

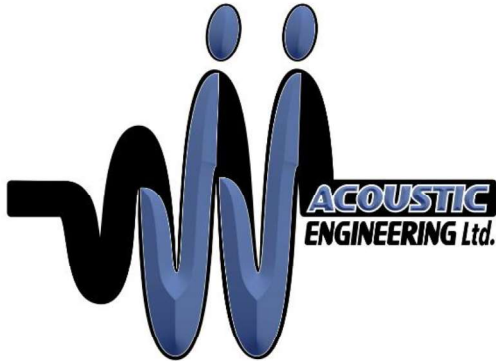


Airport Noise Impact Study

3505 Byng Road Airport Noise Impact Study

JJ-00691 NIS1





November 19, 2024,

Reference No. JJ-00691-NIS1

Nathan Caldwell
Director of Acquisitions
PE Real Estate Solutions
380 Manning Road, Tecumseh ON N8N 4W5

Dear Mr. Caldwell:

**Re: Airport Noise Impact Study
3503 Byng Road, Windsor, Ontario**

1. Introduction

JJ Acoustic Engineering Ltd. (JJAЕ) was retained to complete an Airport Noise Impact Study (Study) for the residential development located at 3503 Byng Road in Windsor, Ontario (Site). The Site will be developed into a 3-storey residential building. JJAЕ has provided a copy of the most up-to-date Site Plan in Attachment A.

The Study was prepared consistent with Ontario Ministry of the Environment, Conservation and Park (MOECP) NPC 300, "Environmental Noise Guideline, Stationary and Transportation Sources—Approval and Planning" dated August 2013.

This Study has determined that the potential environmental noise impact from airport traffic noise is significant. The proposed development will need the following: a requirement for higher STC ratings for the roof, exterior wall and window glazing for the building. The aircraft Noise Exposure Factor (NEF) data was provided by the noise control requirements for the Site were determined based on the City of Windsor's (City) Official Plan Schedule C: Development Constraints.

The following attachments were included with this Study:

- Attachment A – Site Plan
- Attachment B – City of Windsor Schedule C: Development Constraints Map
- Attachment C – Aircraft Noise Calculations

2. Road Traffic Analysis

2.1 Aircraft Noise

JJAE has reviewed the Noise Exposure Forecast NEF for Windsor International Airport and has determined that the site is located between the NEF contours of 25 and 30. JJAE has used 30 as the worst-case scenario in our calculations. JJAE has used a calculation tool developed by the National Research Council (NRC) called IBANA Calc, which calculates the Indoor Noise level within a given space. JJAE has modeled a representative suite within the building to calculate the worst-case noise impact.

JJAE will provide recommendations to mitigate all noise sources below the indoor noise limits stated in NPC 300 Table C-4 that in the Sleeping Quarters the Indoor NEF/NEP of 0. It should be noted that NEF is calculated with the following equation: $NEF = Leq_{24} - 32 \text{ dBA}$. Thus, we are looking to have an indoor noise level at or below 32. Attachment E provides all calculations for the aircraft calculations.

2.2 Air Traffic Model Input Parameters

This section describes the IBANA Calc model input parameters used to predict air traffic noise impact for the Site.

The Site falls within the NEF 30 contour as shown in the City of Windsor Schedule C: Development Constraints Map supplied in Attachment B. No other major sources of noise were observed at the Site.

2.3 Aircraft Noise

JJAE has reviewed the Noise Exposure Forecast NEF for Windsor International Airport and has determined that the site is located in the NEF 30 contour. JJAE has used the building layout and modeled representative areas based on worst case scenario to calculate the worst-case noise impact highest mitigation measures required. Recommendations for the roof, exterior wall and window glazing have been supplied in Section 3. The following warning clauses will be required:

Warning Clause A: "Purchasers/tenants are advised that sound levels due to increasing Air traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."

Warning Clause C: "This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."

3. Recommendations

The Airport noise impacts were above the NPC 300 requirements. Noise mitigation measures include:

- Warning Clause Type A should be registered on Title and/or included in all agreements of purchase and sale and/or leases and/or disclosure statements and declarations for the development for the building.
- Warning Clause Type C should be registered on Title and/or included in all agreements of purchase and sale and/or leases and/or disclosure statements and declarations for the development for the building.
- Provisions for air conditioning must be included for all units.
- Assembly #1 - The Roof assembly must meet a minimum STC rating of 43.
- Assembly #2 - All Exterior walls must meet a minimum STC rating of 29.
- Assembly #3 - All exterior window glazing must meet a minimum STC rating of 25

Assembly #1	Assembly #2	Assembly #3
Asphalt shingles	1 of 13mm gypsum board	Wood casement window
Building paper, 11 mm OSB	140 mm wood studs on 406 mm centres	Glass 3 mm
Wood trusses on 610 mm centre	glass fibre cavity insulation	Air Gap 13 mm
Glass fibre cavity insulation or Blown in Insulation R 60 min	11 mm OSB, 0.7 mm building paper	Glass 3 mm
2 of 13 mm gypsum board on 1/2" resilient channels spaced 406 mm on centre	9.5 mm cement stucco or Hardie Board Siding	
Up to 6 roof vents installed.		

JJAE has reviewed the building components for this Site and has determined that all components meet the required STC rating stated above.

4. Conclusions

The results of this Study indicate that the potential environmental impact from air traffic noise sources is significant. Mitigation measures will be required including ventilation requirements, noise warning clauses and special building components for the building.

Should you have any questions on the above, please do not hesitate to contact us.

Yours truly,

Written By:

Reviewed by:

Nov. 19, 2024



Emmanuel Ghiorghis
Acoustic Technician



Joey Jraige, P.Eng., B.A.Sc.
President (Owner)