ENVIRONMENTAL NOISE ASSESSMENT HORIZON-JEUNESS FRENCH CATHOLIC ELEMENTARY DOME ADDITION R1

Ottawa, ON

For
Ottawa Footy Sevens

Prepared by
State of the Art Acoustik Inc.

Report Date: September 10, 2026

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Ottawa Footy Sevens – 349 Olmstead Street, Ottawa, ON
Stationary Noise Study R1

Dear Chris,

This report assesses stationary environmental noise from the mechanical and emergency equipment proposed for the proposed air-supported dome at 349 Olmstead Street in Ottawa. The calculations and methodology presented here comply with the City of Ottawa Environmental Noise Control Guidelines (ENCG, 2016) and the Ministry of Environment, Conservation and Parks' (MECP) publication NPC-300.

The environmental noise assessment (**Section 2.0**) reveals that noise from the stationary equipment will exceed MECP NPC-300 limits of 50 dBA (day) and 45 dBA (night) for a Class 1 area. Acoustic mitigation measures are necessary to ensure compliance with Ottawa's ENCG and are outlined in **Section 2.5.2**.

A supplementary assessment of noise generated by sporting activities within the dome, including player and spectator voices and referee whistles, is presented separately in **Section 3.0**.

Should you have any questions regarding this report, please do not hesitate to contact us.

Sincerely,

Tiffany-Rose Filler, M.Sc.
Acoustic Consultant

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1.0 Introduction & Site Description

The Dome Consultant Inc. has commissioned State of the Art Acoustik Inc. to complete an environmental noise study for the proposed dome located at 349 Olmstead Street in Ottawa, Ontario.

The site is located within an urban area containing a mixture of institutional,commercial, and residential land uses. Noise-sensitive residential properties are located in the surrounding area. We have reviewed the projected environmental noise impact of the proposed stationary noise sources on the surrounding noise-sensitive properties to assess conformance with the City of Ottawa Environmental Noise Control Guidelines (ENCG) and the Ministry of the Environment, Conservation and Parks (MECP) Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning (NPC-300).

A supplementary assessment of noise associated with sporting activities occurring within the proposed Dome was also completed. This assessment included acoustical measurements at the Ottawa MegaDome during representative operating conditions and environmental noise modelling of the anticipated activity noise at the surrounding Points of Reception.

1.1 Scaled Area Location Plan

Figure 1.1 shows the proposed dome site and surrounding area. The proposed dome is located northeast of the existing school property.

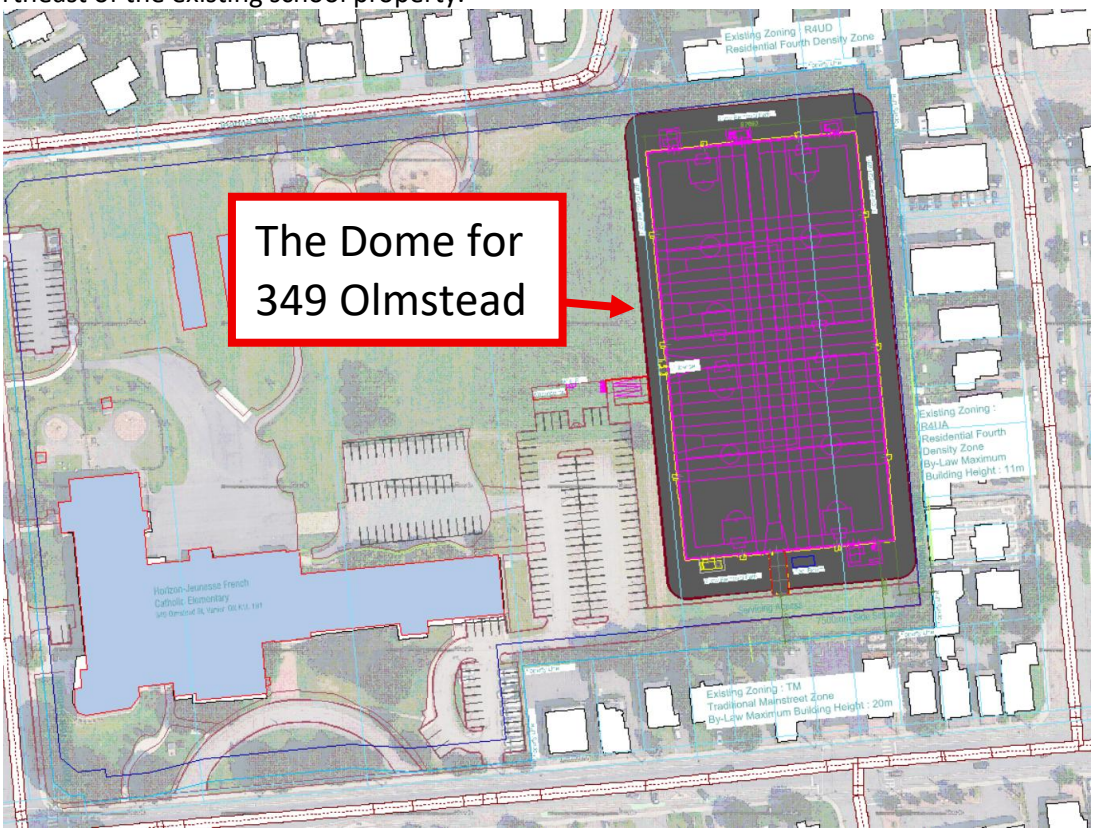


Figure 1.1 – Satellite view of the proposed Dome at 349 Olmstead Street and surrounding area

Based on the surrounding land uses and the definitions provided in the ENCG, the subject site and surrounding residential area are considered to be within a Class 1 area. The ENCG defines a Class 1 area as having an acoustical environment typical of a major population centre, where the background sound level is generally dominated by human activity and road traffic, commonly referred to as an "urban hum." The ENCG further notes that Class 1 areas generally include the urban area of Ottawa.

2.0 Stationary Sources Noise Assessment

This section evaluates the environmental noise impact associated with the proposed outdoor mechanical equipment serving the air-supported dome at 349 Olmstead Street on the surrounding noise-sensitive properties. The assessment identifies the applicable stationary noise criteria, significant noise sources and points of reception (PORs), describes the noise modelling procedure, and evaluates the predicted sound levels at the surrounding receptors.

The assessment has been completed in general accordance with the City of Ottawa Environmental Noise Control Guidelines (ENCG) and the Ministry of the Environment, Conservation and Parks (MECP) Publication NPC-300. Environmental noise propagation calculations were completed using CadnaA environmental noise modelling software.

2.1 Environmental Noise Control Guidelines

As discussed in **Section 1.1**, the subject property and surrounding residential area are considered to be within a Class 1 area.

For steady and varying stationary noise, the City of Ottawa ENCG establishes the following Class 1 exclusion limits for one-hour equivalent sound levels (Leq,1hr), as detailed in **Table 2.1.**

Time of Day	Outdoor Point of Reception	Plane of Window
Daytime (07:00–19:00)	50 dBA	50 dBA
Evening (19:00–23:00)	50 dBA	50 dBA
Nighttime (23:00–07:00)	N/A	45 dBA

Table 2.1 – Class 1 Stationary Noise Exclusion Limits

The applicable Class 1 stationary noise limits are summarized in **Table 2.1**.

For the school building, as an institutional noise-sensitive use, noise levels will be assessed at the plane of the window during daytime operational hours. The recommended target noise level is 50 dBA, based on ENCG's Table 3.2a for Class 1 areas, though this is not a strict requirement. This assessment considers noise from sources on the same property, such as rooftop mechanical units, and aligns with standard practices for institutional uses operating only during the day.

Commercial properties included in the assessment are evaluated using a 50 dBA design criterion.

The proposed backup generator is considered emergency equipment and has been assessed separately from the normal-operation stationary sources. In accordance with NPC-300,

emergency equipment operating in a non-emergency situation, such as routine testing or maintenance, is subject to sound level limits 5 dB greater than the otherwise applicable stationary source limits. For daytime testing, a 55 dBA criterion has therefore been applied. Sound level limits do not apply to emergency equipment operating during an actual emergency.

2.2 Significant Noise Sources

The significant outdoor stationary noise sources associated with the proposed dome are listed in **Table 2.2**. All significant outdoor mechanical equipment is proposed to be located along the west side of the dome.

Noise Source	Noise Source ID	Quantity
Heat and Inflation Unit	HIU-1 and HIU-2	2
A/C Recirculation Unit – 30 ton	AC30-1	1
A/C Recirculation Unit – 40 ton	AC40-1 and AC40-2	2
Standby Inflation Fan	SIF-1	1
Backup Generator	GEN-1	1

Table 2.2 – Quantity of Noise Sources Considered

The proposed equipment locations are illustrated in **Figure 2.1**.

