ENVIRONMENTAL NOISE IMPACT STUDY

"BURLINGTON WATERFRONT"
MIXED USE DEVELOPMENT
LOCATED AT 2020 LAKESHORE ROAD
BURLINGTON, ON

Prepared for:

Burlington 2020 Lakeshore Inc.
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Hamilton, ON
L8P 1B3

Prepared By:



_____

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October 2021
Our File NO: 21-2167

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1.0 INTRODUCTION

dBA Acoustical Consulting Inc. has been retained to conduct a noise impact study on behalf of Burlington 2020 Lakeshore Inc. for the proposed "Burlington Waterfront" mixed-use development located at 2020 Lakeshore Road, Burlington, ON.

The purpose of the study is to determine the noise impact from Brant Street and Lakeshore Road vehicular traffic and the stationary noise that may impact the proposed mixed-use building as required for OPA/ZBA application for the City of Burlington.

The proposed mixed-use site development consists of two towers with a 4-stories underground parking structure and is joined by a 4-storey skybridge. The West Tower Crown is a 35-storey, mixed-use building with a 5th floor outdoor pool and seating area. The East Tower Crown is a 30-storey, mixed-use building consisting of hotel rooms and residential style units. Both towers (East & West) include a rooftop mechanical penthouse. There is a combined total of 557 residential units.

Proposed is a 4-storey open air skybridge (green roof) that is considered an amenity space for this development. The West Tower Crown on the 5th floor has proposed an indoor pool and shared amenity area located in the hotel section of the building. On the southwest portion of the 5th floor (residential portion) there are apartment indoor amenities as well as apartment outdoor amenities and outdoor pool with seating area and walkways. The outdoor amenity area for the pool and seating is located at the south portion of the west tower facing Lake Ontario. The second level proposes an outdoor office amenity area. Due to the extensive shielding from the proposed towers, traffic distance, traffic noise from Lakeshore Road (West Segment) has no acoustical impact on the amenity area. See Appendix A, for Stamson calculations.

The East Tower Crown proposes residential units commencing on the 6th floor to the 30th, floor, including the rooftop mechanical penthouse. The 5th floor skybridge requires a 1.22m minimum safety glass barrier or equivalent as required by the Ontario Building Code will eliminates the need for a noise barrier. The second level proposes a green roof amenity area.

This study will detail noise impact relative to the site plan and recommend noise control measures necessary (if applicable) to meet MOE Publication NPC-300 entitled "Stationary & Transportation Sources-Approval & Planning guidelines while satisfying the planning requirements of the City of Burlington. Vibration is not considered as there are no heavy industry or railway lines within the required setback distances. There are no CN/CP Rail within the setback requirements therefore rail is not a concern with noise. Aircraft is not a concern as the development is located outside the NEF 25 contour of the any area Airports.

2.0 SITE DESCRIPTION

The proposed mixed-use development property is located on the south side of Lakeshore Road and Brant Street, Burlington, ON.

Lakeshore Road is a 3-lane roadway with a center south turning lane and a posted speed of 50 km/hr located north of the proposed development. Brant Street is located north of the proposed development, consisting of 3-lanes with a center turn and a posted speed of 50 km/hr. Site Location attached as Figure 1. Any rooftop mechanical equipment (HVAC, Cooling Towers) will be enclosed in the rooftop mechanical building.

Located north of the proposed property are several commercial buildings on Lakeshore Road. To the east of the proposed site are large multi-storey apartment buildings. Immediately to the west of the site is Spencer Smith Park. To the south of the site is Lake Ontario. Brant Street is a "T" intersection that travels north from Lakeshore Road and is located northwest of the proposed development and contains large multi storey apartment buildings and commercial buildings. All commercial and apartment buildings are equipped with small HVAC units, however due to shielding from the existing buildings, parapet rooftop walls and distance separation from the proposed building, the HVAC units do not have an acoustical impact on the proposed development.

3.0 NOISE IMPACT ASSESSMENT

3.1 NOISE CRITERIA

The Ministry of Environment (MOE) specifies limits for road noise relative to new residential developments. The MOE Publication NPC-300 entitled "Stationary & Transportation Sources-Approval & Planning, specifies the criteria, summarized as follows:

TABLE1- 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 the Plane of the Window (POW) 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)	55 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 Sound Levels Limits

Indoor Location	Leq (dBA)
	Road
Living/Dining/Bedroom 7:00 – 23:00	45
Living/Dining/Bedroom 23:00 - 07:00	40

3.2 ROAD NOISE

Predicted road traffic noise levels were calculated for Lakeshore Road and Brant Street, the main road noise sources in the proposed site area. The 2016 AADT road traffic volumes Lakeshore Road and Brant Street were sourced from the City of Burlington AADT Map. See Appendix "A"

The MOE computer program STAMSON version 5.04 was used to carry out prediction calculations (See Appendix "A"). Traffic data is summarized in Table 4. The daytime/nighttime volume ratios relative to Lakeshore Road and Brant Street is calculated using a 90/10 split and a 16/8 hr assessment required by the MOE.

The percentage of annual growth for Lakeshore Road was figured at 2.0% over 15 years. The AADT (Annual Average Daily Traffic) volumes used are reflective of the worst-case scenario. Truck volumes were factored at 1.5% medium and 1.5% heavy of the total vehicle volumes for the roadway segments. Lakeshore Road has been considered two road segments for this study. Calculated noise levels were modeled at 15 receptor locations representative of the Plain of the Window (POW) of the building facade for specific residential units. Area roadways have no acoustical impact on the proposed site due to low speed and traffic volumes

The percentage of annual growth for Brant Street was figured at 2.0% over 14 years. The AADT (Annual Average Daily Traffic) volumes used are reflective of the worst-case scenario. Truck volumes were factored at 1.0% medium and 1.0% heavy of the total vehicle volumes for the roadway segment. Calculated noise levels were modeled at 5 receptor locations representative of the Plain of the Window (POW) of the building facade for specific residential units. (See Figure 3 Receptor Locations).

TABLE 4 – Future Road Traffic Volumes

Lakeshore Road (West Segment)	AADT 17224 Vehicles		
	Cars	Medium Trucks	Heavy Trucks
Day	15037	233	233
Night	1671	26	26
Lakeshore Road (East Segment)	**AADT 21659 Vehicles**		
	Cars	Medium Trucks	Heavy Trucks
Day	18909	292	292
Night	2101	32	32
Brant Street (Northbound)	**AADT 6084 Vehicles**		
	Cars	Medium Trucks	Heavy Trucks
Day	5421	27	27
Night	602	3	3

WEST TOWER

The following Table 5A represents the free field noise levels of road traffic from Lakeshore Road (West Segment) west of Brant Street intersection.

TABLE 5A – Predicted Future Traffic Noise (dBA) – Lakeshore Road (West Segment)		
Location	07:00 – 23:00	23:00 – 07:00
R1-Northwest Façade (4th Floor)	54.dba (14m)	47 dba (14m)
R2- Northwest Façade (14th Floor)	55 dba (41m)	48 dba (41m)
R3- Northwest Façade (Top Floor)	55 dba (111m)	48 dba (111m)
R4- Northeast Façade (4th Floor)	51 dba (14m)	44.dba (14m)
R5- Northeast Façade (14th Floor)	51 dba (41m)	46 dba (41m)
R6 - Northeast Façade (Top Floor)	53 dba (111m)	46 dba (111m)

The following Table 5B represents the free field noise levels of road traffic from Lakeshore Road (East Segment) east of Brant Street intersection.

TABLE 5B – Predicted Future Traffic Noise (dBA) – Lakeshore Road (East Segment)		
Location	07:00 – 23:00	23:00 – 07:00
R1-Northwest Façade (4th Floor)	56 dba (14m)	49 dba (14m)
R2- Northwest Façade (14th Floor)	57 dba (41m)	50.dba (41m)
R3- Northwest Façade (Top Floor)	57 dba (111m)	50 dba (111m)
R4- Northeast Façade (4th Floor)	61 dba (14m)	55 dba (14m)
R5- Northeast Façade (14th Floor)	63 dba (41m)	56 dba (41m)
R6 - Northeast Façade (Top Floor)	63 dba (111m)	56 dba (111m)

The following Table 5C represents the free field noise levels of road traffic from Brant Street.

TABLE 5C – Predicted Future Traffic Noise (dBA) – Brant Street		
Location	07:00 – 23:00	23:00 – 07:00
R1-Northwest Façade (4th Floor)	54 dba (14m)	47 dba (14m)
R2- Northwest Façade (14th Floor)	56 dba (41m)	50 dba (41m)
R3- Northwest Façade (Top Floor)	56 dba (111m)	49 dba (111m)
R4- Northeast Façade (4th Floor)	45 dba (14m)	39 dba (14m)
R5- Northeast Façade (14th Floor)	47 dba (41m)	41 dba (41m)
R6 - Northeast Façade (Top Floor)	47 dba (111m)	41 dba (111m)

The following Table 5D represents the combined free field noise levels of road traffic from Lakeshore Road (West Segment), Lakeshore Road (East Segment) and Brant Street.

TABLE 5D – Predicted Combined Future Traffic Noise (dBA)		
Location	07:00 – 23:00	23:00 – 07:00
R1-Northwest Façade (4th Floor)	59 dba (14m)	53 dba (14m)
R2- Northwest Façade (14th Floor)	61 dba (41m)	54 dba (41m)
R3- Northwest Façade (Top Floor)	61 dba (111m)	54 dba (111m)
R4- Northeast Façade (4th Floor)	62 dba (14m)	55 dba (14m)
R5- Northeast Façade (14th Floor)	63 dba (41m)	57 dba (41m)
R6 - Northeast Façade (Top Floor)	63 dba (111m)	57 dba (111m)

EAST TOWER

The following Table 6A represents the free field noise levels of road traffic from Lakeshore Road (West Segment) west of Brant Street intersection.

TABLE 6A – Predicted Future Traffic Noise (dBA) – Lakeshore Road (West Segment)		
Location	07:00 – 23:00	23:00 – 07:00
R7-Northwest Façade (6th Floor)	47dba (20m)	40 dba (20m)
R8- Northwest Façade (14th Floor)	46 dba (41m)	41 dba (41m)
R9- Northwest Façade (Top Floor)	49 dba (95m)	42 dba (95m)
R10- Northeast Façade (6th Floor)	42 dba (20m)	35 dba (20m)
R11 -Northeast Façade (14th Floor)	48 dba (41m)	41 dba (41m)
R12 - Northeast Façade (Top Floor)	48 dba (95m)	41 dba (95m)

The following Table 6B represents the free field noise levels of road traffic from Lakeshore Road (East Segment) east of Brant Street intersection.

TABLE 6B – Predicted Future Traffic Noise (dBA) – Lakeshore Road (East Segment)		
Location	07:00 – 23:00	23:00 – 07:00
R7-Northwest Façade (6th Floor)	62 dba (20m)	56 dba (20m)
R8- Northwest Façade (14th Floor)	63 dba (41m)	57dba (41m)
R9- Northwest Façade (Top Floor)	58 dba (95m)	56 dba (95m)
R10- Northeast Façade (6th Floor)	62 dba (20m)	56 dba (20m)
R11 -Northeast Façade (14th Floor)	63 dba (41m)	56 dba (41m)
R12 - Northeast Façade (Top Floor)	57 dba (95m)	57 dba (95m)

The following Table 6C represents the free field noise levels of road traffic from Brant Street.

TABLE 6C – Predicted Future Traffic Noise (dBA) – Brant Street		
Location	07:00 – 23:00	23:00 – 07:00
R7-Northwest Façade (6th Floor)	45 dba (20m)	38 dba (20m)
R8- Northwest Façade (14th Floor)	46 dba (41m)	39 dba (41m)
R9- Northwest Façade (Top Floor)	47 dba (95m)	40 dba (95m)
R10- Northeast Façade (6th Floor)	40 dba (20m)	33 dba (20m)
R11 -Northeast Façade (14th Floor)	46 dba (41m)	39 dba (41m)
R12 - Northeast Façade (Top Floor)	46 dba (95m)	39 dba (95m)

The following Table 6D represents the combined free field noise levels of road traffic from Lakeshore Road (West Segment), Lakeshore Road (East Segment) and Brant Street.

TABLE 6D – Predicted Combined Future Traffic Noise (dBA)		
Location	07:00 – 23:00	23:00 – 07:00
R7-Northwest Façade (6th Floor)	62 dba (20m)	56 dba (20m)
R8- Northwest Façade (14th Floor)	63 dba (41m)	57 dba (41m)
R9- Northwest Façade (Top Floor)	59 dba (95m)	57 dba (95m)
R10- Northeast Façade (6th Floor)	62 dba (20m)	56 dba (20m)
R11 -Northeast Façade (14th Floor)	63 dba (41m)	57 dba (41m)
R12 - Northeast Façade (Top Floor)	58 dba (95m)	57 dba (95m)

The following Table 7 represents the mitigated noise levels for the 2nd floor outdoor office amenity and green roof and the 5th floor outdoor pool, seating and walkway.

TABLE 7 – Predicted Combined Future Traffic Noise (dBA)		
Location	07:00 – 23:00	23:00 – 07:00
Amenity Space – 2nd floor (1.22m safety glass or equivalent)	41dba (7.5m)	N/A
Amenity Space - 5th floor	55 dba (17m)	N/A
Walkway – 5th floor (1.22m safety glass or equivalent)	44 dba (17m)	N/A

4.0 RECOMMENDATIONS - NOISE CONTROL

4.1 OUTDOOR LIVING AREAS

Calculated road noise levels for the proposed outdoor pool and seating area and walkway located on the 5th floor of the West Tower does not exceed the 55 dBA daytime criteria outlined in Table 1. Building designs were made available at the time of this report. Proposed for each residential unit are standard size balconies. There are also large indoor amenity areas that require no noise mitigation measures other than window requirements as noted in the following Table 8. Balconies are less than 4m in depth and are not considered OLA's (Outdoor Living Areas) and as such, no mitigation will be required.

The proposed skybridge does not require noise mitigation measures as the required safety barrier will suffice to mitigate the noise levels from traffic below MOE 55dba. Calculated levels for the 2nd level outdoor office amenity area in the West Tower requires a 1.22m safety glass or equivalent to achieve the noise limits noted in Table 1.

4.2 INDOOR NOISE LEVELS

Calculated nighttime road noise levels at the Plane of Window (POW) exceed the 50 dBA criteria outlined in Table 1 for indoor space for any residential units for all receptors (R1-R12). Specific building components (walls, windows, doors etc.) are required and confirmed using the STC (Sound Transmission Class) method. Building design specifications were not made available at report time and STC calculations (Sound Transmission Class) method are summarized in Table 6 following. Due to cost values, we recommend that all windows throughout both towers be STC-30. This will ensure that an STC-30 mitigates the indoor noise level to within Table 3 requirements.

TABLE 8 – Recommended Door and Window Construction

LOCATION	STC To Be Used	Wall	Door Construction
All Windows			
Bedroom	30	EW-2	D3
Living room	30	EW-2	D3

5.0 VENTILATION / WARNING CLAUSES

Ventilation and Warning Clause requirements are required for this project as noted in Table 8 following. Proposed for the development is heating and air conditioning, which will be enclosed in the rooftop mechanical room and will have no acoustical impact on area residential/commercial buildings.

