

67-1

## Report

Committee of Council

COMMITTEE OF COUNCIL

Standing Committee of the Council  
of the Corporation of the City of Brampton

Date: April 21, 2009

DATE: May 20, 2009

File: CO3E12.04

Subject: **STATUS REPORT: Noise Concerns – Discovery Phase III Subdivision**  
Ward No. 2 (Highway 410 and Bovaird Drive)

Contact: Michael Won, Director, Planning, Design and Development (905-874-2533)

### OVERVIEW:

- In response to a deputation to Committee of Council on January 21<sup>st</sup>, 2009, from Mr. Sameer Subedar of 142 Brussels Avenue, the Committee directed staff to prepare a follow up report as part of the investigation to the noise and safety concerns expressed by the residents of the Discovery Phase III Subdivision.
- Background information respecting the noise mitigation and compliance of the development as it relates to the Ministry of Environmental Noise Guidelines was reviewed.
- Although, the traffic noise generated by the Highway 410 Extension to the houses along Brussels Avenue is appropriately mitigated by the requirements of the subdivision design to MOE criteria, it still remains that the noise is of concern to the residents.
- The suggested proposals by the Discovery Homeowners' Association were reviewed and recommendations to their alternative solutions are outlined in this report.
- The feasibility and cost analysis of installing various types of walls on top of the existing berm located adjacent to the Highway 410 was undertaken.

### Recommendations:

1. THAT the report entitled "Noise Concerns – Discovery Phase III Subdivision" dated April 21, 2009 and the attachments be received;
2. THAT staff be directed to approach the Province of Ontario requesting that they participate in the cost of any mitigation measure, including the construction of a fence adjacent to Highway 410;

## G1-2

3. THAT staff continue discussions with the developer, Senator Homes, to investigate mitigative measures, including the construction of a fence adjacent to Highway 410.
4. THAT any costs associated with the construction of a wall or any mutually agreed solution not be borne by the City and that the City will act as a facilitator to bring all parties together including convening a community meeting with the residents of Brussels Avenue upon hearing from the Province and developer.

### **Background:**

As shown in Figure 1 and in the key map in Appendix 1, the subject residential subdivision development is located between Heart Lake Road and the Highway 410 Extension, north of Bovaird Drive. The eastern limit of this subdivision has a frontage of approximately 540 metres immediately adjacent to the west side of the Highway 410.

The property is surrounded by the following land uses:

**North** - Draft approved residential subdivision that consists of medium density development (Chinguacousy Farms development);

**East** - Highway 410 Extension, beyond which lands have been developed for a Regional Commercial Center (Trinity Commons Mall);

**South** - Wetlands in the immediate proximity and Bovaird Drive; and

**West** - Heart Lake Road, partial wooded areas and existing residential development further north.

Since the opening of the Highway 410 Extension, several homeowners from the Discovery Phase III residential subdivision have raised various concerns regarding noise and safety, particularly those who live in the immediate vicinity of the Highway 410 on Brussels Avenue. Brussels Avenue is a local buffer road located immediately west of the highway. It was constructed as part of the development of the subdivision and prior to the opening of the Highway 410 Extension in October 2007.

This residential subdivision was designed in accordance with the Ministry of Environment (MOE) Noise Guidelines and the City's Urban Design Policies. The houses along Brussels Avenue front onto the highway (approximately 60 metres away) and are separated by a buffer block, upon which a 1.7-metre high landscaped berm has been constructed. Therefore, the rear backyards of the houses, also defined as the Outdoor Living Areas, do not directly back onto the Highway 410.

The MOE Noise Guidelines identify two primary sound level criteria for traffic noise: the Outdoor Living Areas (OLA) such as backyards, and the Indoor Living Areas (ILA) such as bedrooms. With respect to the OLA, noise barriers are typically used as mitigation measures, whereas, with respect to the ILA, special building construction techniques such as thicker glass, double-glazing, etc. are utilized in the windows and doors.

67-3

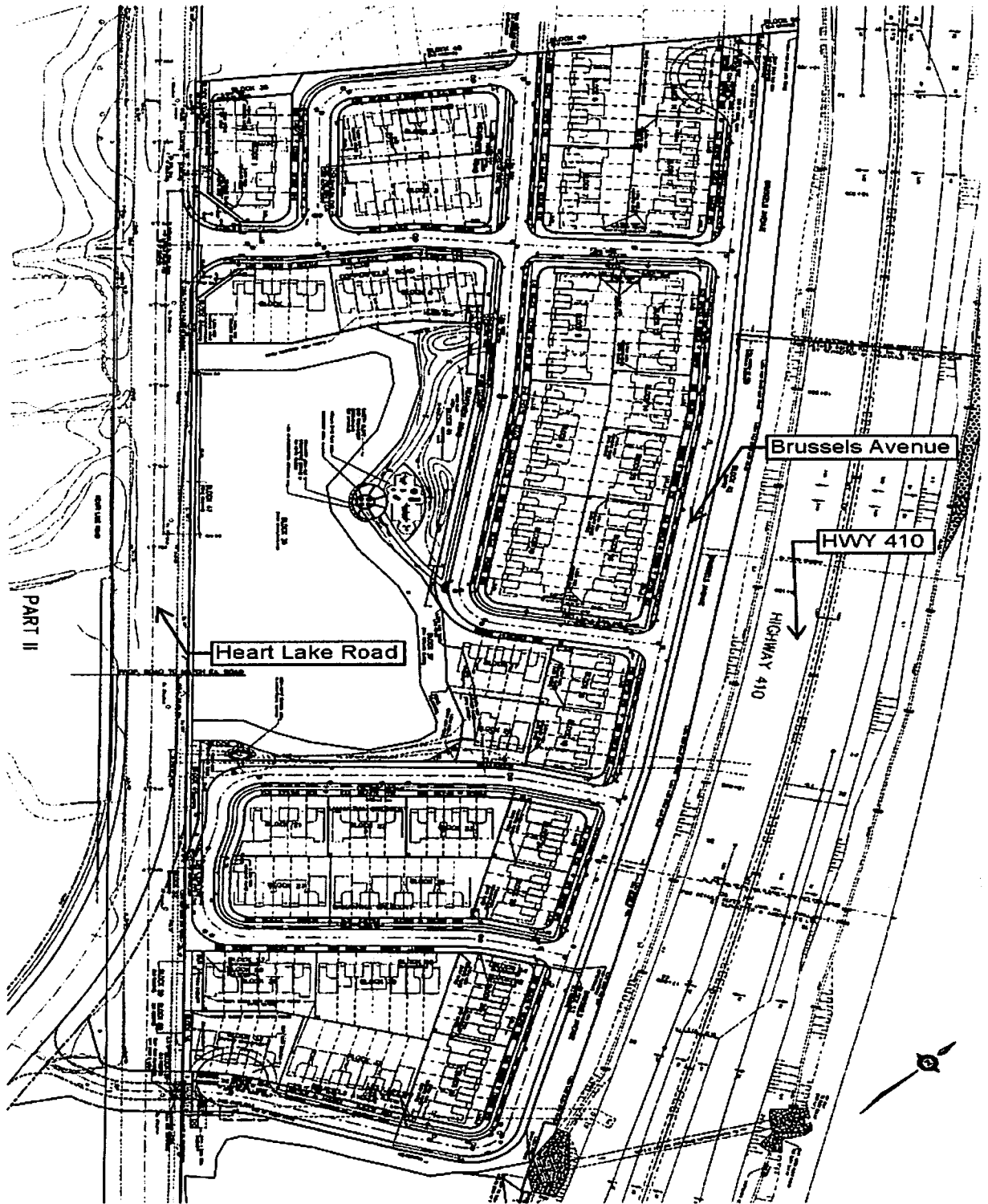


Figure 1 – Discovery Phase III Subdivision

In accordance with the MOE Noise Guidelines, although well-designed barriers are known to be effective in reducing noise levels, they should be only considered as a secondary measure after other measures have been evaluated. Barriers are usually considered in applications where outdoor sound levels cannot be reduced by other methods.

Furthermore, indoor sound levels are commonly controlled through the use of windows, doors and wall treatments. A sound barrier has never been considered as an alternative to control indoor sound levels from traffic generated noise. Figure 2 graphically illustrates sound level criteria for various receptor locations. The details of the acceptable limits for road traffic noise (as per the MOE Noise Guidelines) can be found in Appendix 2. Warning clauses were also registered on title and included in the Schedules of the Builder's Purchase and Sale Agreement with the home buyer stating that despite the inclusion of noise control features required by the development, there will be noise generated from the increasing road traffic (See Appendix 3).

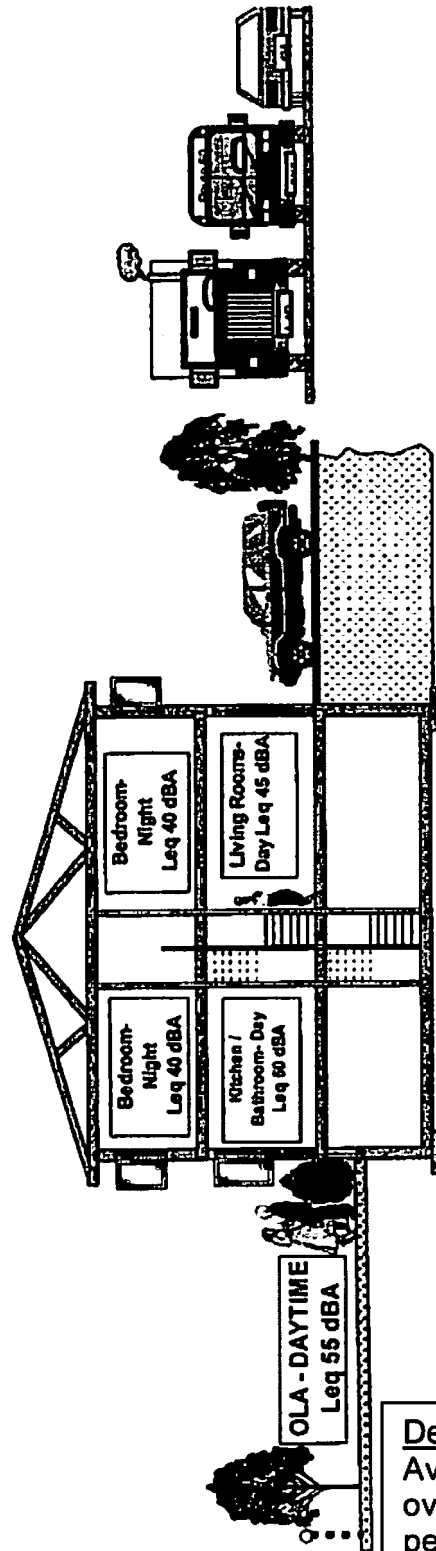
The row of townhouses along Brussels Avenue immediately adjacent to the Highway 410 provides proper noise protection to the units' backyards or OLA. In this case the buildings have been utilized as a noise shield to the backyards. In addition, a 2.4-metre high fence together with gates (between the townhouse blocks and around the corner units) has been installed. This form of urban design is commonly used to address noise mitigation within residential subdivision developments that are adjacent to large highways. An example of this urban form may also be seen on the north side of Highway 401 between Mavis Road and Second Line in Mississauga.

In comparison, within the Discovery Homes Phase II development, located on the east side of Highway 410 and north of Bovaird Drive, reverse frontages have been used in the design. In this case, the houses do not front onto the highway and the orientation of the backyards is such that they are placed between the house and the highway. Therefore, a noise fence or barrier is required to protect the Outdoor Living Areas.

In November 2007, City staff in response to the concerns raised by the residents, requested the developer, Senator Homes, to investigate whether the indoor sound levels meet the criteria as generated by the ultimate traffic volumes of Highway 410 adjacent to the Discovery Phase III subdivision. By conducting the field study it could be determined if the existing windows and doors (facing the highway) were attenuating traffic noise to the appropriate indoor sound levels as required by the MOE Noise Guidelines.

The noise levels were measured by Aercoustics Engineering Limited in November 2007 and the results are summarized in their survey report dated January 21, 2008 (See Appendix 4). Although the majority of the noise levels are in compliance with the initial noise report, there are twenty-five units along Brussels Avenue that are not in compliance with the Ministry of Environment criteria. These units all have French doors located on the 2<sup>nd</sup> floor balcony which lead into a bedroom. These French doors were upgraded from the standard sliding doors and failed to comply with the MOE Noise Guideline of 40dBA for indoor bedroom sound level. All other units having the standard sliding balcony doors meet the indoor living area noise level criteria.

**NEW RESIDENTIAL DEVELOPMENT  
SOUND LEVEL CRITERIA- ROAD NOISE**



**Definition of Leq:**  
Average of sound levels  
over a prescribed time  
period (8hr or 16hr).

Daytime: 7am to 11pm  
Night-time: 11pm to  
7am

Figure 2

67-6

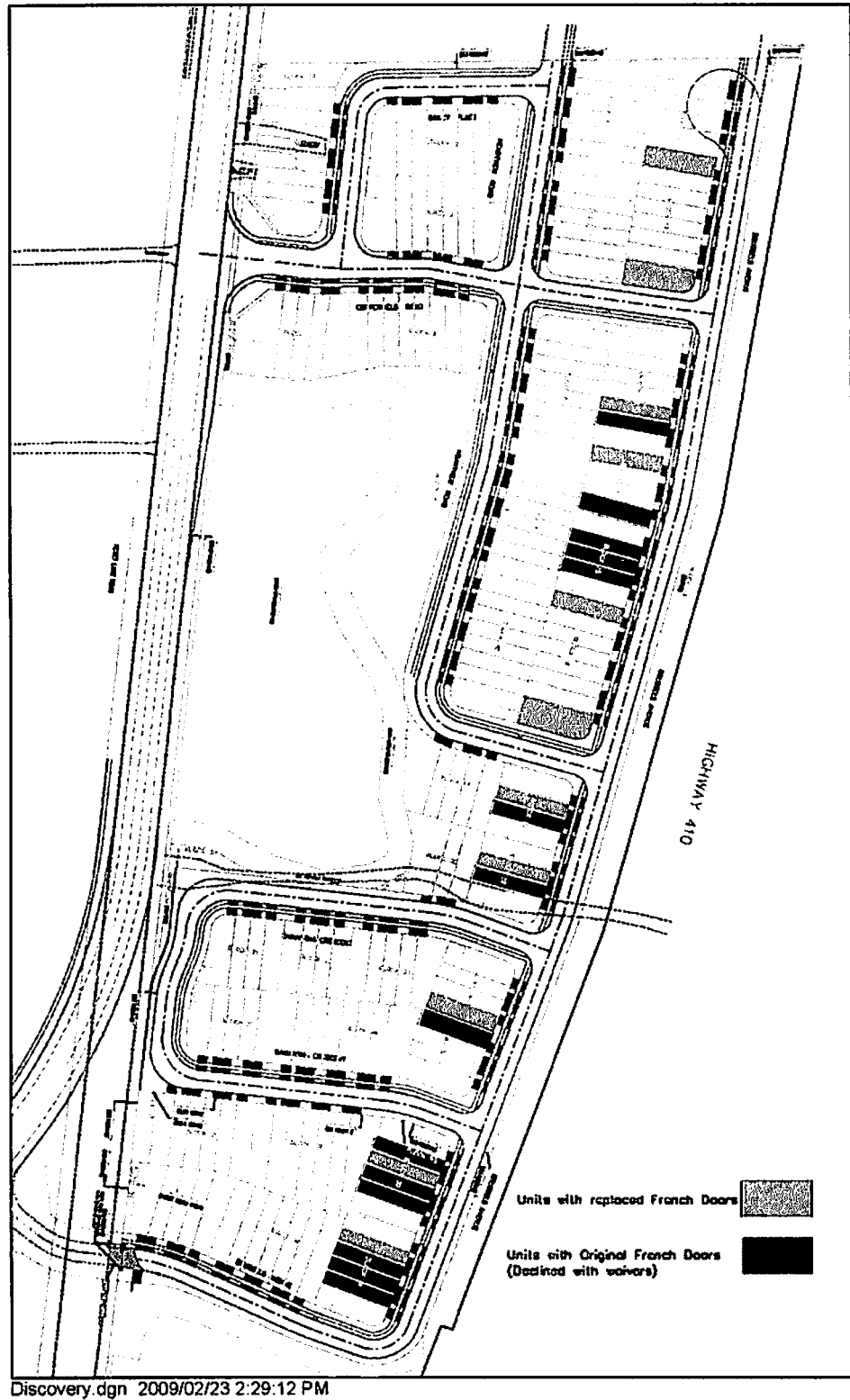


Figure 3 – Units with Replaced French Doors

Senator Homes has since replaced the French doors with a thicker door in order to appropriately mitigate the traffic generated noise. The homeowners of eleven of the twenty-five units elected to have their existing French doors replaced by the thicker doors. The rest of the homeowners signed a waiver declining to have their deficient balcony doors replaced with an acoustically compliant door based on the fact that they preferred the retractable screen-opening feature of the original French doors. The locations of the units with replaced French doors are shown in Figure 3.

