NOISE & VIBRATION IMPACT FEASIBILITY STUDY
145 LORETTA AVENUE & 951 GLADSTONE AVENUE
OTTAWA, ONTARIO

FOR

TRINITY DEVELOPMENT GROUP

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INTRODUCTION

At the request of Trinity Developments, J.E. COULTER ASSOCIATES LIMITED has reviewed the proposed mixed-use (residential, commercial and office) development at 145 Loretta Avenue and 951 Gladstone Avenue in Ottawa, Ontario, for potential noise and vibration impact (see Appendix A, Figure 1). The purpose of this feasibility study is to establish noise mitigation measures that may be necessary as a result of transportation (road and rail) and stationary (mechanical equipment) sources to satisfy the requirements of the City of Ottawa noise guidelines (see Appendix D, Reference 1).

SITE DESCRIPTION

The proposed site is located at 145 Loretta Avenue and 951 Gladstone Avenue (see Appendix A, Figures 2 to 4 for plans and elevations). This proposed mixed-use development includes three residential towers with the following uses and heights:

a. Tower 1: 35 storeys (Retail /Amenity (Flr. 1)/Office (Flr. 2-5)/Residential (Flr. 6-35))
b. Tower 2: 33 storeys (Retail /Amenity (Flr. 1)/Office (Flr. 2-5)/Residential (Flr. 6-33))
c. Tower 3: 30 storeys (Amenity (Flr. 1)/Live/Work Studios (Flr. 2-4)/Residential (Flr. 5-30))

NOISE CRITERIA

The City of Ottawa Environmental Noise Control Guidelines (ENCG) apply to the proposed mixed-use development site, as explained below.

Transportation Sources

Where the sound levels at the exterior of the building façade exceed 55 dB L_{eq} daytime or 50 dB L_{eq} nighttime, the dwelling units must be provided with forced air heating, with a provision for future installation of air conditioning by the owner. An excess up to 10 dB is permissible, provided a warning clause is given. Where the sound levels exceed this limit (i.e., 65 dB daytime or 60 dB nighttime), air conditioning must be incorporated into the building prior to occupancy. Warning clauses are applicable as well.

Air-conditioning requirements are applied so that adequate interior sound levels can be maintained by closing the windows.

Table 1 gives a summary of the above criteria.

Table 1: Sound Level Limits – Road And Rail			
Type of Space	Time Period	L_{eq} (dBA)	
		Road	Rail
INDOOR LIMITS			
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
OUTDOOR LIMITS			
Outdoor recreation areas[1 2]	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

[1] Up to 5 dB excess above criteria is allowed, provided a warning clause is given. Above 60 dB L_{eq}, exterior noise mitigation measures (i.e. noise barriers, intervening structures, additional setback from source) are required.

[2] An outdoor living area is used in reference to a private outdoor patio (4m or more in depth) or backyard.

Stationary Sources

MECP recommends the guidelines found in *NPC-300* as the current noise criteria for stationary sources. The MECP noise guideline basically states that the average sound level of the stationary source (impulse noise such as banging and mechanical equipment) should not exceed the average sound level of the total roadway noise during the same hourly period.

This study has been based on the sound level criteria for a Class 1 Area (Urban). MECP *NPC-300* also refers to a Class 4 designation, which may be considered in the case of this development. This designation is stated as follows:

"Class 4 Area" means an area or specific site that would otherwise be defined as Class 1 or 2 and which:

1. is an area intended for development with new noise sensitive land use(s) not yet built;
2. is in proximity to existing, lawfully established stationary source(s); and
3. has formal confirmation from the land use planning authority with the Class 4 area classification, which is determined during the land use planning process.

The Class 4 designation would allow stationary source sound level to reach a maximum of 60 dB daytime and 55 dB nighttime. This designation must be approved by the Municipality.

As a Class 4 designation, an "Enclosed noise buffer" may be used. This means an enclosed area outside the exterior wall of a building such as an enclosed balcony, specifically intended to buffer one or more windows of noise sensitive spaces. In order for the concept of enclosed noise buffer to be acceptable within the context of an MECP approval of stationary sources, it can only apply to high-rise multi-unit buildings in a Class 4 area. The characteristics of an enclosed noise buffer are listed below:

1. not less than one metre and not more than two metres deep;

2. fully enclosed with floor to ceiling glazing or a combination of solid parapet plus glazing above – glazing can potentially be operable to the maximum permitted by the Ontario Building Code;

3. separated from interior space with a weatherproof boundary of exterior grade wall, exterior grade window, exterior grade door, or any combination, in compliance with exterior envelope requirements of the Ontario Building Code;

4. of sufficient horizontal extent to protect windows of noise sensitive spaces;

5. the architectural design is not amenable to converting the enclosed space to being noise sensitive.

Note that for Class 1, 2 and 3 areas, the plane-of-window limits apply to a window that is assumed to be open. For Class 4 areas, the plane-of-window limits apply to a window that is assumed to be closed. This distinction does not affect the prediction of plane-of-window sound levels.

The MECP considers the higher of the quietest ambient sound level or the minimum sound levels, as follows:

Table 2: Exclusion Limit Values of One-Hour Equivalent Sound Level (L_{eq}, dBA) – Plane-of-Window of Noise Sensitive Spaces

Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00 – 19:00	50	50	45	60
19:00 – 23:00	50	50	40	60
23:00 – 0:700	45	45	40	55

Note: Where the ambient sound levels are higher than the minimum exclusion limits noted above, the higher of the two values is used.

NOISE SOURCES

Transportation Noise Sources

The potential transportation noise concerns for this proposed development are the traffic sound levels on The Queensway, Gladstone Avenue, and the O-Train movements.

Based on the City of Ottawa's Environmental Noise Control Guidelines (Table 1.7), the following traffic volumes were assumed:

Table 3: Traffic Volume Projection

Roadway	AADT (Veh/Day)	Truck Percentage		Day/Night Split (%)	Posted Speed Limit
		Medium	Heavy		
Queensway (8-lane highway)	146,664 (18,333 per lane)	7%	5%	92/8	100 kph
Queensway (8-lane highway)	184,100 (2016)	7%	5%	92/8	100 kph
Queensway (8-lane highway)	229,500 (2029)	7%	5%	92/8	100 kph
Gladstone Avenue (2-lane urban arterial)	15,000	7%	5%	92/8	40 kph

Note: The Queensway is currently an 8-lane configuration highway. It is noted that the latest (2016) volume on this section of The Queensway is 184,100 vehicles AADT (greater than the assumptions in the City of Ottawa's Noise Control Guideline, Table 1.7) and has a historical annual growth rate of 1.71%, compounded. Based on a 10-year projection and current growth rates, The Queensway in 2029 is expected to have 229,500 vehicles AADT. This is equivalent to widening The Queensway to a 12-lane configuration, considered to be a worst-case scenario. Acoustically, this represents an increase of 1 dB, a very minor change.

For the O-Train movements, the following schedule was used based on OC Transpo's schedule of rush-hour service (5-minute headways), off-peak (10-minute headways), and 15-minute headways after midnight.

Table 4: O-Train Movements			
Time		Service*	Train Movements (Both Directions)
To	From		
Midnight	1:00	N	8
1:00	2:00	N	8
2:00	3:00	N	0
3:00	4:00	N	0
4:00	5:00	N	0
5:00	6:00	N	12
6:00	7:00	R	24
7:00	8:00	R	24
8:00	9:00	R	24
9:00	10:00	D	12
10:00	11:00	D	12
11:00	Noon	D	12
Noon	1:00	D	12
1:00	2:00	D	12
2:00	3:00	D	12
3:00	4:00	D	12
4:00	5:00	R	24
5:00	6:00	R	24
6:00	7:00	R	24
7:00	8:00	D	12
8:00	9:00	D	12
9:00	10:00	D	12
10:00	11:00	D	12
11:00	Midnight	N	12
Total Day (0700-2300)			**252**
Total Night (2300-0700)			**136**
* R = Rush Hour, D = Day Off-Peak, N = Night Service			

PROJECTED SOUND LEVELS

The MECP's *ORNAMENT* noise prediction procedure (*STAMSON version 5.04* computer programme) was used to predict the sound levels. *STAMSON 5.04* uses the daily traffic volumes for the road and basic topographical information for the site in its calculations (see Appendix B). Initially, elevated terraces are assumed to be is 1.1m high (minimum) with a solid safety railing.

Table 3, below, provides the projected unmitigated sound levels at various locations exposed to the adjacent arterial roadways.

Table 5: Traffic L_{eq} Sound Levels

	Daytime Sound Level (dB L_{eq})				Nighttime Sound Level (dB L_{eq})			
Location	**Queensway**	**O-Trains**	**Gladstone Avenue**	**Total**	**Queensway**	**O-Trains**	**Gladstone Avenue**	**Total**
TOWER 1								
R1 – SE	75	56	66	**76**	68	57	58	**68**
R2 – SW	75	51	66	**76**	68	51	58	**68**
R3 – NW	72	50	59	**72**	64	50	51	**65**
R4 – NE	72	60	59	**72**	64	55	51	**65**
Terrace (6th Level)	58	47	43	**58**	--	--	--	**--**
TOWER 2								
R5 – SE	73	59	58	**73**	66	59	51	**67**
R6 – SW	73	50	58	**73**	66	51	51	**66**
R7 – NW	71	52	55	**71**	63	53	48	**64**
R8 – NE	71	60	55	**71**	63	60	47	**65**
Terrace (Grade Level)	56	57	43	**60**	--	--	--	**--**
Terrace (3rd Level)	65	45	45	**65**	--	--	--	**--**
TOWER 3								
R9 – SE	69	59	53	**69**	61	59	45	**63**
R10 – SW	71	49	55	**71**	64	49	47	**64**
R11 – NW	70	55	54	**70**	62	55	46	**63**
R12 – NE	69	60	53	**70**	61	60	45	**64**
Terrace (5th Level)	56	45	43	**56**	--	--	--	**--**

EXTEROR NOISE CONTROL MEASURES

All outdoor amenity areas located at Towers 1 and 2 achieve 60 dB L_{eq} daytime or less. Standard height railings (1.1m high and solid along its entire length) for the elevated amenity areas will be sufficient without the need for additional noise control measures. At Tower 3, the 5th floor outdoor amenity area will require that the parapet height be increased to at least 1.25m from 1.1m along the eastern perimeter (see Appendix A, Figure 5). The sound level is expected to be less than 60 dB L_{eq} daytime (including the added shielding provided by Queensway 4m high noise barrier along north R-O-W. As the sound levels are above 55 dB, warning clauses should be provided for all residents notifying them of the excess above the criterion.

VENTILATION AND WARNING CLAUSE REQUIREMENTS

The sound levels generated by combination of The Queensway, Gladstone Avenue, and the O-Trains are greater than 65 dB L_{eq} daytime and 60 dB L_{eq} nighttime at the exterior façades. As a result, the installation of central air conditioning is required prior to occupancy.

The sound levels are above the City of Ottawa's noise criteria such that a warning clause is required. The warning clause must be inserted into the *Agreement of Purchase and Sale* for those affected units as noted above, indicating that the sound levels will exceed the noise guidelines.

FAÇADE COMPONENTS

At this time, there are no detailed suite layouts and window details available for the three towers, thus our comments are general in nature. A detailed review is recommended once the final architectural and elevations are available.

On the basis of the predicted sound levels (see Table 5, above) the south, east and west façades may require upgrades from the minimum OBC requirements. The glazing requirements are determined by the ratio of the window area to floor area. Thus, large window-area to floor-area ratios (such as a corner bedroom) may require upgraded glazing. High-rise condominium towers typically utilize 6mm double-glazing with a 13 or 25mm air space between the panes of glass. This is a standard commercial window typically rated at STC 34-39.

The following table illustrates the estimated window requirements for the three towers. The window types noted in Table 6, below, should be verified by the acoustic consultant on the basis of the final architectural layouts, when they become available.

Table 6: Preliminary Window Requirements			
Location	**Minimum STC Requirement for Fixed Windows**	**Minimum STC Requirement for Operable Windows**	**Minimum STC Requirement for Operable Doors**
TOWER 1			
Living rooms (up to 40% of window/floor area ratio)	STC 36 (6mm glass, 13mm air space, 6mm glass)	STC 33 (6mm glass, 13mm air space, 6mm glass)	STC 32
Living rooms (up to 41 to 80% of window/floor area ratio)	STC 36 (6mm glass, 25mm air space, 6mm glass)	STC 33 (6mm glass, 13mm air space, 6mm glass)	STC 32
Bedrooms (up to 125% of window/floor area ratio)	STC 36 (6mm glass, 13mm air space, 6mm glass)	STC 33 (6mm glass, 13mm air space, 6mm glass)	--
TOWER 2			
Living rooms (up to 80% of window/floor area ratio)	STC 36 (6mm glass, 13mm air space, 6mm glass)	STC 33 (6mm glass, 13mm air space, 6mm glass)	STC 32
Bedrooms (up to 80% of window/floor area ratio)	STC 34 (6mm glass, 13mm air space, 6mm glass)	STC 33 (6mm glass, 13mm air space, 6mm glass)	STC 32
TOWER 3			
Living rooms (up to 135% of window/floor area ratio)	STC 34 (6mm glass, 13mm air space, 6mm glass)	STC 33 (6mm glass, 13mm air space, 6mm glass)	STC 32
Bedrooms (up to 135% of window/floor area ratio)	STC 34 (6mm glass, 13mm air space, 6mm glass)	STC 33 (6mm glass, 13mm air space, 6mm glass)	STC 32

Note: Spandrel panels along the south, east and west façades exposed to the highway may need to be upgraded, depending upon the configuration of the exterior façade.

A detailed review is recommended to finalize the glazing and façade requirements.

The lowest floors of the tower will experience lower sound levels from the transportation sources compared to the upper floors fully exposed to the Queensway. While the glazing requirements can be reduced here, it is recommended the glazing remain consistent up the building.

ON-SITE MECHANICAL EQUIPMENT

At the time of final design, the rooftop mechanical exhaust equipment and grade level parking exhausts should be reviewed to ensure the development itself meets the MECP's *NPC-300* noise criteria. If noise control measures are required, this may include but not be limited to the installation of exhaust silencers, partial enclosure, barriers, or the selection of quieter equipment.

O-TRAIN VIBRATION ANALYSIS

On-site vibration monitoring was conducted at the proposed location of the east façade closest to the O-Train line. The monitoring took place on October 5, 2018. The vibration monitoring location was 2m west of the eastern property line, the location of the closest building façade. The tracks are located in a cut, approximately 4 to 5m below grade. Continuous vibration monitoring was conducted during the afternoon and p.m. rush hour.

As stated in the document, "Railway Association of Canada, Guidelines for New Developments in Proximity to Railway Operations, 2013", the criterion for ground-borne vibration is 0.14 mm/sec. (velocity), the level of perception. Ground-borne vibration transmission is to be estimated through site testing and evaluation, to determine if dwellings within 75 metres of the railway right-of-way will be impacted by vibration conditions in excess of 0.14 mm/sec. RMS between 4 Hz and 200 Hz. The monitoring system should be capable of measuring frequencies between 4 Hz and 200 Hz ± 3 dB, with an RMS averaging time constant of 1 second. If in excess, appropriate isolation measures are recommended to be undertaken to ensure living areas do not exceed 0.14 mm/sec. RMS on and above the first floor of the dwelling.

Table 7: O-Train Vibration Monitoring		
Time	**Train Direction**	**Vibration Level (mm/sec. velocity)**
1:28p	NB	0.01
1:29p	SB	0.01
1:40p	NB	0.01
1:41p	SB	0.02
1:52p	NB	0.01
1:53p	SB	0.01
2:04p	NB	0.01
2:06p	SB	0.01
2:16p	NB	0.01
2:17p	SB	0.01
2:28p	NB	0.01
2:29p	SB	0.01
4:52p	NB	0.01
4:53p	SB	0.02
5:04p	NB	0.01
5:05p	SB	0.01
5:24p	NB	0.01

As summarized above, the ground-borne vibration levels from operation of the City of Ottawa's O-Trains were found to be no more than 0.02 mm/sec. velocity at the east limit of the buildings closest to the train. These vibration levels are well below the criterion (0.14 mm/sec. velocity). No additional vibration control measures as a result of the O-Train passbys are needed for this development.

STATIONARY NOISE SOURCES

To the west at 975 Gladstone Avenue is the existing Canadian Bank Note (CBN) building. This building incorporates the CBN head office and plant. There are several rooftop mechanical ventilation systems used for production as well as loading doors and an outdoor forklift. Information was provided by CBN regarding the projected sound levels from their facility. CBN also noted that idling trucks can wait (temperature controlled trucks with a refrigeration unit) on Loretta Avenue North, waiting to access the eastern entrance directly across from this proposed development. This data was used to determine if a potential noise impact would be present at the proposed development.

Based on the quietest ambient hourly sound levels during day and night, the following table outlines the anticipated sound levels at each tower. The analysis first looks at using Class 1 (default, urban classification). Class 1 is based on an open window noise criteria where the

stationary noise source must meet the criteria in the plane of open window (air conditioning and closed windows are not acceptable mitigation measures). Any noise control measures would need to be implemented at source.

The analysis also looked at the results under a proposed Class 4 designation, which effectively permits high exterior sound levels with the windows closed. Point of reception is taken 6m above grade level (second-storey level, fully exposed to CBN rooftop), considered to the worst-case scenario (see Appendix A, Figure 6).

