

NOISE & VIBRATION IMPACT STUDY

175 JOHN STREET NORTH
12-STOREY RESIDENTIAL BUILDING
CITY OF HAMILTON, ON

Prepared for:

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Revised November 2024
Revised January 2024
November 2022
Our File No: 22-2266

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1.0 INTRODUCTION

dBA Acoustical Consultants Inc. has been requested to conduct a noise & vibration impact study on behalf of Urban Solutions for the proposed “175 John Street North” Residential building located at 175 John Street North, Hamilton, ON. Proposed is a 12-storey residential building with 126 units.

The purpose of this study will detail, for OPA/ZBA approval, vehicular traffic noise from Cannon Street East, John Street North, Wilson Street & James Street North. Area stationary noise sources relative to the site plan are considered and recommend noise control measures necessary (if applicable) to meet Ministry of Environment, Conversation, and Parks, (MECP) Publication NPC-300 entitled “Stationary & Transportation Sources-Approval & Planning guidelines while satisfying the planning requirements of the City of Hamilton. Figure 1 Site Location.

Vibration is not considered as the CP/GO Railway lines are more than 600m away. Aircraft noise was not considered in this report as the proposed development is not within the minimum 25 NEF contour area of influence.

2.0 SITE DESCRIPTION

Proposed for the site is a 12-storey residential building with 126 units. Standard balconies are proposed for this development and are less than 4m in depth; therefore, noise mitigation measures are not required for the balconies. There are 2 levels of underground parking proposed as well as an enclosed rooftop mechanical penthouse. There are two private terraces on the 8th floor which are greater than 4m in depth and are therefore considered as an Outdoor Living Area (OLA). There is also a ground level outdoor amenity area on the south side of the building, but it has already been mitigated with a 2.43m wooden board fence as shown on the site plans.

The proposed building is located approximately 35m north of Cannon Street East, approximately 15m west of John Street North, approximately 235m north Wilson Street and approximately 170m east of James Street North. Barton Street East is located approximately 310m north of the proposed building and will not have an acoustical impact due to distance separation and extensive shielding from existing residential and commercial buildings.

The proposed residential building is situated in an area of existing commercial/residential properties. The north façade of the building is shielded by two 18-storey apartment buildings (181 John Street North & 192 Hughson Street North). John Street North and Cannon Street East have a few small automotive businesses, and they are discussed in Section 7.0 Stationary Sources. Wilson Street and James Street North have large commercial businesses, that due to the distance separation, provide shielding for the lower floors of the proposed building. Local area street will not have an acoustical impact on the proposed building due to low speed limits and low traffic volumes. There are no area stationary noise sources (HVAC units, etc.) in the general area that will have an acoustical impact on the proposed building as the background noise levels created by area traffic noise are greater than any noise associated by area stationary noise sources. See Table 5E.

Cannon Street East is a one-way roadway with three lanes of traffic and a dual direction bike lanes on the south side and has a speed limit of 50 km/hr. John Street North is a two-way roadway with two lanes of traffic on the east side moving south to north and one lane on the west moving north to south with a centre turn lane onto Cannon Street East and has a speed limit of 50 km/hr. There is street parking allowed on both sides of the roadway. Wilson Street South is two-direction roadway with two lanes of traffic on the south side moving west to east and a centre turn lane onto John Street North. There is one lane of traffic on the north side moving east to west and has a speed limit of 50 km/hr. James Street North is a two-direction roadway with one lane of traffic on each side as well as meter parking on each side and has a speed limit of 50 km/hr.

3.0 NOISE IMPACT ASSESSMENT

3.1 NOISE CRITERIA

The MECP specifies limits for road noise relative to new residential developments and MECP Publication NPC-300 entitled “Stationary & Transportation Sources-Approval & Planning, specifies the criteria, summarized as follows:

TABLE 1- Road Traffic Sound Levels Limits	
Time Period	Leq (dBA)
07:00 – 23:00 (16 hr.)	55 Outdoor Living area
	55 Plane of Window
23:00 – 07:00 (8 hr.)	50 Plane of Bedroom window

Where noise levels estimated at windows are equal to or less than the values listed in Table 1, no noise control measures are required.

Where noise levels exceed Table 1 values, the following action is required:

TABLE 2 – Noise Control Requirements		
Time Period	Noise Level Leq (dBA)	Action Required
07:00 - 23:00 Daytime (OLA)	56 to 60	Warning Clause Type “A”
	> 60	Barrier & Warning Clause Type “B”
07:00 – 23:00 Daytime (POW)	> 55	Provision for A/C, Warning Clause “C”
	> 65	Central A/C, Warning Clause “D”
	> 65	Building Component Specification
23:00 to 07:00 Nighttime (POW)	> 50	Provision for A/C and Warning Clause Type “C”
	> 60	Building Component Specification
	> 60	Central Air and Warning Clause Type “D”

Where nighttime noise levels exceed 60 dBA, building components must be designed to meet Table 3 indoor sound level limits.

TABLE 3 - Indoor Road & Rail Sound Levels Limits		
Indoor Location	Leq (dBA)	
	Road	Rail
Living/Dining 7:00 – 23:00	45	40
Bedroom 23:00 - 07:00	40	35

3.2 ROAD NOISE

Predicted road traffic noise levels were calculated for Cannon Street East, John Street North, Wilson Street & James Street North, the major road noise sources in the site area. Road traffic volumes (2019) were sourced accordingly relative from the City of Hamilton Transportation Management System. The MECP computer program STAMSON version 5.04 was used to carry out prediction calculations (See Appendix “A”). Traffic data is summarized in Table 4. Local area roadways are below MECP requirements and not considered in this report as well as other area roadways.

The daytime/nighttime volume ratio relative to Cannon Street East, John Street North, Wilson Street & James Street North is typically calculated using a 90/10 split as required by the MECP. The percentage of annual growth for all roads was figured at 2% over 15 years The AADT (Annual Average Daily Traffic) volumes were used reflective of the worst-case scenario.

Truck volumes were factored at 2% medium and 2% heavy of the total vehicle volumes for Cannon Street East, John Street North, Wilson Street & James Street North.

TABLE 4 – Future Road Traffic Volumes (2034)			
Cannon Street East	AADT 26993 Vehicles		
	Cars	Medium Trucks	Heavy Trucks
Day	23322	486	486
Night	2591	54	54
John Street North	AADT 8832 Vehicles		
	Cars	Medium Trucks	Heavy Trucks
Day	7630	159	159
Night	848	18	18
Wilson Street	AADT 23071 Vehicles		
	Cars	Medium Trucks	Heavy Trucks
Day	19933	415	415
Night	2215	46	46
James Street North	AADT 18963 Vehicles		
	Medium Trucks	Medium Trucks	Heavy Trucks
Day	16384	341	341
Night	1820	38	38

The following Table 5A summarizes the “free field” Cannon Street East traffic noise prediction results, modeled at 8 receptor locations representing the north, south, east and west façades.

TABLE 5A- Predicted Traffic Noise Levels-Free Field (Cannon Street East)		
Location	L _{eq} (dBA)	
	07:00 - 23:00	23:00 - 07:00
R1 – 2 nd Floor South Façade (6.5m)	64 dBA	58 dBA
R2 – 12 th Floor South Façade (38.5m)	64 dBA	58 dBA
R3 – 2 nd Floor East Façade (6.5m)	59 dBA	52 dBA
R4 – 12 th Floor East Façade (38.5m)	59 dBA	52 dBA
R5 – 2 nd Floor West Façade (6.5m)	55 dBA	48 dBA
R6 – 12 th Floor West Façade (38.5m)	59 dBA	52 dBA
R7 – 2 nd Floor North Façade (6.5m)	54 dBA	47 dBA
R8 – 12 th Floor North Façade (38.5m)	54 dBA	47 dBA

The following Table 5B summarizes the “free field” John Street North traffic noise prediction results, modeled at 8 receptor locations representing the north, south, east and west façades.

TABLE 5B- Predicted Traffic Noise Levels-Free Field (John Street North)		
Location	L _{eq} (dBA)	
	07:00 - 23:00	23:00 - 07:00
R1 – 2 nd Floor South Façade (6.5m)	60 dBA	54 dBA
R2 – 12 th Floor South Façade (38.5m)	60 dBA	54 dBA
R3 – 2 nd Floor East Façade (6.5m)	63 dBA	57 dBA
R4 – 12 th Floor East Façade (38.5m)	63 dBA	57 dBA
R5 – 2 nd Floor West Façade (6.5m)	41 dBA	35 dBA
R6 – 12 th Floor West Façade (38.5m)	44 dBA	38 dBA
R7 – 2 nd Floor North Façade (6.5m)	57 dBA	51 dBA
R8 – 12 th Floor North Façade (38.5m)	57 dBA	51 dBA

The following Table 5C summarizes the “free field” Wilson Street traffic noise prediction results, modeled at 8 receptor locations representing the north, south, east and west façades.

TABLE 5C- Predicted Traffic Noise Levels-Free Field (Wilson Street)		
Location	L _{eq} (dBA)	
	07:00 - 23:00	23:00 - 07:00
R1 – 2 nd Floor South Façade (6.5m)	45 dBA	39 dBA
R2 – 12 th Floor South Façade (38.5m)	52 dBA	45 dBA
R3 – 2 nd Floor East Façade (6.5m)	43 dBA	36 dBA
R4 – 12 th Floor East Façade (38.5m)	49 dBA	43 dBA
R5 – 2 nd Floor West Façade (6.5m)	45 dBA	39 dBA
R6 – 12 th Floor West Façade (38.5m)	53 dBA	46 dBA
R7 – 2 nd Floor North Façade (6.5m)	42 dBA	36 dBA
R8 – 12 th Floor North Façade (38.5m)	49 dBA	42 dBA

The following Table 5D summarizes the “free field” James Street North traffic noise prediction results, modeled at 8 receptor locations representing the south, east and west façades.

TABLE 5D- Predicted Traffic Noise Levels-Free Field (James Street North)		
Location	L _{eq} (dBA)	
	07:00 - 23:00	23:00 - 07:00
R1 – 2 nd Floor South Façade (6.5m)	44 dBA	38 dBA
R2 – 12 th Floor South Façade (38.5m)	50 dBA	43 dBA
R3 – 2 nd Floor East Façade (6.5m)	36 dBA	30 dBA
R4 – 12 th Floor East Façade (38.5m)	42 dBA	36 dBA
R5 – 2 nd Floor West Façade (6.5m)	49 dBA	43 dBA
R6 – 12 th Floor West Façade (38.5m)	56 dBA	49 dBA
R7 – 2 nd Floor North Façade (6.5m)	42 dBA	36 dBA
R8 – 12 th Floor North Façade (38.5m)	48 dBA	42 dBA

The following Table 5E indicate the combined results of the road noise levels calculated at the south, east, north and west façades.

TABLE 5E– Predicted Combined Free Field Road Traffic Noise (dBA)		
COMBINED ROAD	L _{eq} (dBA)	
	07:00 - 23:00	23:00 - 07:00
R1 – 2 nd Floor South Façade (6.5m)	66 dBA	59 dBA
R2 – 12 th Floor South Façade (38.5m)	66 dBA	59 dBA
R3 – 2 nd Floor East Façade (6.5m)	64 dBA	58 dBA
R4 – 12 th Floor East Façade (38.5m)	65 dBA	58 dBA
R5 – 2 nd Floor West Façade (6.5m)	56 dBA	50 dBA
R6 – 12 th Floor West Façade (38.5m)	61 dBA	55 dBA
R7 – 2 nd Floor North Façade (6.5m)	59 dBA	52 dBA
R8 – 12 th Floor North Façade (38.5m)	59 dBA	53 dBA

The following Table 5F indicate the combined results (Cannon Street East & John Street North) of the road noise levels calculated at the east façade for the 8th Floor private terraces.

TABLE 5F– Predicted COMBINED Road Traffic Noise (dBA)		
COMBINED ROAD Cannon Street East & John Street North	L _{eq} (dBA)	
	07:00 - 23:00	23:00 - 07:00
R9 – 8 th Floor Terrace East Façade (25.5m) 0.91m mitigated	52 dBA	N/A

3.3 VIBRATION

The City of Hamilton Construction Management Plan 2022 requires pre-condition surveys of area buildings within the area of influence (to be established), noise and vibration protocol, shoring approval and vibration monitoring during shoring and all heavy construction activities prior to mobilizing of construction equipment. Further information will be provided prior to the issuance of a building permit or as The City of Hamilton staff require the documents for approval.

4.0 RECOMMENDATIONS - NOISE CONTROL

4.1 OUTDOOR LIVING AREAS

Calculated road noise levels exceed 55 dBA daytime criteria outlined in Table 1. Standard balconies and are less than 4m in depth; therefore, noise mitigations are not required for the balconies. However, there are two private terraces on the east side of the 8th floor that are considered as OLA's. These private terraces exceed the 55 dBA daytime criteria. Noise mitigation measures are required in the form of a 0.91m (3 ft) safety railing or equivalent.

For reference, the MECP requirements for an acoustical barrier are:

- Minimum surface density (Face Weight) of 20 kg/m².
- Structurally sound.
- Appropriately designed to withstand wind and snow load and constructed without cracks or surface gaps.

4.2 INDOOR NOISE LEVELS

Calculated road noise levels at the Plane of Window (POW) exceed the noise criteria outlined in Table 1 for indoor space for residential units. Building design specifications were not made available at report time and STC calculations (Sound Transmission Class) method are summarized in Table 6 following with minimum window door and wall construction specified for all residential units throughout the proposed development.

The STC was calculated for each room type based on typical window to floor ratios of 20% for bedrooms and 30% for living room areas. Wall to floor ratio was factored at 60%. A maximum of two components were factored per room.

Road STC values were calculated as per MECP guidelines, and the assessment was conservative from a noise impact perspective with worst-case design options modeled to satisfy MECP requirements for indoor sound levels.

A rooftop Mechanical Room is proposed for the building which will consist of indoor HVAC units and appropriate operating mechanical equipment. The enclosed room will not emanate any noise that will have an acoustical impact on the building or area residential/commercial properties. There are no area stationary noise sources in the general area that will impact the proposed site development.

It should be noted that the highest noise level for the proposed building has been considered for south, west, north, and east, exterior windows and walls. This will ensure full compliance with MEPC indoor noise levels for all residential units, as well, it is also cost effective for all windows being installed having the highest STC rating to eliminate noise complaints from the owners/renters of the residential units.

TABLE 6 – Window, Door, & Wall Construction Example Requirements			
LOCATIONS	Acoustically Tested Windows STC	Patio Door STC	Exterior Walls STC
All Units	Example	Example	Example
Bedroom	STC-37	STC-37	STC-48
Living room	STC-37	STC-37	STC-48

5.0 VENTILATION / WARNING CLAUSES

Ventilation and warning clause requirements for all the residential apartment units are presented in Table 7 following. It is recommended that the appropriate warning clauses be inserted into all Offers and Agreements of Purchase and Sale or Lease and Registered on Title. Specific building component requirements noted in Table 7 for all apartment units will satisfy the MECP criterion for noise control relative to indoor living space.

TABLE 7- Ventilation and Warning Clause Requirements		
LOCATION	VENTILATION	WARNING CLAUSE
All Residential Units	Central Air Conditioning	Type “B” & “D”

The following warning clause must be used in combination:

TYPE B:

“Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the buildings units, sound levels due to increasing road traffic may on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the Municipality’s and the MECP’s noise criteria.”

TYPE D:

“This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the Municipality’s and the MECP noise criteria.”

6.0 REGULATORY CONTEXT

The MECP Publication NPC-300 - Stationary and Transportation Source Guidelines defines a point of reception/receptor as *“any point on the premises of a person where the sound or vibration originating from other than those premises is received.”*

The point of reception may be located on any of the following, or zoned for future use, premises including but not limited to the following: residential homes, hospitals, nursing/retirement homes, etc.