In addition to the noise complaints, the residents from Brussels Avenue are also concerned with safety issues and their proximity to the Highway 410, and the visual openness of their houses to Trinity Commons Mall. As a result, City staff requested Senator Homes to increase the planting of the berm with additional coniferous trees along the landscaping buffer. This would ultimately screen any sight lines from Trinity Commons Mall. A modified tree-planting plan was prepared by the City and approximately 40 additional mature coniferous trees (approximately 10 feet in height) were planted along the existing berm in the summer of 2008.

The final Community Information Map, approved on February 28, 2005, did not indicate any proposed noise barrier parallel to Highway 410 or any proposed pedestrian bridge connecting the proposed development to Trinity Commons Mall. (See Appendix 5). The Developer's Conceptual Plan did not show evidence of providing the two features as well.

#### **Current Situation:**

The original noise report was prepared in support of the subdivision application and was approved by the City before the Highway 410 Extension opening on September 2007. The noise report had assumed an asphaltic pavement structure and surface for the road and utilized this in the noise projection modeling, (all public 400 series highways were previously paved with asphalt). However, the Highway 410 Extension north of Bovaird Drive was ultimately surface paved with concrete. Notwithstanding, the approved Environmental Assessment report (EA) for the Highway 410 Extension as undertaken by the Province dated August 1995 did not specify the type of pavement (surface course).

An increase in sound level due to the concrete pavement versus asphalt pavement has not yet been standardized. Some noise consultants will include an additional average sound level to their modeling as a result of the concrete road surface while others do not include this additional factor. In comparison, recently, the City received an application for a proposed residential development immediately north of Discovery Phase III. A peer review consultant was hired, and it was determined that the noise modeling would include an additional 1.7dBA as a result of the concrete surface of the Highway 410 between Bovaird Drive and Mayfield Road. Currently, the MOE does not have a formal position on this issue. If the additional 1.7dBA is considered in this development, the indoor sound criteria will still be met for the Highway 410 ultimate traffic volume.

## G7-8

Furthermore, the proximity and openness of the highway to the residential dwellings presents safety and quality of life concerns. As well, it was expressed by the residents that certain people were crossing the highway in order to get to Trinity Commons Mall.

### **Proposed Solutions from Discovery Homeowners' Association**

The following suggestions were proposed by the Discovery Homeowners' Association at their deputation to Committee of Council on January 21, 2009. (See Appendix 6).

- **Increase the height of the landscaping berm** - The existing berm lies within an 11 metre (36 feet) wide buffer strip and has a slope of 3:1, with an average height of 1.77 metres (5.8 feet). If the berm height is to be increased with the same slope, the base of the berm would become wider and would encroach onto the MTO right of way. If the berm slope were to be made steeper, maintenance and safety may be of concern. Note that increasing the berm slope from 3:1 to 2:1 would only increase the height of the berm to 2.6 metres (8.5 feet) from the existing 1.77 metres (a 0.8 metre (2.6 feet) increase) which is relatively minor and would not have any impact on noise nor visual reduction.
- **Install a noise barrier to reduce the indoor noise levels in the 2<sup>nd</sup> floor bedrooms** – It was determined by the noise consultant that the minimum required height of the barrier would need to be 3.3 metres (11 feet) on top of the existing berm (1.77 metres average height totaling approximately 5 metres (16.4 feet) in height from the road). Any fence lower than 3.3 metres would not provide any sound attenuation to the 2<sup>nd</sup> floor bedrooms. As per the MOE Noise Guidelines, as previously mentioned, berms and fences are typically not used to mitigate Indoor Living Areas from traffic generated noise. The berm/fence combination would almost need to be as high as the houses and would look rather overbearing (refer to Figure 4). In this case the estimated cost for this proposed noise barrier would be approximately \$470,000.00 based on the following:
  - The existing landscape berm has a length of approximately 540 metres (1770 feet). Constructing a 3.3 metre high noise barrier will require significant post footings.
  - Note that regardless of who pays for the capital cost of the fence, the City will be responsible for the maintenance of the proposed 540 metre long-barrier on top of the berm.

Based on the Discovery Homeowners' Association's proposal it is concluded that:

- Raising the existing berm height within the existing buffer strip would not be acoustically nor visually beneficial and may cause landscaping maintenance problems.
- Improving indoor noise quality should not be achieved by building a noise wall. This is achieved by other means, such as using double glazed windows and higher quality doors.



67-9

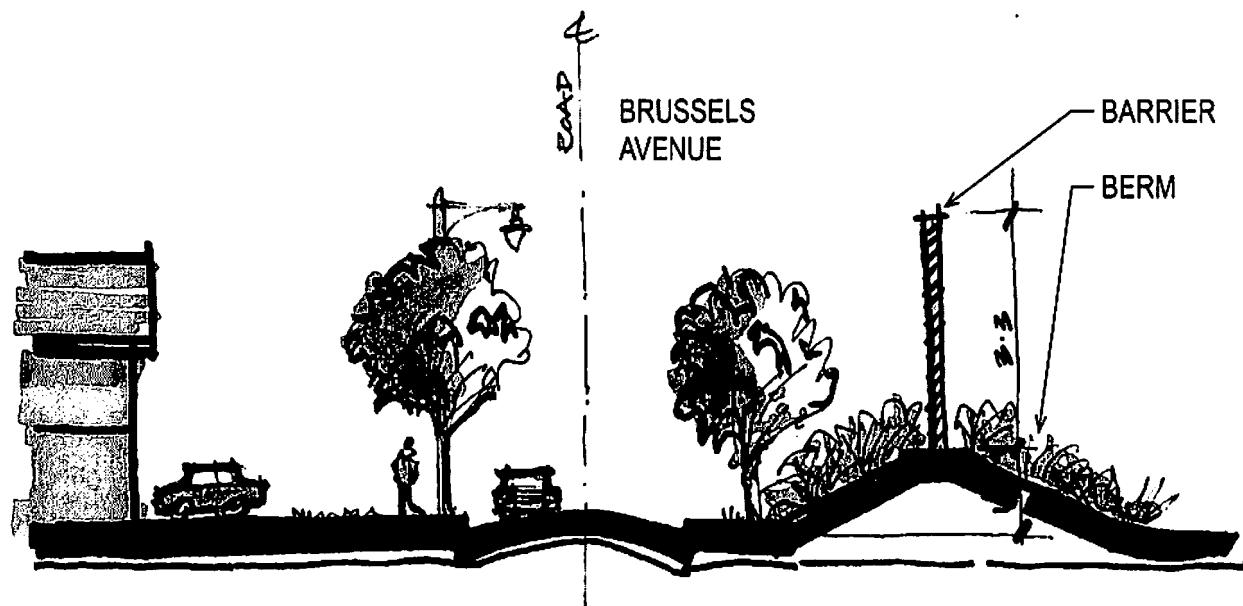


Figure 4 - Cross Section of Brussels Avenue  
with 3.3 m Barrier on 1.77 m Berm

- There exists a chain-link fence within MTO property at the back of the existing berm adjacent to the highway that may help impede public access to the Highway 410 and prevent people from crossing the highway.

Notwithstanding the noise concerns, there remain potential safety and “community comfort” issues that have also been expressed by the residents. Staff met with Mr. Subedar (who represents the Discovery Homeowners’ Association) to discuss what can be done with respect to augmenting the existing berm along Brussels Avenue. A visual barrier rather than a noise attenuation wall, in the form of a screen fence, if installed on top of the berm would offer a level of comfort to the residents of Brussels Avenue (although it would not provide for any additional traffic noise mitigation from the highway). A cost analysis was performed to provide three (3) options for Council's consideration:

1. A 2.0 metre high wooden privacy fence (approximately 540 metres in length) atop of the berm. The estimated capital cost of this cedar fence including berm restoration is approximately \$200,000. However, there will remain a long term maintenance cost associated with its repair and upkeep. Please note that the repairs may be more frequent, although relatively easy to undertake.
2. A 2.4 metre high concrete fence (approximately 540 metres in length) atop of the berm. The estimated capital cost of this fence including berm restoration is approximately \$310,000. The concrete fence is typically constructed with steel posts in 16 feet centre-to-centre sections. It is important to note that the longer sections in comparison to the 8 feet centre-to-centre post construction utilized for a typical wooden fence would reduce the number of posts required and lessen the impact to the existing vegetation during its installation. This concrete wall can be constructed utilizing a crane and a long reach excavator operated along the base of the existing berm. As well, it would be typical that construction is performed during the winter months in order to reduce restoration efforts. Although the capital cost is high, the long term maintenance and repair costs may be less as it is constructed of a more durable material. Note however, graffiti on concrete walls are difficult to remove.
3. A 2.4 metre high vinyl fence (approximately 540 metres in length) atop of the berm. The estimated capital cost of the fence is approximately \$330,000. Although the capital cost is similar to the concrete wall, the maintenance and repair are fairly easy to perform. However, this product is limited in production and may present a potential replacement concern in the future.

In all instances, regardless of fence material type, the periodic maintenance of the landscaping material on the backside of the berm adjacent to Highway 410, may be difficult to access due to the presence of the fence. However, it is concluded that a fence utilizing extra depth footings may be constructed on top of the existing berm without having the majority of the vegetation sacrificed. Please note that not all the residents on Brussels Avenue may agree with the installation of a fence. There will be associated impacts to the homeowners during construction with respect to noise, dust

and potential roadway lane closures. It is anticipated that the time needed to construct the fence and rehabilitate the berm on site would be approximately four to six weeks.

### **Conclusion:**

Except for those townhouse units on Brussels Avenue having upgraded French doors leading from the 2<sup>nd</sup> floor balcony to the front bedroom, the noise mitigation measures within the Discovery Phase III subdivision were constructed in accordance with the Ministry of Environment Noise Guidelines. The builder has since replaced the French doors with a thicker door to meet the noise requirements or has received waivers from those homeowners wishing not to have their original doors replaced.

Because Brussels Avenue is a buffer road immediately adjacent to the Highway 410 Extension, a landscaped berm was utilized in between the window street and the highway. A noise wall was not required to mitigate the sound from the highway, however, due to the safety and community comfort concerns expressed by the residents, staff recommend that a visual barrier in the form of a screen fence be erected on top of the berm. This fence can be constructed of wood, concrete or vinyl material.

The City does not have a policy to undertake fencing in such situations and currently there is no money set aside in the City's budget for these works.

The Discovery Phase III Subdivision has yet to be assumed and the City is holding approximately \$820,000 in securities from the Developer. Staff recommend that the City review the options with the Developer, Senator Homes, and approach the Province with respect to opportunities for cost sharing the fence, should Council approve its installation. Furthermore, a community meeting needs to be held with the residents of Brussels Avenue, the area Councillors and the Mayor prior to the commencement of any works on site.

### **Interdepartmental Comments**

Comments were received from Engineering Construction and have been incorporated into the content of this report.

Respectfully Submitted,

**Original Signed By**

Michael Won, P. Eng.,  
Director of Development Engineering Services.

**Original Signed By**

Agreed: \_\_\_\_\_  
John Corbett, MCIP, RPP,  
Commissioner of Planning, Design and Development.

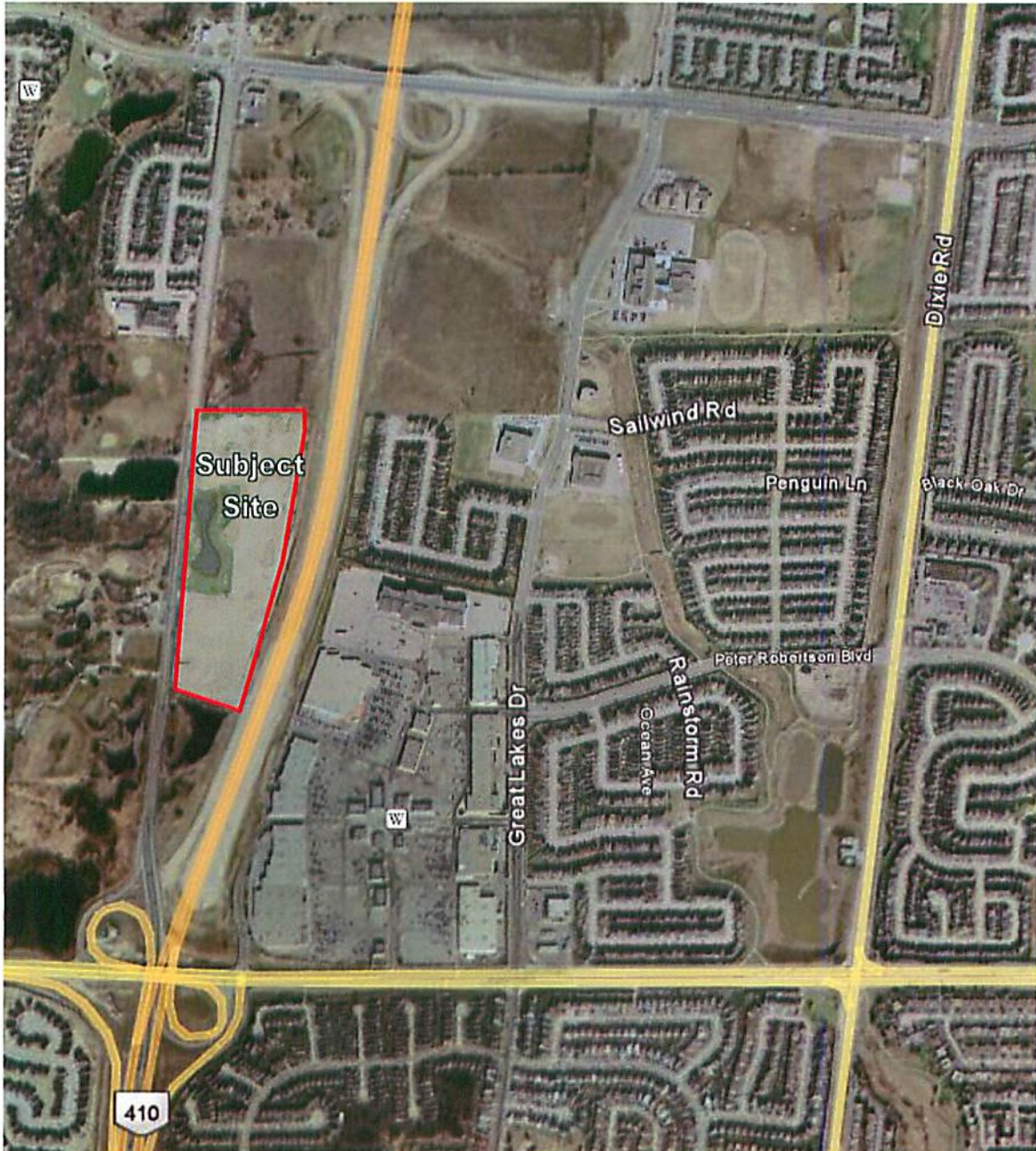
**APPENDICES:**

- Appendix 1: Key Plan
- Appendix 2: M.O.E. Noise Criteria
- Appendix 3: Warning Clauses
- Appendix 4: Environmental Noise Survey by Aeroustics Engineering Limited
- Appendix 5: Community Information Map & Senator Home's Conceptual Plan
- Appendix 6: Discovery Homeowners' Association submission to Committee of Council, January 21, 2009.
- Appendix 7: Chronology of Discovery Phase 3

## **Appendix 1: Key Plan**



G7-14



67-15

## **Appendix 2: M.O.E. Noise Criteria**

## M.O.E. Noise Criteria

### Road Traffic Criteria:

Guidelines for acceptable levels of road traffic noise impacting indoor and outdoor living areas are given in the MOE publication LU-131 "Noise Assessment Criteria in Land Use Planning". Values listed are energy equivalent average sound levels (Leq) in units of a-weighted decibels (dBA).

### Outdoor Living Area

Daytime refers to the period between 07:00 to 23:00 and Night-time refers to the time period between 23:00 and 07:00. The term "Outdoor Living Area" (OLA) is used in reference to an outdoor patio, backyard, terrace, or other area where passive recreation is expected to occur. Balconies less than 4m in depth are not considered as OLA. The acceptable noise level for outdoor living area is 55 dBA, but the MOE guidelines allow the sound level in an OLA to be exceeded by up to 5 dBA without any mitigation. Where OLA sound levels exceed 60 dBA, physical mitigation will be required to reduce the sound level to below 60 dBA and closer to 55 dBA, if possible (technically, economically and administratively). There is no night-time sound level criteria set for OLA, as MOE consider OLA to be use in daytime only.

### Indoor sound level criteria

Daytime noise applies to the lower level of a residence, which includes living and dining areas in a period from 07:00 to 23:00. Night-time noise applies to the second level of a residence, which includes the sleeping quarters. Indoor sound levels are assessed in two locations:

1. where usual activities take place - the noise criteria are 45 dBA and 40 dBA for daytime and night-time respectively.
2. the façade (plane of window) of the building - when daytime noise levels are greater than 65 dBA or night-time noise levels are greater than 60 dBA, a central air conditioning system will be required. This will enable occupants to keep windows closed if road traffic noise interferes with their indoor activities. If the sound level in the plane of window is greater than 55dBA and less than 65 dBA during daytime period, it is required to design the dwelling with a provision for future installation of central air conditioning.



G7-17

## **Appendix 3: Warning Clauses**

## Warning Clauses

1

"Purchasers are advised that despite the inclusion of noise control features in this development area and within the dwelling units, noise due to increasing road traffic may continue to be of concern, occasionally interfering with the activities of the occupants as the sound levels may exceed the noise criteria of the municipality and the Ministry of Environment. I, the purchaser hereby agree to place this clause in all subsequent offers of purchase and sale when I sell the property."