TABLE 9 - Ventilation and Warning Clause Requirements

LOCATION	VENTILATION	WARNING CLAUSE
All Units	Central Air Conditioning	Type “A” & “D”

TYPE A: (Recommended)

> “Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the Municipality’s and the Ministry of the Environment’s noise criteria.”

TYPE D: (Recommended)

> “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 Ministry of the Environment’s noise criteria.”

6.0 SUMMARY OF RECOMMENDATIONS

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

- Central Air Conditioning for all residential units as recommended in Table 9.
- Wall construction as recommended in Table 8.

- Registered Warning Clauses on title Type "A" & "D" (All Condo Units)
- Generators, garage vents, intake and exhaust vents to be confirmed and noise levels confirmed not to impact residential units or other neighbouring properties.

It is recommended that a qualified acoustical consultant certify that the required noise control measures have been incorporated into the builder's plans prior to issuance of a building permit.
It is recommended that a qualified acoustical consultant certify that the required control measures have been properly installed prior to an occupancy permit.

7.0 CONCLUSIONS

dBA Acoustical Consulting Inc. has provided a noise impact study on behalf of Burlington 2020 Lakeshore Inc. for the proposed "Burlington Waterfront" mixed-use development located at 2020 Lakeshore Road, Burlington, ON.

The study determined the noise impact from Brant Street and Lakeshore Road vehicular traffic and the stationary noise sources for the mixed-use buildings as required for OPA/ZBA application for the City of Burlington.

The 4-storey open air atrium (green roof) is considered an amenity area and requires a 1.22m safety glass barrier or equivalent. The West Tower Crown has an office outdoor amenity area located on the 2nd floor and the 5th floor has an outdoor pool, amenity area and walkway. The outdoor amenity area for the pool and seating is located at the south portion of the west tower facing Lake Ontario and both floors require a 1.22m safety glass barrier or equivalent.

The East Tower Crown residential units commencing on the 6th floor to the 30th floor, including the rooftop mechanical penthouse. The 2nd floor outdoor green roof amenity area requires a 1.22m minimum safety glass barrier or equivalent.

Type "A" and "D" Warning Clauses are required for all residential units throughout both towers.

This study detailed noise impact relative to the site plan and recommended noise control measures necessary that achieves MOE Publication NPC-300 entitled "Stationary & Transportation Sources-Approval & Planning guidelines while satisfying the planning requirements of the City of Burlington.

FIGURE 1
SITE LOCATION

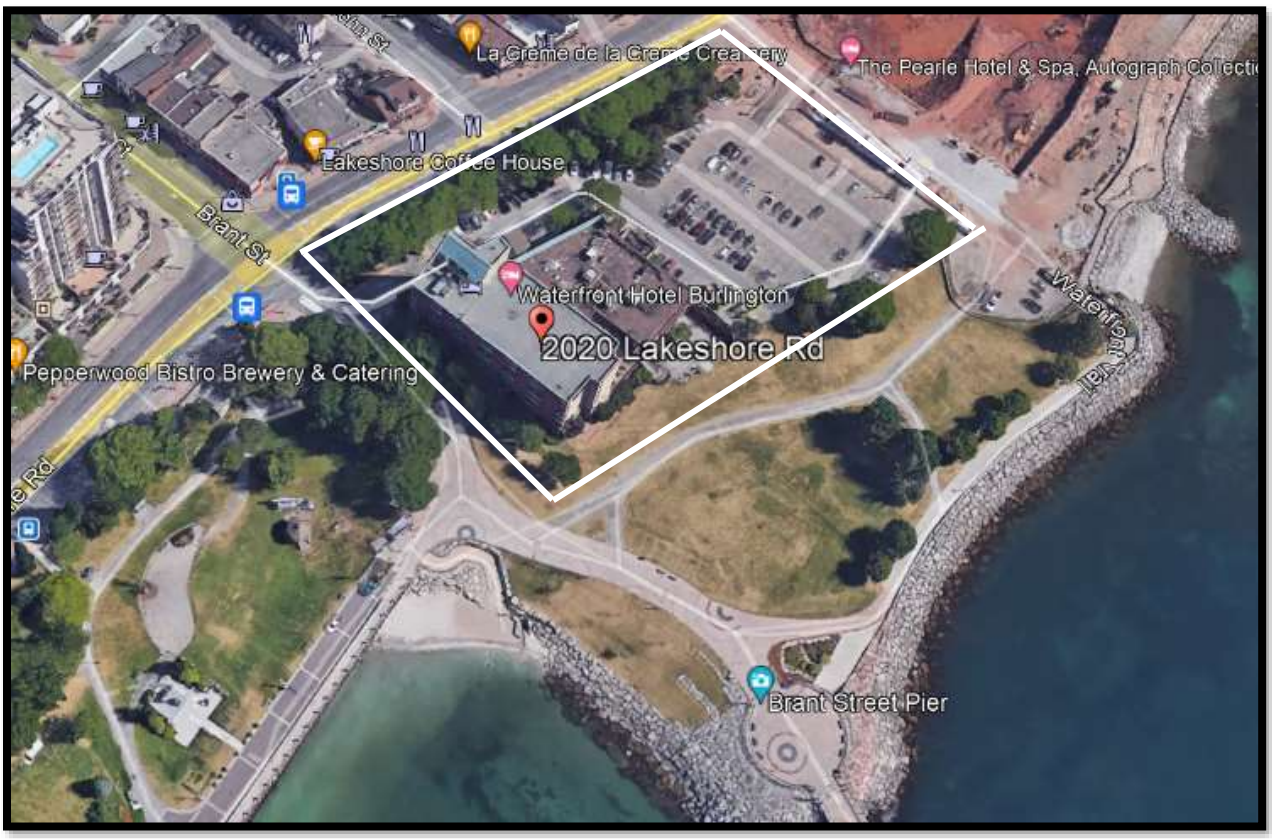


FIGURE 2
SITE PLAN

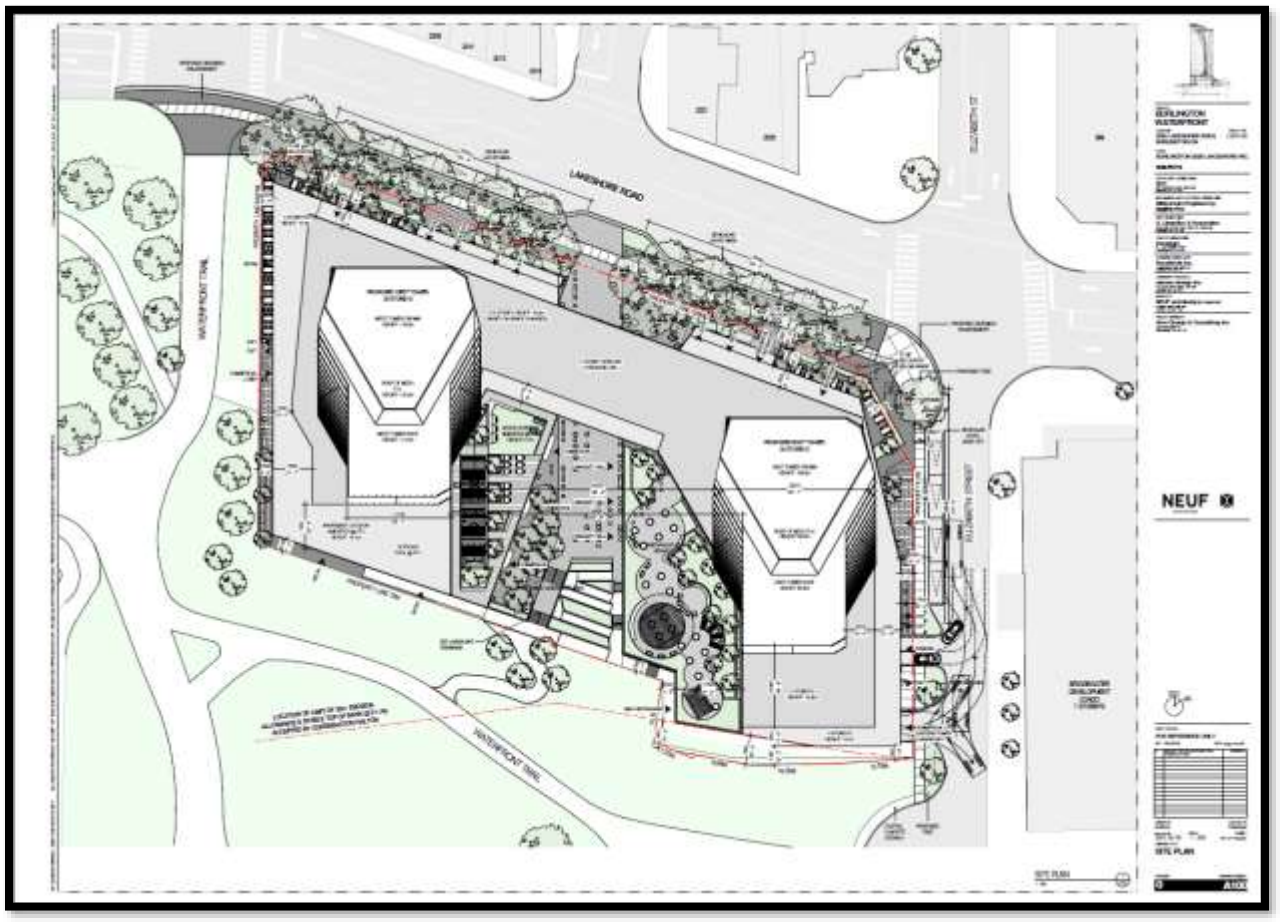


FIGURE 3
RECEPTOR LOCATIONS

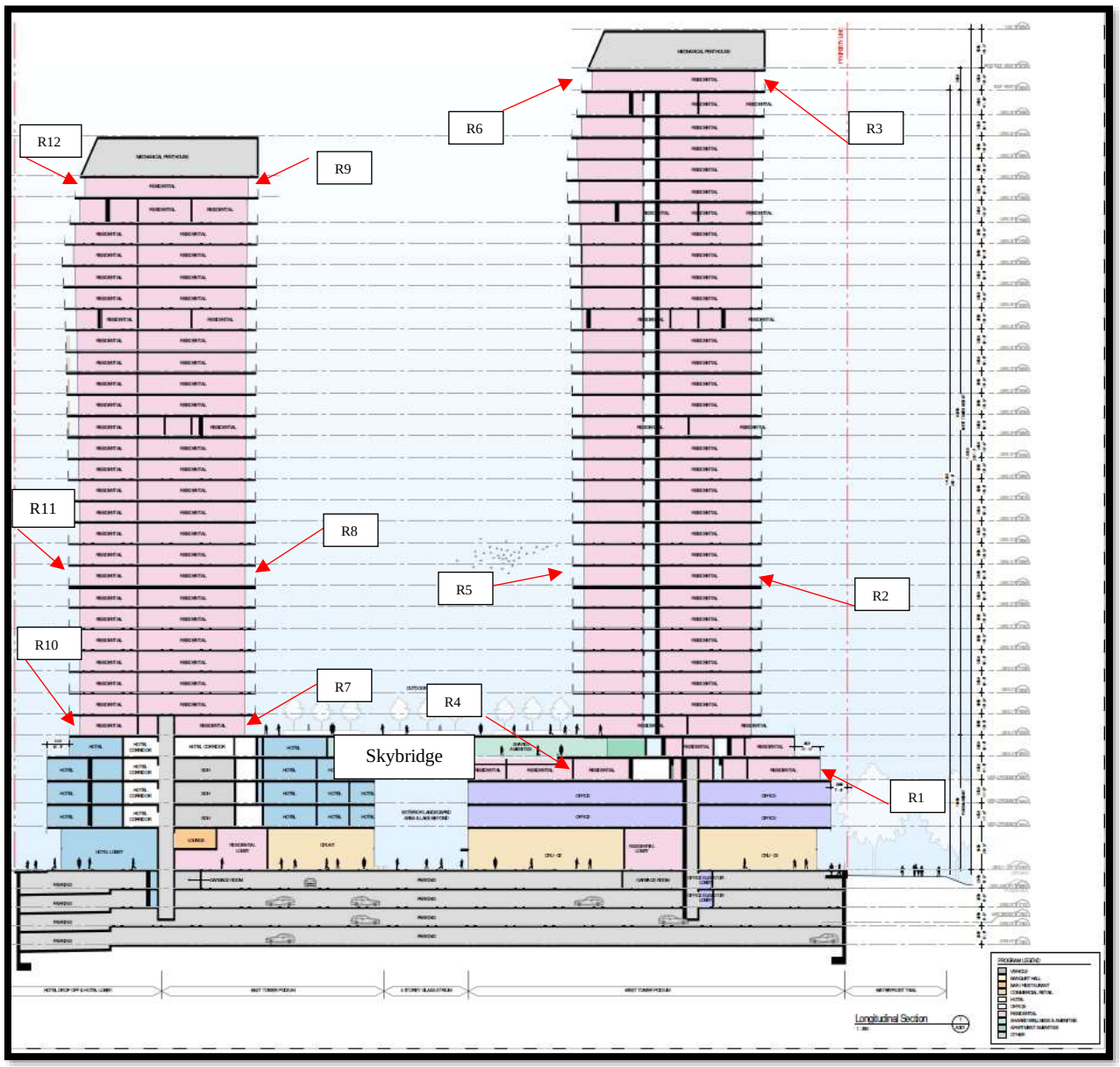
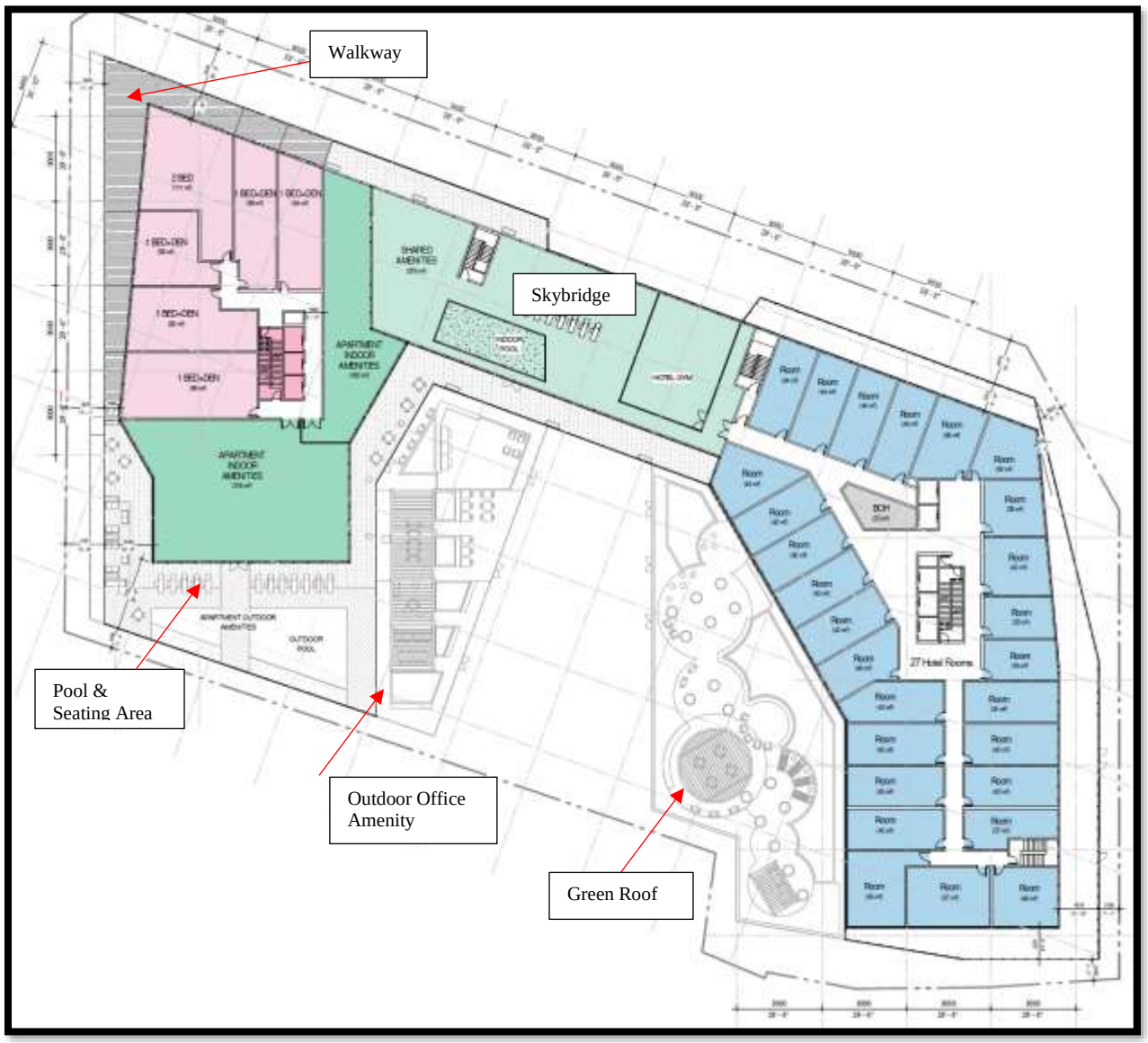
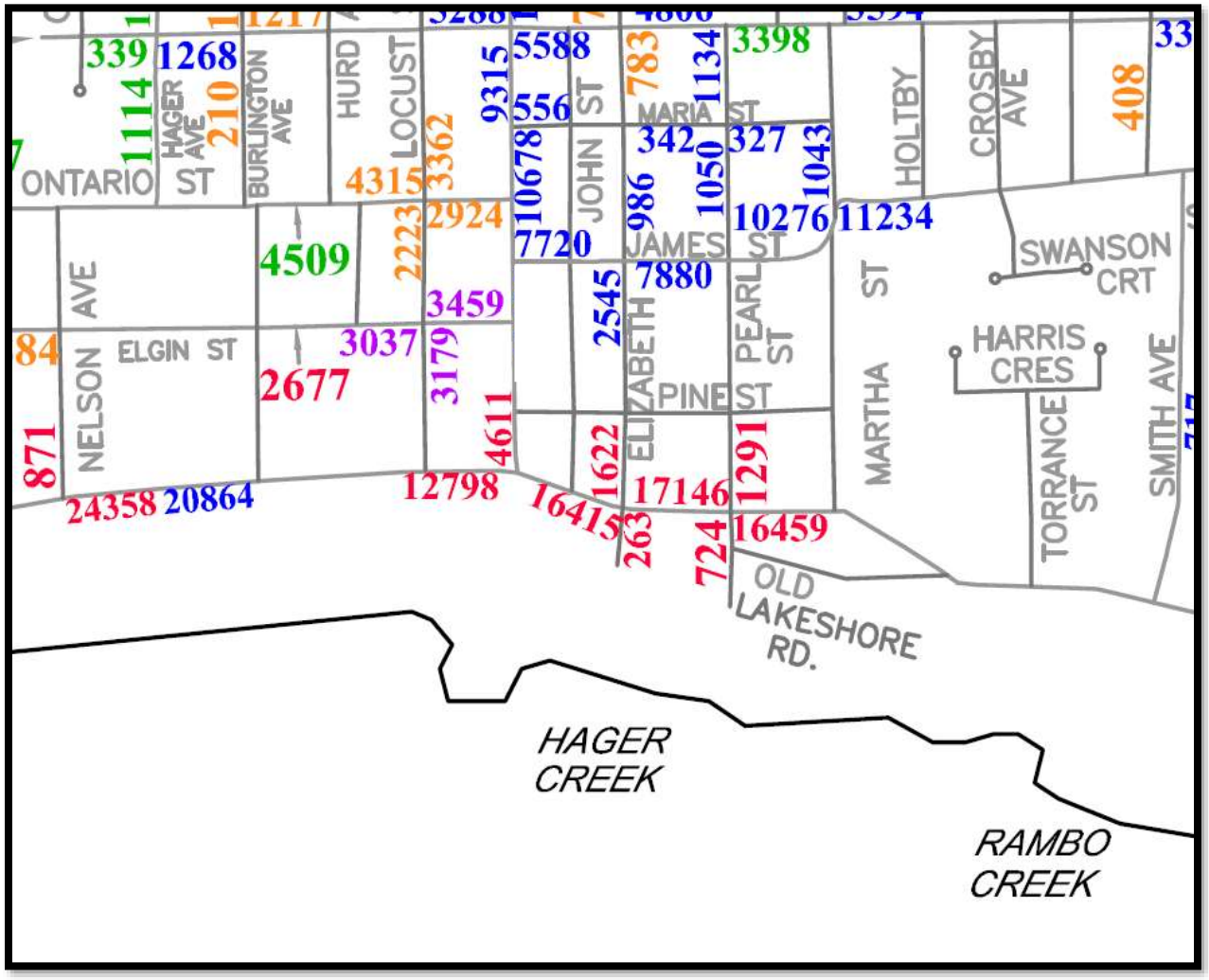