6.1 CLASS 1 NOISE LEVEL CRITERIA

The areas surrounding “175 John Street North” is indicative of a “Class 1 Area” (Urban) as defined in MECP Publication NPC-300, Stationary & Transportation Sources-Approval & Planning.

“Class 1 area” means an area with an acoustical environment typical of a major population centre, where the background sound level is dominated by the activities of people, usually road traffic, often referred to as “urban hum.”

The applicable sound limits are the higher of:

- The existing ambient sound level; or
- The minimum values of Table 8.1. & and Table 8.1B

No restrictions apply to stationary sources if the one-hour equivalent sound exposure (Leq) is lower than the levels in the following Table 8.1A and Table 8.1B.

Table 8.1A
 Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq, dBA)
 Outdoor Points of Reception

Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00-19:00	50	50	45	55
19:00-23:00	50	45	40	55

Table 8.1B
Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq, 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
23:00-07:00	45	45	40	55

7.0 STATIONARY SOURCES

7.1 ESSO GAS BAR

Esso Gas Bar is located at 55 Cannon Street East. Previously there were two auto repairs bays on the south side of the building, facing Cannon Street East, however they have been removed and the bay doors blocked and are under renovations to expand the existing convenience store into that space. There is one ground level 2-ton HVAC unit on the west side of the building and will not have an acoustical impact on the proposed development.

7.2 RSK AUTOMOTIVE & COLLISION

RSK Automotive & Collision is located at 63 Cannon Street East. The building has a parking lot on the east side of John Street North as well as on the north side of Cannon Street East. The office/reception area starts after the parking lot followed by the three auto repair bays on the east side of the building facing south to Cannon Street East. The 4th bay is not operational and is used for storage. If the fourth bay were to open the combined noise level would still be below the noise guidelines. See Appendix “B” for sound propagation levels.

7.3 GOOD GATE AUTO SERVICE

Good Gate Auto Service is located at 64 Cannon Street East. There are two bays for repairs and tires changes that face Cannon Street East. See Appendix “B” for sound propagation levels.

7.4 A STAR AUTO

A Star Auto is located at 135 John Street North and has 3 auto repair bays on the south side of the building. These bays are shielded from the proposed development by the A Star Auto building and will not have an acoustical impact.

7.4 RSK AUTO BODY COLLISION SERVICE

RSK Auto Body Collision Service is located at 129 John Street North and has 2 auto repair bays on the north side of the building facing Cannon Street East. Sound levels were unable to be taken at this business as the bays were not in use and there was active construction of a large residential apartment building taking place approximately 40m south. dBA staff have used our acoustical library to approximate the collision repair shop sound levels when both bays are in operation. See Appendix “B” for sound propagation levels.

8.0 STATIONARY SOURCES COMBINED RESULTS

Source ID	Source Description	Receptor Locations – Proposed Development		
		Distance (m)	Leq Level (dBA)	
			6.5m	38.5m
RSK	3 Bays – Tire Changes	45	24.9	38.0
GOOD GATE	2 Bays – Tire Changes	70	34.6	33.5
RSK COLLISION	2 Bays – Collision Repair	70	26.9	25.8
TOTAL: All Noise Sources Combined		--	35.7	39.5

When the stationary noise sources are combined to include all bays at each location the overall result for both 2nd and 12th floor residential are below the MECP NPC-300 Stationary Noise Guideline of 50 dBA, listed in Section 6.1, Tables 8.1A and 8.1B. These businesses operate during daytime hours only.

9.0 HVAC UNITS

There are three HVAC units on the rooftop of Giant Tiger, located at 33 Cannon Street East. Two are larger units and appear to be 5-tons each and there is one smaller unit that appears to be 2-tons. These units all have acoustical shrouding which will damper the sound levels and therefore not create an acoustical impact on the proposed building. See Appendix “B” for rooftop overview of Giant Tiger.

10.0 SUMMARY OF RECOMMENDATION

The following noise control measures are required to satisfy the indoor and outdoors noise level criterion:

- Warning Clauses inserted into all Offers and Agreements of Purchase and Sale or Lease for all units. (Section 5.0)
- Central Air Conditioning for all residential units. (Section 5.0)
- Appropriate STC values required for all exterior windows, walls, and patio doors. (Section 4.2)
- A minimum 0.91m (3ft) Safety Glass Railing or Equivalent is required for the 8th Floor Terrace.
- Pre-condition surveys and vibration monitoring to be conducted as noted in the City of Hamilton Construction Management Policy.
- A letter from the Window Installation Company confirming the appropriate STC values have been achieved and an Acoustical Certificate from the Qualified Acoustical Consultant be issued prior to issuance of the building plans.
- Qualified Acoustical Consultant certifies that the required noise control measures have been incorporated into the builder’s plans prior to issuance of a building permit.
- Prior to issuance of an occupancy permit or equivalent, it is recommended the Qualified Acoustical Consultant certify that the approved noise control measures have been professionally installed.

11.0 CONCLUSIONS

dBA Acoustical Consultants Inc. has conducted a noise & vibration impact study on behalf of Urban Solutions for the proposed “175 John Street North” Residential building located at 175 John Street North, Hamilton, ON. Proposed is a 12-storey residential building with 126 units.

The study detailed, for OPA/ZBA approval, vehicular traffic noise from Cannon Street East, John Street North, Wilson Street & James Street North. This study determined noise impacts at the proposed development and recommended noise control measures necessary to meet Ministry of Environment, Conservation, and Parks, (MECP) Publication NPC-300 entitled “Stationary & Transportation Sources-Approval & Planning guidelines while satisfying the planning requirements of the City of Hamilton.

FIGURE 1 KEY PLAN



FIGURE 2
 SITE PLAN

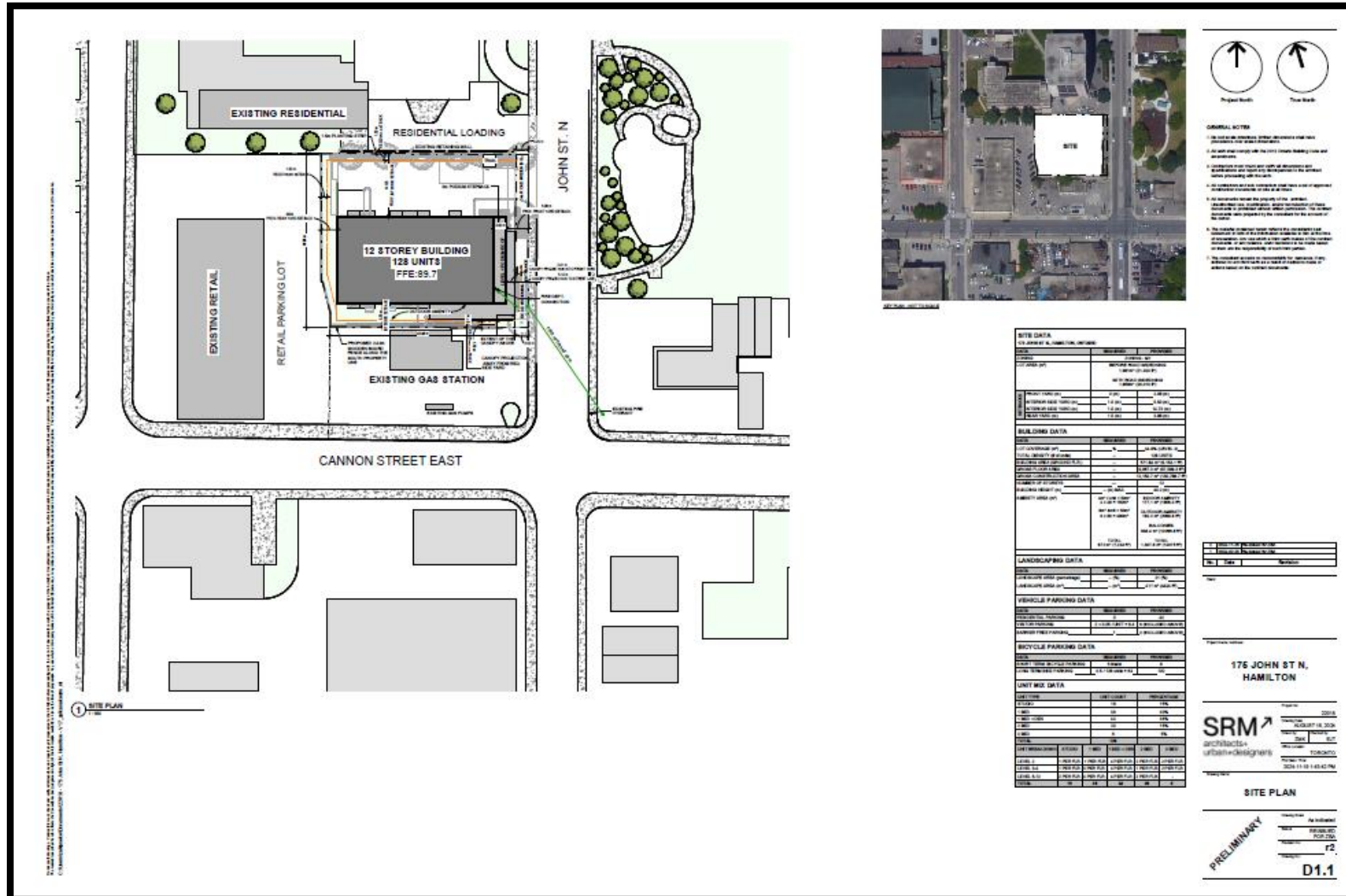
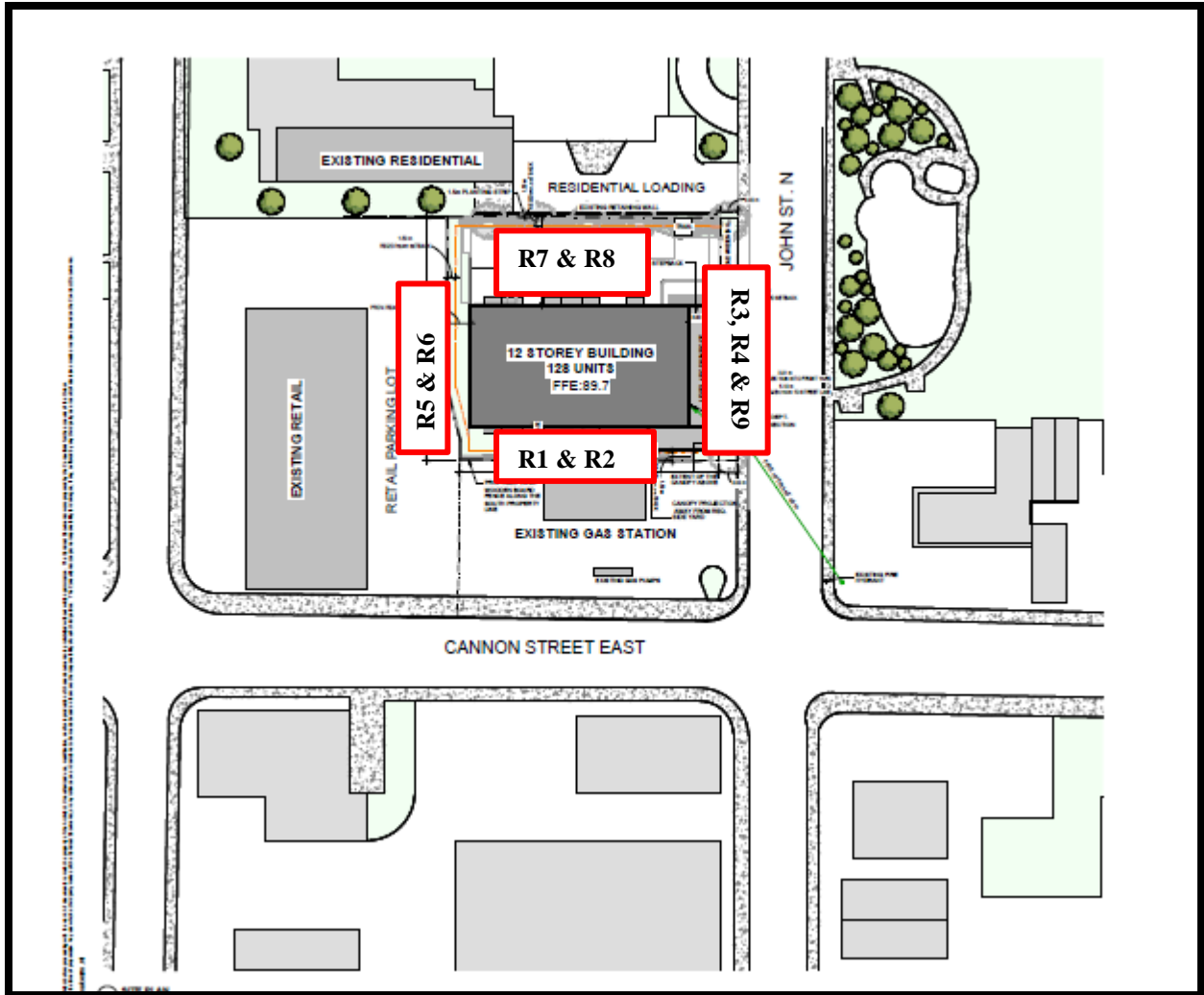


FIGURE 3 RECEPTOR LOCATIONS



R1 – 2 nd Floor South Façade (6.5m)	66 dBA	59 dBA
R2 – 12 th Floor South Façade (38.5m)	66 dBA	59 dBA
R3 – 2 nd Floor East Façade (6.5m)	64 dBA	58 dBA
R4 – 12 th Floor East Façade (38.5m)	65 dBA	58 dBA
R5 – 2 nd Floor West Façade (6.5m)	56 dBA	50 dBA
R6 – 12 th Floor West Façade (38.5m)	61 dBA	55 dBA
R7 – 2 nd Floor North Façade (6.5m)	59 dBA	52 dBA
R8 – 12 th Floor North Façade (38.5m)	59 dBA	53 dBA
R9 – 8 th Floor Terrace East Façade (25.5m) 0.91m mitigated	52 dBA	N/A

