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Proposed Child Care Centre Additions
42-44 Norfolk Street, Greenacre

Noise Assessment
Development Application Phase

Report No.: 241506-01R-DD
Date: Monday 28 October 2024

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1 INTRODUCTION

Acoustic Consulting Engineers Pty Ltd was engaged by Waratah Group to prepare a noise assessment for the proposed additions at 42 Norfolk Road to the existing child care centre at 44 Norfolk Road, Greenacre for the purpose of Development Application (DA).

This report presents the findings from the noise assessment to accompany the development application (DA) for the proposed development. The findings of the noise assessment are site specific and have been prepared for the investigation described. This report should not be used in any other context or for any other purpose.

2 SITE LOCATION

The existing child care centre at 44 Norfolk Road, Greenacre consists of three (3) indoor playrooms, a cot room, an office, a staff room, a kitchen, storage rooms, amenities and an outdoor play area to accommodate forty (40) 0-6 year old children.

The adjoining property at 42 Norfolk Road, Greenacre currently consists of residence at the front and a tutoring centre at the rear. It is proposed to re-develop 42 Norfolk Road, Greenacre to provide additions to the existing child care centre at 44 Norfolk Road, Greenacre.

Surrounding the subject site at 42-44 Norfolk Road, Greenacre are single-storey residential dwellings.

Figure 1 shows the location of the subject site and the surrounding.

Figure 1 Site Location

3 PROPOSAL

The existing child care centre at 44 Norfolk Road, Greenacre consists of three (3) indoor playrooms, a cot room, an office, a staff room, a kitchen, storage rooms, amenities and an outdoor play area to accommodate forty (40) 0-6 year old children (ten (10) 0-2 year old, twenty (20) 2-3 year old and ten (10) 3-6 year old children).

The proposal is to re-develop the site at 42 Norfolk Road, Greenacre to provide additions to the existing child care centre at 44 Norfolk Road, Greenacre to accommodate forty (40) additional 3-6 year old children. The additions will consist of:

- storage area and car-parking on Basement Level;
- an indoor play room, storage rooms, amenities and an outdoor play area to accommodate thirty (30) 3-6 year old children and four (4) additional car-park spaces on Ground Level; and
- an indoor play room, storage rooms, amenities and an outdoor play area to accommodate ten (10) 3-6 year old children on Level 1

Proposed operational hours will be from 7:30am to 5:00pm, Monday to Friday.

Figure 2 and Figure 6 show the floor plans for the existing and proposed child care centre.

Figure 2 Layout of Existing Child Care Centre (44 Norfolk Road)

Figure 3 Layout of Proposed Child Care Centre Additions
42-44 Norfolk Road

Figure 4 **Basement Level Floor Plan – Proposed Child Care Centre Additions 42-44 Norfolk Road**

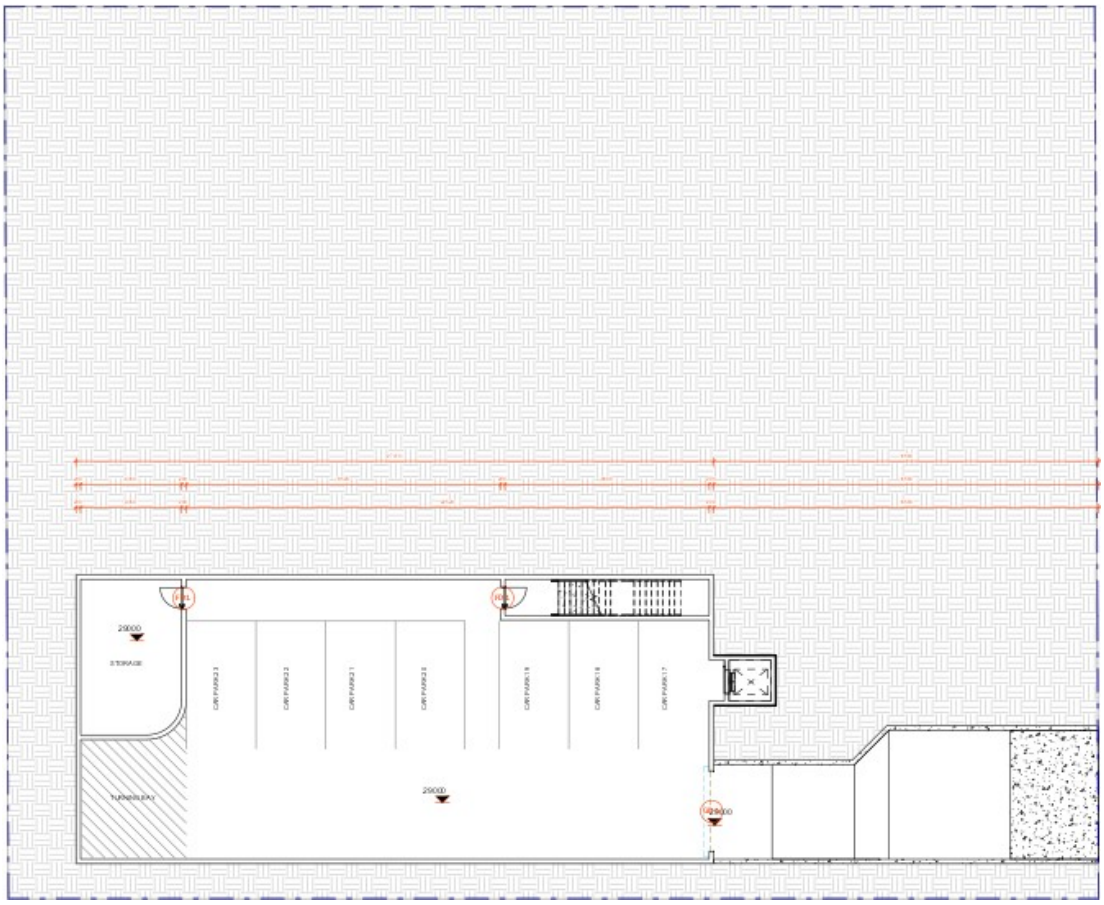


Figure 5 Ground Level Floor Plan – Proposed Child Care Centre Additions 42-44 Norfolk Road

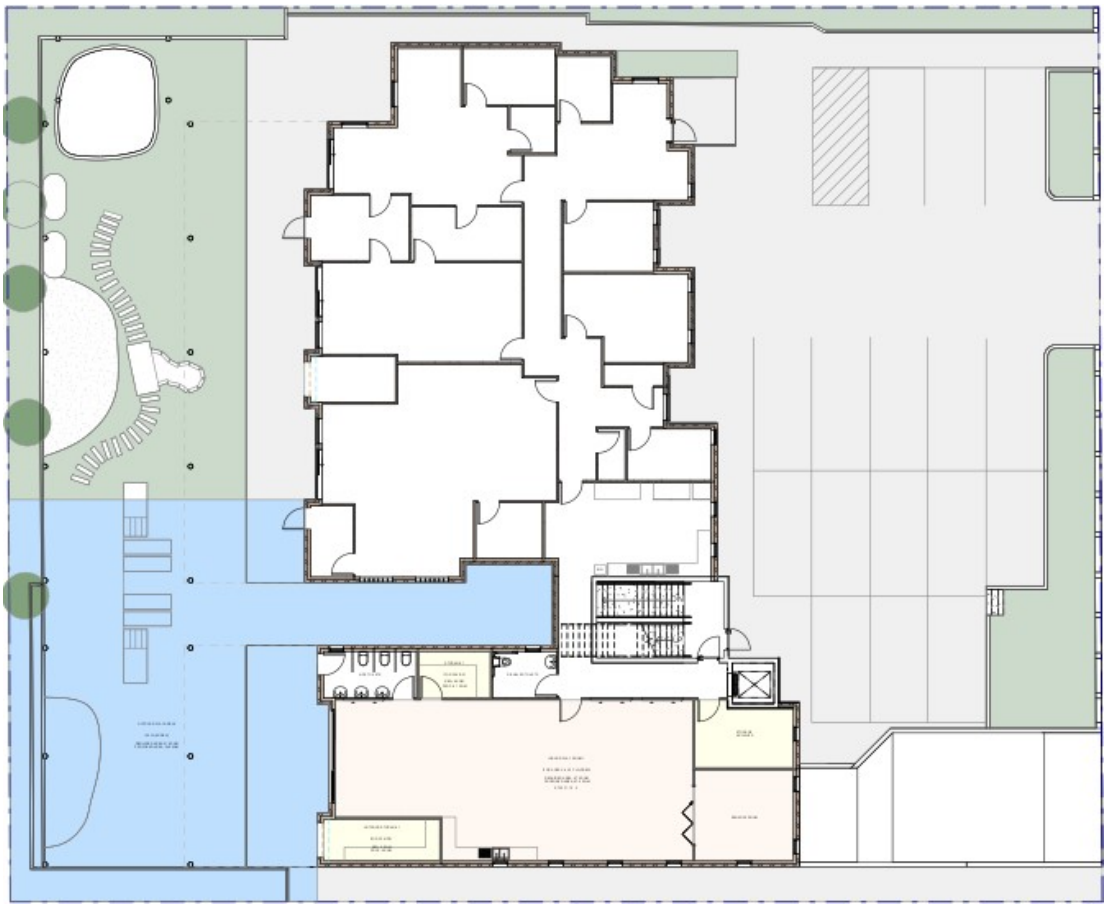
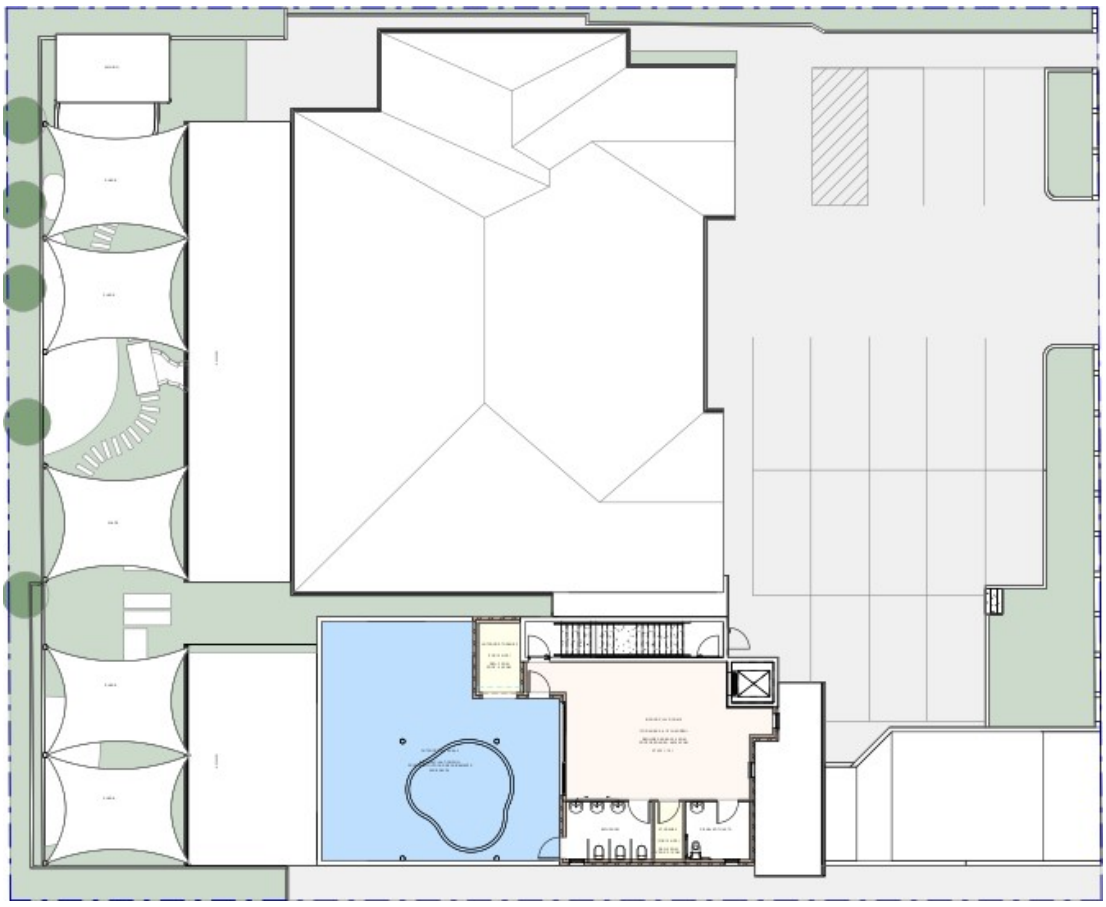