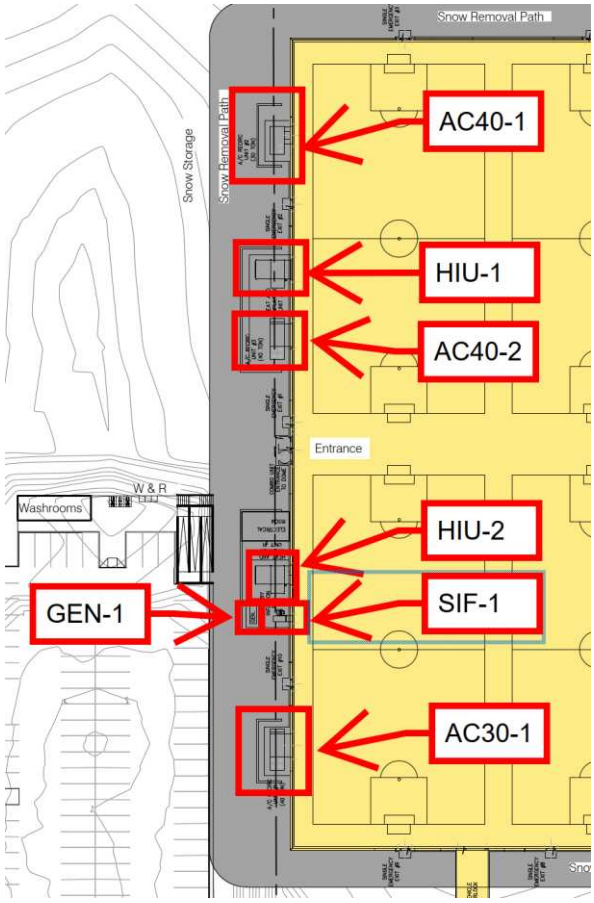


Figure 2.1 – Locations of Noise Sources for Stationary Noise Assessment

Specific equipment information is summarized in **Table 2.3**.

Noise Source ID	Manufacturer	Model/Description
HIU-1 and HIU-2	Farley Manufacturing	F-I-2500 / 2.5 MBtu Heat and Inflation Unit
AC30-1	Trane	Voyager 3 – 30 ton
AC40-1 and AC40-2	Trane	Voyager 3 – 40 ton
SIF-1	Daltec	BI-490
GEN-1	Generac	SG060T, Level 2 Sound-Attenuated Enclosure

Table 2.3 – Summary of Mechanical Equipment

Detailed octave-band sound power levels used in the assessment are provided in **Table 2.4** and are based on manufacturer-provided acoustic data where available (see **Appendix A1** for supporting acoustic data and product sheets). Where only sound pressure level data were available, equivalent sound power levels were calculated for use in the acoustic model.

Noise Source ID and Noise Source	Octave Band Sound Power Levels (dB)								dBA
	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	
HIU-1 and HIU-2: Measured Outdoor Sound Pressure Level[1]	71 dB @ 3.05 m = 88.7 Lw (50% hemispherical radiation)								88.7
AC30-1: Outdoor Noise	100	96	97	96	93	89	90	83	98.6
AC40-1 and AC40-2: Outdoor Noise	104	97	96	97	95	93	88	79	99.9
SIF-1: Casing	60	65	63	69	68	63	59	50	71.5
SIF-1: Fan Inlet	74	83	85	91	90	85	81	74	93.5
GEN-1: Level 2 Sound-Attenuated Enclosure – Full Load	88.9	78.9	81.9	84.9	83.9	77.9	74.9	68.9	87.3

[1] Manufacturer sound data was not provided for this source, only a SPL at 3 m. This was converted into L_w using a hemispherical radiation calculation. The unit was assigned a representative spectrum from a similar piece of equipment, which was adjusted accordingly.

Table 2.4 – Octave Band Sound Power Levels of Noise Sources

2.3 Points of Reception

Points of reception (PORs) are designated to evaluate noise levels at both nearby residential and commercial locations and the plane of the windows of noise-sensitive classrooms within the school. Environmental PORs are located at the nearest residential and commercial facades, while school PORs are positioned at classroom windows. **Figure 2.2** illustrates the POR locations, and **Table 2.5** provides their heights, addresses, and applicable SPL limits.

POR Number	Height (m)	Address	POR Environment Type	Daytime Sound Pressure Level Limit (dBA)	Nighttime Sound Pressure Level Limit (dBA)
1	4.5	Horizon-Jeunesse French Catholic Elementary - Classroom	School	50	N/A[1]
2	1.5	Horizon-Jeunesse French Catholic Elementary - Park			
3	1.5	340 Lajoie Street	Residential Property		45
4	10.5	280 Blake Boulevard			
5	4.5	358 Lacasse Avenue			
6	4.5	364 Lacasse Avenue			
7	4.5	279 McArthur Avenue	Commercial Property		N/A[1]
8	4.5	269 McArthur Avenue	Residential Property		45

Note[1]: Nighttime limits do not apply to the commercial and school PORs as the buildings are operational only during daytime hours.

Table 2.5 – POR Locations, Heights, and Applicable Sound Pressure Level Limits

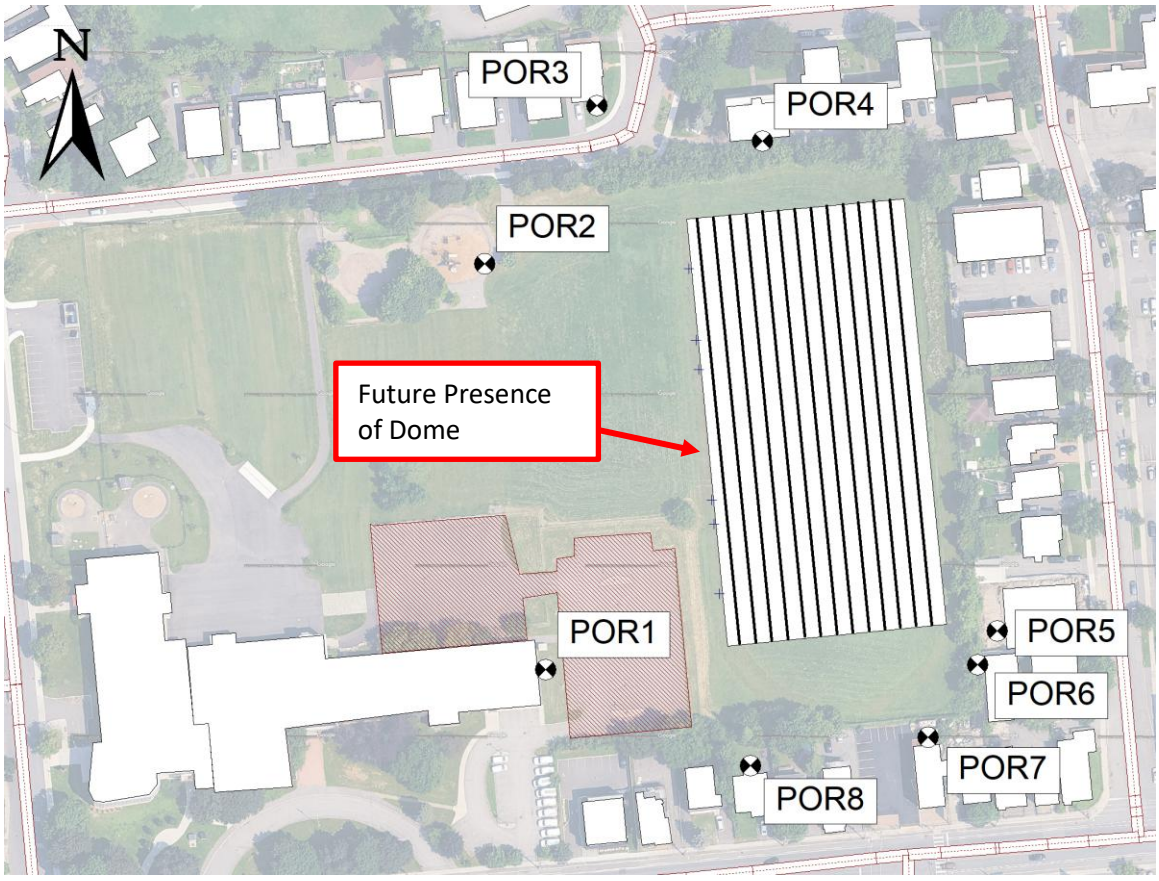


Figure 2.2 – Locations of PORs for Stationary Noise Assessment

2.4 Methodology Used in Environmental Noise Impact Calculation

The following sections describe the methodology and software used to model sound pressure levels at the PORs, accounting for source levels, distance, topography, barriers, and building geometry.

2.4.1 Procedure Used to Assess Noise Impact at Each Point of Reception

This environmental noise analysis was done using an environmental noise modeling software called CadnaA which references ISO 9613. CadnaA predicts environmental noise through calculations based on a 3D model which uses geometrical, landscape, and topographical data, combined with details of the proposed construction and the noise source power levels.

We created a 3D rendering of the neighbourhood around the building and placed the noise sources in the model at the appropriate locations and then applied the sound power levels described in this report. The colours on the ground and building represent the sound pressure level in that area. Sound power levels per octave band were entered into CadnaA at the source's location and the resulting sound pressure levels were calculated at the points of reception.

