

**NOISE IMPACT FEASIBILITY STUDY  
1242-1260 GORDON STREET & 9 VALLEY ROAD  
GUELPH, ONTARIO**

**FOR**

**THE TRICAR GROUP**

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**AUGUST 23, 2021**

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## **1.0 INTRODUCTION**

At the request of the Tricar Group, J.E. COULTER ASSOCIATES LIMITED has reviewed the plans for the proposed high-density residential development at 1242-1270 Gordon Street and 9 Valley Road in Guelph, Ontario (see Appendix A, Figure 1). The proposed development is to be located along the east side of Gordon Street between Edinburgh Road South and Arkell Road.

The purpose of this feasibility report is to identify any transportation source that may have a noise impact on the proposed development. Traffic on Gordon Street and Edinburgh Road South are the main sources of transportation noise potentially affecting this proposed residential development.

The report provides recommendations on the abatement of these transportation sources where required in support of the zone change and Draft Plan amendment. The noise criteria are listed in Appendix D.

## **2.0 DESCRIPTION OF AREA**

The proposal consists of a two apartment buildings, each 10-storeys (see Appendix A, Figure 2). The west façades of the residential portions of the Buildings 1 and 2 are set back approximately 26m and 77m, respectively, from the centreline of Gordon Street. The north façade of Building 1 is setback 15m from the centreline of Street "A" (an extension of Edinburgh Road South) The west facade of the interior amenity areas (Level 1) is approximately 22m from the centreline of Gordon Street.

A review of the existing stationary sources in the vicinity of the proposed condominium development was undertaken by this office. Directly to the south along the east side of Gordon Street are two 5-storey apartment buildings (1280 and 1284 Gordon Street). At the northwest corner of Gordon Street and Arkell Road is an existing 6-storey apartment building (1291 Gordon Street). To the north are existing single-family dwellings along Gordon Street and Valley Road. All these off-site apartment buildings include rooftop HVAC equipment.

## **3.0 NOISE CRITERIA**

The City of Guelph's and the Ministry of the Environment, Conservation & Park's (MECP) noise criteria are as follows (see Appendix D, References 1 and 2):

### 3.1 Transportation Sources

<b>Table 1A: MECP Indoor Sound Level Limits – Road and Rail</b>			
<b>Type of Space</b>	<b>Time Period</b>	<b>L<sub>eq</sub> (dBA)</b>	
		<b>Road</b>	<b>Rail</b>
Living/dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc.	07:00 – 23:00	45	40
Living/dining, den areas of residences, hospitals, nursing homes, etc. (except schools or daycare centres)	23:00 – 07:00	45	40
Sleeping quarters	07:00 – 23:00	45	40
	23:00 – 07:00	40	35

<b>Table 1B: MECP Outdoor Sound Level Limits – Road and Rail</b>			
<b>Type of Space</b>	<b>Time Period</b>	<b>L<sub>eq</sub> (dBA)</b>	
		<b>Road</b>	<b>Rail</b>
Outdoor recreation areas <sup>1</sup>	07:00 – 23:00	55	55
Outside bedroom window	23:00 – 07:00	50	50
Outside living room window	07:00 – 23:00	55	55

<sup>1</sup> Up to 5 dB excess above noise criteria may be allowed with engineering judgement and justification, at the discretion of the Municipality, provided a warning clause is given. Above 60 dB L<sub>eq</sub>, exterior noise mitigation measures (i.e. noise barriers, intervening structures, additional setback from source) are required.

### 3.2 Transportation Sources

The MECP guidelines that apply to a residential development site such as this are in Publication *NPC-300*.

### 3.3 Outdoor Living Areas (OLAs)

If the 16-Hour Equivalent Sound Level, L<sub>eq</sub> (16) in the OLA is greater than 55 dBA and less than or equal to 60 dBA, noise control measures may be applied to reduce the sound level to 55 dBA. If measures are not provided, prospective purchasers or tenants should be informed of potential noise problems by a warning clause Type A.

If the 16-Hour Equivalent Sound Level, L<sub>eq</sub> (16) in the OLA is greater than 60 dBA, noise control measures should be implemented to reduce the level to 55 dBA. Only in cases where the

required noise control measures are not feasible for technical, economic or administrative reasons would an excess above the limit (55 dBA) be acceptable with a warning clause Type B. In the above situations, any excess above the limit will not be acceptable if it exceeds 5 dBA.

### **3.4 Ventilation Requirements – Daytime (0700–2300 Hours)**

For residential buildings, the Ministry's ventilation requirements are based on the sound level at the exterior building façade. Noise control measures may not be required if the  $L_{eq}$  (16 hr.) daytime sound level in the plane of a bedroom or living/dining room window is less than or equal to 55 dBA. If the sound level in the plane of a bedroom or living/dining room window is greater than 55 dBA and less than or equal to 65 dBA, the dwelling should be designed with a provision for the installation of central air conditioning in the future, at the occupant's discretion. Warning Clause Type C is also recommended.

If the daytime sound level in the plane of a bedroom or living/dining room window is greater than 65 dBA, installation of central air conditioning should be implemented with a warning clause Type D. In addition, building components including windows, walls and doors, where applicable, should be designed so that the indoor sound levels comply with the sound level limits in Table 1. The location and installation of the outdoor air conditioning device should comply with sound level limits of Publication *NPC-216* and guidelines contained in *Environmental Noise Guidelines for Installation of Residential Air Conditioning Devices*, or should comply with other criteria specified by the municipality.

### **3.5 Ventilation Requirements – Nighttime (2300–0700 Hours)**

Noise control measures may not be required if the  $L_{eq}$  (8 hr.) nighttime sound level in the plane of a bedroom or living/dining room window is less than or equal to 50 dBA. If the sound level in the plane of a bedroom or living/dining room window is greater than 50 dBA and less than or equal to 60 dBA, the dwelling should be designed with a provision for the installation of central air conditioning in the future, at the occupants' discretion. Warning Clause Type C is also recommended.

If the nighttime sound level in the plane of a bedroom or living/dining room window is greater than 60 dBA, installation of central air conditioning should be implemented, with a Warning Clause Type D. In addition, building components including windows, walls and doors, where applicable, should be designed so that the indoor sound levels comply with the sound level limits in Table 1. The location and installation of the outdoor air conditioning device should comply with sound level limits of Publication *NPC-216* and guidelines contained in *Environmental Noise Guidelines for Installation of Residential Air Conditioning Devices*, or should comply with other criteria specified by the municipality.

### **3.6 Indoor Living Areas – Building Components**

The sound level,  $L_{eq}$ , during the daytime (16-hour) and nighttime (8-hour) periods is determined using the prediction method STEAM, immediately outside the dwelling envelope. Whistle noise is included in the determination of the sound level.

If the nighttime sound level outside the bedroom or living/dining room windows exceeds 60 dBA or the daytime sound level outside the bedroom or living/dining area windows exceeds 65 dBA, building components including windows, walls and doors, where applicable, should be designed

so that the indoor sound levels comply with the sound level limits in Table 1. The acoustical performance of the building components (windows, doors and walls) should be specified.

If the nighttime sound level outside the bedroom or living/dining room windows exceeds 55 dBA or the daytime sound level outside the bedroom or living/dining area windows exceeds 60 dBA, building components including windows, walls and doors, where applicable, need to be designed so that the indoor sound levels comply with the sound level limits in Table 1. The acoustical performance of the building components (windows, doors and walls) needs to be specified.

### **3.7 Exterior Building Façade**

Where the sound levels at the exterior of the building façade exceed 55 dB  $L_{eq}$  daytime at the living room window or 50 dB  $L_{eq}$  nighttime at the bedroom window, the unit must be provided with forced air heating with provision for future air conditioning by the owner. Excesses of up to 10 dB above the criteria are permissible, provided a warning clause is given. Where the sound levels exceed this limit (i.e., 65 dB  $L_{eq}$  daytime or 60 dB  $L_{eq}$  nighttime), central air conditioning must be incorporated into the building design prior to occupancy. Warning clauses are applicable as well.

### **3.8 Stationary Sources**

The current City of Guelph's noise criteria (as per MECP's *NPC-300*) deal with stationary sound sources that are present at this proposed residential development. These criteria are based on the quietest ambient roadway traffic sound levels at the receiving point when the stationary source is operating. The proposed development is located in a Class 2 Urban Area as defined by MECP when the ambient sound levels are primarily generated by road traffic.

As noted in NPC-300, "For sound from a stationary source, including Quasi-Steady Impulsive Sound but not including other impulsive sound, the sound level limit at a point of reception, expressed in terms of the One-Hour Equivalent Sound Level ( $L_{eq}$ ) is the higher of the applicable exclusion limit value or the background sound level for that point of reception. The greatest noise impact at a point of reception may not occur when the noise emissions from the stationary source(s) are highest, since the applicable limit (the higher of either background sound level or exclusion limit) may vary throughout the operating time."

The criteria applicable to this site state that the combined stationary noise sources cannot exceed the ambient roadway sound levels or 50 dB  $L_{eq}$ , whichever is higher, based on a 1-hour time period, during the daytime (0700–2300 hours). At night (2300–0700 hours), the limit is 45 dB  $L_{eq}$ .

The traffic sound levels used to set the stationary sound guidelines are those from current not future traffic, as they represent the worst case.

## **4.0 TRANSPORTATION NOISE SOURCES**

The major sources of transportation noise at the site are the traffic on Gordon Street and Edinburgh Road South. Road traffic information for determining the projected sound levels was obtained from the City of Guelph's Transportation Department. The AADT was determined from the average of the AM and PM Peak hour volumes and multiplied by 10. A growth factor of

2.5% per annum was used to the year 2031. Detailed traffic data are provided in Appendix B. All recommendations are based on the exterior sound levels at the various façades exposed fully or partially to Gordon Street and Edinburgh Road South.

Based on the traffic data provided by the City of Guelph, Gordon Street is expected to carry the following traffic volumes for the purposes of specifying noise control measures (see Appendix B):

Roadway	AADT (Veh/Day)	Truck Percentage		# of Lanes	Posted Speed Limit (kph)	Day/Night Split (%)
		Medium	Heavy			
Gordon Street (2019), Undivided Arterial Road	33,858	3.58%	2.34%	4	60	93/7
Gordon Street (2031), Undivided Arterial Road	45,495	3.58%	2.34%	4	60	93/7
Edinburgh Road South (2019), west of Gordon St., Undivided Arterial Road	9,895	7.6%	0%	2	50	93/7
Edinburgh Road South (2031), west of Gordon St., Undivided Arterial Road	13,308	7.6%	0%	2	50	93/7

*Note:* Gordon Street (2019) includes added traffic from 7 developments on Gordon Street (2,390 vehicles per day) plus base traffic (31,468) for a total of 33,858. Traffic growth on all roads has been assumed to be 2.5% per annum (compounded) to the year 2031, a minimum 10-year projection.

## **5.0 PROJECTED EXTERIOR SOUND LEVELS (TRANSPORTATION)**

The following table summarizes the exterior  $L_{eq}$  sound levels at various façade locations (see Appendix A, Figure 2 for calculation locations). Details of the sound level calculations are provided in Appendix B.

<b>Table 3: Projected Traffic Sound Levels</b>						
	<b>Daytime Sound Level, dB L<sub>eq</sub></b>			<b>Nighttime Sound Level, dB L<sub>eq</sub></b>		
<b>Location</b>	<b>Gordon St.</b>	<b>Edinburgh Rd. South</b>	<b>Total</b>	<b>Gordon St.</b>	<b>Edinburgh Rd. South</b>	<b>Total</b>
<b>EXTERIOR BUILDING FACADES</b>						
Building 1: Loc 1 NE Façade	64	55	<b>65</b>	56	47	<b>56</b>
Building 1: Loc 2 NW Façade	70	56	<b>70</b>	62	48	<b>62</b>
Building 1: Loc 3 SE Façade	64	--	<b>64</b>	56	--	<b>56</b>
Building 1: Loc 4 SW Façade	70	--	<b>70</b>	62	--	<b>62</b>
Building 1: Loc 5 Amenity Level 1, West Facade	71	--	<b>71</b>	63	--	<b>63</b>
Building 1: Loc 6 Amenity Level 1, West Facade	71	--	<b>71</b>	63	--	<b>63</b>
Building 2: Loc 7 NE Façade	60	--	<b>60</b>	52	--	<b>52</b>
Building 2: Loc 8 NW Façade (North Leg)	62	--	<b>62</b>	54	--	<b>54</b>
Building 2: Loc 9 SE Façade	60	--	<b>60</b>	52	--	<b>52</b>
Building 2: Loc 10 SW Façade	62	--	<b>62</b>	54	--	<b>54</b>
Building 2: Loc 11 NW Façade (West Leg)	62	--	<b>62</b>	53	--	<b>53</b>

OUTDOOR AMENITY AREAS						
Loc 12: Common Amenity Space, Building 1, SW (Grade Level)	71	--	<b>71</b>	--	--	--
Loc 13: Common Amenity Space, Building 2, NW (Grade Level)	54	--	<b>54</b>	--	--	--

*Notes:*

1. The sound levels have been calculated using 1 roadway segment for each roadway where the geometric centre of the roadway is used. This is acoustically equivalent to dividing the roadway into two separate segments.
2. In cases where sound levels are not provided for Edinburgh Road South, this is because for most receiver locations, the sound levels generated by Edinburgh Road South are acoustically insignificant relative to Gordon Street. The sound levels are more than 10 dB less than those of Gordon Street and do not increase the total value.
3. The report is based on project north being the top of the drawing. Gordon Street is considered to be situated west of the site.

## 6.0 IMPACT OF EXTERIOR TRANSPORTATION NOISE ON BUILDINGS

From the results summarized in the above table, unmitigated, a modest noise impact would be present primarily because of the traffic on Gordon Street. Edinburgh Rd South has little or no influence on the overall sound levels at the building. Noise control measures will include central air conditioning, acoustic barriers and double glazing as a result of the traffic on Gordon Street.

Balconies or patios that are less than 4m in depth are not classified as Outdoor Living Areas as per the MECP noise guideline. Other areas where balconies or terraces are 4m or greater in depth, noise control measures are to be considered.

The City of Guelph's Noise guidelines state the following:

For the purposes of noise impact assessment in an OLA, the point of assessment is typically:

- a. For rectangular and regularly shaped OLAs: 3 metres from the building façade, 1.5 metres above grade or floor level and aligned with the midpoint of the subject façade;
- b. For unusually shaped OLAs: a reasonably central location, biased toward a conservative assessment of the noise source, (e.g. at the area centroid);
- c. For elevated OLAs, the point of assessment is typically the middle of the OLA however more conservative locations may be necessary.

## 6.1 OUTDOOR AMENITY AREAS

There are 2 outdoor amenity areas for consideration noted as Locations 12 and 13. The southwest portion of the site incorporates a common outdoor space near Gordon Street. The space includes a sitting area. The sound levels from Gordon Street are sufficient that noise control measures are to be considered.

A 3.5m high acoustic barrier is recommended for Location 12 (see Appendix A, Figures 4 and 5). The barrier is to extend from the southwest corner of Building 1 to the south property line (33m) and then wrap to the east for a distance of 7m. With the barrier in place, the sound level is expected to be 60 dB Leq daytime throughout the common outdoor area.

All barriers must have one or more of the following acoustic characteristics:

- a. The Sound Transmission Class (STC) of the panel material to be 20, or greater, when tested in accordance with ASTM-E90 (a test report to be submitted for approval).
- b. The Sound Transmission Class (STC) of the panel material has historically been demonstrated to be 30 or greater (include references).
- c. Surface mass density not less than 20 kg/sq.m (4 lbs/sq-ft).

The common outdoor space just northwest of Building 2 was found to be sufficient setback and shielded from Gordon Street and requires no additional noise control measures as the calculated sound levels are 54 dB Leq daytime, meeting the criterion (55 dB Leq daytime).