Figure 6 Level 1 Floor Plan – Proposed Child Care Centre Additions 42-44 Norfolk Road



4 POTENTIAL ACOUSTIC CONSTRAINTS

From a review of background information and site inspections, acoustic issues associated with the child care centre which have the potential to impact on the neighbouring residences are:

- mechanical plant and air-conditioning equipment;
- children playing indoor and outdoor; and
- vehicular activities associated with children drop-off and pick-up

From a review of the floor plans and site inspections:

- environmental noise from mechanical plant (air-conditioning equipment) will be controlled by appropriate siting to take advantage of shielding provided by the acoustic barriers and selection of selection of equipment based on acoustic performance;
- children playing outdoor can be controlled by provision of acoustic barriers and operational plan of management; and

- children playing indoor is unlikely be audible at the nearest residences; and
- vehicular activities associated with children drop-off and pick-up will be contained within the new basement car-park and acoustic barriers for the at-grade car-park on Ground Floor

5 ASSESSMENT METHODOLOGY

The methodology adopted for the noise assessment includes:

- review architectural drawings and floor plans;
- inspection to identify the site, nearby sensitive receivers and potential acoustic constraints;
- measurement if background noise;
- establishment of environmental noise assessment objectives;
- prediction and assessment of noise impacts; and
- recommendation of noise control and management measures.

6 BACKGROUND NOISE ENVIRONMENT

Existing background noise environment was measured at a residential receiver representative of those potentially affected by noise from the child care centre. The noise data logger was installed at the boundary of 40 and 42 Norfolk Road (refer to Figure 1) from Tuesday 10 September 2024 to Wednesday 18 September 2024. The measured L_{A90} noise levels represent the existing background environment at the surrounding residential properties.

Measurement instrumentation consisted of a Type 1 SVAN977 sound and vibration analyser, and a Type 1 ACO Pacific 7052E prepolarised condenser. The instrumentation was checked before and after the measurements with a SVAN SV30A acoustic calibrator and the drift in calibration was within ±0.3dB.

As environmental noise varies with time and the human ear is not equally sensitive to noise at different frequencies, A-weighted statistical levels are used to describe environmental noise. The common parameters used to describe environmental noise are the L_{Amax}, L_{A1}, L_{A10}, L_{A90} and L_{Aeq} levels measured over 15-minute intervals.

The L_{Amax} level is the maximum A-weighted sound pressure level over the sampling period. The L_{A1}, L_{A10} and L_{A90} levels are the A-weighted sound pressure levels exceeded for 1%, 10% and 90% of the sampling periods respectively. The L_{A90} level is usually referred to as the background noise level. The L_{Aeq} level is the A-weighted continuous equivalent (energy average) sound pressure level over the sampling period.

Appendix 1 provides graphical presentation of the statistical noise levels measured and recorded at 15-minute intervals. *Table 1* provides the measured daytime/evening/nigh-time L_{A90} background noise levels representative of those at the surrounding properties.

For the present assessment, only the daytime L_{A90} acoustic parameter is relevant. Other acoustic parameters are provided for information only.

Table 1 Measured Existing Background Noise Environment

Date	Existing L_{A90} Background Noise Level, dB(A)		
	Day	Evening	Night
Tuesday 10 September 2024		43.6	40.4
Wednesday 11 September 2024	41.3	40.0	35.4
Thursday 12 September 2024	46.2	44.7	38.0
Friday 13 September 2024	41.2	41.5	36.2
Saturday 14 September 2024	40.0	42.4	32.9
Sunday 15 September 2024	43.4	44.0	37.5
Monday 16 September 2024	39.3	39.5	36.6
Tuesday 17 September 2024	39.3	42.9	39.0
Rating Background Noise Level	**41**	**42**	**37**

7 NOISE ASSESSMENT OBJECTIVES

7.1 Environmental Noise from Children Playing Outdoor

With reference to the Association of Australasian Acoustical Consultants' "*Guideline for Child Care Centre Acoustic Assessment (Version 3.0, September 2020)*", the $L_{Aeq,15min}$ noise assessment objectives for child care centres when assessed at residential receiver properties are:

- 5dB above the L_{A90} background noise level for unrestricted outdoor; and
- 10dB above the L_{A90} background noise level for outdoor play activities restricted to a total of not more than four (4) hours per day

Based on the measured daytime rating background noise level of 41dB(A) L_{A90} (refer to Table 1), it is recommended that operational noise levels at the nearest surrounding residences from outdoor playing should not exceed:

- 51dB(A) $L_{Aeq,15min}$ for outdoor play time restricted to no more than four (4) hours per day; and
- 46dB(A) $L_{Aeq,15min}$ for unrestricted outdoor play time

7.2 Environmental Noise from Indoor Play Activity, Mechanical Plant and On-site Vehicle

It is recommended that noise from indoor play activities, mechanical plant and on-site vehicles during children drop-off and pick-up should not exceed the background noise level by more than 5dB at the neighbouring residential receivers.

From the established daytime background noise level of 41dB(A) L_{A90} (Section 6), it is recommended that noise from indoor play activity, mechanical plant and on-site vehicles during children drop-off and pick-up should not exceed 46dB(A) $L_{Aeq,15min}$ at the nearest neighbouring residences.

7.3 Environmental Noise from Children Playing Outdoor

With reference to the EPA Road Noise Policy (RNP), it is recommended that additional road traffic noise generated by the proposed development should not exceed 55dB(A) $L_{Aeq,1hr}$ at 1m from the residential façade or increase the existing road traffic noise level by more than 2dB where existing road traffic noise levels already exceeds 55dB(A) $L_{Aeq,1hr}$.