FIGURE 4

0.91m SAFETY GLASS RAILING OR EQUIVALENT 8TH FLOOR TERRACE

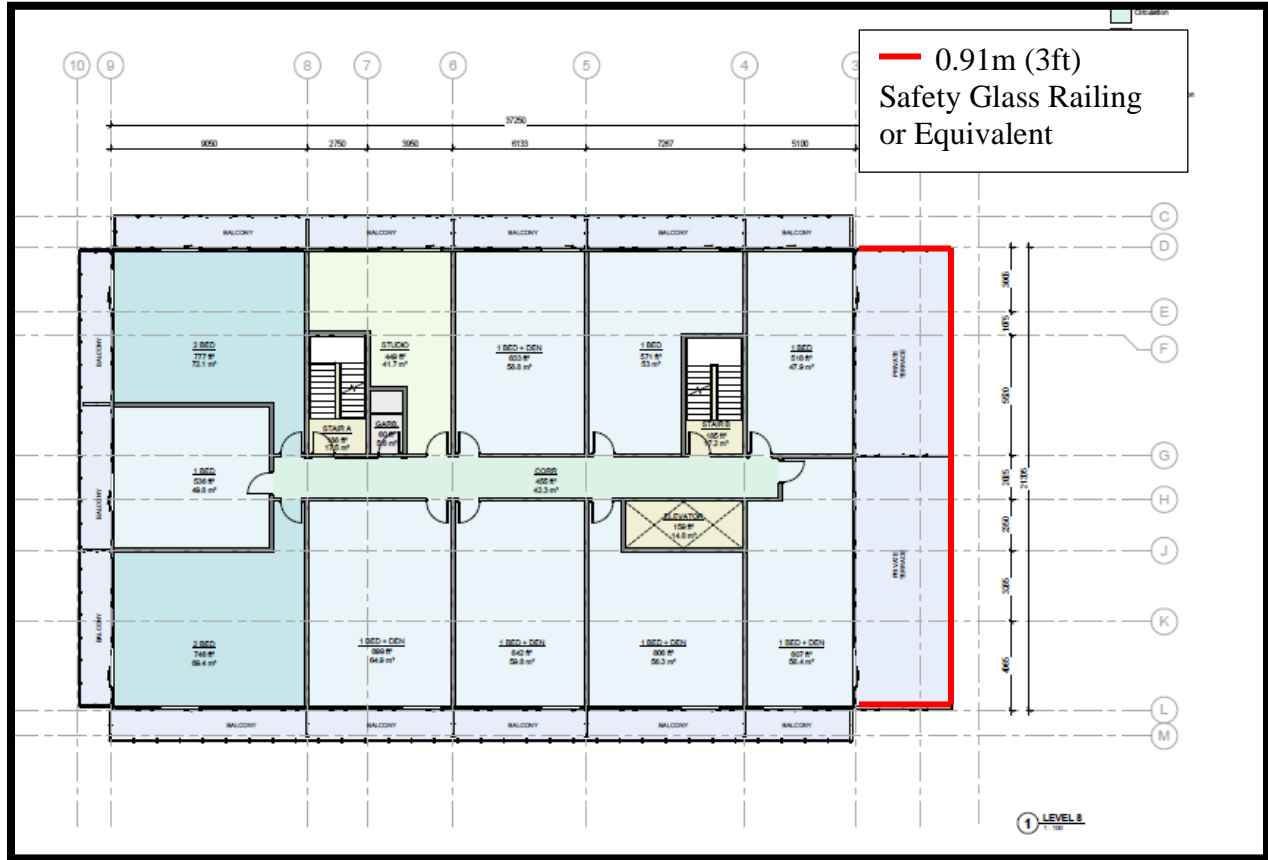
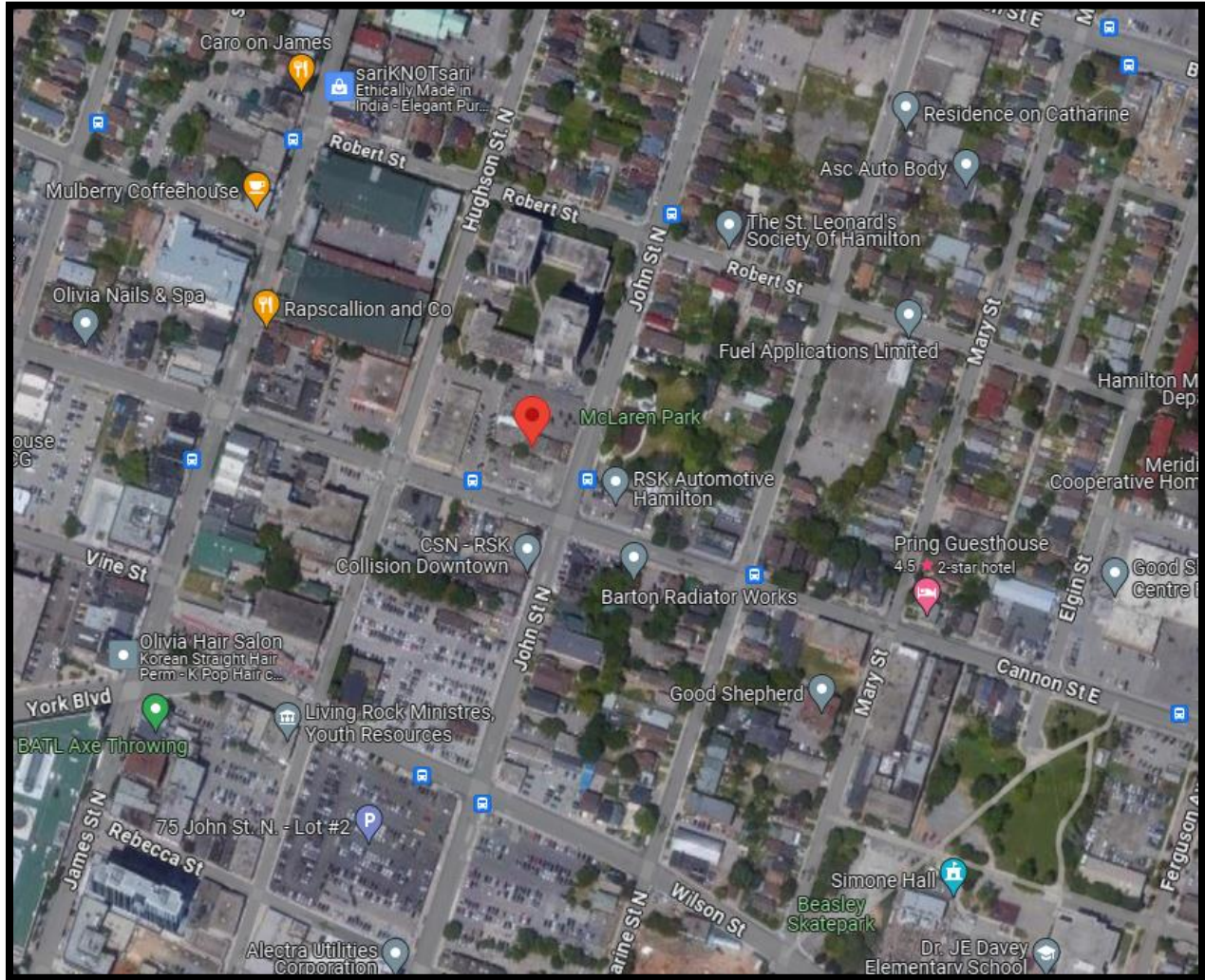
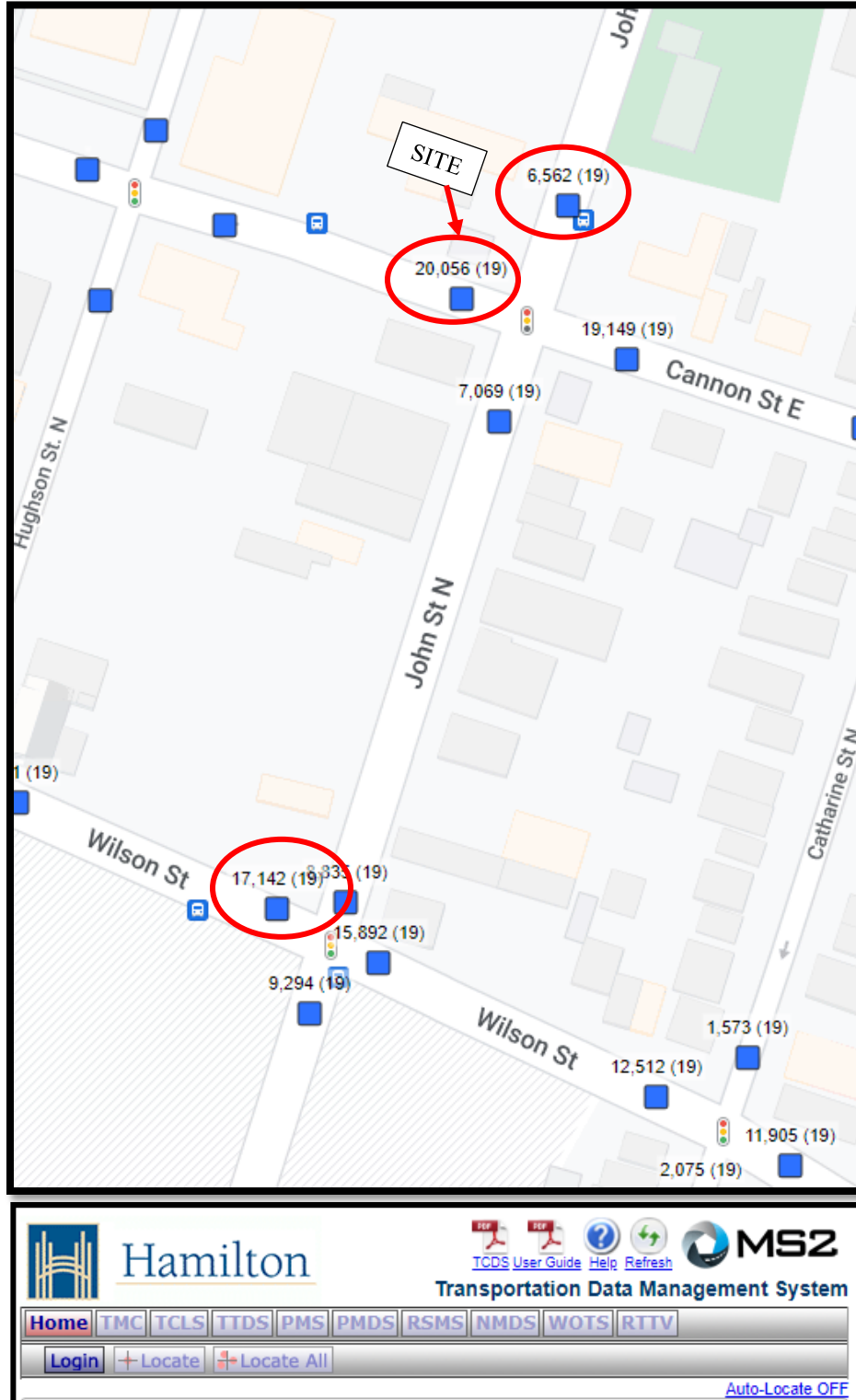


FIGURE 5 AREA CONTEXT MAP

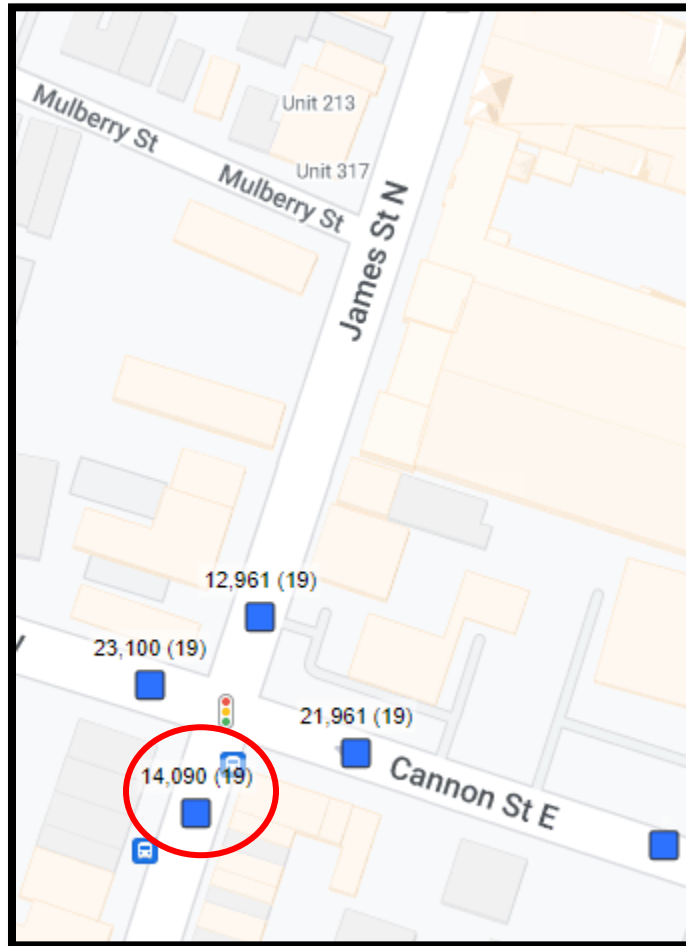


APPENDIX “A”

CITY OF HAMILTON 2019 AADT TRAFFIC CANNON STREET EAST, JOHN STREET NORTH & WILSON STREET



CITY OF HAMILTON 2019 AADT TRAFFIC JAMES STREET NORTH



Hamilton
MS2
Transportation Data Management System

Home TMC TCLS TTDS PMS PMDS RSMS NMDS WOTS RTTV

Login + Locate + Locate All

Auto-Locate OFF

STAMSON CALCULATIONS

STAMSON 5.04 SUMMARY REPORT Date: 28-11-2023 14:24:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1Cannon.te Time Period: Day/Night 16/8 hours

Description: R1 South Facade 1st Floor Residential

TOTAL Leq FROM ALL SOURCES

(DAY): 65.70

(NIGHT): 59.18

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

Car traffic volume : 23322/2591 veh/TimePeriod *
Medium truck volume : 486/54 veh/TimePeriod *
Heavy truck volume : 486/54 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 20056
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 35.00 / 35.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 7630/848 veh/TimePeriod *
Medium truck volume : 159/18 veh/TimePeriod *
Heavy truck volume : 159/18 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6562
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: John St N (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 : 15.00 / 15.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Wilson St (day/night)

Car traffic volume : 19933/2215 veh/TimePeriod *
Medium truck volume : 415/46 veh/TimePeriod *
Heavy truck volume : 415/46 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17142
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: Wilson St (day/night)

Angle1 Angle2 : -45.00 deg 35.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 235.00 / 235.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 4: James St N (day/night)

Car traffic volume : 16384/1820 veh/TimePeriod *
Medium truck volume : 341/38 veh/TimePeriod *
Heavy truck volume : 341/38 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 14090
 Percentage of Annual Growth : 2.00
 Number of Years of Growth : 15.00
 Medium Truck % of Total Volume : 2.00
 Heavy Truck % of Total Volume : 2.00
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 4: James St N (day/night)

 Angle1 Angle2 : -0.00 deg 45.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 165.00 / 165.00 m
 Receiver height : 6.50 / 6.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	64.22 !	64.22
2.John St N	! 1.19 !	60.04 !	60.04
3.Wilson St	! 1.19 !	45.34 !	45.34
4.James St N	! 1.19 !	44.28 !	44.28
Total			65.70 dBA

Result summary (night)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	57.69 !	57.69
2.John St N	! 1.19 !	53.56 !	53.56
3.Wilson St	! 1.19 !	38.80 !	38.80
4.James St N	! 1.19 !	37.76 !	37.76
Total			59.18 dBA

STAMSON 5.04 SUMMARY REPORT Date: 28-11-2023 14:27:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2john.te Time Period: Day/Night 16/8 hours

Description: R2 South Facade 12th Floor Residential

TOTAL Leq FROM ALL SOURCES

(DAY): 65.91

(NIGHT): 59.39

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

Car traffic volume : 23322/2591 veh/TimePeriod *
Medium truck volume : 486/54 veh/TimePeriod *
Heavy truck volume : 486/54 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 20056
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 35.00 / 35.00 m
Receiver height : 38.50 / 38.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 7630/848 veh/TimePeriod *
Medium truck volume : 159/18 veh/TimePeriod *
Heavy truck volume : 159/18 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6562
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: John St N (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 : 15.00 / 15.00 m
Receiver height : 38.50 / 38.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Wilson St (day/night)

Car traffic volume : 19933/2215 veh/TimePeriod *
Medium truck volume : 415/46 veh/TimePeriod *
Heavy truck volume : 415/46 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17142
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: Wilson St (day/night)

Angle1 Angle2 : -45.00 deg 35.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 235.00 / 235.00 m
Receiver height : 38.50 / 38.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 4: James St N (day/night)

Car traffic volume : 16384/1820 veh/TimePeriod *
Medium truck volume : 341/38 veh/TimePeriod *
Heavy truck volume : 341/38 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 14090
 Percentage of Annual Growth : 2.00
 Number of Years of Growth : 15.00
 Medium Truck % of Total Volume : 2.00
 Heavy Truck % of Total Volume : 2.00
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 4: James St N (day/night)