## 7.0 IMPACT OF OFF-SITE STATIONARY NOISE SOURCES ON BUILDINGS

A review of the existing stationary sources in the vicinity of the proposed condominium development was undertaken by this office. Directly to the south, along the east side of Gordon Street, are two 5-storey apartment buildings (1280 and 1284 Gordon Street). At the northwest corner of Gordon Street and Arkell Road is an existing 6-storey apartment building (1291 Gordon Street). To the north are existing single-family dwellings along Gordon Street and Valley Road. All these off-site apartment buildings include rooftop HVAC equipment (see Appendix A, Figure 6).

To calculate the sound levels, a 3-D acoustic model was used (CadnaA 2021). The software analyses each floor level around the entire building and provides the location of the highest sound levels. As a result, the worst case reception locations are located at the top floor of the apartment buildings. The analysis was based on the rooftop mechanical equipment at the off-site locations to have a sound power level of 90 to 95 dBA, typical for most mid-rise buildings. The points of reception considered in the analysis were as follows:

- R1: Building 1, 5<sup>th</sup> Floor Level, South Façade (closest to apartment buildings at 1280 and 1284 Gordon Street)

R2: Building 2, 5<sup>th</sup> Floor Level, South Façade, west end (closest to apartment buildings at 1280 and 1284 Gordon Street)

R3: Building 2, 5<sup>th</sup> Floor Level, South Façade, east end (closest to apartment buildings at 1280 and 1284 Gordon Street).

MECP's stationary source noise criteria were based on the quietest hourly sound levels of 50 dB minimum during the daytime (0700–2300 hours), 45 dB minimum evening (1900-2300 hours) and nighttime (2300–0700 hours). The minimum MECP's ambient sound levels at the building facades. For the OLA at Building, the quietest ambient sound level generated by Gordon Street between 1900 and 2300 hours was calculated to be 58 dB  $L_{eq}$  (2200-2300 hours).

The calculated sound levels from the off-site mechanical ventilation equipment at the proposed condominium are as follows during the daytime (Table 4), nighttime (Table 5) and evening (Table 6):

<b>Table 4: Daytime Sound Level from Off-Site HVAC Equipment</b>			
<b>Off-site Sources</b>	<b>R1</b>	<b>R2</b>	<b>R3</b>
Apartment Building 1 (1280 Gordon) – Rooftop HVAC	45.5	44.9	40.8
Apartment Building 2 (1284 Gordon) – Rooftop HVAC	38.2	41.2	45.9
Apartment Building 3 (1291 Gordon) – Rooftop HVAC	36.8	36.7	35.1
<b>Total (dB <math>L_{eq}</math>)</b>	47	47	47
Noise Criteria (dB), Class 2	50	50	50
Noise Impact (dB)	<b>-3</b>	<b>-3</b>	<b>-3</b>

<b>Table 5: Nighttime Sound Level from Off-Site HVAC Equipment</b>			
<b>Off-site Sources</b>	<b>R1</b>	<b>R2</b>	<b>R3</b>
Apartment Building 1 (1280 Gordon) – Rooftop HVAC	42.5	41.9	37.8
Apartment Building 2 (1284 Gordon) – Rooftop HVAC	35.2	38.2	42.9
Apartment Building 3 (1291 Gordon) – Rooftop HVAC	33.8	33.7	32.1
<b>Total (dB <math>L_{eq}</math>)</b>	44	44	44
Noise Criteria (dB), Class 2	45	45	45
Noise Impact (dB)	<b>-1</b>	<b>-1</b>	<b>-1</b>

<b>Table 6: Evening Sound Level from Off-Site HVAC Equipment at Common Outdoor Spaces</b>		
<b>Off-site Sources</b>	<b>OLA (Bldg1)</b>	<b>OLA (Bldg 2)</b>
Apartment Building 1 (1280 Gordon) – Rooftop HVAC	46.8	15.5
Apartment Building 2 (1284 Gordon) – Rooftop HVAC	38.6	13.8
Apartment Building 3 (1291 Gordon) – Rooftop HVAC	26.3	9.2
<b>Total (dB L<sub>eq</sub>)</b>	47	35
Noise Criteria (dB), Class 2	58	45
Noise Impact (dB)	<b>-11</b>	<b>-10</b>

The overall projected sound levels from all off-site mechanical equipment (operating at 100% duty cycle, daytime and 50% at night) is expected to be 3 and 1 dB below MECP's noise criteria during the day and night times. During the evening, at outdoor amenity areas, the sound levels are 10 to 11 dB below the quietest ambient traffic sound levels. No additional noise mitigation are needed.

As a result, no additional noise control measures are required and no further review is needed.

## **8.0 IMPACT OF PROPOSED DEVELOPMENT ON SURROUNDING AREA**

A review of the proposed rooftop HVAC equipment at 1242-1270 Gordon Street and 9 Valley Road was undertaken by this office. At this time, no details of the rooftop HVAC is known, thus our comments are general in nature (see Appendix A, Figure 7).

The points of reception considered in the analysis were as follows:

- R1: Single family dwelling at 1236 Gordon Street directly north of Building 1
- R2: Outdoor Living Area of R1
- R3 to R7: Single family dwellings along Valley Road, north of Buildings A and B
- R8: 1280 Gordon Street, North Façade, Top Floor (5<sup>th</sup>)
- R9: 1284 Gordon Street, South Leg, North Façade, Top Floor (5<sup>th</sup>)
- R10: 1284 Gordon Street, north Leg, North Façade, Top Floor (5<sup>th</sup>).

MECP's stationary source noise criteria were based on the quietest hourly sound levels of 50 dB minimum during the daytime (0700–2300 hours) and 45 dB minimum nighttime (2300–0700 hours). This represents the worst-case scenario. The reception locations were selected, at the top floor levels as they represent the potential for the highest sound levels from the mechanical equipment as direct line-of-sight and the shortest setback would be present compared to the lower floors where the roof edge will create a barrier effect plus the additional distance from the source.

The calculated sound levels from the on-site mechanical ventilation equipment at the proposed condominium are as follows during the daytime (Table 7) and nighttime (Table 8):

<b>Table 7: Daytime Sound Levels at Off-Site Receptors</b> <b>Source: Rooftop HVAC at 1242-1270 Gordon Street</b>										
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
Building 1 – Rooftop HVAC	27.3	25.5	32.8	34.3	35.1	35.3	35.2	28.3	36.3	24.2
Building 2 – Rooftop HVAC	35.7	34.1	36.1	33.7	25.6	25.7	25.1	35.9	38.7	34.4
<b>Total (dB L<sub>eq</sub>)</b>	<b>36</b>	<b>35</b>	<b>38</b>	<b>37</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>37</b>	<b>41</b>	<b>35</b>
Noise Criteria (dB), Class 1	50	50	50	50	50	50	50	50	50	50
Noise Impact (dB)	<b>-14</b>	<b>-15</b>	<b>-12</b>	<b>-13</b>	<b>-14</b>	<b>-14</b>	<b>-14</b>	<b>-13</b>	<b>-9</b>	<b>-15</b>

<b>Table 8: Nighttime Sound Levels at Off-Site Receptors</b> <b>Source: Rooftop HVAC at 1242-1270 Gordon Street</b>										
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
Building 1 – Rooftop HVAC	24.3	22.5	29.8	31.3	32.1	32.3	32.2	25.3	33.3	21.2
Building 2 – Rooftop HVAC	32.7	31.1	33.1	30.7	22.6	22.7	22.1	32.9	35.7	31.4
<b>Total (dB L<sub>eq</sub>)</b>	<b>33</b>	<b>32</b>	<b>35</b>	<b>34</b>	<b>33</b>	<b>33</b>	<b>33</b>	<b>34</b>	<b>38</b>	<b>32</b>
Noise Criteria (dB), Class 1	45	45	45	45	45	45	45	45	45	45
Noise Impact (dB)	<b>-12</b>	<b>-13</b>	<b>-10</b>	<b>-11</b>	<b>-12</b>	<b>-12</b>	<b>-12</b>	<b>-11</b>	<b>-7</b>	<b>-13</b>

The overall projected sound levels from the projected rooftop mechanical equipment at 1242-1270 Gordon Street and 9 Valley Road (operating at 100% duty cycle, daytime and 50% at night) is expected to range between 9 and 15 dB below MECP's noise criteria during the day. At night, the sound levels are expected to range between 7 and 13 dB below MECP's noise criteria. As a result, no additional noise control measures are expected. Once the mechanical details are known, the acoustic consultant should confirm the equipment meets MECP's NCP-300 noise criteria.

## 9.0 NOISE MITIGATION MEASURES

The exterior sound levels at some parts of the development are greater than 65 dB L<sub>eq</sub> daytime and/or 60 dB L<sub>eq</sub> nighttime. As a result, central air conditioning prior to occupancy is required. It is our understanding that central air conditioning will be supplied for the entire development, in any case.

At this time, there are no details regarding the proposed mechanical ventilation systems to be used at Buildings A and B. A general review of the anticipated sound levels from the rooftop ventilation equipment and location did not result in noise impacts at any point of reception off-site. Prior to building permit, the acoustic consultant should review the equipment selection and

locations and confirm whether additional noise control measures (for example, silencers, barriers, enclosures, parapets or the selection of quieter equipment) are required to meet MECP's *NPC-300* criteria.

## 10.0 FAÇADE COMPONENTS

A general review of the floor plans and building elevations was conducted to determine if upgrades from the minimum Ontario Building Code (OBC) requirement were needed to meet MECP's interior sound level criterion for bedrooms and living rooms. For this feasibility study, there are no detailed layouts of the residential suites to calculate the final façade requirements. The review concluded that no special building components (windows, walls or ceiling) were required for living/dining rooms with a window/door-area-to-floor-area ratio of 112% or less. For bedrooms, the maximum window/door-area-to-floor-area ratio is 125%, an extraordinarily large area of glazing. National Research Council's BPN-56 computer model was used to determine the window area to floor area ratios and the resultant interior sound levels (see Appendix B). A final review is required at Site Plan to confirm the requirements. For the residential suites in Buildings A and B, it is expected that OBC compatible construction with double glazing (operable or fixed) will meet the interior noise requirements.

For the grade level interior amenity areas at the west side of Building 1, calculations of the interior sound levels were undertaken for the large and small interior amenity areas. Based on an exterior sound levels of 71 dB  $L_{eq}$  at the west façade, the interior sound level of 40 and 37 dB  $L_{eq}$  daytime in the large and small amenity rooms using standard commercial double glazing (6mm panes on a 13mm air space) to achieve an interior sound level of 45 dB  $L_{eq}$  or less.

## 11.0 SUMMARY

In summary, the analysis showed that the sound levels generated by the combination of Gordon Street and Edinburgh Road South will be modest, requiring noise control measures typical of such sites to meet the provincial requirements (i.e., central air conditioning, noise barriers and double glazing). These measures are found at many new residential developments adjacent to a main arterial roadway and are not considered onerous requirements.

The common outdoor amenity area at the southwest corner of the site at Building 1 will require noise control measures in the form of an acoustic barrier to meet the guideline.

The existing stationary sources (i.e., rooftop HVAC equipment from the adjacent apartment buildings) were found not to generate a noise impact at this proposed residential development.

## 12.0 RECOMMENDATIONS

To meet the noise requirements of the City of Guelph and MECP's noise guidelines, the following recommendations are proposed:

2. The exterior sound levels are greater than 65 dB  $L_{eq}$  daytime and/or 60 dB  $L_{eq}$  nighttime. As a result, central air conditioning prior to occupancy is required. It is our understanding that central air conditioning will be supplied for each dwelling unit for the entire development in any case, thus meeting the requirement.
3. The review has concluded that no special building components (windows, walls or ceiling) are required for living/dining rooms with a window/door-area-to-floor-area ratio of 112% or less. For bedrooms, the window/door-area-to-floor-area ratio of 125%, an extraordinarily large area of glazing would be well within the interior noise criteria. Ontario Building Code (OBC) compatible construction with double glazing (operable or fixed) will meet the noise requirements based on the window-area-to-floor-area ratios noted above.
4. A 3.5m high acoustic barrier is recommended for Location 12 (see Appendix A, Figure 4). The barrier is to extend from the southwest corner of Building 1 to the south property line (33m) and then wrap to the east for a distance of 7m (see Appendix A, Figures \*\*). With the barrier in place, the sound level is expected to be 60 dB  $L_{eq}$  daytime throughout the common outdoor area.
5. The Owner/Developer acknowledges and agrees that, if stepping of the noise barrier is required, the interval height per panel section of the required noise fence will be no greater than 101.6 millimetres (4 inches).
6. All barriers must have one or more of the following acoustic characteristics:
  - a. The Sound Transmission Class (STC) of the panel material to be 20, or greater, when tested in accordance with ASTM-E90 (a test report to be submitted for approval).
  - b. The Sound Transmission Class (STC) of the panel material has historically been demonstrated to be 30 or greater (include references).
  - c. Surface mass density not less than 20 kg/sq.m (4 lbs/sq-ft).
7. At this time, there are no details regarding the proposed mechanical ventilation systems to be used at Buildings 1 and 2. A general review of the anticipated sound levels from the rooftop ventilation equipment and location did not result in noise impacts at any point of reception off-site. Prior to Site Plan Approval, the acoustic consultant should review the equipment selection and locations and confirm whether additional noise control measures are required to meet MECP's *NPC-300* criteria.
8. Interior amenity areas in Building 1 (west façade) will require 6mm double glazed windows rated at STC 34 to meet the interior sound levels. This is a standard commercial window.

9. A Detailed Noise Study will be required at Site Plan outlining the final recommendations (Barriers, Ventilation, Warning Clauses and Façade Components).

## APPENDIX A: FIGURES

Key Map

NTS.

