0	23.0	24.0	27.0	29.0	26.0	30.0	
Indoor Noise Level	**31.9**	**28.5**	**24.0**	**26.4**	**26.0**	**20.6**	**15.2**	**-2.8**	**35.4**



MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

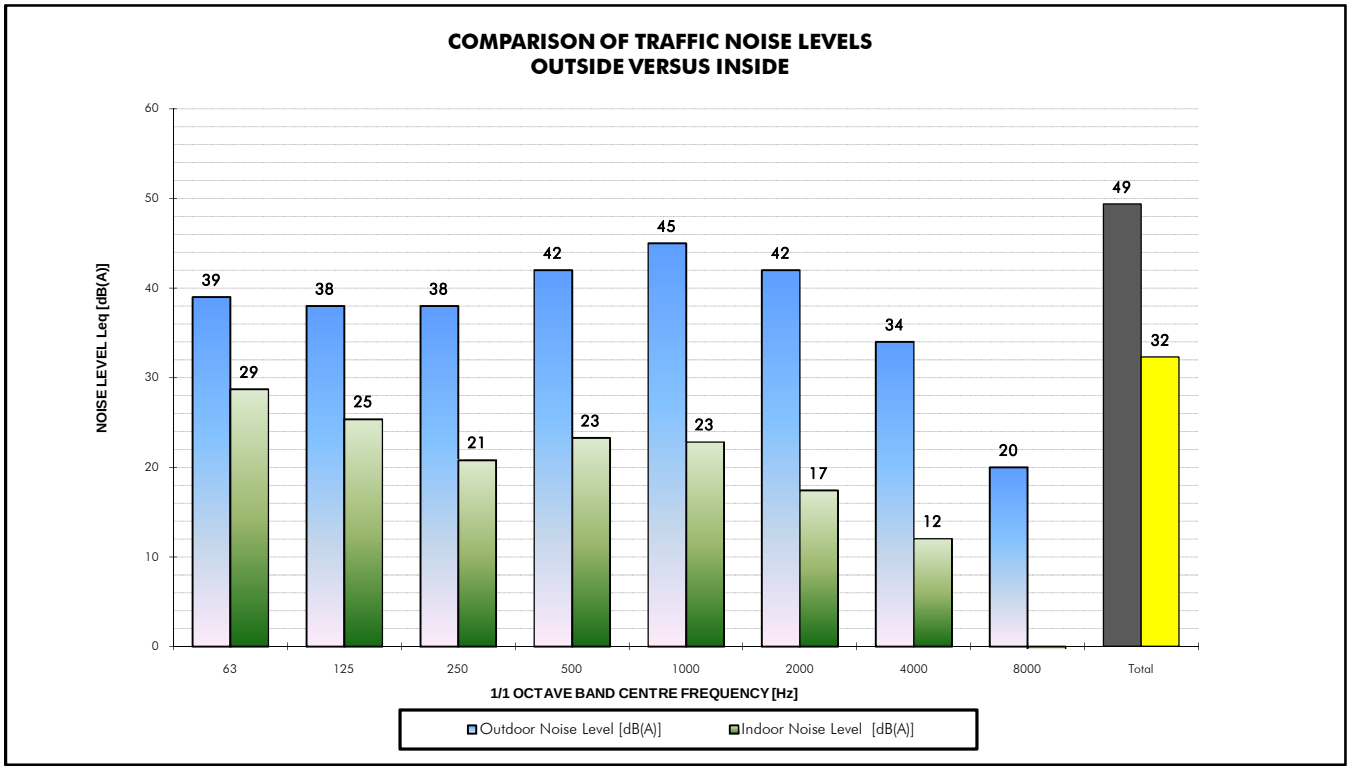
DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

Unit Type H1

DESCRIPTION	21-35 Treacy Street, HURSTVILLE -A1303 A1403 A1503-B1/B2/B3									
ROOM DIMENSIONS	Height	2.7	Width	3.5	Length	3.7	Surface	64.8	Volume	35.0
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
TYPICAL BEDROOM	*0.4*	9	10	11	13	14	15	17	17	

EXTERNAL ELEMENTS		STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID	**west facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID	**south facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID	**east facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - D	ID	**north facade**									
** 4 mm toughened Al sliding door, Mohair seals - **	474	27	17	19	23	24	27	29	26	30	10.8
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*17.0*	*19.0*	*23.0*	*24.0*	*27.0*	*29.0*	*26.0*	*30.0*	*10.8*
Noise Level Spectrum for THIS Facade		0	39	38	38	42	45	42	34	20	49.4
Noise Transmitted Through Facade			28.7	25.4	20.8	23.3	22.9	17.4	12.1	-5.9	32.3
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0

Total Surface Area Exposed to Noise.....	.....								10.8
Composite Transmission Loss	17.0	19.0	23.0	24.0	27.0	29.0	26.0	30.0	
Indoor Noise Level	**28.7**	**25.4**	**20.8**	**23.3**	**22.9**	**17.4**	**12.1**	**-5.9**	**32.3**



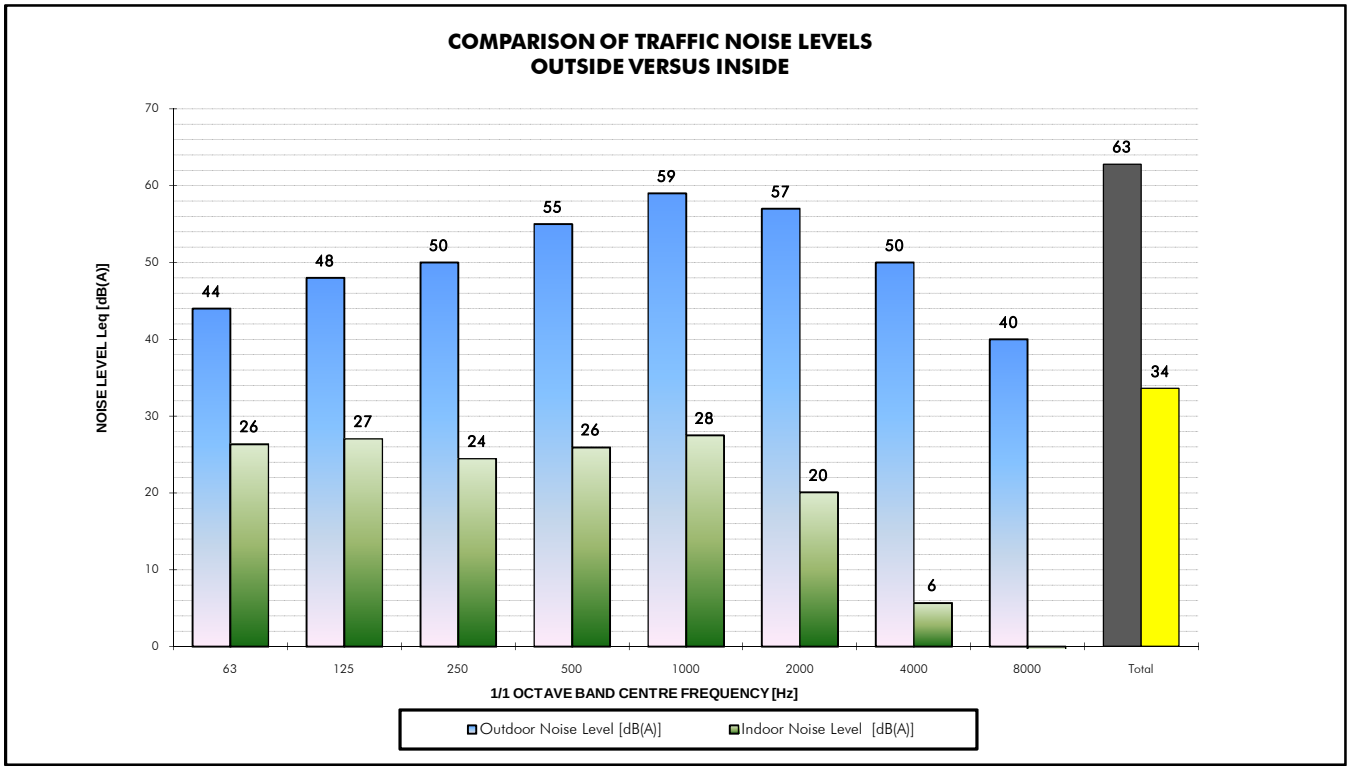
MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - Unit Type E5- B0102/B0202-B1/B2								
ROOM DIMENSIONS	Height	2.7	Width	3.5	Length	4	Surface	68.5	Volume	37.8
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
TYPICAL BEDROOM	*0.4*	10	11	12	14	15	17	18	18	

EXTERNAL ELEMENTS		**STC/Rw**	**TRANSMISSION LOSS [dB]**								Area [m2]
Facade Description - A	ID	**west facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID	**south facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID	**east facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - D	ID	**north facade**									
** 12 mm laminated glazing perfect sealing **	277	37	24	27	31	34	36	41	48	50	10.8
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*24.0*	*27.0*	*31.0*	*34.0*	*36.0*	*41.0*	*48.0*	*50.0*	*10.8*
Noise Level Spectrum for THIS Facade		0	44	48	50	55	59	57	50	40	62.8
Noise Transmitted Through Facade			26.4	27.1	24.5	26.0	27.5	20.1	5.7	-6.3	33.6
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0