2.4.2 Other Parameters/Assumptions Used in Calculations

Table 2.6 describes the parameters used in the CadnaA model:

Parameter	Value/Condition
Ground Absorption	1.0 (Porous Ground)
Roads, Parking Areas, and Buildings	0.0 (Reflective)
Building Reflections	On
Temperature (°C)	10
Relative Humidity (%)	70

Table 2.6 – Parameters used in CadnaA modelling

2.5 Assessment of Stationary Source Environmental Noise Levels

This section evaluates predicted noise levels from the dome equipment at designated PORs, including residential, commercial, and school locations, as shown in **Figure 2.3**. The assessment assumes the equipment operates at 100% capacity at all times, representing the worst-case scenario. It compares impacts with and without mitigation, using the applicable limits: 50 dBA (daytime) and 45 dBA (nighttime) for residential PORs, and 50 dBA (daytime only, recommended) for commercial and school PORs. The nighttime limit for residential PORs is applied because the assessment assumes the equipment runs at full capacity continuously, which maximizes potential noise output. For residential planes of window, the 45 dBA nighttime criterion represents the controlling exclusion limit where the equipment may operate during the nighttime period.

2.5.1 Non-Emergency Results without Mitigation

Figure 2.3 displays the noise grid at a height of 1.5 meters, assessing the impact on nearby noise-sensitive areas from all non-emergency equipment operating simultaneously. For residential PORs, the critical limit is 45 dBA at night (mandatory), while for commercial and school PORs, the recommended limit is 50 dBA during the day. **Table 2.7** shows predicted Sound Pressure Levels (SPLs) without mitigation.

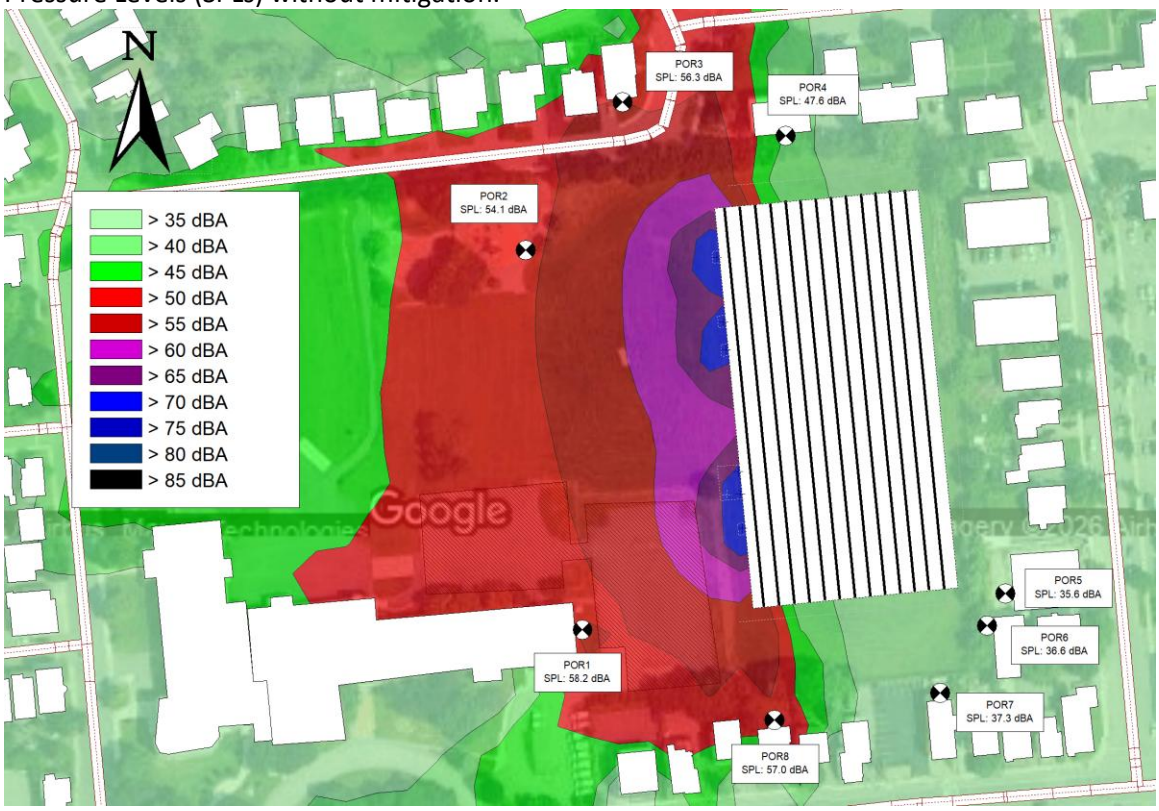


Figure 2.3 – Noise Map at 1.5 m Elevation Showing Predicted Non-Emergency Equipment Sound Levels without Acoustic Mitigation.

POR Number	Predicted SPL (dBA)	Maximum SPL Limit (dBA)	Acoustic Compliance?
1	58.2	50.0	No
2	54.1		No
3	56.3	45.0	No
4	47.6		No
5	35.6		Yes
6	36.6		Yes
7	37.3	50.0	Yes
8	57.0	45.0	No

Table 2.7 – Predicted Non-Emergency Sound Pressure Levels at PORs without Mitigation

The modelling indicates that the non-emergency equipment exceeds Ottawa's ENCG limits at several PORs, necessitating mitigation. Recommended measures are outlined in **Section 2.5.2**.

2.5.2 Results with Current Selection and Acoustic Mitigation Measures

To achieve the mandatory 45 dBA nighttime noise limit at residential Points of Reception (PORs) and the 50 dBA at the commercial and school PORs, we recommend the following acoustic mitigation measures:

- Provide continuous acoustic barriers at the locations and minimum heights shown in **Figure 2.4.** The required minimum barrier heights range from 3.5 m to 4.5 m. The barriers shall have a minimum surface density of 20 kg/m² and shall be constructed continuously without cracks, openings or gaps, including at grade. Barrier locations shall be coordinated with the equipment manufacturer/mechanical consultant to maintain required intake, discharge, service and maintenance clearances.
- Position AC30-1 within the highlighted area shown in **Figure 2.4**.

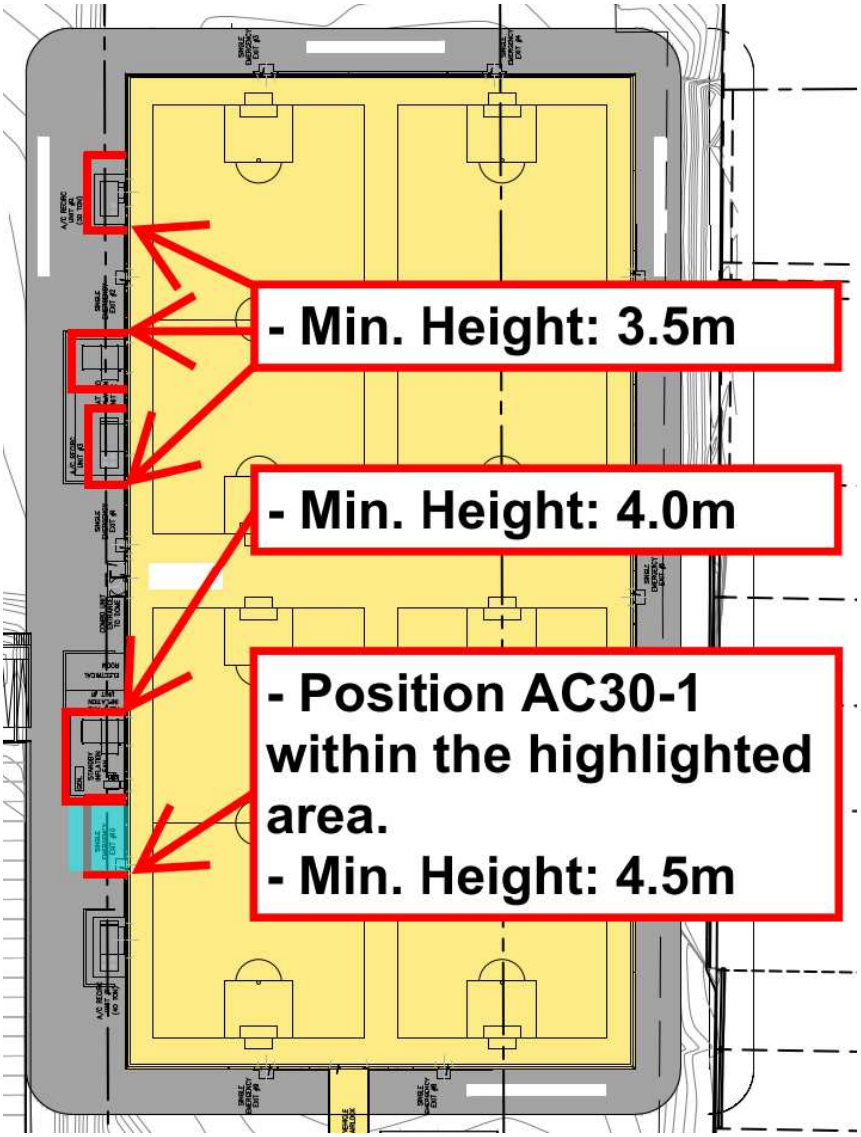


Figure 2.4 – Recommended Acoustic Mitigation Measures

Figure 2.5 displays the noise grid at a height of 1.5 meters, assessing the impact on nearby residential homes from all non-emergency equipment operating simultaneously with mitigation. **Table 2.8** shows predicted Sound Pressure Levels (SPLs) with mitigation.