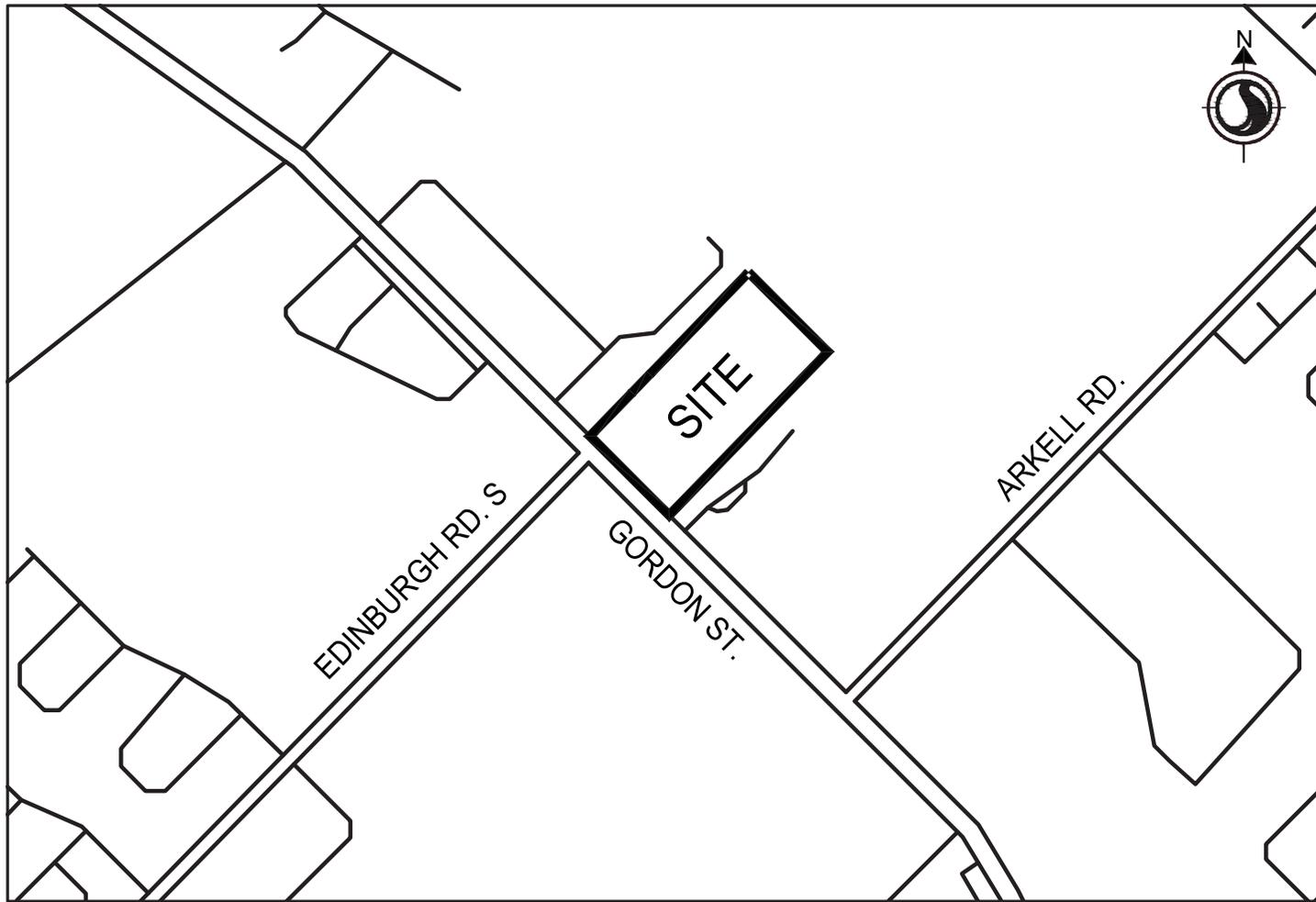
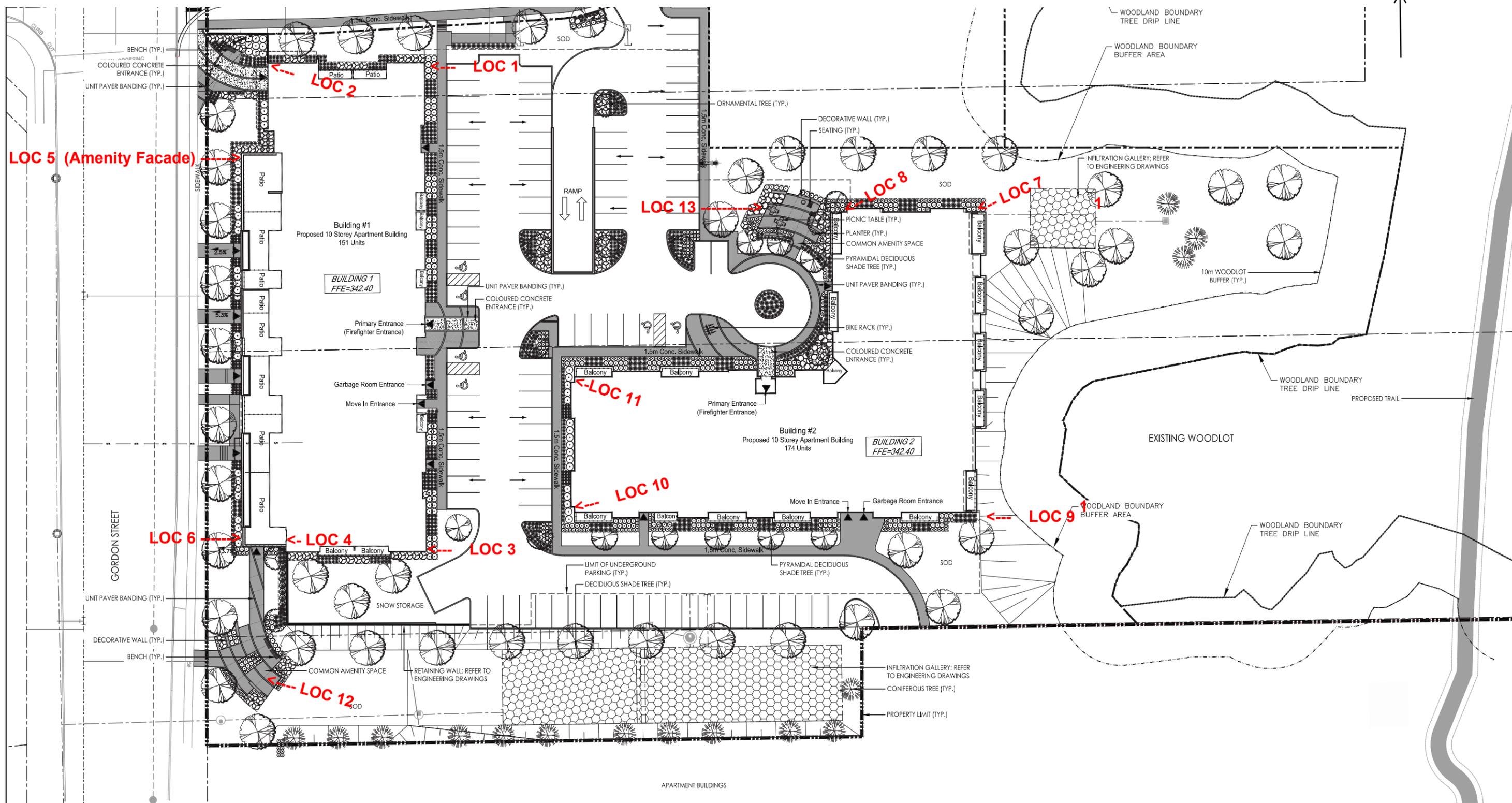


FIGURE 1

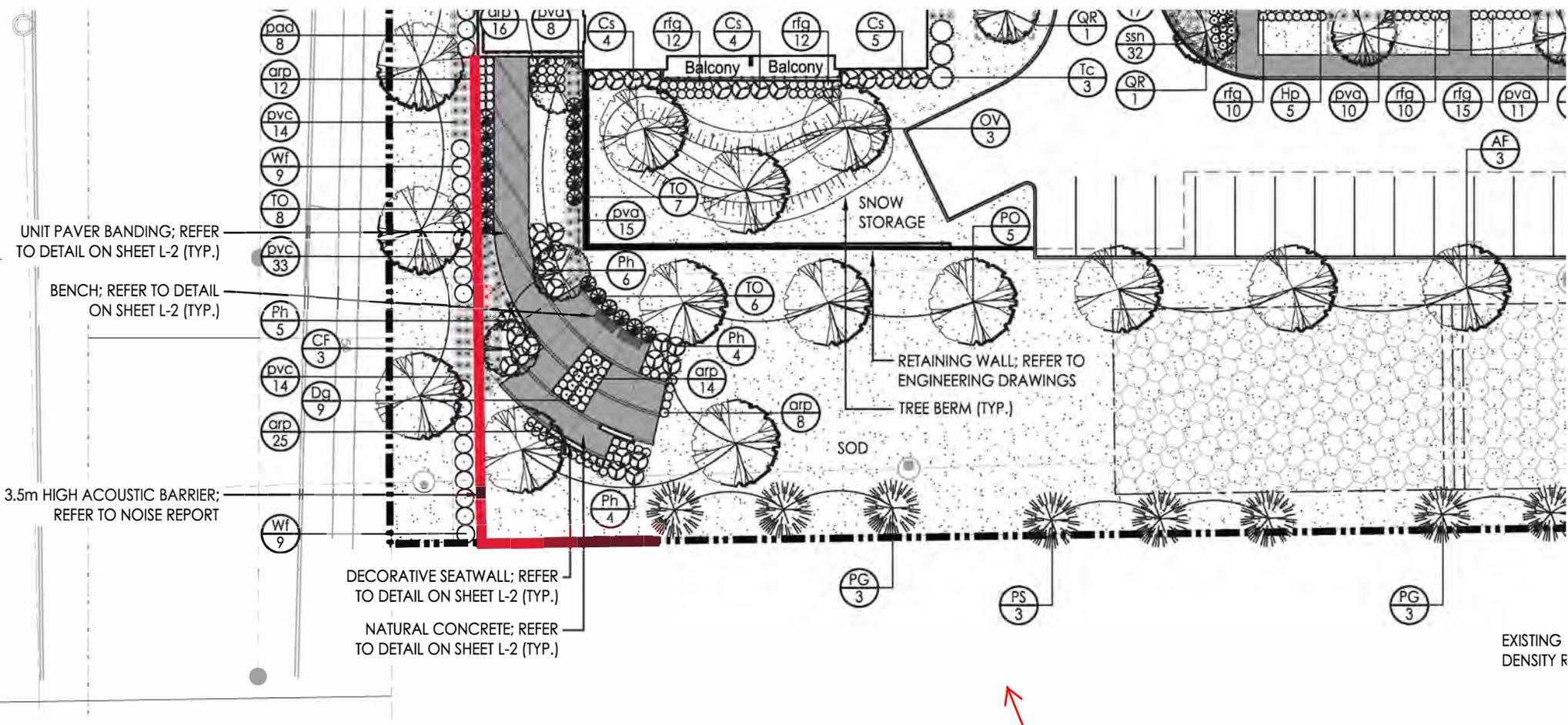




# RECEIVER LOCATIONS

FIGURE 3

6/13/24/urban\_landscape/urban\_landscape/plan/16/14/13/24/13/24.dwg



**NOISE CONTROL MEURES (COMMON OUTDOOR SPACE BUILDING 1)**

**FIGURE 4**



3.5m High Acoustic Barrier

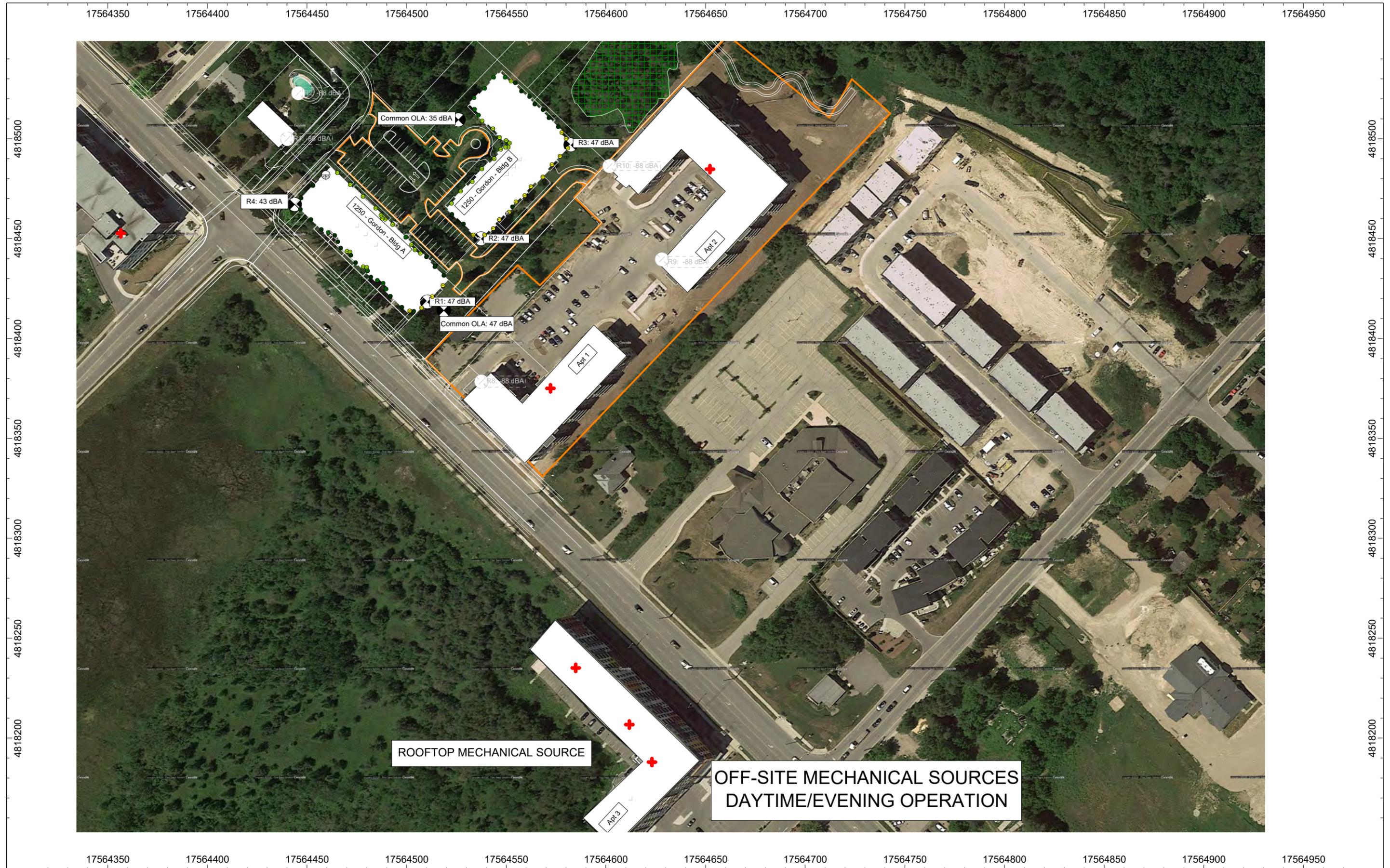
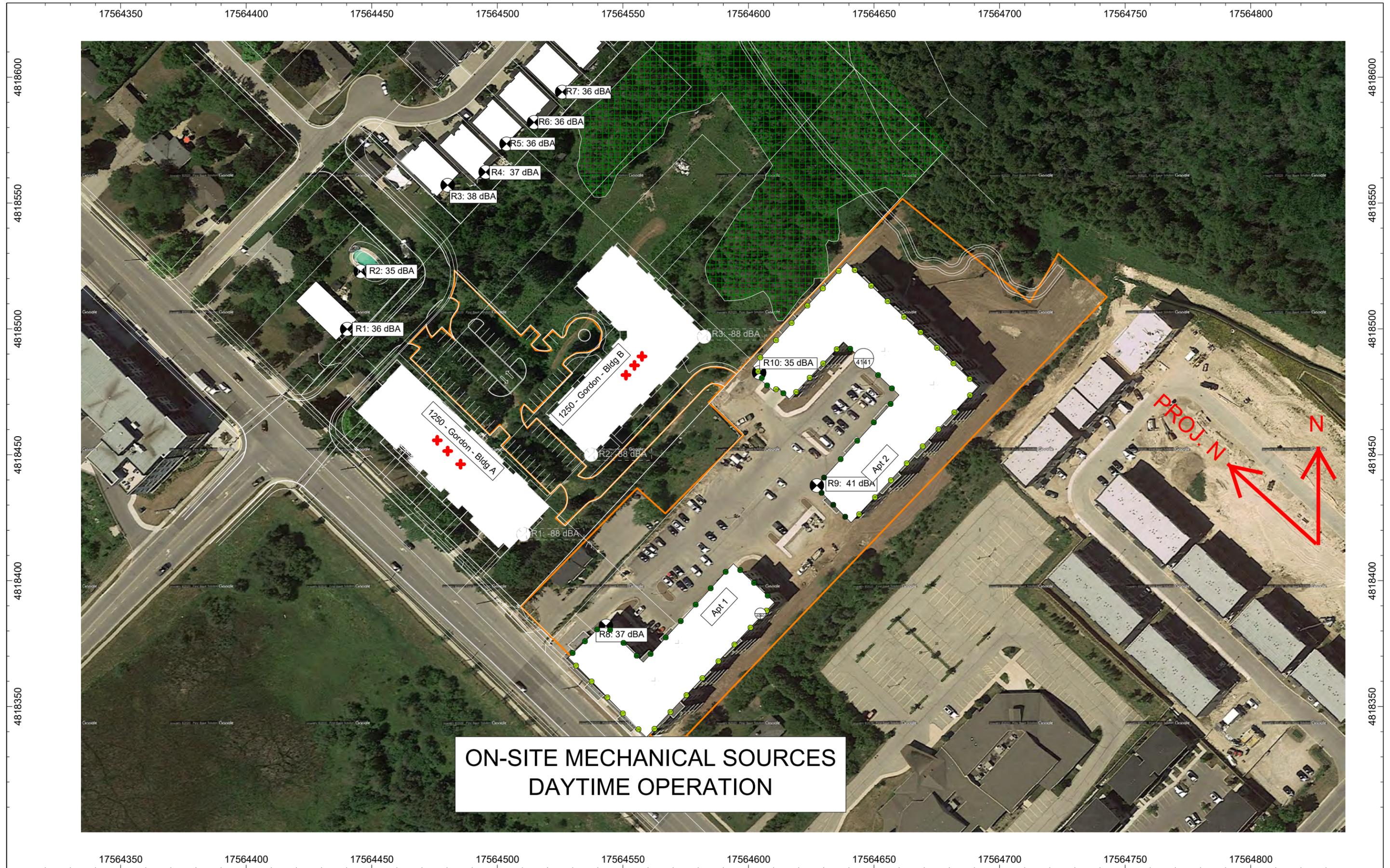