2

"Purchasers are advised that the dwelling unit can be fitted with a central air conditioning system at the owner's option which will enable occupants to keep windows closed if road traffic noise interferes with the indoor activities. If central air conditioning is installed, the air cooled condenser unit shall have a sound rating not exceeding 7.6 bels and shall be located so as to have least possible noise impact on outdoor activities of the occupants and their neighbours."

3

"Purchasers are advised that despite the inclusion of noise control features in this development area and within the dwelling units, noise due to increasing road traffic will continue to be of concern, occasionally interfering with the activities of the occupants as the sound levels may exceed the noise criteria of the municipality and the Ministry of Environment. I, the purchaser hereby agree to place this clause in all subsequent offers of purchase and sale when I sell the property. "Purchasers are advised that the dwelling unit has been or will be fitted with a central air conditioning system which will enable occupants to keep windows closed if road traffic noise interferes with their indoor activities."

4

"Purchasers are advised that despite the inclusion of noise control features in this development area and within the dwelling units, noise due to increasing road traffic will continue to be of concern, occasionally interfering with the activities of the occupants as the sound levels will exceed the noise criteria of the municipality and the Ministry of Environment. I, the purchaser hereby agree to place this clause in all subsequent offers of purchase and sale when I sell the property. "Purchasers are advised that the dwelling unit has been or will be fitted with a central air conditioning system which will enable occupants to keep windows closed if road traffic noise interferes with their indoor activities."

5

"Purchasers are advised that the acoustical berm and/or barrier as installed shall be maintained, repaired or replaced by the owner. Any maintenance repair or replacement shall be with the same material, to the same standards, and having the same colour and appearance of the original."

6

"Purchasers are advised that due to the proximity of the adjacent gun club, sound levels from the gun club may at times be audible during the year 2004 and until their proposed relocation date of June 2005"

67-19

**Appendix 4: Environmental Noise Survey  
by Aercoustics Engineering Limited**

67-20

# AERCOUSTICS ENGINEERING LIMITED

21 January 2008

By email  
Page 1 of 28

Mr. Bruno Nazzicone  
Senator Homes  
250 Lesmill Road  
North York, Ontario  
L3B 2T5

**RE: Environmental Noise Survey  
for Discovery Phase 3,  
Registered Plan 43M-1680, Planning File C3E12.9  
Brampton, Ontario  
for Senator Homes (Discovery II) Inc.  
AEL #2000 021**

Dear Mr. Nazzicone:

Senator Homes (Discovery II) Inc. has retained the services of Aercoustics Engineering Limited to prepare an Environmental Noise Survey Report for select houses of the existing residential subdivision, file number 21T-00001B, in order to assist the City of Brampton in evaluating noise complaints from residences. The proposed subdivision is located in the City of Brampton, Region of Peel, east of Heart Lake Road, west of proposed Highway 410, north of Bovaird Drive as shown on the Key Plan, Figure 1.

The purpose of this report is to examine the existing and anticipated future noise environment in the development area to determine if indoor and outdoor noise is in compliance with the guidelines of the Ontario Ministry of Environment (MOE), City of Brampton, Region of Peel.

The principal noise sources are road traffic on Highway 410 and Heart Lake Road.

This report is not an acoustical certification of the entire Discovery Phase 3 subdivision.

Mohan Barman  
M.A.Sc., P.Eng.

Marc Bracken  
M.A.Sc., P.Eng.

Vince Gambino  
B.A.Sc., P.Eng.

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**Executive Summary:**

- Aercoustics inspected the site 9 January 2008 and concluded that all acoustic fence works recommended for Discovery Phase 3 have been installed in accordance with City of Brampton standards and the noise study titled "Discovery Phase 3, Environmental Noise Study, dated 15 Nov 2004" prepared by Aercoustics Engineering Limited.
- In accordance with the City's Urban Design Policies, the Discovery Phase 3 subdivision was designed such that rear yards in the development would not be backing onto Highway 410 as was done for the Discovery Phase 2 subdivision on the east side of the highway. The Discovery Phase 3 townhouses provide the primary noise barrier for the outdoor amenity areas for the units facing the highway. In addition noise fences are installed between townhouse blocks and around end unit rear yards to provide additional outdoor protection. A noise barrier between the townhouses and the highway is not required to protect the outdoor amenity areas. We also note that an acoustic fence at least 3.3m high would be required to provide indoor noise attenuation for units facing the highway. This exceeds the City's maximum fence height of 2.4m and due to grading constraints the berm cannot be raised any higher.
- Existing noise levels were measured indoors and outdoors for units that have raised complaints to the City, namely: 38 Brussels Avenue (unit 31-1) and 142 Brussels Avenue (unit 12-1).
- Existing and future ultimate noise at balconies facing Hwy 410 is significantly above the 55 dBA MOE target for outdoor living areas, but these balconies are not considered "official" points of reception by the MOE.
- Measured existing indoor noise at all bedrooms and living rooms for unit 31-1 and unit 12-1 complies with the MOE and City of Brampton noise guidelines.
- Predicted future ultimate indoor noise at all bedrooms and the living room for unit 31-1 does comply with the MOE and City of Brampton noise guidelines.
- Predicted future ultimate indoor noise for unit 12-1 bedroom 2 and the living room does comply with the MOE and City of Brampton noise guidelines.
- Predicted future ultimate indoor noise for unit 12-1 bedroom 3 which has a balcony with French doors fails to comply with the MOE and City of Brampton indoor noise guideline of 40 dBA.
- In order to satisfy the City and MOE noise targets for units with 2nd floor balconies and French doors facing the highway, we recommend the following options:
  - Option #1 is to add a storm door to the existing French doors for the above referenced units. The storm door shall have glazing 4mm glass, 11mm air gap, 4mm glass with a total storm door STC of 30 dB. There shall be a minimum 25mm air gap between the existing French door and the storm door.
  - Option #2 is to replace the existing French doors with a "Kawneer Terrace door 2000T" constructed with 6mm laminated glass, 13mm air gap and 6mm glass with a total door STC of 37 dB (or an acoustically equivalent door).

**Noise Measurements:**

Noise was measured indoor and outdoors at 38 Brussels Avenue (unit 31-1) and 142 Brussels Avenue (unit 12-1). The following noise measurements were obtained:

- Balcony level 2<sup>nd</sup> Floor outdoor unattended hourly long term noise measurements were taken from 15<sup>th</sup> to 27<sup>th</sup> November 2007 to determine the existing daytime and nighttime Leq at the building façade facing Hwy 410.
- Outdoor 10 minute spot check noise measurement for the rear outdoor living area @ 142 Brussels Avenue, on 15<sup>th</sup> November 2007.
- Simultaneous 2 channel outdoor & indoor 10 minute noise measurements were taken at 38 and 142 Brussels Avenue on 15<sup>th</sup> November and 27 November 2007, for bedroom 2 & 3 and living room to determine the noise reduction performance of the building façade (windows, walls, roof, & doors).
- Heavy trucks are currently not allowed on Highway 410 from Bovaird to Sandalwood Parkway. Two heavy trucks were observed in a 20 minute traffic counting period on November 27<sup>th</sup>, from 18:20 to 18:40 hours.

**Table 1: Existing Outdoor/Indoor Evening Noise Measurements**

Dwelling	Room	Outdoor Noise	Indoor Noise	Façade Noise Reduction
31-1	Bedroom 2	71.8 dBA	30.7 dBA	41.1 dBA
31-1	Bedroom 3 (with balcony)	65.9	31.0	34.9
31-1	Living Room	71.8	38	33.8
12-1	Bedroom 2	69.5	32.6	36.9
12-1	Bedroom 3 (with balcony)	68.9	38.5	30.4
12-1	Living Room	69.1	28.6	40.5

**Table 2: Six Day Existing Energy Average Outdoor/Indoor Noise**

Dwelling	Room	Measured Existing Outdoor Noise (16 hour Day/8 hour Night)	Measured Façade Noise Reduction	Calculated Existing Indoor Noise (16 hour Day/8 hour Night)	MOE Indoor Sound Level Limit	MOE Compliance Yes/No
31-1	Bedroom 2	66.1 dBA	41.1 dBA	25.0 dBA	40 dBA	Yes
31-1	Bedroom 3 (with balcony)	66.1	34.9	31.2	40	Yes
31-1	Living Room	70.8	33.8	37.0	45	Yes
12-1	Bedroom 2	65.3	36.9	28.4	40	Yes
12-1	Bedroom 3 (with balcony)	65.3	30.4	34.9	40	Yes
12-1	Living Room	69.9	40.5	29.4	45	Yes

67-23

Environmental Noise Survey for  
Discovery Phase 3, City of Brampton

Page 4 of 28  
21 Jan 2008

Table 3 Comparison of Measured Noise vs. "Stamson" Predicted Noise

Dwelling	Measured Outdoor Noise (A)	20 Minute Evening Traffic Count		"Stamson" Predicted Outdoor Noise based on traffic counts (B)	Model Correction (A-B)
31-1	65.9 dBA	1254 Cars	2 Heavy Trucks	64.2 dBA	1.7 dBA

Table 4: Predicted Future Energy Average Outdoor/Indoor Noise

Dwelling	Room	Predicted Future Ultimate Outdoor Noise (16 hour Day/8 hour Night)	Predicted Ultimate Outdoor Noise (16 hour Day/8 hour Night) with 1.7 dB model correction	Measured Façade Noise Reduction	Calculated Future Ultimate Indoor Noise (16 hour Day/8 hour Night)	MOE Indoor Sound Level Limit	MOE Compliance Yes/No
31-1	Bedroom 2	71.55 dBA	73.25 dBA	41.1 dBA	32.2 dBA	40 dBA	Yes
31-1	Bedroom 3 (with balcony)	71.55	73.25	34.9	38.4	40	Yes
31-1	Living Room	70.78	72.48	33.8	38.7	45	Yes
12-1	Bedroom 2	71.27	72.97	36.9	36.1	40	Yes
12-1	Bedroom 3 (with balcony)	71.27	72.97	30.4	42.6	40	No
12-1	Living Room	70.49	72.19	40.5	31.7	45	Yes

Table 5: Indoor Noise vs. Acoustic Fence atop Discovery 3 existing Hwy 410 berm

Unit	Fence Height (metres) located atop existing berm adjacent to Hwy 410	Predicted Nighttime Noise @ Balcony Door (dBA)	Predicted Nighttime Noise with 1.7 dBA model correction @ Balcony Door (dBA)	Estimated Façade Noise Reduction with existing French Doors (dBA)	Predicted Indoor Noise @ Bedroom 2 with French Doors, target = 40 dBA
15-3 Model 1429  * →	0	71.6	73.3	29.2	44.1
	2.2	69.72	71.42	29.2	42.22
	2.4	69.73	71.43	29.2	42.23
	2.5	67.84	69.54	29.2	40.34
	2.6	67.85	69.55	29.2	40.35
	2.7	67.83	69.53	29.2	40.33
	2.8	67.8	69.5	29.2	40.3
	2.9	67.76	69.46	29.2	40.26
	3	67.69	69.39	29.2	40.19
	3.1	67.61	69.31	29.2	40.11
	3.2	67.53	69.23	29.2	40.03
	3.3	67.43	69.13	29.2	39.93
	3.4	67.32	69.02	29.2	39.82
	3.5	67.2	68.9	29.2	39.7
	3.6	67.08	68.78	29.2	39.58
	3.7	66.96	68.66	29.2	39.46
	3.8	66.82	68.52	29.2	39.32
	3.9	66.69	68.39	29.2	39.19
	4	66.55	68.25	29.2	39.05
	4.1	66.42	68.12	29.2	38.92
	4.2	66.28	67.98	29.2	38.78

16.5  
↑  
3.3 + 17 = 56  
total height =  
upgraded fire  
alarm

**Conclusions:****Outdoor Living Area Noise:**

A spot check noise measurement at the rear yard outdoor living area for unit 12-1 (142 Brussels Avenue) measured 56 dBA. This unit has its 2.2m high acoustic fence installed on the side boundary line. The measured outdoor living area noise is in compliance with the MOE guidelines and future ultimate noise levels will remain in compliance with the MOE guidelines and the requirements of the noise study approved by the City.

Units 12-1 and 31-1 and similar units facing highway 410 have balconies facing the highway. From the point of view of the residents, the noise at their balconies is significantly above the MOE guideline for outdoor living areas. From the point of view of the MOE, the balconies are not part of the "outdoor living area" because they are not the only outdoor living area for the occupant and the balconies are less than the 4m MOE minimum depth.

The entire acoustic fence for the subdivision as recommended by the noise study is currently installed and in compliance with the City of Brampton standards.



**Indoor Noise**

Noise was measured indoors and outdoors at 38 Brussels Avenue (unit 31-1) and 142 Brussels Avenue (unit 12-1). These two units are representative of the worst case units for the subdivision because they directly face highway 410 and they have the worst case bedroom which is bedroom #3, with its relatively small floor space and relatively large glazing area. Indoor noise measurements were undertaken 15<sup>th</sup> November and 27<sup>th</sup> November to determine the acoustic performance of the building façade. Continuous unattended noise monitoring was undertaken from 15 November to 27<sup>th</sup> November in order to determine the existing daytime and nighttime energy average noise exposure.

Based on existing noise measurements, the indoor noise for units 12-1 & 31-1 and all similar units of the subdivision are in compliance with the MOE guidelines and the requirements of the noise study.

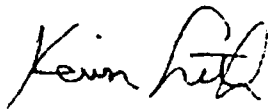
Based on future ultimate noise predictions, the indoor noise for all rooms of unit 31-1 and similar units which have a sliding glass balcony patio door are in compliance with the MOE guidelines and the requirements of the noise study.

Based on future ultimate noise predictions, the indoor noise for unit 12-1, bedroom 3, which has French doors, is not in compliance with the MOE guidelines or the requirements of the noise study.

**Recommended Noise Control**

- Upgraded French doors are recommended to insure City and MOE indoor noise guidelines for units with 2<sup>nd</sup> floor balconies and French doors, namely units: 12-1, 12-8, 13-2, 13-3, 14-1, 14-4, 15-2, 15-3, 15-4, 16-1, 16-8, 18-2, 18-3, 19-2, 19-3, 24-1, 25-4, 30-2, 30-3, 30-4, 30-5, 31-2, 31-3, 31-4, 31-5.
  - Option #1 is to add a storm door to the existing French doors for the above referenced units. The storm door shall have glazing 4mm glass, 11mm air gap, 4mm glass with a total storm door STC of 30 dB. There shall be a minimum 25mm air gap between the existing French door and the storm door.
  - Option #2 is to replace the existing French doors with a "Kawneer Terrace door 2000T" constructed with 6mm laminated glass, 13mm air gap and 6mm glass with a total door STC of 37 dB (or an acoustically equivalent door ).

Yours sincerely,  
**AERCOUSTICS Engineering Limited**



---

Kevin Smith, P.Eng.

Cc: Daniel Tang, Planning Design & Development Dept, City of Brampton

***References:***

1. Ontario Ministry of Environment, *Noise Assessment Criteria in Land Use Planning*, Publication LU-131, October 1995.
2. Ontario Ministry of Environment, *Environmental Noise Assessment in Land Use Planning*, 1987.
3. Ontario Ministry of Environment, *Ontario Road Noise Analysis Method for Environment and Transportation*, 1989.
4. Ontario Ministry of Environment, *Model Municipal Noise Control By-Law*, 1978.
5. Region of Peel, *General Guidelines for the Preparation of Acoustical Reports in the Region of Peel*, 2002
6. Ministry of Housing, *Guidelines on Noise and New Residential Development Adjacent to Freeways*, 1979
7. Aercoustics Engineering Limited, "*Discovery Phase 3, Environmental Noise Study*", 15 Nov 2004

**Appendix:**

**Appendix 1: MOE Traffic Noise Guidelines and Criteria  
Road Traffic Guidelines**

**Outdoor Living Space**

MOE guidelines (Reference 1) and the Ministry of Housing guidelines for Freeway Noise (Reference 7) recommend that equivalent noise levels (Leq) from road noise in outdoor Living spaces should not exceed 55 dBA. The report shall demonstrate that the noise level in outdoor living areas, after applying attenuation measures is the lowest level aesthetically, technically, administratively and economically practical. The sound level objective is 55 dBA. Noise levels above 60 dBA are not desirable. A protected outdoor Living space of 56 square metres is required for single family homes, 47 sq.m. for semi-detached unit, and 37 sq.m. for row-or townhouse units.