Table 8: Projected Sound Level (Stationary Sources)
TOWER 1
Daytime (0700-2300 Hours)

Sources	Total Sound Level (dB L_{eq})			
	NE	**NW**	**SE**	**SW**
Canadian Bank Note (Mechanical Equipment)	52	54	32	53
Idling Truck (on Loretta Ave)	29	41	15	39
Total Sound Level (dB)	52	54	32	53
Noise Criteria (dB L_{eq}), Class 1	50	50	57	57
Noise Impact (dB), Class 1	**2**	**4**	**-25**	**- 4**
Noise Criteria (dB L_{eq}), Class 4	60	60	60	60
Noise Impact (dB), Class 4	**- 8**	**- 6**	**-28**	**- 7**

Table 9: Projected Sound Level (Stationary Sources)
TOWER 1
Nighttime (2300-0700 Hours)

Sources	Total Sound Level (dB L_{eq})			
	NE	**NW**	**SE**	**SW**
Canadian Bank Note (Mechanical Equipment)	52	54	32	53
Idling Truck (on Loretta Ave)	29	41	15	39
Total Sound Level (dB)	52	54	32	53
Noise Criteria (dB L_{eq}), Class 1	45	45	52	52
Noise Impact (dB), Class 1	**7**	**9**	**-20**	**1**
Noise Criteria (dB L_{eq}), Class 4	55	55	55	55
Noise Impact (dB), Class 4	**- 3**	**- 1**	**-23**	**- 2**

Table 10: Projected Sound Level (Stationary Sources) TOWER 2 Daytime (0700-2300 Hours)				
Sources	**Total Sound Level (dB L_{eq})**			
	NE	**NW**	**SE**	**SW**
Canadian Bank Note (Mechanical Equipment)	53	56	47	56
Idling Truck (on Loretta Ave)	32	46	19	45
Total Sound Level (dB)	53	56	47	56
Noise Criteria (dB L_{eq}), Class 1	50	50	57	57
Noise Impact (dB), Class 1	**3**	**6**	**-10**	**- 1**
Noise Criteria (dB L_{eq}), Class 4	60	60	60	60
Noise Impact (dB), Class 4	**- 7**	**- 4**	**-13**	**- 4**

Table 11: Projected Sound Level (Stationary Sources) TOWER 2 Nighttime (2300-0700 Hours)				
Sources	**Total Sound Level (dB L_{eq})**			
	NE	**NW**	**SE**	**SW**
Canadian Bank Note (Mechanical Equipment)	53	56	47	56
Idling Truck (on Loretta Ave)	32	46	19	45
Total Sound Level (dB)	53	56	47	56
Noise Criteria (dB L_{eq}), Class 1	45	47	49	49
Noise Impact (dB), Class 1	**8**	**9**	**- 2**	**7**
Noise Criteria (dB L_{eq}), Class 4	55	55	55	55
Noise Impact (dB), Class 4	**- 2**	**1**	**- 8**	**1**

Table 12: Projected Sound Level (Stationary Sources) TOWER 3 Daytime (0700-2300 Hours)				
Sources	**Total Sound Level (dB L_{eq})**			
	NE	**NW**	**SE**	**SW**
Canadian Bank Note (Mechanical Equipment)	50	55	51	59
Idling Truck (on Loretta Ave)	35	49	26	56
Total Sound Level (dB)	50	56	51	61
Noise Criteria (dB L_{eq}), Class 1	50	51	50	52
Noise Impact (dB), Class 1	**0**	**5**	**1**	**9**
Noise Criteria (dB L_{eq}), Class 4	60	60	60	60
Noise Impact (dB), Class 4	**-10**	**- 4**	**- 9**	**1**

Table 13: Projected Sound Level (Stationary Sources) TOWER 3 Nighttime (2300-0700 Hours)				
Sources	**Total Sound Level (dB L_{eq})**			
	NE	**NW**	**SE**	**SW**
Canadian Bank Note (Mechanical Equipment)	50	55	51	59
Idling Truck (on Loretta Ave)	35	49	26	56
Total Sound Level (dB)	50	56	51	61
Noise Criteria (dB L_{eq}), Class 1	45	45	45	47
Noise Impact (dB), Class 1	**5**	**11**	**6**	**14**
Noise Criteria (dB L_{eq}), Class 4	55	55	55	55
Noise Impact (dB), Class 4	**- 5**	**1**	**- 4**	**6**

As summarized in Tables 8 to 13, the sound levels under the existing Class 1 designation would exceed the criteria between 2 and 14 dB (a very significant impact at nighttime). Under a proposed Class 4 designation, the sound levels would be up to 6 dB above the criteria. It is also noted that our calculations indicate the rooftop mechanical equipment would have an impact for the existing dwelling to the west of CBN. In both cases, noise control measures would need to be discussed with CBN.

Meeting Class 1 at the proposed development will be difficult as a significant number of the rooftop mechanical ventilation units will need to be fitted with intake and discharge silencers to reduce the overall sound levels by 14 dB (a significant reduction). Implementing noise control at the proposed residential building is not feasible as the MECP criterion does not permit closed windows and air conditioning under a Class 1 designation. There are a number of feasibility issues including whether the roof of CBN can support the additional load of physically fitting the noise control measures on the equipment, as the footprint would be a significant increase above the current configuration. As expected, this requires discussion with CBN and their accepting these measures. Alternatively, consideration for applying Class 4 to all three towers would require some noise control measures at CBN resulting in a 5 dB reduction (compared to 14 dB under Class 1). Incorporating noise control measures for this proposed development would also mitigate the sound levels (an estimated 5 to 6 dB excess) for the existing housing as well on Breezehill Avenue North.

CONCLUSIONS

The analysis indicates a modest impact from traffic noise at the proposed mixed-use development. It is feasible to meet the City of Ottawa's noise criteria using standard measures found at many residential buildings. Noise control measures including the installation of central air conditioning prior to occupancy and warning clauses to deal with traffic noise will be required to satisfy the various noise criteria.

The ground-borne vibration levels generated by the O-Trains were not an issue and clearly satisfy the criterion.

The Canadian Bank Note facility at 975 Gladstone Avenue to the west was found under the existing Class 1 designation to exceed the MECP's criteria. Consideration should be given to applying for a Class 4 designation and providing all prospective homeowners with a warning clause has been recommended. The Class 4 designation would require some noise control measures at the CBN facility.

RECOMMENDATIONS

To meet the current noise guidelines of the City of Ottawa, the following recommendations are proposed:

TRANSPORATION SOURCES

1. It is recommended all residential units in Towers 1, 2 and 3 be equipped with central air conditioning prior to occupancy.

2. A warning clause is to be inserted into all occupancy agreements for this development, notifying them of the exterior sound levels (see Appendix C: Warning Clauses).

3. On the basis of the predicted sound levels (see Table 5, above), façades may require upgrades from the minimum OBC requirements. High-rise condominium towers typically utilize 6mm double-glazing with a 13 or 25mm air space between the panes of glass. This is a standard commercial window typically rated at STC 34-39.

4. At Tower 3, the 5th floor outdoor amenity area will require that the parapet height be increased to at least 1.25m at the east perimeter (see Appendix A, Figure 5).

5. It is recommended that once detailed architectural drawings and suite configurations are available, the acoustic consultant confirm the final façade requirements.

STATIONARY SOURCES

1. It is recommended that the City of Ottawa consider designating this development as Class 4 under MECP guidelines.

2. Discussions with CBN are necessary in order to outline the noise impacts and potential noise control measures. Based on our preliminary review, an overall reduction of 5 dB is required based on a Class 4 designation. Reducing the sound levels will also reduce the sound levels at the existing housing to the west on Breezehill Avenue North.

3. At the time of final design for this proposed development, the rooftop mechanical exhaust equipment and grade level parking exhausts should be reviewed to ensure the development itself meets the MECP's *NPC-300* noise criteria. If noise control measures are required, this may include but not be limited to the installation of exhaust silencers, partial enclosure, barriers, or the selection of quieter equipment.

4. It is recommended that all Agreements of Purchase and Sale include a warning clause notifying prospective homeowners of the Class 4 designation (see Warning Clauses).

/pt/hp

LOCATION PLAN

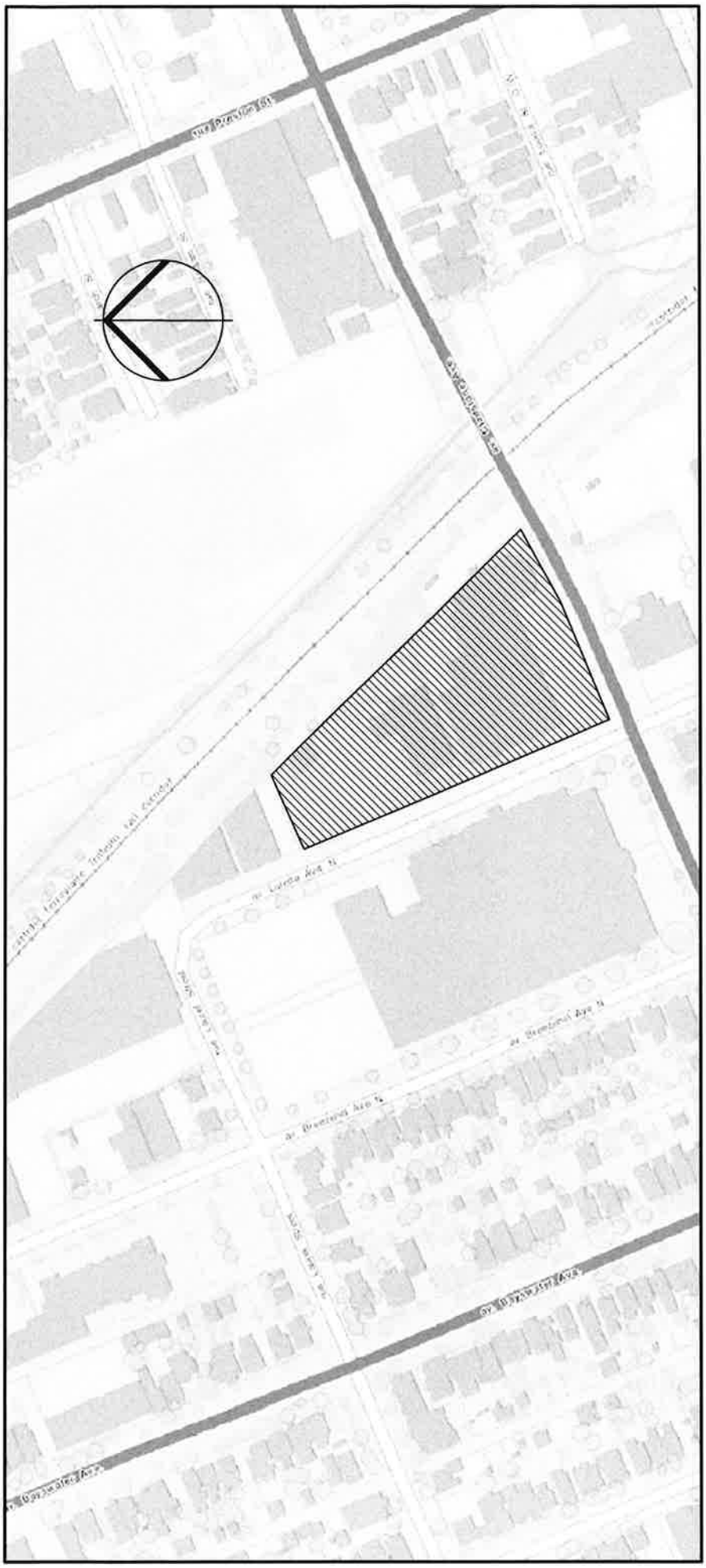
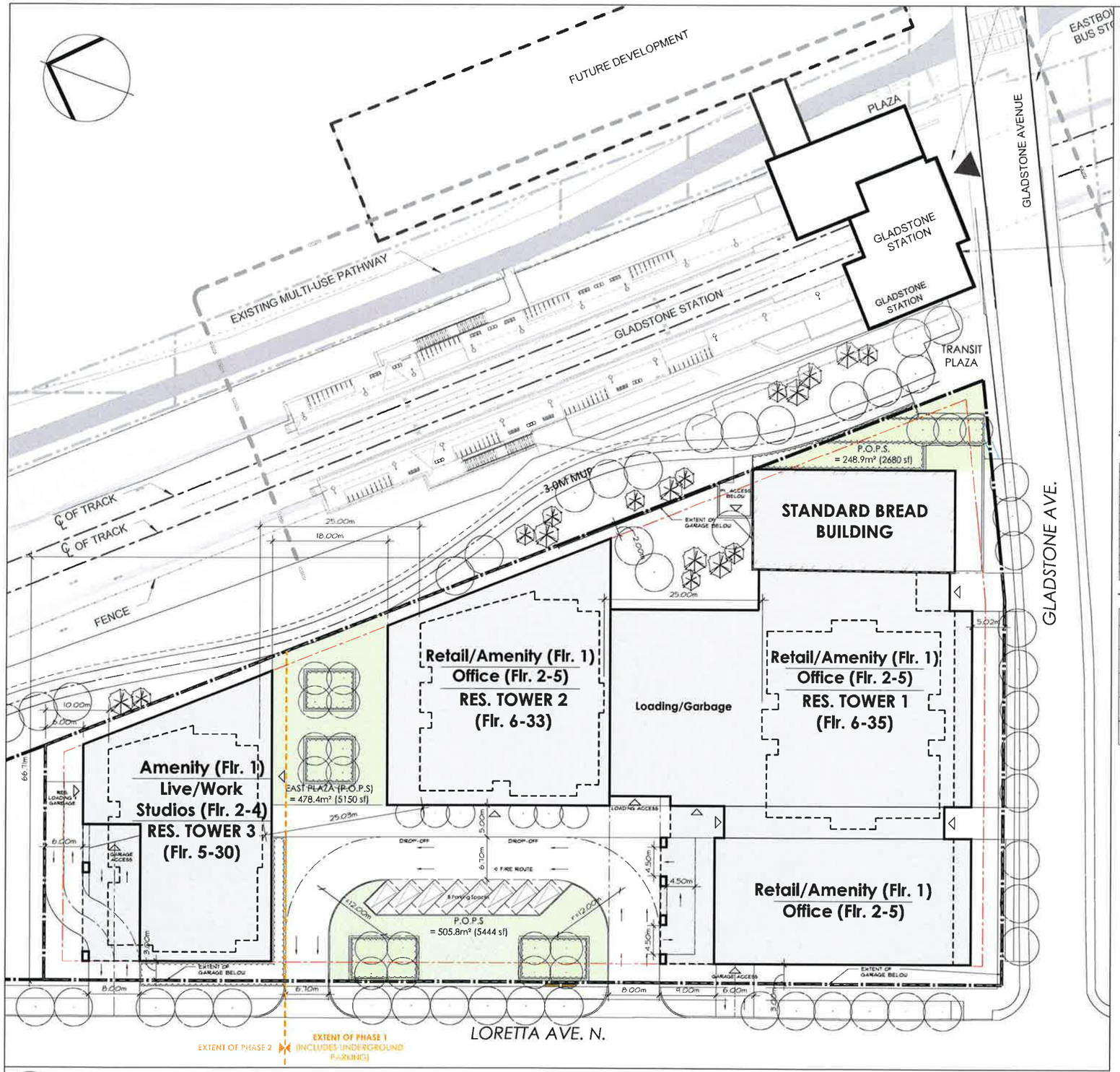
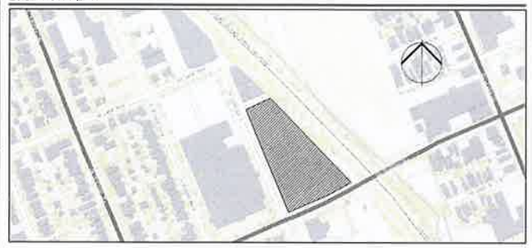


FIGURE 1



1 SITE PLAN
A0.01 1:300

LOCATION PLAN



ZONING NOTES:

CURRENT ZONING: IG1 H(11)

DEVELOPMENT STATS

		PROPOSED
LOT AREA		10,012.3 m² (107,772 sq ft)
LOT WIDTH		66.7m IRREGULAR
LOT DEPTH		150.9m
TOTAL UNITS		168
FRONT YARD SETBACK	GLADSTONE AVE.	5 m
REAR YARD SETBACK	N/A	5 m
CORNER SIDE YARD SETBACK	LORETTA AVE N	3 m
INTERIOR SIDE YARD SETBACK	TRILLIUM RAIL CORRIDOR	2 m
MAXIMUM HEIGHT		± 123 m
NUMBER OF STOREYS		35
BUILDING FOOTPRINT AREA		5,841 m² (62,874 sq ft)
GROSS FLOOR AREA		94,613 m² (1,018,062 sq ft)

PARKING REQUIREMENTS

1. REQUIRED PARKING

LAND USE	REQUIRED	PROVIDED VEHICLE PARKING
APARTMENT	1.75 MAX SPACE PER UNIT	375 SPACES (0.5 SPACES/UNIT)
VISITOR	0.1 SPACE MIN. PER UNIT BUT MAX. 30 SPACES	30 SPACES
RETAIL	3.6 MAX SPACES / 100m² GFA	17 SPACES (1 SPACE / 1076 ft²)
OFFICE	2.2 MAX SPACES / 100m² GFA	99 SPACES (0.75 SPACES / 1076 ft²)
TOTAL		521 SPACES

3. BICYCLE PARKING
REQUIRED BICYCLE PARKING SPACES
RESIDENTIAL (0.5 SPACE/UNIT)
COMMERCIAL (1 / 500 SQ.M. COMMERCIAL GFA)

4. AMENITY SPACE REQUIREMENTS
REQUIRED AMENITY SPACE 6 m² REQUIRED PER UNIT

5. REQUIRED AREA FOR PRIVATELY OWNED PUBLIC SPACE - P.O.P.S.
REQUIRED 1,001m² (10,777 sq ft.)
PROVIDED 1,233.1m² (13,273 sq ft.)

NOTE: ALL EXISTING SITE INFORMATION AS PER SITE SURVEY PLAN DATED ____, 2018 AND PREPARED BY STANTEC

no.	date	revision

TRINITY

Hobin Architecture Incorporated
63 Pamilla Street
Ottawa, Ontario
Canada K1S 3K7
T: 613 238 7200
F: 613 235 2005
E: mail@hobinarc.com
hobinarc.com

HOBIN ARCHITECTURE

PROJECT/LOCATION:
GLADSTONE & LORETTA
951 GLADSTONE AVE.