FIGURE 6



ON-SITE MECHANICAL SOURCES  
DAYTIME OPERATION

FIGURE 7

## APPENDIX B: SOUND LEVEL CALCULATIONS

Filename: a\_ne.te                    Time Period: Day/Night 16/8 hours  
Description: Bldg 1 - NE Facade (All Floors)

Road data, segment # 1: Gordon St (day/night)

-----  
Car traffic volume : 39841/2999    veh/TimePeriod    \*  
Medium truck volume : 1516/114    veh/TimePeriod    \*  
Heavy truck volume : 991/75        veh/TimePeriod    \*  
Posted speed limit : 60 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

\* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 33858  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 12.00  
Medium Truck % of Total Volume : 3.58  
Heavy Truck % of Total Volume : 2.34  
Day (16 hrs) % of Total Volume : 93.00

Data for Segment # 1: Gordon St (day/night)

-----  
Angle1    Angle2                    : 0.00 deg    90.00 deg  
Wood depth                    : 0            (No woods.)  
No of house rows              : 0 / 0  
Surface                        : 2            (Reflective ground surface)  
Receiver source distance : 53.00 / 53.00 m  
Receiver height                : 30.00 / 30.00 m  
Topography                    : 1            (Flat/gentle slope; no barrier)

Road data, segment # 2: Edinburgh (day/night)

-----  
Car traffic volume : 11436/861    veh/TimePeriod    \*  
Medium truck volume : 941/71        veh/TimePeriod    \*  
Heavy truck volume : 0/0            veh/TimePeriod    \*  
Posted speed limit : 50 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

\* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 9895  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 12.00  
Medium Truck % of Total Volume : 7.60  
Heavy Truck % of Total Volume : 0.00  
Day (16 hrs) % of Total Volume : 93.00

Data for Segment # 2: Edinburgh (day/night)

-----  
Angle1 Angle2 : -90.00 deg -69.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 2 (Reflective ground surface)  
Receiver source distance : 15.00 / 15.00 m  
Receiver height : 30.00 / 30.00 m  
Topography : 1 (Flat/gentle slope; no barrier)

Results segment # 1: Gordon St (day)

-----  
Source height = 1.24 m

ROAD (0.00 + 64.16 + 0.00) = 64.16 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	72.66	0.00	-5.48	-3.01	0.00	0.00	0.00	64.16

-----  
Segment Leq : 64.16 dBA

Results segment # 2: Edinburgh (day)

-----  
Source height = 0.50 m

ROAD (0.00 + 54.75 + 0.00) = 54.75 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-69	0.00	64.08	0.00	0.00	-9.33	0.00	0.00	0.00	54.75

-----  
Segment Leq : 54.75 dBA

Total Leq All Segments: 64.63 dBA

Results segment # 1: Gordon St (night)

-----  
Source height = 1.24 m

ROAD (0.00 + 55.95 + 0.00) = 55.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	64.44	0.00	-5.48	-3.01	0.00	0.00	0.00	55.95

-----  
Segment Leq : 55.95 dBA

Results segment # 2: Edinburgh (night)

-----  
Source height = 0.50 m

ROAD (0.00 + 46.53 + 0.00) = 46.53 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-69	0.00	55.86	0.00	0.00	-9.33	0.00	0.00	0.00	46.53

-----

Segment Leq : 46.53 dBA

Total Leq All Segments: 56.42 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.63  
(NIGHT): 56.42

Filename: a\_nw.te                    Time Period: Day/Night 16/8 hours  
Description: Bldg 1 - NW Facade (All Floors)

Road data, segment # 1: Gordon St (day/night)

-----  
Car traffic volume : 39805/2996    veh/TimePeriod    \*  
Medium truck volume : 1515/114    veh/TimePeriod    \*  
Heavy truck volume : 990/75        veh/TimePeriod    \*  
Posted speed limit : 60 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

\* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 33828  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 12.00  
Medium Truck % of Total Volume : 3.58  
Heavy Truck % of Total Volume : 2.34  
Day (16 hrs) % of Total Volume : 93.00

Data for Segment # 1: Gordon St (day/night)

-----  
Angle1    Angle2                    : -90.00 deg    90.00 deg  
Wood depth                    : 0            (No woods.)  
No of house rows               : 0 / 0  
Surface                        : 2            (Reflective ground surface)  
Receiver source distance : 26.10 / 26.10 m  
Receiver height               : 30.00 / 30.00 m  
Topography                    : 1            (Flat/gentle slope; no barrier)

Road data, segment # 2: Edinburgh (day/night)

-----  
Car traffic volume : 11436/861    veh/TimePeriod    \*  
Medium truck volume : 941/71        veh/TimePeriod    \*  
Heavy truck volume : 0/0            veh/TimePeriod    \*  
Posted speed limit : 50 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

\* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 9895  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 12.00  
Medium Truck % of Total Volume : 7.60  
Heavy Truck % of Total Volume : 0.00  
Day (16 hrs) % of Total Volume : 93.00

Data for Segment # 2: Edinburgh (day/night)

-----  
Angle1 Angle2 : -90.00 deg -60.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 2 (Reflective ground surface)  
Receiver source distance : 15.00 / 15.00 m  
Receiver height : 30.00 / 30.00 m  
Topography : 1 (Flat/gentle slope; no barrier)

Results segment # 1: Gordon St (day)

-----  
Source height = 1.24 m

ROAD (0.00 + 70.25 + 0.00) = 70.25 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	72.65	0.00	-2.41	0.00	0.00	0.00	0.00	70.25

-----  
Segment Leq : 70.25 dBA

Results segment # 2: Edinburgh (day)

-----  
Source height = 0.50 m

ROAD (0.00 + 56.30 + 0.00) = 56.30 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-60	0.00	64.08	0.00	0.00	-7.78	0.00	0.00	0.00	56.30

-----  
Segment Leq : 56.30 dBA

Total Leq All Segments: 70.42 dBA

Results segment # 1: Gordon St (night)

-----  
Source height = 1.24 m

ROAD (0.00 + 62.04 + 0.00) = 62.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	64.44	0.00	-2.41	0.00	0.00	0.00	0.00	62.04

-----  
Segment Leq : 62.04 dBA

Results segment # 2: Edinburgh (night)

-----  
Source height = 0.50 m

ROAD (0.00 + 48.08 + 0.00) = 48.08 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-60	0.00	55.86	0.00	0.00	-7.78	0.00	0.00	0.00	48.08

-----

Segment Leq : 48.08 dBA

Total Leq All Segments: 62.21 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.42  
(NIGHT): 62.21

Filename: a\_se.te                    Time Period: Day/Night 16/8 hours  
Description: Bldg 1 - SE Facade (All Floors)

Road data, segment # 1: Gordon St (day/night)

-----  
Car traffic volume    : 39841/2999    veh/TimePeriod    \*  
Medium truck volume  :  1516/114    veh/TimePeriod    \*  
Heavy truck volume   :    991/75    veh/TimePeriod    \*  
Posted speed limit   :     60 km/h  
Road gradient         :     0 %  
Road pavement        :     1 (Typical asphalt or concrete)

\* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 33858  
Percentage of Annual Growth         :  2.50  
Number of Years of Growth           : 12.00  
Medium Truck % of Total Volume      :  3.58  
Heavy Truck % of Total Volume       :  2.34  
Day (16 hrs) % of Total Volume      : 93.00

Data for Segment # 1: Gordon St (day/night)

-----  
Angle1    Angle2                   : -90.00 deg    0.00 deg  
Wood depth                         :     0        (No woods.)  
No of house rows                   :     0 / 0  
Surface                             :     2        (Reflective ground surface)  
Receiver source distance           :  53.00 / 53.00 m  
Receiver height                     :  30.00 / 30.00 m  
Topography                         :     1        (Flat/gentle slope; no barrier)

Results segment # 1: Gordon St (day)

-----  
Source height = 1.24 m

ROAD (0.00 + 64.16 + 0.00) = 64.16 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	72.66	0.00	-5.48	-3.01	0.00	0.00	0.00	64.16

-----  
Segment Leq : 64.16 dBA

Total Leq All Segments: 64.16 dBA

Results segment # 1: Gordon St (night)

-----  
Source height = 1.24 m

ROAD (0.00 + 55.95 + 0.00) = 55.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	64.44	0.00	-5.48	-3.01	0.00	0.00	0.00	55.95

-----

Segment Leq : 55.95 dBA

Total Leq All Segments: 55.95 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.16  
(NIGHT): 55.95

Filename: a\_sw.te                      Time Period: Day/Night 16/8 hours  
 Description: Bldg 1 - SW Facade (All Floors)

Road data, segment # 1: Gordon St (day/night)

```
-----
Car traffic volume : 39841/2999 veh/TimePeriod *
Medium truck volume : 1516/114 veh/TimePeriod *
Heavy truck volume : 991/75 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

\* Refers to calculated road volumes based on the following input:

```
24 hr Traffic Volume (AADT or SADT): 33858
Percentage of Annual Growth : 2.50
Number of Years of Growth : 12.00
Medium Truck % of Total Volume : 3.58
Heavy Truck % of Total Volume : 2.34
Day (16 hrs) % of Total Volume : 93.00
```

Data for Segment # 1: Gordon St (day/night)

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 26.40 / 26.40 m
Receiver height : 30.00 / 30.00 m
Topography : 1 (Flat/gentle slope; no barrier)
```

Results segment # 1: Gordon St (day)

Source height = 1.24 m

ROAD (0.00 + 70.20 + 0.00) = 70.20 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	72.66	0.00	-2.46	0.00	0.00	0.00	0.00	70.20

Segment Leq : 70.20 dBA

Total Leq All Segments: 70.20 dBA

Results segment # 1: Gordon St (night)

-----  
Source height = 1.24 m

ROAD (0.00 + 61.99 + 0.00) = 61.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	64.44	0.00	-2.46	0.00	0.00	0.00	0.00	61.99

-----  
Segment Leq : 61.99 dBA

Total Leq All Segments: 61.99 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.20  
(NIGHT): 61.99

Filename: b\_ne.te                    Time Period: Day/Night 16/8 hours  
 Description: Bldg 2 - NE Facade (All Floors)

Road data, segment # 1: Gordon St (day/night)

```
-----
Car traffic volume : 39841/2999 veh/TimePeriod *
Medium truck volume : 1516/114 veh/TimePeriod *
Heavy truck volume : 991/75 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

\* Refers to calculated road volumes based on the following input:

```
24 hr Traffic Volume (AADT or SADT): 33858
Percentage of Annual Growth : 2.50
Number of Years of Growth : 12.00
Medium Truck % of Total Volume : 3.58
Heavy Truck % of Total Volume : 2.34
Day (16 hrs) % of Total Volume : 93.00
```

Data for Segment # 1: Gordon St (day/night)

```
-----
Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 145.00 / 145.00 m
Receiver height : 30.00 / 30.00 m
Topography : 1 (Flat/gentle slope; no barrier)
```

Results segment # 1: Gordon St (day)

Source height = 1.24 m

ROAD (0.00 + 59.79 + 0.00) = 59.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	72.66	0.00	-9.85	-3.01	0.00	0.00	0.00	59.79

Segment Leq : 59.79 dBA

Total Leq All Segments: 59.79 dBA

Results segment # 1: Gordon St (night)

-----  
Source height = 1.24 m

ROAD (0.00 + 51.58 + 0.00) = 51.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	64.44	0.00	-9.85	-3.01	0.00	0.00	0.00	51.58

-----

Segment Leq : 51.58 dBA

Total Leq All Segments: 51.58 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.79  
(NIGHT): 51.58

Filename: b\_nw.te                    Time Period: Day/Night 16/8 hours  
Description: Bldg 2 - NW Facade (All Floors)

Road data, segment # 1: Gordon St (day/night)

-----  
Car traffic volume    : 39841/2999    veh/TimePeriod    \*  
Medium truck volume  : 1516/114     veh/TimePeriod    \*  
Heavy truck volume   : 991/75        veh/TimePeriod    \*  
Posted speed limit   : 60 km/h  
Road gradient         : 0 %  
Road pavement        : 1 (Typical asphalt or concrete)

\* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 33858  
Percentage of Annual Growth         : 2.50  
Number of Years of Growth           : 12.00  
Medium Truck % of Total Volume      : 3.58  
Heavy Truck % of Total Volume       : 2.34  
Day (16 hrs) % of Total Volume      : 93.00

Data for Segment # 1: Gordon St (day/night)

-----  
Angle1    Angle2                   : -90.00 deg    90.00 deg  
Wood depth                         : 0            (No woods.)  
No of house rows                   : 0 / 0  
Surface                             : 2            (Reflective ground surface)  
Receiver source distance            : 77.30 / 77.30 m  
Receiver height                     : 30.00 / 30.00 m  
Topography                         : 2            (Flat/gentle slope; with barrier)  
Barrier angle1                      : -45.00 deg    Angle2 : 65.00 deg  
Barrier height                      : 31.50 m  
Barrier receiver distance           : 38.50 / 38.50 m  
Source elevation                     : 0.00 m  
Receiver elevation                   : 0.00 m  
Barrier elevation                    : 0.00 m

Results segment # 1: Gordon St (day)

Source height = 1.24 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.24	30.00	15.67	15.67

ROAD (59.52 + 43.40 + 56.96) = 61.50 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-45	0.00	72.66	0.00	-7.12	-6.02	0.00	0.00	0.00	59.52
-45	65	0.00	72.66	0.00	-7.12	-2.14	0.00	0.00	-20.00	43.40
65	90	0.00	72.66	0.00	-7.12	-8.57	0.00	0.00	0.00	56.96

Segment Leq : 61.50 dBA

Total Leq All Segments: 61.50 dBA

Results segment # 1: Gordon St (night)

Source height = 1.24 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.24	30.00	15.68	15.68

ROAD (51.30 + 35.18 + 48.75) = 53.29 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-45	0.00	64.44	0.00	-7.12	-6.02	0.00	0.00	0.00	51.30
-45	65	0.00	64.44	0.00	-7.12	-2.14	0.00	0.00	-20.00	35.18
65	90	0.00	64.44	0.00	-7.12	-8.57	0.00	0.00	0.00	48.75

Segment Leq : 53.29 dBA

Total Leq All Segments: 53.29 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 61.50  
(NIGHT): 53.29

Filename: b\_se.te                    Time Period: Day/Night 16/8 hours  
 Description: Bldg 2 - SE Facade (All Floors)

Road data, segment # 1: Gordon St (day/night)