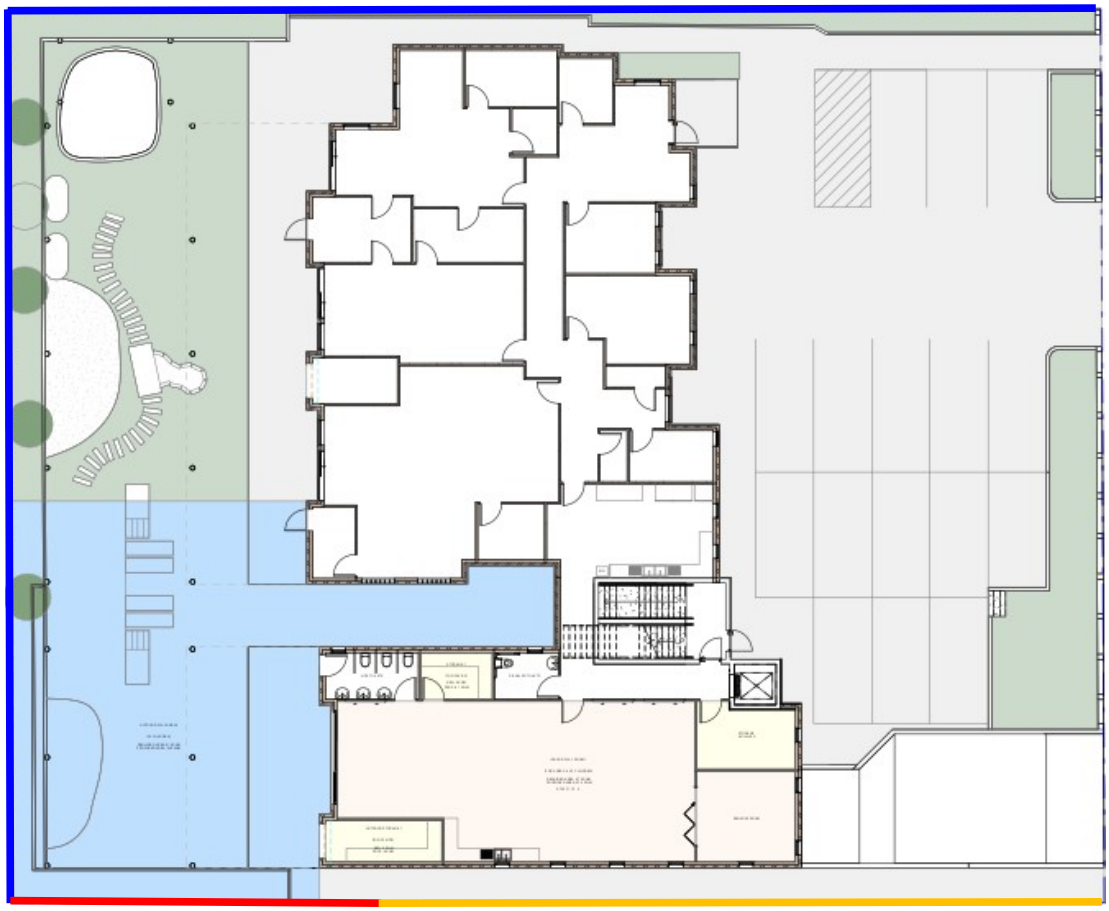
8 RECOMMENDATIONS

The following measures are recommended to control potential environmental noise impact from the child care centre at 42-44 Norfolk Road, Greenacre:

- noise control/management measures recommended in this report shall be incorporated in the Operational Plan of Management for the child care centre;
- existing 1.8m high acoustic barriers on the western and southern site boundaries on top of the planting embankment at the rear of the site shall be maintained;
- existing 1.5m-1.8m high acoustic barriers on the western site boundary at front, separating the subject site's car-park and neighbouring residence at 46 Norfolk Road shall be maintained;
- 2m high acoustic barrier on the eastern site at the rear, followed by 1.8m acoustic barrier tapered down to appropriate height at the front of 42 Norfolk Road shall be constructed on Ground Level (refer to Figure 7);
- 1.4m high acoustic barriers for the outdoor play area shall be constructed on Level 1 (refer to Figure 8);
- operational hours for the child care centre shall be during daytime only (7:00am – 6:00pm);
- music lessons shall not be undertaken in the outdoor play areas;
- windows on the eastern building façade of Indoor Playroom 1 for the age 3-6 children associated with the child care centre additions at 42 Norfolk Road shall be closed during noisy activities (such as music lesson/time);
- outdoor play areas shall be covered with grass, synthetic grass or rubber;
- children shall be divided into smaller play groups with no more than thirty (30) children playing outdoor at any time;

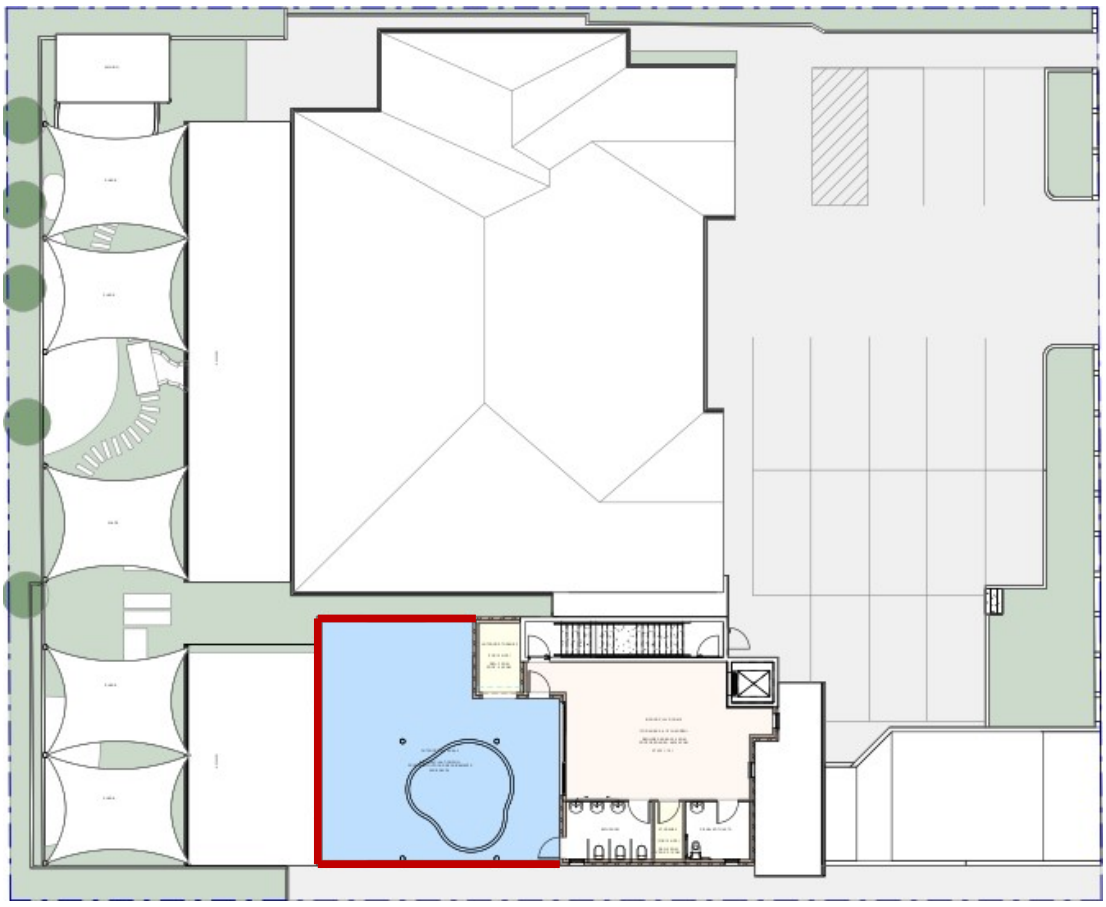
- outdoor play activities shall be restricted to no more than four (4) hours per day;
- play activities shall be spread out and children supervised/encouraged to play in all outdoor areas instead of being concentrated in one (1) area;
- children crying in the outdoor play areas shall be taken inside and comforted;
- staff be made aware of the need to minimise noise to the neighbouring residences;
- air conditioning outdoor condensers shall be sited, taking advantage of acoustic shielding provided by the child care building structures, below the top of acoustic barriers and shall not exceed a noise level of 43dB(A) $L_{Aeq,15min}$ at the nearest residences; and
- mechanical plant and equipment selection and location shall be reviewed by a qualified acoustic consultant during the Construction Certificate (CC) Phase to ensure the recommended assessment objective is achieved

Figure 7 Existing and Proposed Acoustic Barriers on Ground Level



Existing acoustic barriers to be maintained
2m high acoustic barrier to be constructed
1.8m high acoustic barrier tapered down to appropriate height at street frontage to be constructed

Figure 8 Proposed Acoustic Barriers on Level 1



1.4m high acoustic barriers to be constructed

9 NOISE ASSESSMENT

9.1 Noise from Children Playing Outdoor

With the implementation of the recommendations in Section 8, the predicted noise levels from children playing outdoor are 49dB(A) $L_{Aeq,15min}$ at the adjoining neighbouring residences on the western and southern sides and 50dB(A) $L_{Aeq,15min}$ at the adjoining neighbouring residence on the eastern side.

The predicted noise levels from children playing outdoor comply with the recommended noise assessment objective of 51dB(A) $L_{Aeq,15min}$.

9.2 Noise from Indoor Play, Vehicles in the Car-park and Air-Conditioning

With reference to *Section 3.11.3* of the RTA/RMS Guide to Traffic Generating Developments, peak traffic generation from the proposed child care centre will be between 7:00am and 9:00am and a traffic generation rate of 0.8 trip per child. With 80 children, it is estimated that 64 vehicle trips would be generated between 7:00am and 9:00am.

Assuming traffic generation is distributed in the ratio of available car-park spaces in the Basement and Ground Levels during peak hours, a sound power exposure level of 90dB(A) per car in the car-park, taking into distance separation and number of vehicle movements, calculation show that noise generation from cars in the car-park is 38dB(A) $L_{Aeq,15min}$.

As the Development Application has not been approved at this stage, a mechanical consultant has not been engaged to determine and specify the requirement for mechanical plant (air-conditioning equipment).

However, with noise from mechanical plant controlled to within 43dB(A) $L_{Aeq,15min}$ at the nearest and most affected neighbouring residences, the cumulative noise levels from children indoor play activities, vehicles in the car-park and air-conditioning will be within the recommended assessment objective of 46dB(A) $L_{Aeq,15min}$.

Noise from mechanical plant will be controlled by appropriate equipment selection based on acoustic performance and appropriate equipment location to take account of shielding provided by the child care centre building and acoustic barriers.

9.3 Noise from Additional Traffic Generation

With forecast traffic generation of 64 vehicle trips in and out during the peak period (7:00am – 9:00am), the predicted road traffic noise level is 49dB(A) $L_{Aeq,1hr}$ at 1m from the residential building façade. The predicted road traffic noise level complies with the assessment objectives of 55dB(A) $L_{Aeq,1hr}$.

10 SUMMARY

This report presents the findings of the noise assessment for the proposed child care centre additions at 42-44 Norfolk Road, Greenacre.

With the implementation of the recommendations in this report, the findings from the assessment have shown that:

- noise from children outdoor play activities will be controlled to within the recommended assessment objective of 51dB(A) $L_{Aeq,15min}$ at the nearest residences; and
- cumulative noise level from mechanical plant (air-conditioning equipment) and vehicles associated with children drop-off and pick-up in the car-park will comply with the recommended assessment objective of 46dB(A) $L_{Aeq,15min}$ at the nearest residences

It is recommended that a qualified acoustic engineer be engaged during the Construction Certificate (CC) Phase (when mechanical plant and equipment has been designed, specified and selected) to review and ensure the recommended noise assessment objectives are achieved.