DRAWING TITLE:
SITE PLAN

DRAWN BY:	DATE:	SCALE:
TD	19/04/17	1:300

PROJECT: 1726

DRAWING NO.: A001

REVISION NO.:

FIGURE 2

HOBIN

GLADSTONE + LORETTA

Site Elevations

scale 1:750

TRINITY

FIGURE 3

HOBIN

GLADSTONE + LORETTA

Site Elevations

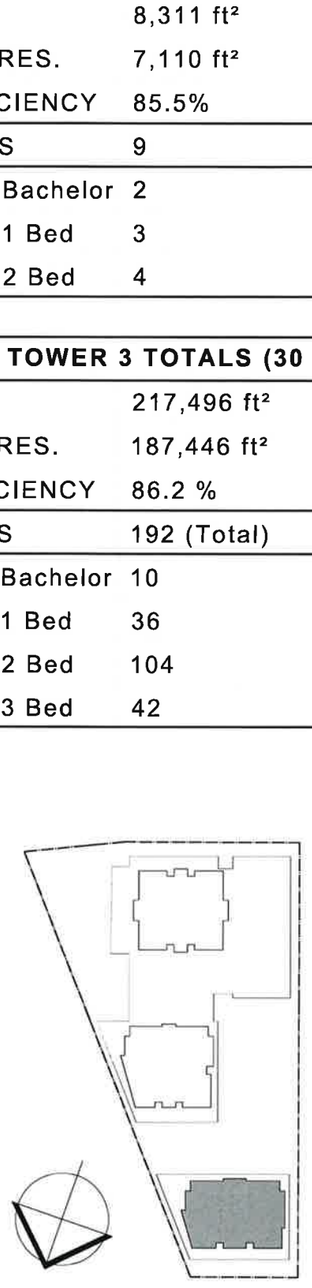
scale 1:750

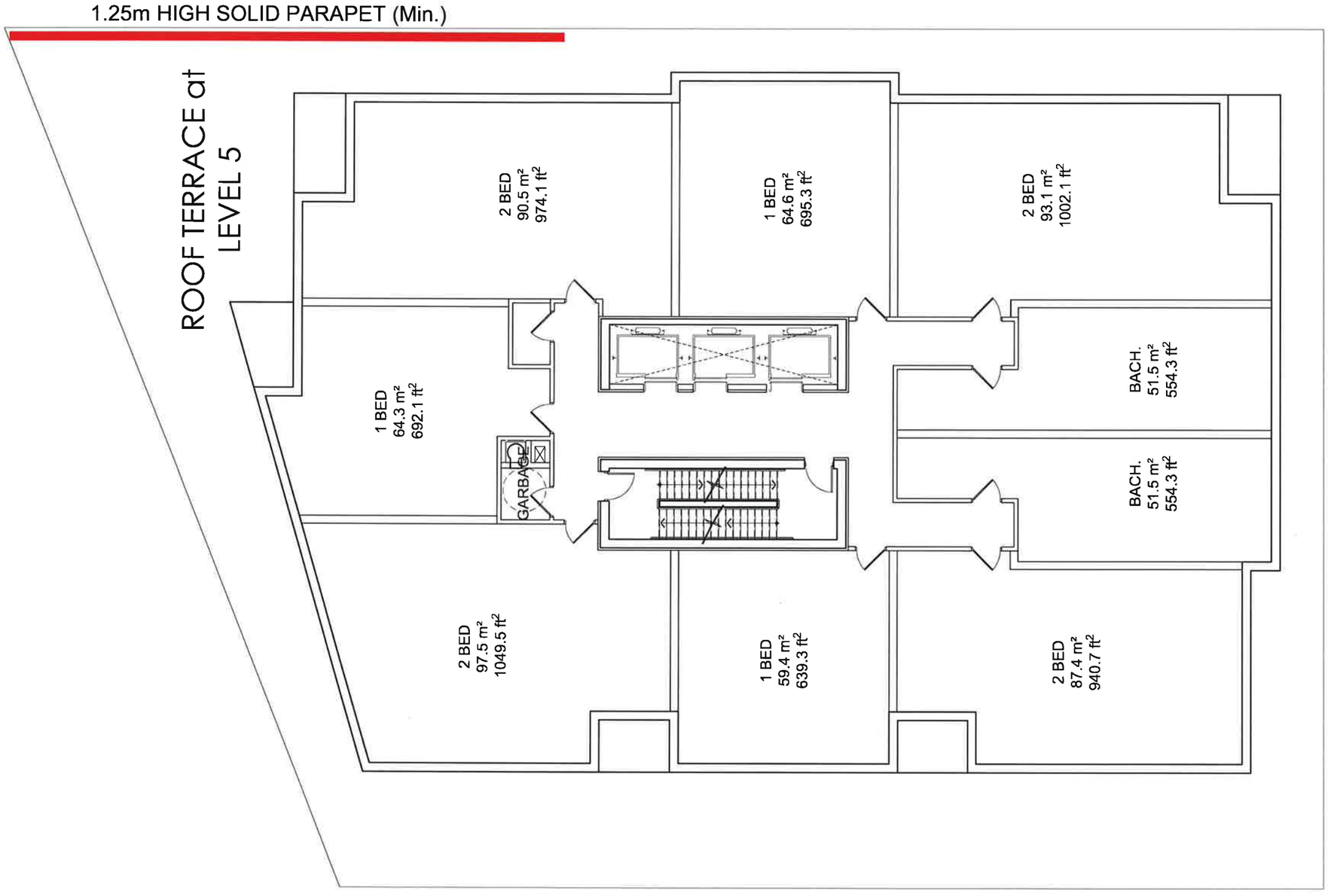
TRINITY

FIGURE 4

LOWER FLOOR x 5 (Flr. 5-9)		
GFA	8,311 ft²	(772.2 m²)
NET RES.	7,110 ft²	(660.6 m²)
EFFICIENCY	85.5%	
UNITS	9	
Bachelor	2	
1 Bed	3	
2 Bed	4	

RES. TOWER 3 TOTALS (30 Flrs.)		
GFA	217,496 ft²	(20,206m²)
NET RES.	187,446 ft²	(17,414m²)
EFFICIENCY	86.2 %	
UNITS	192 (Total)	
Bachelor	10	(~5%)
1 Bed	36	(~19%)
2 Bed	104	(~54%)
3 Bed	42	(~22%)





HOBIN

GLADSTONE + LORETTA
Residential Tower 3

Typical Level (Flr. 5-9)

scale 1:150

TRINITY

FIGURE 5

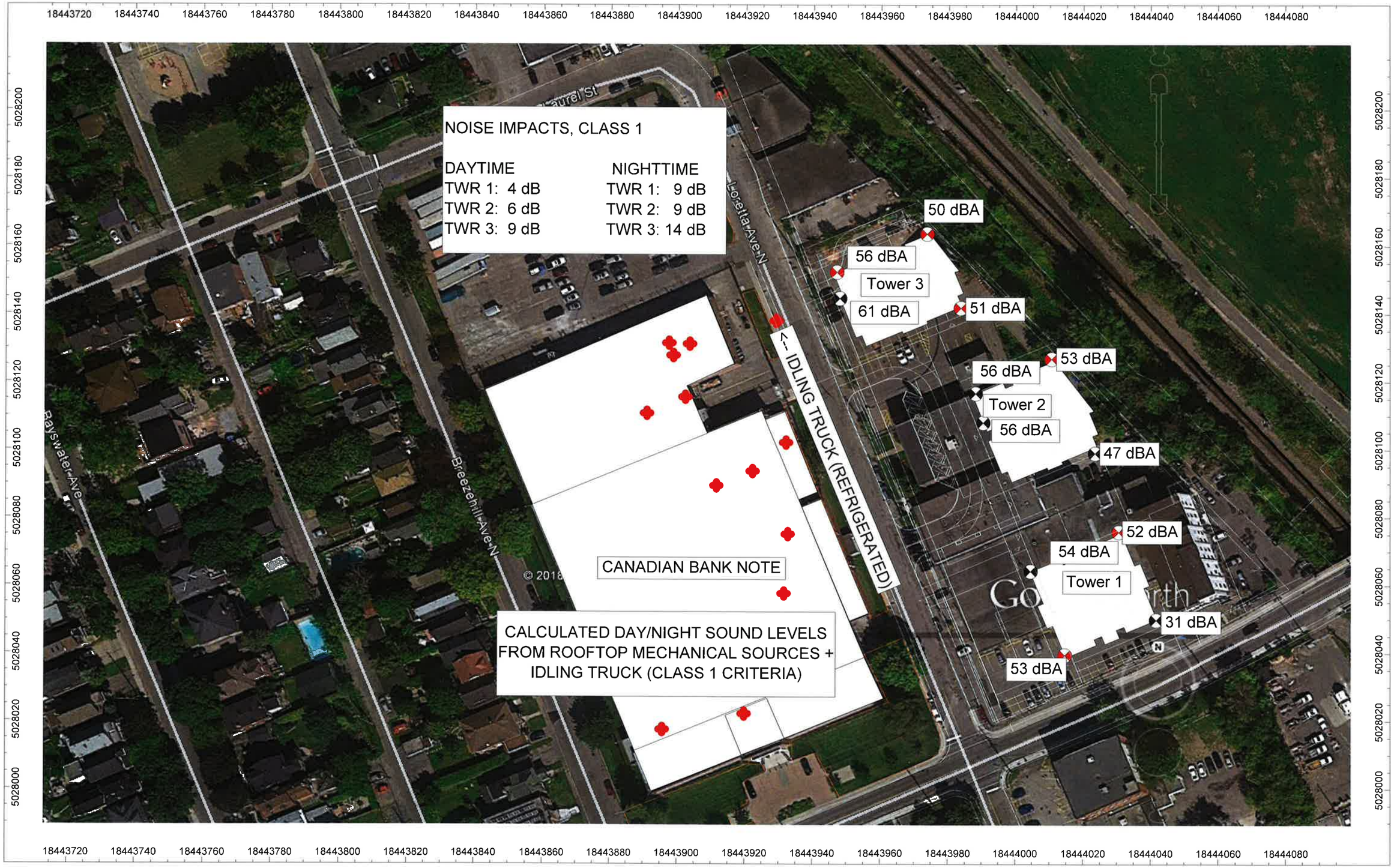

NOISE IMPACTS, CLASS 1
DAYTIME
TWR 1: 4 dB
TWR 2: 6 dB
TWR 3: 9 dB
NIGHTTIME
TWR 1: 9 dB
TWR 2: 9 dB
TWR 3: 14 dB
CANADIAN BANK NOTE
CALCULATED DAY/NIGHT SOUND LEVELS FROM ROOFTOP MECHANICAL SOURCES + IDLING TRUCK (CLASS 1 CRITERIA)
50 dBA
56 dBA
Tower 3
61 dBA
51 dBA
53 dBA
56 dBA
Tower 2
56 dBA
47 dBA
52 dBA
54 dBA
Tower 1
31 dBA
53 dBA
<-- IDLING TRUCK (REFRIGERATED)
Loretta Ave N
Breezehill Ave N
Rays Water Ave
Laurel St
© 2018
18443720 18443740 18443760 18443780 18443800 18443820 18443840 18443860 18443880 18443900 18443920 18443940 18443960 18443980 18444000 18444020 18444040 18444060 18444080
5028200 5028180 5028160 5028140 5028120 5028100 5028080 5028060 5028040 5028020 5028000

FIGURE 6

APPENDIX A: FIGURES

APPENDIX B: SOUND LEVEL CALCULATIONS

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:10:18
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b1_ne.te Time Period: Day/Night 16/8 hours
Description: Bldg 1 - NE Facade

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

Car traffic volume	: 185803/16157	veh/TimePeriod *
Medium truck volume	: 14780/1285	veh/TimePeriod *
Heavy truck volume	: 10557/918	veh/TimePeriod *
Posted speed limit	: 100	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)	: 229500	
Percentage of Annual Growth	: 0.00	
Number of Years of Growth	: 10.00	
Medium Truck % of Total Volume	: 7.00	
Heavy Truck % of Total Volume	: 5.00	
Day (16 hrs) % of Total Volume	: 92.00	

Data for Segment # 1: Queensway (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	: 217.00 / 217.00	m
Receiver height	: 123.00 / 123.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

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

Car traffic volume	: 12144/1056	veh/TimePeriod *
Medium truck volume	: 966/84	veh/TimePeriod *
Heavy truck volume	: 690/60	veh/TimePeriod *
Posted speed limit	: 40	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)	: 15000	
Percentage of Annual Growth	: 0.00	
Number of Years of Growth	: 10.00	
Medium Truck % of Total Volume	: 7.00	
Heavy Truck % of Total Volume	: 5.00	
Day (16 hrs) % of Total Volume	: 92.00	

Data for Segment # 2: Gladstone (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	: 46.50 / 46.50	m
Receiver height	: 123.00 / 123.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

Results segment # 1: Queensway (day)

Source height = 1.50 m

ROAD (0.00 + 71.74 + 0.00) = 71.74 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	86.35	0.00	-11.60	-3.01	0.00	0.00	0.00	71.74

Segment Leq : 71.74 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

ROAD (0.00 + 58.76 + 0.00) = 58.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	66.69	0.00	-4.91	-3.01	0.00	0.00	0.00	58.76

Segment Leq : 58.76 dBA

Total Leq All Segments: 71.95 dBA

Results segment # 1: Queensway (night)

Source height = 1.50 m

ROAD (0.00 + 64.14 + 0.00) = 64.14 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	78.75	0.00	-11.60	-3.01	0.00	0.00	0.00	64.14

Segment Leq : 64.14 dBA

Results segment # 2: Gladstone (night)

Source height = 1.50 m

ROAD (0.00 + 51.17 + 0.00) = 51.17 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	59.09	0.00	-4.91	-3.01	0.00	0.00	0.00	51.17

Segment Leq : 51.17 dBA

Total Leq All Segments: 64.35 dBA

RT/Custom data, segment # 1: O-Train (day/night)
---

1 - 6-car Subway:
Traffic volume : 576/108 veh/TimePeriod
Speed : 50 km/h

Data for Segment # 1: O-Train (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	: 48.00 / 48.00	m
Receiver height	: 123.00 / 123.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

Results segment # 1: O-Train (day)

Source height = 0.50 m

RT/Custom (0.00 + 59.54 + 0.00) = 59.54 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	64.60	-5.05	0.00	0.00	0.00	0.00	59.54

Segment Leq : 59.54 dBA

Total Leq All Segments: 59.54 dBA

Results segment # 1: O-Train (night)

Source height = 0.50 m

RT/Custom (0.00 + 55.28 + 0.00) = 55.28 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.34	-5.05	0.00	0.00	0.00	0.00	55.28

Segment Leq : 55.28 dBA

Total Leq All Segments: 55.28 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 72.20
(NIGHT): 64.86

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:10:29
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b1_nw.te Time Period: Day/Night 16/8 hours
Description: Bldg 1 - NW Facade

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

Car traffic volume : 185803/16157 veh/TimePeriod *
Medium truck volume : 14780/1285 veh/TimePeriod *
Heavy truck volume : 10557/918 veh/TimePeriod *
Posted speed limit : 100 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): 229500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Queensway (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 : 217.00 / 217.00 m
Receiver height : 123.00 / 123.00 m
Topography : 1 (Flat/gentle slope; no barrier)

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

Car traffic volume : 12144/1056 veh/TimePeriod *
Medium truck volume : 966/84 veh/TimePeriod *
Heavy truck volume : 690/60 veh/TimePeriod *
Posted speed limit : 40 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): 15000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Gladstone (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 : 46.50 / 46.50 m
Receiver height : 123.00 / 123.00 m
Topography : 1 (Flat/gentle slope; no barrier)

Results segment # 1: Queensway (day)

Source height = 1.50 m

ROAD (0.00 + 71.74 + 0.00) = 71.74 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	86.35	0.00	-11.60	-3.01	0.00	0.00	0.00	71.74

Segment Leq : 71.74 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

ROAD (0.00 + 58.76 + 0.00) = 58.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	66.69	0.00	-4.91	-3.01	0.00	0.00	0.00	58.76

Segment Leq : 58.76 dBA

Total Leq All Segments: 71.95 dBA

Results segment # 1: Queensway (night)

Source height = 1.50 m

ROAD (0.00 + 64.14 + 0.00) = 64.14 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	78.75	0.00	-11.60	-3.01	0.00	0.00	0.00	64.14

Segment Leq : 64.14 dBA

Results segment # 2: Gladstone (night)

Source height = 1.50 m

ROAD (0.00 + 51.17 + 0.00) = 51.17 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	59.09	0.00	-4.91	-3.01	0.00	0.00	0.00	51.17

Segment Leq : 51.17 dBA

Total Leq All Segments: 64.35 dBA

RT/Custom data, segment # 1: O-Train (day/night)
---

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (day/night)

Angle1 Angle2 : -30.00 deg 20.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 75.00 / 75.00 m
Receiver height : 123.00 / 123.00 m
Topography : 1 (Flat/gentle slope; no barrier)

Results segment # 1: O-Train (day)

Source height = 0.50 m

RT/Custom (0.00 + 50.04 + 0.00) = 50.04 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-30	20	0.00	62.59	-6.99	-5.56	0.00	0.00	0.00	50.04

Segment Leq : 50.04 dBA

Total Leq All Segments: 50.04 dBA

Results segment # 1: O-Train (night)

Source height = 0.50 m

RT/Custom (0.00 + 50.37 + 0.00) = 50.37 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-30	20	0.00	62.92	-6.99	-5.56	0.00	0.00	0.00	50.37

Segment Leq : 50.37 dBA

Total Leq All Segments: 50.37 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 71.98
(NIGHT): 64.52

```
STAMSON 5.0        NORMAL REPORT        Date: 29-07-2019 07:10:41
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b1_se.te              Time Period: Day/Night 16/8 hours
Description: Bldg 1 - SE Facade

Road data, segment # 1: Queensway (day/night)
----------------------------------------------
Car traffic volume  : 185803/16157 veh/TimePeriod  *
Medium truck volume : 14780/1285  veh/TimePeriod  *
Heavy truck volume  : 10557/918   veh/TimePeriod  *
Posted speed limit  :   100 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): 229500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :  10.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Queensway (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  : 190.00 / 190.00 m
Receiver height           : 123.00 / 123.00 m
Topography                :      1       (Flat/gentle slope; no barrier)

Road data, segment # 2: Gladstone (day/night)
----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    40 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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :  10.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Gladstone (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  :  19.50 / 19.50  m
Receiver height           : 123.00 / 123.00 m
Topography                :      1       (Flat/gentle slope; no barrier)
```