FIGURE 4
5TH FLOOR OUTDOOR POOL, SEATING AREA, WALKWAY, SKYBRIDGE
2ND FLOOR OUTDOOR OFFICE & GREEN ROOF AMENITY AREAS



APPENDIX "A"

2017 CITY OF BURLINGTON
TRAFFIC DATA



2017 AADT MAP

LAST REVISION: 2018

NOT TO SCALE

Reproduction of this map is prohibited without express permission of the Burlington Transportation Services Department.

Note: The volumes shown are the two-way annual average daily traffic (24 hour period).

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STAMPSON CALCULATIONS

```
STAMSON 5.04       SUMMARY REPORT        Date: 01-10-2021 01:34:45
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1brant.te           Time Period: Day/Night 16/8 hours
Description: R1- 1St Floor Residential West Tower Free Field
               TOTAL Leq FROM ALL SOURCES                    (DAY): 59.34
                                                             (NIGHT): 52.78


Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :  14.00 / 14.00  m
Topography                :      1       (Flat/gentle slope; no barrier)

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore E (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 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           :  14.00 / 14.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Brant Street (day/night)
------------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (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  :  40.00 / 40.00  m
Receiver height           :  14.00 / 14.00  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.Lakeshore W      !     1.11 !    53.57 !    53.57
 2.Lakeshore E      !     1.11 !    55.81 !    55.81
 3.Brant Street     !     1.00 !    53.98 !    53.98
--------------------+---------+---------+---------
                      Total                 59.34 dBA
Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    47.04 !    47.04
 2.Lakeshore E      !     1.10 !    49.24 !    49.24
 3.Brant Street     !     0.99 !    47.40 !    47.40
--------------------+---------+---------+---------
                      Total                 52.78 dBA
```

```
STAMSON 5.04      SUMMARY REPORT        Date: 01-10-2021 01:58:45
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2brant.te           Time Period: Day/Night 16/8 hours
Description: R2- 14 Floor Residential West Tower Free Field
                     TOTAL Leq FROM ALL SOURCES                  (DAY): 60.82
                                                                (NIGHT): 54.26


Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface))
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :  41.00 / 41.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore E (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 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           :  41.00 / 41.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Brant Street (day/night)
------------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (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  :  40.00 / 40.00  m
Receiver height           :  41.00 / 41.00  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.Lakeshore W      !     1.11 !    54.97 !    54.97
 2.Lakeshore E      !     1.11 !    56.93 !    56.93
 3.Brant Street     !     1.00 !    56.03 !    56.03
--------------------+---------+---------+---------
                      Total                 60.82 dBA
Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    48.45 !    48.45
 2.Lakeshore E      !     1.10 !    50.36 !    50.36
 3.Brant Street     !     0.99 !    49.45 !    49.45
--------------------+---------+---------+---------
                      Total                 54.26 dBA
```

```
STAMSON 5.04       SUMMARY REPORT        Date: 01-10-2021 02:17:09
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r3brant.te           Time Period: Day/Night 16/8 hours
Description: R3- Top Floor Residential West Tower Free Field
                     TOTAL Leq FROM ALL SOURCES (                DAY): 60.82
                                                                 (NIGHT): 54.26
Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           : 111.00 / 111.00 m
Topography                :      1       (Flat/gentle slope; no barrier)

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore E (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 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           : 111.00 / 111.00 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 3: Brant Street (day/night)
-----------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
```

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (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  :  40.00 / 40.00  m
Receiver height           : 111.00 / 111.00 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.Lakeshore W      !     1.11 !    54.97 !    54.97
 2.Lakeshore E      !     1.11 !    56.93 !    56.93
 3.Brant Street     !     1.00 !    56.03 !    56.03
--------------------+---------+---------+---------
                      Total                 60.82 dBA
Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    48.45 !    48.45
 2.Lakeshore E      !     1.10 !    50.36 !    50.36
 3.Brant Street     !     0.99 !    49.45 !    49.45
--------------------+---------+---------+---------
                      Total                 54.26 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 01-10-2021 03:14:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r4brant.te           Time Period: Day/Night 16/8 hours
Description: R4- 1st Floor Residential West Tower Free Field
                      TOTAL Leq FROM ALL SOURCES                    (DAY): 61.70
                                                                    (NIGHT): 55.13


Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  65.00 / 65.00  m
Receiver height           :  14.00 / 14.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore 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  :  32.00 / 32.00  m
Receiver height           :  14.00 / 14.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Brant Street (day/night)
------------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (day/night)
------------------------------------------------
Angle1   Angle2           :  -0.00 deg   20.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  65.00 / 65.00  m
Receiver height           :  14.00 / 14.00  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.Lakeshore W      !     1.11 !    50.83 !    50.83
 2.Lakeshore E      !     1.11 !    61.21 !    61.21
 3.Brant Street     !     1.00 !    45.45 !    45.45
--------------------+---------+---------+---------
                      Total                 61.70 dBA
Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    44.31 !    44.31
 2.Lakeshore E      !     1.10 !    54.64 !    54.64
 3.Brant Street     !     0.99 !    38.87 !    38.87
--------------------+---------+---------+---------
                      Total                 55.13 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 01-10-2021 03:37:58

MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r5brant.te           Time Period: Day/Night 16/8 hours
Description: R5- 14th Floor Residential West Tower Free Field
                     TOTAL Leq FROM ALL SOURCES                    (DAY): 63.46
                                                                   (NIGHT): 56.90

Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  65.00 / 65.00  m
Receiver height           :  41.00 / 41.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore 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  :  32.00 / 32.00  m
Receiver height           :  41.00 / 41.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Brant Street (day/night)
------------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (day/night)
------------------------------------------------
Angle1   Angle2           :  -0.00 deg   20.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  65.00 / 65.00  m
Receiver height           :  41.00 / 41.00  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.Lakeshore W      !     1.11 !    52.86 !    52.86
 2.Lakeshore E      !     1.11 !    62.95 !    62.95
 3.Brant Street     !     1.00 !    47.38 !    47.38
--------------------+---------+---------+---------
                      Total                  63.46 dBA
Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    46.34 !    46.34
 2.Lakeshore E      !     1.10 !    56.38 !    56.38
 3.Brant Street     !     0.99 !    40.80 !    40.80
--------------------+---------+---------+---------
                      Total                  56.90 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 01-10-2021 03:57:29
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6brant.te           Time Period: Day/Night 16/8 hours
Description: R6- Top Floor Residentail West Tower Free Field
                     TOTAL Leq FROM ALL SOURCES                  (DAY): 63.46
                                                                (NIGHT): 56.90


Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  65.00 / 65.00  m
Receiver height           : 111.00 / 111.00 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore 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  :  32.00 / 32.00  m
Receiver height           : 111.00 / 111.00 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Brant Street (day/night)
------------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (day/night)
------------------------------------------------
Angle1   Angle2           :  -0.00 deg   20.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  65.00 / 65.00  m
Receiver height           : 111.00 / 111.00 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.Lakeshore W      !     1.11 !    52.86 !    52.86
 2.Lakeshore E      !     1.11 !    62.95 !    62.95
 3.Brant Street     !     1.00 !    47.38 !    47.38
--------------------+---------+---------+---------
                      Total                  63.46 dBA
Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    46.34 !    46.34
 2.Lakeshore E      !     1.10 !    56.38 !    56.38
 3.Brant Street     !     0.99 !    40.80 !    40.80
--------------------+---------+---------+---------
                      Total                  56.90 dBA
```

```
STAMSON 5.04       SUMMARY REPORT        Date: 01-10-2021 12:53:51
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r7brant.te           Time Period: Day/Night 16/8 hours
Description: R7-East Tower 1st floor residential Free Field
                     TOTAL Leq FROM ALL SOURCES                  (DAY): 62.44
                                                                (NIGHT): 55.87

Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   25.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 112.00 / 112.00 m
Receiver height           :  20.00 / 20.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore 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  :  32.00 / 32.00  m
Receiver height           :  20.00 / 20.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Brant Street (day/night)
-----------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (day/night)
-----------------------------------------------
Angle1   Angle2           :  -0.00 deg   25.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 112.00 / 112.00 m
Receiver height           :  20.00 / 20.00  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.Lakeshore W      !     1.11 !    46.91 !    46.91
 2.Lakeshore E      !     1.11 !    62.24 !    62.24
 3.Brant Street     !     1.00 !    44.93 !    44.93
--------------------+---------+---------+---------
                      Total                  62.44 dBA
Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    40.39 !    40.39
 2.Lakeshore E      !     1.10 !    55.67 !    55.67
 3.Brant Street     !     0.99 !    38.34 !    38.34
--------------------+---------+---------+---------
                      Total                  55.87 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 01-10-2021 13:00:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r8brant.te           Time Period: Day/Night 16/8 hours
Description: R8-East Tower 14 floor residential Free Field
                     TOTAL Leq FROM ALL SOURCES                  (DAY): 63.17
                                                                (NIGHT): 56.6

Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Angle1   Angle2           :  -0.00 deg   25.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 112.00 / 112.00 m
Receiver height           :  41.00 / 41.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore 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  :  32.00 / 32.00  m
Receiver height           :  41.00 / 41.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Brant Street (day/night)
------------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (day/night)
------------------------------------------------
Angle1   Angle2           :  -0.00 deg   25.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 112.00 / 112.00 m
Receiver height           :  41.00 / 41.00  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.Lakeshore W      !     1.11 !    47.95 !    47.95
 2.Lakeshore E      !     1.11 !    62.95 !    62.95
 3.Brant Street     !     1.00 !    45.99 !    45.99
--------------------+---------+---------+---------
                      Total                 63.17 dBA
Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    41.42 !    41.42
 2.Lakeshore E      !     1.10 !    56.38 !    56.38
 3.Brant Street     !     0.99 !    39.41 !    39.41
--------------------+---------+---------+---------
                      Total                 56.60 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 01-10-2021 13:07:37
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r9brant.te           Time Period: Day/Night 16/8 hours
Description: R9-East Tower Top floor residential Free Field
                     TOTAL Leq FROM ALL SOURCES                  (DAY): 58.94
                                                                (NIGHT): 56.64
Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Angle1   Angle2           :  -0.00 deg   25.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  95.00 / 95.00  m
Receiver height           :  41.00 / 95.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore 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  :  95.00 / 32.00  m
Receiver height           :  41.00 / 95.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Brant Street (day/night)
------------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (day/night)
----------------------------------------------
Angle1   Angle2           :  -0.00 deg   25.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  95.00 / 95.00  m
Receiver height           :  41.00 / 95.00  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.Lakeshore W      !     1.11 !    48.66 !    48.66
 2.Lakeshore E      !     1.11 !    58.22 !    58.22
 3.Brant Street     !     1.00 !    46.71 !    46.71
--------------------+---------+---------+---------
                      Total                58.94 dBA
Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    42.14 !    42.14
 2.Lakeshore E      !     1.10 !    56.38 !    56.38
 3.Brant Street     !     0.99 !    40.13 !    40.13
--------------------+---------+---------+---------
                      Total                56.64 dBA
```