Figure 2.5 – Noise Contour Map at 1.5 m Elevation Showing Predicted Non-Emergency Equipment Sound Levels with Acoustic Mitigation

POR Number	Predicted SPL (dBA)	Maximum SPL Limit (dBA)	Acoustic Compliance?
1	44.3	50.0	Yes
2	42.1		Yes
3	44.4	45.0	Yes
4	44.8		Yes
5	34.3		Yes
6	33.3		Yes
7	33.3	50.0	Yes
8	44.8	45.0	Yes

Table 2.8 – Predicted Non-Emergency Sound Pressure Levels at PORs with Mitigation

With the recommended acoustic mitigation in place, all residential PORs meet the applicable ENCG stationary noise limits. The school and commercial PORs are also below the 50 dBA daytime design criterion.

2.5.3 Emergency Results without Mitigation

Figure 2.6 displays the noise grid at a height of 1.5 meters, assessing the impact on nearby noise-sensitive areas from the backup generator operating under the assessed routine testing condition. The limit is 55 dBA for emergency equipment. **Table 2.9** shows predicted SPLs without mitigation.

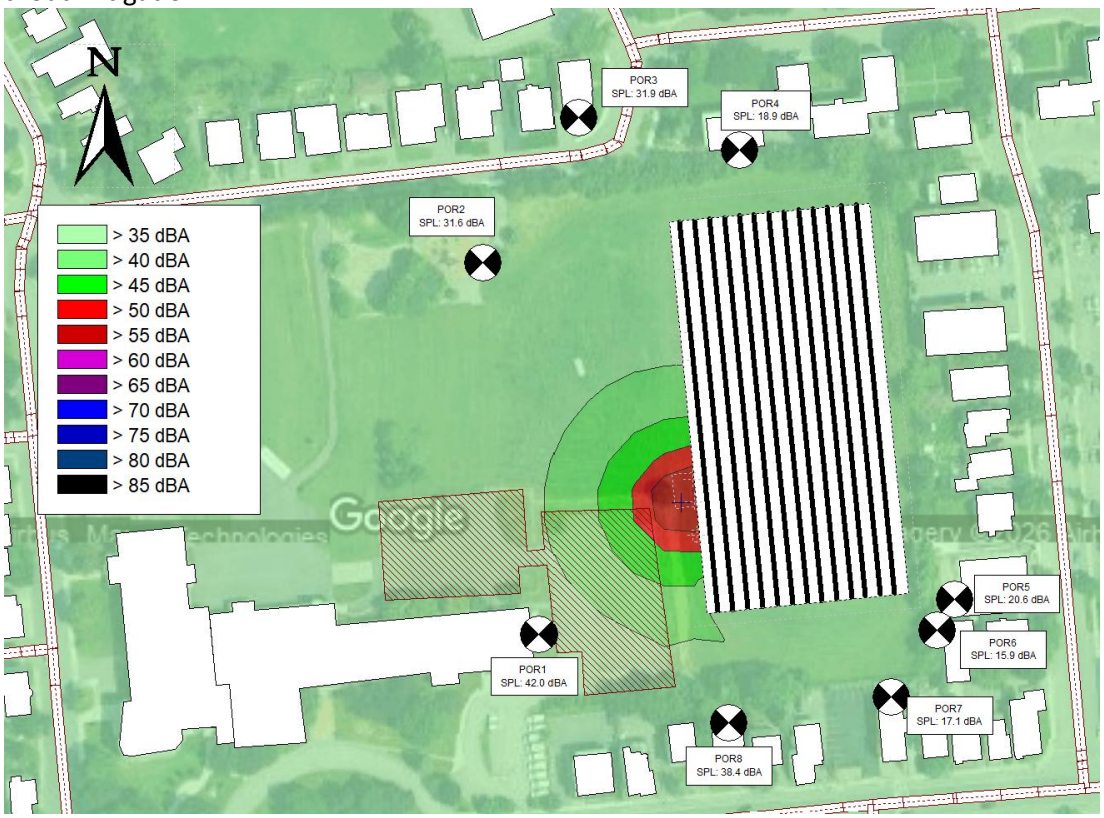


Figure 2.6 – Noise Map at 1.5 m Elevation Showing Predicted Emergency Sound Levels During Routine Testing.

POR Number	Predicted SPL (dBA)	Maximum SPL Limit (dBA)	Acoustic Compliance?
1	42.0	55.0	Yes
2	31.6		Yes
3	31.9		Yes
4	18.9		Yes
5	20.6		Yes
6	15.9		Yes
7	17.1		Yes
8	38.4		Yes

Table 2.9 – Predicted Emergency Sound Pressure Levels at PORs without Mitigation

The predicted generator sound levels are below the applicable 55 dBA daytime routine-testing criterion at all PORs. No additional acoustic mitigation is required for routine generator testing.

3.0 Dome Activity Noise Assessment

This section evaluates the environmental noise impact associated with sporting activities occurring inside the proposed Dome, including player and spectator voices, referee whistles, and other typical sporting activity.

To characterize the noise generated by these activities, personnel from State of the Art Acoustik completed acoustical measurements at the Ottawa MegaDome during representative evening operating conditions. The measured data was used to develop and calibrate a representative Dome activity noise source for use in the Environmental Noise Model.

The City of Ottawa Environmental Noise Control Guidelines (ENCG) specifically excludes people noise from the definition of a stationary noise source. The activity noise assessment is therefore considered separately from the stationary noise assessment presented in **Section 2.0**.

3.1 Assessment Approach and Criteria

MECP Publication NPC-300 specifically excludes the operation of auditory signaling devices, including whistles, and noise associated with gatherings of people from the stationary noise sources addressed by the stationary source criteria presented in **Section 2.1**.

The City of Ottawa Noise By-law prohibits unusual noise or noise likely to disturb inhabitants and also addresses bells, horns, shouting, and similar activities where they are likely to disturb surrounding residents. The By-law does not establish a specific numerical environmental sound level limit applicable to unamplified sports activity noise equivalent to the NPC-300 stationary source limits.

The Dome activity noise assessment therefore evaluates the predicted sound levels at the surrounding properties and identifies potential operational recommendations. For reference, the Class 1 stationary noise values presented in **Section 2.1** are used as screening levels only and are not considered applicable compliance limits for sporting activity noise.

3.2 Measurement Instruments

Acoustical measurements were conducted using fully calibrated acoustic test measurement equipment consisting of the following:

- 1x CESVA SC310 Class 1 Sound Level Meter
- 1x CESVA Type PA13-2654 Microphone Pre-amplifier
- 1x CESVA Type C-130 10230 1/2” Microphone
- Larson Davis Type CA250 Pistonphone Microphone Calibrator
- Associated cables
- 2” diameter windscreen

The sound level measuring system was field-calibrated prior to the measurements using the microphone calibrator. CESVA Capture Studio software was used to transfer the measured data to a computer for review and analysis.

3.3 Modelling and Measurement Process

Tiffany-Rose Filler from State of the Art Acoustik attended the Ottawa MegaDome at 5315 Abbott Street East, Stittsville, during representative evening sporting activities on August 24, 2026. During the measurement period, all four playing fields were in use and the MegaDome was operating under a high level of sporting activity. The acoustical measurements were completed between approximately 6pm and 8pm. For modelling purposes, activity during the 11pm to 12am period was conservatively assumed to be comparable to the busy operating condition observed during the measurements.

The MegaDome was selected as a representative facility as it contains four similarly sized playing fields and accommodates activities generally comparable to those proposed for the new Dome.

Ottawa Footy Sevens has advised that the proposed Dome will not include batting cages, baseball, or other bat/racquet-and-ball activities, and will not include bleachers or dedicated spectator areas. Late-evening adult recreational games are also expected to have very limited spectators. These differences should be considered when comparing the MegaDome measurements to the proposed facility.

Exterior sound level measurements were completed at four locations, as detailed in **Figure 3.1**, surrounding the MegaDome. One measurement was completed on each side of the Dome at a distance of approximately 7 m from the exterior membrane. Approximately 15 minutes of Sound Level Meter (SLM) measurements were completed at each location. Supplementary 1/3-octave-band Real Time Analyzer (RTA) measurements were completed at the east, north and west sides.