Results segment # 1: Queensway (day)

Source height = 1.50 m

ROAD (0.00 + 75.33 + 0.00) = 75.33 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	86.35	0.00	-11.03	0.00	0.00	0.00	0.00	75.33

Segment Leq : 75.33 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

ROAD (0.00 + 65.55 + 0.00) = 65.55 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	66.69	0.00	-1.14	0.00	0.00	0.00	0.00	65.55

Segment Leq : 65.55 dBA

Total Leq All Segments: 75.76 dBA

Results segment # 1: Queensway (night)

Source height = 1.50 m

ROAD (0.00 + 67.73 + 0.00) = 67.73 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	78.75	0.00	-11.03	0.00	0.00	0.00	0.00	67.73

Segment Leq : 67.73 dBA

Results segment # 2: Gladstone (night)

Source height = 1.50 m

ROAD (0.00 + 57.95 + 0.00) = 57.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	59.09	0.00	-1.14	0.00	0.00	0.00	0.00	57.95

Segment Leq : 57.95 dBA

Total Leq All Segments: 68.16 dBA

RT/Custom data, segment # 1: O-Train (day/night)
---

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (day/night)

Angle1 Angle2	: -70.00 deg	90.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 58.00 / 58.00	m
Receiver height	: 123.00 / 123.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

Results segment # 1: O-Train (day)

Source height = 0.50 m

RT/Custom (0.00 + 56.20 + 0.00) = 56.20 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	90	0.00	62.59	-5.87	-0.51	0.00	0.00	0.00	56.20

Segment Leq : 56.20 dBA

Total Leq All Segments: 56.20 dBA

Results segment # 1: O-Train (night)

Source height = 0.50 m

RT/Custom (0.00 + 56.54 + 0.00) = 56.54 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	90	0.00	62.92	-5.87	-0.51	0.00	0.00	0.00	56.54

Segment Leq : 56.54 dBA

Total Leq All Segments: 56.54 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 75.81
(NIGHT): 68.45

```
STAMSON 5.0         NORMAL REPORT         Date: 29-07-2019 07:10:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b1_sw.te              Time Period: Day/Night 16/8 hours
Description: Bldg 1 - SW Facade

Road data, segment # 1: Queensway (day/night)
----------------------------------------------
Car traffic volume  : 185803/16157 veh/TimePeriod  *
Medium truck volume : 14780/1285  veh/TimePeriod  *
Heavy truck volume  : 10557/918   veh/TimePeriod  *
Posted speed limit  :   100 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): 229500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :  10.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Queensway (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  : 190.00 / 190.00 m
Receiver height           : 123.00 / 123.00 m
Topography                :      1       (Flat/gentle slope; no barrier)

Road data, segment # 2: Gladstone (day/night)
----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    40 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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :  10.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Gladstone (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  :  19.50 / 19.50  m
Receiver height           : 123.00 / 123.00 m
Topography                :      1       (Flat/gentle slope; no barrier)
```

Results segment # 1: Queensway (day)

Source height = 1.50 m

ROAD (0.00 + 75.33 + 0.00) = 75.33 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	86.35	0.00	-11.03	0.00	0.00	0.00	0.00	75.33

Segment Leq : 75.33 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

ROAD (0.00 + 65.55 + 0.00) = 65.55 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	66.69	0.00	-1.14	0.00	0.00	0.00	0.00	65.55

Segment Leq : 65.55 dBA

Total Leq All Segments: 75.76 dBA

Results segment # 1: Queensway (night)

Source height = 1.50 m

ROAD (0.00 + 67.73 + 0.00) = 67.73 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	78.75	0.00	-11.03	0.00	0.00	0.00	0.00	67.73

Segment Leq : 67.73 dBA

Results segment # 2: Gladstone (night)

Source height = 1.50 m

ROAD (0.00 + 57.95 + 0.00) = 57.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	59.09	0.00	-1.14	0.00	0.00	0.00	0.00	57.95

Segment Leq : 57.95 dBA

Total Leq All Segments: 68.16 dBA

RT/Custom data, segment # 1: O-Train (day/night)
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1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (day/night)

Angle1 Angle2	: 20.00 deg	90.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 85.00 / 85.00	m
Receiver height	: 123.00 / 123.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

Results segment # 1: O-Train (day)

Source height = 0.50 m

RT/Custom (0.00 + 50.95 + 0.00) = 50.95 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	90	0.00	62.59	-7.53	-4.10	0.00	0.00	0.00	50.95

Segment Leq : 50.95 dBA

Total Leq All Segments: 50.95 dBA

Results segment # 1: O-Train (night)

Source height = 0.50 m

RT/Custom (0.00 + 51.29 + 0.00) = 51.29 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	90	0.00	62.92	-7.53	-4.10	0.00	0.00	0.00	51.29

Segment Leq : 51.29 dBA

Total Leq All Segments: 51.29 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 75.78
(NIGHT): 68.25

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:11:06
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b2_ne.te Time Period: Day/Night 16/8 hours
Description: Bldg 2 - NE Facade

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

Car traffic volume	: 185803/16157	veh/TimePeriod *
Medium truck volume	: 14780/1285	veh/TimePeriod *
Heavy truck volume	: 10557/918	veh/TimePeriod *
Posted speed limit	: 100	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)	: 229500	
Percentage of Annual Growth	: 0.00	
Number of Years of Growth	: 10.00	
Medium Truck % of Total Volume	: 7.00	
Heavy Truck % of Total Volume	: 5.00	
Day (16 hrs) % of Total Volume	: 92.00	

Data for Segment # 1: Queensway (day/night)

Angle1 Angle2	: -90.00 deg	-5.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 271.00 / 271.00	m
Receiver height	: 105.00 / 105.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

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

Car traffic volume	: 12144/1056	veh/TimePeriod *
Medium truck volume	: 966/84	veh/TimePeriod *
Heavy truck volume	: 690/60	veh/TimePeriod *
Posted speed limit	: 40	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)	: 15000	
Percentage of Annual Growth	: 0.00	
Number of Years of Growth	: 10.00	
Medium Truck % of Total Volume	: 7.00	
Heavy Truck % of Total Volume	: 5.00	
Day (16 hrs) % of Total Volume	: 92.00	

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

Angle1 Angle2	: -90.00 deg	-5.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 107.00 / 107.00	m
Receiver height	: 105.00 / 105.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

Results segment # 1: Queensway (day)

Source height = 1.50 m

ROAD (0.00 + 70.52 + 0.00) = 70.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-5	0.00	86.35	0.00	-12.57	-3.26	0.00	0.00	0.00	70.52

Segment Leq : 70.52 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

ROAD (0.00 + 54.89 + 0.00) = 54.89 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-5	0.00	66.69	0.00	-8.53	-3.26	0.00	0.00	0.00	54.89

Segment Leq : 54.89 dBA

Total Leq All Segments: 70.64 dBA

Results segment # 1: Queensway (night)

Source height = 1.50 m

ROAD (0.00 + 62.93 + 0.00) = 62.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-5	0.00	78.75	0.00	-12.57	-3.26	0.00	0.00	0.00	62.93

Segment Leq : 62.93 dBA

Results segment # 2: Gladstone (night)

Source height = 1.50 m

ROAD (0.00 + 47.30 + 0.00) = 47.30 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-5	0.00	59.09	0.00	-8.53	-3.26	0.00	0.00	0.00	47.30

Segment Leq : 47.30 dBA

Total Leq All Segments: 63.05 dBA

RT/Custom data, segment # 1: O-Train (day/night)
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1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (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 : 28.50 / 28.50 m
Receiver height : 105.00 / 105.00 m
Topography : 1 (Flat/gentle slope; no barrier)

Results segment # 1: O-Train (day)

Source height = 0.50 m

RT/Custom (0.00 + 59.80 + 0.00) = 59.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	62.59	-2.79	0.00	0.00	0.00	0.00	59.80

Segment Leq : 59.80 dBA

Total Leq All Segments: 59.80 dBA

Results segment # 1: O-Train (night)

Source height = 0.50 m

RT/Custom (0.00 + 60.13 + 0.00) = 60.13 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	62.92	-2.79	0.00	0.00	0.00	0.00	60.13

Segment Leq : 60.13 dBA

Total Leq All Segments: 60.13 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.98
(NIGHT): 64.84

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:11:21
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b2_nw.te Time Period: Day/Night 16/8 hours
Description: Bldg 2 - NW Facade

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

Car traffic volume	: 185803/16157	veh/TimePeriod *
Medium truck volume	: 14780/1285	veh/TimePeriod *
Heavy truck volume	: 10557/918	veh/TimePeriod *
Posted speed limit	: 100	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)	: 229500	
Percentage of Annual Growth	: 0.00	
Number of Years of Growth	: 10.00	
Medium Truck % of Total Volume	: 7.00	
Heavy Truck % of Total Volume	: 5.00	
Day (16 hrs) % of Total Volume	: 92.00	

Data for Segment # 1: Queensway (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	: 271.00 / 271.00	m
Receiver height	: 105.00 / 105.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

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

Car traffic volume	: 12144/1056	veh/TimePeriod *
Medium truck volume	: 966/84	veh/TimePeriod *
Heavy truck volume	: 690/60	veh/TimePeriod *
Posted speed limit	: 40	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)	: 15000	
Percentage of Annual Growth	: 0.00	
Number of Years of Growth	: 10.00	
Medium Truck % of Total Volume	: 7.00	
Heavy Truck % of Total Volume	: 5.00	
Day (16 hrs) % of Total Volume	: 92.00	

Data for Segment # 2: Gladstone (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	: 107.00 / 107.00	m
Receiver height	: 105.00 / 105.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

Results segment # 1: Queensway (day)

Source height = 1.50 m

ROAD (0.00 + 70.77 + 0.00) = 70.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	86.35	0.00	-12.57	-3.01	0.00	0.00	0.00	70.77

Segment Leq : 70.77 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

ROAD (0.00 + 55.14 + 0.00) = 55.14 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	66.69	0.00	-8.53	-3.01	0.00	0.00	0.00	55.14

Segment Leq : 55.14 dBA

Total Leq All Segments: 70.89 dBA

Results segment # 1: Queensway (night)

Source height = 1.50 m

ROAD (0.00 + 63.18 + 0.00) = 63.18 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	78.75	0.00	-12.57	-3.01	0.00	0.00	0.00	63.18

Segment Leq : 63.18 dBA

Results segment # 2: Gladstone (night)

Source height = 1.50 m

ROAD (0.00 + 47.55 + 0.00) = 47.55 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	59.09	0.00	-8.53	-3.01	0.00	0.00	0.00	47.55

Segment Leq : 47.55 dBA

Total Leq All Segments: 63.30 dBA

RT/Custom data, segment # 1: O-Train (day/night)

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (day/night)

Angle1 Angle2	: -40.00 deg	20.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 54.00 / 54.00	m
Receiver height	: 105.00 / 105.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

Results segment # 1: O-Train (day)

Source height = 0.50 m

RT/Custom (0.00 + 52.26 + 0.00) = 52.26 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-40	20	0.00	62.59	-5.56	-4.77	0.00	0.00	0.00	52.26

Segment Leq : 52.26 dBA

Total Leq All Segments: 52.26 dBA

Results segment # 1: O-Train (night)

Source height = 0.50 m

RT/Custom (0.00 + 52.59 + 0.00) = 52.59 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-40	20	0.00	62.92	-5.56	-4.77	0.00	0.00	0.00	52.59

Segment Leq : 52.59 dBA

Total Leq All Segments: 52.59 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.95
(NIGHT): 63.65

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:11:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b2_se.te Time Period: Day/Night 16/8 hours
Description: Bldg 2 - SE Facade

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

Car traffic volume	: 185803/16157	veh/TimePeriod *
Medium truck volume	: 14780/1285	veh/TimePeriod *
Heavy truck volume	: 10557/918	veh/TimePeriod *
Posted speed limit	: 100	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)	: 229500	
Percentage of Annual Growth	: 0.00	
Number of Years of Growth	: 10.00	
Medium Truck % of Total Volume	: 7.00	
Heavy Truck % of Total Volume	: 5.00	
Day (16 hrs) % of Total Volume	: 92.00	

Data for Segment # 1: Queensway (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	: 244.00 / 244.00	m
Receiver height	: 105.00 / 105.00	m
Topography	: 2	(Flat/gentle slope; with barrier)
Barrier angle1	: 0.00 deg	Angle2 : 40.00 deg
Barrier height	: 123.00	m
Barrier receiver distance	: 47.00 / 47.00	m
Source elevation	: 0.00	m
Receiver elevation	: 0.00	m
Barrier elevation	: 0.00	m

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

Car traffic volume	: 12144/1056	veh/TimePeriod *
Medium truck volume	: 966/84	veh/TimePeriod *
Heavy truck volume	: 690/60	veh/TimePeriod *
Posted speed limit	: 40	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)	: 15000	
Percentage of Annual Growth	: 0.00	
Number of Years of Growth	: 10.00	
Medium Truck % of Total Volume	: 7.00	
Heavy Truck % of Total Volume	: 5.00	
Day (16 hrs) % of Total Volume	: 92.00	

Data for Segment # 2: Gladstone (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	: 78.00 / 78.00	m
Receiver height	: 105.00 / 105.00	m
Topography	: 2	(Flat/gentle slope; with barrier)
Barrier angle1	: 0.00 deg	Angle2 : 40.00 deg
Barrier height	: 123.00 m	
Barrier receiver distance	: 47.00 / 47.00	m
Source elevation	: 0.00 m	
Receiver elevation	: 0.00 m	
Barrier elevation	: 0.00 m	

Results segment # 1: Queensway (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	105.00	85.06	85.06

ROAD (71.23 + 47.71 + 68.68) = 73.16 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	86.35	0.00	-12.11	-3.01	0.00	0.00	0.00	71.23
0	40	0.00	86.35	0.00	-12.11	-6.53	0.00	0.00	-20.00	47.71
40	90	0.00	86.35	0.00	-12.11	-5.56	0.00	0.00	0.00	68.68

Segment Leq : 73.16 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	105.00	42.63	42.63

ROAD (56.52 + 32.99 + 53.96) = 58.45 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	66.69	0.00	-7.16	-3.01	0.00	0.00	0.00	56.52
0	40	0.00	66.69	0.00	-7.16	-6.53	0.00	0.00	-20.00	32.99
40	90	0.00	66.69	0.00	-7.16	-5.56	0.00	0.00	0.00	53.96

Segment Leq : 58.45 dBA
Total Leq All Segments: 73.30 dBA

Results segment # 1: Queensway (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	105.00	85.06	85.06

ROAD (63.63 + 40.11 + 61.08) = 65.56 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	78.75	0.00	-12.11	-3.01	0.00	0.00	0.00	63.63
0	40	0.00	78.75	0.00	-12.11	-6.53	0.00	0.00	-20.00	40.11
40	90	0.00	78.75	0.00	-12.11	-5.56	0.00	0.00	0.00	61.08

Segment Leq : 65.56 dBA

Results segment # 2: Gladstone (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	105.00	42.63	42.63

ROAD (48.92 + 25.40 + 46.37) = 50.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	59.09	0.00	-7.16	-3.01	0.00	0.00	0.00	48.92
0	40	0.00	59.09	0.00	-7.16	-6.53	0.00	0.00	-20.00	25.40
40	90	0.00	59.09	0.00	-7.16	-5.56	0.00	0.00	0.00	46.37

Segment Leq : 50.85 dBA

Total Leq All Segments: 65.70 dBA

RT/Custom data, segment # 1: O-Train (day/night)

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (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	: 37.00 / 37.00	m
Receiver height	: 105.00 / 105.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

Results segment # 1: O-Train (day)

Source height = 0.50 m

RT/Custom (0.00 + 58.67 + 0.00) = 58.67 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	62.59	-3.92	0.00	0.00	0.00	0.00	58.67

Segment Leq : 58.67 dBA

Total Leq All Segments: 58.67 dBA

Results segment # 1: O-Train (night)

Source height = 0.50 m

RT/Custom (0.00 + 59.00 + 0.00) = 59.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	62.92	-3.92	0.00	0.00	0.00	0.00	59.00

Segment Leq : 59.00 dBA

Total Leq All Segments: 59.00 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 73.45
(NIGHT): 66.55

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:11:52
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b2_sw.te Time Period: Day/Night 16/8 hours
Description: Bldg 2 - SW Facade

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

Car traffic volume	: 185803/16157	veh/TimePeriod *
Medium truck volume	: 14780/1285	veh/TimePeriod *
Heavy truck volume	: 10557/918	veh/TimePeriod *
Posted speed limit	: 100	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)	: 229500	
Percentage of Annual Growth	: 0.00	
Number of Years of Growth	: 10.00	
Medium Truck % of Total Volume	: 7.00	
Heavy Truck % of Total Volume	: 5.00	
Day (16 hrs) % of Total Volume	: 92.00	

Data for Segment # 1: Queensway (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	: 244.00 / 244.00	m
Receiver height	: 105.00 / 105.00	m
Topography	: 2	(Flat/gentle slope; with barrier)
Barrier angle1	: 50.00 deg	Angle2 : 90.00 deg
Barrier height	: 123.00	m
Barrier receiver distance	: 47.00 / 47.00	m
Source elevation	: 0.00	m
Receiver elevation	: 0.00	m
Barrier elevation	: 0.00	m

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

Car traffic volume	: 12144/1056	veh/TimePeriod *
Medium truck volume	: 966/84	veh/TimePeriod *
Heavy truck volume	: 690/60	veh/TimePeriod *
Posted speed limit	: 40	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)	: 15000	
Percentage of Annual Growth	: 0.00	
Number of Years of Growth	: 10.00	
Medium Truck % of Total Volume	: 7.00	
Heavy Truck % of Total Volume	: 5.00	
Day (16 hrs) % of Total Volume	: 92.00	

Data for Segment # 2: Gladstone (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	: 79.00 / 79.00	m
Receiver height	: 105.00 / 105.00	m
Topography	: 2	(Flat/gentle slope; with barrier)
Barrier angle1	: 50.00 deg	Angle2 : 90.00 deg
Barrier height	: 123.00 m	
Barrier receiver distance	: 47.00 / 47.00	m
Source elevation	: 0.00 m	
Receiver elevation	: 0.00 m	
Barrier elevation	: 0.00 m	