 Angle1 Angle2 : -0.00 deg 45.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 165.00 / 165.00 m
 Receiver height : 38.50 / 38.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	64.22 !	64.22
2.John St N	! 1.19 !	60.04 !	60.04
3.Wilson St	! 1.19 !	51.75 !	51.75
4.James St N	! 1.19 !	49.93 !	49.93
Total			65.91 dBA

Result summary (night)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	57.69 !	57.69
2.John St N	! 1.19 !	53.56 !	53.56
3.Wilson St	! 1.19 !	45.21 !	45.21
4.James St N	! 1.19 !	43.41 !	43.41
Total			59.39 dBA

STAMSON 5.04 SUMMARY REPORT Date: 28-11-2023 14:29:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r3john.te Time Period: Day/Night 16/8 hours

Description: R3 East Facade 2nd Floor Residential

TOTAL Leq FROM ALL SOURCES

(DAY): 64.49

(NIGHT): 58.00

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

Car traffic volume : 23322/2591 veh/TimePeriod *
Medium truck volume : 486/54 veh/TimePeriod *
Heavy truck volume : 486/54 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 20056
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 7630/848 veh/TimePeriod *
Medium truck volume : 159/18 veh/TimePeriod *
Heavy truck volume : 159/18 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6562
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: John St N (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 : 15.00 / 15.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Wilson St (day/night)

Car traffic volume : 19933/2215 veh/TimePeriod *
Medium truck volume : 415/46 veh/TimePeriod *
Heavy truck volume : 415/46 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17142
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: Wilson St (day/night)

Angle1 Angle2 : -45.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 235.00 / 235.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 4: James St N (day/night)

Car traffic volume : 16384/1820 veh/TimePeriod *
Medium truck volume : 341/38 veh/TimePeriod *
Heavy truck volume : 341/38 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 14090
 Percentage of Annual Growth : 2.00
 Number of Years of Growth : 15.00
 Medium Truck % of Total Volume : 2.00
 Heavy Truck % of Total Volume : 2.00
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 4: James St N (day/night)

 Angle1 Angle2 : -0.00 deg 10.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 215.00 / 215.00 m
 Receiver height : 6.50 / 6.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	58.87 !	58.87
2.John St N	! 1.19 !	63.05 !	63.05
3.Wilson St	! 1.19 !	42.80 !	42.80
4.James St N	! 1.19 !	36.23 !	36.23
Total			64.49 dBA

Result summary (night)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	52.34 !	52.34
2.John St N	! 1.19 !	56.57 !	56.57
3.Wilson St	! 1.19 !	36.26 !	36.26
4.James St N	! 1.19 !	29.71 !	29.71
Total			58.00 dBA

STAMSON 5.04 SUMMARY REPORT Date: 28-11-2023 14:30:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r4john.te Time Period: Day/Night 16/8 hours

Description: R4 East Facade 12th Floor Residential

TOTAL Leq FROM ALL SOURCES

(DAY): 64.61

(NIGHT): 58.11

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

Car traffic volume : 23322/2591 veh/TimePeriod *
Medium truck volume : 486/54 veh/TimePeriod *
Heavy truck volume : 486/54 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 20056
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 38.50 / 38.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 7630/848 veh/TimePeriod *
Medium truck volume : 159/18 veh/TimePeriod *
Heavy truck volume : 159/18 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6562
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: John St N (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 : 15.00 / 15.00 m
Receiver height : 38.50 / 38.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Wilson St (day/night)

Car traffic volume : 19933/2215 veh/TimePeriod *
Medium truck volume : 415/46 veh/TimePeriod *
Heavy truck volume : 415/46 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17142
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: Wilson St (day/night)

Angle1 Angle2 : -45.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 235.00 / 235.00 m
Receiver height : 38.50 / 38.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 4: James St N (day/night)

Car traffic volume : 16384/1820 veh/TimePeriod *
Medium truck volume : 341/38 veh/TimePeriod *
Heavy truck volume : 341/38 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 14090
 Percentage of Annual Growth : 2.00
 Number of Years of Growth : 15.00
 Medium Truck % of Total Volume : 2.00
 Heavy Truck % of Total Volume : 2.00
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 4: James St N (day/night)

 Angle1 Angle2 : -0.00 deg 10.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 215.00 / 215.00 m
 Receiver height : 38.50 / 38.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	58.87 !	58.87
2.John St N	! 1.19 !	63.05 !	63.05
3.Wilson St	! 1.19 !	49.25 !	49.25
4.James St N	! 1.19 !	42.25 !	42.25
Total			64.61 dBA

Result summary (night)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	52.34 !	52.34
2.John St N	! 1.19 !	56.57 !	56.57
3.Wilson St	! 1.19 !	42.71 !	42.71
4.James St N	! 1.19 !	35.73 !	35.73
Total			58.11 dBA

STAMSON 5.04 SUMMARY REPORT Date: 28-11-2023 14:32:06
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r5john.te Time Period: Day/Night 16/8 hours

Description: R5 West Facade 1st Floor Residential

TOTAL Leq FROM ALL SOURCES

(DAY): 56.17

(NIGHT): 49.63

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

Car traffic volume : 23322/2591 veh/TimePeriod *
Medium truck volume : 486/54 veh/TimePeriod *
Heavy truck volume : 486/54 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 20056
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 7630/848 veh/TimePeriod *
Medium truck volume : 159/18 veh/TimePeriod *
Heavy truck volume : 159/18 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6562
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -0.00 deg 10.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Wilson St (day/night)

Car traffic volume : 19933/2215 veh/TimePeriod *
Medium truck volume : 415/46 veh/TimePeriod *
Heavy truck volume : 415/46 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17142
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: Wilson St (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 220.00 / 220.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 4: James St N (day/night)

Car traffic volume : 16384/1820 veh/TimePeriod *
Medium truck volume : 341/38 veh/TimePeriod *
Heavy truck volume : 341/38 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 14090
 Percentage of Annual Growth : 2.00
 Number of Years of Growth : 15.00
 Medium Truck % of Total Volume : 2.00
 Heavy Truck % of Total Volume : 2.00
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 4: James St N (day/night)

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 170.00 / 170.00 m
 Receiver height : 6.50 / 6.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	54.54 !	54.54
2.John St N	! 1.19 !	41.34 !	41.34
3.Wilson St	! 1.19 !	45.28 !	45.28
4.James St N	! 1.19 !	49.14 !	49.14
Total			56.17 dBA

Result summary (night)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	48.00 !	48.00
2.John St N	! 1.19 !	34.86 !	34.86
3.Wilson St	! 1.19 !	38.74 !	38.74
4.James St N	! 1.19 !	42.61 !	42.61
Total			49.63 dBA

STAMSON 5.04 SUMMARY REPORT Date: 28-11-2023 14:33:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6john.te Time Period: Day/Night 16/8 hours

Description: R5 West Facade 1st Floor Residential

TOTAL Leq FROM ALL SOURCES

(DAY): 61.34

(NIGHT): 54.81

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

Car traffic volume : 23322/2591 veh/TimePeriod *
Medium truck volume : 486/54 veh/TimePeriod *
Heavy truck volume : 486/54 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 20056
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 38.50 / 38.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 7630/848 veh/TimePeriod *
Medium truck volume : 159/18 veh/TimePeriod *
Heavy truck volume : 159/18 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6562
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -0.00 deg 10.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 38.50 / 38.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Wilson St (day/night)

Car traffic volume : 19933/2215 veh/TimePeriod *
Medium truck volume : 415/46 veh/TimePeriod *
Heavy truck volume : 415/46 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17142
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: Wilson St (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 220.00 / 220.00 m
Receiver height : 38.50 / 38.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 4: James St N (day/night)

Car traffic volume : 16384/1820 veh/TimePeriod *
Medium truck volume : 341/38 veh/TimePeriod *
Heavy truck volume : 341/38 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 14090
 Percentage of Annual Growth : 2.00
 Number of Years of Growth : 15.00
 Medium Truck % of Total Volume : 2.00
 Heavy Truck % of Total Volume : 2.00
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 4: James St N (day/night)

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 170.00 / 170.00 m
 Receiver height : 38.50 / 38.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	58.87 !	58.87
2.John St N	! 1.19 !	44.48 !	44.48
3.Wilson St	! 1.19 !	52.55 !	52.55
4.James St N	! 1.19 !	55.82 !	55.82
	Total		61.34 dBA

Result summary (night)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	52.34 !	52.34
2.John St N	! 1.19 !	38.00 !	38.00
3.Wilson St	! 1.19 !	46.01 !	46.01
4.James St N	! 1.19 !	49.30 !	49.30
	Total		54.81 dBA

STAMSON 5.04 SUMMARY REPORT Date: 28-11-2023 14:35:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r7john.te Time Period: Day/Night 16/8 hours

Description: R7 North Facade 1st Floor Residential

TOTAL Leq FROM ALL SOURCES

(DAY): 58.91

(NIGHT): 52.41

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

Car traffic volume : 23322/2591 veh/TimePeriod *
Medium truck volume : 486/54 veh/TimePeriod *
Heavy truck volume : 486/54 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 20056
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -35.00 deg -0.00 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 : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 7630/848 veh/TimePeriod *
Medium truck volume : 159/18 veh/TimePeriod *
Heavy truck volume : 159/18 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6562
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: John St N (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 : 30.00 / 30.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Wilson St (day/night)

Car traffic volume : 19933/2215 veh/TimePeriod *
Medium truck volume : 415/46 veh/TimePeriod *
Heavy truck volume : 415/46 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17142
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: Wilson St (day/night)

Angle1 Angle2 : -20.00 deg 20.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 245.00 / 245.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 4: James St N (day/night)

Car traffic volume : 16384/1820 veh/TimePeriod *
Medium truck volume : 341/38 veh/TimePeriod *
Heavy truck volume : 341/38 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 14090
 Percentage of Annual Growth : 2.00
 Number of Years of Growth : 15.00
 Medium Truck % of Total Volume : 2.00
 Heavy Truck % of Total Volume : 2.00
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 4: James St N (day/night)

 Angle1 Angle2 : -0.00 deg 35.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 190.00 / 190.00 m
 Receiver height : 6.50 / 6.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	53.80 !	53.80
2.John St N	! 1.19 !	57.03 !	57.03
3.Wilson St	! 1.19 !	42.21 !	42.21
4.James St N	! 1.19 !	42.36 !	42.36
Total			58.91 dBA

Result summary (night)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	47.27 !	47.27
2.John St N	! 1.19 !	50.55 !	50.55
3.Wilson St	! 1.19 !	35.67 !	35.67
4.James St N	! 1.19 !	35.83 !	35.83
Total			52.41 dBA

STAMSON 5.04 SUMMARY REPORT Date: 28-11-2023 14:36:41
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r8john.te Time Period: Day/Night 16/8 hours

Description: 87 North Facade 12th Floor Residential

TOTAL Leq FROM ALL SOURCES

(DAY): 59.46

(NIGHT): 52.96

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

Car traffic volume : 23322/2591 veh/TimePeriod *
Medium truck volume : 486/54 veh/TimePeriod *
Heavy truck volume : 486/54 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 20056
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -35.00 deg -0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 75.00 / 75.00 m
Receiver height : 38.50 / 38.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 7630/848 veh/TimePeriod *
Medium truck volume : 159/18 veh/TimePeriod *
Heavy truck volume : 159/18 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6562
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: John St N (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 : 30.00 / 30.00 m
Receiver height : 38.50 / 38.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Wilson St (day/night)

Car traffic volume : 19933/2215 veh/TimePeriod *
Medium truck volume : 415/46 veh/TimePeriod *
Heavy truck volume : 415/46 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17142
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: Wilson St (day/night)

Angle1 Angle2 : -20.00 deg 20.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 245.00 / 245.00 m
Receiver height : 38.50 / 38.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 4: James St N (day/night)

Car traffic volume : 16384/1820 veh/TimePeriod *
Medium truck volume : 341/38 veh/TimePeriod *
Heavy truck volume : 341/38 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 14090
 Percentage of Annual Growth : 2.00
 Number of Years of Growth : 15.00
 Medium Truck % of Total Volume : 2.00
 Heavy Truck % of Total Volume : 2.00
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 4: James St N (day/night)

 Angle1 Angle2 : -0.00 deg 35.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 190.00 / 190.00 m
 Receiver height : 38.50 / 38.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	53.80 !	53.80
2.John St N	! 1.19 !	57.03 !	57.03
3.Wilson St	! 1.19 !	48.56 !	48.56
4.James St N	! 1.19 !	48.23 !	48.23
Total			59.46 dBA

Result summary (night)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon St	! 1.19 !	47.27 !	47.27
2.John St N	! 1.19 !	50.55 !	50.55
3.Wilson St	! 1.19 !	42.02 !	42.02
4.James St N	! 1.19 !	41.70 !	41.70
Total			52.96 dBA

STAMSON 5.04 SUMMARY REPORT Date: 17-01-2024 13:52:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R9Terrace.te Time Period: Day/Night 16/8 hours
Description: R9- 8th floor east side terraces
TOTAL Leq FROM ALL SOURCES (DAY): 51.53

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

Car traffic volume : 23322/2591 veh/TimePeriod *
Medium truck volume : 486/54 veh/TimePeriod *
Heavy truck volume : 486/54 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 20056
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Cannon E (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 : 25.50 / 25.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 0.91 m
Barrier receiver distance : 3.00 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 25.50 m
Reference angle : 0.00

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

Car traffic volume : 7630/848 veh/TimePeriod *
Medium truck volume : 159/18 veh/TimePeriod *
Heavy truck volume : 159/18 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6562
 Percentage of Annual Growth : 2.00
 Number of Years of Growth : 15.00
 Medium Truck % of Total Volume : 2.00
 Heavy Truck % of Total Volume : 2.00
 Day (16 hrs) % of Total Volume : 90.00

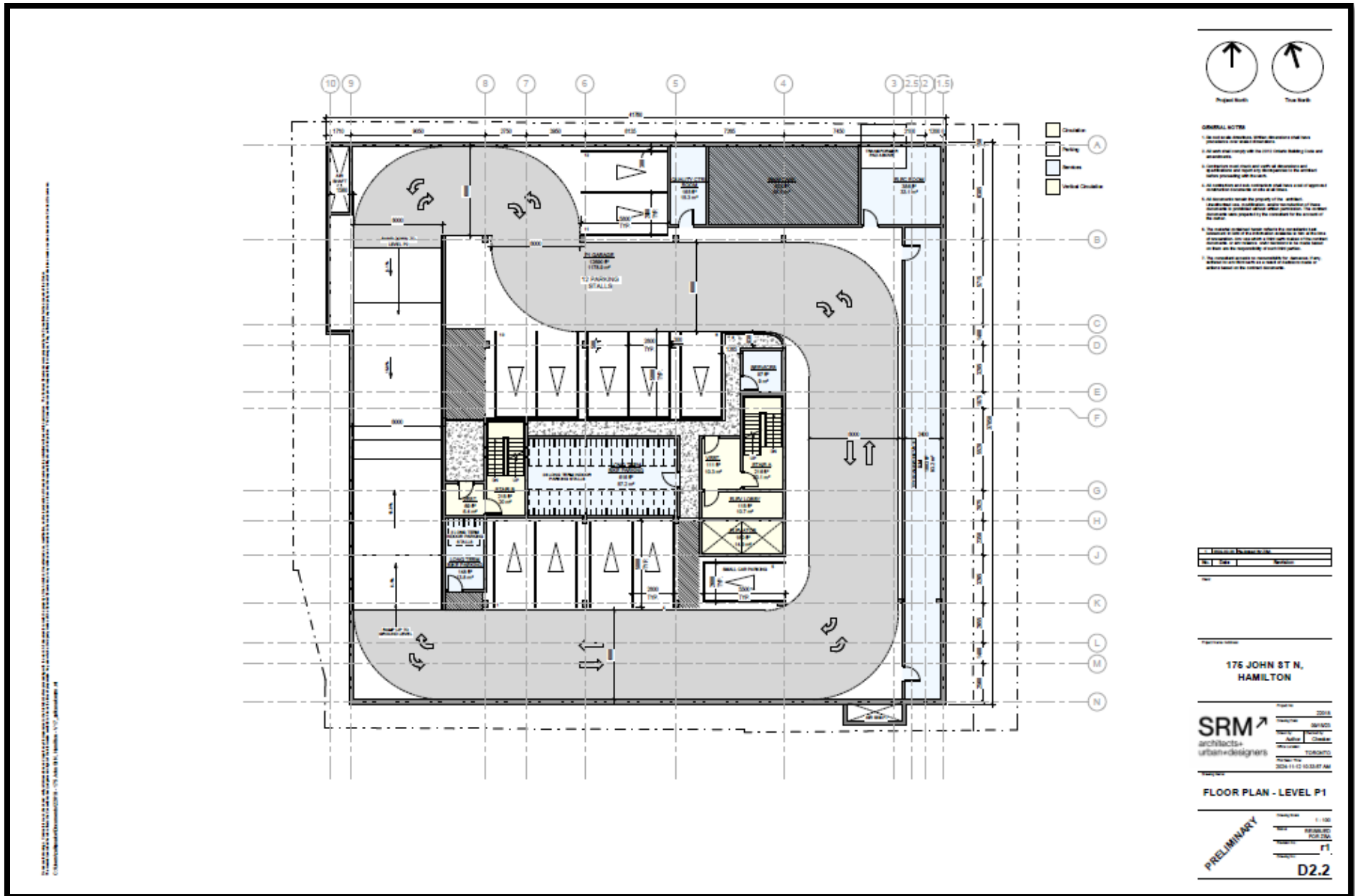
Data for Segment # 2: John St N (day/night)