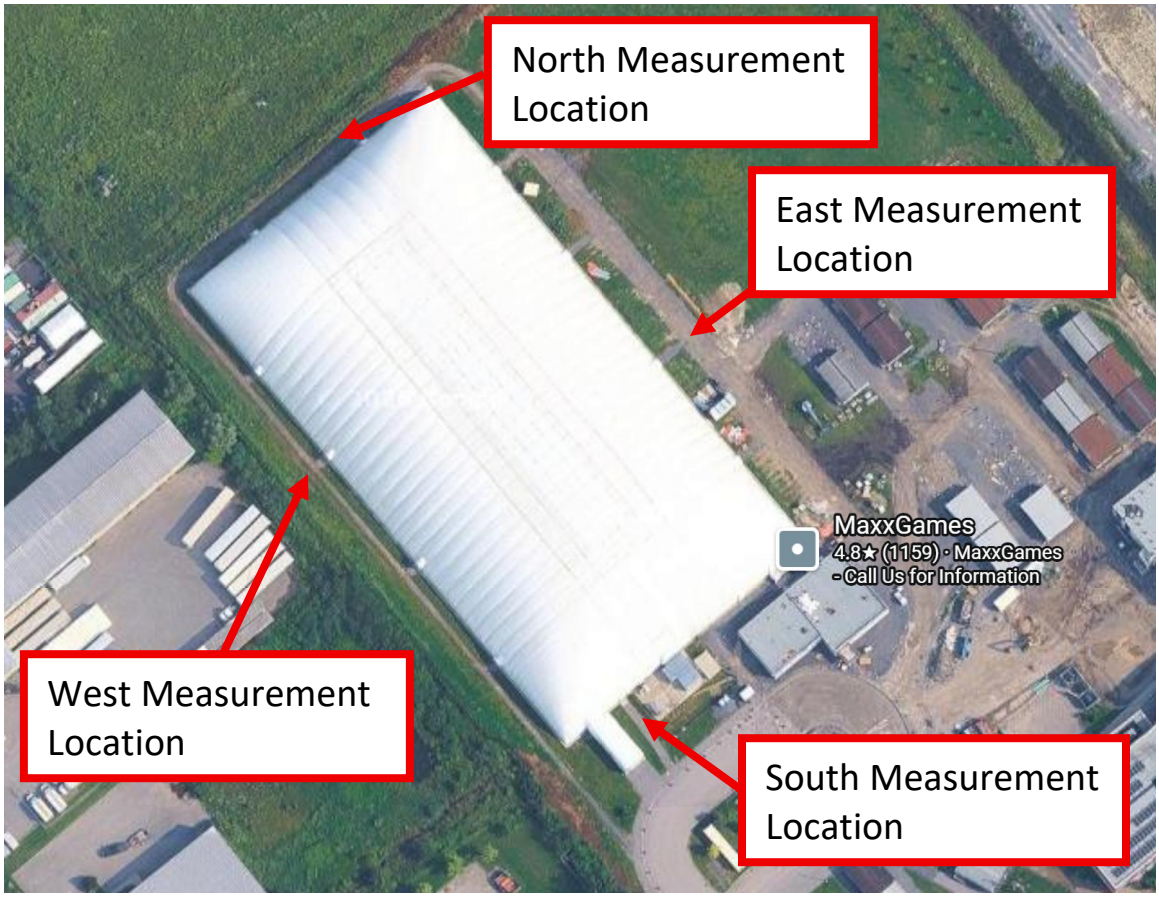


Figure 3.1 – Ottawa MegaDome Activity Noise Measurement Locations

The measured sound levels are summarized in **Table 3.1**.

Measurement Location	Distance from Dome (m)	Duration (in min:s)	LAeq (dBA)	L90 (dBA)	Estimated Activity LAeq[1] (dBA)
East	7.0	15min:04s	53.3	48.4	51.6
North	7.0	15min:06s	52.9	47.2	51.5
West	7.0	15min:02s	49.6	45.8	47.3
South	7.0	16min:03s	56.7	45.6	N/A[2]

Note 1: The estimated Dome activity contribution was calculated by removing the approximate background sound level (L90) from the measured LAeq using logarithmic subtraction.
Note 2: The south measurement was excluded from development of the activity noise source due to the significant contribution from the existing MegaDome mechanical equipment.

Table 3.1 – Measured Sound Pressure Levels at the Ottawa MegaDome

The individual measurement locations were affected to varying degrees by Dome activity, site-specific noise sources and environmental conditions. At the south measurement location, the measured sound level was dominated by the existing MegaDome mechanical equipment. Noise from the air-lock revolving door was also audible. The south measurement was therefore excluded from development of the representative Dome activity noise source.

At the east measurement location, batting activity from the batting cages on the east side of the MegaDome was a prominent source of noise. Drainage water discharge was also audible, along with occasional aircraft pass-bys and noise from the pressurized Dome access doors. As batting cages are not proposed for the new Dome, the east measurement was considered with caution when developing the representative activity noise source.

The north and west measurement locations were primarily influenced by sporting activity on the adjacent fields. Player and spectator yelling and cheering were the most prominent activity-related sounds, followed by ball-kicking impacts. Ball impacts on the Dome membrane were also audible and caused visible movement of the membrane at the point of impact. Referee whistles were audible but were generally less prominent than the voices and ball impacts.

At the north measurement location, localized airflow noise was audible between the Dome and the adjacent chain-link fence.

Overall, the dominant activity-related sounds observed during the measurements were player and spectator yelling and cheering, followed by batting impacts, ball-kicking and ball-to-membrane impacts. Referee whistles were generally the least prominent of these sources. Batting impacts are not expected at the proposed Dome, as batting cages are not included in the proposed development.

The north measurement, where sporting activity on the adjacent fields was the primary activity-related noise source, resulted in an estimated Dome activity contribution of approximately 51.5 dBA at 7 m from the Dome membrane. The east measurement resulted in a similar estimated level of approximately 51.6 dBA, although this location included a significant contribution from batting activity that will not be present at the proposed Dome. Based on the measured results, a representative activity noise level of 52 dBA at 7 m from the Dome membrane was selected for the Environmental Noise Model.

The measurements were completed during a period of high sporting activity with all four fields in use and are therefore considered representative of a busy operating condition.

3.4 Environmental Noise Model Analysis

As discussed in **Section 1.1**, the subject site is located within a Class 1 area.

As discussed in **Section 3.1**, the Class 1 stationary noise limits do not directly apply to sporting activity noise. For reference, the 50 dBA daytime/evening and 45 dBA nighttime Class 1 stationary noise values have been used as screening levels for the activity noise assessment.

The calculated environmental noise impact from representative Dome sporting activities is shown in **Figure 3.2**, with predicted sound levels at the PORs provided in **Table 3.2**.

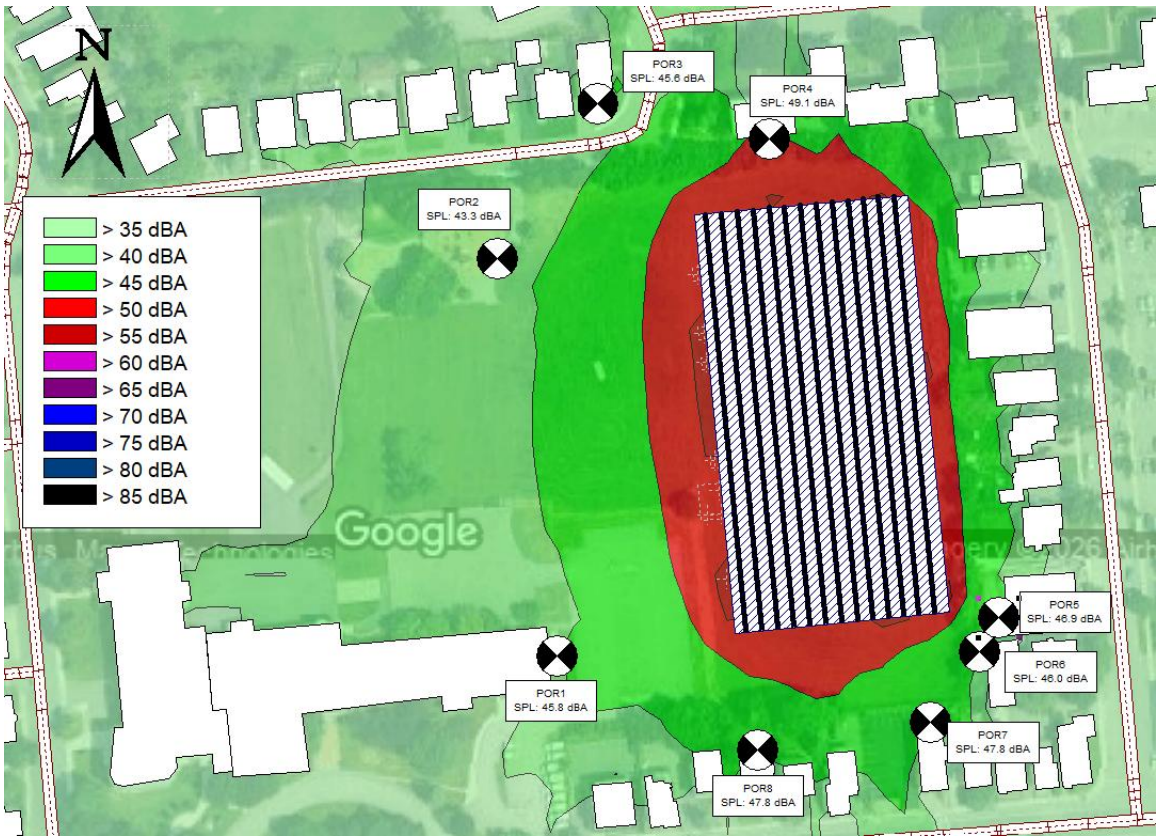


Figure 3.2 – Predicted sound pressure levels from representative Dome sporting activities. Sound pressure levels (SPL) for PORs are shown in dBA. The calculation grid is shown at 1.5 m above ground.