Results segment # 1: Queensway (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	105.00	85.06	85.06

ROAD (73.15 + 49.24 + 0.00) = 73.16 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	50	0.00	86.35	0.00	-12.11	-1.09	0.00	0.00	0.00	73.15
50	90	0.00	86.35	0.00	-12.11	-6.53	0.00	0.00	-18.47	49.24

Segment Leq : 73.16 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	105.00	43.42	43.42

ROAD (58.38 + 33.56 + 0.00) = 58.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	50	0.00	66.69	0.00	-7.22	-1.09	0.00	0.00	0.00	58.38
50	90	0.00	66.69	0.00	-7.22	-6.53	0.00	0.00	-19.37	33.56

Segment Leq : 58.39 dBA

Total Leq All Segments: 73.30 dBA

Results segment # 1: Queensway (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	105.00	85.06	85.06

ROAD (65.55 + 41.64 + 0.00) = 65.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	50	0.00	78.75	0.00	-12.11	-1.09	0.00	0.00	0.00	65.55
50	90	0.00	78.75	0.00	-12.11	-6.53	0.00	0.00	-18.47	41.64

Segment Leq : 65.57 dBA

Results segment # 2: Gladstone (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	105.00	43.42	43.42

ROAD (50.78 + 25.97 + 0.00) = 50.80 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	50	0.00	59.09	0.00	-7.22	-1.09	0.00	0.00	0.00	50.78
50	90	0.00	59.09	0.00	-7.22	-6.53	0.00	0.00	-19.37	25.97

Segment Leq : 50.80 dBA

Total Leq All Segments: 65.71 dBA

RT/Custom data, segment # 1: O-Train (day/night)

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (day/night)

Angle1 Angle2	: 20.00 deg	90.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 64.00 / 64.00	m
Receiver height	: 105.00 / 105.00	m
Topography	: 2	(Flat/gentle slope; with barrier)
Barrier angle1	: 65.00 deg	Angle2 : 90.00 deg
Barrier height	: 123.00 m	
Barrier receiver distance	: 15.00 / 15.00	m
Source elevation	: 0.00 m	
Receiver elevation	: 0.00 m	
Barrier elevation	: 0.00 m	

Results segment # 1: O-Train (day)

Source height = 0.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
0.50	105.00	80.51	80.51

RT/Custom (50.27 + 29.01 + 0.00) = 50.30 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	65	0.00	62.59	-6.30	-6.02	0.00	0.00	0.00	50.27
65	90	0.00	62.59	-6.30	-8.57	0.00	0.00	-18.71	29.01

Segment Leq : 50.30 dBA

Total Leq All Segments: 50.30 dBA

Results segment # 1: O-Train (night)

Source height = 0.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
0.50	105.00	80.51	80.51

RT/Custom (50.60 + 29.34 + 0.00) = 50.63 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	65	0.00	62.92	-6.30	-6.02	0.00	0.00	0.00	50.60
65	90	0.00	62.92	-6.30	-8.57	0.00	0.00	-18.71	29.34

Segment Leq : 50.63 dBA

Total Leq All Segments: 50.63 dBA
TOTAL Leq FROM ALL SOURCES (DAY): 73.32
(NIGHT): 65.85

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:12:08
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b3_ne.te Time Period: Day/Night 16/8 hours
Description: Bldg 3 - NE Facade

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

Car traffic volume	: 185803/16157	veh/TimePeriod *
Medium truck volume	: 14780/1285	veh/TimePeriod *
Heavy truck volume	: 10557/918	veh/TimePeriod *
Posted speed limit	: 100	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)	: 229500	
Percentage of Annual Growth	: 0.00	
Number of Years of Growth	: 10.00	
Medium Truck % of Total Volume	: 7.00	
Heavy Truck % of Total Volume	: 5.00	
Day (16 hrs) % of Total Volume	: 92.00	

Data for Segment # 1: Queensway (day/night)

Angle1 Angle2	: -90.00 deg	-20.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 317.00 / 317.00	m
Receiver height	: 90.00 / 90.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

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

Car traffic volume	: 12144/1056	veh/TimePeriod *
Medium truck volume	: 966/84	veh/TimePeriod *
Heavy truck volume	: 690/60	veh/TimePeriod *
Posted speed limit	: 40	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)	: 15000	
Percentage of Annual Growth	: 0.00	
Number of Years of Growth	: 10.00	
Medium Truck % of Total Volume	: 7.00	
Heavy Truck % of Total Volume	: 5.00	
Day (16 hrs) % of Total Volume	: 92.00	

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

Angle1 Angle2	: -90.00 deg	-20.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 152.00 / 152.00	m
Receiver height	: 90.00 / 90.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

Results segment # 1: Queensway (day)

Source height = 1.50 m

ROAD (0.00 + 69.00 + 0.00) = 69.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-20	0.00	86.35	0.00	-13.25	-4.10	0.00	0.00	0.00	69.00

Segment Leq : 69.00 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

ROAD (0.00 + 52.53 + 0.00) = 52.53 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-20	0.00	66.69	0.00	-10.06	-4.10	0.00	0.00	0.00	52.53

Segment Leq : 52.53 dBA

Total Leq All Segments: 69.10 dBA

Results segment # 1: Queensway (night)

Source height = 1.50 m

ROAD (0.00 + 61.40 + 0.00) = 61.40 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-20	0.00	78.75	0.00	-13.25	-4.10	0.00	0.00	0.00	61.40

Segment Leq : 61.40 dBA

Results segment # 2: Gladstone (night)

Source height = 1.50 m

ROAD (0.00 + 44.93 + 0.00) = 44.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-20	0.00	59.09	0.00	-10.06	-4.10	0.00	0.00	0.00	44.93

Segment Leq : 44.93 dBA

Total Leq All Segments: 61.50 dBA

RT/Custom data, segment # 1: O-Train (day/night)
---

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (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 : 28.50 / 28.50 m
Receiver height : 90.00 / 90.00 m
Topography : 1 (Flat/gentle slope; no barrier)

Results segment # 1: O-Train (day)

Source height = 0.50 m

RT/Custom (0.00 + 59.80 + 0.00) = 59.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	62.59	-2.79	0.00	0.00	0.00	0.00	59.80

Segment Leq : 59.80 dBA

Total Leq All Segments: 59.80 dBA

Results segment # 1: O-Train (night)

Source height = 0.50 m

RT/Custom (0.00 + 60.13 + 0.00) = 60.13 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	62.92	-2.79	0.00	0.00	0.00	0.00	60.13

Segment Leq : 60.13 dBA

Total Leq All Segments: 60.13 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 69.58
(NIGHT): 63.88

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:12:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b3_nw.te Time Period: Day/Night 16/8 hours
Description: Bdlg 3 - NW Facade

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

```
Car traffic volume  : 185803/16157 veh/TimePeriod  *
Medium truck volume : 14780/1285  veh/TimePeriod  *
Heavy truck volume  : 10557/918   veh/TimePeriod  *
Posted speed limit  :   100 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): 229500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :  10.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00
```

Data for Segment # 1: Queensway (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  : 317.00 / 317.00 m
Receiver height           :  90.00 / 90.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
```

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

```
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    40 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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :  10.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00
```

Data for Segment # 2: Gladstone (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  : 152.00 / 152.00 m
Receiver height           :  90.00 / 90.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
```

Results segment # 1: Queensway (day)

Source height = 1.50 m

ROAD (0.00 + 70.09 + 0.00) = 70.09 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	86.35	0.00	-13.25	-3.01	0.00	0.00	0.00	70.09

Segment Leq : 70.09 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

ROAD (0.00 + 53.62 + 0.00) = 53.62 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	66.69	0.00	-10.06	-3.01	0.00	0.00	0.00	53.62

Segment Leq : 53.62 dBA

Total Leq All Segments: 70.19 dBA

Results segment # 1: Queensway (night)

Source height = 1.50 m

ROAD (0.00 + 62.49 + 0.00) = 62.49 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	78.75	0.00	-13.25	-3.01	0.00	0.00	0.00	62.49

Segment Leq : 62.49 dBA

Results segment # 2: Gladstone (night)

Source height = 1.50 m

ROAD (0.00 + 46.02 + 0.00) = 46.02 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	59.09	0.00	-10.06	-3.01	0.00	0.00	0.00	46.02

Segment Leq : 46.02 dBA

Total Leq All Segments: 62.59 dBA

RT/Custom data, segment # 1: O-Train (day/night)
---

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (day/night)

Angle1 Angle2 : -90.00 deg 20.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 57.00 / 57.00 m
Receiver height : 90.00 / 90.00 m
Topography : 1 (Flat/gentle slope; no barrier)

Results segment # 1: O-Train (day)

Source height = 0.50 m

RT/Custom (0.00 + 54.65 + 0.00) = 54.65 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	20	0.00	62.59	-5.80	-2.14	0.00	0.00	0.00	54.65

Segment Leq : 54.65 dBA

Total Leq All Segments: 54.65 dBA

Results segment # 1: O-Train (night)

Source height = 0.50 m

RT/Custom (0.00 + 54.98 + 0.00) = 54.98 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	20	0.00	62.92	-5.80	-2.14	0.00	0.00	0.00	54.98

Segment Leq : 54.98 dBA

Total Leq All Segments: 54.98 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.31
(NIGHT): 63.28

```
STAMSON 5.0        NORMAL REPORT        Date: 29-07-2019 07:12:45
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b3_se.te              Time Period: Day/Night 16/8 hours
Description: Bdlg 3 - SE Facade

Road data, segment # 1: Queensway (day/night)
----------------------------------------------
Car traffic volume  : 185803/16157 veh/TimePeriod  *
Medium truck volume : 14780/1285  veh/TimePeriod  *
Heavy truck volume  : 10557/918   veh/TimePeriod  *
Posted speed limit  :   100 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): 229500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :  10.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Queensway (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   -30.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 293.00 / 293.00 m
Receiver height           :  90.00 / 90.00  m
Topography                :      1       (Flat/gentle slope; no barrier)

Road data, segment # 2: Gladstone (day/night)
----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    40 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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :  10.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Gladstone (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   -30.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 129.00 / 129.00 m
Receiver height           :  90.00 / 90.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
```

Results segment # 1: Queensway (day)

Source height = 1.50 m

ROAD (0.00 + 68.67 + 0.00) = 68.67 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-30	0.00	86.35	0.00	-12.91	-4.77	0.00	0.00	0.00	68.67

Segment Leq : 68.67 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

ROAD (0.00 + 52.57 + 0.00) = 52.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-30	0.00	66.69	0.00	-9.34	-4.77	0.00	0.00	0.00	52.57

Segment Leq : 52.57 dBA

Total Leq All Segments: 68.78 dBA

Results segment # 1: Queensway (night)

Source height = 1.50 m

ROAD (0.00 + 61.08 + 0.00) = 61.08 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-30	0.00	78.75	0.00	-12.91	-4.77	0.00	0.00	0.00	61.08

Segment Leq : 61.08 dBA

Results segment # 2: Gladstone (night)

Source height = 1.50 m

ROAD (0.00 + 44.97 + 0.00) = 44.97 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-30	0.00	59.09	0.00	-9.34	-4.77	0.00	0.00	0.00	44.97

Segment Leq : 44.97 dBA

Total Leq All Segments: 61.19 dBA

RT/Custom data, segment # 1: O-Train (day/night)

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (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	: 35.00 / 35.00	m
Receiver height	: 90.00 / 90.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

Results segment # 1: O-Train (day)

Source height = 0.50 m

RT/Custom (0.00 + 58.91 + 0.00) = 58.91 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	62.59	-3.68	0.00	0.00	0.00	0.00	58.91

Segment Leq : 58.91 dBA

Total Leq All Segments: 58.91 dBA

Results segment # 1: O-Train (night)

Source height = 0.50 m

RT/Custom (0.00 + 59.24 + 0.00) = 59.24 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	62.92	-3.68	0.00	0.00	0.00	0.00	59.24

Segment Leq : 59.24 dBA

Total Leq All Segments: 59.24 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 69.20
(NIGHT): 63.33

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:12:58
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b3_sw.te Time Period: Day/Night 16/8 hours
Description: Bdlg 3 - SW Facade

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

Car traffic volume	: 185803/16157	veh/TimePeriod *
Medium truck volume	: 14780/1285	veh/TimePeriod *
Heavy truck volume	: 10557/918	veh/TimePeriod *
Posted speed limit	: 100	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)	: 229500
Percentage of Annual Growth	: 0.00
Number of Years of Growth	: 10.00
Medium Truck % of Total Volume	: 7.00
Heavy Truck % of Total Volume	: 5.00
Day (16 hrs) % of Total Volume	: 92.00

Data for Segment # 1: Queensway (day/night)

Angle1 Angle2	: -15.00 deg	90.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 293.00 / 293.00	m
Receiver height	: 90.00 / 90.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

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

Car traffic volume	: 12144/1056	veh/TimePeriod *
Medium truck volume	: 966/84	veh/TimePeriod *
Heavy truck volume	: 690/60	veh/TimePeriod *
Posted speed limit	: 40	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)	: 15000
Percentage of Annual Growth	: 0.00
Number of Years of Growth	: 10.00
Medium Truck % of Total Volume	: 7.00
Heavy Truck % of Total Volume	: 5.00
Day (16 hrs) % of Total Volume	: 92.00

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

Angle1 Angle2	: -15.00 deg	90.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 129.00 / 129.00	m
Receiver height	: 90.00 / 4.50	m
Topography	: 1	(Flat/gentle slope; no barrier)

Results segment # 1: Queensway (day)

Source height = 1.50 m

ROAD (0.00 + 71.10 + 0.00) = 71.10 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	90	0.00	86.35	0.00	-12.91	-2.34	0.00	0.00	0.00	71.10

Segment Leq : 71.10 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

ROAD (0.00 + 55.00 + 0.00) = 55.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	90	0.00	66.69	0.00	-9.34	-2.34	0.00	0.00	0.00	55.00

Segment Leq : 55.00 dBA

Total Leq All Segments: 71.21 dBA

Results segment # 1: Queensway (night)

Source height = 1.50 m

ROAD (0.00 + 63.51 + 0.00) = 63.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	90	0.00	78.75	0.00	-12.91	-2.34	0.00	0.00	0.00	63.51

Segment Leq : 63.51 dBA

Results segment # 2: Gladstone (night)

Source height = 1.50 m

ROAD (0.00 + 47.40 + 0.00) = 47.40 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	90	0.00	59.09	0.00	-9.34	-2.34	0.00	0.00	0.00	47.40

Segment Leq : 47.40 dBA

Total Leq All Segments: 63.62 dBA

RT/Custom data, segment # 1: O-Train (day/night)

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (day/night)

Angle1 Angle2	:	20.00 deg 90.00 deg
Wood depth	:	0 (No woods.)
No of house rows	:	0 / 0
Surface	:	2 (Reflective ground surface)
Receiver source distance	:	64.00 / 64.00 m
Receiver height	:	90.00 / 90.00 m
Topography	:	2 (Flat/gentle slope; with barrier)
Barrier angle1	:	45.00 deg Angle2 : 85.00 deg
Barrier height	:	105.00 m
Barrier receiver distance	:	38.00 / 38.00 m
Source elevation	:	0.00 m
Receiver elevation	:	0.00 m
Barrier elevation	:	0.00 m

Results segment # 1: O-Train (day)

Source height = 0.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
0.50	90.00	36.86	36.86

RT/Custom (47.72 + 29.76 + 40.73) = 48.56 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	45	0.00	62.59	-6.30	-8.57	0.00	0.00	0.00	47.72
45	85	0.00	62.59	-6.30	-6.53	0.00	0.00	-20.00	29.76
85	90	0.00	62.59	-6.30	-15.56	0.00	0.00	0.00	40.73

Segment Leq : 48.56 dBA

Total Leq All Segments: 48.56 dBA

Results segment # 1: O-Train (night)

Source height = 0.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
0.50	90.00	36.86	36.86

RT/Custom (48.05 + 30.09 + 41.06) = 48.90 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	45	0.00	62.92	-6.30	-8.57	0.00	0.00	0.00	48.05
45	85	0.00	62.92	-6.30	-6.53	0.00	0.00	-20.00	30.09
85	90	0.00	62.92	-6.30	-15.56	0.00	0.00	0.00	41.06

Segment Leq : 48.90 dBA

Total Leq All Segments: 48.90 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 71.23
(NIGHT): 63.76

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:13:37
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: terr_3rd.te Time Period: Day/Night 16/8 hours
Description: Terrace - 3rd Floor

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

Car traffic volume : 185803/16157 veh/TimePeriod *
Medium truck volume : 14780/1285 veh/TimePeriod *
Heavy truck volume : 10557/918 veh/TimePeriod *
Posted speed limit : 100 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): 229500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Queensway (day/night)

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 281.00 / 281.00 m
Receiver height : 1.50 / 90.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -45.00 deg
Barrier height : 1.10 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 3.00 m
Receiver elevation : 5.50 m
Barrier elevation : 5.50 m

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

Car traffic volume : 12144/1056 veh/TimePeriod *
Medium truck volume : 966/84 veh/TimePeriod *
Heavy truck volume : 690/60 veh/TimePeriod *
Posted speed limit : 40 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): 15000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

```
Angle1   Angle2           : -90.00 deg   -45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 118.00 / 118.00 m
Receiver height           :   1.50 / 90.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -45.00 deg
Barrier height            :   1.10 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :   0.00 m
Receiver elevation        :   5.50 m
Barrier elevation         :   5.50 m
```

Results segment # 1: Queensway (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.47	6.97

ROAD (0.00 + 56.18 + 0.00) = 56.18 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-45	0.59	86.35	0.00	-20.29	-8.79	0.00	0.00	-4.51	52.77*
-90	-45	0.66	86.35	0.00	-21.13	-9.05	0.00	0.00	0.00	56.18

* Bright Zone !

Segment Leq : 56.18 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.36	6.86

ROAD (0.00 + 42.77 + 0.00) = 42.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-45	0.59	66.69	0.00	-14.28	-8.79	0.00	0.00	-4.77	38.85*
-90	-45	0.66	66.69	0.00	-14.87	-9.05	0.00	0.00	0.00	42.77

* Bright Zone !