```
STAMSON 5.04       SUMMARY REPORT        Date: 01-10-2021 13:17:40
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 10brant.te           Time Period: Day/Night 16/8 hours
Description: R10-East Tower Top floor residential Free Field
                     TOTAL Leq FROM ALL SOURCES                    (DAY): 62.30
                                                                   (NIGHT): 55.73

Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Angle1   Angle2           :  -0.00 deg   10.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 147.00 / 147.00 m
Receiver height           :  20.00 / 20.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore 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  :  32.00 / 32.00  m
Receiver height           :  20.00 / 20.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Brant Street (day/night)
-----------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (day/night)
-----------------------------------------------
Angle1   Angle2           :  -0.00 deg   10.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 147.00 / 147.00 m
Receiver height           :  20.00 / 20.00  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.Lakeshore W      !     1.11 !    41.63 !    41.63
 2.Lakeshore E      !     1.11 !    62.24 !    62.24
 3.Brant Street     !     1.00 !    39.64 !    39.64
--------------------+---------+---------+---------
                      Total                 62.30 dBA

Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    35.10 !    35.10
 2.Lakeshore E      !     1.10 !    55.67 !    55.67
 3.Brant Street     !     0.99 !    33.06 !    33.06
--------------------+---------+---------+---------
                      Total                 55.73 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 01-10-2021 13:19:17
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R11brant.te          Time Period: Day/Night 16/8 hours
Description: R11-East Tower 14th floor residential Free Field
                     TOTAL Leq FROM ALL SOURCES                  (DAY): 63.17
                                                                (NIGHT): 56.60


Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   25.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 112.00 / 112.00 m
Receiver height           :  41.00 / 41.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore 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  :  32.00 / 32.00  m
Receiver height           :  41.00 / 41.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Brant Street (day/night)
------------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (day/night)
----------------------------------------------
Angle1   Angle2           :  -0.00 deg   25.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 112.00 / 112.00 m
Receiver height           :  41.00 / 41.00  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.Lakeshore W      !     1.11 !    47.95 !    47.95
 2.Lakeshore E      !     1.11 !    62.95 !    62.95
 3.Brant Street     !     1.00 !    45.99 !    45.99
--------------------+---------+---------+---------
                      Total                63.17 dBA

Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    41.42 !    41.42
 2.Lakeshore E      !     1.10 !    56.38 !    56.38
 3.Brant Street     !     0.99 !    39.41 !    39.41
--------------------+---------+---------+---------
                      Total                56.60 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 01-10-2021 13:26:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r12brant.te          Time Period: Day/Night 16/8 hours
Description: R12 East Tower Top floor residential Free Field
                     TOTAL Leq FROM ALL SOURCES                  (DAY): 58.15
                                                                (NIGHT): 56.60


Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   25.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 114.00 / 114.00 m
Receiver height           :  41.00 / 95.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore 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  : 114.00 / 32.00  m
Receiver height           :  41.00 / 95.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Brant Street (day/night)
------------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (day/night)
------------------------------------------------
Angle1   Angle2           :  -0.00 deg   25.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 114.00 / 114.00 m
Receiver height           :  41.00 / 95.00  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.Lakeshore W      !     1.11 !    47.87 !    47.87
 2.Lakeshore E      !     1.11 !    57.43 !    57.43
 3.Brant Street     !     1.00 !    45.91 !    45.91
--------------------+---------+---------+---------
                      Total                58.15 dBA

Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    41.35 !    41.35
 2.Lakeshore E      !     1.10 !    56.38 !    56.38
 3.Brant Street     !     0.99 !    39.33 !    39.33
--------------------+---------+---------+---------
                      Total                56.60 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 01-10-2021 13:43:58
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: Amenity.te           Time Period: Day/Night 16/8 hours
Description: 5th Floor Amenity Area Pool and Seating
                     TOTAL Leq FROM ALL SOURCES                  (DAY): 55.19


Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (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  :  92.00 / 92.00  m
Receiver height           :  17.00 / 17.00  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.Lakeshore W      !     1.11 !    55.19 !    55.19
--------------------+---------+---------+---------
                      Total                  55.19 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 01-10-2021 15:06:40
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: Atrium            Time Period: Day/Night 16/8 hours
Description: 5th Floor Atrium with 1.22m safety glass or equivalent
                     TOTAL Leq FROM ALL SOURCES (DAY): 44.48


Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (day/night)
---------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :  14.00 / 14.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -0.00 deg   Angle2 : 45.00 deg
Barrier height            :   1.22 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :  14.00 m

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00
```

```
Data for Segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Angle1   Angle2           :  -0.00 deg   45.00 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           :  14.00 / 14.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -0.00 deg   Angle2 : 45.00 deg
Barrier height            :   1.22 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :  14.00 m
Reference angle           :   0.00

Road data, segment # 3: Brant Street (day/night)
-------------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (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  :  40.00 / 40.00  m
Receiver height           :  14.00 / 14.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -0.00 deg   Angle2 : 90.00 deg
Barrier height            :   1.22 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :  14.00 m
Reference angle           :   0.00

Result summary (day)
--------------------

                   !  source  !   Road   !  Total
                   !  height  !   Leq    !   Leq
                   !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W     !     1.11 !    37.67 !    37.67
 2.Lakeshore E     !     1.11 !    38.99 !    38.99
 3.Brant Street    !     1.00 !    41.55 !    41.55
--------------------+---------+---------+---------
                     Total                 44.48 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 04-10-2021 15:25:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: Walkway.te           Time Period: Day/Night 16/8 hours
Description: 5th Floor Walkway West Building
                     TOTAL Leq FROM ALL SOURCES                  (DAY): 44.34

Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (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  :  40.00 / 40.00  m
Receiver height           :  17.00 / 17.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -0.00 deg   Angle2 : 45.00 deg
Barrier height            :   1.22 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :  17.00 m
Reference angle           :   0.00

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore E (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  :  32.00 / 32.00  m
Receiver height           :  17.00 / 17.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -0.00 deg   Angle2 : 45.00 deg
Barrier height            :   1.22 m
Barrier receiver distance :   3.00 / 3.00   m
```

```
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :  17.00 m
Reference angle           :   0.00

Road data, segment # 3: Brant Street (day/night)
-----------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Brant Street (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  :  40.00 / 40.00  m
Receiver height           :  17.00 / 17.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -0.00 deg   Angle2 : 90.00 deg
Barrier height            :   1.22 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :  17.00 m
Reference angle           :   0.00

Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    37.37 !    37.37
 2.Lakeshore E      !     1.11 !    38.57 !    38.57
 3.Brant Street     !     1.00 !    41.61 !    41.61
--------------------+---------+---------+---------
                      Total                 44.34 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 04-10-2021 16:20:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 2amenity.te          Time Period: Day/Night 16/8 hours
Description: 2nd Floor Office Green Roof Amenity Areas
                     TOTAL Leq FROM ALL SOURCES                  (DAY): 41.13

Road data, segment # 1: Lakeshore W (day/night)
-----------------------------------------------
Car traffic volume  : 15037/1671  veh/TimePeriod  *
Medium truck volume :   233/26    veh/TimePeriod  *
Heavy truck volume  :   233/26    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):  12798
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  15.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Lakeshore W (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  :  40.00 / 40.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -0.00 deg   Angle2 : 10.00 deg
Barrier height            :   1.22 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   7.50 m
Reference angle           :   0.00

Road data, segment # 2: Lakeshore E (day/night)
-----------------------------------------------
Car traffic volume  : 18909/2101  veh/TimePeriod  *
Medium truck volume :   292/32    veh/TimePeriod  *
Heavy truck volume  :   292/32    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):  16415
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  14.00
    Medium Truck % of Total Volume     :   1.50
    Heavy Truck  % of Total Volume     :   1.50
    Day (16 hrs) % of Total Volume     :  90.00
```

```
Data for Segment # 2: Lakeshore E (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  :  32.00 / 32.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -20.00 deg   Angle2 : 20.00 deg
Barrier height            :   1.22 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   7.50 m
Reference angle           :   0.00

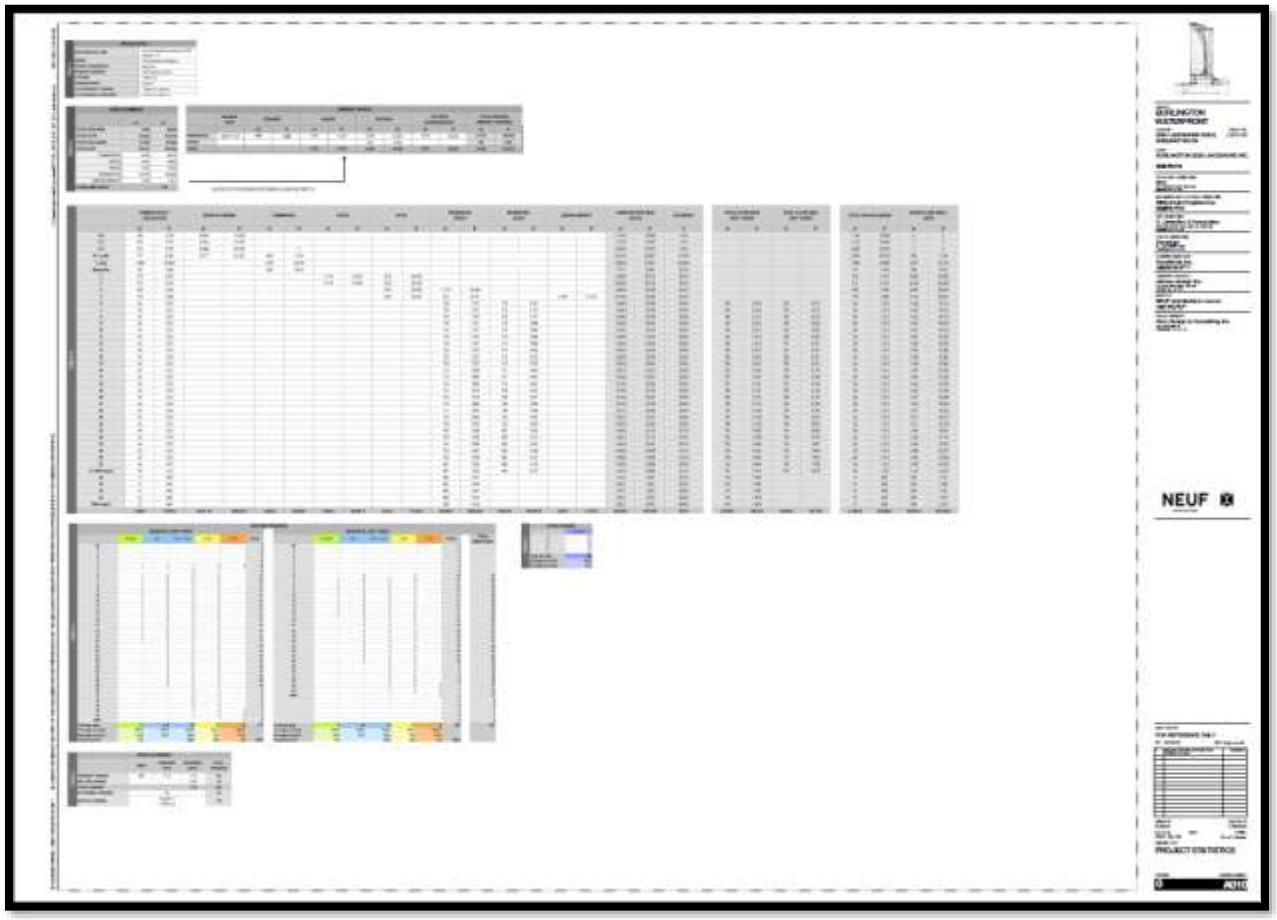
Road data, segment # 3: Brant Street (day/night)
-------------------------------------------------
Car traffic volume  : 11791/1310  veh/TimePeriod
Medium truck volume :   120/13    veh/TimePeriod
Heavy truck volume  :   120/13    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

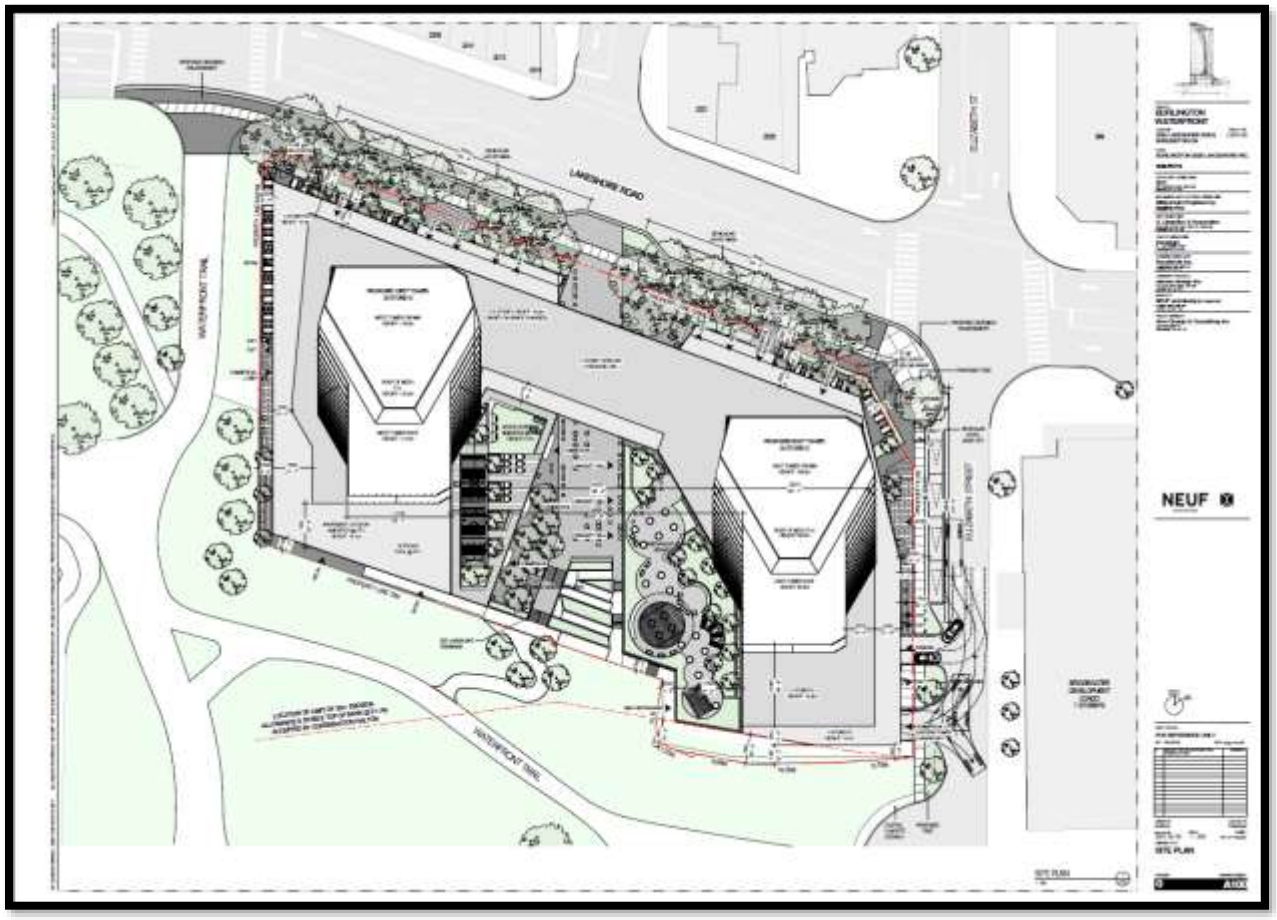
Data for Segment # 3: Brant Street (day/night)
-----------------------------------------------
Angle1   Angle2           :  -0.00 deg   20.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  -0.00 deg   Angle2 : 20.00 deg
Barrier height            :   1.22 m
Barrier receiver distance :   3.00 / 3.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   7.50 m
Reference angle           :   0.00