Appendix 1 MEASURED BACKGROUND NOISE LEVEL

Measurement Location 42 Norfolk Road, Greenacre
Rear Eastern Site Boundary

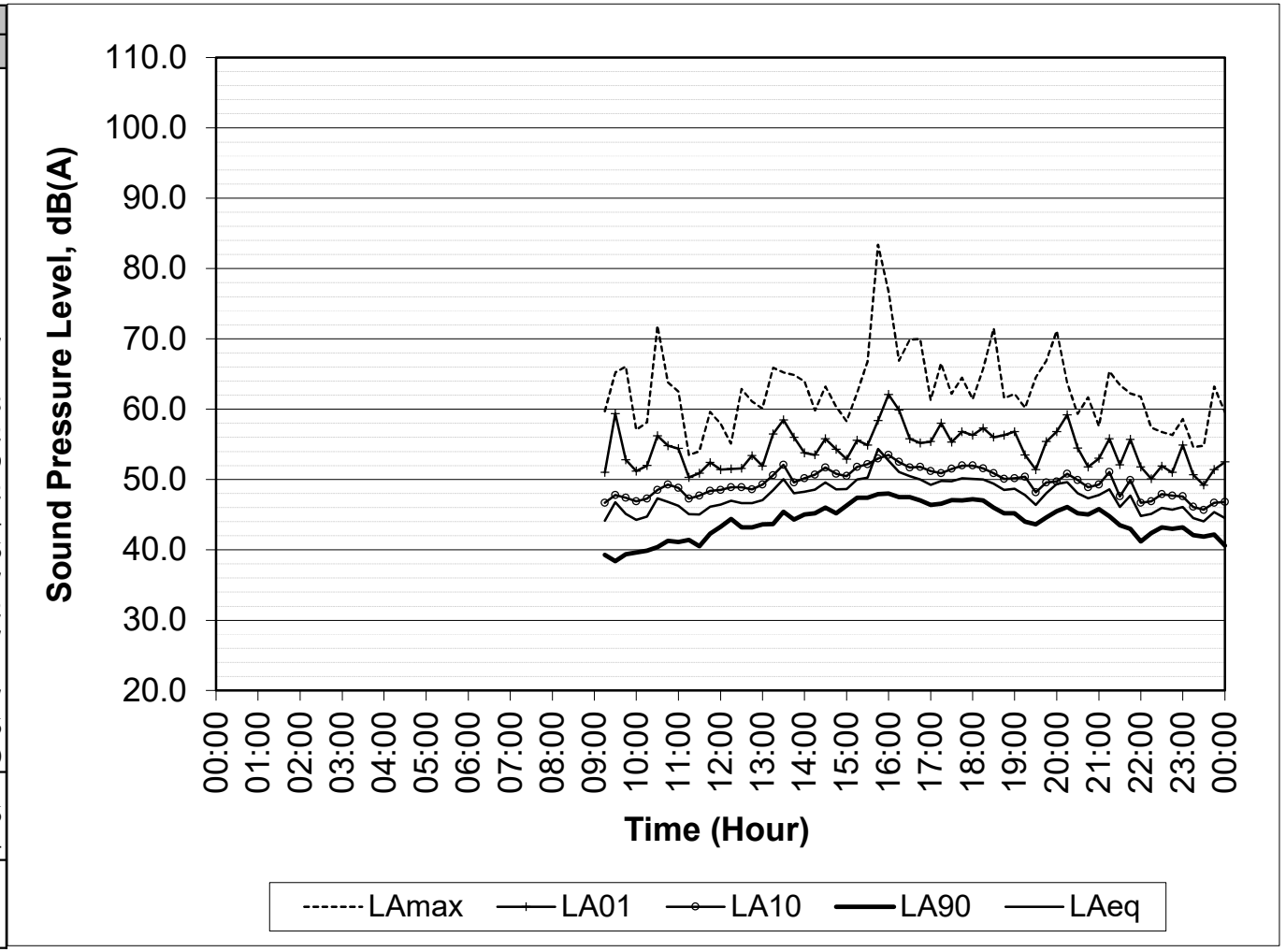
Project Title Proposed Child Care Centre Additions
42-44 Norfolk Road, Greenacre

Measurement Date Tuesday, 10 September 2024

Notes

1. Tabulated L_{Aeq} are logarithically averaged
2. Tabulated L_{A01} and L_{A10} are arithmetically averaged
3. Tabulated L_{A90} are the lowest 10-percentile levels

Time	Average Noise Level			
	L_{Aeq}	L_{A01}	L_{A10}	L_{A90}
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00				
08:00-09:00				
09:00-10:00	45.2	53.6	47.2	38.7
10:00-11:00	46.4	54.4	48.5	40.1
11:00-12:00	45.7	51.3	48.0	40.8
12:00-13:00	46.8	52.1	48.9	43.2
13:00-14:00	48.8	56.2	50.6	43.9
14:00-15:00	48.9	54.1	50.9	45.2
15:00-16:00	52.2	57.8	52.6	47.4
16:00-17:00	50.3	56.6	51.8	46.6
17:00-18:00	50.0	56.6	51.6	46.7
18:00-19:00	49.2	56.6	50.7	45.2
19:00-20:00	48.0	54.3	49.5	43.7
20:00-21:00	48.3	54.6	49.7	45.1
21:00-22:00	47.0	53.9	48.8	41.7
22:00-23:00	45.7	52.0	47.5	42.6
23:00-24:00	44.6	51.0	46.3	41.0
Day				
Evening	48.5	55.1	50.0	43.6
Night	45.6	51.2	47.1	40.4
LAeq,15hr				
LAeq,9hr	45.6			
LAeq,24hr				



Measurement Location 42 Norfolk Road, Greenacre
Rear Eastern Site Boundary

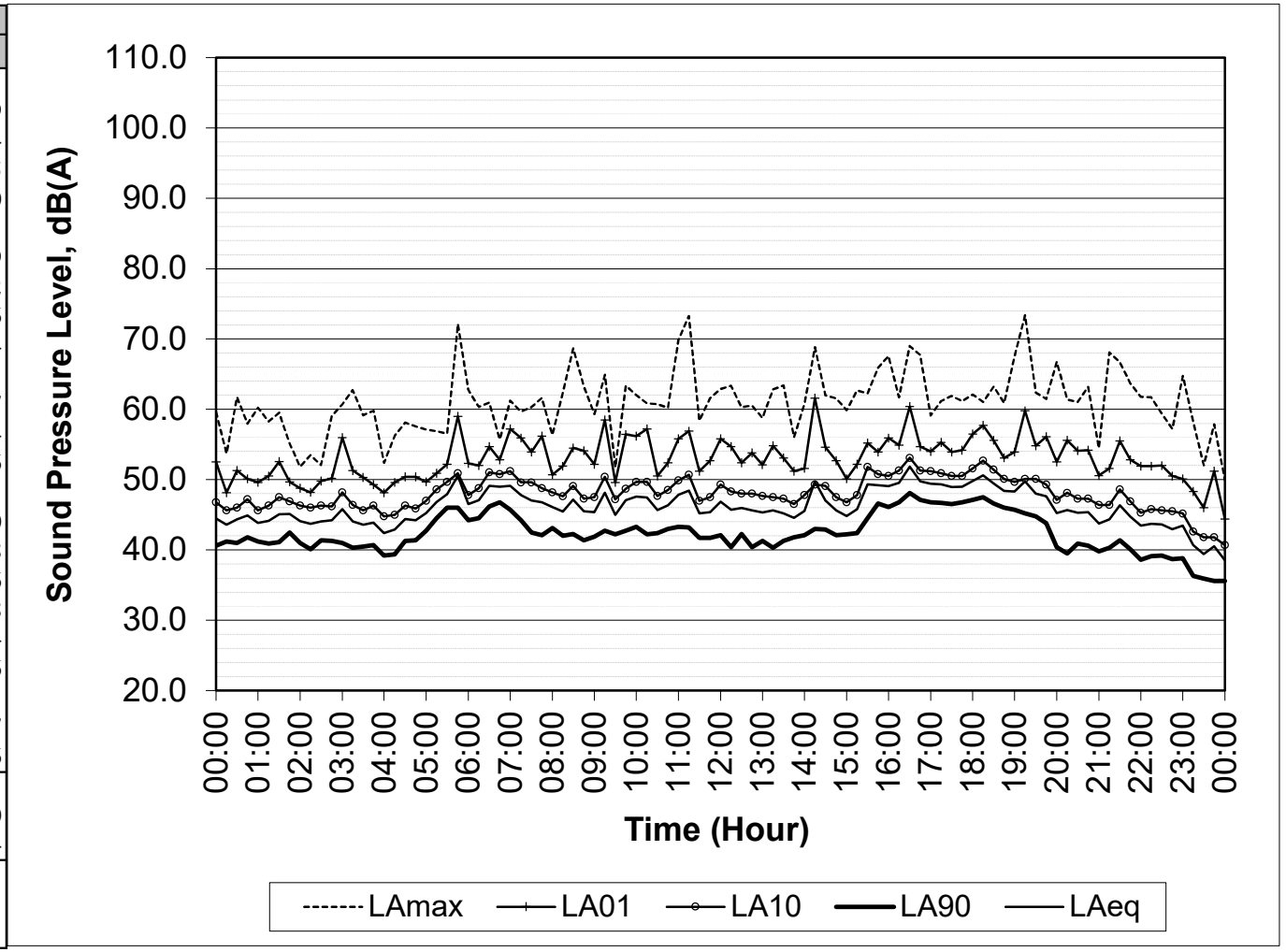
Project Title Proposed Child Care Centre Additions
42-44 Norfolk Road, Greenacre