 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 : 15.00 / 15.00 m
 Receiver height : 25.50 / 25.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
 Barrier height : 0.91 m
 Barrier receiver distance : 3.00 / 10.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 25.50 m
 Reference angle : 0.00

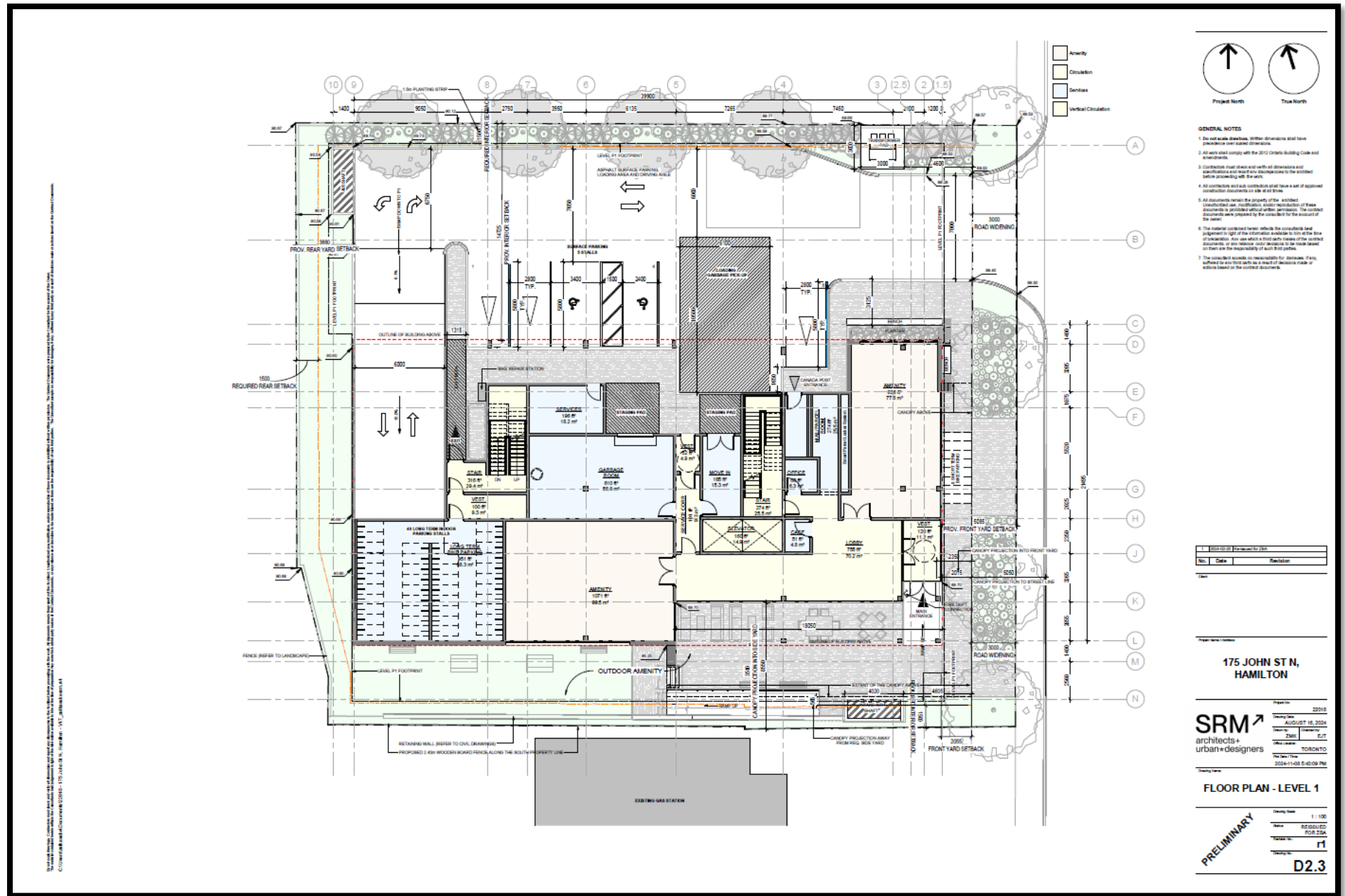
Result summary (day)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cannon E	! 1.19 !	49.83 !	49.83
2.John St N	! 1.19 !	46.63 !	46.63
	Total		51.53 dBA