POR Number	Predicted SPL (dBA)	Recommended Max Daytime/ Evening Noise Level (dBA)	Below Daytime/Evening Recommendation?	Recommended Max Nighttime Noise Level (dBA)	Below Nighttime Recommendation?
1	45.8	50.0	Yes	N/A	N/A
2	43.3		Yes		N/A
3	45.6		Yes	45	No
4	49.1		Yes		No
5	46.9		Yes		No
6	46.0		Yes		No
7	47.8		Yes	N/A	N/A
8	47.8		Yes	45	No

Note 1: Class 1 stationary noise values are provided for reference only and are not compliance limits for sporting activity noise.

Table 3.2 – Predicted Dome Activity Sound Pressure Levels and Class 1 Reference Screening Level

The Environmental Noise Model predicts Dome activity noise levels ranging from 43.3 to 49.1 dBA at the surrounding PORs. The highest calculated activity noise level is 49.1 dBA at POR4.

All calculated activity noise levels are below the 50 dBA Class 1 daytime/evening reference screening level.

Organized sporting activities are expected to continue until approximately 12am. Therefore, Dome activity will occur during the 11pm to 12am nighttime period. Predicted activity noise levels at the residential PORs range from 45.6 to 49.1 dBA and are above the 45 dBA Class 1 nighttime reference screening level.

The MegaDome measurements represent a conservative operating condition and included noise sources that will not be present at the proposed Dome, most notably batting activity. Based on the modelling and the proposed operating conditions, organized activities may continue after 11pm provided appropriate operational measures are implemented to reduce potential nighttime noise impacts.

Recommended measures for activities after 11pm include:

- No baseball, batting, or otherbat/racquet-and-ball activities;
- Player benches, substitutes and any spectators/supporters located on the side of the playing fields farthest from nearby residences;
- An interior noise monitoring system, such as a SoundEar (see **Appendix A2** for product sheet) or equivalent, to assist staff in identifying excessive activity noise; and
- Signage requesting that cheering and yelling be limited after 11pm.

These measures are non-exhaustive and may be adjusted based on actual operating conditions. Follow-up noise measurements are recommended once the Dome is operational to confirm actual nighttime activity noise levels and the effectiveness of the operational measures at nearby receptors.

4.0 Conclusion

We have completed an environmental noise assessment for the proposed air-supported Dome located at 349 Olmstead Street in Ottawa, Ontario.

The stationary noise assessment (**Section 2.0**) demonstrates that acoustic mitigation is required for the proposed mechanical equipment to meet the applicable City of Ottawa ENCG and MECP NPC-300 Class 1 stationary noise limits. With the acoustic barriers and other mitigation measures described in **Section 2.5.2**, the predicted non-emergency sound levels are within the applicable limits at the assessed Points of Reception. The standby generator also meets the applicable daytime criterion for routine testing, as outlined in **Section 2.5.3**.

The Dome activity noise assessment (**Section 3.0**) predicts activity noise levels ranging from 43.3 to 49.1 dBA, as outlined in **Section 3.4**. These levels are below the 50 dBA daytime/evening reference screening level. During the 11pm to 12am nighttime period, predicted activity noise levels at the residential PORs are above the 45 dBA nighttime reference screening level. As sporting activity and people noise are not considered stationary noise sources under the ENCG, these values are provided for reference only.

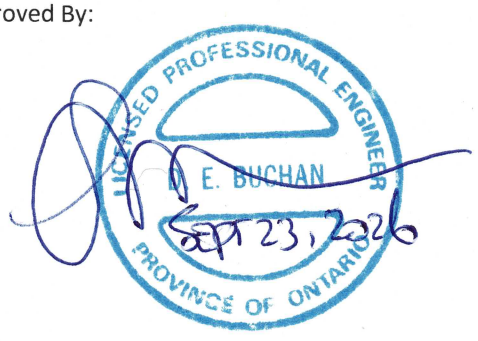
For activities continuing after 11pm, operational mitigation measures are recommended as outlined in **Section 3.4**. Follow-up measurements are also recommended once the Dome is operational to confirm the effectiveness of these measures.

If you have any questions or concerns regarding this report, please let us know.

Sincerely,

Tiffany-Rose Filler, M.Sc.,
Acoustic Consultant

Approved By:



Donald Buchan, P.Eng
Principal
Buchan Lawton Parent Ltd.

APPENDIX

Appendix A1 - Mechanical Equipment Acoustic Data

Appendix A2 - Recommended Product Information

Unit Overview - TCH360D50*0A1AAEA0*****0H00000*0000*0000X**********

Unit Function	Tonnage	Estimated Installed Weight	EER @ AHRI	IEER @ AHRI	System Power	Elevation
DX Cooling, no heat	30 Ton	4126.0 lb	10.80	15.40	34.50 kW	

Unit Features

Efficiency/Condenser Coil	Standard efficiency unit
System Control	Multi-speed fan w/ Bypass
Airflow Configuration	Horizontal supply and horizontal return
Filters	2" MERV 4 Throwaway filters
Outside Air Selection	0% Outside air



Unit Electrical

Voltage/Phase/Hertz	575/60/3
SCCR Rating	5k SCCR

Condenser Motor FLA	1.50 A	**Supply Fan FLA**	7.80 A	**MCA**	65.00 A
Condenser Motor Count	3.00 Each	**Exhaust Fan Count**	0.00 Each	**MOP**	80.00 A
Compressor 1 RLA	12.50 A	**CCH FLA**	1.00 A	**DSS**	100.00 A
Compressor 2 RLA	17.20 A				
Compressor 3 RLA	17.20 A				

Note: Connect properly sized and protected power supply wiring to the unit (copper wiring only to the unit)

Cooling Section

Refrigerant Type	R-454B	**Gross Total Capacity**	379.16 MBh
Refrigerant Charge - Circuit 1	31.0 lb	**Gross Sensible Capacity**	294.82 MBh
Minimum Room Area	501.00 sq ft	**Gross Latent Capacity**	84.34 MBh
Condenser Coil Type	MCHE	**Net Total Capacity**	364.56 MBh
Condenser Coil Rows	1	**Net Sensible Capacity**	280.22 MBh
Evaporator Face Area	31.70 sq ft	**Net Sensible Heat Ratio (%)**	0.77 %
Evaporator Coil Rows	4	**Fan Motor Heat**	12.92 MBh
Evaporator Face Velocity	379 ft/min	**Leaving Coil Dry Bulb**	56.80 F
Design Airflow	12000 cfm	**Leaving Coil Wet Bulb**	56.72 F
Entering Dry Bulb	80.00 F	**Leaving Unit Dry Bulb**	58.44 F
Entering Wet Bulb	67.00 F	**Leaving Unit Wet Bulb**	57.39 F
Ambient Dry Bulb	95.00 F	**Compressor Power**	27.24 kW

Heating Section

Function	DX Cooling, no heat
Heat Type & Capacity	Cooling only unit

Fan Section

Unit Airflow Design	Horizontal supply and horizontal return
Supply Fan Data	
Supply Fan Type	FC
System Control/SGR	Multi-speed fan w/ Bypass
Design Airflow	12000 cfm
Design ESP	0.500 in H2O
Total Static Pressure	1.097 in H2O
Supply Fan Motor HP	7.5 Hp
Total Supply BHP	5.07 bhp
Supply Fan Drive	550 RPM
Operating Speed (RPM)	551 rpm
Supply Motor Power	3.79 kW

Exhaust Fan Data	
Exhaust Fan Type	Prop
Exhaust Fan Drive	Direct
Exhaust Fan Count	0.00 Each
Outdoor Fan Data	
Outdoor Fan Type	Prop
Outdoor Fan Drive	Direct
Low Ambient Temp	0 F
Condenser Fan Count	3.00 Each
Outdoor Fan Motor Power	0.00 kW

Acoustics

	63	125	250	500	1K	2K	4K	8K
Supply Duct	86 dB	85 dB	81 dB	87 dB	76 dB	73 dB	67 dB	62 dB
Return Duct	84 dB	76 dB	68 dB	71 dB	65 dB	60 dB	55 dB	48 dB
Outdoor Noise	100 dB	96 dB	97 dB	96 dB	93 dB	89 dB	90 dB	83 dB

Service Options

Service Valve	Service valves	**Condenser Coil Guards**	Louvered condenser coil hail guards

Publication

AHRI Certification

Packaged Rooftop units cooling, heating capacities and efficiencies are rated within the scope of the Air-Conditioning, Heating & Refrigeration Institute (AHRI) Certification Program and display the AHRI Certified® mark as a visual confirmation of conformance to the certification sections of AHRI Standard 340-360 (I-P) and ANSIZ21.47 and 10 CFR Part 431 pertaining to Commercial Warm Air Furnaces. Certified units may be found in the AHRI directory at www.ahridirectory.org

Unit Overview - TCH480D50*0A2JAEA0*****0H00000*0000*0000X**********

Unit Function	Tonnage	Estimated Installed Weight	EER @ AHRI	IEER @ AHRI	System Power	Elevation
DX Cooling, no heat	40 Ton	5101.0 lb	11.40	15.80	42.92 kW	