Measurement Date Wednesday, 11 September 2024

Notes

1. Tabulated L_{Aeq} are logarithically averaged
2. Tabulated L_{A01} and L_{A10} are arithmetically averaged
3. Tabulated L_{A90} are the lowest 10-percentile levels

Time	Average Noise Level			
	L_{Aeq}	L_{A01}	L_{A10}	L_{A90}
00:00-01:00	44.2	49.8	46.1	41.1
01:00-02:00	44.6	50.4	46.8	40.9
02:00-03:00	44.5	51.1	46.7	40.4
03:00-04:00	43.5	49.8	45.8	39.5
04:00-05:00	44.3	50.0	46.1	40.0
05:00-06:00	48.2	53.6	49.3	44.3
06:00-07:00	48.7	54.2	50.5	44.9
07:00-08:00	47.0	54.2	49.1	42.2
08:00-09:00	45.9	53.2	47.9	41.6
09:00-10:00	47.1	55.2	49.0	42.4
10:00-11:00	46.9	54.0	49.0	42.3
11:00-12:00	46.7	54.2	48.6	41.7
12:00-13:00	45.7	53.3	48.0	40.4
13:00-14:00	45.2	52.7	47.3	40.6
14:00-15:00	47.2	54.8	48.2	42.1
15:00-16:00	48.6	54.3	50.2	43.0
16:00-17:00	50.3	56.0	51.7	46.8
17:00-18:00	49.3	55.0	50.9	46.6
18:00-19:00	49.3	55.1	51.0	45.8
19:00-20:00	47.9	55.8	49.2	41.4
20:00-21:00	45.1	53.6	47.3	39.6
21:00-22:00	44.8	53.0	46.8	39.1
22:00-23:00	43.4	51.1	45.5	38.7
23:00-24:00	39.9	47.5	41.7	35.6
Day	47.5	54.3	49.1	41.3
Evening	47.6	54.7	48.9	40.0
Night	43.9	49.6	44.6	35.4
LAeq,15hr	47.5			
LAeq,9hr	43.9			
LAeq,24hr	46.9			



Measurement Location 42 Norfolk Road, Greenacre
Rear Eastern Site Boundary

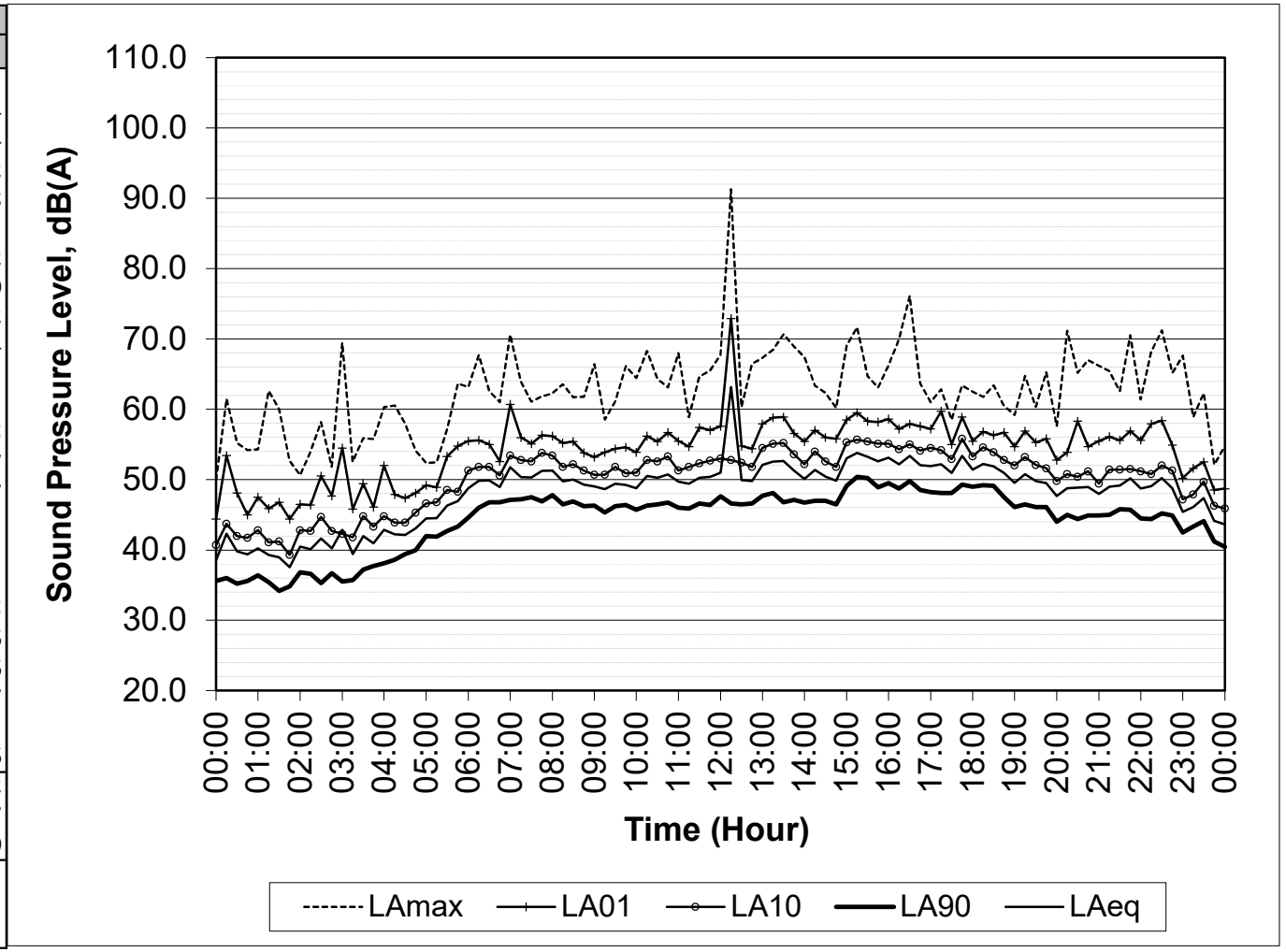
Project Title Proposed Child Care Centre Additions
42-44 Norfolk Road, Greenacre

Measurement Date Thursday, 12 September 2024

Notes

1. Tabulated L_{Aeq} are logarithically averaged
2. Tabulated L_{A01} and L_{A10} are arithmetically averaged
3. Tabulated L_{A90} are the lowest 10-percentile levels

Time	Average Noise Level			
	L_{Aeq}	L_{A01}	L_{A10}	L_{A90}
00:00-01:00	40.6	48.5	42.6	35.3
01:00-02:00	39.2	45.9	41.1	34.4
02:00-03:00	41.3	49.8	43.1	35.4
03:00-04:00	41.5	48.3	43.7	36.2
04:00-05:00	43.1	48.2	44.9	38.8
05:00-06:00	46.9	53.1	48.7	42.1
06:00-07:00	50.2	56.0	51.9	46.2
07:00-08:00	50.8	55.9	53.2	47.0
08:00-09:00	49.6	54.4	51.5	46.2
09:00-10:00	49.0	54.2	51.1	45.4
10:00-11:00	50.3	56.0	52.5	46.1
11:00-12:00	50.3	56.7	52.5	46.1
12:00-13:00	57.8	60.0	52.9	46.5
13:00-14:00	51.8	57.4	54.0	46.7
14:00-15:00	51.4	56.8	53.4	46.7
15:00-16:00	53.2	58.7	55.3	49.1
16:00-17:00	52.4	57.5	54.5	48.3
17:00-18:00	52.1	57.3	54.1	48.1
18:00-19:00	51.3	56.1	53.3	46.5
19:00-20:00	49.6	55.2	51.7	44.6
20:00-21:00	48.7	55.6	50.5	44.6
21:00-22:00	49.3	56.1	51.4	44.7
22:00-23:00	48.7	55.4	50.3	43.1
23:00-24:00	45.6	50.3	47.5	40.6
Day	52.5	56.9	53.2	46.2
Evening	50.0	55.7	51.8	44.7
Night	45.1	50.2	46.1	38.0
LAeq,15hr	51.9			
LAeq,9hr	45.1			
LAeq,24hr	50.6			