```
-----
Car traffic volume : 39841/2999 veh/TimePeriod *
Medium truck volume : 1516/114 veh/TimePeriod *
Heavy truck volume : 991/75 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

\* Refers to calculated road volumes based on the following input:

```
24 hr Traffic Volume (AADT or SADT): 33858
Percentage of Annual Growth : 2.50
Number of Years of Growth : 12.00
Medium Truck % of Total Volume : 3.58
Heavy Truck % of Total Volume : 2.34
Day (16 hrs) % of Total Volume : 93.00
```

Data for Segment # 1: Gordon St (day/night)

```
-----
Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 144.00 / 144.00 m
Receiver height : 30.00 / 30.00 m
Topography : 3 (Elevated; no barrier)
Elevation : 0.00 m
```

Results segment # 1: Gordon St (day)

Source height = 1.24 m

ROAD (0.00 + 59.82 + 0.00) = 59.82 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	72.66	0.00	-9.82	-3.01	0.00	0.00	0.00	59.82

Segment Leq : 59.82 dBA

Total Leq All Segments: 59.82 dBA

Results segment # 1: Gordon St (night)

-----  
Source height = 1.24 m

ROAD (0.00 + 51.61 + 0.00) = 51.61 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	64.44	0.00	-9.82	-3.01	0.00	0.00	0.00	51.61

-----

Segment Leq : 51.61 dBA

Total Leq All Segments: 51.61 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.82  
(NIGHT): 51.61

Filename: b\_nw2.te                    Time Period: Day/Night 16/8 hours  
Description: Bldg 2 - NW (North Leg) Facade (All Floors)

Road data, segment # 1: Gordon St (day/night)

-----  
Car traffic volume : 39841/2999 veh/TimePeriod \*  
Medium truck volume : 1516/114 veh/TimePeriod \*  
Heavy truck volume : 991/75 veh/TimePeriod \*  
Posted speed limit : 60 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

\* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 33858  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 12.00  
Medium Truck % of Total Volume : 3.58  
Heavy Truck % of Total Volume : 2.34  
Day (16 hrs) % of Total Volume : 93.00

Data for Segment # 1: Gordon St (day/night)

-----  
Angle1    Angle2                    : -90.00 deg    90.00 deg  
Wood depth                    :            0            (No woods.)  
No of house rows               :            0 / 0  
Surface                        :            2            (Reflective ground surface)  
Receiver source distance       : 123.00 / 123.00 m  
Receiver height                : 30.00 / 30.00 m  
Topography                    :            2            (Flat/gentle slope; with barrier)  
Barrier angle1                 : -39.00 deg    Angle2 : 20.00 deg  
Barrier height                 : 31.50 m  
Barrier receiver distance       : 82.00 / 82.00 m  
Source elevation               : 0.00 m  
Receiver elevation              : 0.00 m  
Barrier elevation               : 0.00 m

Results segment # 1: Gordon St (day)

Source height = 1.24 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.24	30.00	10.82	10.82

ROAD (58.04 + 38.67 + 59.42) = 61.82 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-39	0.00	72.66	0.00	-9.14	-5.48	0.00	0.00	0.00	58.04
-39	20	0.00	72.66	0.00	-9.14	-4.84	0.00	0.00	-20.00	38.67
20	90	0.00	72.66	0.00	-9.14	-4.10	0.00	0.00	0.00	59.42

Segment Leq : 61.82 dBA

Total Leq All Segments: 61.82 dBA

Results segment # 1: Gordon St (night)

Source height = 1.24 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.24	30.00	10.83	10.83

ROAD (49.83 + 30.46 + 51.20) = 53.60 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-39	0.00	64.44	0.00	-9.14	-5.48	0.00	0.00	0.00	49.83
-39	20	0.00	64.44	0.00	-9.14	-4.84	0.00	0.00	-20.00	30.46
20	90	0.00	64.44	0.00	-9.14	-4.10	0.00	0.00	0.00	51.20

Segment Leq : 53.60 dBA

Total Leq All Segments: 53.60 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 61.82  
(NIGHT): 53.60

Filename: b\_sw.te                    Time Period: Day/Night 16/8 hours  
Description: Bldg 2 - SW Facade (All Floors)

Road data, segment # 1: Gordon St (day/night)

-----  
Car traffic volume : 35419/2666 veh/TimePeriod \*  
Medium truck volume : 1348/101 veh/TimePeriod \*  
Heavy truck volume : 881/66 veh/TimePeriod \*  
Posted speed limit : 60 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

\* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 33858  
Percentage of Annual Growth : 1.50  
Number of Years of Growth : 12.00  
Medium Truck % of Total Volume : 3.58  
Heavy Truck % of Total Volume : 2.34  
Day (16 hrs) % of Total Volume : 93.00

Data for Segment # 1: Gordon St (day/night)

-----  
Angle1 Angle2 : -90.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 2 (Reflective ground surface)  
Receiver source distance : 77.30 / 77.30 m  
Receiver height : 30.00 / 30.00 m  
Topography : 2 (Flat/gentle slope; with barrier)  
Barrier angle1 : -10.00 deg Angle2 : 72.00 deg  
Barrier height : 31.50 m  
Barrier receiver distance : 38.50 / 38.50 m  
Source elevation : 0.00 m  
Receiver elevation : 0.00 m  
Barrier elevation : 0.00 m

Results segment # 1: Gordon St (day)

Source height = 1.24 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.24	30.00	15.67	15.67

ROAD (61.50 + 41.61 + 55.03) = 62.42 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-10	0.00	72.15	0.00	-7.12	-3.52	0.00	0.00	0.00	61.50
-10	72	0.00	72.15	0.00	-7.12	-3.41	0.00	0.00	-20.00	41.61
72	90	0.00	72.15	0.00	-7.12	-10.00	0.00	0.00	0.00	55.03

Segment Leq : 62.42 dBA

Total Leq All Segments: 62.42 dBA

Results segment # 1: Gordon St (night)

Source height = 1.24 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.24	30.00	15.67	15.67

ROAD (53.27 + 33.38 + 46.79) = 54.18 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-10	0.00	63.91	0.00	-7.12	-3.52	0.00	0.00	0.00	53.27
-10	72	0.00	63.91	0.00	-7.12	-3.41	0.00	0.00	-20.00	33.38
72	90	0.00	63.91	0.00	-7.12	-10.00	0.00	0.00	0.00	46.79

Segment Leq : 54.18 dBA

Total Leq All Segments: 54.18 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.42  
(NIGHT): 54.18

Filename: ola\_b1.te                    Time Period: Day/Night 16/8 hours  
Description: Bldg 1 - Common OLA - Sitting Area - No Barrier

Road data, segment # 1: Gordon St (day/night)

-----  
Car traffic volume : 39841/2999 veh/TimePeriod \*  
Medium truck volume : 1516/114 veh/TimePeriod \*  
Heavy truck volume : 991/75 veh/TimePeriod \*  
Posted speed limit : 60 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

\* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 33858  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 12.00  
Medium Truck % of Total Volume : 3.58  
Heavy Truck % of Total Volume : 2.34  
Day (16 hrs) % of Total Volume : 93.00

Data for Segment # 1: Gordon St (day/night)

-----  
Angle1 Angle2 : -90.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 2 (Reflective ground surface)  
Receiver source distance : 32.00 / 8.30 m  
Receiver height : 1.50 / 1.50 m  
Topography : 1 (Flat/gentle slope; no barrier)

Results segment # 1: Gordon St (day)

-----  
Source height = 1.24 m

ROAD (0.00 + 69.37 + 0.00) = 69.37 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	72.66	0.00	-3.29	0.00	0.00	0.00	0.00	69.37

-----  
Segment Leq : 69.37 dBA

Total Leq All Segments: 69.37 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 69.37

Filename: ola\_b1.te                    Time Period: Day/Night 16/8 hours  
Description: Bldg 1 - Common OLA - Sitting Area - 3.5m Barrier

Road data, segment # 1: Gordon St (day/night)

-----  
Car traffic volume    : 39841/2999    veh/TimePeriod    \*  
Medium truck volume  :  1516/114     veh/TimePeriod    \*  
Heavy truck volume   :    991/75     veh/TimePeriod    \*  
Posted speed limit   :     60 km/h  
Road gradient         :     0 %  
Road pavement        :     1 (Typical asphalt or concrete)

\* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 33858  
Percentage of Annual Growth         :  2.50  
Number of Years of Growth           : 12.00  
Medium Truck % of Total Volume       :  3.58  
Heavy Truck % of Total Volume        :  2.34  
Day (16 hrs) % of Total Volume       : 93.00

Data for Segment # 1: Gordon St (day/night)

-----  
Angle1    Angle2                   : -90.00 deg    90.00 deg  
Wood depth                         :     0        (No woods.)  
No of house rows                   :     0 / 0  
Surface                             :     2        (Reflective ground surface)  
Receiver source distance           :  32.00 / 8.30    m  
Receiver height                     :    1.50 / 1.50    m  
Topography                         :     2        (Flat/gentle slope; with barrier)  
Barrier angle1                      : -90.00 deg    Angle2 : 90.00 deg  
Barrier height                      :    3.50 m  
Barrier receiver distance           :  10.00 / 10.00    m  
Source elevation                    : 336.00 m  
Receiver elevation                   : 337.00 m  
Barrier elevation                    : 336.60 m

Results segment # 1: Gordon St (day)

-----  
Source height = 1.24 m

Barrier height for grazing incidence

-----  
Source ! Receiver ! Barrier ! Elevation of  
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)  
-----+-----+-----+-----  
1.24 ! 1.50 ! 1.51 ! 338.11

ROAD (0.00 + 59.56 + 0.00) = 59.56 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq  
-----  
-90 90 0.00 72.66 0.00 -3.29 0.00 0.00 0.00 -9.81 59.56  
-----

Segment Leq : 59.56 dBA

Total Leq All Segments: 59.56 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.56

Filename: ola\_b2.te                    Time Period: Day/Night 16/8 hours  
Description: Bldg 2 - Common OLA - No Barrier

Road data, segment # 1: Gordon St (day/night)

-----  
Car traffic volume : 39841/2999 veh/TimePeriod \*  
Medium truck volume : 1516/114 veh/TimePeriod \*  
Heavy truck volume : 991/75 veh/TimePeriod \*  
Posted speed limit : 60 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

\* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 33858  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 12.00  
Medium Truck % of Total Volume : 3.58  
Heavy Truck % of Total Volume : 2.34  
Day (16 hrs) % of Total Volume : 93.00

Data for Segment # 1: Gordon St (day/night)

-----  
Angle1 Angle2 : -40.00 deg 25.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 2 (Reflective ground surface)  
Receiver source distance : 111.00 / 111.00 m  
Receiver height : 1.50 / 1.50 m  
Topography : 2 (Flat/gentle slope; with barrier)  
Barrier angle1 : -40.00 deg Angle2 : 25.00 deg  
Barrier height : 31.50 m  
Barrier receiver distance : 71.00 / 71.00 m  
Source elevation : 0.00 m  
Receiver elevation : 0.00 m  
Barrier elevation : 0.00 m

Road data, segment # 2: Gordon St (day/night)

-----  
Car traffic volume : 39841/2999 veh/TimePeriod \*  
Medium truck volume : 1516/114 veh/TimePeriod \*  
Heavy truck volume : 991/75 veh/TimePeriod \*  
Posted speed limit : 60 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

\* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 33858  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 12.00  
Medium Truck % of Total Volume : 3.58  
Heavy Truck % of Total Volume : 2.34  
Day (16 hrs) % of Total Volume : 93.00

Data for Segment # 2: Gordon St (day/night)

```

-----
Angle1   Angle2           : 25.00 deg  90.00 deg
Wood depth      :          0      (No woods.)
No of house rows :          1 / 1
House density   :          80 %
Surface        :          2      (Reflective ground surface)
Receiver source distance : 111.00 / 111.00 m
Receiver height :          1.50 / 1.50 m
Topography     :          1      (Flat/gentle slope; no barrier)

```

Results segment # 1: Gordon St (day)

Source height = 1.24 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.24 !          1.50 !          1.33 !          1.33

```

ROAD (0.00 + 39.54 + 0.00) = 39.54 dBA

```

-----
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----
   -40    25   0.00  72.66   0.00  -8.69  -4.42   0.00   0.00 -20.00  39.54
-----

```

Segment Leq : 39.54 dBA

Results segment # 2: Gordon St (day)

Source height = 1.24 m

ROAD (0.00 + 53.90 + 0.00) = 53.90 dBA