Unit Features

Efficiency/Condenser Coil	Standard efficiency unit
System Control	Multi-speed fan w/ Bypass
Airflow Configuration	Horizontal supply and horizontal return
Filters	2" MERV 4 Throwaway filters
Outside Air Selection	0% Outside air



Unit Electrical

Voltage/Phase/Hertz	575/60/3
SCCR Rating	5k SCCR

Condenser Motor FLA	1.50 A	**Supply Fan FLA**	10.10 A	**MCA**	75.00 A
Condenser Motor Count	4.00 Each	**Exhaust Fan Count**	0.00 Each	**MOP**	90.00 A
Compressor 1 RLA	14.50 A	**CCH FLA**	1.00 A	**DSS**	100.00 A
Compressor 2 RLA	19.10 A				
Compressor 3 RLA	19.10 A				

Note: Connect properly sized and protected power supply wiring to the unit (copper wiring only to the unit)

Cooling Section

Refrigerant Type	R-454B	**Gross Total Capacity**	495.46 MBh
Refrigerant Charge - Circuit 1	57.2 lb	**Gross Sensible Capacity**	385.59 MBh
Minimum Room Area	943.00 sq ft	**Gross Latent Capacity**	109.87 MBh
Condenser Coil Type	MCHE	**Net Total Capacity**	470.48 MBh
Condenser Coil Rows	2	**Net Sensible Capacity**	360.62 MBh
Evaporator Face Area	36.70 sq ft	**Net Sensible Heat Ratio (%)**	0.77 %
Evaporator Coil Rows	5	**Fan Motor Heat**	22.36 MBh
Evaporator Face Velocity	436 ft/min	**Leaving Coil Dry Bulb**	57.29 F
Design Airflow	16000 cfm	**Leaving Coil Wet Bulb**	56.86 F
Entering Dry Bulb	80.00 F	**Leaving Unit Dry Bulb**	59.45 F
Entering Wet Bulb	67.00 F	**Leaving Unit Wet Bulb**	57.73 F
Ambient Dry Bulb	95.00 F	**Compressor Power**	31.55 kW

Heating Section

Function	DX Cooling, no heat
Heat Type & Capacity	Cooling only unit

Fan Section

Unit Airflow Design	Horizontal supply and horizontal return
Supply Fan Data	
Supply Fan Type	FC
System Control/SGR	Multi-speed fan w/ Bypass
Design Airflow	16000 cfm
Design ESP	0.350 in H2O
Total Static Pressure	1.268 in H2O
Supply Fan Motor HP	10 Hp
Total Supply BHP	8.77 bhp
Supply Fan Drive	525 RPM
Operating Speed (RPM)	517 rpm
Supply Motor Power	6.55 kW

Exhaust Fan Data	
Exhaust Fan Type	Prop
Exhaust Fan Drive	Direct
Exhaust Fan Count	0.00 Each
Outdoor Fan Data	
Outdoor Fan Type	Prop
Outdoor Fan Drive	Direct
Low Ambient Temp	0 F
Condenser Fan Count	4.00 Each
Outdoor Fan Motor Power	0.00 kW

Acoustics

	63	125	250	500	1K	2K	4K	8K
Supply Duct	95 dB	83 dB	79 dB	74 dB	70 dB	68 dB	62 dB	57 dB
Return Duct	85 dB	85 dB	80 dB	78 dB	73 dB	71 dB	71 dB	71 dB
Outdoor Noise	104 dB	97 dB	96 dB	97 dB	95 dB	93 dB	88 dB	79 dB

Service Options

Service Valve	Service valves	**Condenser Coil Guards**	Louvered condenser coil hail guards

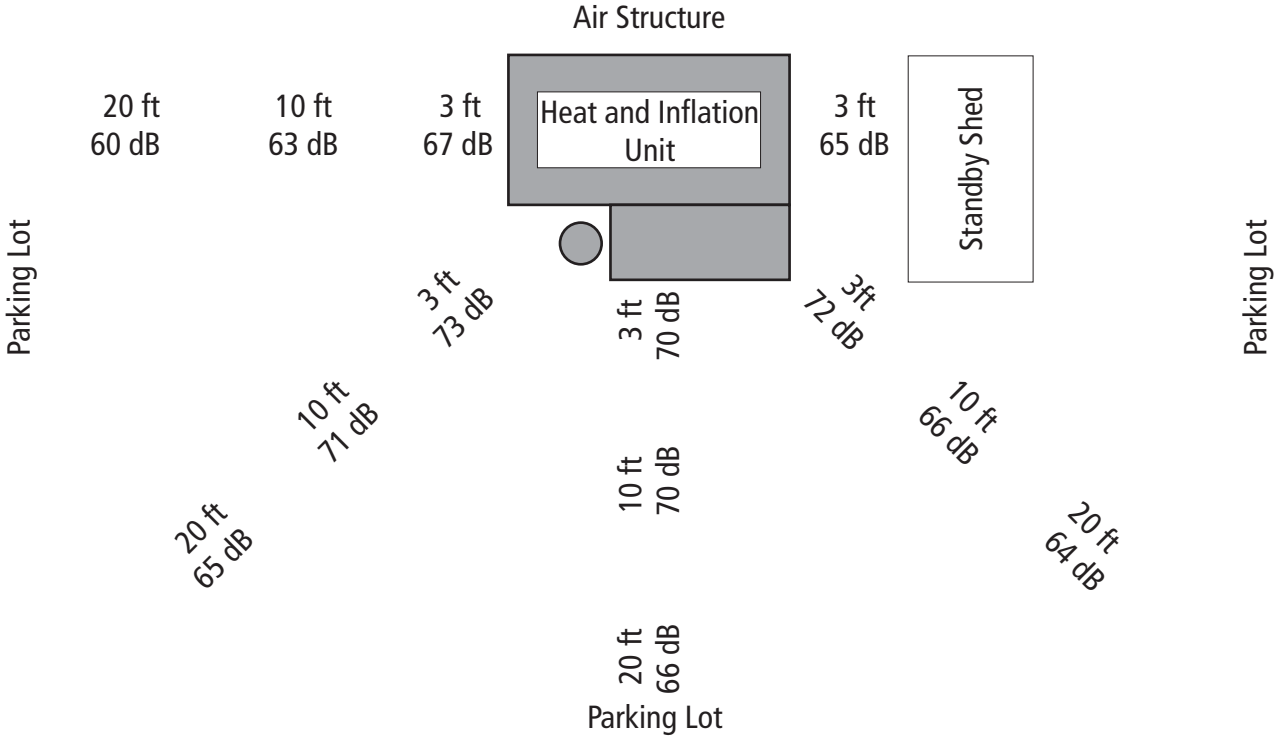
Publication

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Noise Level Observation: Farley Group Manufacturing Facility

Location:	Guelph, Ontario, Canada
Site Description:	- located in an industrial park - moderate to heavy street traffic - no sound barriers such as fencing or trees
Furnace:	2.50 Mbtu Heat and Inflation Unit
Mode at Time of Test:	Heat on
Ambient Noise Level:	65 dB
Date of Test:	January 15, 2001
Weather:	Overcast and cold



Daltec Process Fans

Phone : 519-837-1921
Fax : 519-837-2380

Customer : farley Group
Project : 25-023 Complexe Multi Sport de Laval
Item 1 - Ref : Temp 1

Quote Ref : 23-7621
2026-04-30

Gas Properties :

Elevation :	500	Feet
Operating Temp:	68	Deg.F.
Humidity:	38	%
Specific Gravity:	1.0	
Inlet Density:	0.073571	Lbs/ft3
Dust Load:	0	g/m3

Duty Required :

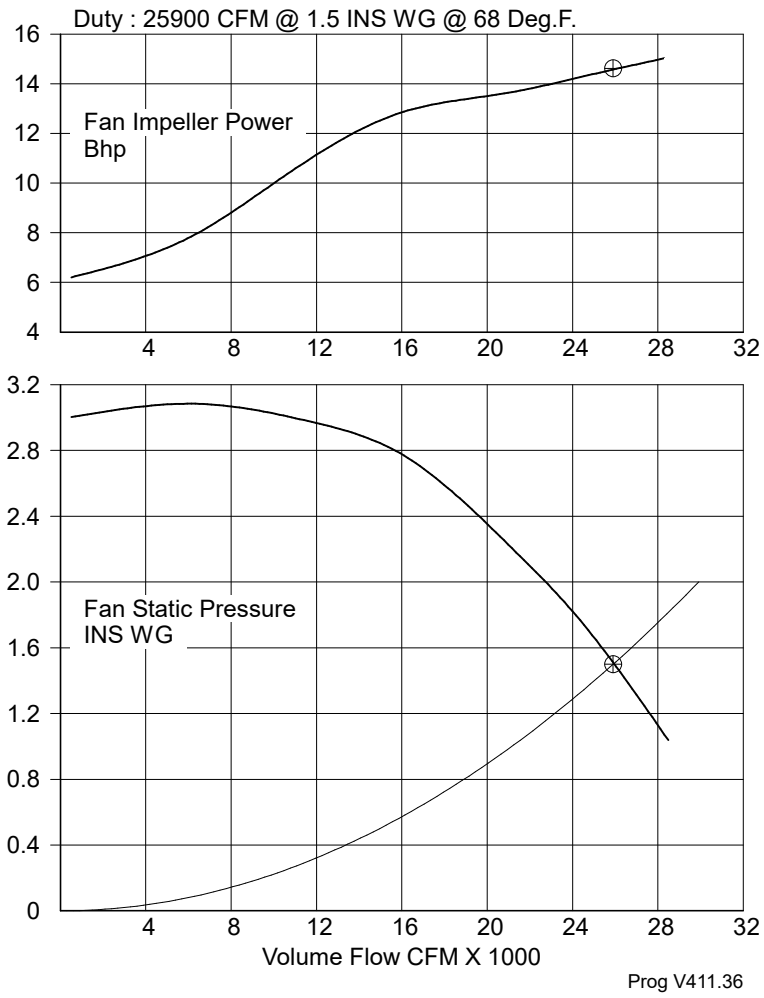
Inlet Volume Flow:	25900	cfm
Fan Static Pressure:		
Inlet Pressure:	-0	ins wg
Outlet Pressure:	1.5	ins wg