Total Surface Area Exposed to Noise.....	.....								10.8
Composite Transmission Loss	24.0	27.0	31.0	34.0	36.0	41.0	48.0	50.0	
Indoor Noise Level	**26.4**	**27.1**	**24.5**	**26.0**	**27.5**	**20.1**	**5.7**	**-6.3**	**33.6**



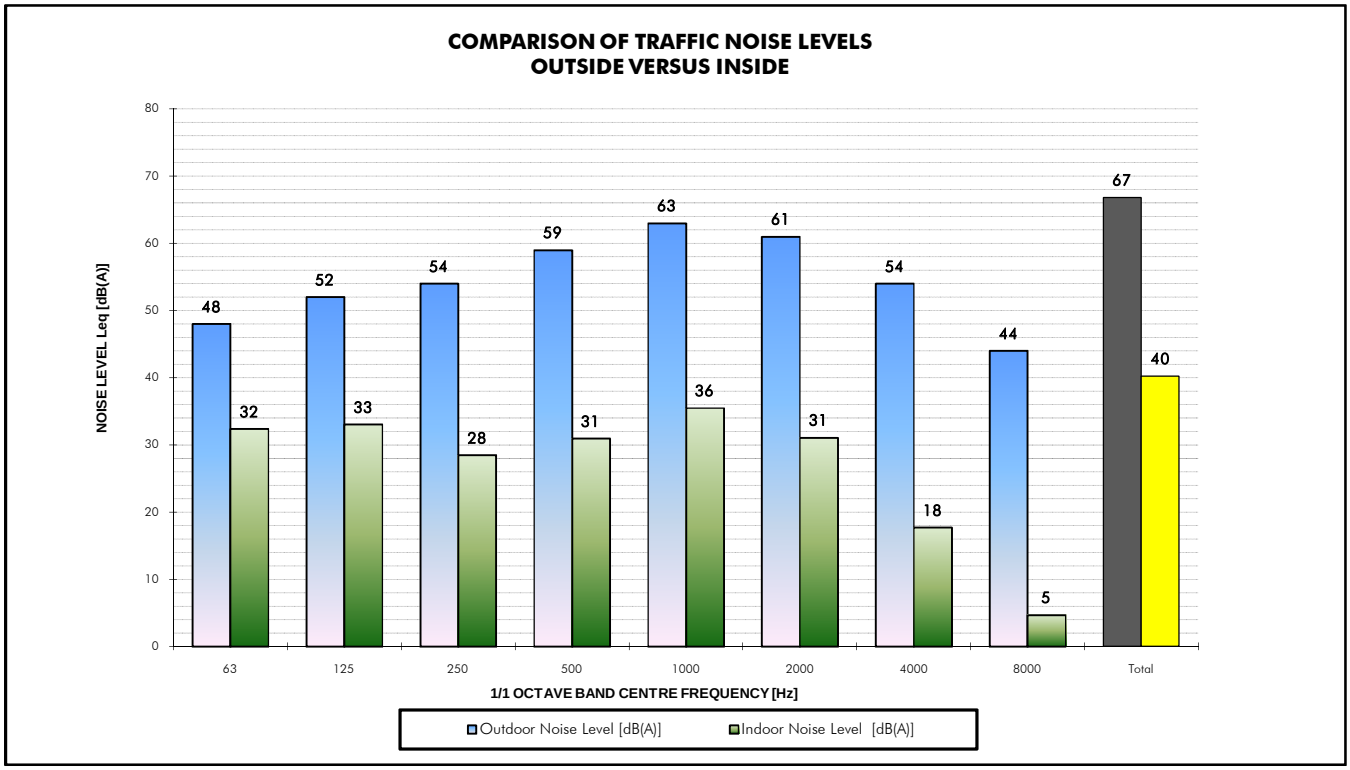
MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - Unit Type E5- B0102/B0202-L/D								
ROOM DIMENSIONS	Height	2.7	Width	3.5	Length	4	Surface	68.5	Volume	37.8
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
TYPICAL BEDROOM	*0.4*	10	11	12	14	15	17	18	18	

EXTERNAL ELEMENTS		**STC/Rw**	**TRANSMISSION LOSS [dB]**								Area [m2]
Facade Description - A	ID	**west facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID	**south facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID	**east facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - D	ID	**north facade**									
** 10.38 mm lam Al sliding door, Q-lon seals - Architectural Window Systems P/L **	486	34	22	25	31	33	32	34	40	43	10.8
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*22.0*	*25.0*	*31.0*	*33.0*	*32.0*	*34.0*	*40.0*	*43.0*	*10.8*
Noise Level Spectrum for THIS Facade		0	48	52	54	59	63	61	54	44	66.8
Noise Transmitted Through Facade			32.4	33.1	28.5	31.0	35.5	31.1	17.7	4.7	40.3
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0

Total Surface Area Exposed to Noise.....	.....								10.8
Composite Transmission Loss	22.0	25.0	31.0	33.0	32.0	34.0	40.0	43.0	
Indoor Noise Level	**32.4**	**33.1**	**28.5**	**31.0**	**35.5**	**31.1**	**17.7**	**4.7**	**40.3**



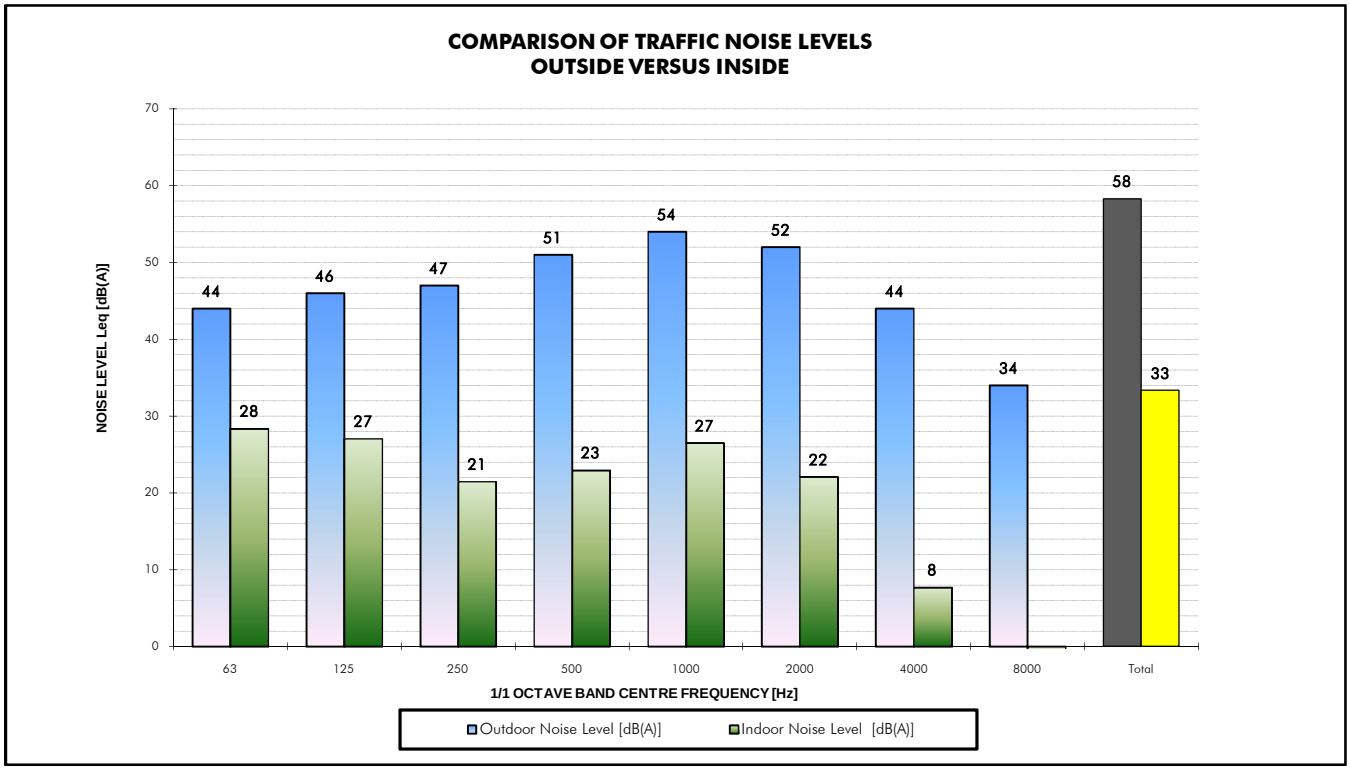
MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - Unit Type E5- B0602/B0702-B1/B2								
ROOM DIMENSIONS	Height	2.7	Width	3.5	Length	4	Surface	68.5	Volume	37.8
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
TYPICAL BEDROOM	*0.4*	10	11	12	14	15	17	18	18	

EXTERNAL ELEMENTS		STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID	**west facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID	**south facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID	**east facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - D	ID	**north facade**									
** 10.38 mm lam Al sliding door, Q-lon seals - Architectural Window Systems P/L **	486	34	22	25	31	33	32	34	40	43	10.8
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*22.0*	*25.0*	*31.0*	*33.0*	*32.0*	*34.0*	*40.0*	*43.0*	*10.8*
Noise Level Spectrum for THIS Facade		0	44	46	47	51	54	52	44	34	58.3
Noise Transmitted Through Facade			28.4	27.1	21.5	23.0	26.5	22.1	7.7	-5.3	33.3
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0