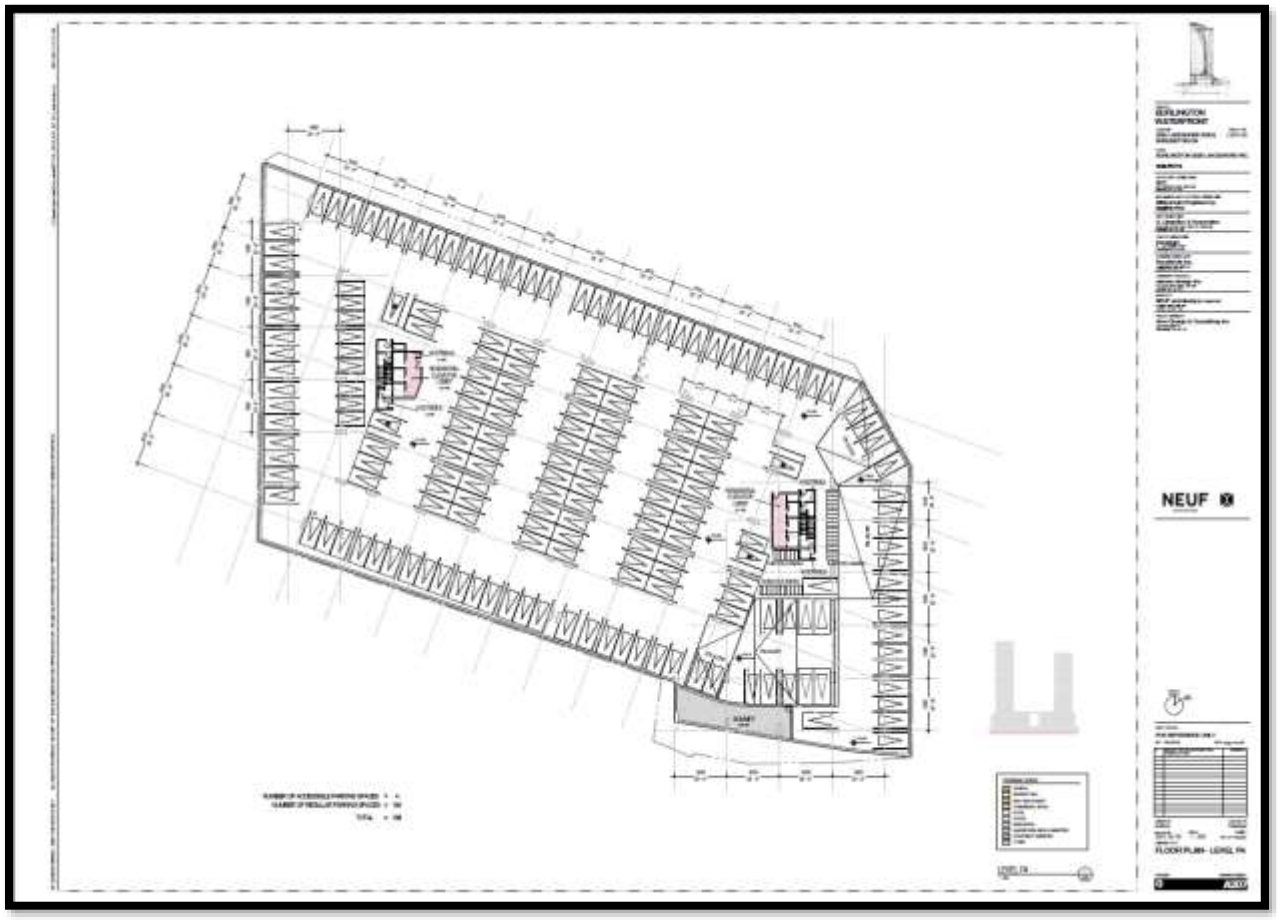
Result summary (day)
--------------------