```

-----
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----
    25    90   0.00  72.66   0.00  -8.69  -4.42   0.00  -5.64   0.00  53.90
-----

```

Segment Leq : 53.90 dBA

Total Leq All Segments: 54.06 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.06

NATIONAL RESEARCH COUNCIL BPN-56 INTERNAL SOUND LEVEL CALCULATIONS

**Building 1 - Internal Amenity Area (Small room)**

RESULT SUMMARY

Outside sound level is 74 db(A) from angle 0 to 90 degrees  
 Room absorption category is intermediate

		STC	From Table 4 (% floor area)	From Table 5 (spectrum)	Energy %
COMPONENTS:					
1. Window, sealed	thin doub	34	-4dB ( 30%)	+4dB	95%
2. Exterior wall		53	-1dB ( 64%)	+7dB	5%

Noise reduction (adjusted 0db for source angle) is 34dB  
 Indoor sound level is 40 dB(A) if only this surface transmits sound

**Building 1 - Internal Amenity Area (Large room)**

RESULT SUMMARY

Outside sound level is 74 db(A) from angle 0 to 90 degrees  
 Room absorption category is intermediate

		STC	From Table 4 (% floor area)	From Table 5 (spectrum)	Energy %
COMPONENTS:					
1. Window, sealed	thin doub	34	-8dB ( 13%)	+4dB	90%
2. Exterior wall		53	-2dB ( 55%)	+7dB	10%

Noise reduction (adjusted 0db for source angle) is 38dB  
 Indoor sound level is 37 dB(A) if only this surface transmits sound

Building 1 - Livingrooms - West Façade (All Floors) w/sliding doors

RESULT SUMMARY

Outside sound level is 74 db(A) from angle 0 to 90 degrees

Room absorption category is intermediate

	STC	From Table 4 (% floor area)	From Table 5 (spectrum)	Energy %
-----				
COMPONENTS:				
1. Sliding Door	doub 32	-3dB ( 42%)	+2dB	37%
2. Window, sealed thin	doub 34	-1dB ( 70%)	+4dB	62%
3. Exterior wall	55	-6dB ( 20%)	+7dB	0%

Noise reduction (adjusted 0db for source angle) is 29dB

Indoor sound level is 45 dB(A) if only this surface transmits sound

Building 1 - Bedrooms - West Façade (All Floors)

RESULT SUMMARY

Outside sound level is 65 db(A) from angle 0 to 90 degrees

Room absorption category is high absorption

	STC	From Table 4 (% floor area)	From Table 5 (spectrum)	Energy %
-----				
COMPONENTS:				
1. Window, openable thin	doub 31	-11dB ( 10%)	+2dB	9%
2. Window, sealed thin	doub 34	+0dB (125%)	+4dB	91%

Noise reduction (adjusted 0db for source angle) is 30dB

Indoor sound level is 35 dB(A) if only this surface transmits sound

## TRAFFIC DATA

**HOURLY BREAKDOWN - CARS, MEDIUM, HEAVY TRUCKS**

Project: **TriGor - Gordon St**  
 Date: **May 30 2019**

Time	Cars Trailer Cars	2 Axle Long Cars	Buses Med	2 Axle 6 Tire Med	3 Axle Single Med	4 Axle Single Med	<5 Axle Doubl Hvy	5 Axle Doubl Hvy	>6 / Dc
12:00 AM	60	5	6	0	0	0	0	0	
12:15	62	0	5	1	0	0	0	0	
12:30	39	2	4	2	0	0	0	0	
12:45	27	0	0	0	0	0	0	0	
1:00	36	1	1	0	0	0	0	0	
1:15	20	3	2	0	0	0	0	0	
1:30	17	2	1	0	0	0	0	0	
1:45	12	1	1	0	0	0	0	0	
2:00	20	2	0	0	0	0	0	0	
2:15	21	1	0	0	0	0	0	0	
2:30	9	1	0	0	0	0	0	0	
2:45	10	3	0	0	0	0	0	0	
3:00	10	2	0	0	0	0	0	0	
3:15	9	0	0	1	0	0	0	0	
3:30	7	1	0	0	0	0	1	0	
3:45	13	2	0	0	0	0	0	0	
4:00	17	2	0	0	0	0	0	0	
4:15	18	0	2	0	0	0	0	0	
4:30	21	4	0	2	0	0	0	0	
4:45	32	2	1	0	0	0	0	0	
5:00	39	9	2	0	0	0	0	0	
5:15	46	8	1	0	0	0	0	0	
5:30	78	11	3	4	0	0	0	0	
5:45	89	21	4	1	1	1	0	1	
6:00	126	16	6	1	0	2	0	0	
6:15	127	27	5	2	0	1	1	0	
6:30	180	36	6	1	1	2	0	0	
6:45	199	25	3	2	1	0	0	0	
7:00	189	35	5	2	0	3	1	1	
7:15	261	38	8	7	1	0	4	1	
7:30	350	46	6	8	3	3	4	0	
7:45	399	37	8	5	4	3	4	0	
8:00	372	41	9	9	0	5	5	0	
8:15	391	58	8	5	2	8	3	0	
8:30	494	49	18	7	1	3	4	1	
8:45	480	51	5	6	5	10	2	0	
9:00	405	42	6	11	3	0	4	1	

12:30	407	51	5	9	1	4	7	1
12:45	414	55	3	8	1	4	1	0
1:00	413	62	5	8	1	4	4	0
1:15	371	52	6	8	1	5	5	0
1:30	401	46	5	10	2	7	2	3
1:45	367	49	4	10	0	7	3	0
2:00	423	48	6	6	2	2	4	0
2:15	402	45	4	12	0	1	6	1
2:30	427	57	6	8	1	6	3	0
2:45	422	50	4	11	1	3	0	2
3:00	445	67	7	12	0	5	4	0
3:15	448	47	11	5	0	2	4	0
3:30	449	64	8	11	1	7	5	0
3:45	497	54	10	9	1	9	10	0
4:00	513	43	7	9	1	10	3	0
4:15	498	52	4	10	1	4	4	0
4:30	567	67	0	4	2	4	5	1
4:45	607	60	2	6	0	4	3	0
5:00	606	50	2	9	0	11	7	0
5:15	634	68	4	4	1	3	5	0
5:30	590	54	1	7	1	7	7	0
5:45	592	61	4	2	1	1	8	0
6:00	547	58	4	4	1	5	3	0
6:15	499	50	2	3	3	4	2	0
6:30	500	39	4	4	2	7	3	1
6:45	486	48	4	3	0	6	5	0
7:00	419	50	3	4	1	4	1	0
7:15	423	41	4	6	0	1	2	0
7:30	378	39	3	2	0	2	2	0
7:45	368	41	2	5	0	3	2	0
8:00	403	31	4	2	0	3	0	0
8:15	366	43	4	7	0	4	3	0
8:30	328	31	3	2	0	4	3	0
8:45	360	31	4	2	0	3	0	0
9:00	282	25	4	3	0	5	3	0
9:15	270	30	4	4	1	2	1	0
9:30	266	19	4	1	0	1	0	0
9:45	203	18	3	0	0	0	0	0
10:00	194	9	3	1	0	1	1	0
10:15	149	15	4	1	0	1	0	0
10:30	146	11	6	0	1	3	0	1
10:45	119	8	4	0	0	0	0	0
11:00	113	10	5	0	0	0	1	0
11:15	128	8	4	1	0	1	0	0
11:30	93	5	1	1	0	0	0	1
11:45	170	11	3	1	0	2	0	0

**HOURLY BREAKDOWN - CARS, MEDIUM, HEAVY TRUCKS**

Project: **TriGor - Gordon St**  
 Date: **May 29, 2019**

Time	Cars Trailer Cars	2 Axle Long Cars	Buses Med	2 Axle 6 Tire Med	3 Axle Single Med	4 Axle Single Med	<5 Axle Doubl Hvy	5 Axle Doubl Hvy	>6 Axle Doubl Hvy	>6 Axl Multi Hvy	6 Axle Multi Hvy	>t
12:00 AM	65	6	6	1	0	0	0	0	0	0	0	
12:15	52	3	5	0	0	0	0	0	0	0	0	
12:30	42	4	4	1	0	0	0	0	0	0	0	
12:45	36	3	1	1	0	0	0	0	0	0	0	
1:00	37	1	0	1	1	1	0	0	0	0	0	
1:15	25	2	2	0	0	0	0	0	0	0	0	
1:30	24	1	1	0	0	0	0	0	0	0	0	
1:45	13	1	1	0	0	0	0	0	0	0	0	
2:00	11	1	0	0	0	0	0	0	0	0	0	
2:15	21	4	0	0	0	0	0	0	0	0	0	
2:30	12	3	0	0	0	0	0	0	0	0	0	
2:45	17	4	0	0	0	0	0	0	0	0	0	
3:00	8	1	0	0	0	0	0	0	0	0	0	
3:15	5	1	0	0	0	0	0	0	0	0	0	
3:30	10	0	0	0	0	0	0	0	0	0	0	
3:45	9	5	0	0	0	0	0	0	0	0	0	
4:00	17	2	1	1	0	0	0	0	0	0	0	
4:15	19	3	1	0	0	0	0	0	0	0	0	
4:30	21	3	0	0	0	0	0	0	0	0	0	
4:45	23	6	2	1	0	0	0	0	0	0	0	
5:00	42	5	2	0	0	0	0	0	0	0	0	
5:15	51	9	2	0	0	0	0	0	0	0	0	
5:30	75	15	3	2	0	0	0	0	0	0	0	
5:45	95	17	3	2	0	2	0	0	0	0	0	
6:00	120	29	4	3	1	0	0	0	0	0	0	
6:15	130	25	5	3	0	0	1	0	0	0	0	
6:30	189	42	7	2	0	1	1	0	0	0	0	
6:45	212	22	4	8	1	2	0	0	0	0	0	
7:00	203	29	5	6	1	0	0	1	0	0	0	
7:15	257	43	8	14	1	0	2	0	0	0	0	
7:30	310	36	6	9	2	2	1	0	0	1	0	
7:45	377	36	7	13	3	4	5	3	0	0	0	
8:00	415	47	7	6	1	6	4	0	0	0	0	
8:15	426	38	8	11	1	5	7	1	0	0	0	
8:30	474	54	16	6	3	5	4	0	0	0	0	
8:45	508	43	4	5	2	11	7	0	0	0	0	
9:00	376	40	9	14	3	5	4	1	0	0	0	
9:15	349	43	4	4	5	1	6	0	0	0	0	
9:30	334	49	4	9	2	4	1	0	0	0	0	
9:45	303	42	4	11	2	4	3	1	0	0	0	
10:00	286	44	4	15	3	5	1	0	0	0	0	
10:15	308	39	4	14	2	3	2	0	1	0	0	
10:30	343	40	6	13	0	4	2	2	0	0	0	
10:45	303	41	3	11	3	2	4	0	0	0	0	
11:00	341	35	6	6	1	2	3	1	0	0	0	
11:15	315	48	6	8	3	3	3	2	0	0	0	
11:30	384	48	5	4	1	2	4	0	1	0	0	
11:45	410	52	5	2	2	2	2	0	0	0	0	

4:00	518	50	2	12	5	8	3	0	1	0	0
4:15	495	55	5	3	3	11	9	0	0	0	0
4:30	591	57	3	7	1	4	3	1	0	0	0
4:45	623	52	4	7	1	4	3	0	0	0	0
5:00	661	39	6	7	3	5	1	0	0	0	0
5:15	588	51	2	8	2	5	2	0	0	0	0
5:30	535	41	4	3	2	11	5	0	0	0	0
5:45	558	41	2	7	0	4	3	2	0	0	0
6:00	573	47	3	1	0	2	1	0	0	0	0
6:15	520	45	5	6	2	6	5	1	0	0	0
6:30	464	50	3	5	1	8	1	0	0	0	0
6:45	378	39	4	6	0	4	3	0	0	0	0
7:00	374	44	4	2	2	5	2	0	0	0	0
7:15	384	33	6	2	2	3	3	1	0	0	0
7:30	389	40	1	1	0	5	2	0	0	0	0
7:45	408	44	6	2	2	3	3	0	0	0	0
8:00	354	27	3	1	0	4	3	0	0	0	0
8:15	362	19	3	3	0	4	1	0	0	0	0
8:30	324	25	4	4	0	0	2	0	0	0	0
8:45	328	18	4	4	0	0	1	0	0	0	0
9:00	265	20	6	0	0	2	1	0	0	0	0
9:15	263	16	4	1	0	0	0	0	0	0	0
9:30	202	11	3	1	0	2	1	0	0	0	0
9:45	192	10	6	0	0	2	0	1	0	0	0
10:00	162	9	4	3	0	0	2	0	0	0	0
10:15	152	11	5	1	0	2	3	0	0	0	0
10:30	112	6	4	1	0	0	0	1	0	0	0
10:45	115	13	5	1	0	0	0	0	0	0	0
11:00	118	6	4	0	0	0	0	0	0	0	0
11:15	92	5	5	1	0	0	0	1	0	0	0
11:30	78	2	2	1	0	0	0	0	0	0	0
11:45	170	11	3	1	0	2	0	0	0	0	0

Total	26,194	2,760	401	457	95	251	177	34	5	1	0
Percent	84.79%	8.93%	1.30%	1.48%	0.31%	0.81%	0.57%	0.11%	0.02%	0.00%	0.00%

Cars	93.72%
MT	3.90%
HT	2.38%

Average (May 29, 30):

Average MT:	3.58%
Average HT:	2.34%

Avg AADT:	31,468
Additional Dev:	2,390
Total AADT	33,858

**OFF-SITE SOUND LEVELS FROM ON-SITE ROOFTOP HVAC – DAY & NIGHT**

Receiver

Name: R1  
 ID: R1  
 X: 17564440.21 m  
 Y: 4818499.86 m  
 Z: 4.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
1	17564476.06	4818455.75	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	47.4	0.1	0.0	0.0	0.0	19.2	0.0	0.0	20.3

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
2	17564480.26	4818451.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	48.0	0.1	0.0	0.0	0.0	19.3	0.0	0.0	19.6

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
4	17564485.40	4818446.23	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	48.8	0.1	0.0	0.0	0.0	19.3	0.0	0.0	18.8

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
6	17564551.22	4818481.61	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.4	0.2	-1.6	0.0	0.0	8.3	0.0	0.0	27.7

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
8	17564554.62	4818485.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.6	0.2	-1.6	0.0	0.0	8.1	0.0	0.0	27.7

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
17	17564557.63	4818489.05	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.8	0.2	-1.6	0.0	0.0	7.1	0.0	0.0	28.5

Receiver

Name: R2  
 ID: R2  
 X: 17564445.64 m  
 Y: 4818522.78 m  
 Z: 1.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
3	17564476.06	4818455.75	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	49.3	0.2	3.8	0.0	0.0	15.5	0.0	0.0	18.3

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
5	17564480.26	4818451.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	49.8	0.2	4.0	0.0	0.0	15.4	0.0	0.0	17.7

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
26	17564485.40	4818446.23	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	50.4	0.2	4.1	0.0	0.0	15.2	0.0	0.0	17.1

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
29	17564551.22	4818481.61	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.5	0.2	3.4	0.0	0.0	4.9	0.0	0.0	25.9

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
31	17564554.62	4818485.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.6	0.2	3.4	0.0	0.0	4.0	0.0	0.0	26.7

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
53	17564557.63	4818489.05	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.8	0.2	3.3	0.0	0.0	4.3	0.0	0.0	26.4

Receiver

Name: R3  
 ID: R3  
 X: 17564480.24 m  
 Y: 4818557.05 m  
 Z: 4.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
16	17564476.06	4818455.75	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.6	0.2	-0.7	0.0	0.0	10.6	0.0	0.0	25.3

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
22	17564557.63	4818489.05	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.7	0.2	0.0	0.0	0.0	6.1	0.0	0.0	29.0

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
25	17564554.62	4818485.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.7	0.2	-0.3	0.0	0.0	7.7	0.0	0.0	27.6

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
28	17564551.22	4818481.61	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.7	0.2	-0.4	0.0	0.0	7.2	0.0	0.0	28.3

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
40	17564480.26	4818451.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.9	0.2	-0.7	0.0	0.0	10.6	0.0	0.0	25.0

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
49	17564485.40	4818446.23	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.3	0.2	-1.0	0.0	0.0	10.6	0.0	0.0	24.9

Receiver

Name: R4  
 ID: R4  
 X: 17564495.38 m  
 Y: 4818562.27 m  
 Z: 4.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
7	17564557.63	4818489.05	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.2	0.2	0.0	0.0	0.0	18.0	0.0	0.0	17.6

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
10	17564554.62	4818485.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.2	0.2	0.0	0.0	0.0	8.5	0.0	0.0	27.0

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
13	17564551.22	4818481.61	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.3	0.2	-0.3	0.0	0.0	7.9	0.0	0.0	27.9

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
20	17564476.06	4818455.75	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.1	0.2	-1.2	0.0	0.0	9.0	0.0	0.0	26.9

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
32	17564480.26	4818451.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.3	0.2	-1.2	0.0	0.0	9.1	0.0	0.0	26.6

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
35	17564485.40	4818446.23	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.7	0.2	-1.2	0.0	0.0	9.1	0.0	0.0	26.2

Receiver

Name: R5  
 ID: R5  
 X: 17564503.71 m  
 Y: 4818573.52 m  
 Z: 4.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
9	17564557.63	4818489.05	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.5	0.2	0.0	0.0	0.0	17.4	0.0	0.0	17.9

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
14	17564554.62	4818485.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.6	0.2	0.0	0.0	0.0	17.4	0.0	0.0	17.8

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
18	17564551.22	4818481.61	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.7	0.2	0.0	0.0	0.0	17.2	0.0	0.0	17.9

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
52	17564476.06	4818455.75	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	53.0	0.2	-1.1	0.0	0.0	7.5	0.0	0.0	27.3

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
54	17564480.26	4818451.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	53.2	0.2	-1.1	0.0	0.0	7.6	0.0	0.0	27.0

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
56	17564485.40	4818446.23	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	53.5	0.3	-1.1	0.0	0.0	6.8	0.0	0.0	27.5

Receiver

Name: R6  
 ID: R6  
 X: 17564514.63 m  
 Y: 4818582.05 m  
 Z: 4.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
11	17564557.63	4818489.05	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.7	0.2	0.0	0.0	0.0	17.3	0.0	0.0	17.8

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
15	17564554.62	4818485.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.8	0.2	0.0	0.0	0.0	17.0	0.0	0.0	18.0

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
24	17564551.22	4818481.61	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.0	0.2	0.0	0.0	0.0	17.0	0.0	0.0	17.8

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
36	17564476.06	4818455.75	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	53.7	0.3	-0.9	0.0	0.0	6.4	0.0	0.0	27.6

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
39	17564480.26	4818451.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	53.9	0.3	-0.9	0.0	0.0	6.5	0.0	0.0	27.3

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
41	17564485.40	4818446.23	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	54.1	0.3	-1.0	0.0	0.0	5.9	0.0	0.0	27.6

Receiver

Name: R7  
 ID: R7  
 X: 17564525.85 m  
 Y: 4818594.11 m  
 Z: 4.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
12	17564557.63	4818489.05	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.2	0.2	0.0	0.0	0.0	17.1	0.0	0.0	17.5

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
38	17564554.62	4818485.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.4	0.2	0.0	0.0	0.0	17.2	0.0	0.0	17.2

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
42	17564551.22	4818481.61	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	52.6	0.2	0.0	0.0	0.0	17.0	0.0	0.0	17.2

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
44	17564476.06	4818455.75	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	54.6	0.3	-0.9	0.0	0.0	5.4	0.0	0.0	27.6

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
46	17564480.26	4818451.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	54.7	0.3	-0.9	0.0	0.0	5.6	0.0	0.0	27.2

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
48	17564485.40	4818446.23	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	54.9	0.3	-0.9	0.0	0.0	5.3	0.0	0.0	27.4

ON-SITE ROOFTOP HVAC MECHANICAL SYSTEMS - NIGHTTIME

Receiver

Name: R8  
 ID: R8  
 X: 17564543.27 m  
 Y: 4818381.98 m  
 Z: 13.50 m