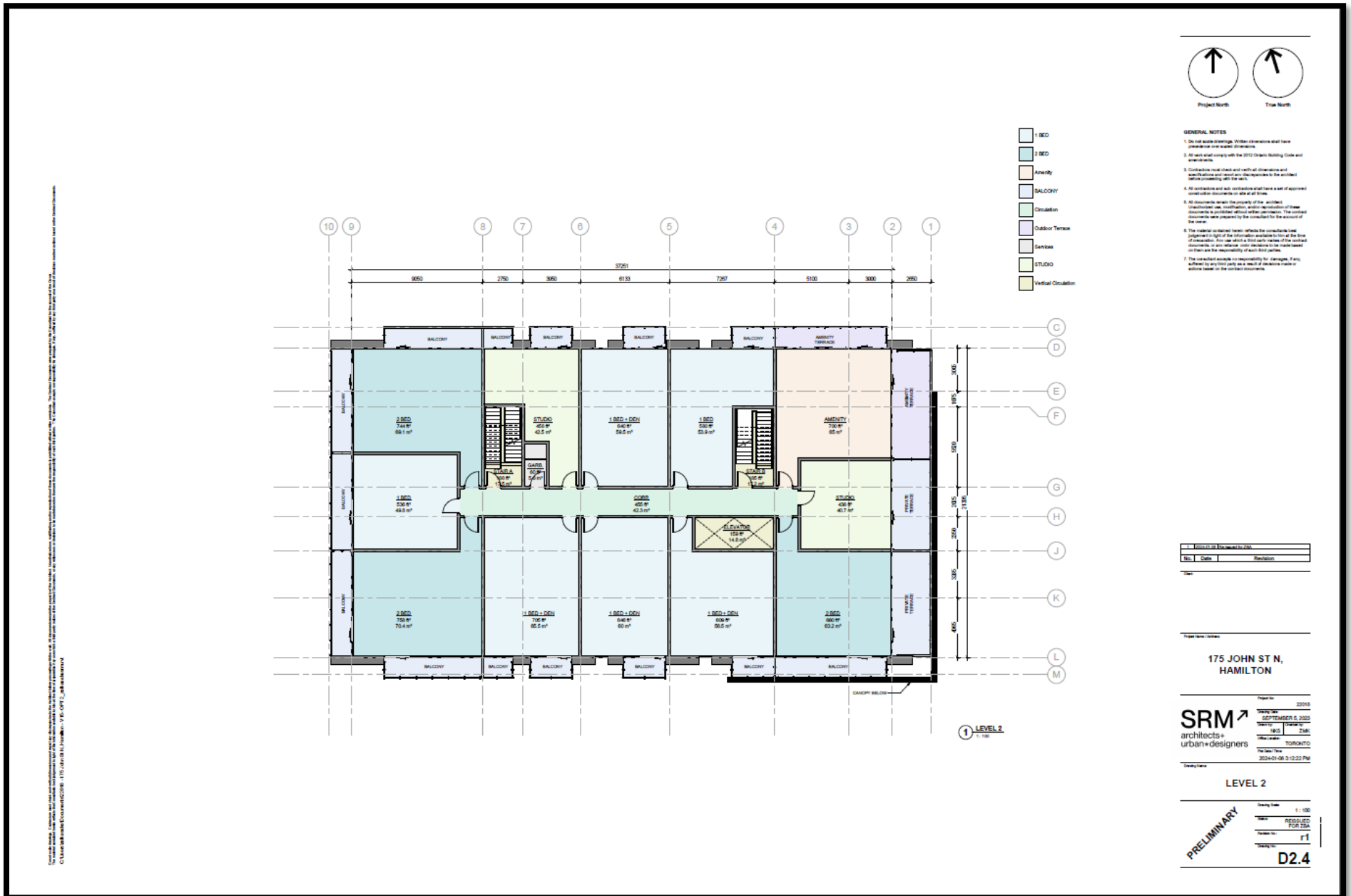
FLOOR PLANS



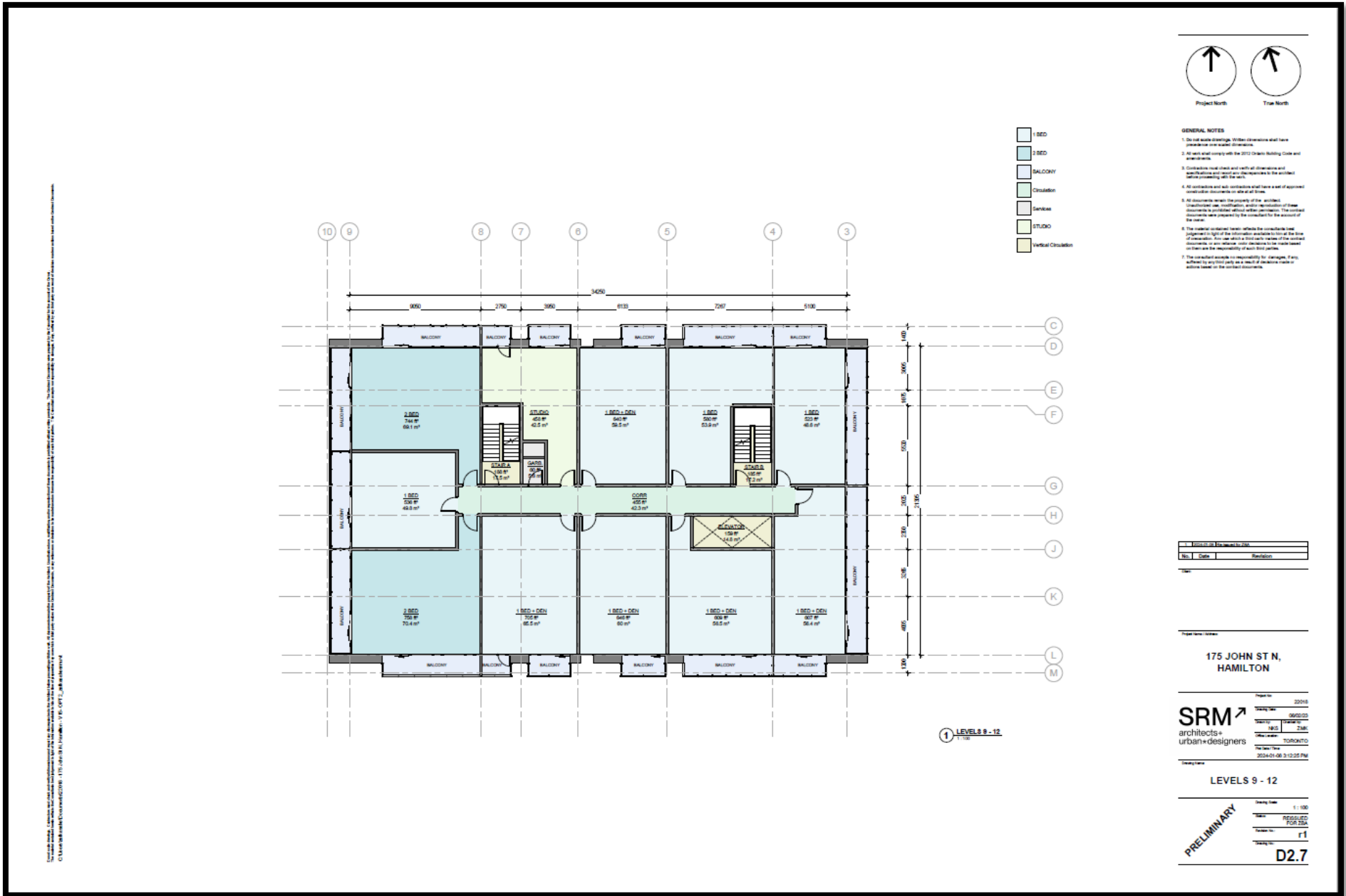




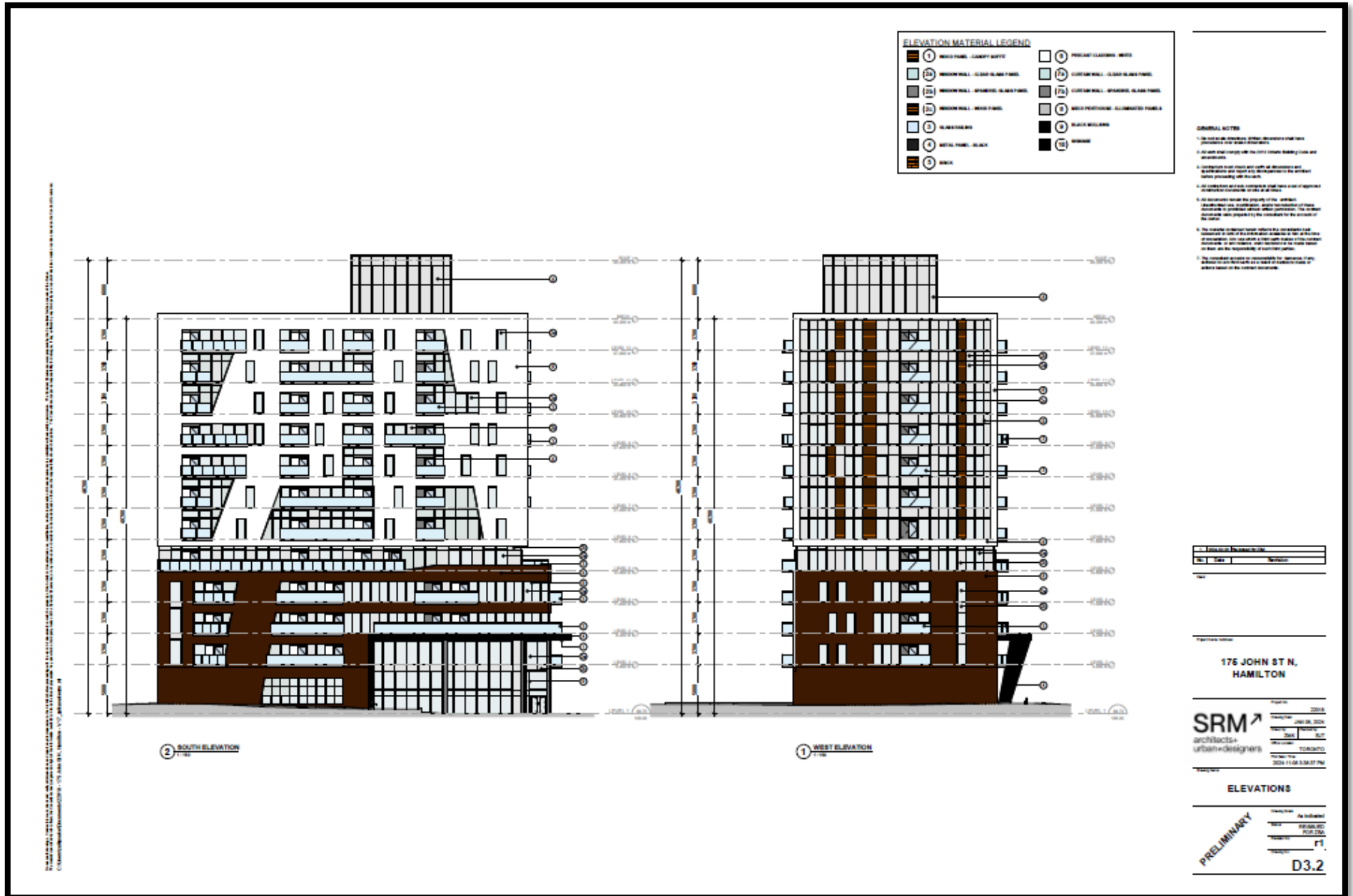




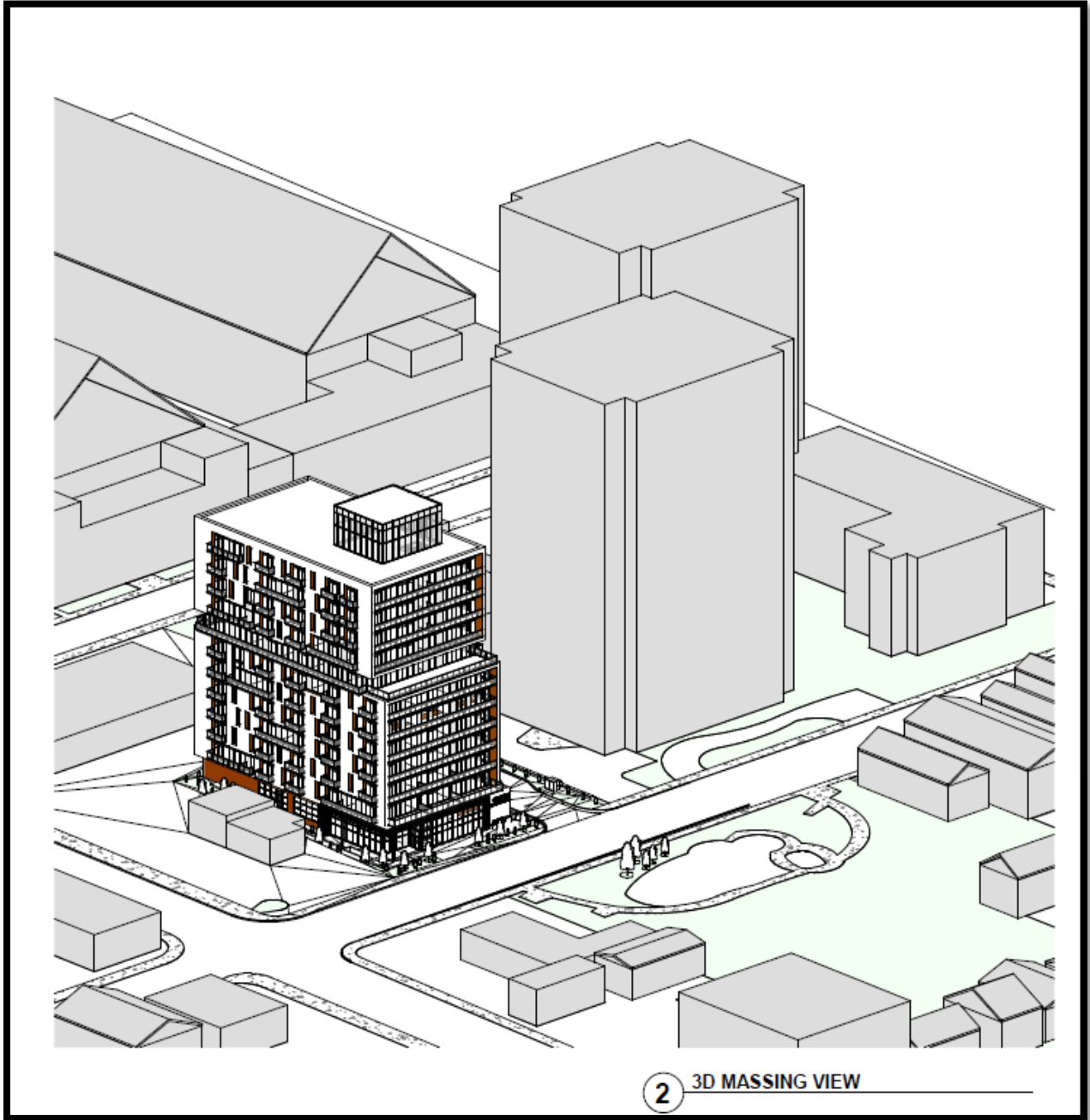




ELEVATIONS



3D MASSING VIEW



RENDERINGS











SITE DATA

SITE DATA			
175 JOHN ST N., HAMILTON, ONTARIO			
DATA	REQUIRED	PROVIDED	
ZONING	ZONING - M1		
LOT AREA (m ²)	BEFORE ROAD WIDENING 1,981m ² (21,323 ft ²) WITH ROAD WIDENING 1,859m ² (20,010 ft ²)		
SETBACKS	FRONT YARD (m)	0 (m)	2.08 (m)
	INTERIOR SIDE YARD (m)	1.5 (m)	5.50 (m)
	INTERIOR SIDE YARD (m)	1.5 (m)	14.73 (m)
	REAR YARD (m)	1.5 (m)	3.88 (m)
BUILDING DATA			
DATA	REQUIRED	PROVIDED	
LOT COVERAGE (m ²)	%	44.6% (LEVEL 3)	
TOTAL DENSITY (# of units)	--	128 UNITS	
BUILDING AREA (GROUND FLR.)	--	571.64 m ² (6,153.1 ft ²)	
GROSS FLOOR AREA	--	9,067.3 m ² (97,599.3 ft ²)	
GROSS CONSTRUCTION AREA	--	12,150.7 m ² (130,788.7 ft ²)	
NUMBER OF STOREYS	--	12	
BUILDING HEIGHT (m)	-- (m) MAX.	40.2 (m)	
AMENITY AREA (m ²)	4m ² / unit < 50m ² 4 x 48 = 192m ² 6m ² /unit > 50m ² 6 x 80 = 480m ² TOTAL 672 m ² (7,233 ft ²)	INDOOR AMENITY 177.1 m ² (1906.3 ft ²) OUTDOOR AMENITY 192.2 m ² (2068.8 ft ²) BALCONIES 938.3 m ² (10099.8 ft ²) TOTAL 1,307.6 m ² (14075 ft ²)	

LANDSCAPING DATA					
DATA		REQUIRED		PROVIDED	
LANDSCAPE AREA (percentage)		-- (%)		21 (%)	
LANDSCAPE AREA (m ²)		-- (m ²)		411 m ² (4424 ft ²)	
VEHICLE PARKING DATA					
DATA		REQUIRED		PROVIDED	
RESIDENTIAL PARKING		0		42	
VISITOR PARKING		2 + 0.05 / UNIT = 8.4		9 (INCLUDED ABOVE)	
BARRIER FREE PARKING		1		2 (INCLUDED ABOVE)	
BICYCLE PARKING DATA					
DATA		REQUIRED		PROVIDED	
SHORT TERM BICYCLE PARKING		5 Stalls		8	
LONG TERM BIKE PARKING		0.5 / 128 units = 64		102	
UNIT MIX DATA					
UNIT TYPE		UNIT COUNT		PERCENTAGE	
STUDIO		19		15%	
1 BED		39		30%	
1 BED + DEN		44		35%	
2 BED		20		15%	
3 BED		6		5%	
TOTAL		128			
UNIT BREAKDOWN	STUDIO	1 BED	1 BED + DEN	2 BED	3 BED
LEVEL 2	1 PER FLR.	1 PER FLR.	4 PER FLR.	2 PER FLR.	2 PER FLR.
LEVEL 3-4	1 PER FLR.	3 PER FLR.	4 PER FLR.	1 PER FLR.	2 PER FLR.
LEVEL 5-12	2 PER FLR.	4 PER FLR.	4 PER FLR.	2 PER FLR.	-
TOTAL	19	39	44	20	6

EXTERIOR WALL STC RATINGS

EXTERIOR WALL STC RATINGS

Wall Configuration	EW1	EW2	EW3	EW4	EW1R	EW2R	EW3R	EW5	EW4R	EW6	EW7 EW5R	EW8
STC Rating	38	40	43	46	47	48	49	54	55	57	58	62

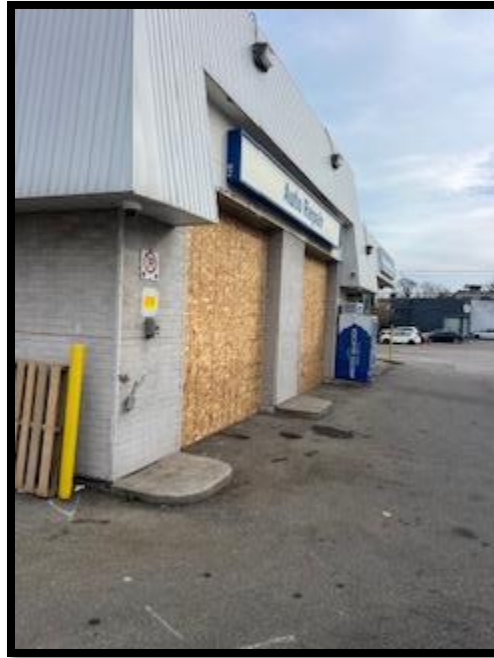
Source: National Research Council, Division of Building Research

NOTES:

- 1 The common structure of walls EW1 to EW5 is composed of 12.7mm gypsum board, vapour barrier and 38x89 mm studs with 50 mm (or thicker) mineral wool or glass fibre batts in inter-stud cavities.
 - EW1 denotes the common structure, plus sheathing, plus wood siding or metal siding and fibre backer board
 - EW2 denotes the common structure, plus rigid insulation (25 to 30 mm), and wood siding or metal siding and fibre backer board.
 - EW3 denotes simulated mansard with the common structure, plus sheathing, 28 X89 mm framing, sheathing and asphalt roofing material
 - EW4 denotes the common structure, plus sheathing and 20 mm stucco.
 - EW5 denotes the common structure, plus sheathing, 25 mm air space, 100mm brick veneer.
 - EW6 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25 to 50 mm), 100 mm back-up block 100 mm face brick.
 - EW7 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25 to 50 mm), 140mm back-up block, 100 mm face brick.
 - EW8 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25 to 50 mm), 200 mm concrete.
- 2 R signifies the mounting of the interior gypsum board on resilient clips.
- 3 An exterior wall conforming to rainscreen design principles and composed of 12.7 mm gypsum board, 100 mm concrete block, rigid insulation (25 to 50 mm), 25 mm air space, and 100 mm brick veneer has the same STC as EW6.
- 4 An exterior wall described in EW1 with the addition of rigid insulation (25 to 50 mm) between the sheathing and the external finish has the same STC as EW2.

APPENDIX “B”

ESSO GAS BAR



As seen in the photo above (taken November 5th, 2024) there were previously two auto repairs bays on the south side of the building, facing Cannon Street East. The building is currently under renovations to expand the existing convenience store and permanently block the bay doors.

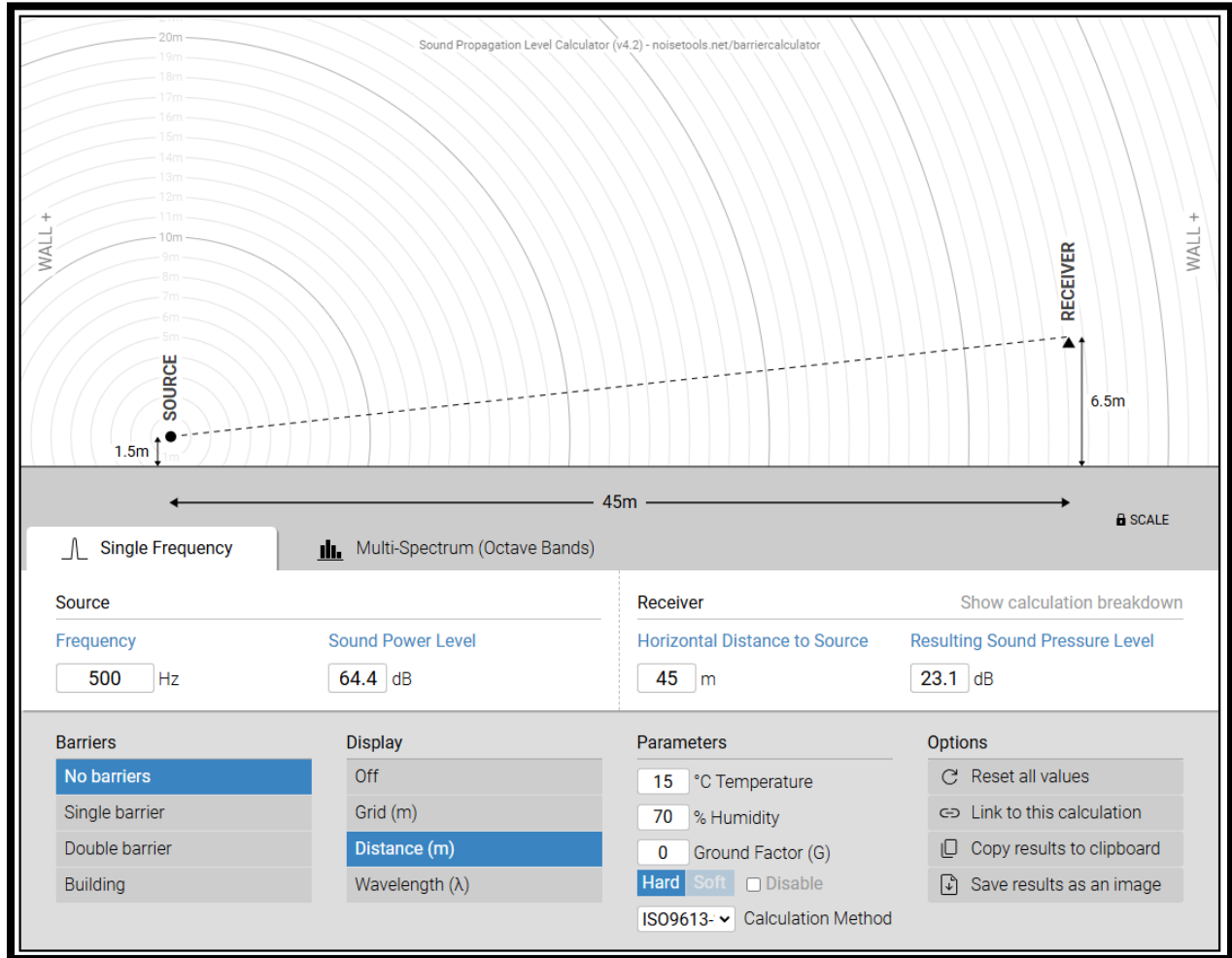
RSK AUTOMOTIVE & COLLISION



Tires being changed on vehicle with air ratchet. Five minutes for all 4 tires to be removed and replaced. Sound recorded from 7m away from the open bay door. 64.4 dBA.



