HGC ENGINEERING

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November 13, 2020

Frank Bon
E: Frank Bon frank@fbdevconsulting.com

Re: Responses to City of Burlington Comments dated November 6, 2020, Noise and Vibration Feasibility Study, Proposed Residential Development, Millcroft Greens Corporation, Burlington, Ontario dated October 6, 2020

Dear Frank,

We are in receipt of the City of Burlington's comments dated November 6, 2020 in reference to our noise study entitled, "Noise and Vibration Feasibility Study, Proposed Residential Development, Millcroft Greens Corporation, Burlington, Ontario" dated October 6, 2020. The City's comments related to noise and vibration are *italicized* below followed by HGC Engineering's responses.

10. Please revise the Noise and Vibration Feasibility Study prepared by HGC Engineering, dated October 6, 2020 as follows:

d. Please clearly state in the noise report that the development blocks are considered Class 1 properties.

Noted. This will be included in the updated noise study.

e. Please use the same identification for the blocks as the other reports. i.e. Area A, B, etc., please also avoid confusion with prediction locations having the same lettering.

Noted. This will be included in the updated noise study.

f. Please assess the proposed 6 story condo as a possible stationary source on existing adjacent residential. Please provide comments/recommendations on locations of rooftop/at grade mechanical and underground parking/venting, mitigation strategies, etc. We acknowledge and appreciate that detailed design for the proposed 6 storey building is likely not available, however, we trust that HGC in consultation with the architect has experience on similar projects and could provide expert opinion on estimated mechanical requirements for the building that would produce noise. We need to clearly see in the report that the proposed 6 story building will not be a source of noise to the existing adjacent residential.

The City is correct in noting that the details of the mechanical equipment and underground parking/venting are not yet available. These will be reviewed at the SPA stage when the details are available. It is likely that the majority of rooftop mechanical equipment will be housed in a mechanical penthouse on the roof of the proposed 6-storey building. Any rooftop equipment not housed in the penthouse will be assessed and sufficiently shielded from neighbouring residences, as needed. It is noted that the residences (sensitive receptors) in the area are all 2-storeys in height. In HGC Engineering's experience, the roof edge and height of the proposed 6-storey building will

sufficiently shield any rooftop equipment that is not housed inside the penthouse. These will be verified at the detailed stage.

It is also HGC Engineering's experience with numerous developments, that typical HVAC equipment and parking garage exhaust fans can meet the applicable MECP noise criteria at neighbouring residential uses, either with low noise emission fans or relocation of the fans or through mitigation. Prior to building permit, an acoustical consultant should review the mechanical drawings and details of potential exhaust vents/fans, when available, to help ensure that the noise impact of the development on the environment, and of the development on itself, are maintained within acceptable levels.

g. Please clarify in the report who is responsible for installation of noise control measures (i.e. builder) and who is responsible for maintenance (i.e. homeowner, condo corp., other). The Pre-Consultation Checklist indicated "Includes technical details and clarifies the responsibility for the implementation and maintenance of the required noise measures".

Typically, noise control measures will be installed prior to occupancy. Maintenance is typically the responsibility of the condo corporation for common element features.

h. Please address construction related vibration on neighboring dwellings. Is construction related vibration a concern? If so, for all areas? If so, what are the recommended precondition survey limits and vibration monitoring during construction?

Please see response to 12. e. below.

i. Figure 2b should be updated to provide general (recommended) location of the underground parking vents/fans, rooftop mechanical, emergency generator, etc.

This will be completed at the detailed noise study stage, at SPA. Please see response to f.

j. Please provide an additional prediction location for the (top) area on Figure 2c at the worst-case scenario for the 16 lot pod, we acknowledge that it is probably similar to "I" but need to see the values in the table.



Figure 1 - Key Plan



Figure 2c - Proposed Development Concept Plan Showing Prediction Locations

A prediction location was not included for "the top area on Figure 2c" since that area is far from the major roadways (Dundas, Millcroft, Upper Middle Road) with traffic. The closest proposed residential lot is approximately 65 m from Berwick Drive with one row of existing dwellings. Berwick Drive is a low volume residential road and does not have significant traffic volumes. The sound levels at the additional prediction location is expected to be <55 dBA during the daytime hours and <50 dBA during the nighttime hours.

k. Tables 4 and 5, please either add columns for mitigated estimated noise levels or provide additional table(s) for mitigated noise levels for all prediction locations.

Outdoor predicted sound levels at the facade will remain the same even with mitigation. The City should clarify this request.

The Outdoor Living Area (OLA) sound levels with the proposed mitigation has been provided in Table 6.

l. As per the pre-consultation notes please provide the actual noise measurements taken from the site visit, including supporting information, date, weather, calibration, equipment, etc.

Actual noise measurements are not required by the Ministry of Environment, Conservation and Parks (MECP). Noise studies are based on sound level predictions from traffic data. Appropriate mitigation measures are recommended based on the predicted sound levels.

m. There is correspondence from Halton and CNR regarding traffic/train counts but not the City of Burlington, only handwritten notes, please include the correspondence from the City regarding traffic counts.