Total Surface Area Exposed to Noise.....	.....								10.8
Composite Transmission Loss	22.0	25.0	31.0	33.0	32.0	34.0	40.0	43.0	
Indoor Noise Level	**28.4**	**27.1**	**21.5**	**23.0**	**26.5**	**22.1**	**7.7**	**-5.3**	**33.3**



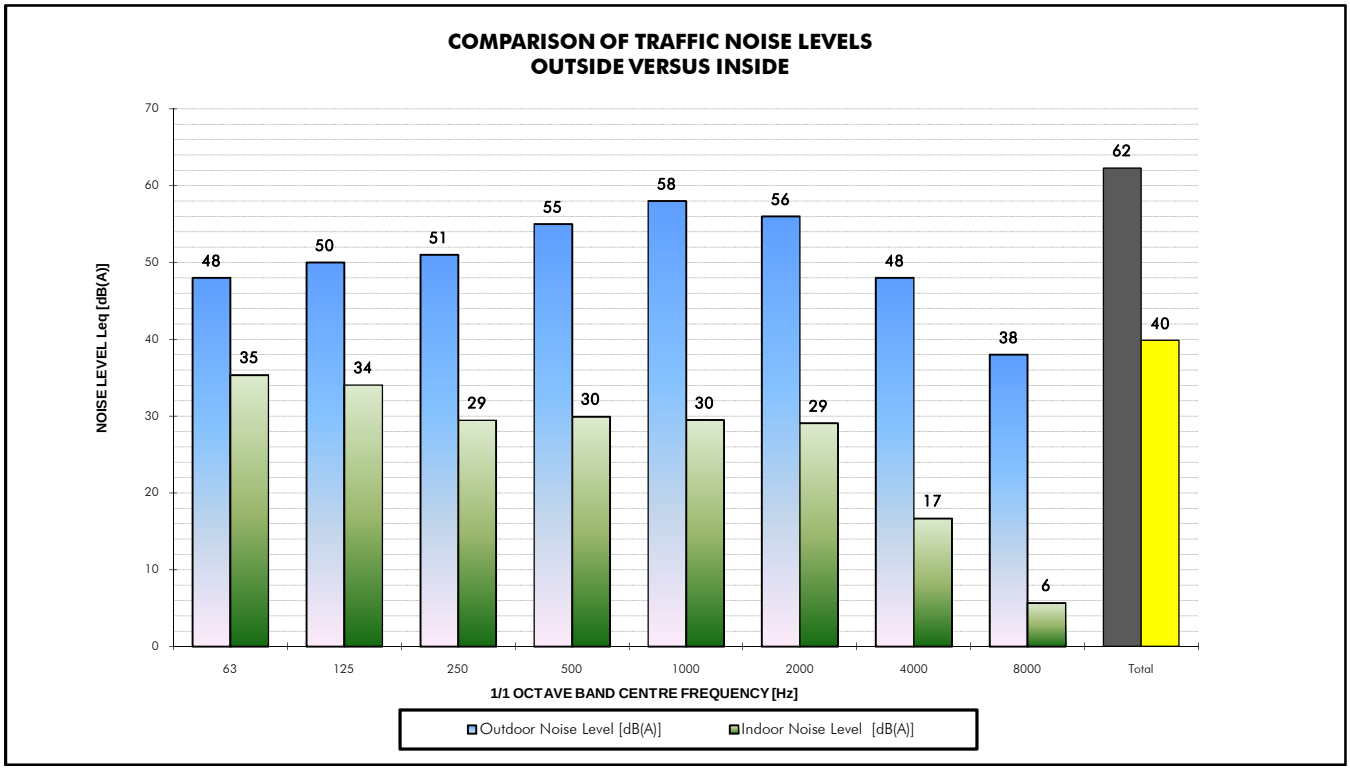
MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - Unit Type E5- B0602/B0702-L/D								
ROOM DIMENSIONS	Height	2.7	Width	3.5	Length	4	Surface	68.5	Volume	37.8
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
TYPICAL BEDROOM	*0.4*	10	11	12	14	15	17	18	18	

EXTERNAL ELEMENTS	ID	STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID	**west facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID	**south facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID	**east facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - D	ID	**north facade**									
** 6.38 mm lam Al sliding door, Q-lon & Mohair seals **	478	32	19	22	27	30	33	31	35	36	10.8
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*19.0*	*22.0*	*27.0*	*30.0*	*33.0*	*31.0*	*35.0*	*36.0*	*10.8*
Noise Level Spectrum for THIS Facade		0	48	50	51	55	58	56	48	38	62.3
Noise Transmitted Through Facade			35.4	34.1	29.5	30.0	29.5	29.1	16.7	5.7	39.8
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0

Total Surface Area Exposed to Noise.....	.....								10.8
Composite Transmission Loss	19.0	22.0	27.0	30.0	33.0	31.0	35.0	36.0	
Indoor Noise Level	**35.4**	**34.1**	**29.5**	**30.0**	**29.5**	**29.1**	**16.7**	**5.7**	**39.8**



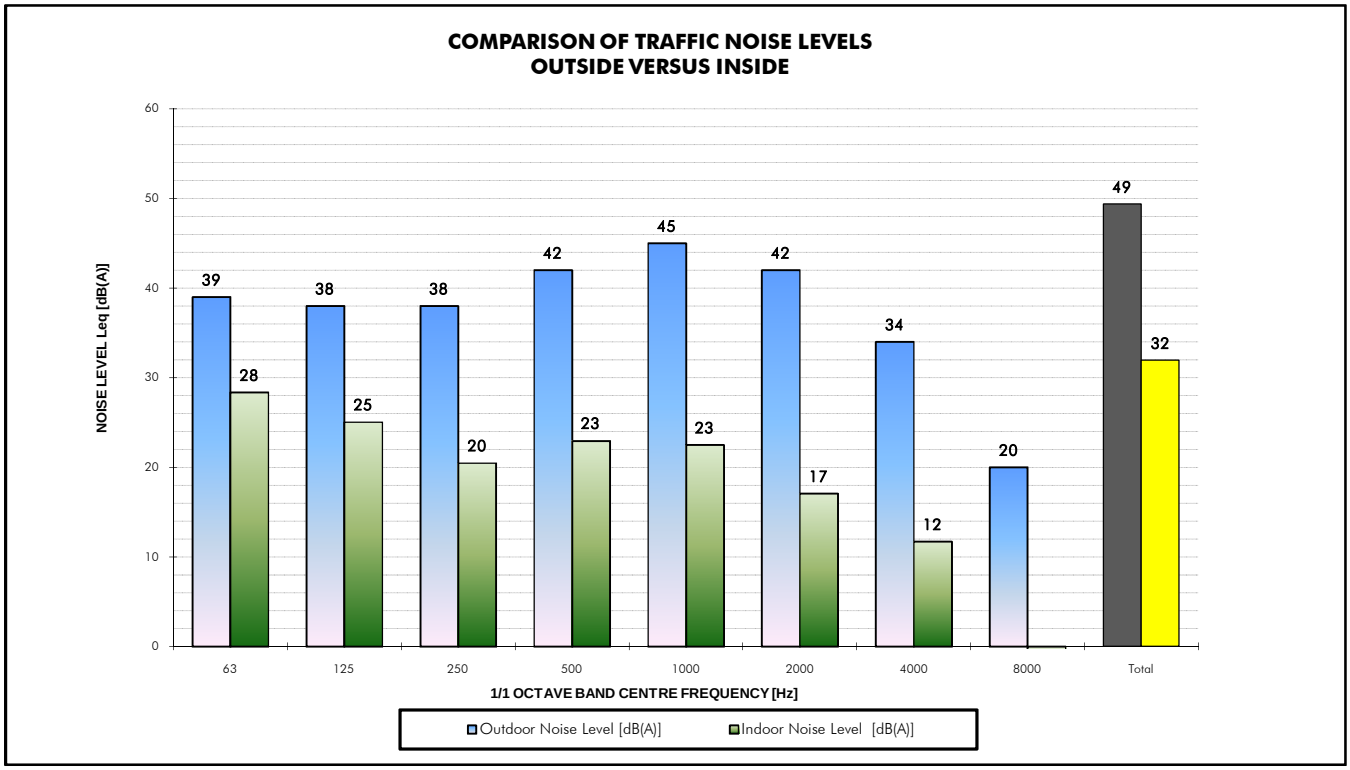
MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - Unit Type E5- B1302 to B1502 -B1/B2								
ROOM DIMENSIONS	Height	2.7	Width	3.5	Length	4	Surface	68.5	Volume	37.8
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
TYPICAL BEDROOM	*0.4*	10	11	12	14	15	17	18	18	

EXTERNAL ELEMENTS	ID	STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID	**west facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID	**south facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID	**east facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - D	ID	**north facade**									
** 4 mm toughened Al sliding door, Mohair seals - **	474	27	17	19	23	24	27	29	26	30	10.8
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*17.0*	*19.0*	*23.0*	*24.0*	*27.0*	*29.0*	*26.0*	*30.0*	*10.8*
Noise Level Spectrum for THIS Facade		0	39	38	38	42	45	42	34	20	49.4
Noise Transmitted Through Facade			28.4	25.1	20.5	23.0	22.5	17.1	11.7	-6.3	31.9
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0

Total Surface Area Exposed to Noise.....	.....								10.8
Composite Transmission Loss	17.0	19.0	23.0	24.0	27.0	29.0	26.0	30.0	
Indoor Noise Level	**28.4**	**25.1**	**20.5**	**23.0**	**22.5**	**17.1**	**11.7**	**-6.3**	**31.9**