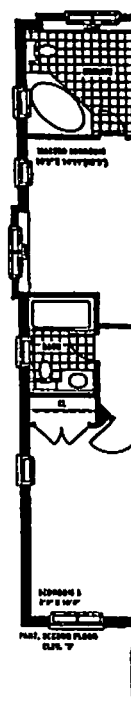
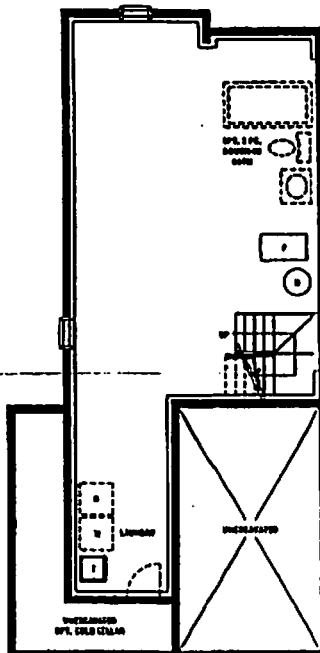
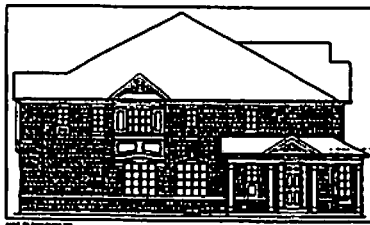
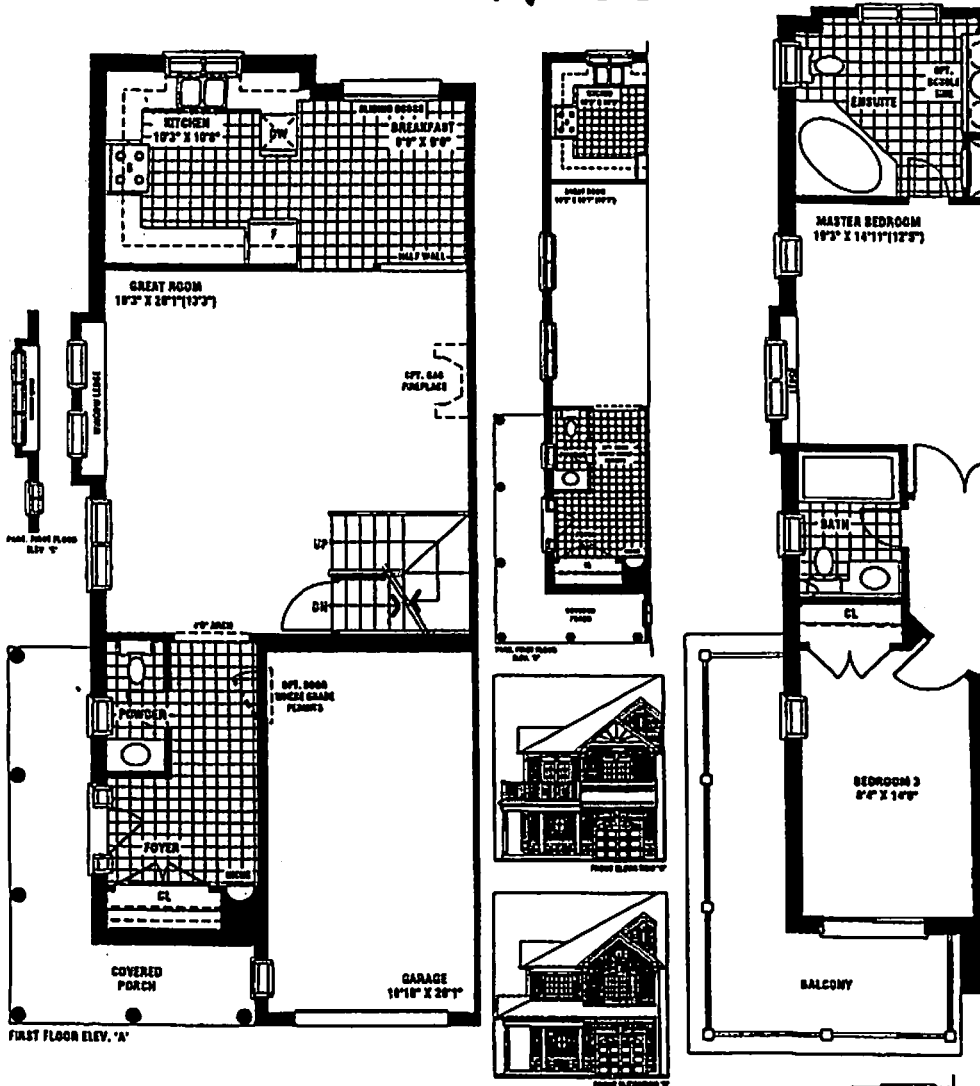
**Indoor Noise**

Indoor noise levels will also be examined with respect to MOE Guidelines. According to Table 2 of Reference 1, bedrooms are normally required to meet an indoor Leq of 40 dBA. The recommended limit for living or dining rooms is 45 dBA. To achieve these levels, the MOE Guidelines outline the types of windows and exterior walls that will be required based on outdoor noise levels, the size of windows, etc. MOE normally requires that air conditioning be installed when night time noise levels are greater than or equal to 60 dBA or when daytime noise levels are greater than or equal to 65 dBA. Glazing requirements are also outlined in the MOE Guidelines.

**Table 6: MOE Noise Criteria**

Type of Space	Road Traffic Equivalent Sound Level Limit (Leq), dBA
Bedrooms (2300-0700 hrs)	40
Living Rooms (0700-2300 hrs)	45
Outdoor Living Areas (0700-2300hrs)	55

67-28



Materials, specifications, and floor plans are subject to change without notice. All house renderings are artist's conceptions. All floor plans are approximate dimensions. Actual usable floor space may vary from the stated floor area. S.O.B.E.

31-1

**constel**

1854 s

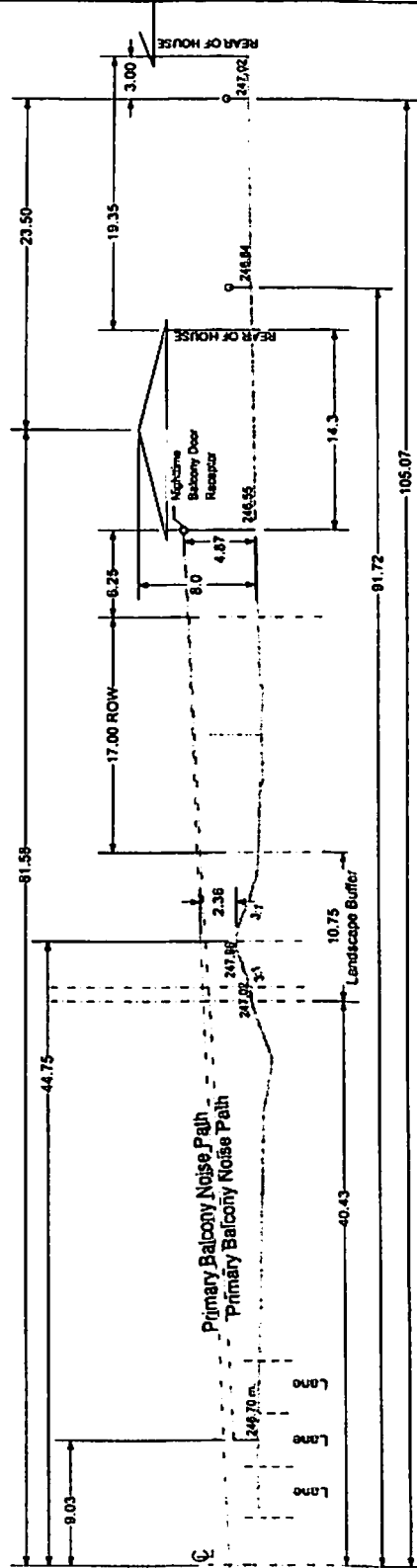
Townhouse 15, Station A  
Highway 410, 163,000 AADT ultimate  
3% Medium Trucks, 7% Heavy, 100 km/h  
MOE "Stamson" Prediction Method  
Townhouse 15: Front Balcony:  
Nighttime Traffic Leq = 71.60 dBA

Hwy 410  
 six lanes  
 Southbound  
 NOISE SOURCE (HS)  
 ELEV. = 246.70 + 1.63 m.

DISCOVERY PHASE 3: PROPERTY LINE  
TOP of BARRIER (HB)  
ELEV. = 247.96 m.

OUTDOOR LIVING AREA  
TOWNHOUSE 15: RECEIVER (HR)  
ELEV. = 246.84 + 1.5

OUTDOOR LIVING AREA  
TOWNHOUSE 9: RECEIVER (HR)  
ELEV. = 247.02 + 1.5



<b>Aeroustics</b> Engineering Limited 50 Kansas Drive, Suite 105 Kansas City, MO 64114 (816) 451-1830 Fax: (816) 451-3241	Discovery Phase 3			
	Townhouse Block 15			
	15.1	15.2	15.3	15.4
Checked by: KS	15.5	15.6	15.7	15.8
	15.9	15.10	15.11	15.12
	15.13	15.14	15.15	15.16
	15.17	15.18	15.19	15.20
	15.21	15.22	15.23	15.24
	15.25	15.26	15.27	15.28
	15.29	15.30	15.31	15.32
	15.33	15.34	15.35	15.36
	15.37	15.38	15.39	15.40
	15.41	15.42	15.43	15.44
	15.45	15.46	15.47	15.48
	15.49	15.50	15.51	15.52
	15.53	15.54	15.55	15.56
	15.57	15.58	15.59	15.60
	15.61	15.62	15.63	15.64
	15.65	15.66	15.67	15.68
	15.69	15.70	15.71	15.72
	15.73	15.74	15.75	15.76
	15.77	15.78	15.79	15.80
	15.81	15.82	15.83	15.84
	15.85	15.86	15.87	15.88
	15.89	15.90	15.91	15.92
	15.93	15.94	15.95	15.96
	15.97	15.98	15.99	16.00
	16.01	16.02	16.03	16.04
	16.05	16.06	16.07	16.08
	16.09	16.10	16.11	16.12
	16.13	16.14	16.15	16.16
	16.17	16.18	16.19	16.20
	16.21	16.22	16.23	16.24
	16.25	16.26	16.27	16.28
	16.29	16.30	16.31	16.32
	16.33	16.34	16.35	16.36
	16.37	16.38	16.39	16.40
	16.41	16.42	16.43	16.44
	16.45	16.46	16.47	16.48
	16.49	16.50	16.51	16.52
	16.53	16.54	16.55	16.56
	16.57	16.58	16.59	16.60
	16.61	16.62	16.63	16.64
	16.65	16.66	16.67	16.68
	16.69	16.70	16.71	16.72
	16.73	16.74	16.75	16.76
	16.77	16.78	16.79	16.80
	16.81	16.82	16.83	16.84
	16.85	16.86	16.87	16.88
	16.89	16.90	16.91	16.92
	16.93	16.94	16.95	16.96
	16.97	16.98	16.99	17.00
	17.01	17.02	17.03	17.04
	17.05	17.06	17.07	17.08
	17.09	17.10	17.11	17.12
	17.13	17.14	17.15	17.16
	17.17	17.18	17.19	17.20
	17.21	17.22	17.23	17.24
	17.25	17.26	17.27	17.28
	17.29	17.30	17.31	17.32
	17.33	17.34	17.35	17.36
	17.37	17.38	17.39	17.40
	17.41	17.42	17.43	17.44
	17.45	17.46	17.47	17.48
	17.49	17.50	17.51	17.52
	17.53	17.54	17.55	17.56
	17.57	17.58	17.59	17.60
	17.61	17.62	17.63	17.64
	17.65	17.66	17.67	17.68
	17.69	17.70	17.71	17.72
	17.73	17.74	17.75	17.76
	17.77	17.78	17.79	17.80
	17.81	17.82	17.83	17.84
	17.85	17.86	17.87	17.88
	17.89	17.90	17.91	17.92
	17.93	17.94	17.95	17.96
	17.97	17.98	17.99	18.00
	18.01	18.02	18.03	18.04
	18.05	18.06	18.07	18.08
	18.09	18.10	18.11	18.12
	18.13	18.14	18.15	18.16
	18.17	18.18	18.19	18.20
	18.21	18.22	18.23	18.24
	18.25	18.26	18.27	18.28
	18.29	18.30	18.31	18.32
	18.33	18.34	18.35	18.36
	18.37	18.38	18.39	18.40
	18.41	18.42	18.43	18.44
	18.45	18.46	18.47	18.48
	18.49	18.50	18.51	18.52
	18.53	18.54	18.55	18.56
	18.57	18.58	18.59	18.60
	18.61	18.62	18.63	18.64
	18.65	18.66	18.67	18.68
	18.69	18.70	18.71	18.72
	18.73	18.74	18.75	18.76
	18.77	18.78	18.79	18.80
	18.81	18.82	18.83	18.84
	18.85	18.86	18.87	18.88
	18.89	18.90	18.91	18.92
	18.93	18.94	18.95	18.96
	18.97	18.98	18.99	19.00
	19.01	19.02	19.03	19.04
	19.05	19.06	19.07	19.08
	19.09	19.10	19.11	19.12
	19.13	19.14	19.15	19.16
	19.17	19.18	19.19	19.20
	19.21	19.22	19.23	19.24
	19.25	19.26	19.27	19.28
	19.29	19.30	19.31	19.32
	19.33	19.34	19.35	19.36
	19.37	19.38	19.39	19.40
	19.41	19.42	19.43	19.44
	19.45	19.46	19.47	19.48
	19.49	19.50	19.51	19.52
	19.53	19.54	19.55	19.56
	19.57	19.58	19.59	19.60
	19.61	19.62	19.63	19.64
	19.65	19.66	19.67	19.68
	19.69	19.70	19.71	19.72
	19.73	19.74	19.75	19.76
	19.77	19.78	19.79	19.80
	19.81	19.82	19.83	19.84
	19.85	19.86	19.87	19.88
	19.89	19.90	19.91	19.92
	19.93	19.94	19.95	19.96
	19.97	19.98	19.99	20.00

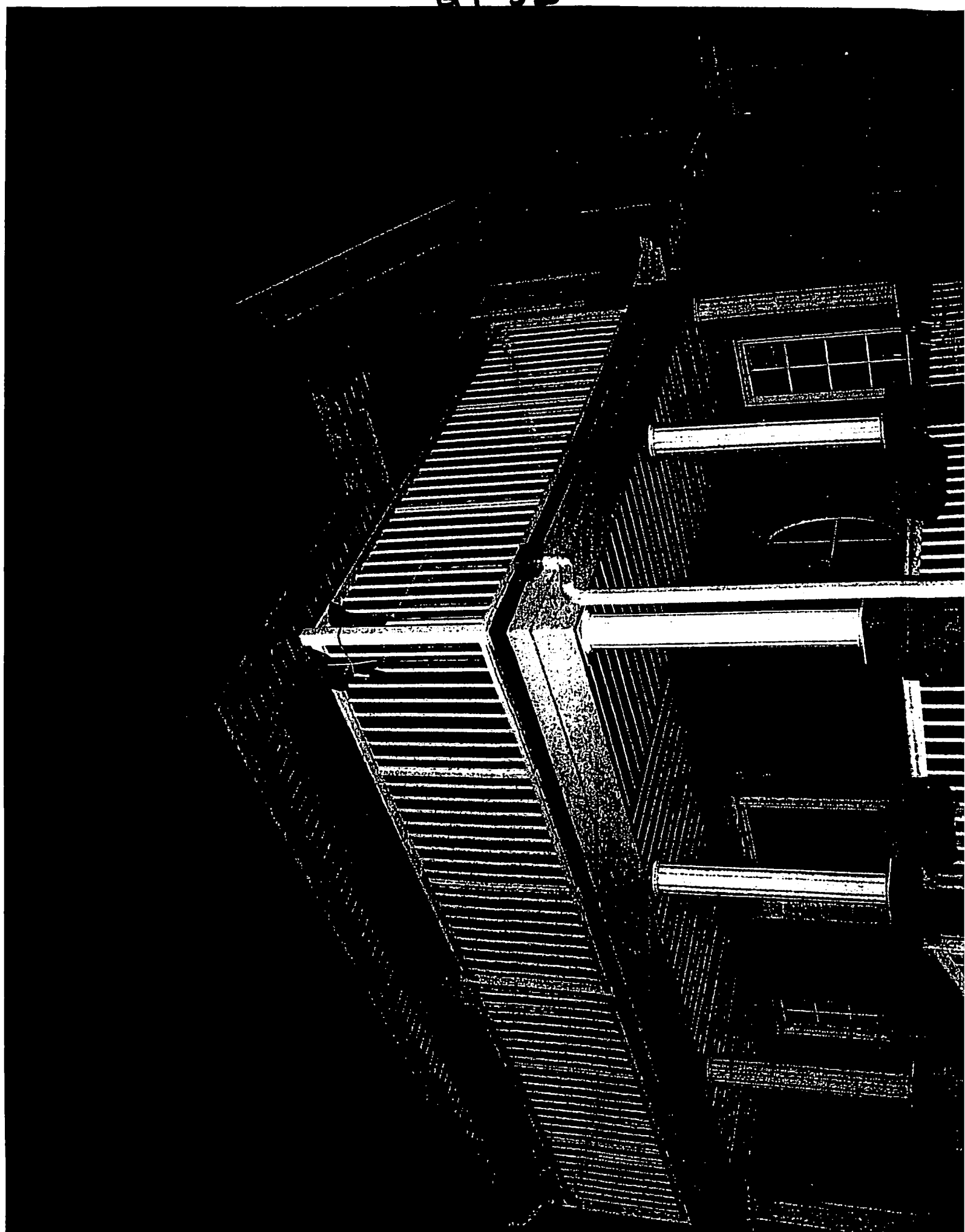
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67-31