Measurement Location 42 Norfolk Road, Greenacre
Rear Eastern Site Boundary

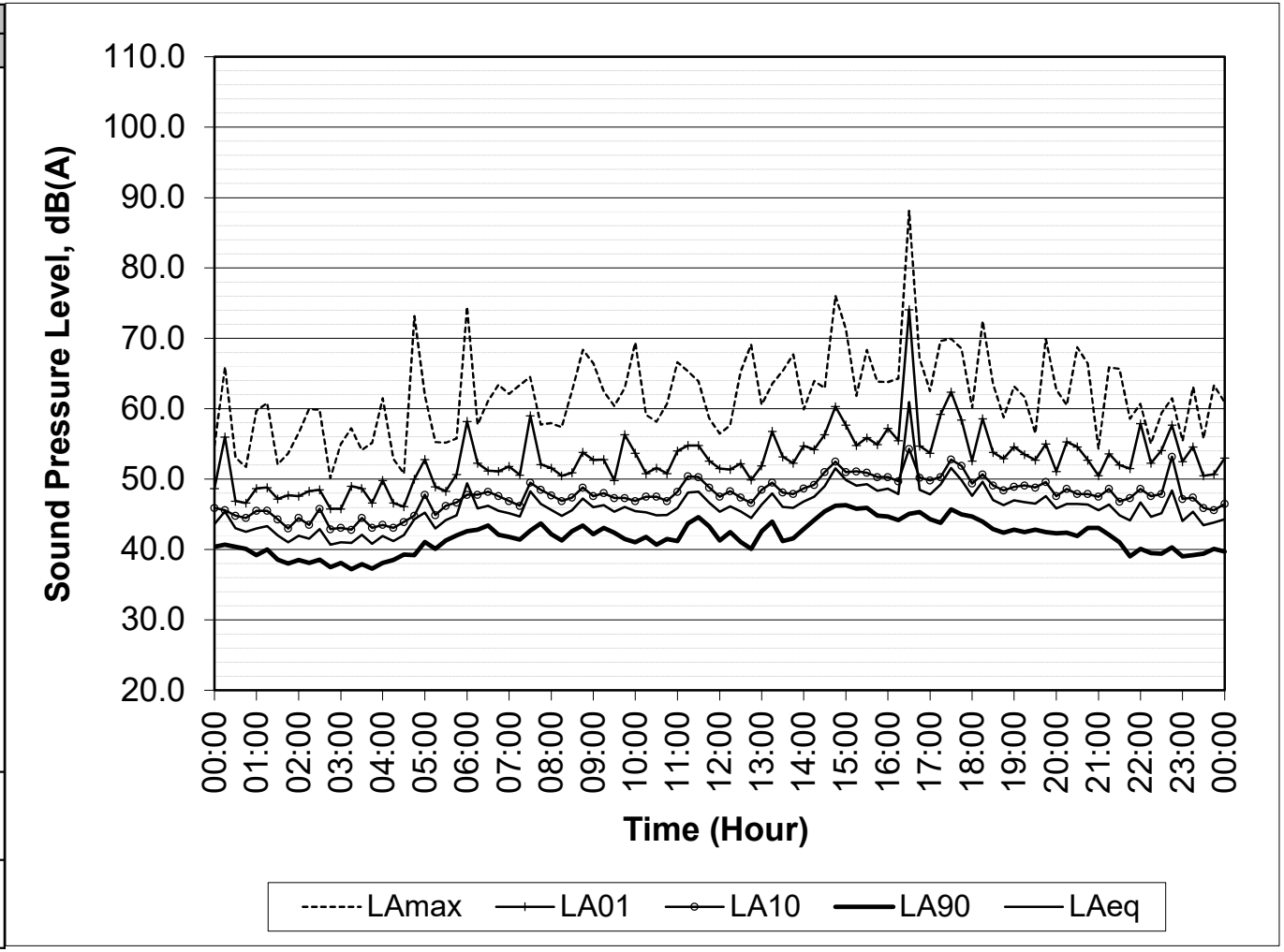
Project Title Proposed Child Care Centre Additions
42-44 Norfolk Road, Greenacre

Measurement Date Friday, 13 September 2024

Notes

1. Tabulated L_{Aeq} are logarithically averaged
2. Tabulated L_{A01} and L_{A10} are arithmetically averaged
3. Tabulated L_{A90} are the lowest 10-percentile levels

Time	Average Noise Level			
	L_{Aeq}	L_{A01}	L_{A10}	L_{A90}
00:00-01:00	43.7	49.6	45.1	39.5
01:00-02:00	42.2	47.8	44.3	38.2
02:00-03:00	41.6	47.1	43.8	37.7
03:00-04:00	41.5	48.5	43.5	37.2
04:00-05:00	43.5	48.9	44.9	38.7
05:00-06:00	46.1	51.5	46.4	40.5
06:00-07:00	45.7	51.6	47.6	41.9
07:00-08:00	46.5	53.3	48.0	41.6
08:00-09:00	46.0	52.0	47.7	41.6
09:00-10:00	45.8	53.2	47.4	41.2
10:00-11:00	45.3	51.8	47.5	40.9
11:00-12:00	47.2	53.4	49.3	41.9
12:00-13:00	45.7	51.4	47.7	40.4
13:00-14:00	46.8	54.3	48.6	41.3
14:00-15:00	49.7	57.1	50.9	44.6
15:00-16:00	48.9	55.7	50.7	44.7
16:00-17:00	55.5	59.5	51.0	44.2
17:00-18:00	49.8	58.2	51.1	44.1
18:00-19:00	47.7	55.0	49.3	42.5
19:00-20:00	46.7	53.1	48.8	42.4
20:00-21:00	46.3	53.3	48.0	42.1
21:00-22:00	45.6	53.8	47.8	39.3
22:00-23:00	45.9	54.2	49.0	39.1
23:00-24:00	44.3	52.2	46.4	39.3
Day	49.2	54.5	49.0	41.2
Evening	46.7	53.4	48.5	41.5
Night	44.1	50.4	44.6	36.2
LAeq,15hr	48.6			
LAeq,9hr	44.1			
LAeq,24hr	47.6			



Measurement Location 42 Norfolk Road, Greenacre
Rear Eastern Site Boundary

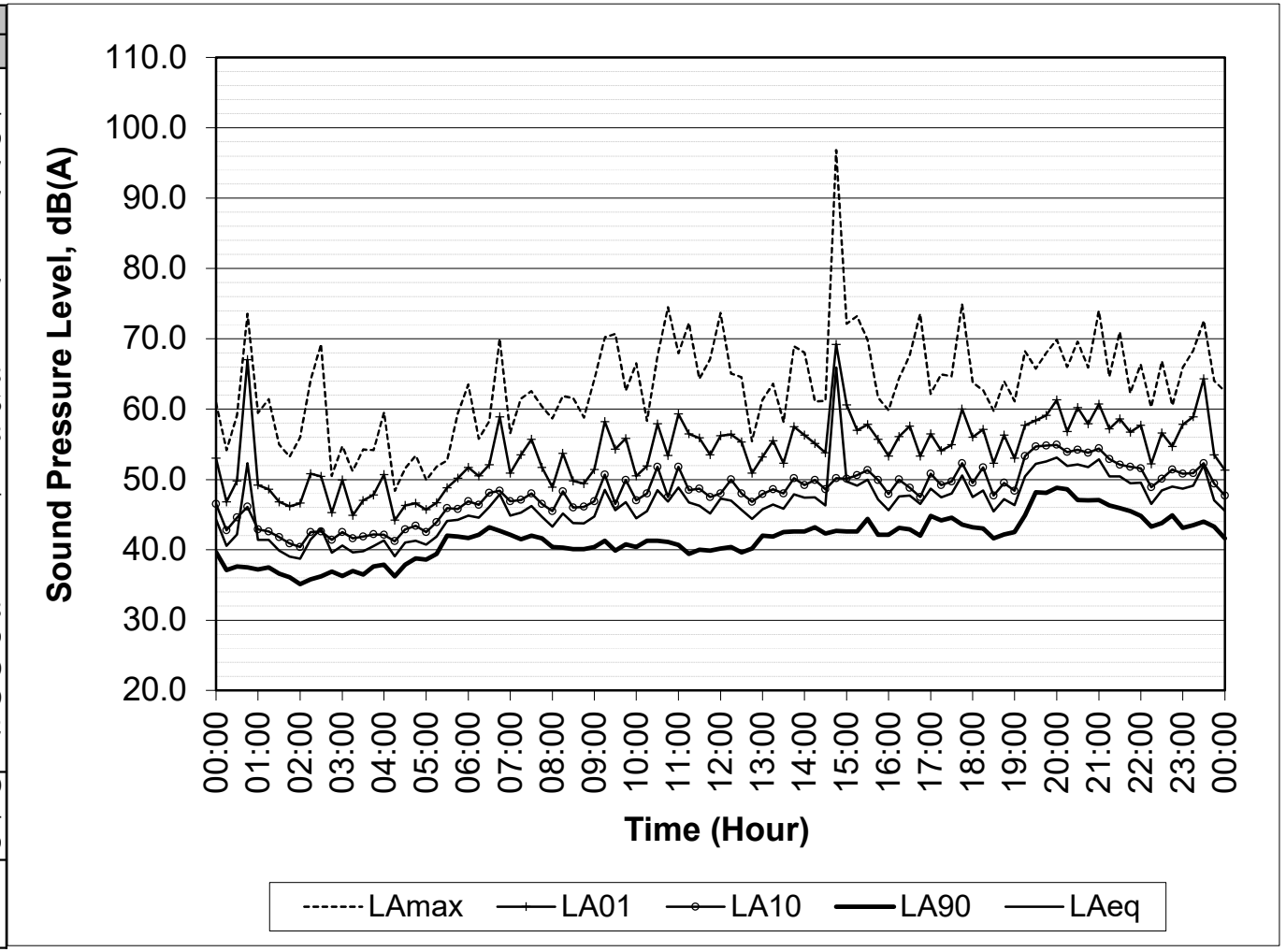
Project Title Proposed Child Care Centre Additions
42-44 Norfolk Road, Greenacre

Measurement Date Saturday, 14 September 2024

Notes

1. Tabulated L_{Aeq} are logarithically averaged
2. Tabulated L_{A01} and L_{A10} are arithmetically averaged
3. Tabulated L_{A90} are the lowest 10-percentile levels

Time	Average Noise Level			
	L_{Aeq}	L_{A01}	L_{A10}	L_{A90}
00:00-01:00	47.2	53.2	44.1	37.1
01:00-02:00	39.9	47.1	41.4	35.4
02:00-03:00	41.4	49.1	42.3	35.9
03:00-04:00	40.4	47.6	42.0	36.7
04:00-05:00	40.6	45.7	42.5	36.7
05:00-06:00	43.9	49.4	45.6	40.1
06:00-07:00	46.1	53.1	47.5	42.1
07:00-08:00	45.0	52.5	46.8	40.7
08:00-09:00	44.4	51.1	46.8	40.1
09:00-10:00	46.6	54.7	48.5	40.1
10:00-11:00	47.6	55.6	49.8	40.8
11:00-12:00	46.4	55.5	48.2	39.6
12:00-13:00	45.8	54.0	48.2	39.8
13:00-14:00	47.0	55.4	49.0	42.1
14:00-15:00	60.1	59.7	49.7	42.4
15:00-16:00	48.3	56.0	49.9	42.1
16:00-17:00	47.7	55.9	49.3	42.3
17:00-18:00	48.6	56.3	50.2	43.3
18:00-19:00	47.0	54.7	49.3	41.8
19:00-20:00	52.2	59.1	54.4	45.9
20:00-21:00	52.2	58.9	54.1	47.0
21:00-22:00	50.0	57.6	52.1	45.0
22:00-23:00	48.3	55.3	50.3	43.2
23:00-24:00	49.1	57.0	50.1	42.1
Day	51.4	55.0	48.7	40.0
Evening	50.7	57.5	52.4	42.4
Night	45.7	50.3	44.0	32.9
LAeq,15hr	51.2			
LAeq,9hr	45.7			
LAeq,24hr	49.8			