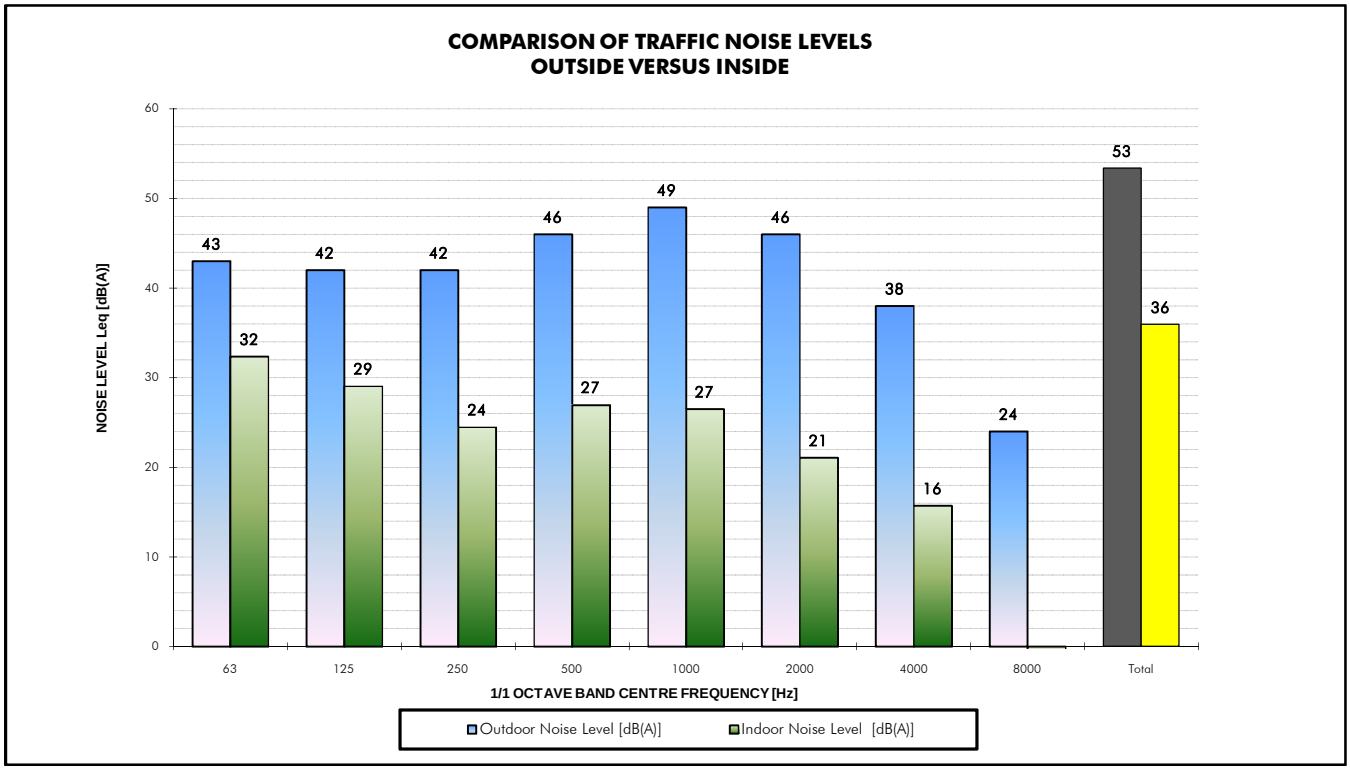
MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - Unit Type E5- B1302 to B1502-L/D								
ROOM DIMENSIONS	Height 2.7	Width 3.5	Length 4	Surface 68.5	Volume 37.8				
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
TYPICAL BEDROOM	*0.4*	10	11	12	14	15	17	18	18	

EXTERNAL ELEMENTS		**STC/Rw**	**TRANSMISSION LOSS [dB]**								Area [m2]
Facade Description - A	ID	**west facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - B	ID	**south facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - C	ID	**east facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - D	ID	**north facade**									
** 4 mm toughened Al sliding door, Mohair seals - **	474	27	17	19	23	24	27	29	26	30	10.8
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*17.0*	*19.0*	*23.0*	*24.0*	*27.0*	*29.0*	*26.0*	*30.0*	*10.8*
Noise Level Spectrum for THIS Facade		0	43	42	42	46	49	46	38	24	53.4
Noise Transmitted Through Facade			32.4	29.1	24.5	27.0	26.5	21.1	15.7	-2.3	35.9
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0

Total Surface Area Exposed to Noise.....	.....								10.8
Composite Transmission Loss	17.0	19.0	23.0	24.0	27.0	29.0	26.0	30.0	
Indoor Noise Level	**32.4**	**29.1**	**24.5**	**27.0**	**26.5**	**21.1**	**15.7**	**-2.3**	**35.9**

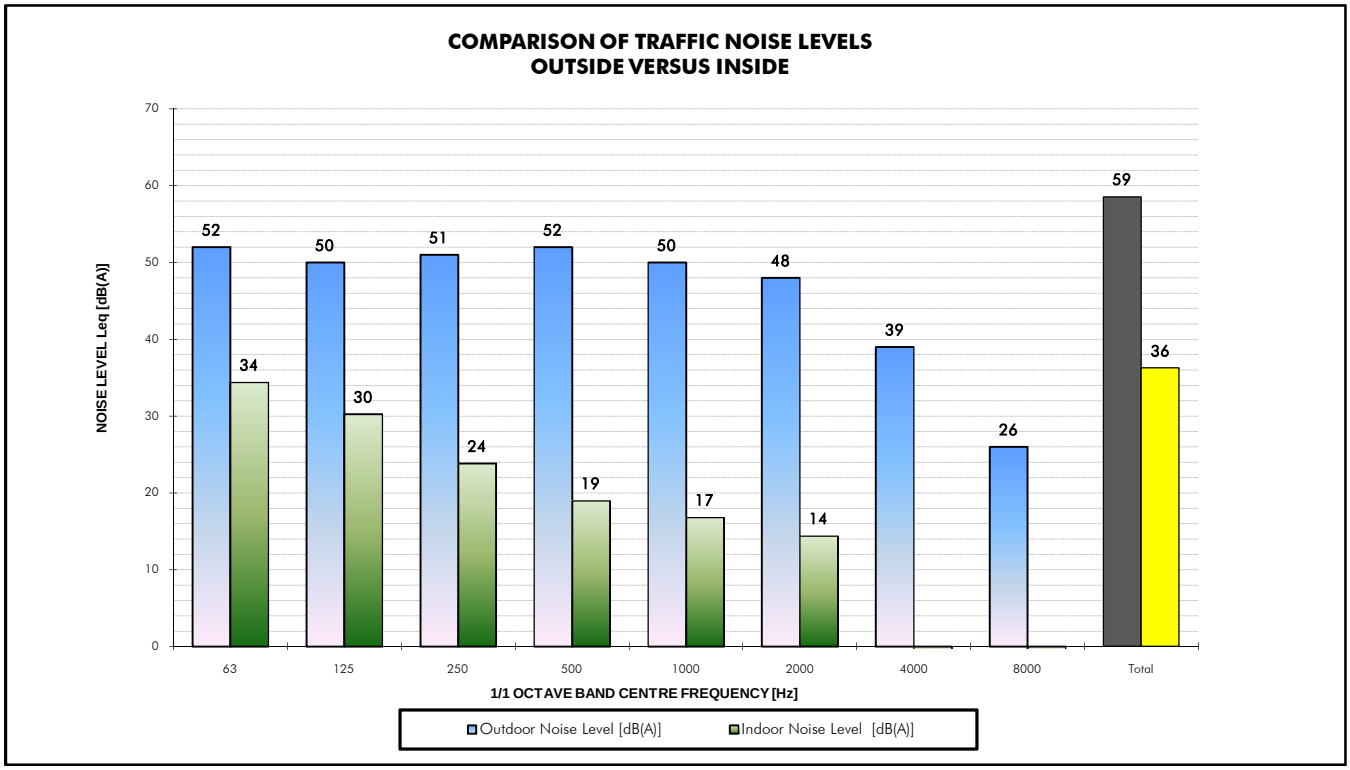


MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - Unit Type A1 - B0104									
ROOM DIMENSIONS	Height	2.7	Width	6	Length	6.2	Surface	140.3	Volume	100.4
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
LOUNGE/DINING	*0.6*	18	19	22	24	27	30	32	32	