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**AERCOUSTICS ENGINEERING LIMITED**

INTERVAL REPORT      LARSON-DAVIS LABORATORIES MODEL 700 SN: B3425  
DATA FROM: DISC12      11/27/2007 5:26:23 PM

**Date 15 NOV Period 01:00 h:m**

**Location: 2nd Floor Balcony facing Hwy 410, Block 12-1, 142 Brussels Avenue, Brampton**

11/27/2007 5:26:23 PM

Date 15 NOV Period 01:00 h:m											Wind		Cale	Cale	Events	Conditions	Traffic Ambient Valid
INT	Date	Time	LVL	SEL	Lmin	Lmax	Lpk	L01	L10	L90	L95	KPH	Noise	Noise			
													20.0	26.0		?	
													20.0	26.0		?	
													20.0	26.0		?	
													20.0	26.0		?	
													20.0	26.0		?	
													20.0	26.0		?	
1	15	NOV 18:00:01	69.0	104.5	56.5	76.0	90.0	73.5	71.0	65.5	65.0	20.0	48.0	32.1		mostly cloudy	yes
2	15	NOV 19:00:01	68.5	104.0	60.5	78.5	97.0	73.5	71.0	65.0	64.5	17.0	43.8	30.7		clear	?
3	15	NOV 20:00:01	67.5	103.0	56.5	74.0	91.0	72.0	70.0	63.0	61.5	32.0	60.0	41.6		mostly cloudy	?
4	15	NOV 21:00:01	66.5	102.5	56.5	77.5	92.0	72.0	69.5	62.0	61.0	32.0	60.0	41.6	Rain	rain showers	?
5	15	NOV 22:00:01	66.5	102.0	48.0	76.5	89.5	72.5	69.5	59.5	57.0	34.0	52.0	35.0		mostly cloudy	yes
6	15	NOV 23:00:01	62.5	100.0	41.0	77.0	88.0	71.0	68.5	58.0	56.0	20.0	48.0	32.1		mostly cloudy	yes
7	15	NOV 24:00:01	62.5	100.0	41.0	77.0	88.0	71.0	68.5	58.0	56.0	20.0	48.0	32.1		mostly cloudy	yes
8	15	NOV 25:00:01	62.5	100.0	41.0	77.0	88.0	71.0	68.5	58.0	56.0	20.0	48.0	32.1		mostly cloudy	yes
9	15	NOV 26:00:01	62.5	100.0	41.0	77.0	88.0	71.0	68.5	58.0	56.0	20.0	48.0	32.1		mostly cloudy	yes
10	15	NOV 27:00:01	62.5	100.0	41.0	77.0	88.0	71.0	68.5	58.0	56.0	20.0	48.0	32.1		mostly cloudy	yes
11	15	NOV 28:00:01	62.5	100.0	41.0	77.0	88.0	71.0	68.5	58.0	56.0	20.0	48.0	32.1		mostly cloudy	yes
12	15	NOV 29:00:01	62.5	100.0	41.0	77.0	88.0	71.0	68.5	58.0	56.0	20.0	48.0	32.1		mostly cloudy	yes
13	15	NOV 30:00:01	62.5	100.0	41.0	77.0	88.0	71.0	68.5	58.0	56.0	20.0	48.0	32.1		mostly cloudy	yes
14	16	NOV 7:00:01	71.5	107.0	59.5	79.5	91.0	75.5	73.5	68.0	67.0	20.0	48.0	32.1		mostly cloudy	yes
15	16	NOV 8:00:01	71.0	106.5	59.0	78.5	91.0	75.5	73.0	67.0	66.0	17.0	43.8	30.7		snow	?
16	16	NOV 9:00:01	71.5	107.0	59.5	77.5	92.0	75.5	73.5	67.5	66.5	17.0	43.8	30.7		snow	?
17	16	NOV 10:00:01	70.5	106.0	58.5	80.0	98.0	76.5	73.0	65.5	64.5	13.0	38.2	29.6		mostly cloudy	yes
18	16	NOV 11:00:01	69.5	105.0	58.0	77.5	89.5	75.5	72.0	64.0	62.5	15.0	41.0	30.2		mostly cloudy	yes
19	16	NOV 12:00:01	69.0	104.5	55.5	81.0	95.0	76.0	71.5	63.0	61.5	13.0	38.2	29.6		mostly cloudy	yes
20	16	NOV 13:00:01	69.0	104.5	54.5	78.5	91.0	75.0	72.0	63.5	62.5	20.0	48.0	32.1		mostly cloudy	yes
21	16	NOV 14:00:01	69.5	105.0	58.5	84.0	102.0	75.0	72.0	65.0	64.0	30.0	58.0	39.3		mostly cloudy	yes
22	16	NOV 15:00:01	70.5	106.0	59.5	83.5	98.0	76.5	73.0	66.0	64.5	28.0	56.0	37.6		mostly cloudy	yes
23	16	NOV 16:00:01	70.0	105.5	61.0	78.0	91.5	75.5	72.5	66.5	65.5	30.0	58.0	39.3		mostly cloudy	yes
24	16	NOV 17:00:01	70.0	105.5	62.5	76.5	89.0	74.5	72.0	66.5	65.5	26.0	54.0	36.4		mostly cloudy	yes
25	16	NOV 18:00:02	69.5	105.0	61.0	74.5	90.0	73.5	71.5	65.5	64.5	20.0	48.0	32.1		mostly cloudy	yes
26	16	NOV 19:00:02	68.0	104.5	59.0	75.5	88.5	73.5	71.5	65.0	64.0	33.0	61.0	42.3		mostly cloudy	?
27	16	NOV 20:00:02	68.0	103.5	57.0	76.0	91.5	73.0	70.5	65.5	61.5	20.0	48.0	32.1		mostly cloudy	yes
28	16	NOV 21:00:02	67.0	102.5	54.5	77.0	90.0	72.0	69.5	61.5	60.5	24.0	52.0	34.0		mostly cloudy	yes
29	16	NOV 22:00:02	66.0	101.5	52.5	75.5	90.5	71.5	69.0	61.5	60.5	35.0	63.0	43.2		mostly cloudy	yes
30	16	NOV 23:00:02	65.0	100.5	50.5	74.5	89.5	70.5	67.5	61.5	60.5	31.0	61.0	41.6		mostly cloudy	yes
31	16	NOV 24:00:02	64.0	99.5	48.5	73.5	88.5	69.5	66.5	61.5	60.5	27.0	59.0	39.3		mostly cloudy	yes
32	16	NOV 25:00:02	63.0	98.5	46.5	72.5	87.5	68.5	65.5	61.5	60.5	23.0	57.0	37.6		mostly cloudy	yes
33	16	NOV 26:00:02	62.0	97.5	44.5	71.5	86.5	67.5	64.5	61.5	60.5	19.0	55.0	35.0		mostly cloudy	yes
34	16	NOV 27:00:02	61.0	96.5	42.5	70.5	85.5	66.5	63.5	61.5	60.5	15.0	53.0	32.1		mostly cloudy	yes
35	16	NOV 28:00:02	60.0	95.5	40.5	69.5	84.5	65.5	62.5	61.5	60.5	11.0	51.0	29.6		mostly cloudy	yes
36	16	NOV 29:00:02	59.0	94.5	38.5	68.5	83.5	64.5	61.5	61.5	60.5	7.0	49.0	27.1		mostly cloudy	yes
37	16	NOV 30:00:02	58.0	93.5	36.5	67.5	82.5	63.5	60.5	61.5	60.5	3.0	47.0	24.6		mostly cloudy	yes
38	17	NOV 7:00:02	68.5	104.0	55.5	76.0	89.0	73.5	71.5	63.0	62.0	0.0	20.0	26.0		cloudy	yes
39	17	NOV 8:00:02	69.5	105.0	56.5	75.0	88.5	74.5	72.0	63.0	63.5	4.0	25.6	27.1		cloudy	yes
40	17	NOV 9:00:02	69.5	105.0	58.0	75.5	89.5	74.0	72.0	63.5	64.5	4.0	25.6	27.1		cloudy	yes
41	17	NOV 10:00:02	69.0	105.0	54.5	76.5	87.5	74.0	71.5	63.0	63.5	0.0	20.0	26.0		cloudy	yes
42	17	NOV 11:00:02	69.5	105.5	57.0	77.0	91.5	74.0	72.0	66.0	65.0	0.0	20.0	26.0		mostly cloudy	yes
43	17	NOV 12:00:02	70.5	106.0	60.5	76.5	87.5	74.0	72.5	66.5	66.0	0.0	20.0	26.0		cloudy	yes
44	17	NOV 13:00:02	70.0	105.5	57.0	75.0	94.0	74.0	72.0	66.5	65.0	0.0	20.0	26.0		cloudy	yes
45	17	NOV 14:00:02	70.0	105.5	60.5	76.0	90.0	73.5	72.0	66.5	65.5	4.0	25.6	27.1		mostly cloudy	yes
46	17	NOV 15:00:02	71.0	106.5	61.0	82.5	94.0	74.5	73.0	67.5	66.5	9.0	32.6	28.5		mostly cloudy	yes
47	17	NOV 16:00:02	71.0	106.5	61.0	77.5	97.5	74.0	73.0	68.0	67.5	11.0	35.4	29.1		mostly cloudy	yes
48	17	NOV 17:00:02	70.5	106.0	62.5	75.0	90.0	74.0	72.0	67.0	66.5	6.0	28.4	27.7		mostly cloudy	yes
49	17	NOV 18:00:03	70.5	106.0	62.0	85.5	94.5	74.5	72.5	67.0	66.0	0.0	20.0	26.0		mostly cloudy	yes
50	17	NOV 19:00:03	69.5	105.0	55.5	73.0	89.0	74.0	72.0	64.5	64.0	0.0	20.0	26.0		mostly cloudy	yes
51	17	NOV 20:00:03	69.0	104.5	56.0	74.0	87.5	73.5	71.5	64.0	63.0	5.0	26.4	27.7		clear	yes
52	17	NOV 21:00:03	69.5	105.0	58.0	74.0	101.0	74.0	71.5	64.0	62.5	7.0	29.8	27.5		clear	yes
53	17	NOV 22:00:03	69.0	105.0	59.0	76.5	89.0	74.5	71.5	63.0	62.0	7.0	32.4	28.5		clear	yes
54	17	NOV 23:00:03	67.0	103.5	58.0	73.0	87.5	73.0	70.0	60.5	60.5	7.0	32.4	28.5		clear	yes
55	17	NOV 24:00:03	67.0	103.5	58.0	73.0	87.5	73.0	70.0	60.5	60.5	7.0	32.4	28.5		clear	yes
56	17	NOV 25:00:03	67.0	103.5	58.0	73.0	87.5	73.0	70.0	60.5	60.5	7.0	32.4	28.5		clear	yes
57	17	NOV 26:00:03	67.0	103.5	58.0	73.0	87.5	73.0	70.0	60.5	60.5	7.0	32.4	28.5		clear	yes
58	17	NOV 27:00:03	67.0	103.5	58.0	73.0	87.5	73.0	70.0	60.5	60.5	7.0	32.4	28.5		clear	yes
59	17	NOV 28:00:03	67.0	103.5	58.0	73.0	87.5	73.0	70.0	60.5	60.5	7.0	32.4	28.5		clear	yes
60	17	NOV 29:00:03	67.0	103.5	58.0	73.0	87.5	73.0	70.0	60.5	60.5	7.0	32.4	28.5		clear	yes
61	17	NOV 30:00:03	67.0	103.5	58.0	73.0	87.5	73.0	70.0	60.5	60.5	7.0	32.4	28.5		clear	yes