Measurement Location 42 Norfolk Road, Greenacre
Rear Eastern Site Boundary

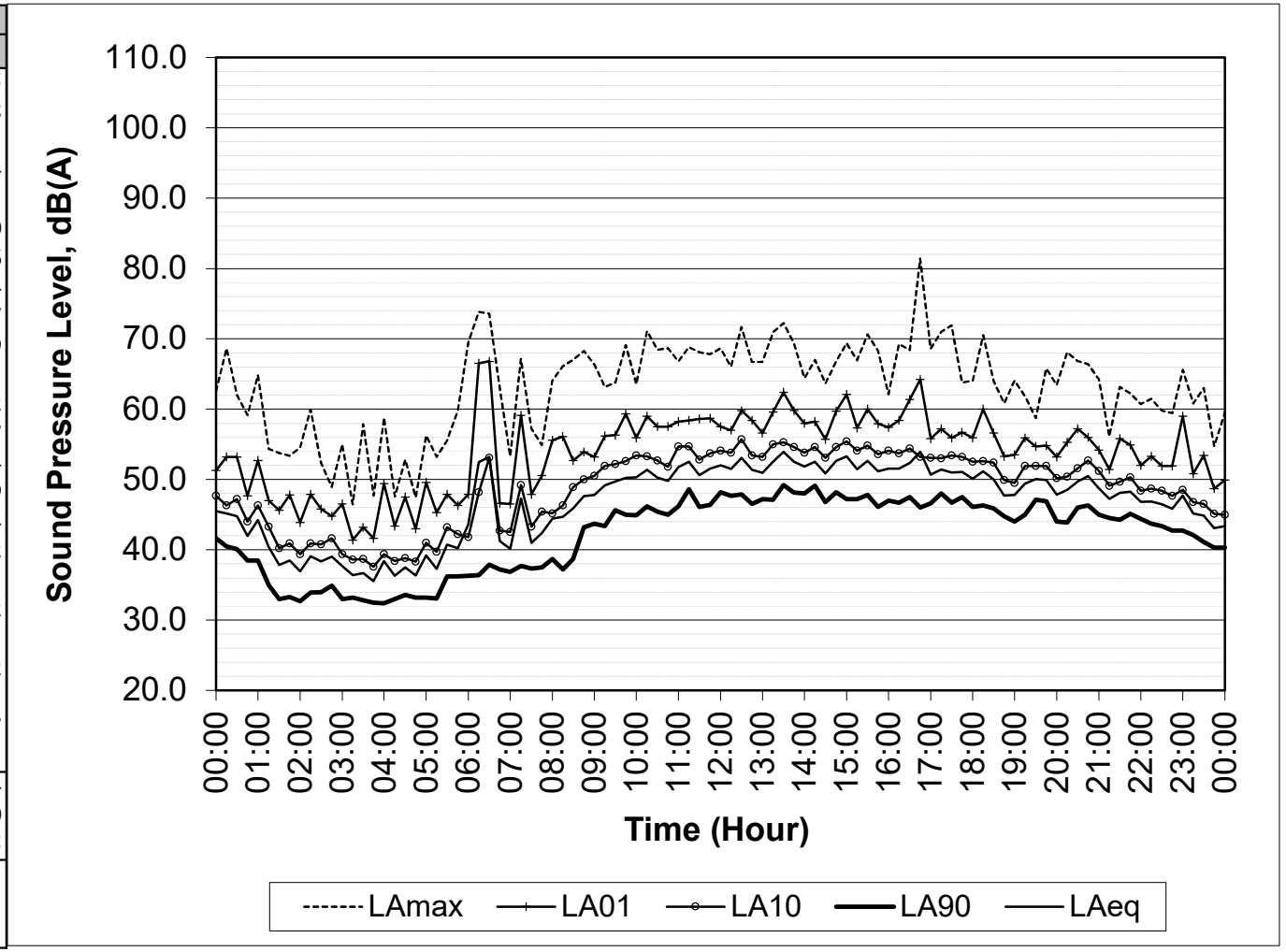
Project Title Proposed Child Care Centre Additions
42-44 Norfolk Road, Greenacre

Measurement Date Sunday, 15 September 2024

Notes

1. Tabulated L_{Aeq} are logarithically averaged
2. Tabulated L_{A01} and L_{A10} are arithmetically averaged
3. Tabulated L_{A90} are the lowest 10-percentile levels

Time	Average Noise Level			
	L_{Aeq}	L_{A01}	L_{A10}	L_{A90}
00:00-01:00	44.2	51.7	46.0	38.5
01:00-02:00	38.6	46.1	41.0	32.8
02:00-03:00	38.6	46.3	40.7	33.3
03:00-04:00	36.9	43.9	38.6	32.4
04:00-05:00	37.5	45.9	39.1	33.1
05:00-06:00	41.0	46.9	41.7	34.0
06:00-07:00	50.1	56.6	46.6	36.6
07:00-08:00	44.4	53.3	45.8	37.4
08:00-09:00	46.7	54.0	48.9	37.7
09:00-10:00	49.9	56.9	52.5	43.9
10:00-11:00	50.9	58.1	53.1	45.1
11:00-12:00	51.7	58.3	53.8	46.2
12:00-13:00	51.8	58.0	54.0	46.7
13:00-14:00	52.8	60.0	54.7	47.4
14:00-15:00	52.4	58.9	54.4	46.9
15:00-16:00	51.8	58.2	54.2	46.4
16:00-17:00	52.3	60.0	53.6	46.2
17:00-18:00	50.9	56.4	53.0	46.3
18:00-19:00	49.4	55.9	51.1	44.2
19:00-20:00	49.4	54.7	51.5	44.3
20:00-21:00	49.4	55.7	51.5	44.2
21:00-22:00	47.6	53.5	49.4	44.3
22:00-23:00	46.8	54.0	48.3	42.7
23:00-24:00	44.2	50.7	45.9	40.3
Day	51.0	57.9	53.0	43.4
Evening	49.2	55.2	51.1	44.0
Night	43.8	49.6	45.1	37.5
LAeq,15hr	50.6			
LAeq,9hr	43.8			
LAeq,24hr	49.2			



Measurement Location 42 Norfolk Road, Greenacre
Rear Eastern Site Boundary

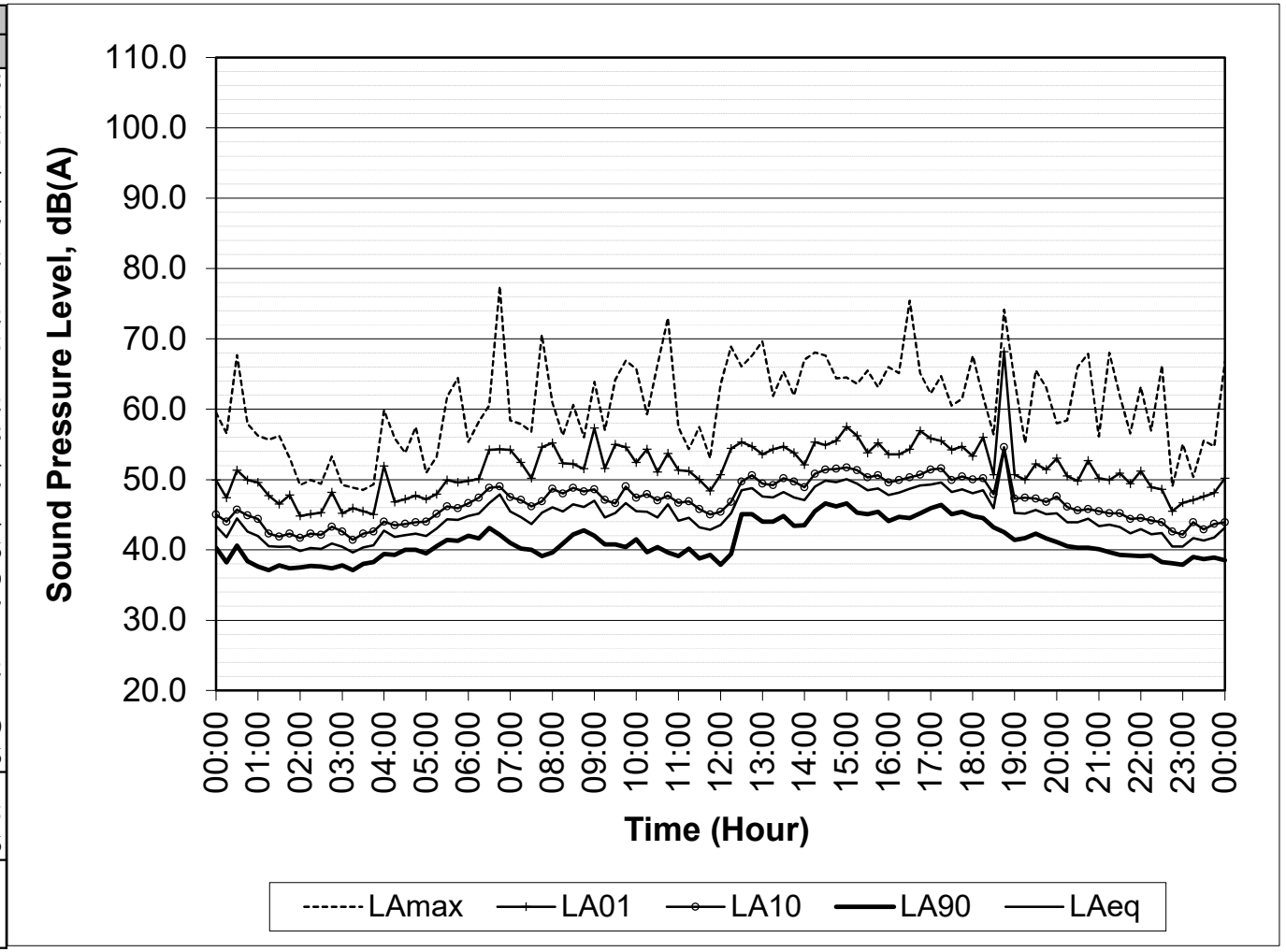
Project Title Proposed Child Care Centre Additions
42-44 Norfolk Road, Greenacre