EXTERNAL ELEMENTS	ID	STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID	**west facade**									
180 concrete - 28mm cavity with furring channels - 13mm PB	182	57	42	38	45	55	68	76	83	86	15.12
** 6.38 mm lam Al sliding window Q-lon & fur/fin weatherpile seals - Architectural Window Systems P/L **	247	31	20	22	28	29	32	32	35	38	1.1
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*31.4*	*32.5*	*38.7*	*40.6*	*43.7*	*43.8*	*46.8*	*49.8*	*16.2*
Noise Level Spectrum for THIS Facade		0	52	50	51	52	50	48	39	26	58.5
Noise Transmitted Through Facade			26.3	22.9	17.1	15.6	10.0	7.6	-4.8	-20.8	28.6
Facade Description - B	ID	**south facade**									
** 10.38 mm lam awning Al window - Architectural Window Systems P/L **	274	36	21	23	30	37	35	35	45	47	8.1
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*21.0*	*23.0*	*30.0*	*37.0*	*35.0*	*35.0*	*45.0*	*47.0*	*8.1*
Noise Level Spectrum for THIS Facade		0	52	50	51	52	50	48	39	26	58.5
Noise Transmitted Through Facade			33.6	29.3	22.7	16.2	15.8	13.4	-6.0	-21.0	35.4
Facade Description - C	ID	**east facade**									
180 concrete - 28mm cavity with furring channels - 13mm PB	182	57	42	38	45	55	68	76	83	86	4.05
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*42.0*	*38.0*	*45.0*	*55.0*	*68.0*	*76.0*	*83.0*	*86.0*	*4.05*
Noise Level Spectrum for THIS Facade		0	52	50	51	52	50	48	39	26	58.5
Noise Transmitted Through Facade			9.6	11.3	4.7	-4.8	-20.2	-30.6	-47.0	-63.0	14.2
Facade Description - D	ID	**north facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Total Surface Area Exposed to Noise.....											28.4
Composite Transmission Loss			25.7	27.5	34.3	39.7	39.4	39.4	46.8	49.3	
Indoor Noise Level			**34.4**	**30.3**	**23.8**	**19.0**	**16.8**	**14.4**	**-2.3**	**-17.9**	**36.2**

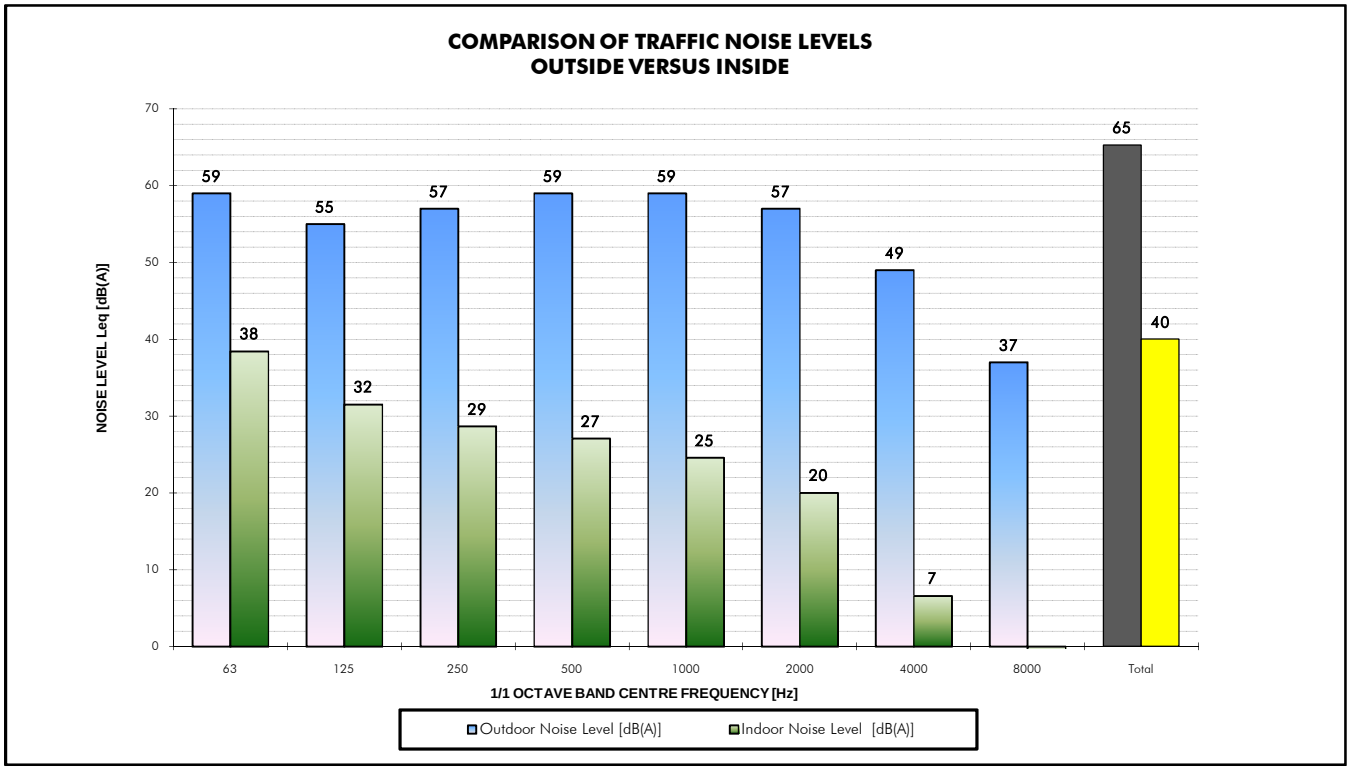


MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

DESCRIPTION		21-35 Treacy Street, HURSTVILLE - Unit Type A1 - B0204								
ROOM DIMENSIONS	Height	2.7	Width	6	Length	6.2	Surface	140.3	Volume	100.4
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
LOUNGE/DINING	*0.6*	18	19	22	24	27	30	32	32	

EXTERNAL ELEMENTS		STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID	**west facade**									
180 concrete - 28mm cavity with furring channels - 13mm PB	182	57	42	38	45	55	68	76	83	86	15.12
** 4 mm Al Sliding Glass Window **	229	23	17	22	20	23	26	23	25	28	1.1
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*28.6*	*32.5*	*31.6*	*34.7*	*37.8*	*34.8*	*36.8*	*39.8*	*16.2*
Noise Level Spectrum for THIS Facade		0	59	52	48	50	51	49	39	27	61.2
Noise Transmitted Through Facade			36.1	24.9	21.2	19.5	17.0	17.6	5.2	-9.8	36.7
Facade Description - B	ID	**south facade**									
** 12 mm laminated glazing perfect sealing **	277	37	24	27	31	34	36	41	48	50	8.1
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*24.0*	*27.0*	*31.0*	*34.0*	*36.0*	*41.0*	*48.0*	*50.0*	*8.1*
Noise Level Spectrum for THIS Facade		0	56	55	57	59	59	57	49	37	65.3
Noise Transmitted Through Facade			34.6	30.3	27.7	26.2	23.8	16.4	1.0	-13.0	37.2
Facade Description - C	ID	**east facade**									
180 concrete - 28mm cavity with furring channels - 13mm PB	182	57	42	38	45	55	68	76	83	86	4.05
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*42.0*	*38.0*	*45.0*	*55.0*	*68.0*	*76.0*	*83.0*	*86.0*	*4.05*
Noise Level Spectrum for THIS Facade		0	56	55	57	59	59	57	49	37	65.3
Noise Transmitted Through Facade			13.6	16.3	10.7	2.2	-11.2	-21.6	-37.0	-52.0	19.0
Facade Description - D	ID	**north facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Total Surface Area Exposed to Noise.....											28.4
Composite Transmission Loss			27.1	30.4	32.0	35.1	37.8	36.7	39.0	42.0	
Indoor Noise Level			**38.5**	**31.6**	**28.7**	**27.1**	**24.6**	**20.0**	**6.6**	**-8.1**	**40.0**

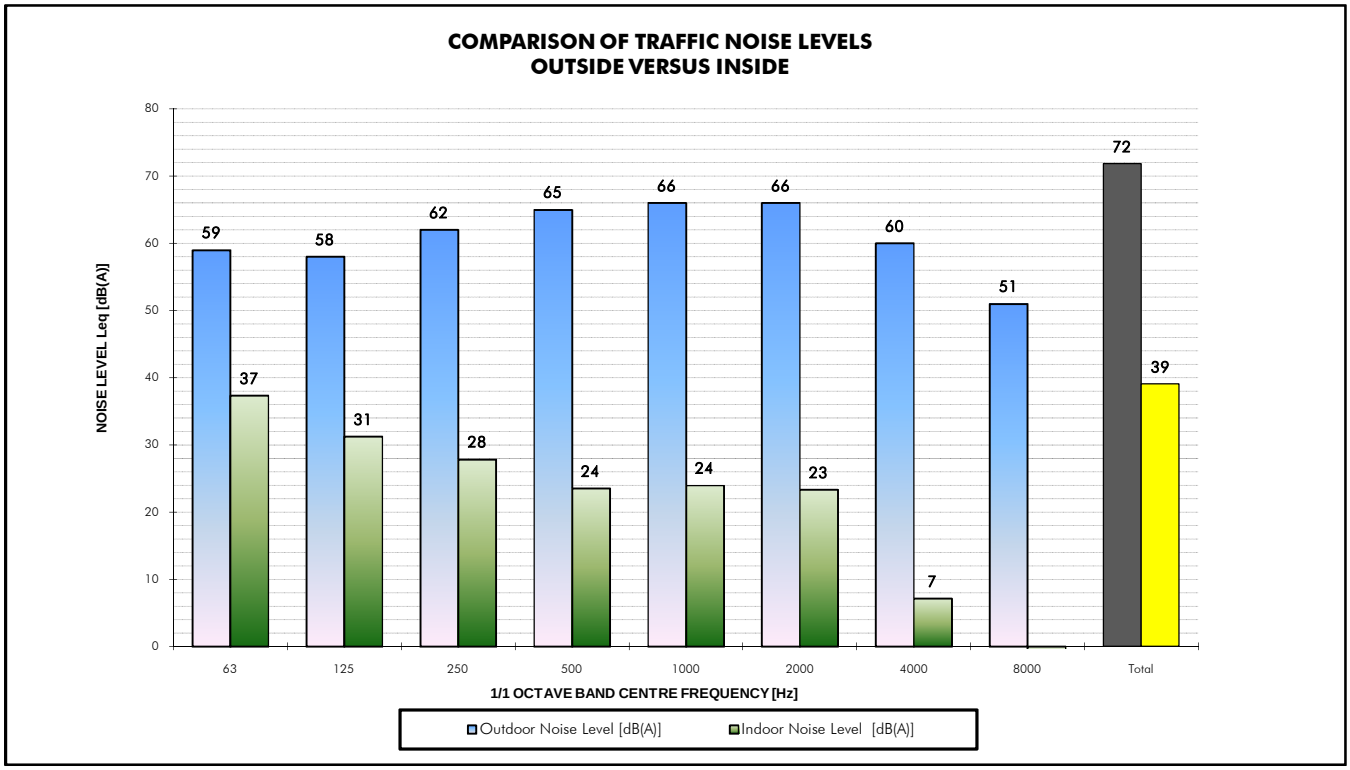


MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - Unit Type A1- B0304/B0404/B0504									
ROOM DIMENSIONS	Height	2.7	Width	6	Length	6.2	Surface	140.3	Volume	100.4
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
LOUNGE/DINING	*0.6*	18	19	22	24	27	30	32	32	