67-34

## AERCOUSTICS ENGINEERING LIMITED

INTERVAL REPORT LARSON-DAVIS LABORATORIES MODEL 700 SN: B3425

DATA FROM: DISC12.1

11/27/2007 5:26:23 PM

Date 15 NOV Period 01:00 h:m														Calc	Calc	Events	Conditions	Trafic
Location: 2nd Floor Balcony facing Hwy 410, Block 12-1, 142 Brussels Avenue, Brampton														Max	Min			
INT	Date	Time	LVL	SEL	Lmin	Lmax	Lpk	L01	L10	L90	L95	KPH	Noise	Noise				Valid
62	18 NOV	7:00:03	66.5	102.0	48.0	76.0	88.5	72.5	69.5	60.0	58.5	15.0	41.0	30.2			clear	yes
63	18 NOV	8:00:03	67.5	103.0	50.0	76.5	93.0	72.5	70.5	61.0	59.5	15.0	41.0	30.2			clear	yes
64	18 NOV	9:00:03	69.5	105.5	51.5	75.0	90.5	74.0	72.5	64.5	63.0	13.0	38.2	29.6			clear	yes
65	18 NOV	10:00:03	71.0	106.5	59.0	76.0	90.0	74.5	73.0	67.0	66.0	11.0	35.4	29.1			clear	yes
66	18 NOV	11:00:03	71.0	106.5	61.0	75.0	88.0	74.5	73.0	67.5	66.5	11.0	35.4	29.1			clear	yes
67	18 NOV	12:00:03	71.0	106.5	62.5	77.0	89.0	74.5	73.0	67.5	67.0	11.0	35.4	29.1			clear	yes
68	18 NOV	13:00:03	71.0	106.5	61.0	76.0	88.5	74.5	72.5	68.0	67.0	11.0	35.4	29.1			clear	yes
69	18 NOV	14:00:03	70.5	106.0	61.0	77.0	93.0	74.0	72.5	67.5	66.5	9.0	32.6	28.5			clear	yes
70	18 NOV	15:00:03	70.5	106.0	63.0	75.0	89.5	74.0	72.5	67.0	66.5	13.0	38.2	29.6			clear	yes
71	18 NOV	16:00:03	70.5	106.0	60.0	75.0	92.0	73.5	72.5	67.0	66.0	15.0	41.0	30.2			clear	yes
72	18 NOV	17:00:03	70.5	106.0	61.0	75.5	89.0	73.5	72.0	67.5	66.5	9.0	32.6	28.5			clear	yes
73	18 NOV	18:00:04	70.0	105.5	61.5	77.5	92.0	74.0	72.0	66.5	66.0	9.0	32.6	28.5			clear	yes
74	18 NOV	19:00:04	69.5	105.0	59.5	75.0	93.5	73.5	72.0	66.0	65.0	7.0	29.8	27.9			clear	yes
75	18 NOV	20:00:04	70.0	105.5	60.0	78.0	93.5	74.5	72.5	66.0	65.0	4.0	25.6	27.1			clear	yes
76	18 NOV	21:00:04	69.5	105.0	56.0	79.0	93.0	74.5	72.0	65.0	64.0	9.0	32.6	28.5			clear	yes
77	18 NOV	22:00:04	67.5	103.0	53.0	74.0	86.5	72.5	70.5	62.5	61.5	9.0	32.6	28.5			clear	yes
78	19 NOV	0:00:04	67.5	103.0	51.0	72.5	82.5	71.5	68.5	59.5	58.5	11.0	32.6	28.5			clear	yes
79	19 NOV	1:00:04	67.5	103.0	51.0	72.5	82.5	71.5	68.5	59.5	58.5	11.0	32.6	28.5			clear	yes
80	19 NOV	2:00:04	67.5	103.0	51.0	72.5	82.5	71.5	68.5	59.5	58.5	11.0	32.6	28.5			clear	yes
81	19 NOV	3:00:04	67.5	103.0	51.0	72.5	82.5	71.5	68.5	59.5	58.5	11.0	32.6	28.5			clear	yes
82	19 NOV	4:00:04	67.5	103.0	51.0	72.5	82.5	71.5	68.5	59.5	58.5	11.0	32.6	28.5			clear	yes
83	19 NOV	5:00:04	67.5	103.0	51.0	72.5	82.5	71.5	68.5	59.5	58.5	11.0	32.6	28.5			clear	yes
84	19 NOV	6:00:04	67.5	103.0	51.0	72.5	82.5	71.5	68.5	59.5	58.5	11.0	32.6	28.5			clear	yes
85	19 NOV	7:00:04	73.5	108.5	61.5	80.5	94.0	77.0	75.0	71.0	69.0	6.0	28.4	27.7			cloudy	yes
86	19 NOV	8:00:04	72.5	108.0	63.0	78.0	90.5	76.5	74.5	69.5	68.5	0.0	20.0	26.0			cloudy	yes
87	19 NOV	9:00:04	72.0	107.5	61.5	78.0	95.5	76.0	74.0	68.0	67.0	0.0	20.0	26.0			clear	yes
88	19 NOV	10:00:04	70.0	105.5	58.0	77.0	92.0	75.5	72.5	65.5	64.0	9.0	32.6	28.5			cloudy	yes
89	19 NOV	11:00:04	69.5	105.5	58.5	77.0	90.5	75.0	72.5	65.0	64.0	9.0	32.6	28.5			cloudy	yes
90	19 NOV	12:00:04	69.5	105.0	60.5	76.0	88.5	74.5	72.0	65.0	64.0	11.0	35.4	29.1			cloudy	yes
91	19 NOV	13:00:04	69.5	105.0	60.0	76.0	88.5	74.5	72.0	65.5	64.5	11.0	35.4	29.1			cloudy	yes
92	19 NOV	14:00:04	70.0	105.5	61.0	77.0	88.5	75.5	72.5	66.5	65.5	15.0	41.0	30.2			cloudy	yes
93	19 NOV	15:00:04	70.5	106.0	63.5	80.5	95.0	75.0	72.5	67.5	66.5	13.0	38.2	29.6			cloudy	yes
94	19 NOV	16:00:04	70.5	106.0	63.5	80.0	93.0	75.0	72.5	67.0	66.5	11.0	35.4	29.1			cloudy	yes
95	19 NOV	17:00:04	70.0	106.0	64.0	75.5	91.5	73.5	72.0	67.5	66.5	13.0	38.2	29.6	Rain	rain	?	?
96	19 NOV	18:00:05	69.5	105.0	62.5	75.0	94.5	73.0	71.5	67.0	66.0	15.0	41.0	30.2	Rain	rain	?	?
97	19 NOV	19:00:05	68.5	104.0	60.5	81.0	95.0	72.5	70.5	65.5	65.0	11.0	35.4	29.1	Rain	rain	?	?
98	19 NOV	20:00:05	67.5	103.0	58.0	75.5	90.0	72.0	70.0	64.0	63.0	13.0	41.0	30.2			cloudy	yes
99	19 NOV	21:00:05	67.0	102.5	56.0	74.0	87.5	72.0	69.5	63.5	62.5	13.0	38.2	29.6			cloudy	yes
100	19 NOV	22:00:05	67.0	102.5	51.5	74.0	87.0	72.5	69.5	63.0	61.0	15.0	41.0	30.2			cloudy	yes
101	19 NOV	23:00:05	67.0	102.5	50.5	72.5	85.5	72.0	69.5	62.0	60.5	15.0	41.0	30.2			cloudy	yes
102	20 NOV	0:00:05	67.0	102.5	50.5	72.5	85.5	72.0	69.5	62.0	60.5	15.0	41.0	30.2			cloudy	yes
103	20 NOV	1:00:05	67.0	102.5	50.5	72.5	85.5	72.0	69.5	62.0	60.5	15.0	41.0	30.2			cloudy	yes
104	20 NOV	2:00:05	67.0	102.5	50.5	72.5	85.5	72.0	69.5	62.0	60.5	15.0	41.0	30.2			cloudy	yes
105	20 NOV	3:00:05	67.0	102.5	50.5	72.5	85.5	72.0	69.5	62.0	60.5	15.0	41.0	30.2			cloudy	yes
106	20 NOV	4:00:05	67.0	102.5	50.5	72.5	85.5	72.0	69.5	62.0	60.5	15.0	41.0	30.2			cloudy	yes
107	20 NOV	5:00:05	67.0	102.5	50.5	72.5	85.5	72.0	69.5	62.0	60.5	15.0	41.0	30.2			cloudy	yes
108	20 NOV	6:00:05	67.0	102.5	50.5	72.5	85.5	72.0	69.5	62.0	60.5	15.0	41.0	30.2			cloudy	yes
109	20 NOV	7:00:05	73	108.5	64.5	79.5	92.0	76.5	75.0	70.0	69.5	6.0	28.4	27.7			fog	yes
110	20 NOV	8:00:05	72	107.5	63.5	78.0	92.0	76.0	74.0	69.0	68.5	9.0	32.6	28.5			fog	yes
111	20 NOV	9:00:05	71	106.5	60.5	76.5	90.0	75.5	73.0	67.0	66.0	9.0	32.6	28.5			cloudy	yes
112	20 NOV	10:00:05	69.5	105.0	56.5	78.0	93.0	75.5	72.0	64.0	62.5	20.0	48.0	32.1			cloudy	yes
113	20 NOV	11:00:05	69	104.5	55.5	77.5	90.0	75.0	71.5	63.5	62.5	20.0	48.0	32.1			cloudy	yes
114	20 NOV	12:00:05	69	104.5	54.0	77.5	90.0	75.0	71.5	63.0	61.5	15.0	41.0	30.2			cloudy	yes
115	20 NOV	13:00:05	69	104.5	55.0	77.5	90.5	75.0	71.5	64.5	63.0	13.0	38.2	29.6			cloudy	yes
116	20 NOV	14:00:05	70	106.0	55.0	83.5	97.0	75.5	73.0	65.5	64.5	11.0	35.4	29.1			cloudy	yes
117	20 NOV	15:00:05	72	107.5	63.5	79.0	92.0	76.5	74.0	69.0	68.0	20.0	48.0	32.1			cloudy	yes
118	20 NOV	16:00:05	72	107.5	63.5	77.0	89.5	75.0	73.5	69.0	68.5	17.0	43.8	30.7			cloudy	yes
119	20 NOV	17:00:05	71.5	107.0	65.0	77.5	89.5	74.5	73.0	69.0	68.5	20.0	48.0	32.1			cloudy	yes
120	20 NOV	18:00:06	71	106.5	64.0	78.0	90.0	75.0	72.5	68.0	67.5	6.0	28.4	27.7			cloudy	yes
121	20 NOV	19:00:06	70.5	106.5	62.0	77.0	90.5	74.0	73.0	66.5	66.5	0.0	20.0	26.0			clear	yes
122	20 NOV	20:00:06	69	104.5	59.5	83.5	95.5	74.5	71.0	64.5	63.5	7.0	29.8	27.9			cloudy	yes
123	20 NOV	21:00:06	68	104.5	58.0	74.0	85.5	72.5	70.0	64.5	63.5	0.0	20.0	26.0			cloudy	yes
124	20 NOV	22:00:06	68	104.5	57.0	71.0	81.0	72.0	70.0	63.5	62.5	6.0	28.4	27.7	Rain	rain	?	?
125	20 NOV	23:00:06	68.5	104.5	51.0	74.5	84.5	71.5	68.5	61.5	60.5	15.0	41.0	30.2			cloudy	yes
126	21 NOV	0:00:06	68.5	104.5	51.0	74.5	84.5	71.5	68.5	61.5	60.5	15.0	41.0	30.2			cloudy	yes
127	21 NOV	1:00:06	68.5	104.5	51.0	74.5	84.5	71.5	68.5	61.5	60.5	15.0	41.0	30.2			cloudy	yes
128	21 NOV	2:00:06	68.5	104.5	51.0	74.5	84.5	71.5	68.5	61.5	60.5	15.0	41.0	30.2			cloudy	yes
129	21 NOV	3:00:06	68.5	104.5	51.0	74.5	84.5	71.5	68.5	61.5	60.5	15.0	41.0	30.2			cloudy	yes
130	21 NOV	4:00:06	68.5	104.5	51.0	74.5	84.5	71.5	68.5	61.5	60.5	15.0	41.0	30.2			cloudy	yes
131	21 NOV	5:00:06	68.5	104.5	51.0	74.5	84.5	71.5	68.5	61.5	60.5	15.0	41.0	30.2			cloudy	yes
132	21 NOV	6:00:06	68.5	104.5	51.0	74.5	84.5	71.5	68.5	61.5	60.5	15.0	41.0	30.2			cloudy	yes
133	21 NOV	7:00:06	75	108.5	65.0	77.0	100.5	76.0	74.5	71.0	70.0	11.0	35.4					

67-35

## AERCOUSTICS ENGINEERING LIMITED

INTERVAL REPORT LARSON-DAVIS LABORATORIES MODEL 700 SN: B3425

DATA FROM: DISC12\_1

11/27/2007 5:26:23 PM

Date 15 NOV Period 01:00 h:m														Cale	Cale	Events	Conditions	Traffic
Location: 2nd Floor Balcony facing Hwy 410, Block 12-1, 142 Brussels Avenue, Brampton														Max	Min			
INT	Date	Time	LVL	SEL	Lmin	Lmax	Lpk	L01	L10	L90	L95	KPH	Noise	Noise	Noise	Valid		
134	21 NOV	7:00:06	72.5	108.0	66.0	78.5	101.0	76.0	74.0	70.5	69.5	13.0	38.2	29.6	Rain	rain, fog	?	
135	21 NOV	8:00:06	72	107.5	64.5	78.0	109.5	75.5	73.5	70.0	69.0	13.0	38.2	29.6	Rain	rain, fog	?	
136	21 NOV	9:00:06	72	107.5	59.0	77.5	106.5	75.5	73.5	68.5	68.0	19.0	46.6	31.6	Rain	rain, fog	?	
137	21 NOV	10:00:06	71	106.5	60.5	77.5	102.0	75.5	73.5	67.0	66.0	11.0	35.4	29.1	Rain	rain, fog	?	
138	21 NOV	11:00:06	71	106.5	61.0	79.0	99.0	76.0	73.0	67.0	66.5	17.0	43.8	30.7	Rain	rain, fog	?	
139	21 NOV	12:00:06	71	107.0	61.5	77.0	96.5	75.5	73.5	67.5	66.5	17.0	43.8	30.7	Rain	rain	?	
140	21 NOV	13:00:06	71.5	107.0	61.0	77.0	102.0	75.5	73.5	68.0	67.0	15.0	41.0	30.2	Rain	rain	?	
141	21 NOV	14:00:06	72	107.5	64.0	77.5	105.0	76.0	74.0	69.0	68.5	24.0	52.0	35.0	Rain	rain, fog	?	
142	21 NOV	15:00:06	72	107.5	63.5	78.5	106.0	75.5	73.5	69.0	68.0	24.0	52.0	35.0	Rain	rain, fog	?	
143	21 NOV	16:00:06	72	107.5	65.5	77.5	104.0	75.0	73.5	69.5	69.0	24.0	52.0	35.0	Rain	rain, fog	?	
144	21 NOV	17:00:06	71.5	107.0	64.5	76.0	100.5	75.0	73.0	69.0	68.0	15.0	41.0	30.2	Rain	rain, fog	?	
145	21 NOV	18:00:07	71.5	107.0	64.0	75.5	100.0	74.5	73.0	68.5	68.0	19.0	46.6	31.6	Rain	rain, fog	?	
146	21 NOV	19:00:07	70.5	106.0	63.0	76.5	113.5	74.5	72.5	68.0	67.0	22.0	50.0	33.3	Rain	rain	?	
147	21 NOV	20:00:07	69.5	105.0	61.5	86.0	124.0	74.0	72.0	66.5	65.5	24.0	52.0	35.0	Rain	rain	?	
148	21 NOV	21:00:07	69.5	105.0	61.0	86.5	124.0	74.0	71.5	66.0	65.5	19.0	46.6	31.6	Rain	rain	?	
149	21 NOV	22:00:07	68.5	104.5	57.0	79.0	116.5	74.5	71.0	64.5	64.0	22.0	50.0	33.3	Rain	rain, snow	?	
150	21 NOV	23:00:07	67.5	103.5	58.0	84.0	123.5	74.5	71.0	63.0	62.0	19.0	46.6	31.6	Rain	rain, snow	?	
151	22 NOV	00:00:07	67.5	103.5	58.0	84.0	123.5	74.5	71.0	63.0	62.0	19.0	46.6	31.6	Rain	rain, snow	?	
152	22 NOV	01:00:07	67.5	103.5	58.0	84.0	123.5	74.5	71.0	63.0	62.0	19.0	46.6	31.6	Rain	rain, snow	?	
153	22 NOV	02:00:07	67.5	103.5	58.0	84.0	123.5	74.5	71.0	63.0	62.0	19.0	46.6	31.6	Rain	rain, snow	?	
154	22 NOV	03:00:07	67.5	103.5	58.0	84.0	123.5	74.5	71.0	63.0	62.0	19.0	46.6	31.6	Rain	rain, snow	?	
155	22 NOV	04:00:07	67.5	103.5	58.0	84.0	123.5	74.5	71.0	63.0	62.0	19.0	46.6	31.6	Rain	rain, snow	?	
156	22 NOV	05:00:07	67.5	103.5	58.0	84.0	123.5	74.5	71.0	63.0	62.0	19.0	46.6	31.6	Rain	rain, snow	?	
157	22 NOV	06:00:07	67.5	103.5	58.0	84.0	123.5	74.5	71.0	63.0	62.0	19.0	46.6	31.6	Rain	rain, snow	?	
158	22 NOV	7:00:07	67.5	103.0	58.0	82.5	118.5	75.5	70.0	63.0	62.5	28.0	56.0	37.6	Rain	snow, ice	?	
159	22 NOV	8:00:07	65	100.5	56.5	79.0	106.0	72.0	67.5	60.5	59.5	19.0	46.6	31.6	Rain	snow	?	
160	22 NOV	9:00:07	65	101.0	53.0	75.0	101.5	72.5	68.0	60.5	59.5	39.0	67.0	45.7	Rain	snow	?	
161	22 NOV	10:00:07	66	101.5	55.0	74.5	105.0	71.5	68.5	62.0	61.0	33.0	61.0	42.3	Rain	snow	?	
162	22 NOV	11:00:07	66	102.0	54.0	74.5	103.5	71.5	69.0	62.0	61.0	32.0	60.0	41.6	Rain	snow	?	
163	22 NOV	12:00:07	66	101.5	56.0	74.5	101.5	72.0	68.5	62.0	61.5	32.0	60.0	41.6	Rain	snow	?	
164	22 NOV	13:00:07	67.5	103.0	57.5	77.0	97.0	73.0	70.0	63.0	62.0	33.0	61.0	42.3	Rain	snow	?	
165	22 NOV	14:00:07	67.5	103.0	57.5	77.0	100.0	72.0	69.5	63.5	62.5	24.0	52.0	35.0	Rain	snow	?	
166	22 NOV	15:00:07	67.5	103.0	57.5	75.5	89.0	72.5	70.0	64.0	63.0	22.0	50.0	33.3	Rain	cloudy	yes	
167	22 NOV	16:00:07	67	102.5	54.0	81.0	91.5	73.5	69.0	63.0	62.5	24.0	52.0	35.0	Rain	snow	?	
168	22 NOV	17:00:07	66	101.5	58.5	79.0	93.5	70.5	68.5	62.5	62.0	26.0	54.0	36.4	Rain	snow	?	
169	22 NOV	18:00:08	67	102.5	56.5	72.5	89.5	71.0	69.0	63.5	62.5	20.0	48.0	32.1	Rain	snow	?	
170	22 NOV	19:00:08	66.5	102.0	56.5	78.5	92.0	72.0	69.0	63.5	61.5	20.0	48.0	32.1	Rain	clear	yes	
171	22 NOV	20:00:08	66	101.5	58.0	75.0	89.0	71.0	68.0	62.5	62.0	22.0	50.0	33.3	Rain	clear	yes	
172	22 NOV	21:00:08	66	101.5	51.5	72.5	84.5	70.0	68.0	62.5	61.5	24.0	49.0	32.7	Rain	clear	yes	
173	22 NOV	22:00:08	67	102.0	50.0	72.5	90.0	70.5	68.5	62.5	62.5	17.0	43.8	30.7	Rain	clear	yes	
174	22 NOV	23:00:08	67	102.0	50.0	72.5	90.0	70.5	68.5	62.5	62.5	17.0	43.8	30.7	Rain	clear	yes	
175	23 NOV	00:00:08	67	102.0	50.0	72.5	90.0	70.5	68.5	62.5	62.5	17.0	43.8	30.7	Rain	clear	yes	
176	23 NOV	01:00:08	67	102.0	50.0	72.5	90.0	70.5	68.5	62.5	62.5	17.0	43.8	30.7	Rain	clear	yes	
177	23 NOV	02:00:08	67	102.0	50.0	72.5	90.0	70.5	68.5	62.5	62.5	17.0	43.8	30.7	Rain	clear	yes	
178	23 NOV	03:00:08	67	102.0	50.0	72.5	90.0	70.5	68.5	62.5	62.5	17.0	43.8	30.7	Rain	clear	yes	
179	23 NOV	04:00:08	67	102.0	50.0	72.5	90.0	70.5	68.5	62.5	62.5	17.0	43.8	30.7	Rain	clear	yes	
180	23 NOV	05:00:08	67	102.0	50.0	72.5	90.0	70.5	68.5	62.5	62.5	17.0	43.8	30.7	Rain	clear	yes	
181	23 NOV	06:00:08	67	102.0	50.0	72.5	90.0	70.5	68.5	62.5	62.5	17.0	43.8	30.7	Rain	clear	yes	
182	23 NOV	7:00:08	69.5	105.0	61.5	75.0	92.0	73.0	71.0	67.0	66.5	13.0	38.2	29.6	clear	clear	yes	
183	23 NOV	8:00:08	68.5	104.0	59.5	81.5	98.5	73.5	70.5	65.0	64.5	11.0	35.4	29.1	clear	clear	yes	
184	23 NOV	9:00:08	68	104.0	53.0	75.5	88.0	72.5	70.5	64.0	62.5	13.0	41.0	30.2	clear	clear	yes	
185	23 NOV	10:00:08	68.5	104.0	56.0	80.5	92.0	73.5	71.0	64.0	62.5	17.0	43.8	30.7	clear	clear	yes	
186	23 NOV	11:00:08	69	104.5	51.0	84.0	97.5	75.0	71.5	64.5	63.5	19.0	46.6	31.6	clear	clear	yes	
187	23 NOV	12:00:08	69	104.5	58.0	76.5	89.0	74.5	71.0	65.0	64.5	11.0	35.4	29.1	clear	clear	yes	
188	23 NOV	13:00:08	69	104.5	56.0	76.5	89.0	75.0	71.5	65.5	64.0	9.0	32.6	28.5	clear	clear	yes	
189	23 NOV	14:00:08	70	105.5	60.0	76.5	90.5	74.5	72.0	66.5	66.0	11.0	35.4	29.1	clear	clear	yes	
190	23 NOV	15:00:08	70.5	106.5	63.0	78.5	91.0	75.0	72.5	67.5	67.0	6.0	28.4	27.7	clear	clear	yes	
191	23 NOV	16:00:08	70.5	106.0	64.5	78.5	106.5	75.0	72.5	68.0	67.0	7.0	29.8	27.9	clear	clear	yes	
192	23 NOV	17:00:08	71	106.5	63.0	82.5	102.5	75.0	73.0	68.0	67.0	6.0	28.4	27.7	clear	clear	yes	
193	23 NOV	18:00:09	70.5	106.0	63.5	75.0	90.0	74.0	72.5	67.5	66.5	4.0	25.6	27.1	clear	clear	yes	
194	23 NOV	19:00:09	70	105.5	62.5	75.0	88.0	73.5	72.0	67.0	66.0	0.0	20.0	26.0	clear	clear	yes	
195	23 NOV	20:00:09	69.5	104.0	57.0	75.0	88.0	73.0	70.5	64.0	63.0	4.0	25.6	27.1	clear	clear	yes	
196	23 NOV	21:00:09	67.5	103.0	56.0	76.5	92.5	72.5	70.0	63.5	62.5	4.0	25.6	27.1	clear	clear	yes	
197	23 NOV	22:00:09	67	102.5	55.0	75.5	86.5	71.5	69.5	63.0	61.5	0.0	20.0	26.0	clear	clear	yes	
198	23 NOV	23:00:09	67.5	103.0	53.0	72.5	85.5	71.0	68.5	61.5	60.5	0.0	20.0	26.0	clear	clear	yes	
199	24 NOV	00:00:09	67.5	103.0	53.0	72.5	85.5	71.0	68.5	61.5	60.5	0.0	20.0	26.0	clear	clear	yes	
200	24 NOV	01:00:09	67.5	103.0	53.0	72.5	85.5	71.0	68.5	61.5	60.5	0.0	20.0	26.0	clear	clear	yes	
201	24 NOV	02:00:09	67.5	103.0	53.0	72.5	85.5	71.0	68.5	61.5	60.5	0.0	20.0	26.0	clear	clear	yes	
202	24 NOV	03:00:09	67.5	103.0	53.0	72.5	85.5	71.0	68.5	61.5	60.5	0.0	20.0	26.0	clear	clear	yes	
203	24 NOV	04:00:09	67.5	103.0	53.0	72.5	85.5	71.0	68.5	61.5	60.5	0.0	20.0	26.0	clear	clear	yes	
204	24 NOV	05:00:09	67.5	103.0	53.0	72.5	85.5	71.0	68.5	61.5	60.5	0.0	20.0	26.0	clear	clear	yes	
205	24 NOV	06:00:09	67.5	103.0	53.0	72.5	85.5	71.0	68.5	61.5	60.5	0.0	20.0	26.0	clear	clear	yes	