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
19	17564485.40	4818446.23	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	50.1	0.2	-1.0	0.0	0.0	16.2	0.0	0.0	21.6

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
21	17564480.26	4818451.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	50.7	0.2	-0.9	0.0	0.0	16.7	0.0	0.0	20.3

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
23	17564476.06	4818455.75	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.2	0.2	-0.9	0.0	0.0	17.1	0.0	0.0	19.4

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
34	17564551.22	4818481.61	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.2	0.2	-1.7	0.0	0.0	9.1	0.0	0.0	28.2

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
37	17564554.62	4818485.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.6	0.2	-1.7	0.0	0.0	9.0	0.0	0.0	27.9

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
47	17564557.63	4818489.05	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	51.9	0.2	-1.7	0.0	0.0	8.4	0.0	0.0	28.2

Receiver

Name: R9  
 ID: R9  
 X: 17564627.24 m  
 Y: 4818437.79 m  
 Z: 13.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
27	17564557.63	4818489.05	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	50.1	0.2	-1.9	0.0	0.0	7.7	0.0	0.0	30.9

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
30	17564554.62	4818485.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	50.1	0.2	-1.5	0.0	0.0	7.5	0.0	0.0	30.7

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
33	17564551.22	4818481.61	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	50.2	0.2	-1.5	0.0	0.0	6.8	0.0	0.0	31.3

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
43	17564485.40	4818446.23	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	54.2	0.3	-1.7	0.0	0.0	5.1	0.0	0.0	29.1

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
45	17564480.26	4818451.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	54.5	0.3	-1.7	0.0	0.0	5.5	0.0	0.0	28.3

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
51	17564476.06	4818455.75	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	54.8	0.3	-1.6	0.0	0.0	5.5	0.0	0.0	28.1

Receiver

Name: R10  
 ID: R10  
 X: 17564604.27 m  
 Y: 4818482.64 m  
 Z: 13.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
50	17564557.63	4818489.05	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	45.5	0.1	-0.5	0.0	0.0	15.5	0.0	0.0	26.4

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
55	17564554.62	4818485.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	45.9	0.1	-1.2	0.0	0.0	15.5	0.0	0.0	26.8

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
57	17564551.22	4818481.61	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	46.3	0.1	-1.4	0.0	0.0	15.5	0.0	0.0	26.5

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
58	17564485.40	4818446.23	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	53.1	0.2	-1.2	0.0	0.0	17.3	0.0	0.0	17.6

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
59	17564480.26	4818451.47	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	53.3	0.3	-1.1	0.0	0.0	18.5	0.0	0.0	16.1

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
60	17564476.06	4818455.75	38.00	0	N	500	87.0	0.0	0.0	0.0	0.0	53.5	0.3	-1.1	0.0	0.0	18.9	0.0	0.0	15.4

Receiver

Name: R1  
 ID: R1  
 X: 17564440.21 m  
 Y: 4818499.86 m  
 Z: 4.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
1	17564476.06	4818455.75	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	47.4	0.1	0.0	0.0	0.0	19.2	0.0	0.0	23.3

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
2	17564480.26	4818451.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	48.0	0.1	0.0	0.0	0.0	19.3	0.0	0.0	22.6

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
4	17564485.40	4818446.23	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	48.8	0.1	0.0	0.0	0.0	19.3	0.0	0.0	21.8

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
6	17564551.22	4818481.61	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.4	0.2	-1.6	0.0	0.0	8.3	0.0	0.0	30.7

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
8	17564554.62	4818485.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.6	0.2	-1.6	0.0	0.0	8.1	0.0	0.0	30.7

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
17	17564557.63	4818489.05	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.8	0.2	-1.6	0.0	0.0	7.1	0.0	0.0	31.5

Receiver

Name: R2  
 ID: R2  
 X: 17564445.64 m  
 Y: 4818522.78 m  
 Z: 1.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
3	17564476.06	4818455.75	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	49.3	0.2	3.8	0.0	0.0	15.5	0.0	0.0	21.3

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
5	17564480.26	4818451.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	49.8	0.2	4.0	0.0	0.0	15.4	0.0	0.0	20.7

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
26	17564485.40	4818446.23	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	50.4	0.2	4.1	0.0	0.0	15.2	0.0	0.0	20.1

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
29	17564551.22	4818481.61	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.5	0.2	3.4	0.0	0.0	4.9	0.0	0.0	28.9

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
31	17564554.62	4818485.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.6	0.2	3.4	0.0	0.0	4.0	0.0	0.0	29.7

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
53	17564557.63	4818489.05	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.8	0.2	3.3	0.0	0.0	4.3	0.0	0.0	29.4

Receiver

Name: R3  
 ID: R3  
 X: 17564480.24 m  
 Y: 4818557.05 m  
 Z: 4.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
16	17564476.06	4818455.75	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.6	0.2	-0.7	0.0	0.0	10.6	0.0	0.0	28.3

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
22	17564557.63	4818489.05	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.7	0.2	0.0	0.0	0.0	6.1	0.0	0.0	32.0

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
25	17564554.62	4818485.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.7	0.2	-0.3	0.0	0.0	7.7	0.0	0.0	30.6

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
28	17564551.22	4818481.61	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.7	0.2	-0.4	0.0	0.0	7.2	0.0	0.0	31.3

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
40	17564480.26	4818451.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.9	0.2	-0.7	0.0	0.0	10.6	0.0	0.0	28.0

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
49	17564485.40	4818446.23	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.3	0.2	-1.0	0.0	0.0	10.6	0.0	0.0	27.9

Receiver

Name: R4  
 ID: R4  
 X: 17564495.38 m  
 Y: 4818562.27 m  
 Z: 4.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
7	17564557.63	4818489.05	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.2	0.2	0.0	0.0	0.0	18.0	0.0	0.0	20.6

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
10	17564554.62	4818485.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.2	0.2	0.0	0.0	0.0	8.5	0.0	0.0	30.0

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
13	17564551.22	4818481.61	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.3	0.2	-0.3	0.0	0.0	7.9	0.0	0.0	30.9

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
20	17564476.06	4818455.75	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.1	0.2	-1.2	0.0	0.0	9.0	0.0	0.0	29.9

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
32	17564480.26	4818451.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.3	0.2	-1.2	0.0	0.0	9.1	0.0	0.0	29.6

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
35	17564485.40	4818446.23	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.7	0.2	-1.2	0.0	0.0	9.1	0.0	0.0	29.2

Receiver

Name: R5  
 ID: R5  
 X: 17564503.71 m  
 Y: 4818573.52 m  
 Z: 4.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
9	17564557.63	4818489.05	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.5	0.2	0.0	0.0	0.0	17.4	0.0	0.0	20.9

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
14	17564554.62	4818485.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.6	0.2	0.0	0.0	0.0	17.4	0.0	0.0	20.8

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
18	17564551.22	4818481.61	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.7	0.2	0.0	0.0	0.0	17.2	0.0	0.0	20.9

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
52	17564476.06	4818455.75	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	53.0	0.2	-1.1	0.0	0.0	7.5	0.0	0.0	30.3

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
54	17564480.26	4818451.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	53.2	0.2	-1.1	0.0	0.0	7.6	0.0	0.0	30.0

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
56	17564485.40	4818446.23	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	53.5	0.3	-1.1	0.0	0.0	6.8	0.0	0.0	30.5

Receiver

Name: R6  
 ID: R6  
 X: 17564514.63 m  
 Y: 4818582.05 m  
 Z: 4.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
11	17564557.63	4818489.05	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.7	0.2	0.0	0.0	0.0	17.3	0.0	0.0	20.8

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
15	17564554.62	4818485.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.8	0.2	0.0	0.0	0.0	17.0	0.0	0.0	21.0

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
24	17564551.22	4818481.61	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.0	0.2	0.0	0.0	0.0	17.0	0.0	0.0	20.8

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
36	17564476.06	4818455.75	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	53.7	0.3	-0.9	0.0	0.0	6.4	0.0	0.0	30.6

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
39	17564480.26	4818451.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	53.9	0.3	-0.9	0.0	0.0	6.5	0.0	0.0	30.3

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
41	17564485.40	4818446.23	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	54.1	0.3	-1.0	0.0	0.0	5.9	0.0	0.0	30.6

Receiver

Name: R7  
 ID: R7  
 X: 17564525.85 m  
 Y: 4818594.11 m  
 Z: 4.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
12	17564557.63	4818489.05	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.2	0.2	0.0	0.0	0.0	17.1	0.0	0.0	20.5

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
38	17564554.62	4818485.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.4	0.2	0.0	0.0	0.0	17.2	0.0	0.0	20.2

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
42	17564551.22	4818481.61	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	52.6	0.2	0.0	0.0	0.0	17.0	0.0	0.0	20.2

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
44	17564476.06	4818455.75	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	54.6	0.3	-0.9	0.0	0.0	5.4	0.0	0.0	30.6

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
46	17564480.26	4818451.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	54.7	0.3	-0.9	0.0	0.0	5.6	0.0	0.0	30.2

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
48	17564485.40	4818446.23	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	54.9	0.3	-0.9	0.0	0.0	5.3	0.0	0.0	30.4

Receiver

Name: R8  
 ID: R8  
 X: 17564543.27 m  
 Y: 4818381.98 m  
 Z: 13.50 m

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
19	17564485.40	4818446.23	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	50.1	0.2	-1.0	0.0	0.0	16.2	0.0	0.0	24.6

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
21	17564480.26	4818451.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	50.7	0.2	-0.9	0.0	0.0	16.7	0.0	0.0	23.3

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
23	17564476.06	4818455.75	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.2	0.2	-0.9	0.0	0.0	17.1	0.0	0.0	22.4

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
34	17564551.22	4818481.61	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.2	0.2	-1.7	0.0	0.0	9.1	0.0	0.0	31.2

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
37	17564554.62	4818485.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.6	0.2	-1.7	0.0	0.0	9.0	0.0	0.0	30.9

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
47	17564557.63	4818489.05	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	51.9	0.2	-1.7	0.0	0.0	8.4	0.0	0.0	31.2

Receiver

Name: R9  
 ID: R9  
 X: 17564627.24 m  
 Y: 4818437.79 m  
 Z: 13.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
27	17564557.63	4818489.05	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	50.1	0.2	-1.9	0.0	0.0	7.7	0.0	0.0	33.9

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
30	17564554.62	4818485.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	50.1	0.2	-1.5	0.0	0.0	7.5	0.0	0.0	33.7

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
33	17564551.22	4818481.61	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	50.2	0.2	-1.5	0.0	0.0	6.8	0.0	0.0	34.3

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
43	17564485.40	4818446.23	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	54.2	0.3	-1.7	0.0	0.0	5.1	0.0	0.0	32.1

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
45	17564480.26	4818451.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	54.5	0.3	-1.7	0.0	0.0	5.5	0.0	0.0	31.3

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
51	17564476.06	4818455.75	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	54.8	0.3	-1.6	0.0	0.0	5.5	0.0	0.0	31.1

Receiver

Name: R10  
 ID: R10  
 X: 17564604.27 m  
 Y: 4818482.64 m  
 Z: 13.50 m

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
50	17564557.63	4818489.05	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	45.5	0.1	-0.5	0.0	0.0	15.5	0.0	0.0	29.4

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
55	17564554.62	4818485.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	45.9	0.1	-1.2	0.0	0.0	15.5	0.0	0.0	29.8

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_B"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
57	17564551.22	4818481.61	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	46.3	0.1	-1.4	0.0	0.0	15.5	0.0	0.0	29.5

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
58	17564485.40	4818446.23	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	53.1	0.2	-1.2	0.0	0.0	17.3	0.0	0.0	20.6

Point Source, ISO 9613, Name: "Bldg A - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
59	17564480.26	4818451.47	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	53.3	0.3	-1.1	0.0	0.0	18.5	0.0	0.0	19.1

Point Source, ISO 9613, Name: "Bldg B - HVAC", ID: "125GOR\_A"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
60	17564476.06	4818455.75	38.00	0	D	500	90.0	0.0	0.0	0.0	0.0	53.5	0.3	-1.1	0.0	0.0	18.9	0.0	0.0	18.4

**ON-SITE SOUND LEVELS FROM OFF-SITE ROOFTOP HVAC – DAY & NIGHT**

Receiver

Name: R1- 1250 Gordon  
 ID: APT2\_HVAC  
 X: 17564510.40 m  
 Y: 4818418.41 m  
 Z: 15.50 m

Point Source, ISO 9613, Name: "APT1 - HVAC", ID: "APT1\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
1	17564572.20	4818375.02	17.00	0	N	500	92.0	0.0	0.0	0.0	-3.0	48.6	0.1	-2.2	0.0	0.0	0.0	0.0	0.0	42.5

Point Source, ISO 9613, Name: "APT2 - HVAC", ID: "APT2\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
2	17564652.23	4818484.80	17.00	0	N	500	92.0	0.0	0.0	0.0	-3.0	54.9	0.3	-1.4	0.0	0.0	0.0	0.0	0.0	35.2

Point Source, ISO 9613, Name: "APT4 - HVAC", ID: "APT4\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
3	17564356.57	4818452.65	2.00	0	N	500	92.0	0.0	0.0	0.0	0.0	55.0	0.3	2.1	0.0	0.0	19.9	0.0	0.0	14.7

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
4	17564584.86	4818235.10	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	56.9	0.4	-0.5	0.0	0.0	0.0	0.0	0.0	30.2

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