EXTERNAL ELEMENTS		STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID	**west facade**									
180 concrete - 28mm cavity with furring channels - 13mm PB	182	57	42	38	45	55	68	76	83	86	15.12
** 10.38 mm lam awning Al window - Architectural Window Systems P/L **	274	36	21	23	30	37	35	35	45	47	1.1
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*32.3*	*33.2*	*40.2*	*47.9*	*46.7*	*46.8*	*56.8*	*58.8*	*16.2*
Noise Level Spectrum for THIS Facade		0	59	58	62	65	66	66	60	51	71.8
Noise Transmitted Through Facade			32.4	30.2	26.6	21.4	23.1	22.6	6.2	-4.8	35.7
Facade Description - B	ID	**south facade**									
6.38 mm - 150 mm air gap - 10.38 mm (2 x 1.5)	501	50	26	37	43	47	50	51	60	64	8.1
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*26.0*	*37.0*	*43.0*	*47.0*	*50.0*	*51.0*	*60.0*	*64.0*	*8.1*
Noise Level Spectrum for THIS Facade		0	59	58	62	65	66	66	60	51	71.8
Noise Transmitted Through Facade			35.6	23.3	20.7	19.2	16.8	15.4	0.0	-13.0	36.2
Facade Description - C	ID	**east facade**									
180 concrete - 28mm cavity with furring channels - 13mm PB	182	57	42	38	45	55	68	76	83	86	4.05
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*42.0*	*38.0*	*45.0*	*55.0*	*68.0*	*76.0*	*83.0*	*86.0*	*4.05*
Noise Level Spectrum for THIS Facade		0	59	58	62	65	66	66	60	51	71.8
Noise Transmitted Through Facade			16.6	19.3	15.7	8.2	-4.2	-12.6	-26.0	-38.0	22.5
Facade Description - D	ID	**north facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0	-13	-14	-10	-7	-6	-6	-12	-21	0.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0	-13	-14	-10	-7	-6	-6	-12	-21	0.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Total Surface Area Exposed to Noise.....											28.4
Composite Transmission Loss			29.7	34.5	41.3	48.1	48.2	48.4	58.3	60.6	
Indoor Noise Level			**37.4**	**31.3**	**27.9**	**23.6**	**24.0**	**23.4**	**7.2**	**-4.1**	**39.1**

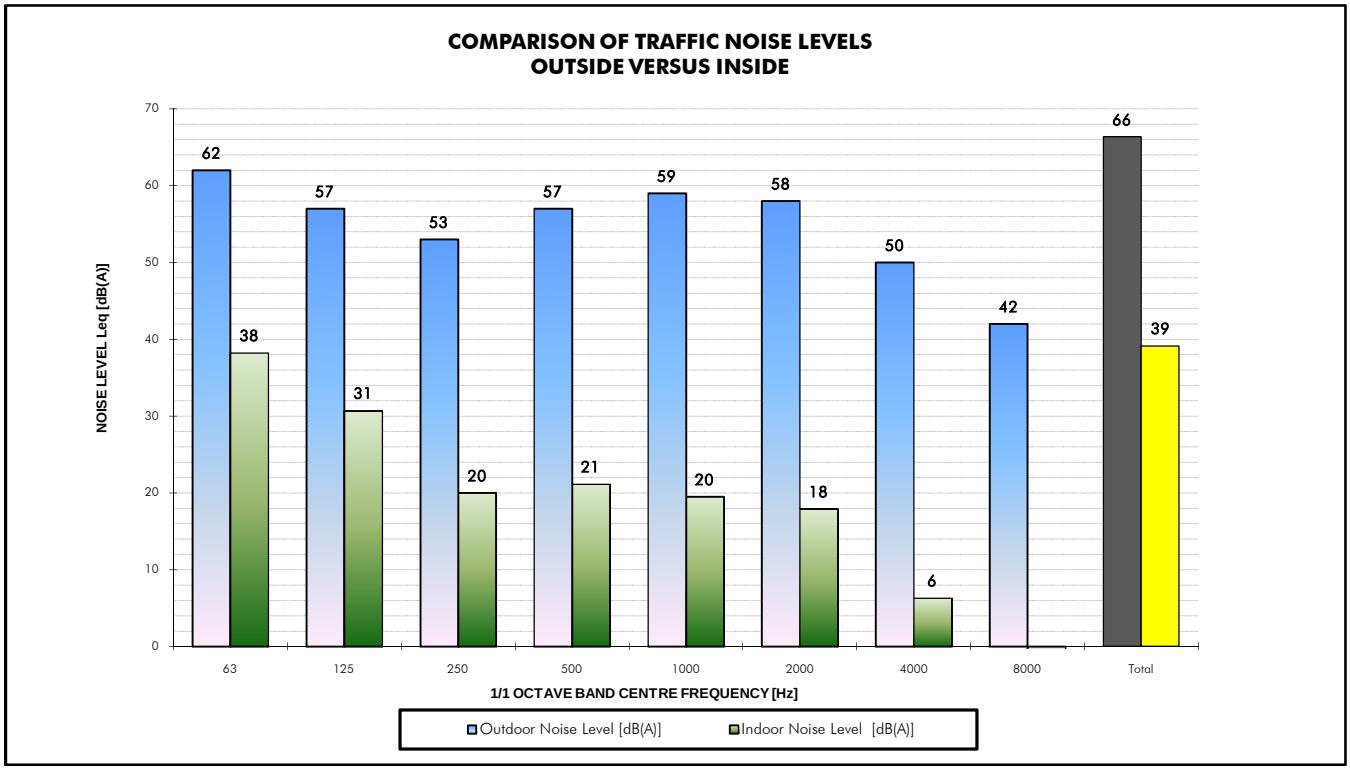


MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - Unit Type A1- B0604/B0704/B0804/B0904									
ROOM DIMENSIONS	Height	2.7	Width	6	Length	6.2	Surface	140.3	Volume	100.4
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
LOUNGE/DINING	*0.6*	18	19	22	24	27	30	32	32	

EXTERNAL ELEMENTS		STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID	**west facade**									
180 concrete - 28mm cavity with furring channels - 13mm PB	182	57	42	38	45	55	68	76	83	86	15.12
** 6.38 mm lam Al sliding window Q-lon & fur/fin weatherpile seals - Architectural Window Systems P/L **	247	31	20	22	28	29	32	32	35	38	1.1
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*31.4*	*32.5*	*38.7*	*40.6*	*43.7*	*43.8*	*46.8*	*49.8*	*16.2*
Noise Level Spectrum for THIS Facade		0	62	57	53	57	59	58	50	42	66.4
Noise Transmitted Through Facade			36.3	29.9	19.1	20.6	19.0	17.6	6.2	-4.8	37.4
Facade Description - B	ID	**south facade**									
10.38 mm - 150 mm air gap - 10.38 mm (2 x 1.5)	504	50	31	38	43	47	50	52	61	65	8.1
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*31.0*	*38.0*	*43.0*	*47.0*	*50.0*	*52.0*	*61.0*	*65.0*	*8.1*
Noise Level Spectrum for THIS Facade		0	62	57	53	57	59	58	50	42	66.4
Noise Transmitted Through Facade			33.6	21.3	11.7	11.2	9.8	6.4	-11.0	-23.0	34.0
Facade Description - C	ID	**east facade**									
180 concrete - 28mm cavity with furring channels - 13mm PB	182	57	42	38	45	55	68	76	83	86	4.05
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*42.0*	*38.0*	*45.0*	*55.0*	*68.0*	*76.0*	*83.0*	*86.0*	*4.05*
Noise Level Spectrum for THIS Facade		0	62	57	53	57	59	58	50	42	66.4
Noise Transmitted Through Facade			19.6	18.3	6.7	0.2	-11.2	-20.6	-36.0	-47.0	22.2
Facade Description - D	ID	**north facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0	-4	-9	-13	-9	-7	-8	-16	-24	0.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0	-4	-9	-13	-9	-7	-8	-16	-24	0.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Total Surface Area Exposed to Noise.....			.....								28.4
Composite Transmission Loss			31.9	34.1	40.2	42.5	45.7	45.9	49.1	52.1	
Indoor Noise Level			**38.2**	**30.7**	**20.0**	**21.1**	**19.5**	**17.9**	**6.3**	**-4.7**	**39.1**