## Summary of 12-1 Balcony Measurements

	16-Nov-07	17-Nov-07	18-Nov-07	19-Nov-07	20-Nov-07	23-Nov-07	Energy Average
0700-0800	71.5	68.5	66.5	73.5	73.0	69.5	71.1
0800-0900		69.5	67.5	72.5	72.0	68.5	70.4
0900-1000		69.5	69.5	72.0	71.0	68.0	70.2
1000-1100	70.5	69.0	71.0	70.0	69.5	68.5	69.8
1100-1200	69.5	69.5	71.0	69.5	69.0	69.0	69.6
1200-1300	69.0	70.5	71.0	69.5	69.0	69.0	69.7
1300-1400	69.0	70.0	71.0	69.5	69.0	69.0	69.6
1400-1500	69.5	70.0	70.5	70.0	70.0	70.0	70.0
1500-1600	70.5	71.0	70.5	70.5	72.0	70.5	70.9
1600-1700	70.0	71.0	70.5	70.5	72.0	70.5	70.8
1700-1800	70.0	70.5	70.5		71.5	71.0	70.7
1800-1900	69.5	70.5	70.0		71.0	70.5	70.3
1900-2000	69.0	69.5	69.5		70.0	70.0	69.6
2000-2100	68.0	69.0	70.0	67.5	69.0	68.5	68.7
2100-2200	67.0	69.5	69.5	67.0		67.5	68.3
2200-2300	66.0	69.0	67.5	67.0	68.0	67.0	67.5
	69.4	69.8	69.9	70.3	70.6	69.3	69.9
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**AERCOUSTICS ENGINEERING LIMITED**

INTERVAL REPORT    LARSON-DAVIS LABORATORIES MODEL 700 SN: B2187  
DATA FROM: DISC31    11/27/2007 5:50:10 PM

Date 15 Nov Perled 01:00 h:m

**Location:** 2nd Floor balcony facing Hwy 410, Block 31-1, 38 Brussels Street, Brampton

INT Date

Time

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## Notes

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## EVENTS

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## Discussion

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## AERCOUSTICS ENGINEERING LIMITED

INTERVAL REPORT LARSON-DAVIS LABORATORIES MODEL 700 SN: B2187  
 DATA FROM: DISC31\_1 11/27/2007 5:50:10 PM

Date 15 Nov Period 01:00 h:m														Cale	Cale				
Location: 2nd Floor balcony facing Hwy 410, Block 31-1, 38 Brussels Street, Brampton														Wind	Wind	Wind	Events	Conditions	Traffic Ambient
INT	Date	Time	LVL	SEL	Lmin	Lmax	Lpk	L01	L10	L90	L95	KPH	Noise	Noise			Valid		
62	18	NOV 7:00:03	67.5	103.0	49.0	75.5	87.5	73.5	70.5	61.0	59.0	15.0	41.0	30.2		clear	yes		
63	18	NOV 8:00:03	69.0	104.5	52.5	76.0	89.5	74.0	72.0	63.0	61.5	15.0	41.0	30.2		clear	yes		
64	18	NOV 9:00:03	71.0	106.5	59.0	76.5	90.5	75.0	73.0	66.0	64.5	13.0	38.2	29.6		clear	yes		
65	18	NOV 10:00:03	72.0	107.5	58.5	77.0	89.5	75.5	74.0	68.5	67.5	11.0	35.4	29.1		clear	yes		
66	18	NOV 11:00:03	72.0	107.5	62.0	77.5	90.0	76.0	74.0	68.5	67.5	11.0	35.4	29.1		clear	yes		
67	18	NOV 12:00:03	72.0	107.5	63.0	78.5	90.5	75.5	74.0	69.0	68.0	11.0	35.4	29.1		clear	yes		
68	18	NOV 13:00:03	71.5	107.0	64.0	76.5	93.0	75.0	73.5	69.0	68.0	11.0	35.4	29.1		clear	yes		
69	18	NOV 14:00:03	71.5	107.0	62.5	78.5	95.5	74.5	73.5	68.5	67.5	9.0	32.6	28.5		clear	yes		
70	18	NOV 15:00:03	71.0	106.5	62.0	77.5	90.0	75.0	73.0	67.5	67.0	13.0	38.2	29.6		clear	yes		
71	18	NOV 16:00:03	71.0	106.5	61.0	75.5	90.5	74.5	73.0	68.0	67.0	15.0	41.0	30.2		clear	yes		
72	18	NOV 17:00:03	71.0	106.5	62.5	76.0	89.5	74.5	73.0	68.0	67.5	9.0	32.6	28.5		clear	yes		
73	18	NOV 18:00:04	71.0	106.5	61.0	80.0	92.5	75.0	73.0	67.5	66.5	9.0	32.6	28.5		clear	yes		
74	18	NOV 19:00:04	70.5	106.0	59.5	75.5	88.0	74.0	72.5	66.5	65.5	7.0	29.8	27.9		clear	yes		
75	18	NOV 20:00:04	70.5	106.0	58.5	76.0	94.0	74.5	73.0	66.5	65.5	4.0	25.6	27.1		clear	yes		
76	18	NOV 21:00:04	69.5	105.0	57.5	78.5	91.5	74.5	72.0	65.0	64.0	9.0	32.6	28.5		clear	yes		
77	18	NOV 22:00:04	68.0	104.0	55.5	77.5	90.0	73.0	71.0	63.0	62.0	9.0	32.6	28.5		clear	yes		
78	18	NOV 23:00:04	66.5	102.0	48.5	77.0	88.0	72.5	70.5	60.0	59.5	13.0	38.2	29.6		clear	yes		
79	18	NOV 24:00:04	65.0	100.0	46.0	71.5	84.5	68.0	66.5	55.5	55.0	9.0	32.6	28.5		cloudy	yes		
80	18	NOV 25:00:04	64.0	99.0	45.0	70.5	83.0	67.5	66.0	54.5	54.0	7.0	29.8	27.9		cloudy	yes		
81	18	NOV 26:00:04	62.5	96.5	44.0	73.5	87.0	69.5	68.0	57.5	57.0	9.0	32.6	28.5		clear	yes		
82	18	NOV 27:00:04	62.5	96.5	45.0	72.5	88.5	71.0	67.0	60.0	59.0	4.0	25.6	27.1		clear	yes		
83	19	NOV 28:00:04	67.0	102.5	46.0	76.0	90.0	74.0	70.5	64.0	63.5	4.0	25.6	27.1		clear	yes		
84	19	NOV 29:00:04	72.5	108.0	55.0	78.5	91.0	77.0	75.5	67.0	66.5	7.0	29.8	27.9		clear	yes		
85	19	NOV 30:00:04	74.5	110.0	64.0	80.0	95.0	78.0	76.0	71.5	70.5	4.0	25.6	27.1		cloudy	yes		
86	19	NOV 7:00:04	75.0	110.5	67.0	80.0	92.0	78.0	76.5	73.0	72.5	6.0	28.4	27.7		cloudy	yes		
87	19	NOV 8:00:04	74.0	109.5	65.0	79.5	97.0	77.5	75.5	71.0	70.5	0.0	20.0	26.0		cloudy	yes		
88	19	NOV 9:00:04	73.5	109.0	60.0	79.0	92.0	77.5	75.5	70.0	69.0	0.0	20.0	26.0		clear	yes		
89	19	NOV 10:00:04	71.5	107.0	57.5	78.5	93.0	77.0	74.0	66.5	65.5	9.0	32.6	28.5		cloudy	yes		
90	19	NOV 11:00:04	71.0	106.5	57.5	78.0	90.5	76.0	73.5	66.0	65.0	9.0	32.6	28.5		cloudy	yes		
91	19	NOV 12:00:04	70.5	106.5	61.0	78.5	90.0	76.0	73.0	66.5	65.0	11.0	35.4	29.1		cloudy	yes		
92	19	NOV 13:00:04	71.0	106.5	60.0	77.5	89.5	76.0	73.5	67.0	66.0	11.0	35.4	29.1		cloudy	yes		
93	19	NOV 14:00:04	71.0	107.0	62.0	78.5	91.0	76.0	73.5	67.5	66.5	15.0	41.0	30.2		cloudy	yes		
94	19	NOV 15:00:04	71.5	107.0	64.0	77.5	90.5	75.5	73.5	68.5	67.5	13.0	38.2	29.6		cloudy	yes		
95	19	NOV 16:00:04	71.5	107.0	60.5	79.5	92.5	76.5	73.5	68.5	68.0	11.0	35.4	29.1		cloudy	yes		
96	19	NOV 17:00:04	71.5	107.0	64.5	76.5	92.5	75.0	73.5	68.5	68.0	13.0	38.2	29.6		Rain	rain		
97	19	NOV 18:00:05	70.5	106.0	62.5	77.5	93.5	74.0	72.5	68.0	67.0	15.0	41.0	30.2		Rain	rain		
98	19	NOV 19:00:05	70.0	105.5	60.5	75.5	91.0	73.5	72.0	66.5	66.0	11.0	35.4	29.1		Rain	rain		
99	19	NOV 20:00:05	69.0	104.5	59.0	75.5	87.5	73.0	71.0	63.0	62.0	13.0	38.2	29.6		cloudy	yes		
100	19	NOV 21:00:05	68.5	104.0	57.5	77.5	89.0	73.0	71.0	64.5	63.5	13.0	38.2	29.6		cloudy	yes		
101	19	NOV 22:00:05	68.5	104.0	55.5	78.0	90.0	73.5	71.0	63.5	62.0	13.0	38.2	29.6		cloudy	yes		
102	19	NOV 23:00:05	65.5	101.0	49.5	78.0	90.0	71.0	68.5	60.5	59.0	11.0	35.4	29.1		cloudy	yes		
103	20	NOV 24:00:05	65.5	101.0	48.5	78.0	90.0	71.0	68.5	60.5	59.0	11.0	35.4	29.1		Rain	rain		
104	20	NOV 25:00:05	67.5	103.0	51.5	78.0	90.0	73.5	71.0	64.5	63.5	11.0	35.4	29.1		Rain	rain		
105	20	NOV 26:00:05	67.5	103.0	51.5	78.0	90.0	73.5	71.0	64.5	63.5	11.0	35.4	29.1		Rain	rain		
106	20	NOV 27:00:05	67.5	103.0	51.5	78.0	90.0	73.5	71.0	64.5	63.5	11.0	35.4	29.1		Rain	rain		
107	20	NOV 28:00:05	68.5	104.0	59.0	78.5	90.0	74.0	71.5	65.5	64.5	13.0	38.2	29.6		Rain	rain		
108	20	NOV 29:00:05	72.5	108.0	64.5	77.5	91.5	76.5	74.0	67.5	66.5	13.0	38.2	29.6		Rain	rain		
109	20	NOV 30:00:05	73.5	109.5	64.5	79.0	92.0	77.0	75.0	71.0	70.0	13.0	38.2	29.6		Rain	rain		
110	20	NOV 7:00:05	74	109.5	66.0	79.5	91.0	77.0	75.5	71.5	71.0	6.0	28.4	27.7		fog	yes		
111	20	NOV 8:00:05	73	108.5	64.0	79.0	91.0	77.0	74.5	70.5	69.5	9.0	32.6	28.5		fog	yes		
112	20	NOV 9:00:05	72	107.5	60.0	77.5	91.0	76.0	74.0	68.0	67.5	9.0	32.6	28.5		cloudy	yes		
113	20	NOV 10:00:05	70.5	106.5	56.5	79.0	93.0	76.5	73.0	66.0	64.5	20.0	48.0	32.1		cloudy	yes		
114	20	NOV 11:00:05	70.5	106.0	53.5	79.0	91.0	76.5	73.0	65.5	64.5	20.0	48.0	32.1		cloudy	yes		
115	20	NOV 12:00:05	70.5	106.0	57.0	79.5	91.5	76.5	73.5	65.0	64.0	15.0	41.0	30.2		cloudy	yes		
116	20	NOV 13:00:05	71	106.5	59.5	79.0	91.5	76.0	73.0	66.5	65.5	13.0	38.2	29.6		cloudy	yes		
117	20	NOV 14:00:05	71	107.0	61.0	80.0	90.5	76.0	73.5	67.0	66.0	11.0	35.4	29.1		cloudy	yes		
118	20	NOV 15:00:05	72.5	108.0	64.5	79.5	92.5	76.5	74.5	69.5	68.5	20.0	48.0	32.1		cloudy	yes		
119	20	NOV 16:00:05	72.5	108.0	65.0	77.0	91.5	75.5	74.5	69.5	69.0	17.0	43.8	30.7		cloudy	yes		
120	20	NOV 17:00:05	72	107.5	65.0	78.0	89.5	75.5	74.0	69.5	68.5	20.0	48.0	32.1		cloudy	yes		
121	20	NOV 18:00:06	71.5	107.0	62.5	77.5	90.5	75.5	73.5	68.5	67.5	6.0	28.4	27.7		cloudy	yes		
122	20	NOV 19:00:06	70.5	106.0	62.5	76.5	90.0	75.0	72.5	67.0	66.0	0.0	20.0	26.0		clear	yes		
123	20	NOV 20:00:06	69.5	105.0	61.0	77.5	90.5	75.0	72.0	65.5	64.5	7.0	29.8	27.9		cloudy	yes		
124	20	NOV 21:00:06	69.5	104.5	55.0	79.0	102.0	71.0	71.5	65.0	63.5	0.0	20.0	26.0		cloudy	yes		
125	20	NOV 22:00:06	69.5	104.0	58.0	76.5	91.0	75.5	71.0	64.0	63.0	6.0	28.4	27.7		Rain	rain		
126	20	NOV 23:00:06	66.5	102.0	52.5	71.0	88.0	71.5	69.0	62.0	61.0	4.0	25.6	27.1		Rain	rain		
127	21	NOV 24:00:06	64.5	100.0	51.0	74.0	104.0												