Measurement Date Monday, 16 September 2024

Notes

1. Tabulated L_{Aeq} are logarithically averaged
2. Tabulated L_{A01} and L_{A10} are arithmetically averaged
3. Tabulated L_{A90} are the lowest 10-percentile levels

Time	Average Noise Level			
	L_{Aeq}	L_{A01}	L_{A10}	L_{A90}
00:00-01:00	42.8	49.6	44.8	37.8
01:00-02:00	40.3	46.7	42.1	37.2
02:00-03:00	40.4	46.0	42.6	37.5
03:00-04:00	41.0	47.1	42.6	37.4
04:00-05:00	42.1	47.2	43.8	39.4
05:00-06:00	44.2	49.3	46.0	40.7
06:00-07:00	46.4	53.2	48.2	41.2
07:00-08:00	45.0	53.1	47.2	39.3
08:00-09:00	46.3	53.3	48.4	41.2
09:00-10:00	45.6	53.4	47.5	40.5
10:00-11:00	45.2	52.6	47.3	39.3
11:00-12:00	43.6	50.1	45.8	38.2
12:00-13:00	47.7	54.5	49.1	40.8
13:00-14:00	47.6	53.7	49.5	43.4
14:00-15:00	49.7	55.8	51.4	45.7
15:00-16:00	48.6	54.7	50.5	44.4
16:00-17:00	48.9	55.2	50.6	44.6
17:00-18:00	48.7	54.4	50.5	44.9
18:00-19:00	50.1	56.4	50.0	41.7
19:00-20:00	45.3	51.7	47.3	41.3
20:00-21:00	43.9	50.8	45.8	40.2
21:00-22:00	43.1	50.4	44.8	39.1
22:00-23:00	41.5	47.4	43.2	38.0
23:00-24:00	42.1	48.3	43.6	38.6
Day	47.3	53.7	48.8	39.3
Evening	46.8	52.4	47.3	39.5
Night	42.5	48.5	43.8	36.6
LAeq,15hr	47.2			
LAeq,9hr	42.5			
LAeq,24hr	46.1			



Measurement Location 42 Norfolk Road, Greenacre
Rear Eastern Site Boundary

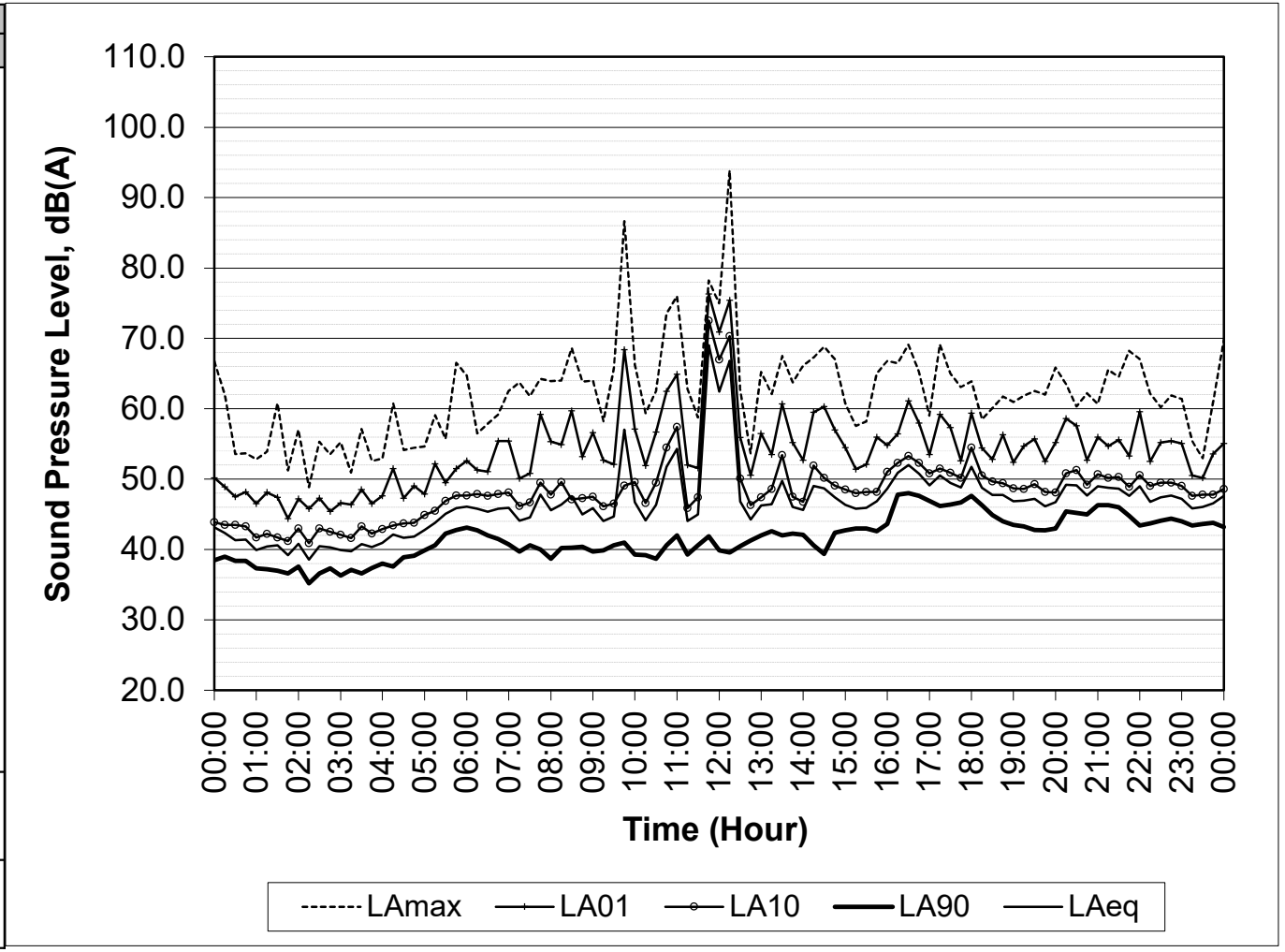
Project Title Proposed Child Care Centre Additions
42-44 Norfolk Road, Greenacre

Measurement Date Tuesday, 17 September 2024

Notes

1. Tabulated L_{Aeq} are logarithically averaged
2. Tabulated L_{A01} and L_{A10} are arithmetically averaged
3. Tabulated L_{A90} are the lowest 10-percentile levels

Time	Average Noise Level			
	L_{Aeq}	L_{A01}	L_{A10}	L_{A90}
00:00-01:00	41.3	47.8	43.0	37.6
01:00-02:00	40.3	46.8	42.0	36.7
02:00-03:00	39.9	46.3	42.1	35.5
03:00-04:00	40.5	47.3	42.5	36.8
04:00-05:00	42.1	48.9	44.0	38.0
05:00-06:00	45.3	51.5	47.0	41.1
06:00-07:00	45.7	53.3	47.9	40.9
07:00-08:00	45.7	53.9	47.6	39.0
08:00-09:00	46.3	56.1	47.9	39.9
09:00-10:00	51.8	57.6	47.8	39.5
10:00-11:00	50.9	59.0	52.0	38.9
11:00-12:00	63.9	62.7	58.2	39.5
12:00-13:00	60.9	59.6	53.5	39.9
13:00-14:00	47.3	55.5	49.1	42.0
14:00-15:00	48.0	57.8	49.9	39.8
15:00-16:00	47.0	53.6	48.9	42.7
16:00-17:00	50.8	57.3	52.2	47.1
17:00-18:00	50.3	57.1	51.8	46.3
18:00-19:00	47.8	54.0	49.6	43.7
19:00-20:00	46.8	54.5	48.6	42.7
20:00-21:00	48.8	56.2	50.5	45.1
21:00-22:00	48.5	55.8	50.0	43.8
22:00-23:00	47.3	54.6	49.3	43.8
23:00-24:00	46.6	52.4	48.0	43.3
Day	56.0	57.2	50.7	39.3
Evening	48.3	55.1	49.9	42.9
Night	45.7	51.2	46.9	39.0
LAeq,15hr	54.9			
LAeq,9hr	45.7			
LAeq,24hr	53.3			



Measurement Location 42 Norfolk Road, Greenacre
Rear Eastern Site Boundary

Project Title Proposed Child Care Centre Additions
42-44 Norfolk Road, Greenacre

Measurement Date Wednesday, 18 September 2024

Notes

1. Tabulated L_{Aeq} are logarithically averaged
2. Tabulated L_{A01} and L_{A10} are arithmetically averaged
3. Tabulated L_{A90} are the lowest 10-percentile levels

Time	Average Noise Level			
	L_{Aeq}	L_{A01}	L_{A10}	L_{A90}
00:00-01:00	44.2	50.1	46.2	40.6
01:00-02:00	42.4	48.3	44.4	39.3
02:00-03:00	41.9	48.3	44.0	38.0
03:00-04:00	43.1	50.3	45.4	38.9
04:00-05:00	44.4	49.6	46.3	40.2
05:00-06:00	47.6	52.6	49.0	43.4
06:00-07:00	47.8	53.1	49.6	43.3
07:00-08:00	46.1	52.0	48.1	42.5
08:00-09:00	45.6	51.9	47.5	42.2
09:00-10:00				
10:00-11:00				
11:00-12:00				
12:00-13:00				
13:00-14:00				
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19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				
Day				
Evening				
Night				
LAeq,15hr				
LAeq,9hr				
LAeq,24hr