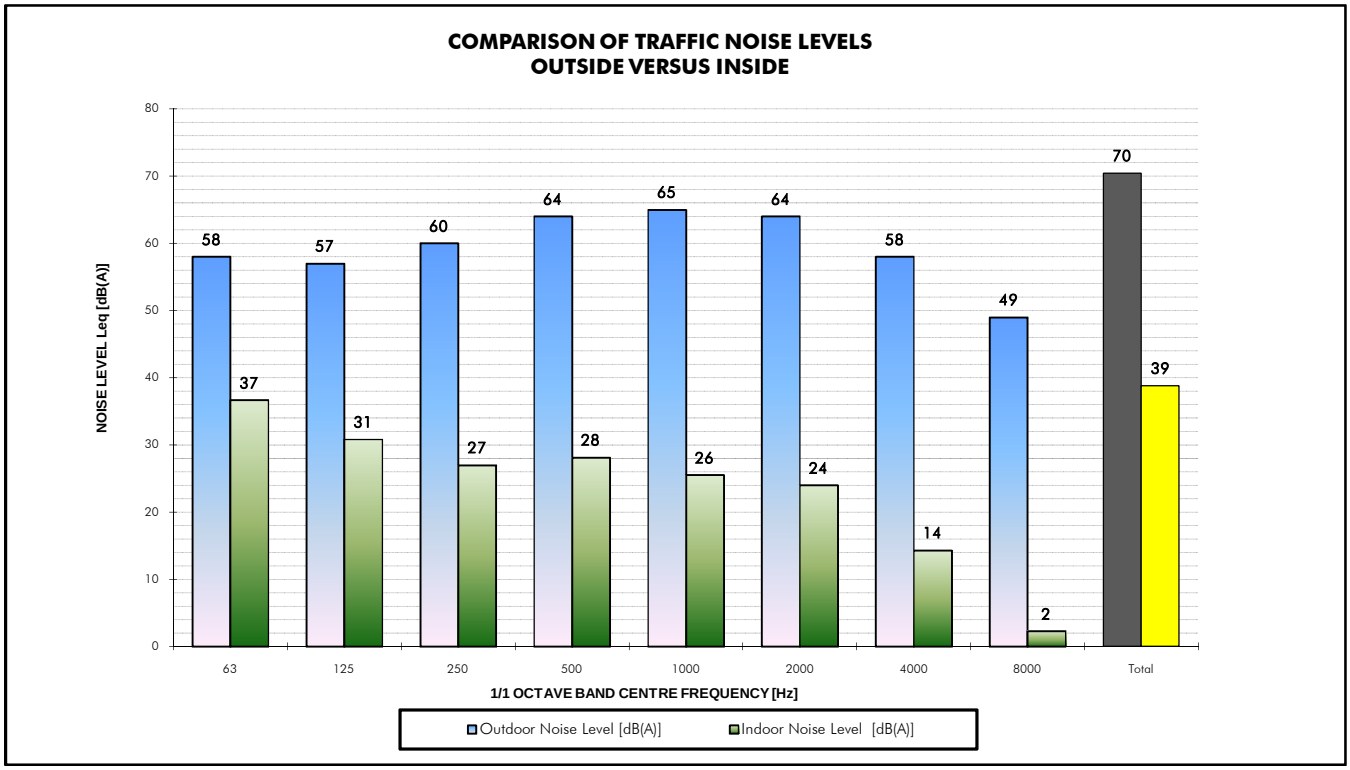


MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

DESCRIPTION	21-35 Treacy Street, HURSTVILLE - Unit Type A1- B1004/B1104/B1204									
ROOM DIMENSIONS	Height	2.7	Width	6	Length	6.2	Surface	140.3	Volume	100.4
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
LOUNGE/DINING	*0.6*	18	19	22	24	27	30	32	32	

EXTERNAL ELEMENTS		STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID	**west facade**									
180 concrete - 28mm cavity with furring channels - 13mm PB	182	57	42	38	45	55	68	76	83	86	15.12
** 6.38 mm lam Al sliding window Q-lon & fur/fin weatherpile seals - Architectural Window Systems P/L **	247	31	20	22	28	29	32	32	35	38	1.1
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*31.4*	*32.5*	*38.7*	*40.6*	*43.7*	*43.8*	*46.8*	*49.8*	*16.2*
Noise Level Spectrum for THIS Facade		0	58	57	60	64	65	64	58	49	70.4
Noise Transmitted Through Facade			32.3	29.9	26.1	27.6	25.0	23.6	14.2	2.2	36.3
Facade Description - B	ID	**south facade**									
6.38 mm - 150 mm air gap - 10.38 mm (2 x 1.5)	501	50	26	37	43	47	50	51	60	64	8.1
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*26.0*	*37.0*	*43.0*	*47.0*	*50.0*	*51.0*	*60.0*	*64.0*	*8.1*
Noise Level Spectrum for THIS Facade		0	58	57	60	64	65	64	58	49	70.4
Noise Transmitted Through Facade			34.6	22.3	18.7	18.2	15.8	13.4	-2.0	-15.0	35.2
Facade Description - C	ID	**east facade**									
180 concrete - 28mm cavity with furring channels - 13mm PB	182	57	42	38	45	55	68	76	83	86	4.05
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*42.0*	*38.0*	*45.0*	*55.0*	*68.0*	*76.0*	*83.0*	*86.0*	*4.05*
Noise Level Spectrum for THIS Facade		0	58	57	60	64	65	64	58	49	70.4
Noise Transmitted Through Facade			15.6	18.3	13.7	7.2	-5.2	-14.6	-28.0	-40.0	21.3
Facade Description - D	ID	**north facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0	-12	-13	-10	-6	-5	-6	-12	-21	0.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0	-12	-13	-10	-6	-5	-6	-12	-21	0.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Total Surface Area Exposed to Noise.....											28.4
Composite Transmission Loss			29.4	33.9	40.2	42.5	45.7	45.8	49.1	52.1	
Indoor Noise Level			**36.7**	**30.8**	**27.0**	**28.1**	**25.5**	**24.0**	**14.3**	**2.3**	**38.8**

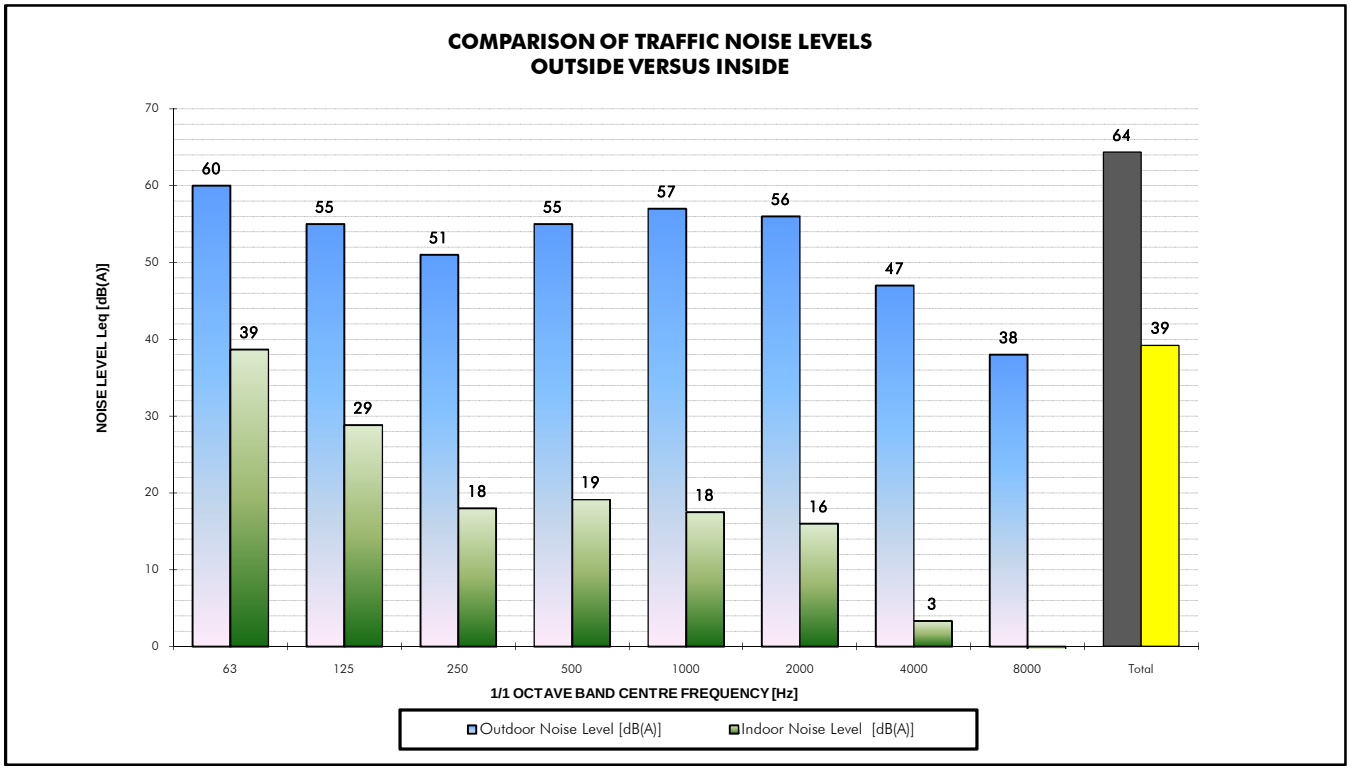


MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

DETAILS OF THE EXTERNAL TRAFFIC NOISE LEVELS, THE CALCULATED COMPOSITE T.L. AND THE INTERNAL NOISE LEVELS

DESCRIPTION		21-35 Treacy Street, HURSTVILLE - Unit Type A1-B1304/B1404/B1504								
ROOM DIMENSIONS	Height	2.7	Width	6	Length	6.2	Surface	140.3	Volume	100.4
FREQUENCY	STC/Level	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Total*
TYPICAL OUTDOOR SPECTRUM NOISE LEVEL Lp,A										9.0
LOUNGE/DINING	*0.6*	18	19	22	24	27	30	32	32	