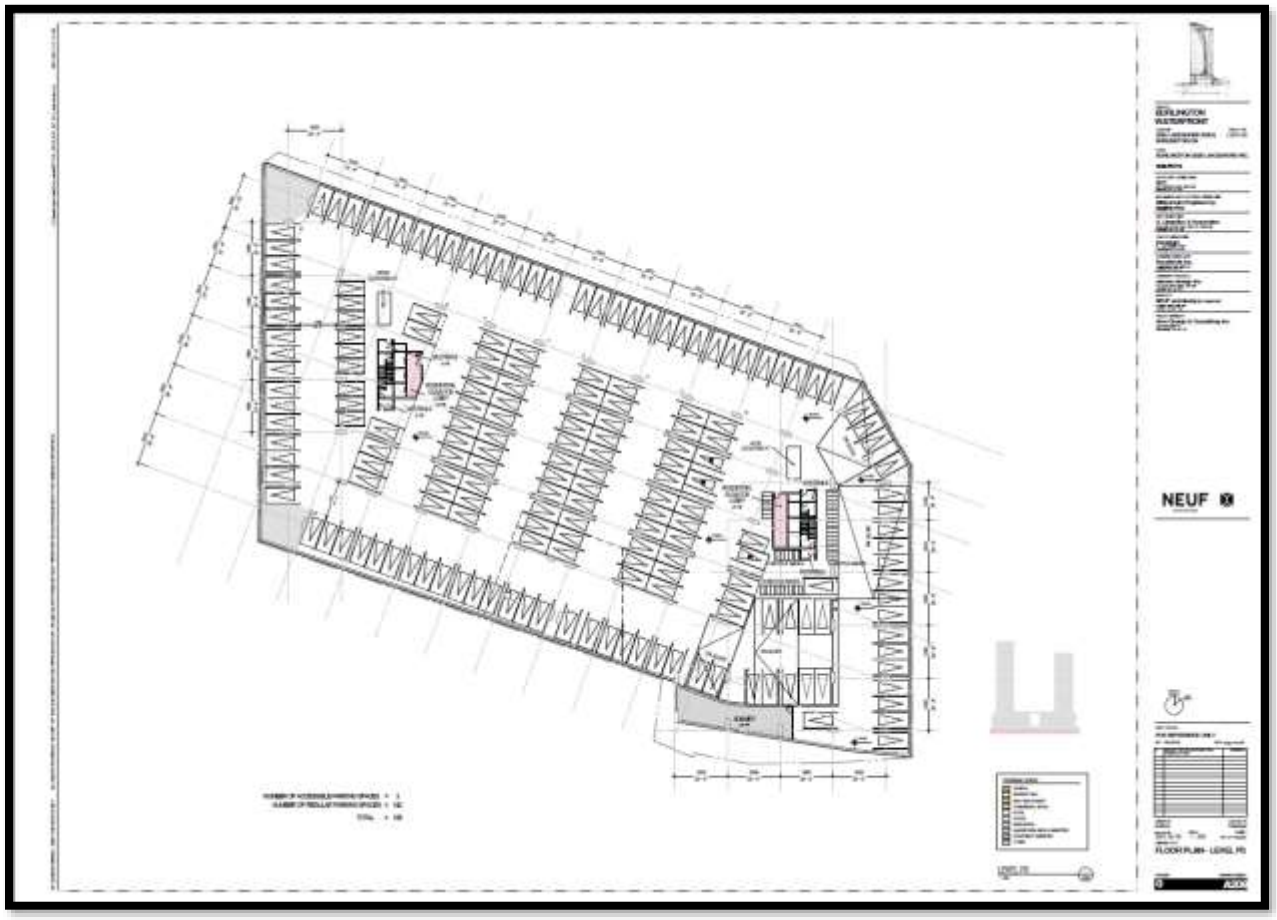
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Lakeshore W      !     1.11 !    31.96 !    31.96
 2.Lakeshore E      !     1.11 !    39.74 !    39.74
 3.Brant Street     !     1.00 !    33.00 !    33.00
--------------------+---------+---------+---------
                      Total                41.13 dBA
```

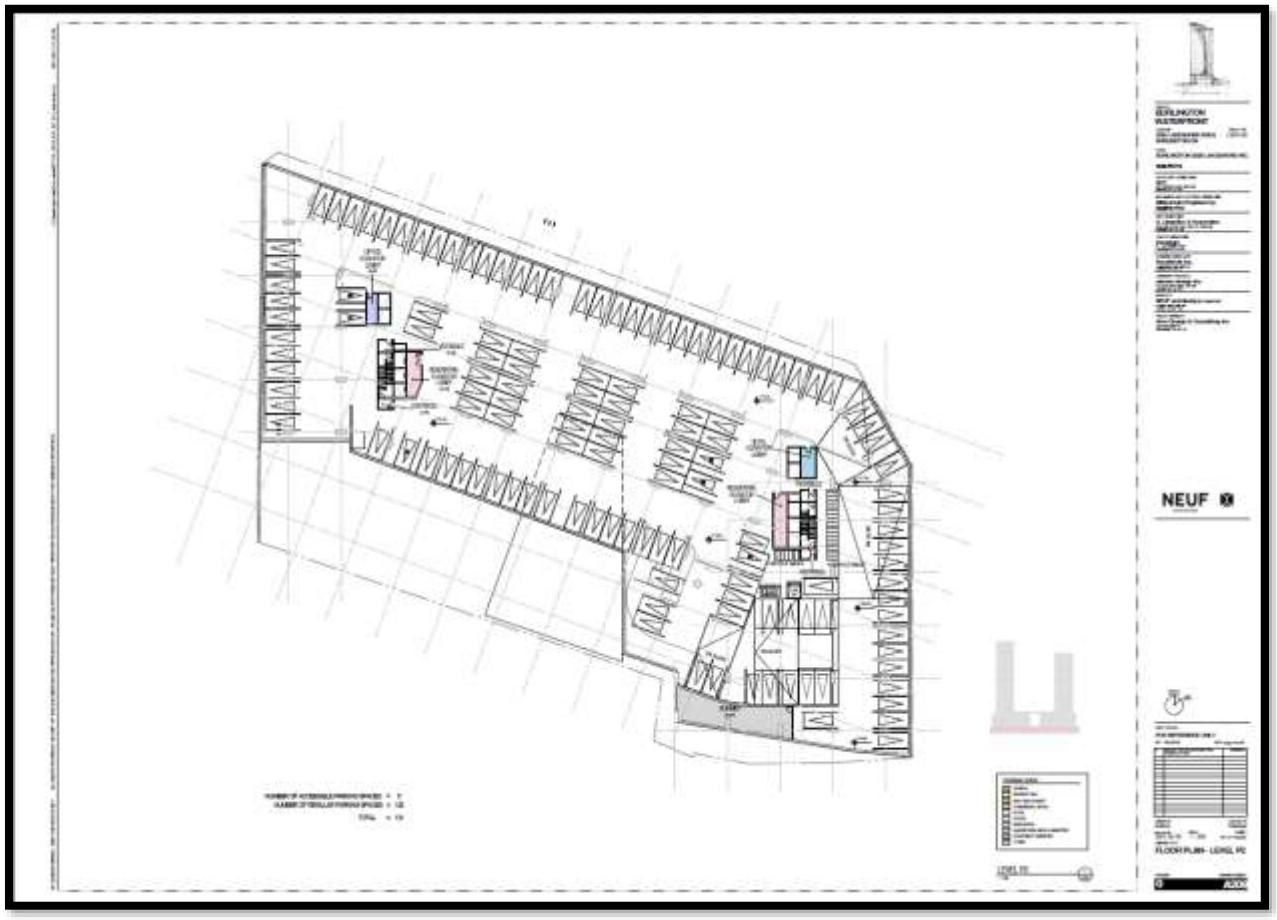
BUILDING DESIGNS

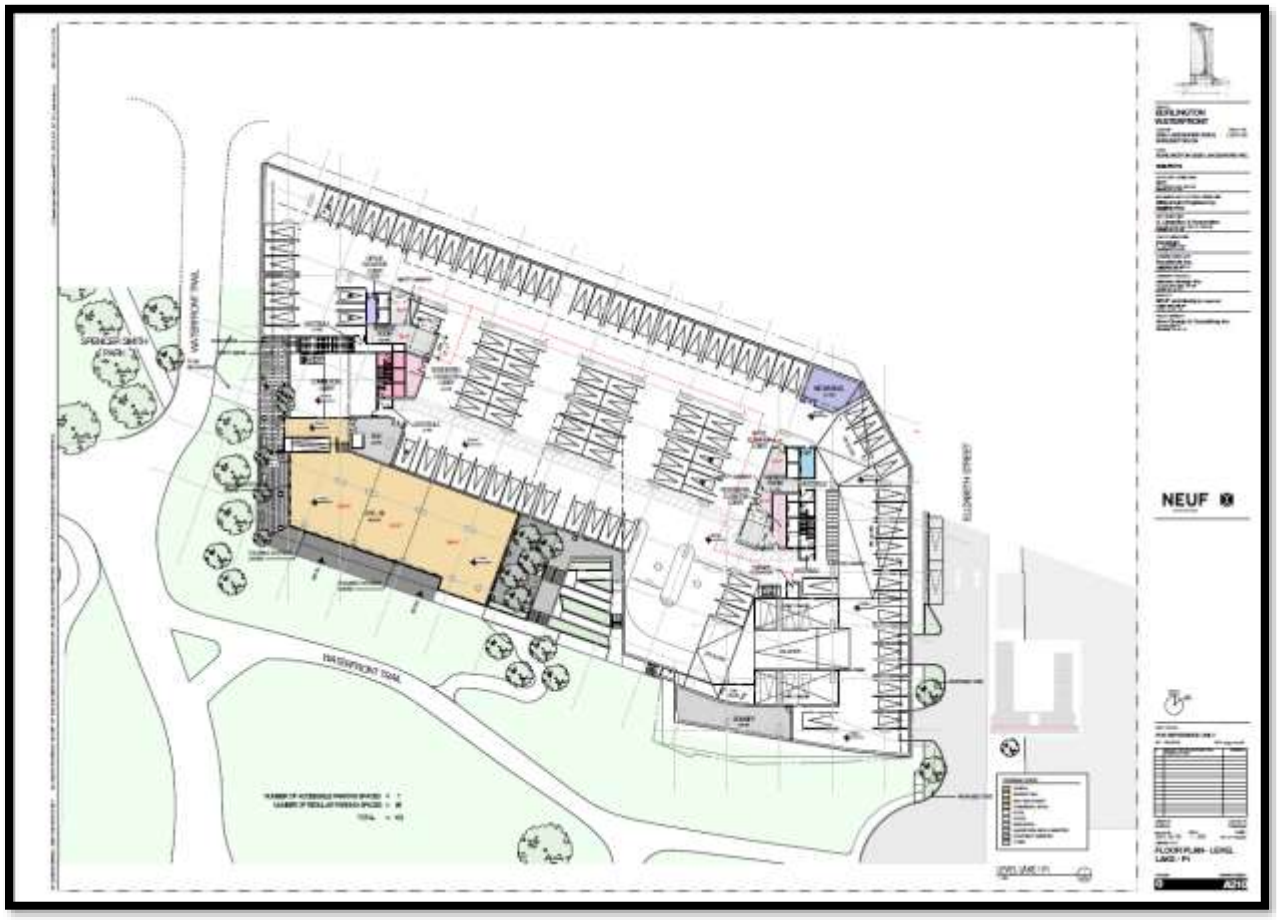



LAKESHORE ROAD
WATERFRONT TRAIL
NEUF

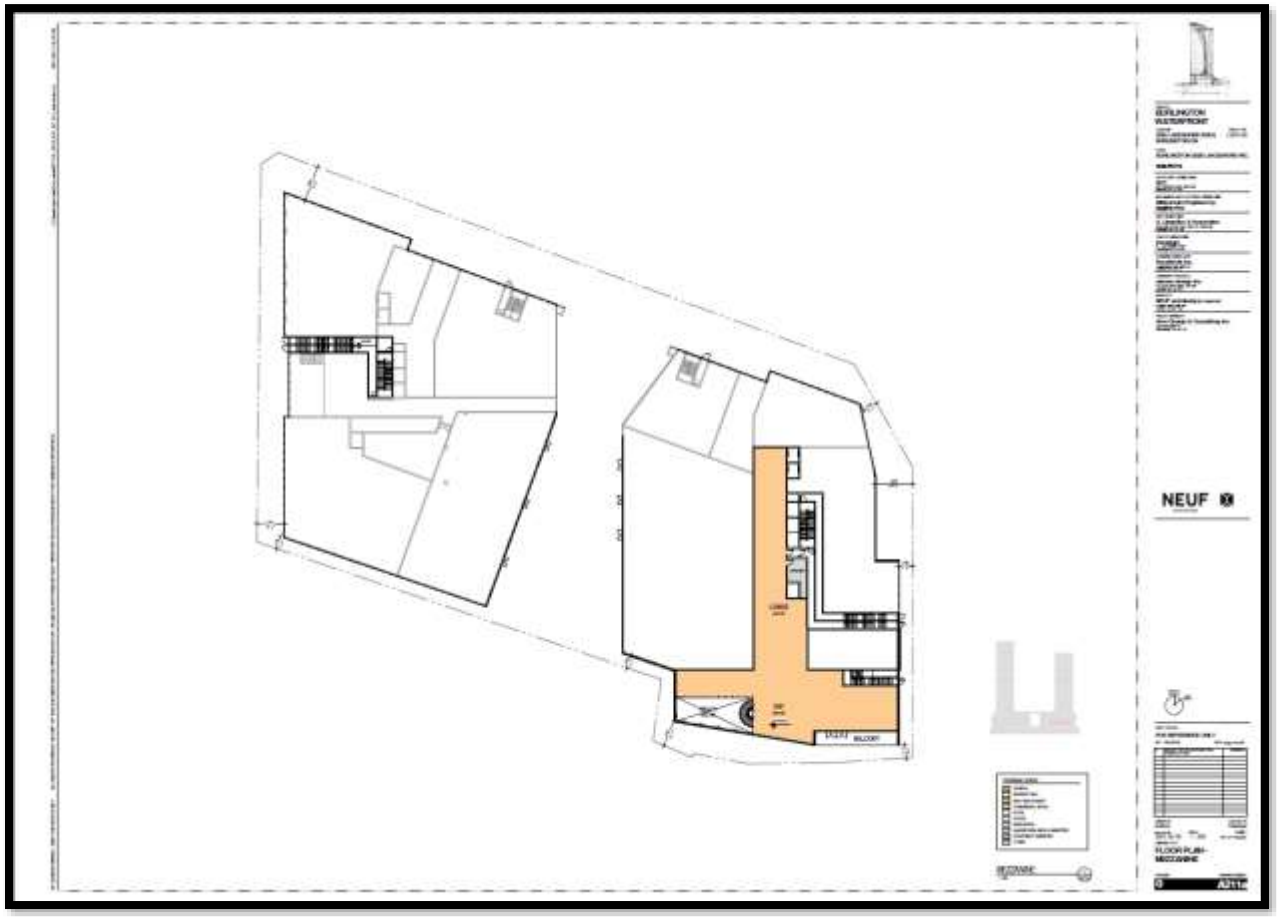

