

# GRADIENTWIND

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October 3, 2024

**All Saints Development LP**

150 Elgin Street, Suite 1000  
Ottawa, ON K2P 1L4

Attn: Ross Farris, Senior Development Manager  
[ross.farris@windmilldevelopments.com](mailto:ross.farris@windmilldevelopments.com)

Dear Mr. Farris:

Re: Roadway Traffic Noise Addendum Letter  
315 & 321 Chapel Street, Ottawa  
GW File No.: 23-051 – Noise Addendum Letter

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Gradient Wind Engineering Inc. (Gradient Wind) was retained by All Saints Development Limited to undertake a traffic noise assessment for a proposed mixed-use residential development located at 315 & 321 Chapel Street in Ottawa, Ontario. This addendum letter is supplemental to our traffic noise report (ref. *Gradient Wind report #23-051 – Traffic Noise*, dated August 9, 2023), to address changes in the latest site plan drawings received in September 2024.

Overall, the revised building retains a similar design to the tested configuration, which is a nine-storey nominally rectangular building affixed to the east of the existing church by a polygonal apse. Changes to the site plan include general reconfigurations of the balconies, an addition of a canopy at Level 2, and a reduction in the MPH Amenity Terrace area.

The following is a summary of the comparison between the current drawing set and the drawing set used in the study:

- The building footprint do not include any changes that will impact the roadway traffic noise study results.
- The Level 4 include private terraces located at the south site of floor plan. The building include an amenity terrace as well as private terraces on the mechanical penthouse (MPH) level. The terraces continue to have same size and orientation. The MPH terrace was assessed as an outdoor living areas (OLA) in our report.

Further analysis was undertaken to examine the noise levels at the Level 4 south-facing terrace. Results indicate the noise levels are 48 dBA during the daytime period, which is well below the ENCG criterion of 55 dBA. As such, mitigation in this area is not required. The STAMSON 5.04 calculations performed for this area can be seen at the end of this letter.

The minimal changes to the buildings' massing will not alter the noise impacts onto the development from nearby traffic noise sources. Therefore, the initial results, recommendations, and conclusions of our traffic noise report remain unchanged.

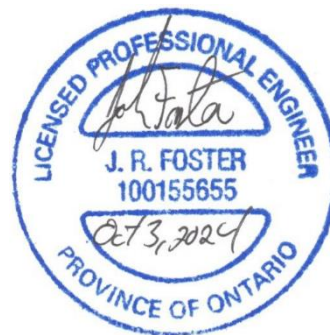
This concludes our response and review of the design changes for 315 & 321 Chapel Street in Ottawa, Ontario. Please advise the undersigned of any questions or concerns.

Sincerely,

**Gradient Wind Engineering Inc.**



Efsar Kara, MSc, LEED GA  
Acoustic Scientist



Joshua Foster, P.Eng.  
Lead Engineer

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## NOISE AT THE LEVEL 4 TERRACE – STAMSON CALCULATION

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STAMSON 5.0                      NORMAL REPORT                      Date: 08-02-2024 11:30:32  
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 14.te    Time Period: Day/Night 16/8 hours  
Description:

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

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Car traffic volume    :    6477/563    veh/TimePeriod    \*  
Medium truck volume :    515/45    veh/TimePeriod    \*  
Heavy truck volume  :    368/32    veh/TimePeriod    \*  
Posted speed limit   :    40 km/h  
Road gradient        :    0 %  
Road pavement       :    1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT):    8000  
Percentage of Annual Growth            :    0.00  
Number of Years of Growth               :    0.00  
Medium Truck % of Total Volume         :    7.00  
Heavy Truck % of Total Volume          :    5.00  
Day (16 hrs) % of Total Volume         :    92.00

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

-----  
Angle1    Angle2                   : -90.00 deg    90.00 deg  
Wood depth                         :    0            (No woods.)  
No of house rows                   :    0 / 0  
Surface                              :    2            (Reflective ground surface)  
Receiver source distance            :    48.00 / 48.00 m  
Receiver height                     :    14.70 / 14.70 m  
Topography                         :    2            (Flat/gentle slope; with barrier)  
Barrier angle1                      : -90.00 deg    Angle2 : 90.00 deg  
Barrier height                       :    10.00 m  
Barrier receiver distance            :    32.00 / 32.00 m  
Source elevation                     :    0.00 m  
Receiver elevation                   :    0.00 m  
Barrier elevation                     :    0.00 m  
Reference angle                      :    0.00



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

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Car traffic volume : 9715/845 veh/TimePeriod \*  
Medium truck volume : 773/67 veh/TimePeriod \*  
Heavy truck volume : 552/48 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): 12000  
Percentage of Annual Growth : 0.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 7.00  
Heavy Truck % of Total Volume : 5.00  
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Laurier Ave (day/night)

-----  
Angle1 Angle2 : -90.00 deg 0.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 2 (Reflective ground surface)  
Receiver source distance : 62.00 / 62.00 m  
Receiver height : 14.70 / 14.70 m  
Topography : 2 (Flat/gentle slope; with barrier)  
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg  
Barrier height : 10.00 m  
Barrier receiver distance : 51.00 / 51.00 m  
Source elevation : 0.00 m  
Receiver elevation : 0.00 m  
Barrier elevation : 0.00 m  
Reference angle : 0.00



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Results segment # 1: Chapel St (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	14.70	5.90	5.90

ROAD (0.00 + 46.57 + 0.00) = 46.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	90	0.00	63.96	0.00	-5.05	0.00	0.00	0.00	-12.33

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46.57

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Segment Leq : 46.57 dBA

Results segment # 2: Laurier Ave (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	14.70	3.84	3.84

ROAD (0.00 + 42.95 + 0.00) = 42.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	0	0.00	67.51	0.00	-6.16	-3.01	0.00	0.00	-15.39

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42.95

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Segment Leq : 42.95 dBA

Total Leq All Segments: 48.14 dBA

Results segment # 1: Chapel St (night)

-----  
 Source height = 1.50 m

Barrier height for grazing incidence  
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Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.50	!	14.70	!
		5.90	!
			5.90

ROAD (0.00 + 38.98 + 0.00) = 38.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	90	0.00	56.36	0.00	-5.05	0.00	0.00	0.00	-12.33
SubLeq									

-----  
 --  
 38.98  
 -----  
 --

Segment Leq : 38.98 dBA



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Results segment # 2: Laurier Ave (night)

-----  
 Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.50	!	14.70	!
		3.84	!
			3.84

ROAD (0.00 + 35.35 + 0.00) = 35.35 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
SubLeq									

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 --  
 -90      0    0.00   59.91   0.00   -6.16   -3.01   0.00   0.00   -15.39  
 35.35  
 -----  
 --

Segment Leq : 35.35 dBA

Total Leq All Segments: 40.54 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 48.14  
 (NIGHT): 40.54