The traffic data from the City of Burlington was obtained through a phone conversation, hence, the hand written notes on the *Conversation Record*. In the revised noise study, we can attempt to obtain email correspondence including the traffic data from the City of Burlington.

n. For prediction location H, please also provide prediction values for the OLA, at grade and/or rooftop

The site plan does not indicate an OLA location. The following table provides the additional noise predictions for location H, as requested.

Balconies less than 4 m in depth are not considered as outdoor living areas and are exempt from road traffic noise assessments.

Table 1: Future Daytime and Nighttime Traffic Sound Levels, Without Mitigation [dBA]

Prediction Location	Description	Daytime – at Façade Total ($L_{EQ-16hr}$)	Nighttime – at Façade Total (L_{EQ-8hr})
[H]	6-storey condo with exposure to Dundas Street West, 6th floor	70	63
	6-storey condo with exposure to Dundas Street West, 1st floor	70	63
	6-storey condo, east/west façade with some exposure to Dundas Street West, 6th floor	66	59
	6-storey condo, east/west façade with some exposure to Dundas Street West, 1st floor	66	59
	6-storey condo, south façade, 6th floor	<55	<50
	6-storey condo, south façade, 1st floor	<55	<50
	Potential OLA to east, ground level	68	--
	Potential OLA to south of building, ground level	55	--
	Potential OLA on roof+	55	--

Note: + including minimum 1.07 m high solid parapet

o. For prediction location H, the receptor height in the Stamson calculation is noted as 16.5m, the top floor? Please also provide a receptor for the ground floor (if residential units on the ground floor) or the 2nd floor (if that's where the residential units start)

Please see Table 1 in Item n. above.

p. For prediction location H, please provide receptors for each side of the building (ground/first and top floor)

Please see Table 1 in Item n. above.

q. As per the Pre-Consultation Notes, please provide an area context plan showing & labelling sources of noise (roads, rail, buildings, commercial, etc.), including distance from receptor to source of noise

Noted. This will be included in the updated noise study.

12. e. Include a section that addresses vibration from construction activities, whether or not it is a concern and if so, recommendations for pre-condition survey/vibration monitoring during construction. This could also be addressed by the acoustical consultant.

In our experience, vibration studies during construction are not generally required for single family homes in the area.

13. c. Include a section that addresses vibration from construction activities, whether or not it is a concern, and if so, and recommendations for pre-condition survey/vibration monitoring during construction. This could also be addressed by the acoustical consultant.

Upon submission of a site plan application, details of the apartment building will be determined, such as underground parking levels and the method of construction and excavation of the site.

Although some municipalities, such as the City of Toronto, routinely require an assessment and subsequent vibration monitoring to address potential concerns related to construction vibration, most do not. In our experience, such assessments are routinely conducted only in municipalities that require them.

In Burlington, a City of Burlington Report, Report CW-27-19, dated September 9, 2019 discusses the need for studies assessing construction vibration, but it is not clear when this requirement could be expected to apply. For example, in this case, does it apply to all four areas, or only for the six-storey building? Burlington will need to clarify this.

If an assessment of construction vibration is required, HGC Engineering has the capability to provide this service. Typically, this is needed at SPA of at the construction permit stage and when details of the construction process are known.

Summary

It is our understanding that a comprehensive noise and vibration study will need to be updated with all of the various comments from the agencies incorporated.

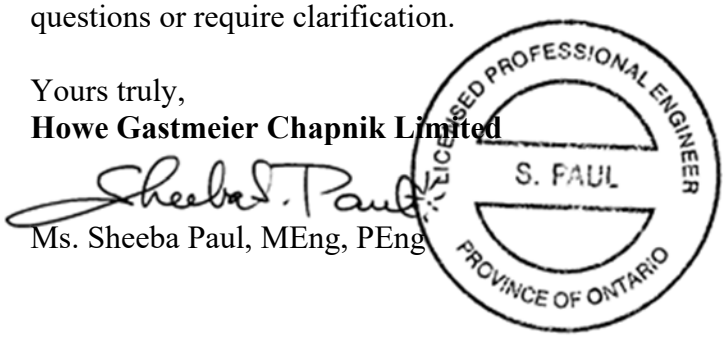
Many of the comments relate to details that are not available at this stage. When details are available at SPA, HGC Engineering will update the information, provide calculations and mitigation, as necessary and as required.

Minor comments have been addressed above and do not change the overall recommendations of the noise and vibration report.

In summary, the recommendations and conclusions of the noise report do not change from previous versions. Detailed noise studies will be needed for the properties closest to Dundas Street and Upper Middle Road, to refine the acoustic requirements.

Trusting this information is sufficient for your present purposes. Please call if you have any further questions or require clarification.

Yours truly,
Howe Gastmeier Chapnik Limited



Ms. Sheeba Paul, MEng, PEng