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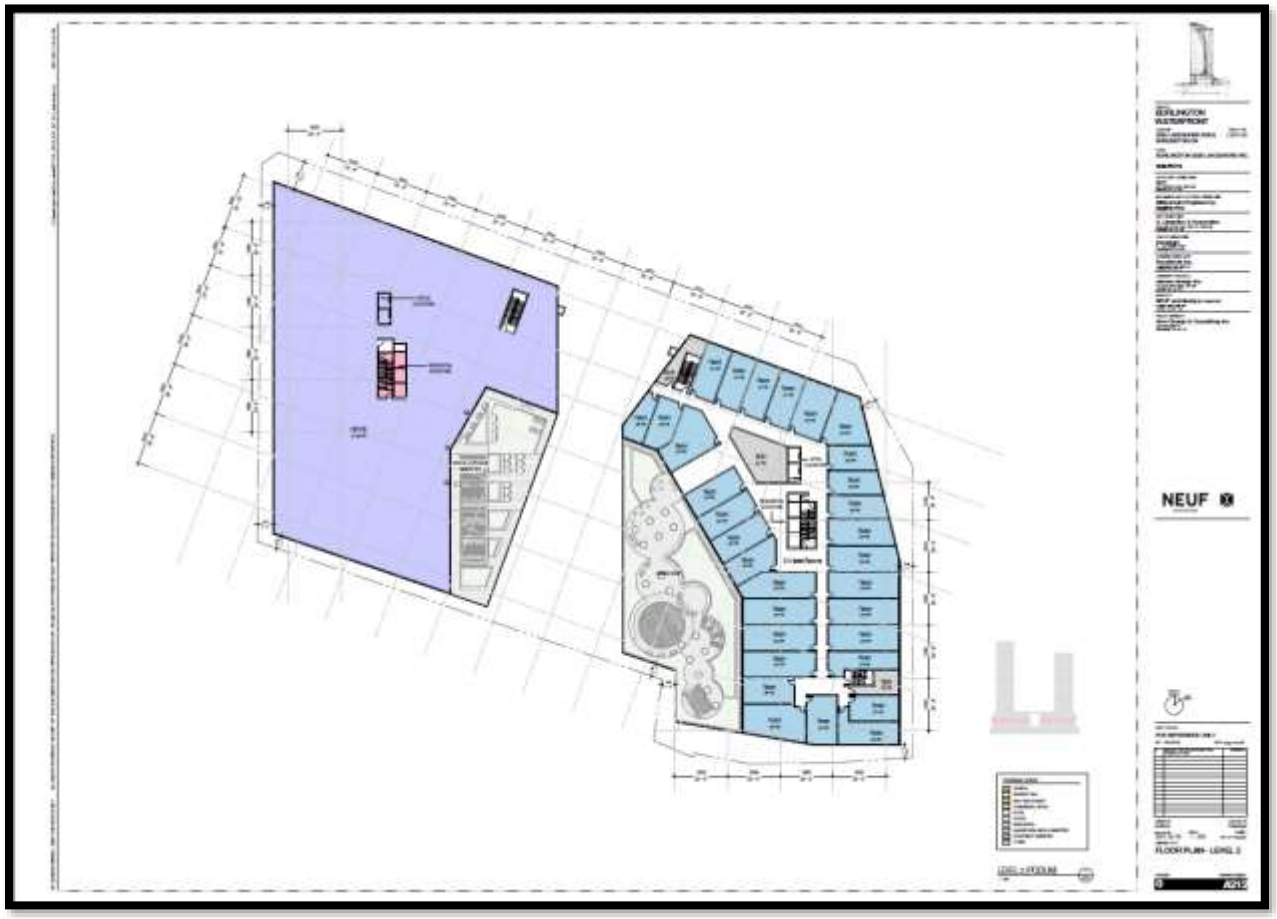

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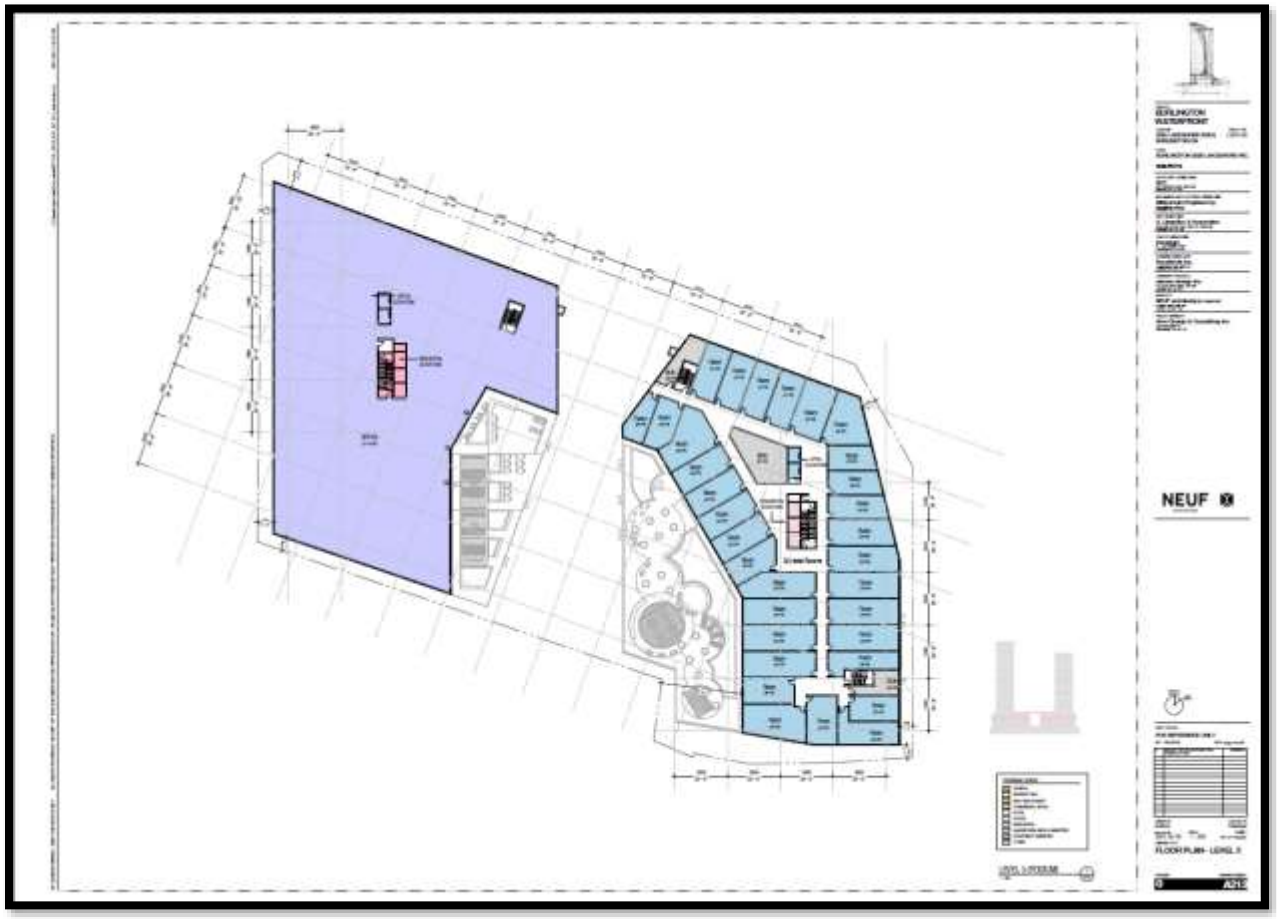

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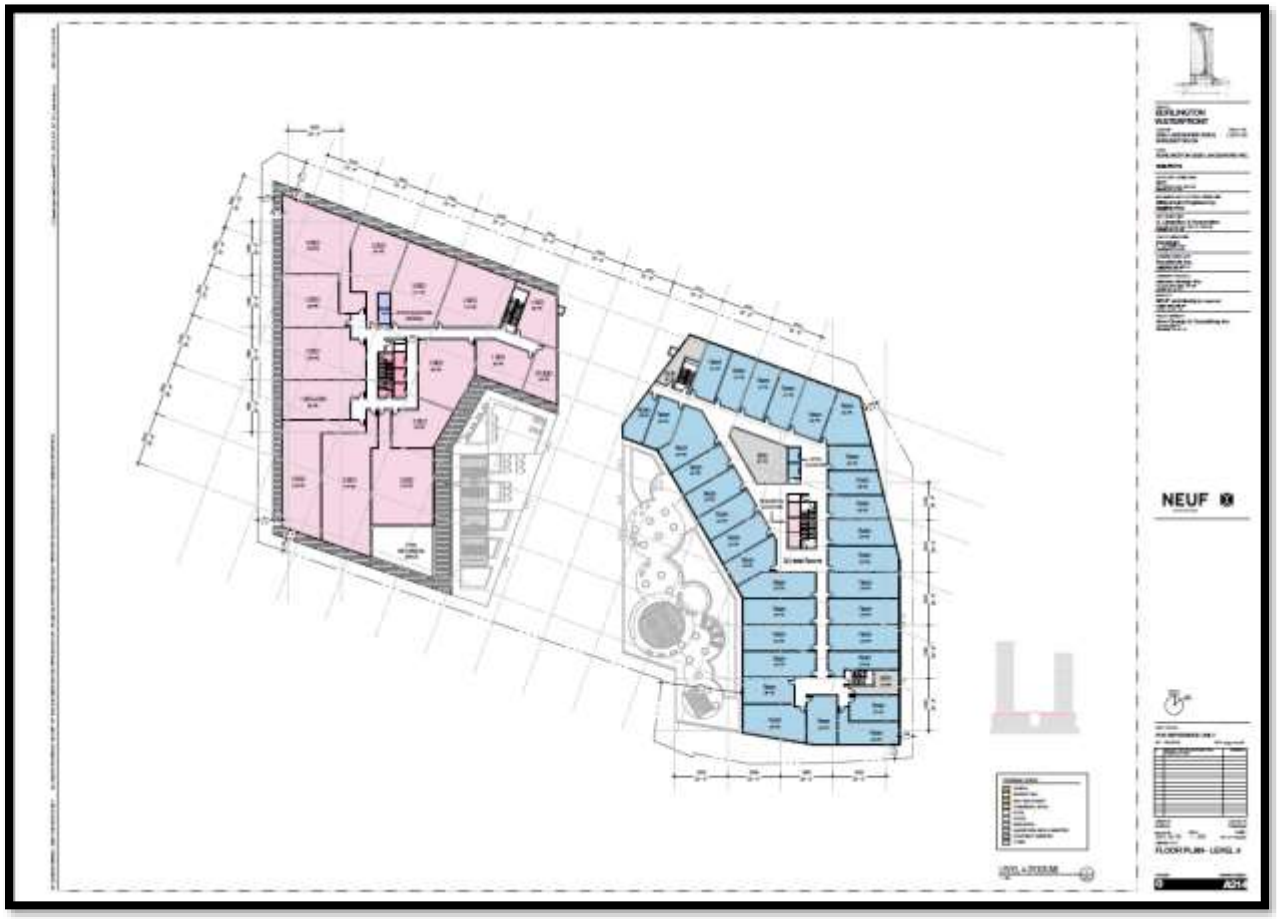

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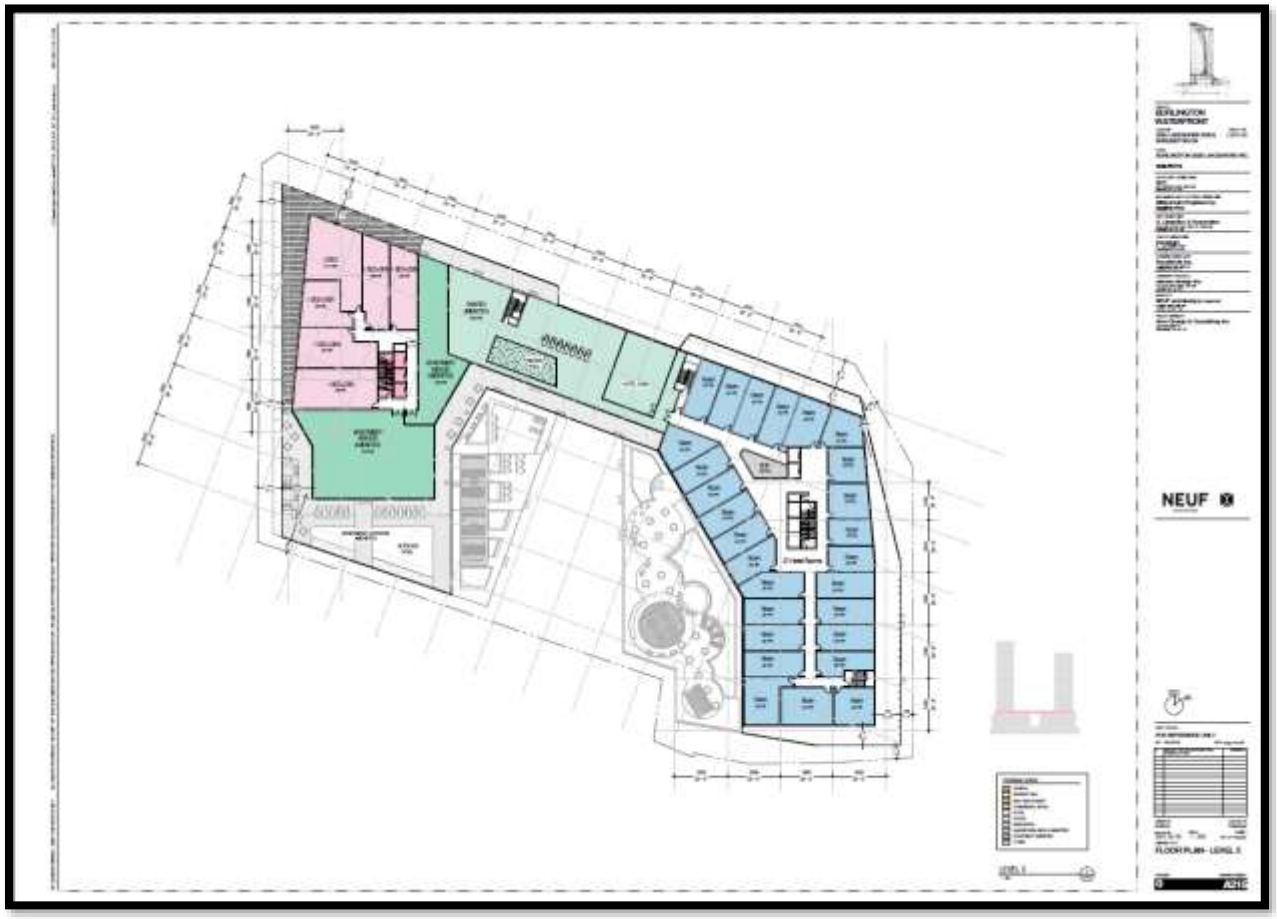

LAKESHORE ROAD
JOHN STREET
ELIZABETH STREET
WATERFRONT TRAIL
SPENCER SMITH PARK
NEUF

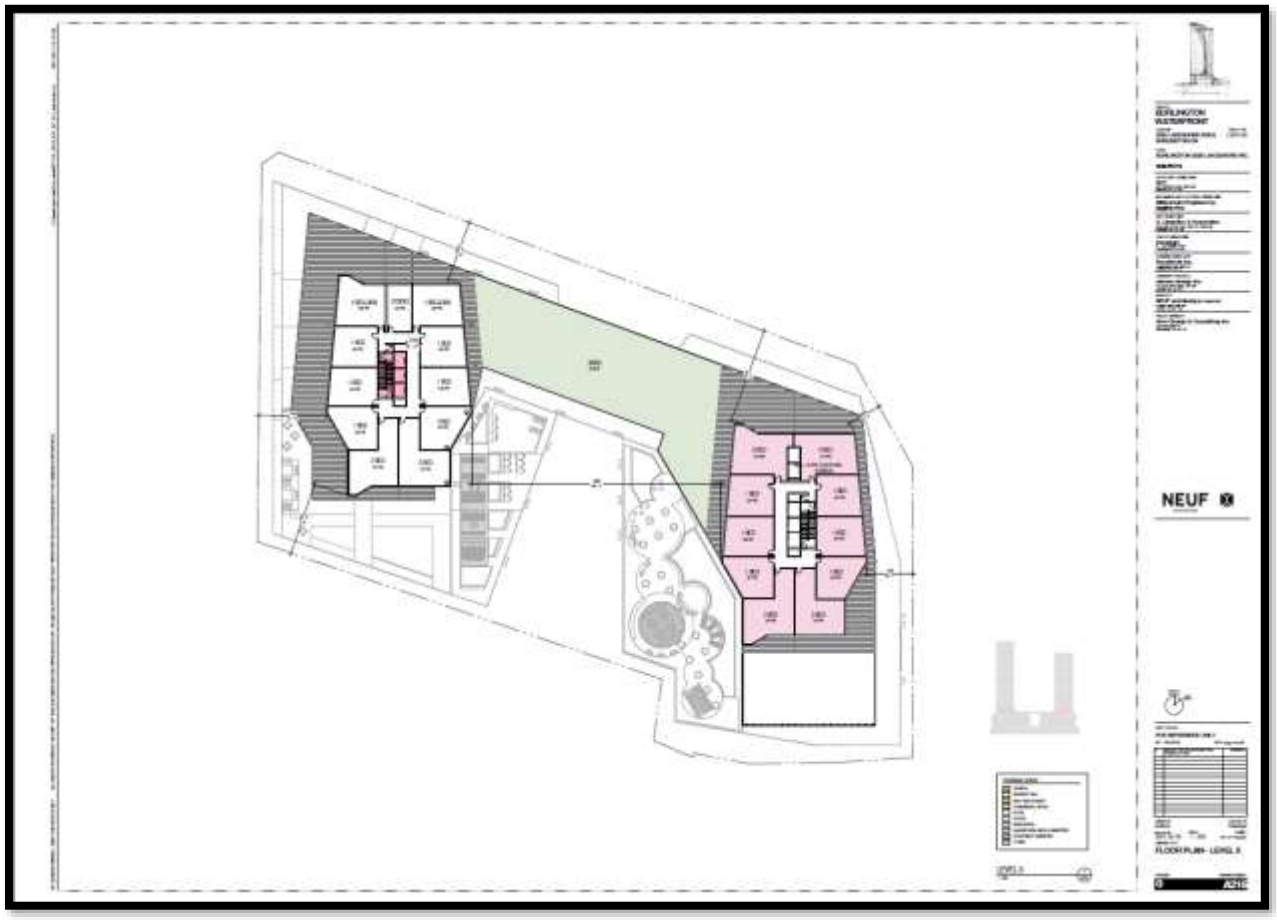

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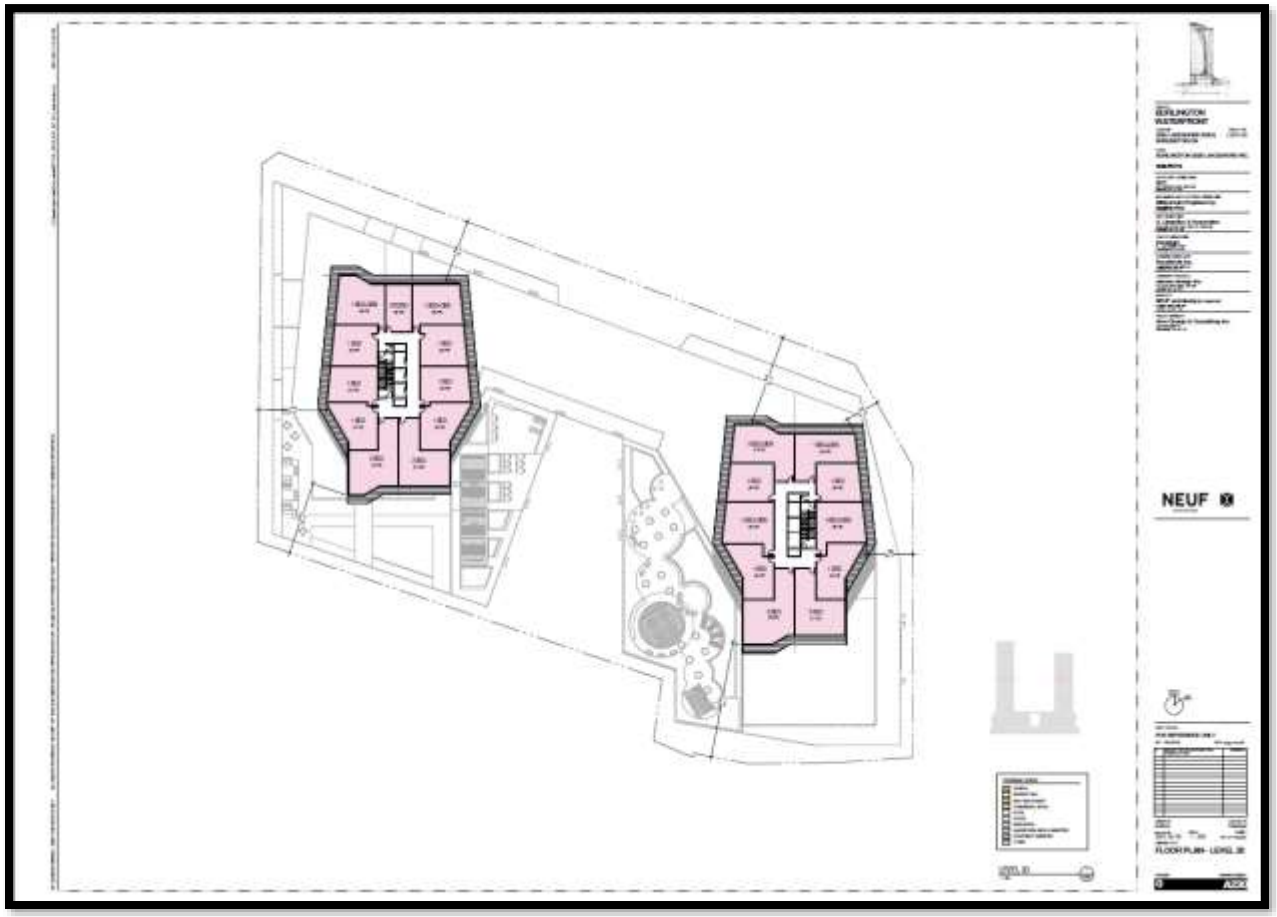