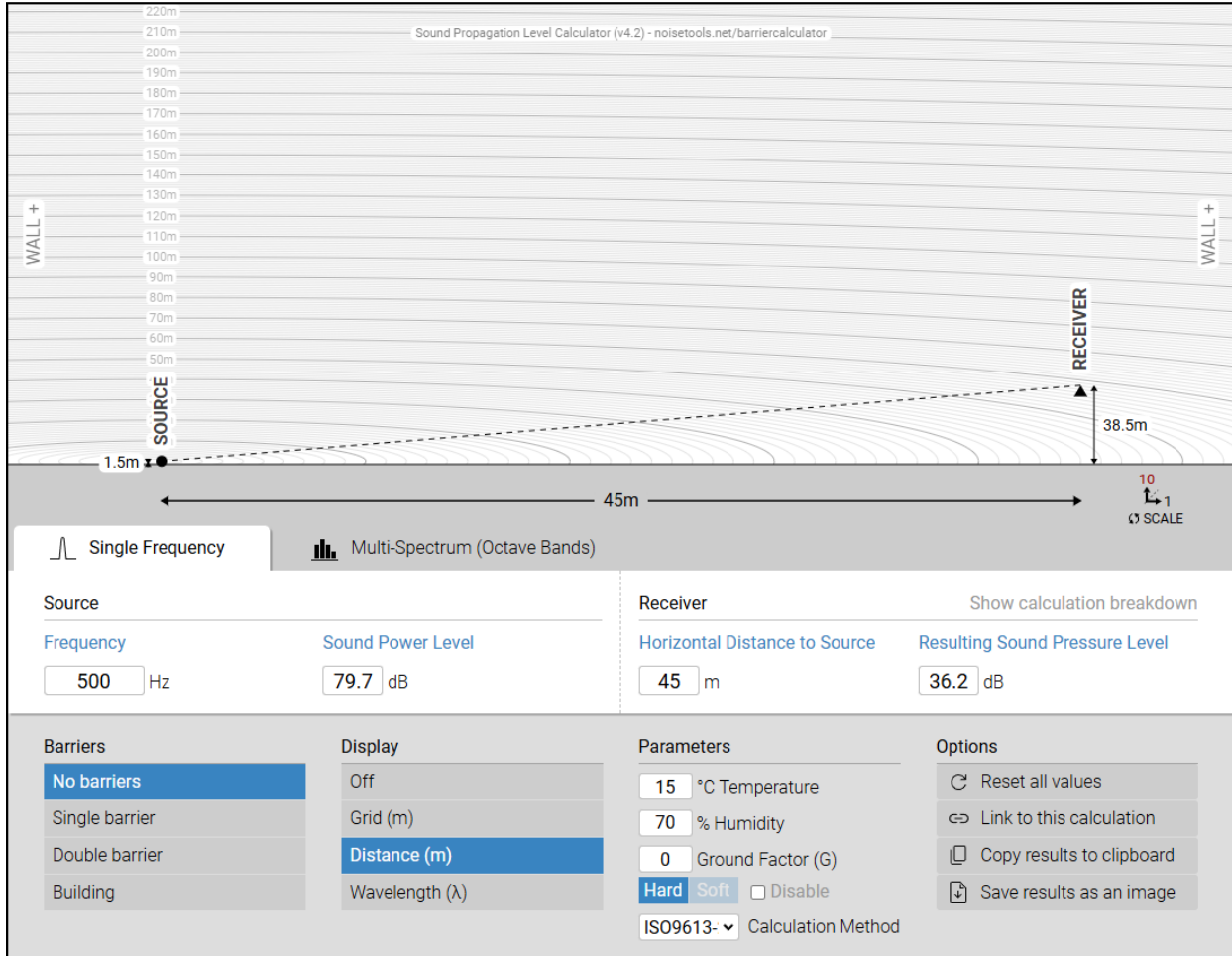
SOUND PROPAGATION LEVEL RSK AUTOMOTIVE & COLLISION ONE BAY – TIRE CHANGES 2ND FLOOR RESIDENTIAL



# Bays	Sound Pressure Level (dBA)	
1	23.1	
2	23.1	
3	23.1	Leq= 27.9 dBA

The RSK building partially shields the sound of the bays by 50% and therefore the combined sound pressure level of the three bays in operation can be reduced by 3 dBA, making the rating 27.9 dBA minus 3 dBA = 24.9 dBA.

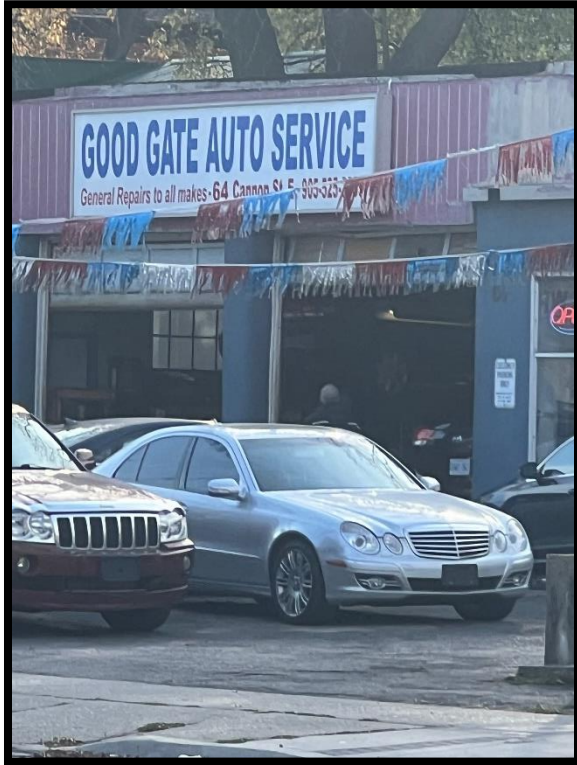
SOUND PROPAGATION LEVEL RSK AUTOMOTIVE & COLLISION ONE BAY – TIRE CHANGES 12TH FLOOR RESIDENTIAL



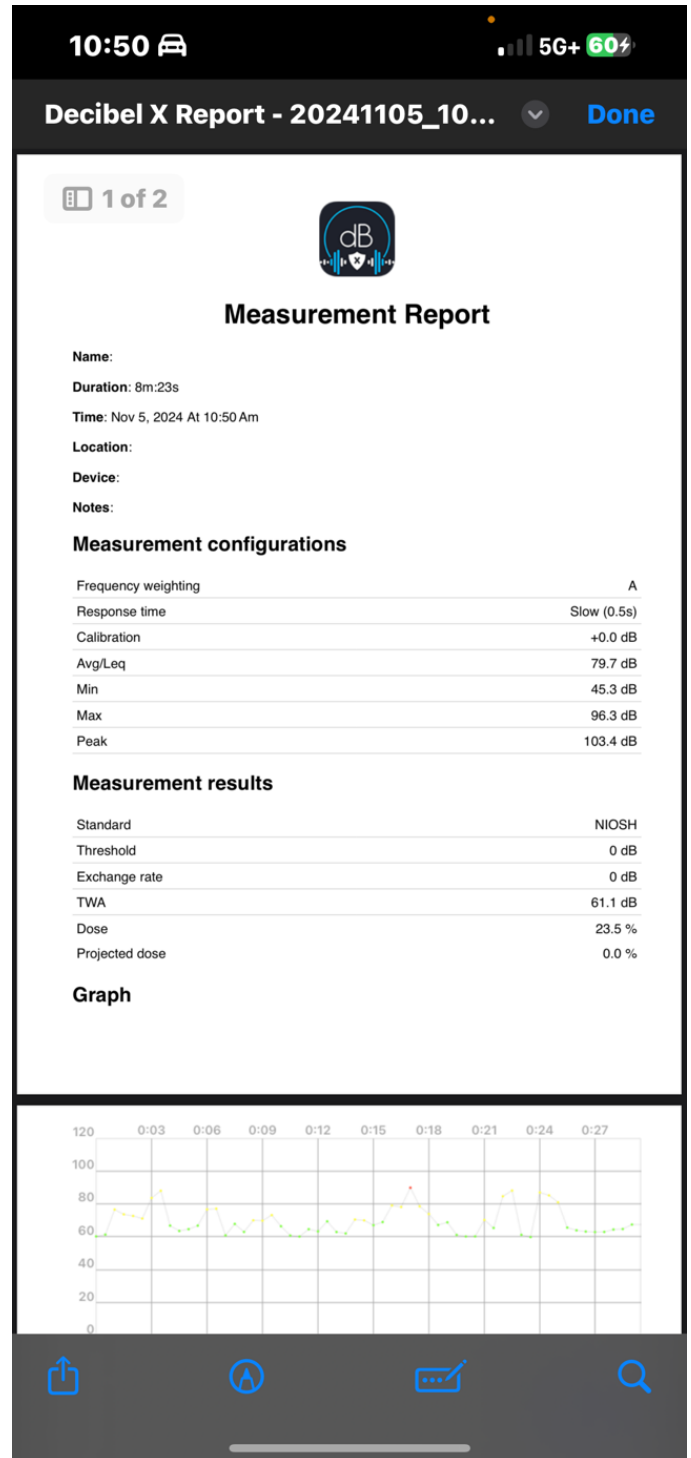
# Bays	Sound Pressure Level (dBA)	
1	36.2	
2	36.2	
3	36.2	Leq= 41.0 dBA

The RSK building partially shields the sound of the bays by 50% and therefore the combined sound pressure level of the three bays in operation can be reduced by 3 dBA, making the rating 41.0 dBA minus 3 dBA = 38 dBA.

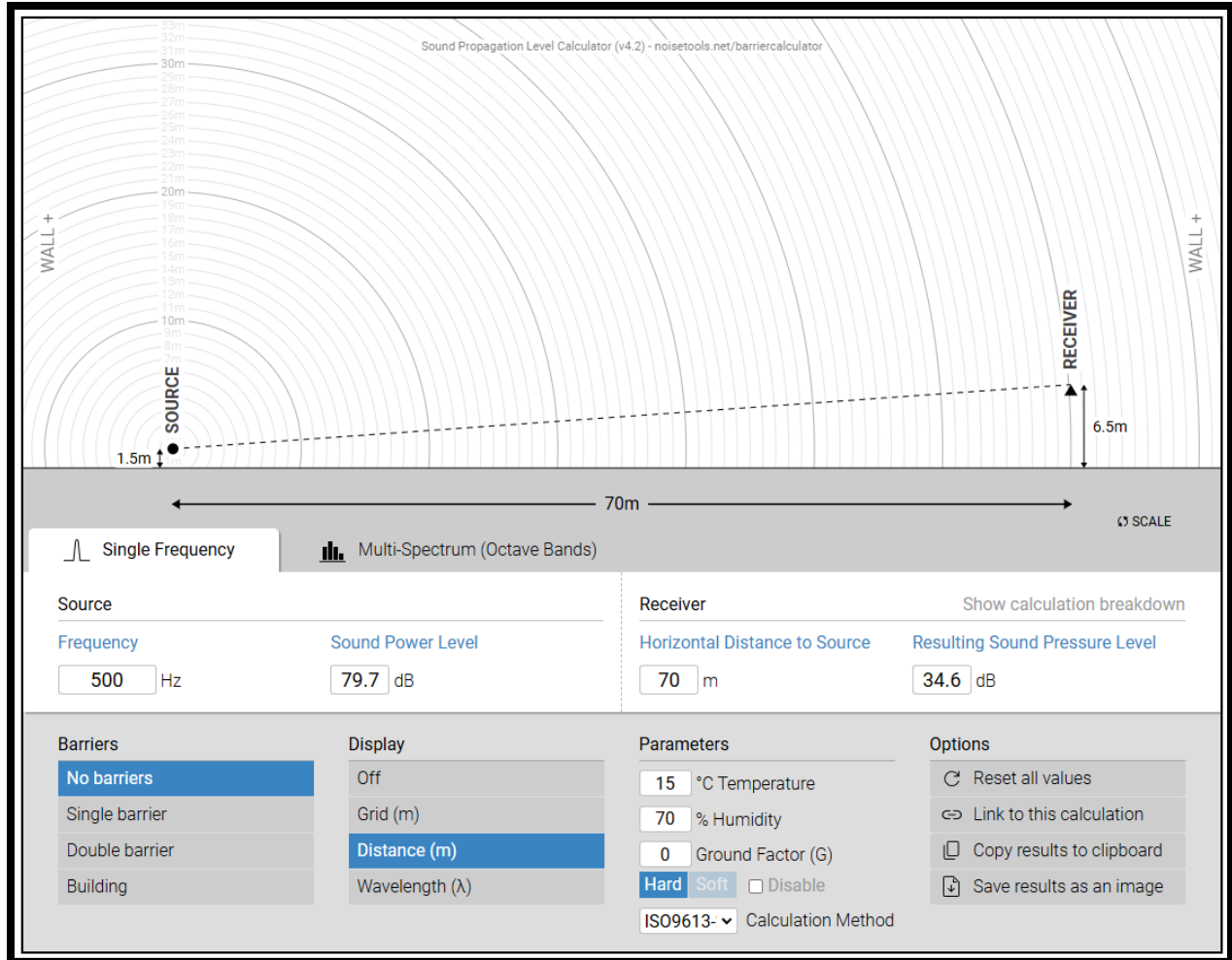
GOOD GATE AUTO SERVICE



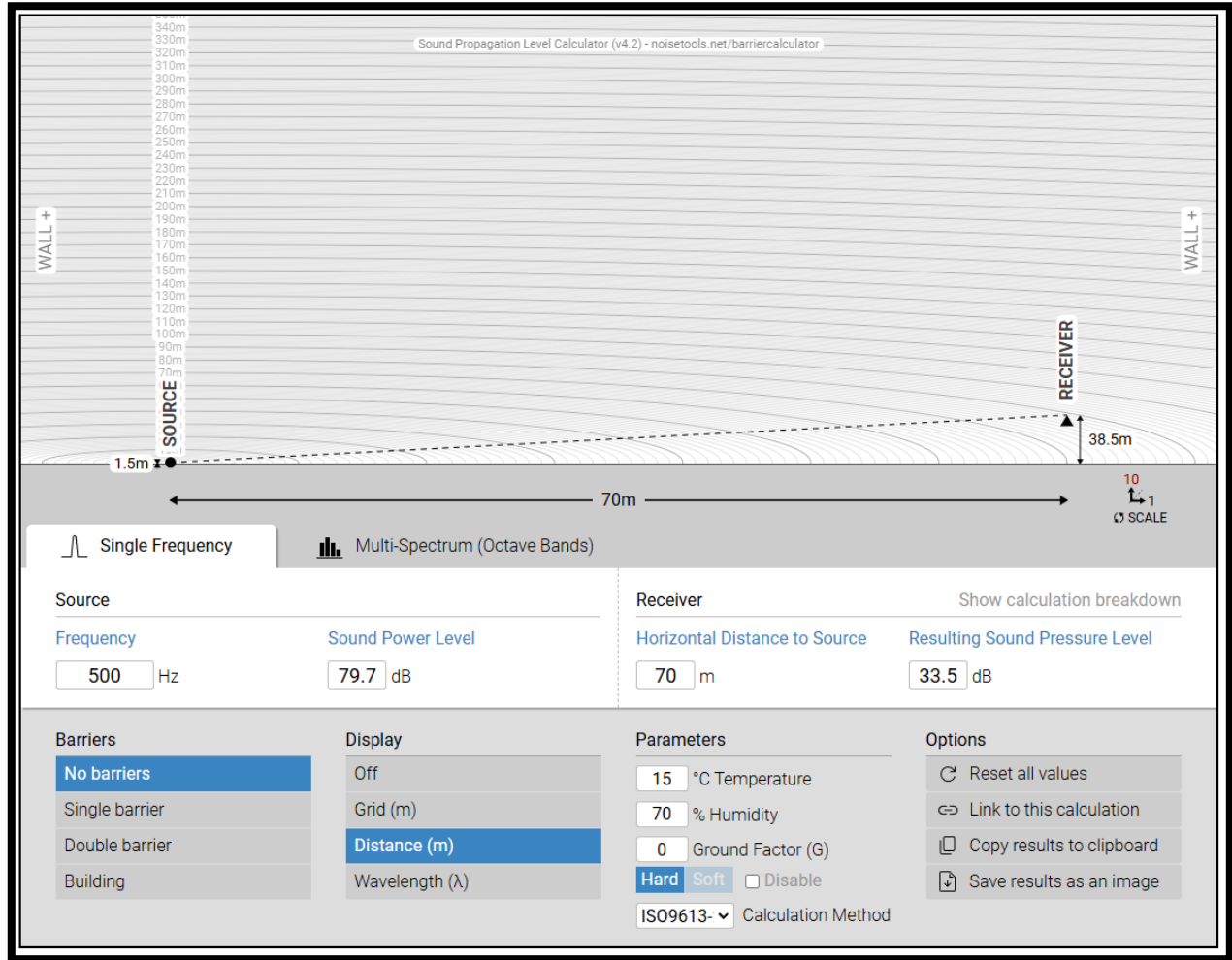
Tires being changed on vehicle with air ratchet. Eight minutes for all 4 tires to be removed and replaced. Sound recorded from 4m away from the open bay door. 79.7 dBA.