6	17564611.74	4818206.75	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	58.4	0.5	-0.5	0.0	0.0	0.0	0.0	0.0	28.7

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
8	17564623.13	4818187.96	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	59.2	0.5	-0.5	0.0	0.0	0.0	0.0	0.0	27.8

Receiver

Name: R2 - 1250 Gordon  
 ID: APT2\_HVAC  
 X: 17564537.38 m  
 Y: 4818450.01 m  
 Z: 15.50 m

Point Source, ISO 9613, Name: "APT1 - HVAC", ID: "APT1\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
23	17564572.20	4818375.02	17.00	0	N	500	92.0	0.0	0.0	0.0	-3.0	49.3	0.2	-2.4	0.0	0.0	0.0	0.0	0.0	0.0	41.9

Point Source, ISO 9613, Name: "APT2 - HVAC", ID: "APT2\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
25	17564652.23	4818484.80	17.00	0	N	500	92.0	0.0	0.0	0.0	-3.0	52.6	0.2	-2.0	0.0	0.0	0.0	0.0	0.0	0.0	38.2

Point Source, ISO 9613, Name: "APT4 - HVAC", ID: "APT4\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
29	17564356.57	4818452.65	2.00	0	N	500	92.0	0.0	0.0	0.0	0.0	56.2	0.3	2.0	0.0	0.0	22.6	0.0	0.0	0.0	11.0

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
31	17564584.86	4818235.10	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	57.9	0.4	-1.3	0.0	0.0	0.0	0.0	0.0	0.0	30.0

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
33	17564611.74	4818206.75	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	59.1	0.5	-1.2	0.0	0.0	0.0	0.0	0.0	0.0	28.6

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
34	17564623.13	4818187.96	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	59.8	0.5	-1.1	0.0	0.0	0.0	0.0	0.0	0.0	27.8

Receiver

Name: R3 - 1250 Gordon  
 ID: APT2\_HVAC  
 X: 17564582.39 m  
 Y: 4818496.90 m  
 Z: 15.50 m

Point Source, ISO 9613, Name: "APT2 - HVAC", ID: "APT2\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
5	17564652.23	4818484.80	17.00	0	N	500	92.0	0.0	0.0	0.0	-3.0	48.0	0.1	-2.0	0.0	0.0	0.0	0.0	0.0	0.0	42.9

Point Source, ISO 9613, Name: "APT1 - HVAC", ID: "APT1\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
7	17564572.20	4818375.02	17.00	0	N	500	92.0	0.0	0.0	0.0	-3.0	52.7	0.2	-1.8	0.0	0.0	0.0	0.0	0.0	0.0	37.8

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
10	17564584.86	4818235.10	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	59.4	0.5	-1.2	0.0	0.0	0.0	0.0	0.0	0.0	28.3

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
11	17564611.74	4818206.75	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	60.3	0.6	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	27.1

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
13	17564623.13	4818187.96	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	60.9	0.6	-0.9	0.0	0.0	0.0	0.0	0.0	0.0	26.4

Receiver

Name: R4  
 ID: R4  
 X: 17564443.86 m  
 Y: 4818467.11 m  
 Z: 36.00 m

Point Source, ISO 9613, Name: "APT4 - HVAC", ID: "APT4_HVAC"																					
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
12	17564356.57	4818452.65	2.00	0	N	500	92.0	0.0	0.0	0.0	0.0	50.5	0.2	1.8	0.0	0.0	0.0	0.0	0.0	0.0	39.4

Point Source, ISO 9613, Name: "APT1 - HVAC", ID: "APT1_HVAC"																					
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
14	17564572.20	4818375.02	17.00	0	N	500	92.0	0.0	0.0	0.0	-3.0	55.0	0.3	-1.1	0.0	0.0	8.7	0.0	0.0	0.0	26.0

Point Source, ISO 9613, Name: "APT2 - HVAC", ID: "APT2_HVAC"																					
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
16	17564652.23	4818484.80	17.00	0	N	500	92.0	0.0	0.0	0.0	-3.0	57.4	0.4	-1.6	0.0	0.0	8.9	0.0	0.0	0.0	23.9

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3_HVAC"																					
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
18	17564584.86	4818235.10	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	59.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.8

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3_HVAC"																					
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
19	17564611.74	4818206.75	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	60.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.6

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3_HVAC"																					
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
22	17564623.13	4818187.96	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	61.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.9

Receiver

Name: OLA1  
 ID: OLA1  
 X: 17564518.72 m  
 Y: 4818414.03 m  
 Z: 5.50 m

Point Source, ISO 9613, Name: "APT1 - HVAC", ID: "APT1\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
15	17564572.20	4818375.02	17.00	0	N	500	92.0	0.0	0.0	0.0	-3.0	47.5	0.1	-2.5	0.0	0.0	0.0	0.0	0.0	0.0	43.8

Point Source, ISO 9613, Name: "APT2 - HVAC", ID: "APT2\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
17	17564652.23	4818484.80	17.00	0	N	500	92.0	0.0	0.0	0.0	-3.0	54.6	0.3	-1.5	0.0	0.0	0.0	0.0	0.0	0.0	35.6

Point Source, ISO 9613, Name: "APT4 - HVAC", ID: "APT4\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
20	17564356.57	4818452.65	2.00	0	N	500	92.0	0.0	0.0	0.0	0.0	55.4	0.3	2.1	0.0	0.0	15.9	0.0	0.0	0.0	18.2

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
24	17564584.86	4818235.10	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	56.7	0.4	-0.8	0.0	0.0	9.8	0.0	0.0	0.0	20.9

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
27	17564611.74	4818206.75	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	58.2	0.4	-0.9	0.0	0.0	10.6	0.0	0.0	0.0	18.7

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
30	17564623.13	4818187.96	24.00	0	N	500	87.0	0.0	0.0	0.0	0.0	58.9	0.5	-0.9	0.0	0.0	15.9	0.0	0.0	0.0	12.5

Receiver

Name: OLA2  
 ID: OLA2  
 X: 17564526.02 m  
 Y: 4818509.44 m  
 Z: 1.50 m

Point Source, ISO 9613, Name: "APT2 - HVAC", ID: "APT2\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
21	17564652.23	4818484.80	17.00	0	N	500	92.0	0.0	0.0	0.0	-3.0	53.2	0.2	4.0	0.0	0.0	20.7	0.0	0.0	10.8

Point Source, ISO 9613, Name: "APT1 - HVAC", ID: "APT1\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
26	17564572.20	4818375.02	17.00	0	N	500	92.0	0.0	0.0	0.0	-3.0	54.1	0.3	2.2	0.0	0.0	19.9	0.0	0.0	12.5

Point Source, ISO 9613, Name: "APT4 - HVAC", ID: "APT4\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
28	17564356.57	4818452.65	2.00	0	N	500	92.0	0.0	0.0	0.0	0.0	56.0	0.3	3.6	0.0	0.0	0.0	0.0	0.0	32.0

Receiver

Name: R1- 1250 Gordon  
 ID: APT2\_HVAC  
 X: 17564510.40 m  
 Y: 4818418.41 m  
 Z: 15.50 m

Point Source, ISO 9613, Name: "APT1 - HVAC", ID: "APT1\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
1	17564572.20	4818375.02	17.00	0	D	500	95.0	0.0	0.0	0.0	-3.0	48.6	0.1	-2.2	0.0	0.0	0.0	0.0	0.0	0.0	45.5

Point Source, ISO 9613, Name: "APT2 - HVAC", ID: "APT2\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
2	17564652.23	4818484.80	17.00	0	D	500	95.0	0.0	0.0	0.0	-3.0	54.9	0.3	-1.4	0.0	0.0	0.0	0.0	0.0	0.0	38.2

Point Source, ISO 9613, Name: "APT4 - HVAC", ID: "APT4\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
3	17564356.57	4818452.65	2.00	0	D	500	95.0	0.0	0.0	0.0	0.0	55.0	0.3	2.1	0.0	0.0	19.9	0.0	0.0	0.0	17.7

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
4	17564584.86	4818235.10	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	56.9	0.4	-0.5	0.0	0.0	0.0	0.0	0.0	0.0	33.2

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
6	17564611.74	4818206.75	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	58.4	0.5	-0.5	0.0	0.0	0.0	0.0	0.0	0.0	31.7

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)							
8	17564623.13	4818187.96	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	59.2	0.5	-0.5	0.0	0.0	0.0	0.0	0.0	0.0	30.8

Receiver

Name: R2 - 1250 Gordon  
 ID: APT2\_HVAC  
 X: 17564537.38 m  
 Y: 4818450.01 m  
 Z: 15.50 m

Point Source, ISO 9613, Name: "APT1 - HVAC", ID: "APT1_HVAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
23	17564572.20	4818375.02	17.00	0	D	500	95.0	0.0	0.0	0.0	-3.0	49.3	0.2	-2.4	0.0	0.0	0.0	0.0	0.0	44.9

Point Source, ISO 9613, Name: "APT2 - HVAC", ID: "APT2_HVAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
25	17564652.23	4818484.80	17.00	0	D	500	95.0	0.0	0.0	0.0	-3.0	52.6	0.2	-2.0	0.0	0.0	0.0	0.0	0.0	41.2

Point Source, ISO 9613, Name: "APT4 - HVAC", ID: "APT4_HVAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
29	17564356.57	4818452.65	2.00	0	D	500	95.0	0.0	0.0	0.0	0.0	56.2	0.3	2.0	0.0	0.0	22.6	0.0	0.0	14.0

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3_HVAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
31	17564584.86	4818235.10	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	57.9	0.4	-1.3	0.0	0.0	0.0	0.0	0.0	33.0

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3_HVAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
33	17564611.74	4818206.75	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	59.1	0.5	-1.2	0.0	0.0	0.0	0.0	0.0	31.6

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3_HVAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)						
34	17564623.13	4818187.96	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	59.8	0.5	-1.1	0.0	0.0	0.0	0.0	0.0	30.8

Receiver

Name: R3 - 1250 Gordon  
 ID: APT2\_HVAC  
 X: 17564582.39 m  
 Y: 4818496.90 m  
 Z: 15.50 m

Point Source, ISO 9613, Name: "APT2 - HVAC", ID: "APT2\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
5	17564652.23	4818484.80	17.00	0	D	500	95.0	0.0	0.0	0.0	-3.0	48.0	0.1	-2.0	0.0	0.0	0.0	0.0	0.0	0.0	45.9

Point Source, ISO 9613, Name: "APT1 - HVAC", ID: "APT1\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
7	17564572.20	4818375.02	17.00	0	D	500	95.0	0.0	0.0	0.0	-3.0	52.7	0.2	-1.8	0.0	0.0	0.0	0.0	0.0	0.0	40.8

Point Source, ISO 9613, Name: "APT4 - HVAC", ID: "APT4\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
9	17564356.57	4818452.65	2.00	0	D	500	95.0	0.0	0.0	0.0	0.0	58.3	0.4	1.9	0.0	0.0	22.5	0.0	0.0	0.0	11.9

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
10	17564584.86	4818235.10	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	59.4	0.5	-1.2	0.0	0.0	0.0	0.0	0.0	0.0	31.3

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
11	17564611.74	4818206.75	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	60.3	0.6	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	30.1

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
13	17564623.13	4818187.96	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	60.9	0.6	-0.9	0.0	0.0	0.0	0.0	0.0	0.0	29.4

OFF-SITE ROOFTOP MECHANICAL SOURCES - DAYTIME

Receiver

Name: R4  
 ID: R4  
 X: 17564443.86 m  
 Y: 4818467.11 m  
 Z: 36.00 m

Point Source, ISO 9613, Name: "APT4 - HVAC", ID: "APT4\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
12	17564356.57	4818452.65	2.00	0	D	500	95.0	0.0	0.0	0.0	0.0	50.5	0.2	1.8	0.0	0.0	0.0	0.0	0.0	0.0	42.4

Point Source, ISO 9613, Name: "APT1 - HVAC", ID: "APT1\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
14	17564572.20	4818375.02	17.00	0	D	500	95.0	0.0	0.0	0.0	-3.0	55.0	0.3	-1.1	0.0	0.0	8.7	0.0	0.0	0.0	29.0

Point Source, ISO 9613, Name: "APT2 - HVAC", ID: "APT2\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
16	17564652.23	4818484.80	17.00	0	D	500	95.0	0.0	0.0	0.0	-3.0	57.4	0.4	-1.6	0.0	0.0	8.9	0.0	0.0	0.0	26.9

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
18	17564584.86	4818235.10	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	59.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.8

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
19	17564611.74	4818206.75	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	60.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.6

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
22	17564623.13	4818187.96	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	61.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.9

Receiver

Name: OLA1  
 ID: OLA1  
 X: 17564518.72 m  
 Y: 4818414.03 m  
 Z: 5.50 m

Point Source, ISO 9613, Name: "APT1 - HVAC", ID: "APT1\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
15	17564572.20	4818375.02	17.00	0	D	500	95.0	0.0	0.0	0.0	-3.0	47.5	0.1	-2.5	0.0	0.0	0.0	0.0	0.0	0.0	46.8

Point Source, ISO 9613, Name: "APT2 - HVAC", ID: "APT2\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
17	17564652.23	4818484.80	17.00	0	D	500	95.0	0.0	0.0	0.0	-3.0	54.6	0.3	-1.5	0.0	0.0	0.0	0.0	0.0	0.0	38.6

Point Source, ISO 9613, Name: "APT4 - HVAC", ID: "APT4\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
20	17564356.57	4818452.65	2.00	0	D	500	95.0	0.0	0.0	0.0	0.0	55.4	0.3	2.1	0.0	0.0	15.9	0.0	0.0	0.0	21.2

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
24	17564584.86	4818235.10	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	56.7	0.4	-0.8	0.0	0.0	9.8	0.0	0.0	0.0	23.9

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
27	17564611.74	4818206.75	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	58.2	0.4	-0.9	0.0	0.0	10.6	0.0	0.0	0.0	21.7

Point Source, ISO 9613, Name: "APT3 - HVAC", ID: "APT3\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
30	17564623.13	4818187.96	24.00	0	D	500	90.0	0.0	0.0	0.0	0.0	58.9	0.5	-0.9	0.0	0.0	15.9	0.0	0.0	0.0	15.5

Receiver

Name: OLA2  
 ID: OLA2  
 X: 17564526.02 m  
 Y: 4818509.44 m  
 Z: 1.50 m

Point Source, ISO 9613, Name: "APT2 - HVAC", ID: "APT2\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
21	17564652.23	4818484.80	17.00	0	D	500	95.0	0.0	0.0	0.0	-3.0	53.2	0.2	4.0	0.0	0.0	20.7	0.0	0.0	13.8

Point Source, ISO 9613, Name: "APT1 - HVAC", ID: "APT1\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
26	17564572.20	4818375.02	17.00	0	D	500	95.0	0.0	0.0	0.0	-3.0	54.1	0.3	2.2	0.0	0.0	19.9	0.0	0.0	15.5

Point Source, ISO 9613, Name: "APT4 - HVAC", ID: "APT4\_HVAC"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
28	17564356.57	4818452.65	2.00	0	D	500	95.0	0.0	0.0	0.0	0.0	56.0	0.3	3.6	0.0	0.0	0.0	0.0	0.0	35.0

## APPENDIX D: NOISE CRITERIA

The noise study will be based on the following criteria for residential units as required by the City of Guelph and the Ministry of the Environment, Conservation and Parks:

<b>SOUND LEVEL LIMITS ROAD AND RAIL</b>			
<b>Type of Space</b>	<b>Time Period</b>	<b>L<sub>eq</sub> (dBA)</b>	
		<b>Road</b>	<b>Rail</b>
<b>INDOOR LIMITS</b>			
Living/dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc.	07:00 – 23:00	45	40
Living/dining, den areas of residences, hospitals, nursing homes, etc. (except schools or daycare centres)	23:00 – 07:00	45	40
Sleeping quarters	07:00 – 23:00	45	40
	23:00 – 07:00	40	35
<b>OUTDOOR LIMITS</b>			
Outdoor recreation areas <sup>1</sup>	07:00 – 23:00	55	55
Outside bedroom window	23:00 – 07:00	50	50
Outside living room window	07:00 – 23:00	55	55

<sup>1</sup> Up to 5 dB excess above criteria is allowed, provided a warning clause is given. Above 60 dB L<sub>eq</sub>, exterior noise mitigation measures (i.e. noise barriers, intervening structures, additional setback from source) are required.

All calculations were based on the Grading Plan provided by Stantec, dated August 5 , 2021.

### **L<sub>eq</sub>**

The L<sub>eq</sub> is defined as the mean energy of the sound level averaged over the measurement period. It can be considered as the continuous steady sound level which would have the same acoustic energy as the real fluctuating noise measured over the same period of time.

## APPENDIX E: REFERENCES

1. City of Guelph Noise Control Guidelines, Version 1.0, November 2018.
2. Ministry of the Environment, "Publication NPC-300, Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning", August 2013.
3. Ministry of Environment and Energy *STAMSON* Computer Programme (*Version 5.04* for the IBM PC).
4. Ministry of Environment and Energy, *ORNAMENT*, Ontario Road Noise Analysis Method for Environment and Transportation, November 1988.