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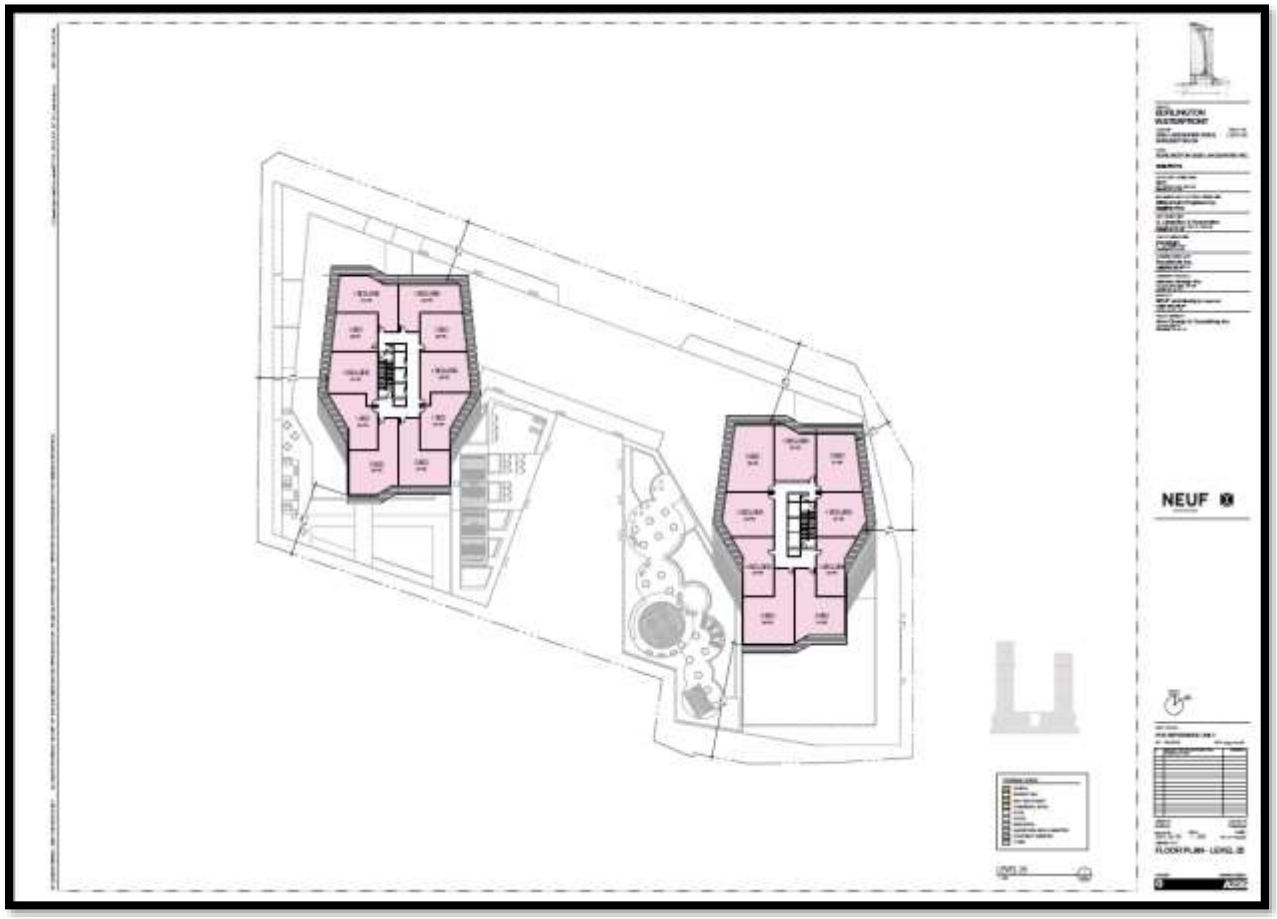

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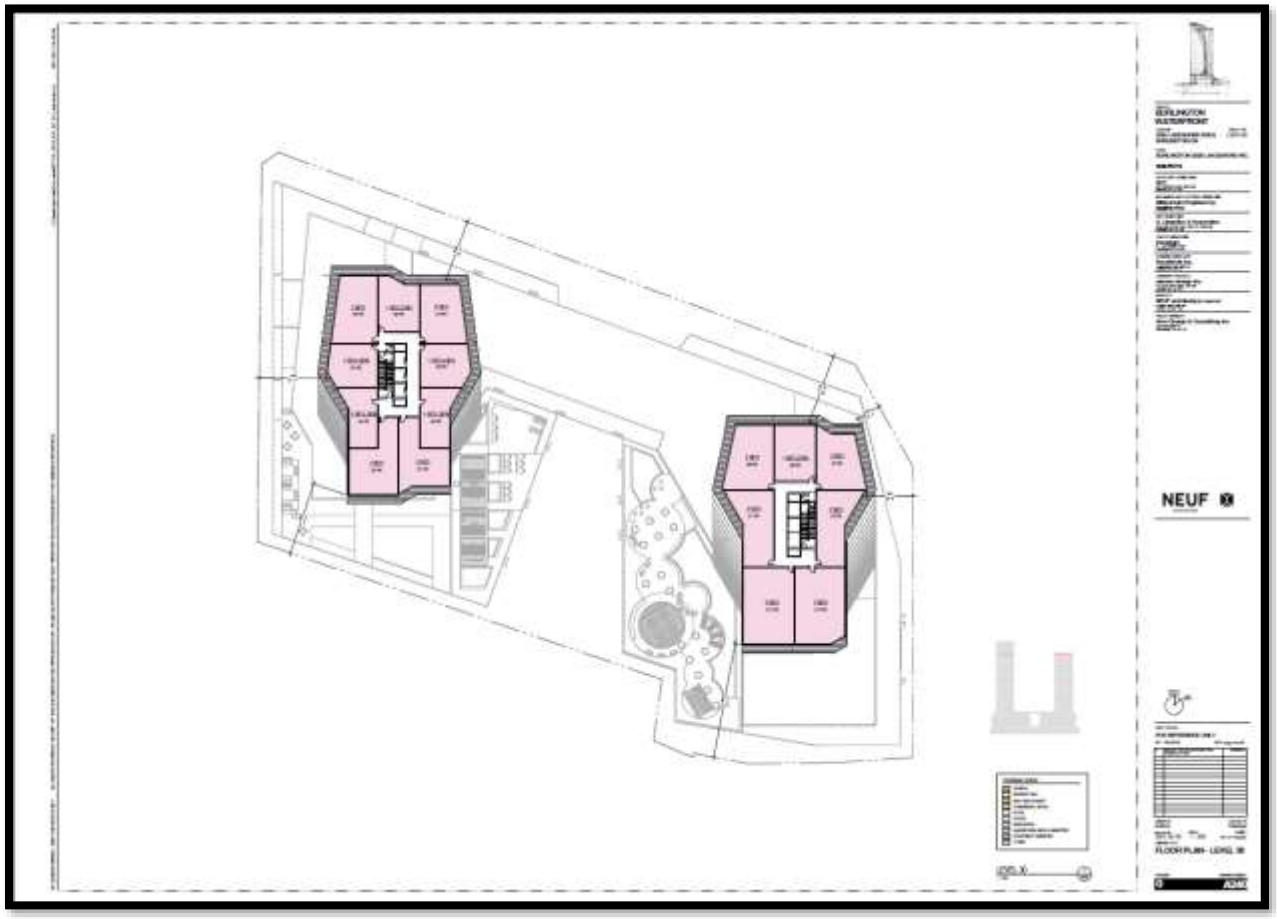

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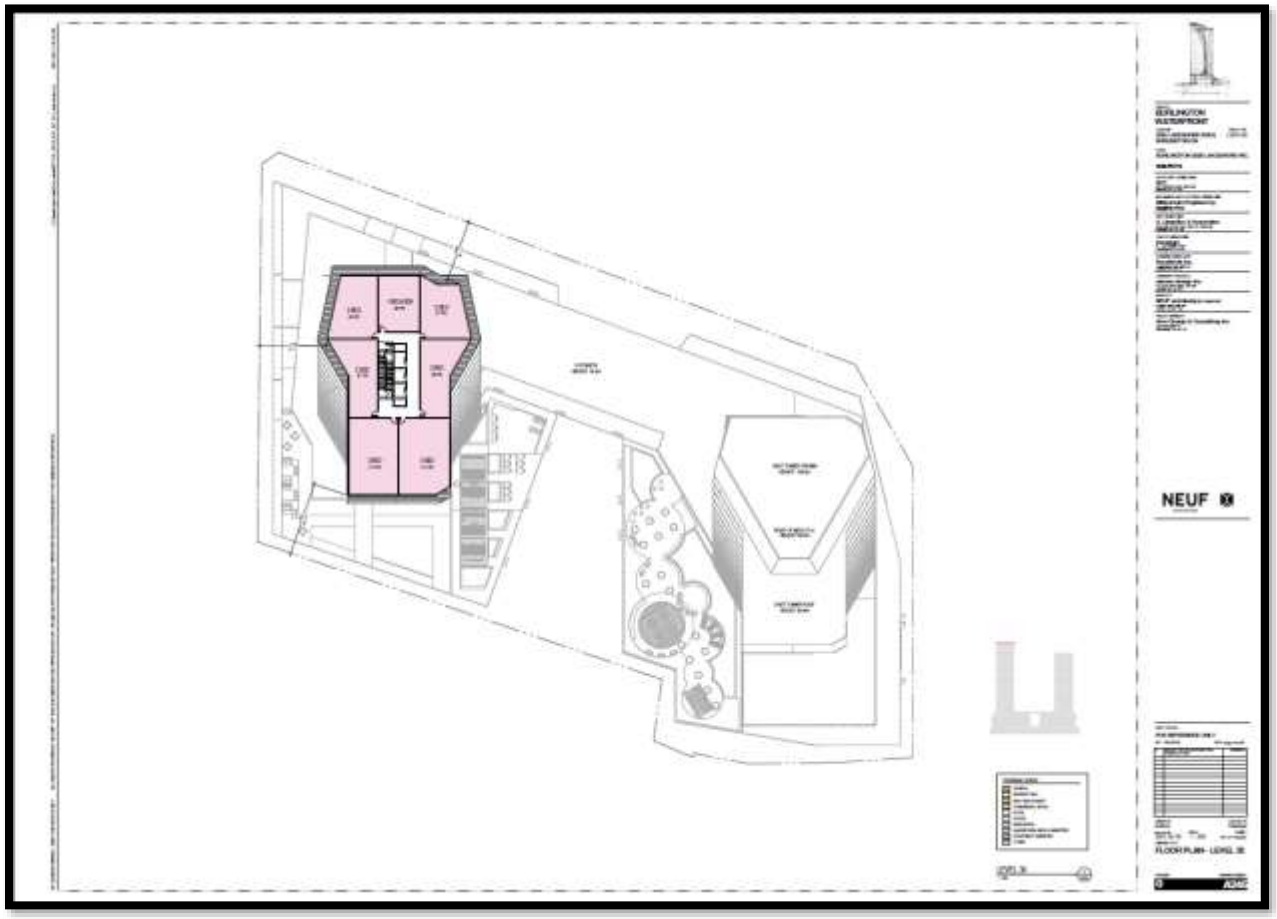

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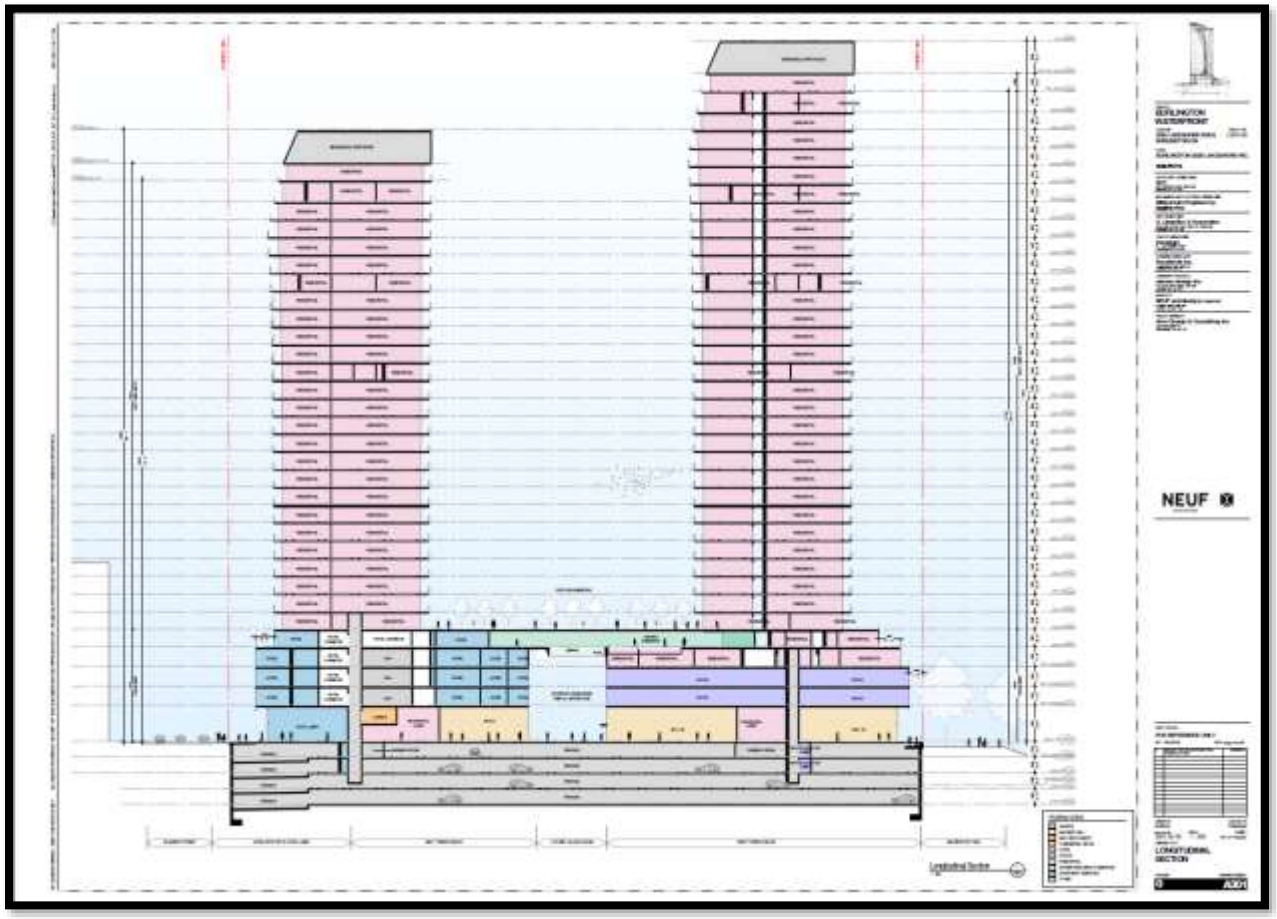

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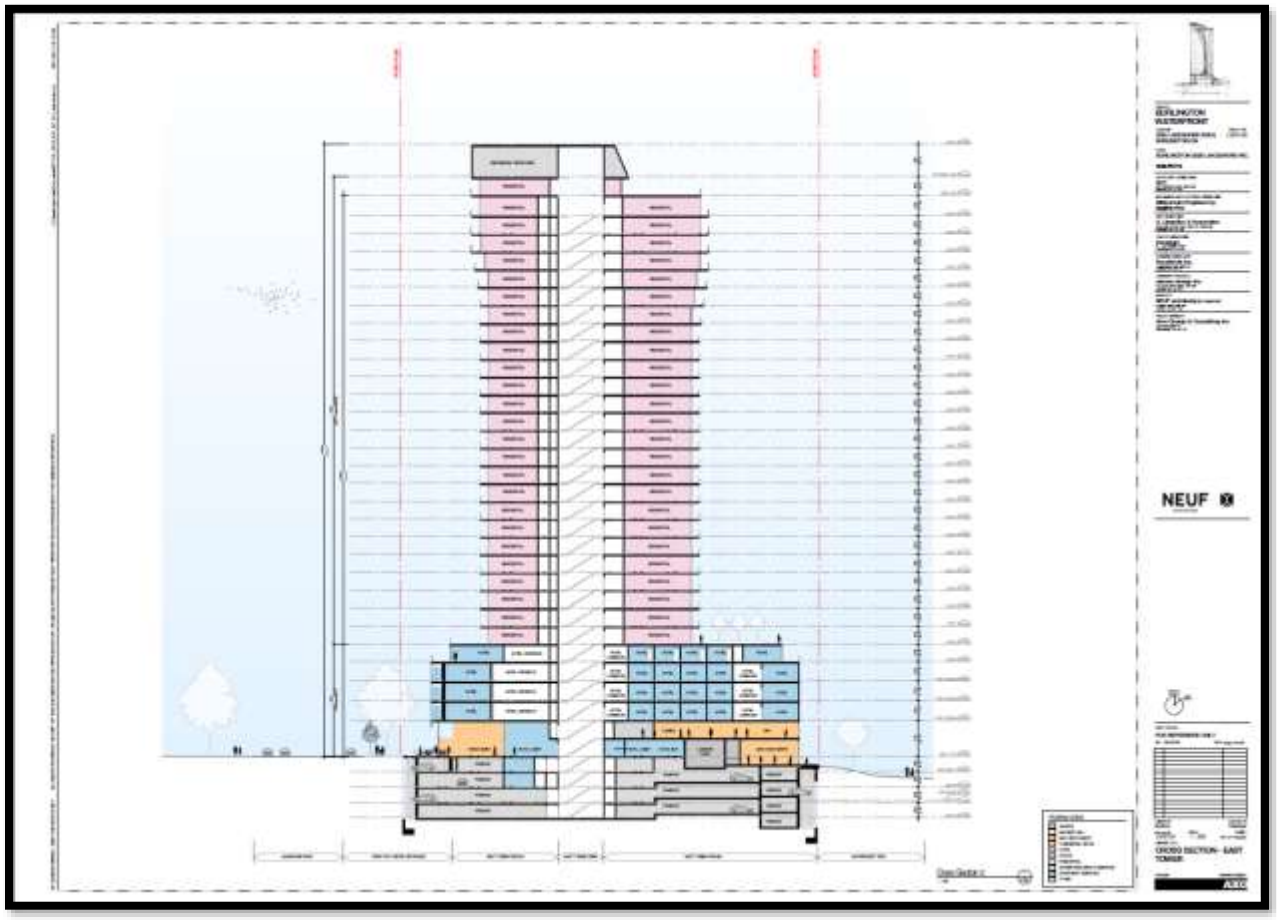

NEUF


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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.