EXTERNAL ELEMENTS		STC/Rw	TRANSMISSION LOSS [dB]								Area [m2]
Facade Description - A	ID	**west facade**									
180 concrete - 28mm cavity with furring channels - 13mm PB	182	57	42	38	45	55	68	76	83	86	15.12
** 6.38 mm lam Al sliding window Q-lon & fur/fin weatherpile seals - Architectural Window Systems P/L **	247	31	20	22	28	29	32	32	35	38	1.1
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*31.4*	*32.5*	*38.7*	*40.6*	*43.7*	*43.8*	*46.8*	*49.8*	*16.2*
Noise Level Spectrum for THIS Facade		0	60	55	51	55	57	56	47	38	64.3
Noise Transmitted Through Facade			34.3	27.9	17.1	18.6	17.0	15.6	3.2	-8.8	35.4
Facade Description - B	ID	**south facade**									
6.38 mm - 150 mm air gap - 10.38 mm (2 x 1.5)	501	50	26	37	43	47	50	51	60	64	8.1
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*26.0*	*37.0*	*43.0*	*47.0*	*50.0*	*51.0*	*60.0*	*64.0*	*8.1*
Noise Level Spectrum for THIS Facade		0	60	55	51	55	57	56	47	38	64.3
Noise Transmitted Through Facade			36.6	20.3	9.7	9.2	7.8	5.4	-13.0	-26.0	36.8
Facade Description - C	ID	**east facade**									
180 concrete - 28mm cavity with furring channels - 13mm PB	182	57	42	38	45	55	68	76	83	86	4.05
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*42.0*	*38.0*	*45.0*	*55.0*	*68.0*	*76.0*	*83.0*	*86.0*	*4.05*
Noise Level Spectrum for THIS Facade		0	60	55	51	55	57	56	47	38	64.3
Noise Transmitted Through Facade			17.6	16.3	4.7	-1.8	-13.2	-22.6	-39.0	-51.0	20.2
Facade Description - D	ID	**north facade**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Facade Description - E	ID	**Roof**									
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
----------	632	0	0	0	0	0	0	0	0	0	
Composite Transmission Loss - A			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0*
Noise Level Spectrum for THIS Facade		0									9.0
Noise Transmitted Through Facade			-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0	-99.0
Total Surface Area Exposed to Noise.....											28.4
Composite Transmission Loss			29.4	33.9	40.2	42.5	45.7	45.8	49.1	52.1	
Indoor Noise Level			**38.7**	**28.8**	**18.0**	**19.1**	**17.5**	**16.0**	**3.3**	**-8.7**	**39.2**

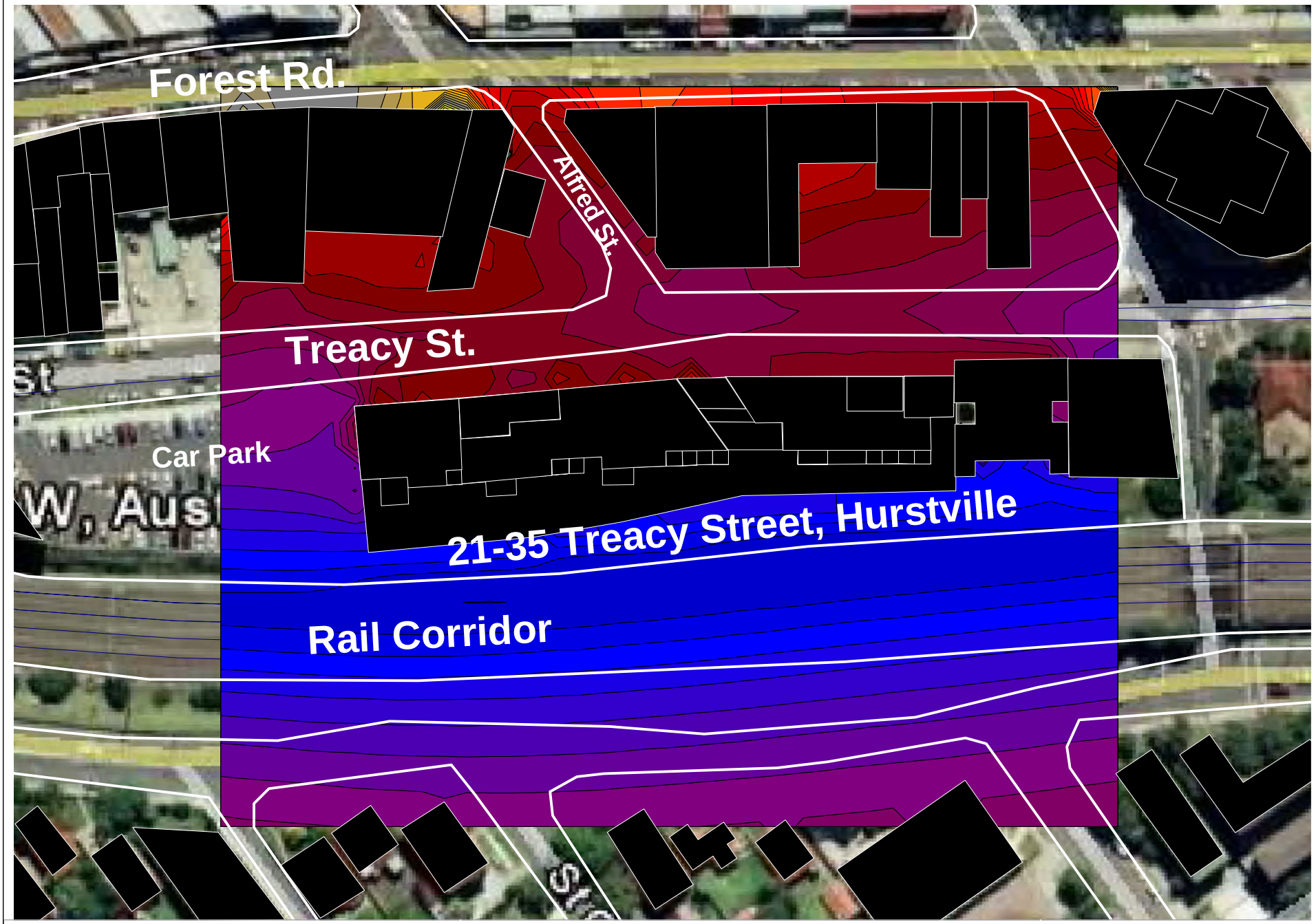


MISCELLANEOUS TRANSMISSION LOSS AND ABSORPTION DATA

APPENDIX G

APPENDIX G

APPENDIX G



**** NOISE SOURCES ****

~ Traffic Noise from Treacy Street.

~ Noise from the train movments along the rail corridor at rear

Note:

- LAeq noise level contours shown are at a RL of 73.60 m (level 3).

- The maximum reading at the most affected tenancy is 72 dBA.

PRINT DATE:23/11/10
Day time 0700-2200

- \+ Point Source
- Line Source
- Building
- Barrier
- 3D-Reflector
- Bridge
- Contour Line
- Calculation Area

- > -99.0 dB
- > 35.0 dB
- > 40.0 dB
- > 45.0 dB
- > 50.0 dB
- > 55.0 dB
- > 60.0 dB
- > 65.0 dB
- > 70.0 dB
- > 75.0 dB
- > 80.0 dB
- > 85.0 dB

KOIKAS ACOUSTICS PTY LTD
CONSULTANTS IN NOISE & VIBRATION
ABN 12 058 524 771 Commercial 1 (Unit 27), 637 - 645 Forest Road, Bexley 2207
E- mail Nick@KoikasAcoustics.com F (02) 9587 5337 P (02) 9587 9702

JOB NUMBER: 2001 (Daytime)
CLIENT: Earljest Pty Ltd
SITE ADDRESS: 21-35 Treacy Street, Hurstville
ASSESSED TO: Development Near Rail Corridors and Busy Roads Interim Guidelines December 2008
LIMITING CRITERIA: 35 dBA (Bedrooms) 40 dBA-others

N
W E
S

**** NOISE SOURCES ****

~ Traffic Noise from Treacy Street.

~ Noise from the train movments along the rail corridor at rear

Note:

- LAeq noise level contours shown are at a RL of 73.60 m (level 3).

- The maximum reading at the most affected tenancy is 68 dBA.

PRINT DATE:23/11/10
Night-time 2200-0700

+ Point Source
Line Source
Building
Barrier
3D-Reflector
Bridge
Contour Line
Calculation Area

> -99.0 dB
> 35.0 dB
> 40.0 dB
> 45.0 dB
> 50.0 dB
> 55.0 dB
> 60.0 dB
> 65.0 dB
> 70.0 dB
> 75.0 dB
> 80.0 dB
> 85.0 dB

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N
W E
S