Segment Leq : 42.77 dBA

Total Leq All Segments: 56.37 dBA

RT/Custom data, segment # 1: O-Train (day/night)

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (day/night)

Angle1 Angle2	: -45.00 deg	20.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 44.00 / 44.00	m
Receiver height	: 1.50 / 90.00	m
Topography	: 2	(Flat/gentle slope; with barrier)
Barrier angle1	: -45.00 deg	Angle2 : 20.00 deg
Barrier height	: 1.10 m	
Barrier receiver distance	: 3.00 / 3.00	m
Source elevation	: -5.00 m	
Receiver elevation	: 5.50 m	
Barrier elevation	: 5.50 m	

Results segment # 1: O-Train (day)

Source height = 0.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
0.50	1.50	0.72	6.22

RT/Custom (0.00 + 47.40 + 0.00) = 47.40 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	20	0.00	62.59	-4.67	-4.42	0.00	0.00	-6.10	47.40

Segment Leq : 47.40 dBA

Total Leq All Segments: 47.40 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.89

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:14:00
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: terr_6th.te Time Period: Day/Night 16/8 hours
Description: Terrace - 6th Floor

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

Car traffic volume : 185803/16157 veh/TimePeriod *
Medium truck volume : 14780/1285 veh/TimePeriod *
Heavy truck volume : 10557/918 veh/TimePeriod *
Posted speed limit : 100 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): 229500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Queensway (day/night)

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 196.00 / 196.00 m
Receiver height : 1.50 / 90.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -45.00 deg
Barrier height : 1.10 m
Barrier receiver distance : 18.00 / 18.00 m
Source elevation : 3.00 m
Receiver elevation : 18.00 m
Barrier elevation : 18.00 m

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

Car traffic volume : 185803/16157 veh/TimePeriod *
Medium truck volume : 14780/1285 veh/TimePeriod *
Heavy truck volume : 10557/918 veh/TimePeriod *
Posted speed limit : 100 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): 229500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

```
Data for Segment # 2: Queensway (day/night)
--------------------------------------------
Angle1   Angle2           : -45.00 deg   55.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 196.00 / 196.00 m
Receiver height           :   1.50 / 90.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -45.00 deg   Angle2 : 55.00 deg
Barrier height            : 100.00 m
Barrier receiver distance :  18.00 / 18.00  m
Source elevation          :   3.00 m
Receiver elevation        :  18.00 m
Barrier elevation         :  18.00 m

Road data, segment # 3: Queensway (day/night)
--------------------------------------------
Car traffic volume  : 185803/16157 veh/TimePeriod  *
Medium truck volume : 14780/1285  veh/TimePeriod  *
Heavy truck volume  : 10557/918   veh/TimePeriod  *
Posted speed limit  :   100 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): 229500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :  10.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Queensway (day/night)
--------------------------------------------
Angle1   Angle2           :  55.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 196.00 / 196.00 m
Receiver height           :   1.50 / 90.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  55.00 deg   Angle2 : 90.00 deg
Barrier height            :   1.10 m
Barrier receiver distance :  18.00 / 18.00  m
Source elevation          :   3.00 m
Receiver elevation        :  18.00 m
Barrier elevation         :  18.00 m

Road data, segment # 4: Gladstone (day/night)
--------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    40 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)	15000
Percentage of Annual Growth	0.00
Number of Years of Growth	10.00
Medium Truck % of Total Volume	7.00
Heavy Truck % of Total Volume	5.00
Day (16 hrs) % of Total Volume	92.00

Data for Segment # 4: Gladstone (day/night)

Angle1 Angle2	-90.00 deg -45.00 deg
Wood depth	0 (No woods.)
No of house rows	0 / 0
Surface	1 (Absorptive ground surface)
Receiver source distance	32.00 / 32.00 m
Receiver height	1.50 / 90.00 m
Topography	2 (Flat/gentle slope; with barrier)
Barrier angle1	-90.00 deg Angle2 : -45.00 deg
Barrier height	1.10 m
Barrier receiver distance	18.00 / 18.00 m
Source elevation	0.00 m
Receiver elevation	18.00 m
Barrier elevation	18.00 m

Road data, segment # 5: Gladstone (day/night)

Car traffic volume	12144/1056 veh/TimePeriod *
Medium truck volume	966/84 veh/TimePeriod *
Heavy truck volume	690/60 veh/TimePeriod *
Posted speed limit	40 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)	15000
Percentage of Annual Growth	0.00
Number of Years of Growth	10.00
Medium Truck % of Total Volume	7.00
Heavy Truck % of Total Volume	5.00
Day (16 hrs) % of Total Volume	92.00

Data for Segment # 5: Gladstone (day/night)

Angle1 Angle2	-45.00 deg 55.00 deg
Wood depth	0 (No woods.)
No of house rows	0 / 0
Surface	1 (Absorptive ground surface)
Receiver source distance	32.00 / 32.00 m
Receiver height	1.50 / 90.00 m
Topography	2 (Flat/gentle slope; with barrier)
Barrier angle1	-45.00 deg Angle2 : 55.00 deg
Barrier height	100.00 m
Barrier receiver distance	18.00 / 18.00 m
Source elevation	0.00 m
Receiver elevation	18.00 m
Barrier elevation	18.00 m

Road data, segment # 6: Gladstone (day/night)

Car traffic volume	: 12144/1056	veh/TimePeriod *
Medium truck volume	: 966/84	veh/TimePeriod *
Heavy truck volume	: 690/60	veh/TimePeriod *
Posted speed limit	: 40 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)	:	15000
Percentage of Annual Growth	:	0.00
Number of Years of Growth	:	10.00
Medium Truck % of Total Volume	:	7.00
Heavy Truck % of Total Volume	:	5.00
Day (16 hrs) % of Total Volume	:	92.00

Data for Segment # 6: Gladstone (day/night)

Angle1 Angle2	: 55.00 deg	90.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 1	(Absorptive ground surface)
Receiver source distance	: 32.00 / 32.00	m
Receiver height	: 1.50 / 90.00	m
Topography	: 2	(Flat/gentle slope; with barrier)
Barrier angle1	: 55.00 deg	Angle2 : 90.00 deg
Barrier height	: 1.10 m	
Barrier receiver distance	: 18.00 / 18.00	m
Source elevation	: 0.00 m	
Receiver elevation	: 18.00 m	
Barrier elevation	: 18.00 m	

Results segment # 1: Queensway (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	0.12	18.12

ROAD (0.00 + 54.24 + 0.00) = 54.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-45	0.59	86.35	0.00	-17.79	-8.79	0.00	0.00	-5.53	54.24

Segment Leq : 54.24 dBA

Results segment # 2: Queensway (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	0.12	18.12

ROAD (0.00 + 52.64 + 0.00) = 52.64 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	55	0.00	86.35	0.00	-11.16	-2.55	0.00	0.00	-20.00	52.64

Segment Leq : 52.64 dBA

Results segment # 3: Queensway (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	0.12	18.12

ROAD (0.00 + 52.65 + 0.00) = 52.65 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
55	90	0.59	86.35	0.00	-17.79	-10.48	0.00	0.00	-5.43	52.65

Segment Leq : 52.65 dBA

Results segment # 4: Gladstone (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	-8.63	9.37

ROAD (0.00 + 36.93 + 0.00) = 36.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-45	0.59	66.69	0.00	-5.25	-8.79	0.00	0.00	-15.72	36.93

Segment Leq : 36.93 dBA

Results segment # 5: Gladstone (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	-8.63	9.37

ROAD (0.00 + 40.84 + 0.00) = 40.84 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	55	0.00	66.69	0.00	-3.29	-2.55	0.00	0.00	-20.00	40.84

Segment Leq : 40.84 dBA

Results segment # 6: Gladstone (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	-8.63	9.37

ROAD (0.00 + 35.95 + 0.00) = 35.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
55	90	0.59	66.69	0.00	-5.25	-10.48	0.00	0.00	-15.01	35.95

Segment Leq : 35.95 dBA

Total Leq All Segments: 58.16 dBA

RT/Custom data, segment # 1: O-Train (day/night)
---

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (day/night)

Angle1 Angle2 : -90.00 deg 20.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 85.00 / 85.00 m
Receiver height : 1.50 / 90.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 20.00 deg
Barrier height : 1.10 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : -5.00 m
Receiver elevation : 18.00 m
Barrier elevation : 18.00 m

Results segment # 1: O-Train (day)

Source height = 0.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
0.50	1.50	0.65	18.65

RT/Custom (0.00 + 46.88 + 0.00) = 46.88 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	20	0.00	62.59	-7.53	-2.14	0.00	0.00	-6.04	46.88

Segment Leq : 46.88 dBA

Total Leq All Segments: 46.88 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.47

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:14:12
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: terr_grd.te Time Period: Day/Night 16/8 hours
Description: Terrace - Ground Floor

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

Car traffic volume : 185803/16157 veh/TimePeriod *
Medium truck volume : 14780/1285 veh/TimePeriod *
Heavy truck volume : 10557/918 veh/TimePeriod *
Posted speed limit : 100 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): 229500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Queensway (day/night)

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 281.00 / 281.00 m
Receiver height : 1.50 / 90.00 m
Topography : 1 (Flat/gentle slope; no barrier)

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

Car traffic volume : 12144/1056 veh/TimePeriod *
Medium truck volume : 966/84 veh/TimePeriod *
Heavy truck volume : 690/60 veh/TimePeriod *
Posted speed limit : 40 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): 15000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 118.00 / 118.00 m
Receiver height : 1.50 / 90.00 m
Topography : 1 (Flat/gentle slope; no barrier)

Results segment # 1: Queensway (day)

Source height = 1.50 m

ROAD (0.00 + 56.18 + 0.00) = 56.18 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-45	0.66	86.35	0.00	-21.13	-9.05	0.00	0.00	0.00	56.18

Segment Leq : 56.18 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

ROAD (0.00 + 42.77 + 0.00) = 42.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-45	0.66	66.69	0.00	-14.87	-9.05	0.00	0.00	0.00	42.77

Segment Leq : 42.77 dBA

Total Leq All Segments: 56.37 dBA

Results segment # 1: Queensway (night)

Source height = 1.50 m

ROAD (0.00 + 60.01 + 0.00) = 60.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-45	0.00	78.75	0.00	-12.73	-6.02	0.00	0.00	0.00	60.01

Segment Leq : 60.01 dBA

Results segment # 2: Gladstone (night)

Source height = 1.50 m

ROAD (0.00 + 44.11 + 0.00) = 44.11 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-45	0.00	59.09	0.00	-8.96	-6.02	0.00	0.00	0.00	44.11

Segment Leq : 44.11 dBA

Total Leq All Segments: 60.12 dBA

RT/Custom data, segment # 1: O-Train (day/night)

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (day/night)

Angle1 Angle2	: -90.00 deg	20.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 2	(Reflective ground surface)
Receiver source distance	: 32.00 / 32.00	m
Receiver height	: 1.50 / 90.00	m
Topography	: 1	(Flat/gentle slope; no barrier)

Results segment # 1: O-Train (day)

Source height = 0.50 m

RT/Custom (0.00 + 57.16 + 0.00) = 57.16 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	20	0.00	62.59	-3.29	-2.14	0.00	0.00	0.00	57.16

Segment Leq : 57.16 dBA

Total Leq All Segments: 57.16 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.79

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:35:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: terr_5th.te Time Period: Day/Night 16/8 hours
Description: Terrace - 5th Floor

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

Car traffic volume : 185803/16157 veh/TimePeriod *
Medium truck volume : 14780/1285 veh/TimePeriod *
Heavy truck volume : 10557/918 veh/TimePeriod *
Posted speed limit : 100 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): 229500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Queensway (day/night)

Angle1 Angle2 : -90.00 deg -30.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 317.00 / 317.00 m
Receiver height : 1.50 / 90.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -30.00 deg
Barrier height : 1.10 m
Elevation : 15.00 m
Barrier receiver distance : 7.50 / 7.50 m
Source elevation : 3.00 m
Receiver elevation : 15.00 m
Barrier elevation : 15.00 m

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

Car traffic volume : 12144/1056 veh/TimePeriod *
Medium truck volume : 966/84 veh/TimePeriod *
Heavy truck volume : 690/60 veh/TimePeriod *
Posted speed limit : 40 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): 15000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

```
Angle1   Angle2           : -90.00 deg   -30.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 152.00 / 152.00 m
Receiver height           :   1.50 / 90.00  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -30.00 deg
Barrier height            :   1.10 m
Elevation                 :  15.00 m
Barrier receiver distance :   7.50 / 7.50   m
Source elevation          :   3.00 m
Receiver elevation        :  15.00 m
Barrier elevation         :  15.00 m
```

Results segment # 1: Queensway (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.22	16.22

ROAD (0.00 + 64.70 + 0.00) = 64.70 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-30	0.14	86.35	0.00	-15.16	-5.37	0.00	0.00	-4.98	60.85*
-90	-30	0.21	86.35	0.00	-16.03	-5.62	0.00	0.00	0.00	64.70

* Bright Zone !

Segment Leq : 64.70 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	0.91	15.91

ROAD (0.00 + 44.75 + 0.00) = 44.75 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-30	0.14	66.69	0.00	-11.51	-5.37	0.00	0.00	-5.06	44.75

Segment Leq : 44.75 dBA

Total Leq All Segments: 64.74 dBA

RT/Custom data, segment # 1: O-Train (day/night)

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (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	: 28.50 / 28.50	m
Receiver height	: 1.50 / 90.00	m
Topography	: 2	(Flat/gentle slope; with barrier)
Barrier angle1	: -90.00 deg	Angle2 : 90.00 deg
Barrier height	: 1.10	m
Barrier receiver distance	: 7.50 / 3.00	m
Source elevation	: -5.00	m
Receiver elevation	: 15.00	m
Barrier elevation	: 15.00	m

Results segment # 1: O-Train (day)

Source height = 0.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
0.50	1.50	-4.03	10.97

RT/Custom (0.00 + 44.75 + 0.00) = 44.75 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	62.59	-2.79	0.00	0.00	0.00	-15.05	44.75

Segment Leq : 44.75 dBA

Total Leq All Segments: 44.75 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.79

STAMSON 5.0 NORMAL REPORT Date: 29-07-2019 07:35:52
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: terr_5th.te Time Period: Day/Night 16/8 hours
Description: Terrace - 5th Floor - 1.25m high parapet + Dbl Bar

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

Car traffic volume : 185803/16157 veh/TimePeriod *
Medium truck volume : 14780/1285 veh/TimePeriod *
Heavy truck volume : 10557/918 veh/TimePeriod *
Posted speed limit : 100 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): 229500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Queensway (day/night)

Angle1 Angle2 : -90.00 deg -30.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 317.00 / 317.00 m
Receiver height : 1.50 / 90.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -30.00 deg
Barrier height : 1.25 m
Elevation : 15.00 m
Barrier receiver distance : 7.50 / 7.50 m
Source elevation : 3.00 m
Receiver elevation : 15.00 m
Barrier elevation : 15.00 m

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

Car traffic volume : 12144/1056 veh/TimePeriod *
Medium truck volume : 966/84 veh/TimePeriod *
Heavy truck volume : 690/60 veh/TimePeriod *
Posted speed limit : 40 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): 15000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