Fan Selected :

SWSI-AMX BI-490/100-100

Speed:	607	Rpm
Impeller Ø:	1245	mm
Fan Class:	4	

Impeller Power :		
@ 50.0 Deg F :	15.1	Bhp
@ Duty Temp:	14.6	Bhp
Tip Speed:	39.6	m/s
Inlet Velocity:	9.4	m/s
Outlet Velocity:	9.5	m/s
Temp Rise:	1.4	Deg.F.



Prog V411.36

Noise Details :	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	**Total**
Internal SWL dB	101	97	91	91	87	81	77	72	**103**
Free Inlet SPL dBA	66	75	77	83	82	77	73	66	**87**
Free Outlet SPL dBA	66	75	77	83	82	77	73	66	**87**
Outside Casing dBA	52	57	55	61	60	55	51	42	**66**

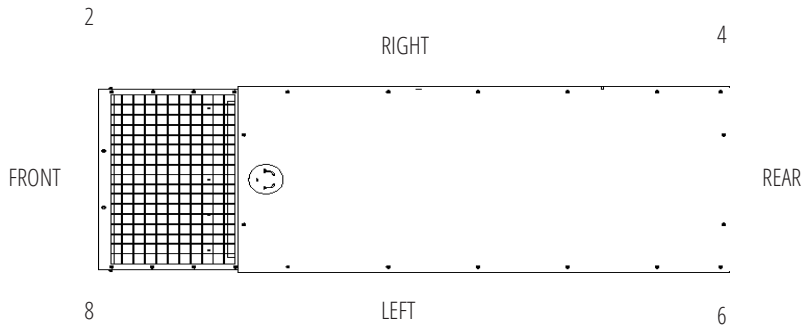
Motor noise is NOT included in the figures above.

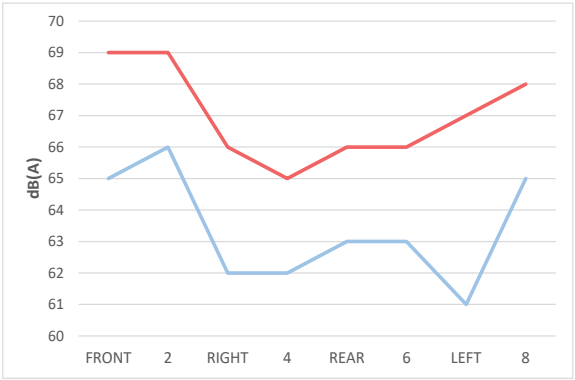
Sound Pressure levels (SPL) are estimated within the Near Field range at 1 metre(s)
Breakout at 1 metre from 6.35 mm thick casing (inside Near Field range).
Casing levels assume the inlet / outlet are ducted and noise does not breakout through duct.
All values are averages. Free Inlet assumes that outlet is ducted and vice versa.

LEVEL 2 SOUND ATTENUATED ENCLOSURE
G4.5L Generac, SG060T

	60Hz NO-LOAD, dB(A)								DISTANCE: 7 METERS	
MICROPHONE LOCATION	OCTAVE BAND CENTER FREQUENCY (Hz)									
	32	65	125	250	500	1000	2000	4000	8000	dB(A)
FRONT	33	44	48	57	60	61	54	52	43	65
2	32	43	47	59	61	61	54	51	43	66
RIGHT	31	44	48	55	58	56	49	52	42	62
4	29	45	47	55	57	57	50	48	40	62
REAR	29	47	47	53	59	59	52	48	42	63
6	29	44	46	58	59	56	50	46	38	63
LEFT	31	45	49	55	56	56	50	49	39	61
8	32	44	47	59	61	59	53	50	43	65
AVERAGE	**31**	**45**	**47**	**56**	**59**	**58**	**51**	**49**	**41**	**63**

	60Hz FULL-LOAD, dB(A)								DISTANCE: 7 METERS	
MICROPHONE LOCATION	OCTAVE BAND CENTER FREQUENCY (Hz)									
	32	65	125	250	500	1000	2000	4000	8000	dB(A)
FRONT	34	66	56	59	62	62	55	52	44	69
2	33	65	54	60	63	63	55	52	45	69
RIGHT	30	63	53	55	58	57	52	51	44	66
4	26	62	50	54	58	58	52	49	43	65
REAR	26	63	54	54	59	59	53	50	45	66
6	26	62	51	60	60	58	53	48	42	66
LEFT	31	63	57	59	58	57	52	49	40	67
8	34	65	56	59	61	60	55	52	45	68
AVERAGE	**30**	**64**	**54**	**57**	**60**	**59**	**53**	**50**	**44**	**67**





- All positions at 23 feet (7 meters) from side faces of generator set.
- Test conducted on a 100 foot diameter asphalt surface.
- Sound pressure levels are subject to instrumentation, installation and testing conditions.
- Sound levels are ±2 dB(A).

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Part No. A0000317325
Rev. C 2/18/26

SoundEar®

- awarded The Danish Design Prize 2000!



Keep an ear on the noise level!

The first step towards a better noise environment.

SoundShip aps

SoundEar® - keeping an ear on the noise level!

Noise has become a nuisance to more and more people – but you don't have to put up with uncomfortable and detrimental noise levels with the risk of hearing damage any longer. SoundEar® gives you the ultimate noise abatement tool.



These noise indicators, SoundEar®2000 and SoundEar® present a clear and unmistakable warning as soon as the noise exceeds the limit. Children and adults can easily understand the warning symbol so that immediate action can be taken to do something about the noise. You can adjust the noise limit on the device to suit the function of the room.

SoundEar®'s elegant and effective design fits in everywhere, it is easy to find room for this compact unit on the wall and its user friendliness is superb.





SoundEar® 2000

SoundEar®2000 presents a hard-to-miss alarm signal (red ear and the word WARNING), as soon as the noise limit is exceeded. The noise limit can easily be set to one of 16 settings between 40 and 115 dB(A) by turning a knob on the back of the device. These settings represent all the noise levels between examination halls to rock concerts. SoundEar®2000 presents a yellow warning ear just before the noise limit is reached.

SoundEar®2000 is well suited to all those who require a flexible noise limit setting e.g. children's day care centres, after-school care centres, youth clubs, schools, music academies, concert halls, discotheques, pubs, offices and industry.

Technical data

Tolerance threshold:	± 1dB
Power supply:	Connect to normal electrical socket using the enclosed transformer.
Power consumption:	app. 3W
Dimensions:	28 x 28 x 6 cm
Weight:	app. 1,5 kg

SoundEar®

SoundEar® is almost identical to SoundEar®2000. The difference is that SoundEar® only has two noise limit settings. The device is set from the factory to warn at 85 dB, which is the max. noise level for normal surroundings. You can easily adjust this limit to 105 dB, which is the max. noise level for music practice rooms and concert halls. SoundEar®2000 presents a yellow warning ear just before the noise limit is reached.

SoundEar® is well suited to all those who require a simple and precise noise indicator. e.g. children's day care centres, after-school care centres, schools, youth clubs, music academies, rehearsal rooms, concert halls, discotheques, pubs, offices and industry.

Technical data

Tolerance threshold:	± 1dB
Power supply:	Connect to normal electrical socket using the enclosed transformer.
Power consumption:	app. 3W
Dimensions:	28 x 28 x 6 cm
Weight:	app. 1,5 kg

SoundBuster™

SoundBuster™ is an auxiliary device to SoundEar® and SoundEar®2000 that is used to cut off the power supply to noisy machines like amplifiers and hi-fi systems. SoundBuster™ cuts off the power supply to these machines as soon as the SoundEar® or SoundEar®2000 has lit up the red light for more than five seconds. The power supply can be reconnected by pressing the SoundBuster™'s reset button.

SoundBuster™ is well suited to all those who wish to put a stop to noise above a certain level in an effective way e.g. youth clubs, music academies, rehearsal rooms, concert halls, discotheques, pubs etc.

Technical data

Power supply:	connect to normal electrical socket
Power consumption:	Disconnects via relay at max. 16A. External intermediate relay or contactor to be used at higher power consumpton.
Dimensions:	12 x 28 x 6 cm
Weight:	app. 0,8 kg



SoundShip aps