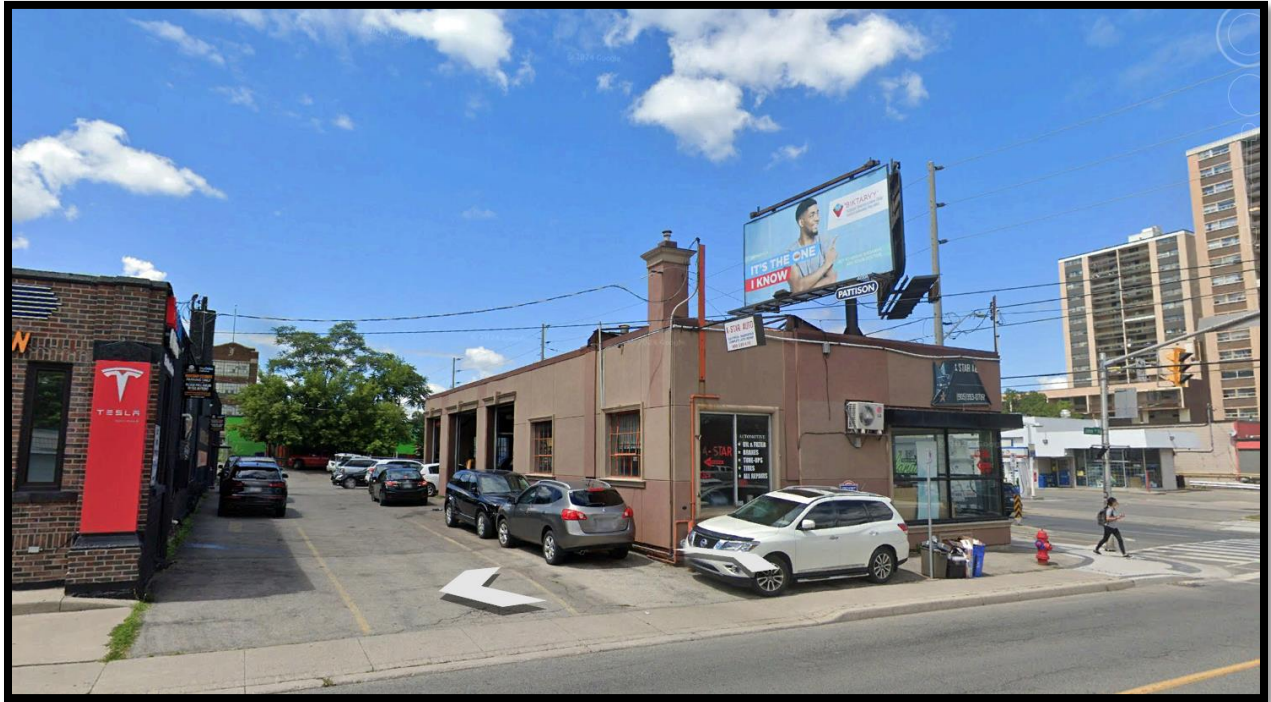
SOUND PROPAGATION LEVEL GOOD GATE AUTO SERVICE TWO BAYS – TIRE CHANGES 2ND FLOOR RESIDENTIAL



SOUND PROPAGATION LEVEL GOOD GATE AUTO SERVICE TWO BAYS – TIRE CHANGES 12TH FLOOR RESIDENTIAL

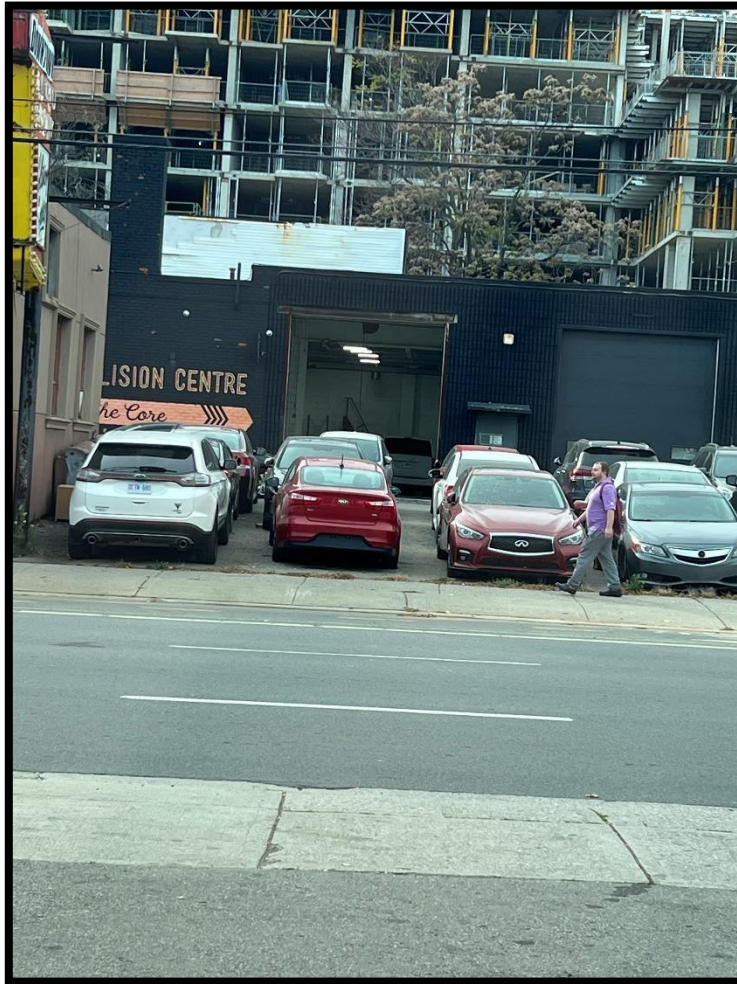


A STAR AUTO



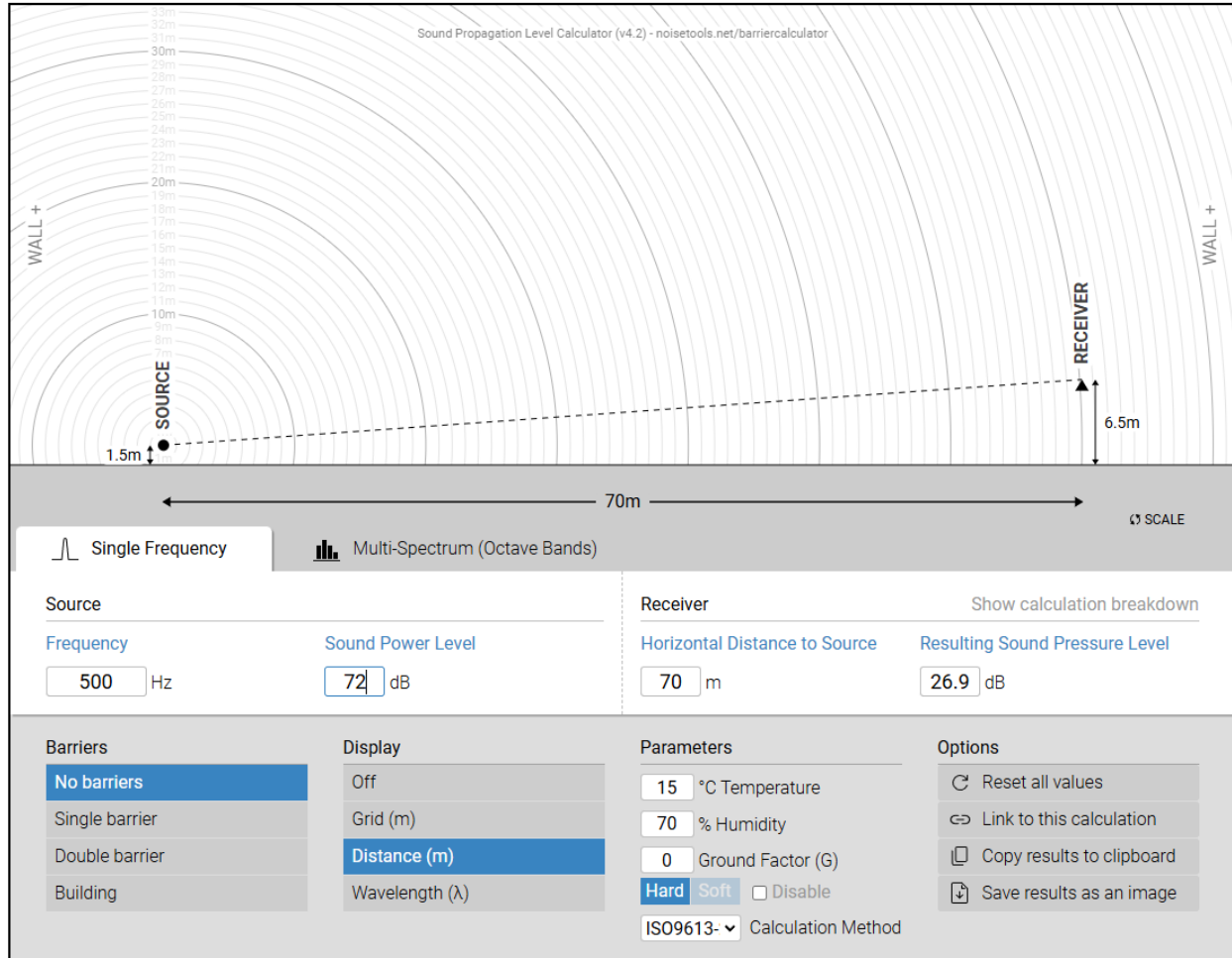
This repair shop has 3 bays at the rear of the building, facing south of Cannon Street East. The bay doors are approximately 60m from the south façade of the proposed development. The bays are shielded by the building itself and therefore it will not have an acoustical impact on the proposed development.

RSK AUTO BODY COLLISION SERVICE

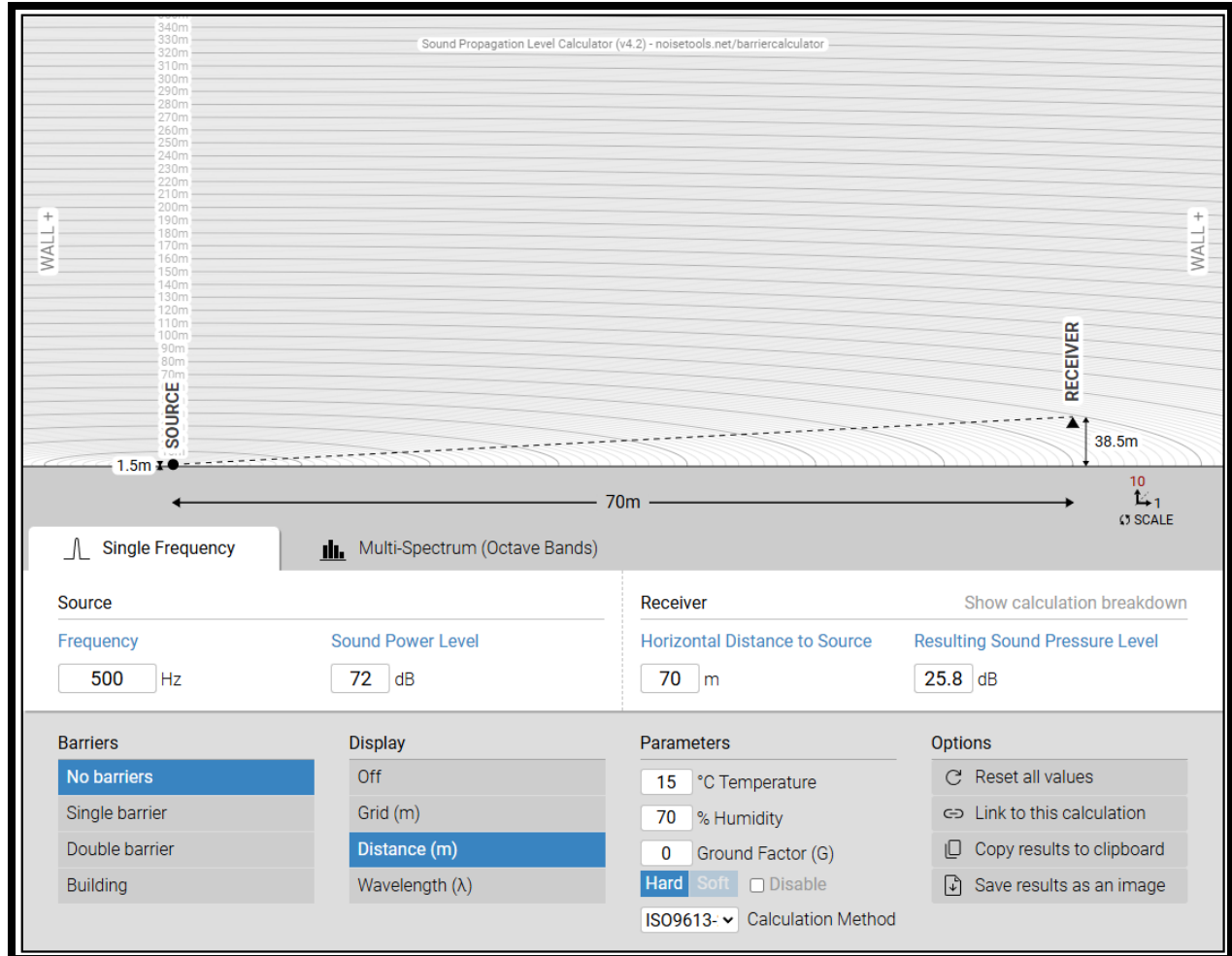


Sound levels were unable to be taken at this business as the bays were not in use and there was active construction of a large residential apartment building taking place approximately 40m south. dBA staff have used our acoustical library to approximate the collision repair shop sound levels when in operation.

SOUND PROPAGATION LEVEL RSK AUTO BODY COLLISION SERVICE TWO BAYS – COLLISION REPAIR 2ND FLOOR RESIDENTIAL



SOUND PROPAGATION LEVEL RSK AUTO BODY COLLISION SERVICE TWO BAYS – COLLISION REPAIR 12TH FLOOR RESIDENTIAL



GIANT TIGER ROOFTOP OVERVIEW