```
Angle1   Angle2           : -90.00 deg   -30.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 152.00 / 152.00 m
Receiver height           :   1.50 / 90.00  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -30.00 deg
Barrier height            :   1.25 m
Elevation                 :  15.00 m
Barrier receiver distance :   7.50 / 7.50   m
Source elevation          :   3.00 m
Receiver elevation        :  15.00 m
Barrier elevation         :  15.00 m
```

Results segment # 1: Queensway (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.22	16.22

ROAD (0.00 + 60.98 + 0.00) = 60.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-30	0.14	86.35	0.00	-15.04	-5.33	0.00	0.00	-5.00	60.98

Segment Leq : 60.98 dBA

Results segment # 2: Gladstone (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	0.91	15.91

ROAD (0.00 + 44.73 + 0.00) = 44.73 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-30	0.14	66.69	0.00	-11.42	-5.33	0.00	0.00	-5.20	44.73

Segment Leq : 44.73 dBA

Total Leq All Segments: 61.08 dBA

RT/Custom data, segment # 1: O-Train (day/night)

1 - 6-car Subway:
Traffic volume : 252/136 veh/TimePeriod
Speed : 60 km/h

Data for Segment # 1: O-Train (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	: 28.50 / 28.50	m
Receiver height	: 1.50 / 90.00	m
Topography	: 2	(Flat/gentle slope; with barrier)
Barrier angle1	: -90.00 deg	Angle2 : 90.00 deg
Barrier height	: 1.10	m
Barrier receiver distance	: 7.50 / 3.00	m
Source elevation	: -5.00	m
Receiver elevation	: 15.00	m
Barrier elevation	: 15.00	m

Results segment # 1: O-Train (day)

Source height = 0.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
0.50	1.50	-4.03	10.97

RT/Custom (0.00 + 44.75 + 0.00) = 44.75 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	62.59	-2.79	0.00	0.00	0.00	-15.05	44.75

Segment Leq : 44.75 dBA

Total Leq All Segments: 44.75 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 61.18
Double barrier effect (Queensway): -2.27
Final Leq: 58.91

OFF-SITE STATIONARY SOURCES - CADNAA OUTPUT

Receiver
Name: TWR3-SW - R3B
ID: R3B
X: 18443947.80 m
Y: 5028144.57 m
Z: 7.00 m

Point Source, ISO 9613, Name: "Idling Truck", ID: "TRUCK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
93	18443928.96	5028138.05	2.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	37.3	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	55.7

Point Source, ISO 9613, Name: "Condenser2", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
94	18443898.64	5028127.81	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	45.3	0.1	-2.8	0.0	0.0	0.0	0.0	0.0	52.4

Point Source, ISO 9613, Name: "Condenser1", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
95	18443897.37	5028131.47	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	45.3	0.1	-2.8	0.0	0.0	0.0	0.0	0.0	52.3

Point Source, ISO 9613, Name: "Condenser4", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
96	18443890.90	5028110.75	8.50	0	DEN	500	97.0	0.0	0.0	0.0	0.0	47.4	0.1	-2.8	0.0	0.0	0.0	0.0	0.0	52.3

Point Source, ISO 9613, Name: "Condenser3", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
97	18443903.42	5028131.18	8.00	0	DEN	500	92.0	0.0	0.0	0.0	0.0	44.3	0.1	-2.7	0.0	0.0	0.0	0.0	0.0	50.3

Point Source, ISO 9613, Name: "Condenser Exh", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
98	18443902.16	5028115.54	8.50	0	DEN	500	90.0	0.0	0.0	0.0	0.0	45.7	0.1	-2.8	0.0	0.0	0.0	0.0	0.0	47.0

Point Source, ISO 9613, Name: "ExhFan1", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
99	18443922.06	5028093.64	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	46.1	0.1	-2.9	0.0	0.0	0.0	0.0	0.0	46.6

Point Source, ISO 9613, Name: "ExhFan2", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
100	18443911.42	5028089.38	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	47.4	0.1	-3.0	0.0	0.0	0.0	0.0	0.0	45.5

Point Source, ISO 9613, Name: "ExhFan3", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
101	18443932.44	5028075.13	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	48.0	0.1	-2.6	0.0	0.0	0.0	0.0	0.0	44.4

Point Source, ISO 9613, Name: "Stack", ID: "STACK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
102	18443895.63	5028017.53	25.50	0	DEN	500	95.0	0.0	0.0	0.0	0.0	53.8	0.3	-2.8	0.0	0.0	0.0	0.0	0.0	43.7

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
103	18443931.31	5028057.67	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	49.9	0.2	-2.6	0.0	0.0	0.0	0.0	0.0	42.5

SOUND LEVELS (DAY/NIGHT) - MECHANICAL (HVAC/TRUCKS)

Point Source, ISO 9613, Name: "ExhFan4", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
104	18443931.87	5028102.16	5.70	0	DEN	500	83.0	0.0	0.0	0.0	0.0	44.1	0.1	-2.4	0.0	0.0	0.0	0.0	0.0	41.2

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
105	18443919.76	5028022.18	16.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	53.0	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	39.5

Receiver
Name: TWR2-SW-R2B
ID: R2B
X: 18443990.30 m
Y: 5028107.98 m
Z: 7.00 m

Point Source, ISO 9613, Name: "Condenser4", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
44	18443890.90	5028110.75	8.50	0	DEN	500	97.0	0.0	0.0	0.0	0.0	51.0	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	48.7

Point Source, ISO 9613, Name: "Condenser2", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
46	18443898.64	5028127.81	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	50.4	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	47.4

Point Source, ISO 9613, Name: "Condenser1", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
50	18443897.37	5028131.47	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	50.6	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	47.2

Point Source, ISO 9613, Name: "ExhFan3", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
52	18443932.44	5028075.13	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	47.5	0.1	-2.7	0.0	0.0	0.0	0.0	0.0	45.1

Point Source, ISO 9613, Name: "Idling Truck", ID: "TRUCK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
80	18443928.96	5028138.05	2.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	47.7	0.1	-3.0	0.0	0.0	0.0	0.0	0.0	45.2

Point Source, ISO 9613, Name: "ExhFan1", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
82	18443922.06	5028093.64	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	47.9	0.1	-2.7	0.0	0.0	0.0	0.0	0.0	44.7

Point Source, ISO 9613, Name: "Condenser3", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
91	18443903.42	5028131.18	8.00	0	DEN	500	92.0	0.0	0.0	0.0	0.0	50.1	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	44.7

Point Source, ISO 9613, Name: "Stack", ID: "STACK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
151	18443895.63	5028017.53	25.50	0	DEN	500	95.0	0.0	0.0	0.0	0.0	53.4	0.3	-2.9	0.0	0.0	0.0	0.0	0.0	44.2

Point Source, ISO 9613, Name: "HVAC", ID: "HVAC"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
152	18443931.31	5028057.67	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	48.8	0.1	-2.8	0.0	0.0	0.0	0.0	0.0	43.8

Point Source, ISO 9613, Name: "ExhFan2", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
153	18443911.42	5028089.38	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	49.2	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	43.5

Point Source, ISO 9613, Name: "Condenser Exh", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
154	18443902.16	5028115.54	8.50	0	DEN	500	90.0	0.0	0.0	0.0	0.0	49.9	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	42.7

SOUND LEVELS (DAY/NIGHT) - MECHANICAL (HVAC/TRUCKS)

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
155	18443919.76	5028022.18	16.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	51.9	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	40.7

Point Source, ISO 9613, Name: "ExhFan4", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
156	18443931.87	5028102.16	5.70	0	DEN	500	83.0	0.0	0.0	0.0	0.0	46.4	0.1	-2.7	0.0	0.0	0.0	0.0	0.0	39.2

Receiver
Name: TWR1-NW-1A
ID: R1A
X: 18444004.46 m
Y: 5028064.20 m
Z: 24.00 m

Point Source, ISO 9613, Name: "Condenser4", ID: "COND"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
1	18443890.90	5028110.75	8.50	0	DEN	500	97.0	0.0	0.0	0.0	0.0	52.8	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	46.7

Point Source, ISO 9613, Name: "Stack", ID: "STACK"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
5	18443895.63	5028017.53	25.50	0	DEN	500	95.0	0.0	0.0	0.0	0.0	52.5	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	45.3

Point Source, ISO 9613, Name: "Condenser2", ID: "COND"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
8	18443898.64	5028127.81	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	52.9	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	44.6

Point Source, ISO 9613, Name: "Condenser1", ID: "COND"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
10	18443897.37	5028131.47	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	53.1	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	44.4

Point Source, ISO 9613, Name: "ExhFan3", ID: "EXH_FAN"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
12	18443932.44	5028075.13	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	48.5	0.1	-2.7	0.0	0.0	0.0	0.0	0.0	44.1

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
14	18443931.31	5028057.67	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	48.5	0.1	-2.8	0.0	0.0	0.0	0.0	0.0	44.1

Point Source, ISO 9613, Name: "ExhFan1", ID: "EXH_FAN"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
16	18443922.06	5028093.64	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.0	0.2	-2.7	0.0	0.0	0.0	0.0	0.0	42.6

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
18	18443919.76	5028022.18	16.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.5	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	42.3

Point Source, ISO 9613, Name: "Condenser3", ID: "COND"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
20	18443903.42	5028131.18	8.00	0	DEN	500	92.0	0.0	0.0	0.0	0.0	52.7	0.2	-2.7	0.0	0.0	0.0	0.0	0.0	41.8

Point Source, ISO 9613, Name: "ExhFan2", ID: "EXH_FAN"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
22	18443911.42	5028089.38	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.8	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	41.8

Point Source, ISO 9613, Name: "Idling Truck", ID: "TRUCK"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
24	18443928.96	5028138.05	2.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	51.7	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	41.1

SOUND LEVELS (DAY/NIGHT) - MECHANICAL (HVAC/TRUCKS)

Point Source, ISO 9613, Name: "Condenser Exh", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
26	18443902.16	5028115.54	8.50	0	DEN	500	90.0	0.0	0.0	0.0	0.0	52.3	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	40.3

Point Source, ISO 9613, Name: "ExhFan4", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
28	18443931.87	5028102.16	5.70	0	DEN	500	83.0	0.0	0.0	0.0	0.0	49.5	0.2	-2.7	0.0	0.0	0.0	0.0	0.0	36.0

Receiver
Name: TWR3-NW - R3A
ID: R3A
X: 18443946.88 m
Y: 5028152.35 m
Z: 7.00 m

Point Source, ISO 9613, Name: "Idling Truck", ID: "TRUCK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
90	18443928.96	5028138.05	2.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	38.4	0.0	-3.0	0.0	0.0	5.8	0.0	0.0	48.7

Point Source, ISO 9613, Name: "Condenser1", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
139	18443897.37	5028131.47	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	45.6	0.1	-2.8	0.0	0.0	0.0	0.0	0.0	52.1

Point Source, ISO 9613, Name: "Condenser2", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
140	18443898.64	5028127.81	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	45.7	0.1	-2.8	0.0	0.0	4.7	0.0	0.0	47.3

Point Source, ISO 9613, Name: "Condenser4", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
141	18443890.90	5028110.75	8.50	0	DEN	500	97.0	0.0	0.0	0.0	0.0	47.9	0.1	-2.8	0.0	0.0	5.5	0.0	0.0	46.3

Point Source, ISO 9613, Name: "Condenser3", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
142	18443903.42	5028131.18	8.00	0	DEN	500	92.0	0.0	0.0	0.0	0.0	44.7	0.1	-2.8	0.0	0.0	4.6	0.0	0.0	45.3

Point Source, ISO 9613, Name: "Condenser Exh", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
143	18443902.16	5028115.54	8.50	0	DEN	500	90.0	0.0	0.0	0.0	0.0	46.3	0.1	-2.8	0.0	0.0	5.9	0.0	0.0	40.5

Point Source, ISO 9613, Name: "ExhFan1", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
144	18443922.06	5028093.64	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	47.1	0.1	-3.0	0.0	0.0	10.3	0.0	0.0	35.5

Point Source, ISO 9613, Name: "ExhFan2", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
145	18443911.42	5028089.38	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	48.2	0.1	-3.0	0.0	0.0	9.4	0.0	0.0	35.3

Point Source, ISO 9613, Name: "ExhFan3", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
146	18443932.44	5028075.13	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	48.9	0.2	-2.6	0.0	0.0	11.9	0.0	0.0	31.7

Point Source, ISO 9613, Name: "Stack", ID: "STACK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
147	18443895.63	5028017.53	25.50	0	DEN	500	95.0	0.0	0.0	0.0	0.0	54.3	0.3	-2.9	0.0	0.0	10.6	0.0	0.0	32.9

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
148	18443931.31	5028057.67	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.6	0.2	-2.7	0.0	0.0	12.0	0.0	0.0	29.8

SOUND LEVELS (DAY/NIGHT) - MECHANICAL (HVAC/TRUCKS)

Point Source, ISO 9613, Name: "ExhFan4", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
149	18443931.87	5028102.16	5.70	0	DEN	500	83.0	0.0	0.0	0.0	0.0	45.4	0.1	-2.5	0.0	0.0	11.2	0.0	0.0	28.9

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
150	18443919.76	5028022.18	16.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	53.5	0.3	-2.8	0.0	0.0	11.7	0.0	0.0	27.3

Receiver
Name: TWR2-NW - R2A
ID: R2A
X: 18443988.05 m
Y: 5028116.56 m
Z: 7.00 m

Point Source, ISO 9613, Name: "Condenser4", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
37	18443890.90	5028110.75	8.50	0	DEN	500	97.0	0.0	0.0	0.0	0.0	50.8	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	48.9

Point Source, ISO 9613, Name: "Condenser2", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
39	18443898.64	5028127.81	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	50.1	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	47.7

Point Source, ISO 9613, Name: "Condenser1", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
41	18443897.37	5028131.47	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	50.3	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	47.5

Point Source, ISO 9613, Name: "Idling Truck", ID: "TRUCK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
43	18443928.96	5028138.05	2.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	47.0	0.1	-3.0	0.0	0.0	0.0	0.0	0.0	45.9

Point Source, ISO 9613, Name: "Condenser3", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
45	18443903.42	5028131.18	8.00	0	DEN	500	92.0	0.0	0.0	0.0	0.0	49.7	0.2	-2.9	0.0	0.0	0.0	0.0	0.0	45.1

Point Source, ISO 9613, Name: "ExhFan3", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
47	18443932.44	5028075.13	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	47.8	0.1	-2.7	0.0	0.0	5.5	0.0	0.0	39.3

Point Source, ISO 9613, Name: "ExhFan1", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
49	18443922.06	5028093.64	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	47.9	0.1	-2.8	0.0	0.0	0.0	0.0	0.0	44.7

Point Source, ISO 9613, Name: "Stack", ID: "STACK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
53	18443895.63	5028017.53	25.50	0	DEN	500	95.0	0.0	0.0	0.0	0.0	53.7	0.3	-2.9	0.0	0.0	7.0	0.0	0.0	36.9

Point Source, ISO 9613, Name: "ExhFan2", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
55	18443911.42	5028089.38	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	49.2	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	43.4

Point Source, ISO 9613, Name: "HVAC", ID: "HVAC"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
57	18443931.31	5028057.67	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	49.3	0.2	-2.8	0.0	0.0	6.9	0.0	0.0	36.5

Point Source, ISO 9613, Name: "Condenser Exh", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
59	18443902.16	5028115.54	8.50	0	DEN	500	90.0	0.0	0.0	0.0	0.0	49.7	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	43.2

SOUND LEVELS (DAY/NIGHT) - MECHANICAL (HVAC/TRUCKS)

Point Source, ISO 9613, Name: "HVAC", ID: "HVAC"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
61	18443919.76	5028022.18	16.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	52.4	0.2	-2.8	0.0	0.0	8.2	0.0	0.0	32.1

Point Source, ISO 9613, Name: "ExhFan4", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
63	18443931.87	5028102.16	5.70	0	DEN	500	83.0	0.0	0.0	0.0	0.0	46.3	0.1	-2.7	0.0	0.0	0.0	0.0	0.0	39.3

SOUND LEVELS (DAY/NIGHT) - MECHANICAL (HVAC/TRUCKS)

Receiver
Name: TWR3-SE - R3C
ID: R3C
X: 18443983.58 m
Y: 5028141.75 m
Z: 7.00 m

Point Source, ISO 9613, Name: "Condenser4", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
106	18443890.90	5028110.75	8.50	0	DEN	500	97.0	0.0	0.0	0.0	0.0	50.8	0.2	-3.0	0.0	0.0	10.3	0.0	0.0	38.7

Point Source, ISO 9613, Name: "Condenser2", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
107	18443898.64	5028127.81	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	49.7	0.2	-2.8	0.0	0.0	18.5	0.0	0.0	29.5

Point Source, ISO 9613, Name: "Condenser1", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
108	18443897.37	5028131.47	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	49.8	0.2	-2.9	0.0	0.0	19.5	0.0	0.0	28.4

Point Source, ISO 9613, Name: "Idling Truck", ID: "TRUCK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
109	18443928.96	5028138.05	2.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	45.8	0.1	-3.0	0.0	0.0	21.2	0.0	0.0	25.9

Point Source, ISO 9613, Name: "Condenser3", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
110	18443903.42	5028131.18	8.00	0	DEN	500	92.0	0.0	0.0	0.0	0.0	49.2	0.2	-2.8	0.0	0.0	19.4	0.0	0.0	26.2

Point Source, ISO 9613, Name: "ExhFan1", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
111	18443922.06	5028093.64	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	48.9	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	43.8

Point Source, ISO 9613, Name: "ExhFan3", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
112	18443932.44	5028075.13	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	49.5	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	43.1

Point Source, ISO 9613, Name: "Condenser Exh", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
113	18443902.16	5028115.54	8.50	0	DEN	500	90.0	0.0	0.0	0.0	0.0	49.6	0.2	-3.0	0.0	0.0	11.4	0.0	0.0	31.8

Point Source, ISO 9613, Name: "Stack", ID: "STACK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
114	18443895.63	5028017.53	25.50	0	DEN	500	95.0	0.0	0.0	0.0	0.0	54.7	0.3	-2.9	0.0	0.0	0.0	0.0	0.0	42.9

Point Source, ISO 9613, Name: "ExhFan2", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
115	18443911.42	5028089.38	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.0	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	42.6

Point Source, ISO 9613, Name: "HVAC", ID: "HVAC"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
116	18443931.31	5028057.67	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.9	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	41.7

SOUND LEVELS (DAY/NIGHT) - MECHANICAL (HVAC/TRUCKS)

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
117	18443919.76	5028022.18	16.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	53.7	0.3	-2.8	0.0	0.0	0.0	0.0	0.0	38.9

Point Source, ISO 9613, Name: "ExhFan4", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
118	18443931.87	5028102.16	5.70	0	DEN	500	83.0	0.0	0.0	0.0	0.0	47.3	0.1	-2.7	0.0	0.0	0.0	0.0	0.0	38.3

Receiver
Name: TWR3-NE - R3D
ID: R3D
X: 18443973.58 m
Y: 5028163.58 m
Z: 7.00 m

Point Source, ISO 9613, Name: "Condenser4", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
119	18443890.90	5028110.75	8.50	0	DEN	500	97.0	0.0	0.0	0.0	0.0	50.8	0.2	-2.9	0.0	0.0	12.9	0.0	0.0	35.9

Point Source, ISO 9613, Name: "Condenser1", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
120	18443897.37	5028131.47	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	49.4	0.2	-2.9	0.0	0.0	0.0	0.0	0.0	48.3

Point Source, ISO 9613, Name: "Condenser2", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
121	18443898.64	5028127.81	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	49.4	0.2	-2.9	0.0	0.0	6.4	0.0	0.0	41.9

Point Source, ISO 9613, Name: "Idling Truck", ID: "TRUCK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
122	18443928.96	5028138.05	2.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	45.3	0.1	-3.0	0.0	0.0	12.3	0.0	0.0	35.3

Point Source, ISO 9613, Name: "Condenser3", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
123	18443903.42	5028131.18	8.00	0	DEN	500	92.0	0.0	0.0	0.0	0.0	48.8	0.1	-2.8	0.0	0.0	5.7	0.0	0.0	40.2

Point Source, ISO 9613, Name: "Condenser Exh", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
124	18443902.16	5028115.54	8.50	0	DEN	500	90.0	0.0	0.0	0.0	0.0	49.7	0.2	-2.9	0.0	0.0	14.0	0.0	0.0	29.0

Point Source, ISO 9613, Name: "ExhFan1", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
125	18443922.06	5028093.64	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	49.8	0.2	-2.8	0.0	0.0	20.3	0.0	0.0	22.5

Point Source, ISO 9613, Name: "Stack", ID: "STACK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
126	18443895.63	5028017.53	25.50	0	DEN	500	95.0	0.0	0.0	0.0	0.0	55.4	0.3	-2.9	0.0	0.0	20.8	0.0	0.0	21.3

Point Source, ISO 9613, Name: "ExhFan2", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
127	18443911.42	5028089.38	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.7	0.2	-2.9	0.0	0.0	19.6	0.0	0.0	22.5

Point Source, ISO 9613, Name: "ExhFan3", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
128	18443932.44	5028075.13	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.8	0.2	-2.8	0.0	0.0	21.3	0.0	0.0	20.4

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
129	18443931.31	5028057.67	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	52.1	0.2	-2.8	0.0	0.0	21.4	0.0	0.0	19.0

SOUND LEVELS (DAY/NIGHT) - MECHANICAL (HVAC/TRUCKS)

Point Source, ISO 9613, Name: "HVAC", ID: "HVAC"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
130	18443919.76	5028022.18	16.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	54.6	0.3	-2.8	0.0	0.0	21.3	0.0	0.0	16.6

Point Source, ISO 9613, Name: "ExhFan4", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
131	18443931.87	5028102.16	5.70	0	DEN	500	83.0	0.0	0.0	0.0	0.0	48.4	0.1	-2.7	0.0	0.0	20.8	0.0	0.0	16.4

Receiver
Name: TWR2-NE - R2D
ID: R2D
X: 18444010.52 m
Y: 5028126.75 m
Z: 7.00 m

Point Source, ISO 9613, Name: "Condenser4", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
68	18443890.90	5028110.75	8.50	0	DEN	500	97.0	0.0	0.0	0.0	0.0	52.6	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	47.1

Point Source, ISO 9613, Name: "Condenser2", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
69	18443898.64	5028127.81	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	52.0	0.2	-2.9	0.0	0.0	0.0	0.0	0.0	45.7

Point Source, ISO 9613, Name: "Condenser1", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
70	18443897.37	5028131.47	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	52.1	0.2	-2.9	0.0	0.0	0.0	0.0	0.0	45.6

Point Source, ISO 9613, Name: "Idling Truck", ID: "TRUCK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
71	18443928.96	5028138.05	2.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	49.3	0.2	-3.0	0.0	0.0	11.3	0.0	0.0	32.2

Point Source, ISO 9613, Name: "Condenser3", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
72	18443903.42	5028131.18	8.00	0	DEN	500	92.0	0.0	0.0	0.0	0.0	51.6	0.2	-2.9	0.0	0.0	0.0	0.0	0.0	43.1

Point Source, ISO 9613, Name: "Stack", ID: "STACK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
73	18443895.63	5028017.53	25.50	0	DEN	500	95.0	0.0	0.0	0.0	0.0	55.1	0.3	-2.9	0.0	0.0	16.4	0.0	0.0	26.1

Point Source, ISO 9613, Name: "ExhFan3", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
74	18443932.44	5028075.13	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.4	0.2	-2.8	0.0	0.0	11.8	0.0	0.0	30.4

Point Source, ISO 9613, Name: "ExhFan1", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
75	18443922.06	5028093.64	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.5	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	42.1

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
76	18443931.31	5028057.67	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	51.4	0.2	-2.8	0.0	0.0	15.8	0.0	0.0	25.3

Point Source, ISO 9613, Name: "ExhFan2", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
77	18443911.42	5028089.38	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	51.5	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	41.1

Point Source, ISO 9613, Name: "Condenser Exh", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
78	18443902.16	5028115.54	8.50	0	DEN	500	90.0	0.0	0.0	0.0	0.0	51.7	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	41.0

SOUND LEVELS (DAY/NIGHT) - MECHANICAL (HVAC/TRUCKS)

Point Source, ISO 9613, Name: "HVAC", ID: "HVAC"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
79	18443919.76	5028022.18	16.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	53.8	0.3	-2.9	0.0	0.0	18.2	0.0	0.0	20.6

Point Source, ISO 9613, Name: "ExhFan4", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
84	18443931.87	5028102.16	5.70	0	DEN	500	83.0	0.0	0.0	0.0	0.0	49.3	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	36.3

Receiver
Name: TWR2-SE - R2C
ID: R2C
X: 18444023.45 m
Y: 5028098.95 m
Z: 7.00 m

Point Source, ISO 9613, Name: "Condenser4", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
48	18443890.90	5028110.75	8.50	0	DEN	500	97.0	0.0	0.0	0.0	0.0	53.5	0.3	-2.9	0.0	0.0	20.7	0.0	0.0	25.4

Point Source, ISO 9613, Name: "Condenser2", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
51	18443898.64	5028127.81	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	53.2	0.2	-3.0	0.0	0.0	21.8	0.0	0.0	22.8

Point Source, ISO 9613, Name: "Condenser1", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
54	18443897.37	5028131.47	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	53.3	0.3	-3.0	0.0	0.0	21.9	0.0	0.0	22.5

Point Source, ISO 9613, Name: "Stack", ID: "STACK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
56	18443895.63	5028017.53	25.50	0	DEN	500	95.0	0.0	0.0	0.0	0.0	54.7	0.3	-2.9	0.0	0.0	0.0	0.0	0.0	42.9

Point Source, ISO 9613, Name: "ExhFan3", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
58	18443932.44	5028075.13	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.5	0.2	-2.8	0.0	0.0	10.1	0.0	0.0	32.1

Point Source, ISO 9613, Name: "Condenser3", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
60	18443903.42	5028131.18	8.00	0	DEN	500	92.0	0.0	0.0	0.0	0.0	52.9	0.2	-3.0	0.0	0.0	22.0	0.0	0.0	19.9

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
62	18443931.31	5028057.67	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	51.1	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	41.6

Point Source, ISO 9613, Name: "ExhFan1", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
64	18443922.06	5028093.64	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	51.1	0.2	-2.8	0.0	0.0	18.8	0.0	0.0	22.7

Point Source, ISO 9613, Name: "Idling Truck", ID: "TRUCK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
65	18443928.96	5028138.05	2.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	51.2	0.2	-3.0	0.0	0.0	22.9	0.0	0.0	18.7

Point Source, ISO 9613, Name: "ExhFan2", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
66	18443911.42	5028089.38	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	52.0	0.2	-2.8	0.0	0.0	17.9	0.0	0.0	22.7

Point Source, ISO 9613, Name: "Condenser Exh", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
67	18443902.16	5028115.54	8.50	0	DEN	500	90.0	0.0	0.0	0.0	0.0	52.8	0.2	-2.8	0.0	0.0	21.2	0.0	0.0	18.6

SOUND LEVELS (DAY/NIGHT) - MECHANICAL (HVAC/TRUCKS)

Point Source, ISO 9613, Name: "HVAC", ID: "HVAC"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
81	18443919.76	5028022.18	16.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	53.2	0.2	-2.9	0.0	0.0	0.0	0.0	0.0	39.4

Point Source, ISO 9613, Name: "ExhFan4", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
92	18443931.87	5028102.16	5.70	0	DEN	500	83.0	0.0	0.0	0.0	0.0	50.2	0.2	-2.8	0.0	0.0	20.4	0.0	0.0	15.0

Receiver
Name: TWR1-NE - R1D
ID: R1D
X: 18444030.52 m
Y: 5028075.78 m
Z: 7.00 m

Point Source, ISO 9613, Name: "Condenser4", ID: "COND"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
2	18443890.90	5028110.75	8.50	0	DEN	500	97.0	0.0	0.0	0.0	0.0	54.2	0.3	-2.8	0.0	0.0	0.0	0.0	0.0	45.4

Point Source, ISO 9613, Name: "Condenser2", ID: "COND"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
4	18443898.64	5028127.81	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	54.0	0.3	-2.9	0.0	0.0	0.0	0.0	0.0	43.6

Point Source, ISO 9613, Name: "Condenser1", ID: "COND"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
6	18443897.37	5028131.47	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	54.2	0.3	-3.0	0.0	0.0	0.0	0.0	0.0	43.5

Point Source, ISO 9613, Name: "Stack", ID: "STACK"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
19	18443895.63	5028017.53	25.50	0	DEN	500	95.0	0.0	0.0	0.0	0.0	54.4	0.3	-3.0	0.0	0.0	4.8	0.0	0.0	38.5

Point Source, ISO 9613, Name: "ExhFan3", ID: "EXH_FAN"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
21	18443932.44	5028075.13	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.8	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	41.8

Point Source, ISO 9613, Name: "HVAC", ID: "HVAC"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
23	18443931.31	5028057.67	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	51.1	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	41.6

Point Source, ISO 9613, Name: "ExhFan1", ID: "EXH_FAN"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
30	18443922.06	5028093.64	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	51.8	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	40.8

Point Source, ISO 9613, Name: "Condenser3", ID: "COND"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
32	18443903.42	5028131.18	8.00	0	DEN	500	92.0	0.0	0.0	0.0	0.0	53.8	0.3	-3.0	0.0	0.0	0.0	0.0	0.0	40.9

Point Source, ISO 9613, Name: "Idling Truck", ID: "TRUCK"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
35	18443928.96	5028138.05	2.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	52.5	0.2	-3.0	0.0	0.0	10.8	0.0	0.0	29.4

Point Source, ISO 9613, Name: "ExhFan2", ID: "EXH_FAN"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
36	18443911.42	5028089.38	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	52.6	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	40.0

Point Source, ISO 9613, Name: "HVAC", ID: "HVAC"

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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
38	18443919.76	5028022.18	16.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	52.8	0.2	-2.8	0.0	0.0	7.2	0.0	0.0	32.6

SOUND LEVELS (DAY/NIGHT) - MECHANICAL (HVAC/TRUCKS)

Point Source, ISO 9613, Name: "Condenser Exh", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
40	18443902.16	5028115.54	8.50	0	DEN	500	90.0	0.0	0.0	0.0	0.0	53.6	0.3	-2.8	0.0	0.0	0.0	0.0	0.0	39.0

Point Source, ISO 9613, Name: "ExhFan4", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
42	18443931.87	5028102.16	5.70	0	DEN	500	83.0	0.0	0.0	0.0	0.0	51.2	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	34.4

Receiver
Name: TWR1-SW - R1B
ID: R1B
X: 18444014.50 m
Y: 5028039.48 m
Z: 7.00 m

Point Source, ISO 9613, Name: "Condenser4", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
3	18443890.90	5028110.75	8.50	0	DEN	500	97.0	0.0	0.0	0.0	0.0	54.1	0.3	-2.8	0.0	0.0	0.0	0.0	0.0	45.4

Point Source, ISO 9613, Name: "Stack", ID: "STACK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
7	18443895.63	5028017.53	25.50	0	DEN	500	95.0	0.0	0.0	0.0	0.0	52.7	0.2	-2.7	0.0	0.0	0.0	0.0	0.0	44.7

Point Source, ISO 9613, Name: "Condenser2", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
9	18443898.64	5028127.81	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	54.3	0.3	-2.8	0.0	0.0	0.0	0.0	0.0	43.2

Point Source, ISO 9613, Name: "Condenser1", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
11	18443897.37	5028131.47	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	54.5	0.3	-2.8	0.0	0.0	0.0	0.0	0.0	43.0

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
13	18443931.31	5028057.67	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	49.6	0.2	-2.9	0.0	0.0	0.0	0.0	0.0	43.1

Point Source, ISO 9613, Name: "ExhFan3", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
15	18443932.44	5028075.13	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.0	0.2	-2.7	0.0	0.0	0.0	0.0	0.0	42.5

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
17	18443919.76	5028022.18	16.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	50.7	0.2	-2.6	0.0	0.0	0.0	0.0	0.0	41.7

Point Source, ISO 9613, Name: "ExhFan1", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
25	18443922.06	5028093.64	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	51.6	0.2	-2.7	0.0	0.0	0.0	0.0	0.0	40.9

Point Source, ISO 9613, Name: "Condenser3", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
27	18443903.42	5028131.18	8.00	0	DEN	500	92.0	0.0	0.0	0.0	0.0	54.2	0.3	-2.7	0.0	0.0	0.0	0.0	0.0	40.3

Point Source, ISO 9613, Name: "ExhFan2", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
29	18443911.42	5028089.38	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	52.2	0.2	-2.8	0.0	0.0	0.0	0.0	0.0	40.4

Point Source, ISO 9613, Name: "Idling Truck", ID: "TRUCK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
31	18443928.96	5028138.05	2.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	53.3	0.3	-3.0	0.0	0.0	0.0	0.0	0.0	39.4

SOUND LEVELS (DAY/NIGHT) - MECHANICAL (HVAC/TRUCKS)

Point Source, ISO 9613, Name: "Condenser Exh", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
33	18443902.16	5028115.54	8.50	0	DEN	500	90.0	0.0	0.0	0.0	0.0	53.6	0.3	-2.8	0.0	0.0	0.0	0.0	0.0	38.9

Point Source, ISO 9613, Name: "ExhFan4", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
34	18443931.87	5028102.16	5.70	0	DEN	500	83.0	0.0	0.0	0.0	0.0	51.3	0.2	-2.7	0.0	0.0	0.0	0.0	0.0	34.1

Receiver
Name: TWR1-SE - R1C
ID: R1C
X: 18444041.62 m
Y: 5028049.83 m
Z: 10.00 m

Point Source, ISO 9613, Name: "Condenser4", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
83	18443890.90	5028110.75	8.50	0	DEN	500	97.0	0.0	0.0	0.0	0.0	55.2	0.3	-2.9	0.0	0.0	22.6	0.0	0.0	21.7

Point Source, ISO 9613, Name: "Stack", ID: "STACK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
85	18443895.63	5028017.53	25.50	0	DEN	500	95.0	0.0	0.0	0.0	0.0	54.5	0.3	-2.8	0.0	0.0	16.3	0.0	0.0	26.6

Point Source, ISO 9613, Name: "Condenser2", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
86	18443898.64	5028127.81	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	55.2	0.3	-2.8	0.0	0.0	22.5	0.0	0.0	19.8

Point Source, ISO 9613, Name: "Condenser1", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
87	18443897.37	5028131.47	8.00	0	DEN	500	95.0	0.0	0.0	0.0	0.0	55.4	0.3	-2.8	0.0	0.0	22.5	0.0	0.0	19.6

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
88	18443931.31	5028057.67	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	51.9	0.2	-2.8	0.0	0.0	21.7	0.0	0.0	19.0

Point Source, ISO 9613, Name: "ExhFan3", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
89	18443932.44	5028075.13	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	52.0	0.2	-2.8	0.0	0.0	22.5	0.0	0.0	18.1

Point Source, ISO 9613, Name: "HVAC", ID: "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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
132	18443919.76	5028022.18	16.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	52.9	0.2	-2.7	0.0	0.0	16.3	0.0	0.0	23.3

Point Source, ISO 9613, Name: "ExhFan1", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
133	18443922.06	5028093.64	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	53.1	0.2	-2.8	0.0	0.0	22.6	0.0	0.0	16.8

Point Source, ISO 9613, Name: "Condenser3", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
134	18443903.42	5028131.18	8.00	0	DEN	500	92.0	0.0	0.0	0.0	0.0	55.1	0.3	-2.9	0.0	0.0	22.5	0.0	0.0	17.0

Point Source, ISO 9613, Name: "ExhFan2", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
135	18443911.42	5028089.38	7.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	53.7	0.3	-2.8	0.0	0.0	22.5	0.0	0.0	16.4

Point Source, ISO 9613, Name: "Idling Truck", ID: "TRUCK"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
136	18443928.96	5028138.05	2.00	0	DEN	500	90.0	0.0	0.0	0.0	0.0	54.1	0.3	-3.0	0.0	0.0	23.9	0.0	0.0	14.7

SOUND LEVELS (DAY/NIGHT) - MECHANICAL (HVAC/TRUCKS)

Point Source, ISO 9613, Name: "Condenser Exh", ID: "COND"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
137	18443902.16	5028115.54	8.50	0	DEN	500	90.0	0.0	0.0	0.0	0.0	54.8	0.3	-2.8	0.0	0.0	22.6	0.0	0.0	15.2

Point Source, ISO 9613, Name: "ExhFan4", ID: "EXH_FAN"																				
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)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
138	18443931.87	5028102.16	5.70	0	DEN	500	83.0	0.0	0.0	0.0	0.0	52.7	0.2	-2.8	0.0	0.0	22.7	0.0	0.0	10.2

APPENDIX C: WARNING CLAUSES

Applicable to all units within this development

"Occupants/tenants are advised that despite the inclusion of noise control features in this development area and within the building units, sound levels from increasing road and light rail traffic may continue to be of concern, occasionally interfering with some activities of the dwelling occupants as the sound level exceeds the Ministry of the Environment, Conservation and Parks and the City of Ottawa's noise criteria.

"This dwelling unit has been supplied with a central air conditioning system which will allow the windows and exterior doors to remain closed, thereby ensuring that the interior sound levels are within the Ministry of the Environment, Conservation and Parks and the City of Ottawa's noise criteria."

TYPE F: (Class 4 Designation)

"Purchasers/tenants are advised that sound levels due to the adjacent industry (Canadian Bank Note, 975 Gladstone Avenue, Ottawa) are required to comply with sound level limits that are protective of indoor areas and are based on the assumption that windows and exterior doors are closed. This dwelling unit has been supplied with a ventilation/air conditioning system which will allow windows and exterior doors to remain closed."

APPENDIX D: NOISE CRITERIA

The noise study will be based on the following criteria for residential units, as required by the City of Ottawa.

SOUND LEVEL LIMITS ROAD AND RAIL			
Type of Space	**Time Period**	**L_{eq} (dBA)**	
		Road	**Rail**
INDOOR LIMITS			
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
OUTDOOR LIMITS			
Outdoor recreation areas[1]	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

[1] Up to 5 dB excess above criteria is allowed, provided a warning clause is given. Above 60 dB L_{eq}, exterior noise mitigation measures (i.e. noise barriers, intervening structures, additional setback from source) are required.

All calculations are based on the Architectural drawings by Hobin Architect dated July 19, 2019.

L_{eq} (Definition)

The L_{eq} is defined as the mean energy of the noise level averaged over the measurement period. It can be considered as the continuous steady noise 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 Ottawa Environmental Noise Control Guidelines", January 2016.

2. Ministry of the Environment's *STAMSON* Computer Programme (*Version 5.04*) for the IBM PC.

3. Ministry of the Environment, *ORNAMENT*, "Ontario Road Noise Analysis Method for Environment and Transportation", November 1988.

4. Ministry of the Environment, "Publication NPC-300, Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning", August 2013.