**AERCOUSTICS ENGINEERING LIMITED**

INTERVAL REPORT    LARSON-DAVIS LABORATORIES MODEL 700 SN: B2187  
DATA FROM: DISC 11    11/27/2007 5:50:10 PM

Date: 15 Nov Period: 01:00 h:m										Calc		Calc		Events	Conditions	Traffic Ambient Valid
Location: 2nd floor balcony facing Hwy 410, Block 31-1, 38 Brussels Street, Brampton										Wind	Max	Min	Wind			
INT	Date	Time	LVL	SEL	Lmin	Lmax	Lpk	L01	L10	L90	L95	KPH	Noise	Noise		
134	21	NOV 7:00:06	74	109.5	68.0	78.5	101.5	77.0	75.5	72.0	71.5	13.0	38.2	29.6	Rain	rain, fog ?
135	21	NOV 8:00:06	73.5	109.0	67.5	78.5	109.5	76.5	75.0	71.5	70.5	13.0	38.2	29.6	Rain	rain, fog ?
136	21	NOV 9:00:06	73.5	109.0	63.0	80.0	103.0	77.0	75.5	70.5	69.5	19.0	46.6	31.6	Rain	rain, fog ?
137	21	NOV 10:00:06	72.5	108.0	56.0	79.0	107.0	76.5	75.0	68.5	67.5	11.0	35.4	29.1	Rain	rain, fog ?
138	21	NOV 11:00:06	72.5	108.0	62.5	81.5	97.5	77.5	74.5	68.5	67.5	17.0	43.8	30.7	Rain	rain, fog ?
139	21	NOV 12:00:06	72	108.0	62.0	78.0	101.0	76.0	74.5	69.0	68.0	17.0	43.8	30.7	Rain	rain ?
140	21	NOV 13:00:06	72	107.5	60.5	77.0	103.5	76.0	74.0	69.0	68.0	15.0	41.0	30.2	Rain	rain ?
141	21	NOV 14:00:06	72.5	108.0	65.0	78.0	107.0	76.5	74.5	69.5	69.0	24.0	52.0	35.0	Rain	rain, fog ?
142	21	NOV 15:00:06	72.5	108.0	65.5	77.5	106.0	76.0	74.0	70.0	69.0	24.0	52.0	35.0	Rain	rain, fog ?
143	21	NOV 16:00:06	72.5	108.0	65.5	78.0	107.0	76.0	74.5	70.0	69.0	24.0	52.0	35.0	Rain	rain, fog ?
144	21	NOV 17:00:06	72	107.5	66.0	76.0	102.0	75.0	73.5	69.5	69.0	15.0	41.0	30.2	Rain	rain, fog ?
145	21	NOV 18:00:07	72	107.5	64.5	83.5	100.0	75.5	73.5	69.5	69.0	19.0	46.6	31.6	Rain	rain, fog ?
146	21	NOV 19:00:07	71	107.0	64.0	77.0	116.5	75.0	73.0	68.5	67.5	22.0	50.0	33.3	Rain	rain ?
147	21	NOV 20:00:07	70	105.5	60.5	77.0	118.0	74.0	72.0	67.0	66.0	24.0	52.0	35.0	Rain	rain ?
148	21	NOV 21:00:07	70	105.5	62.0	77.0	116.5	74.0	72.0	66.5	66.0	19.0	46.6	31.6	Rain	rain ?
149	21	NOV 22:00:07	69	104.5	56.0	81.0	117.5	74.5	71.5	65.0	64.0	22.0	50.0	33.3	Rain	rain, snow ?
150	22	NOV 23:00:07	67	102.5	56.5	79.5	119.0	71.5	69.5	63.0	62.0	19.0	46.6	31.6	Rain	rain, fog ?
151	22	NOV 24:00:07	65	99.0	55.5	75.5	116.0	70.0	66.5	57.0	55.5	20.0	48.0	32.0	Rain	rain, fog ?
152	22	NOV 25:00:07	64	97.5	54.0	73.5	117.0	69.0	65.0	56.0	54.5	24.0	52.0	35.0	Rain	rain, fog ?
153	22	NOV 26:00:07	63	96.0	53.5	72.0	118.0	68.0	64.0	55.0	54.0	22.0	50.0	33.3	Rain	rain, fog ?
154	22	NOV 27:00:07	62	97.5	54.0	71.0	104.5	69.0	65.0	54.5	54.0	24.0	52.0	35.0	Rain	rain, fog ?
155	22	NOV 28:00:07	61	96.0	53.0	70.0	121.5	72.0	68.0	58.5	58.0	22.0	50.0	33.3	Rain	rain, fog ?
156	22	NOV 29:00:07	60	95.0	52.0	69.0	120.5	71.0	67.0	64.5	63.5	24.0	52.0	35.0	Rain	rain ?
157	22	NOV 30:00:07	59	94.0	51.5	68.0	119.5	70.5	66.5	63.5	62.5	24.0	52.0	35.0	Rain	rain, fog ?
158	22	NOV 7:00:07	65.5	101.0	58.0	75.5	108.5	72.5	67.5	62.0	61.5	28.0	56.0	37.6	Rain	snow, ice ?
159	22	NOV 8:00:07	64.5	100.5	55.0	80.5	101.0	71.0	67.0	60.5	59.5	19.0	46.6	31.6	Rain	snow ?
160	22	NOV 9:00:07	64.5	100.5	56.0	77.0	96.0	71.5	67.0	60.5	60.0	39.0	67.0	45.7	Rain	snow ?
161	22	NOV 10:00:07	65.5	101.5	55.0	73.5	98.5	71.0	68.5	61.5	60.0	33.0	61.0	42.3	Rain	snow ?
162	22	NOV 11:00:07	65.5	101.0	55.0	74.0	97.5	71.0	68.0	61.0	60.0	32.0	60.0	41.6	Rain	snow ?
163	22	NOV 12:00:07	66	101.5	54.0	78.0	102.0	72.0	68.5	62.0	61.0	32.0	60.0	41.6	Rain	snow ?
164	22	NOV 13:00:07	67	103.0	54.5	76.0	93.0	73.5	70.0	63.0	62.0	33.0	61.0	42.3	Rain	snow ?
165	22	NOV 14:00:07	67.5	103.0	56.5	77.0	91.0	71.5	69.5	64.0	63.0	24.0	52.0	35.0	Rain	snow ?
166	22	NOV 15:00:07	68	103.5	59.5	75.0	90.0	72.0	70.0	64.5	63.0	22.0	50.0	33.3	Rain	cloudy yes
167	22	NOV 16:00:07	67.5	103.0	60.0	84.0	93.5	72.5	69.5	64.0	63.0	24.0	52.0	35.0	Rain	snow ?
168	22	NOV 17:00:07	66.5	102.5	60.0	78.0	91.0	72.5	68.5	63.0	62.5	26.0	54.0	36.4	Rain	snow ?
169	22	NOV 18:00:08	67	102.5	57.0	72.0	88.5	70.5	69.0	64.0	63.5	20.0	48.0	32.1	Rain	snow ?
170	22	NOV 19:00:08	66.5	102.5	54.0	77.0	94.5	72.0	69.0	63.0	62.0	20.0	48.0	32.1	Rain	clear yes
171	22	NOV 20:00:08	66	101.5	57.0	72.0	77.5	70.5	68.0	62.5	62.0	22.0	50.0	33.3	Rain	clear yes
172	22	NOV 21:00:08	66	101.5	57.0	71.5	94.5	70.0	68.0	62.5	62.0	20.0	48.0	32.1	Rain	clear yes
173	22	NOV 22:00:08	65	100	54.0	75.0	92.0	70.5	67.5	60.5	59.5	17.0	43.8	30.7	Rain	clear yes
174	22	NOV 23:00:08	63	98.0	49.0	71.0	87.0	69.5	66.0	59.0	57.5	17.0	43.8	30.7	Rain	clear yes
175	22	NOV 24:00:08	62	97.5	46.0	71.0	86.0	70.0	67.0	60.0	59.0	15.0	41.0	30.2	Rain	clear yes
176	22	NOV 25:00:08	59	94.0	42.5	71.5	85.0	68.0	65.0	58.5	57.5	17.0	43.8	30.7	Rain	clear yes
177	22	NOV 26:00:08	59	94.0	39.5	72.0	85.5	68.5	65.0	58.5	57.5	17.0	43.8	30.7	Rain	clear yes
178	22	NOV 27:00:08	59	94.0	38.5	72.0	85.5	68.5	65.0	58.5	57.5	17.0	43.8	30.7	Rain	clear yes
179	22	NOV 28:00:08	59	94.0	38.5	72.0	85.5	68.5	65.0	58.5	57.5	17.0	43.8	30.7	Rain	clear yes
180	22	NOV 29:00:08	59	94.0	38.5	72.0	85.5	68.5	65.0	58.5	57.5	17.0	43.8	30.7	Rain	clear yes
181	22	NOV 30:00:08	59	94.0	38.5	72.0	85.5	68.5	65.0	58.5	57.5	17.0	43.8	30.7	Rain	clear yes
182	23	NOV 7:00:08	69.5	105.0	64.5	76.5	89.5	72.5	70.5	67.5	67.0	13.0	38.2	29.6	clear	yes
183	23	NOV 8:00:08	69	104.5	60.0	77.5	95.0	73.0	71.0	66.5	65.5	11.0	35.4	29.1	clear	yes
184	23	NOV 9:00:08	68.5	104.0	56.5	73.5	86.5	72.0	70.5	64.5	63.5	15.0	41.0	30.2	clear	yes
185	23	NOV 10:00:08	68.5	104.0	58.0	79.5	92.0	73.0	71.0	64.5	63.5	17.0	43.8	30.7	clear	yes
186	23	NOV 11:00:08	68.5	104.0	56.0	75.5	87.0	73.5	70.5	64.5	63.5	19.0	46.6	31.6	clear	yes
187	23	NOV 12:00:08	68.5	104.0	59.0	77.0	90.0	73.5	70.5	65.5	64.5	11.0	35.4	29.1	clear	yes
188	23	NOV 13:00:08	69	104.5	59.5	76.0	90.0	74.0	71.0	65.5	65.0	9.0	32.6	28.5	clear	yes
189	23	NOV 14:00:08	69.5	105.0	61.0	76.0	89.5	74.0	71.5	66.5	66.0	11.0	35.4	29.1	clear	yes
190	23	NOV 15:00:08	70	105.5	62.5	76.5	89.5	74.5	72.0	67.5	67.0	6.0	28.4	27.7	clear	yes
191	23	NOV 16:00:08	70	105.5	64.0	76.0	90.0	74.0	71.5	67.5	67.0	7.0	29.8	27.9	clear	yes
192	23	NOV 17:00:08	70	106.0	61.5	79.0	94.0	74.0	72.0	67.5	67.0	6.0	28.4	27.7	clear	yes
193	23	NOV 18:00:09	70	105.5	63.0	75.5	88.5	73.5	72.0	67.5	66.5	4.0	25.6	27.1	clear	yes
194	23	NOV 19:00:09	69.5	105.0	63.0	74.0	89.0	72.5	71.0	66.5	66.0	0.0	20.0	26.0	clear	yes
195	23	NOV 20:00:09	68	103.5	59.5	75.5	91.5	72.0	70.0	64.5	63.5	4.0	25.6	27.1	clear	yes
196	23	NOV 21:00:09	67	102.5	58.0	75.0	94.5	71.0	69.0	63.5	63.0	4.0	25.6	27.1	clear	yes
197	23	NOV 22:00:09	66.5	102.5	57.0	72.5	87.0	70.5	68.0	63.0	62.0	0.0	20.0	26.0	clear	yes
198	23	NOV 23:00:09	66.5	101.5	53.0	71.0	83.5	70.0	68.5	61.5	60.5	0.0	20.0	26.0	clear	yes
199	24	NOV 1:00:09	67.5	99.5	52.0	70.5	82.5	64.5	66.5	60.5	59.0	0.0	20.0	26.0	clear	yes
200	24	NOV 2:00:09	68	98.5	47.0	71.0	83.5	68.5	67.0	57.0	55.0	0.0	20.0	26.0	clear	yes
201	24	NOV 3:00:09	60.5	96.0	46.0	68.5	81.5	66.5	63.5	54.0	51.5	0.0	20.0	26.0	clear	yes
202	24	NOV 4:00:09	60	95.5	45.0	71.5	82.0	67.0	63.5	51.5	49.0	4.0	25.6	27.1	cloudy	yes
203	24	NOV 5:00:09	60.5	96.0	45.5	70.5	82.5	67.5	64.5	51.0	49.5	0.0	20.0	26.0	cloudy	yes
204	24	NOV 6:00:09	63	98.5	47.0	73.0	86.5	68.5	66.0	55.0	52.5	0.0	20.0	26.0	cloudy	yes
205	24	NOV 7:00:09	65	100.5	52.0	73.5	85.0	70.0	67.5	60.5	59.0	4.0	25.6	27.1	cloudy	yes
206	24	NOV 7:00:09	66.5	102.0	54.5	71.5	84.0	71.0	69.0	62.5	61.0	7.0	29.8	27.9	cloudy	yes
207	24	NOV 8:00:09	68	103.5	56.0	72.5	85.5	71.5	70.0	64.5	63.5	11.0	35.4	29.1	cloudy	yes
208	24	NOV 9:00:09	68	103.5	58.5	73	85	72	70	65	64	13.0	38.2	29.6	cloudy	yes
209	24	NOV 10:00:09	68	103.5	61	73	85	71.5	70	65	64.5	9.0	32.6	28.5	cloudy	yes
210	24	NOV 11:00:09	66.5	102	57	75.5	91.5	70.5	68.5	63.5	63	13.0	38.2	29.6	cloudy	yes
211	24	NOV 12:00:09	67	102.5	58.5	75.5	90.5	71.5	68.5	64	63.5	20.0	48.0	32.1	cloudy	yes
212	24	NOV 13:00:09</														

## Summary of 31-1 Balcony measurements

	16-Nov-07	17-Nov-07	18-Nov-07	19-Nov-07	20-Nov-07	23-Nov-07	Energy Average
0700-0800	72.5	70.0	67.5	75.0	74.0	69.5	72.2
0800-0900		71.0	69.0	74.0	73.0	69.0	71.7
0900-1000		71.5	71.0	73.5	72.0	68.5	71.6
1000-1100	72.0	71.5	72.0	71.5	70.5	68.5	71.2
1100-1200	70.5	71.5	72.0	71.0	70.5	68.5	70.8
1200-1300	70.0	71.5	72.0	70.5	70.5	68.5	70.6
1300-1400	70.0	71.0	71.5	71.0	71.0	69.0	70.7
1400-1500	70.5	71.5	71.5	71.0	71.0	69.5	70.9
1500-1600	71.5	72.0	71.0	71.5	72.5	70.0	71.5
1600-1700	71.5	71.5	71.0	71.5	72.5	70.0	71.4
1700-1800	71.0	71.0	71.0		72.0	70.0	71.0
1800-1900	70.5	71.5	71.0		71.5	70.0	70.9
1900-2000	70.0	70.5	70.5		70.5	69.5	70.2
2000-2100	69.0	69.5	70.5	69.0	69.5	68.0	69.3
2100-2200	68.0	69.5	69.5	68.5		67.0	68.6
2200-2300	67.0	69.5	68.0	68.5	69.0	66.5	68.2
	70.5	71.0	70.7	71.7	71.5	69.0	70.8
							dBA Overall Daytime Energy Average

	16-Nov-07	17-Nov-07	18-Nov-07	19-Nov-07	23-Nov-07	24-Nov-07	Energy Averages
2300-2400	63.5	64.5	68.5	66.5	63.5	66.0	65.8
0000-0100		62.5	67.0	63.0	62.0	64.0	64.1
0100-0200		61.0	65.5	60.5	59.5	63.0	62.5
0200-0300	59.5	62.0	64.5	61.0	59.0	60.5	61.5
0300-0400	61.5	61.0	62.5	62.5	59.0	60.0	61.3
0400-0500	55.0	63.0	62.0	67.0	62.5	60.5	62.9
0500-0600	68.5	66.5	64.5	72.5	67.5	63.0	68.2
0600-0700	72.5	69.0	67.0	74.5	70.0	65.0	70.8
	66.9	64.6	65.7	68.9	64.7	63.2	66.1
							dBA Overall Nighttime Energy Average



## Unit 12-1: Predicted Ultimate Noise outside living room window daytime and outside bedroom window nighttime

STAMSON 5.0 SUMMARY REPORT Date: 03-12-2007 14:50:52  
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 12\_lwin.te Time Period: Day/Night 16/8 hours

### Road data, segment # 1: Hwy 410 S.B. (day/night)

Car traffic volume : 48902/24448 veh/TimePeriod \*  
Medium truck volume : 1630/815 veh/TimePeriod \*  
Heavy truck volume : 3804/1901 veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 81500  
Percentage of Annual Growth : 0.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.00  
Heavy Truck % of Total Volume : 7.00  
Day (16 hrs) % of Total Volume : 66.67

### Data for Segment # 1: Hwy 410 S.B. (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface: 1 (Absorptive ground surface)  
Receiver source distance : 68.72 / 68.72 m  
Receiver height : 1.50 / 4.50 m  
Topography: 1 (Flat/gentle slope; no barrier)

### Road data, segment # 2: Hwy 410 N.B. (day/night)

Car traffic volume : 48902/24448 veh/TimePeriod \*  
Medium truck volume : 1630/815 veh/TimePeriod \*  
Heavy truck volume : 3804/1901 veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 81500  
Percentage of Annual Growth : 0.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.00  
Heavy Truck % of Total Volume : 7.00  
Day (16 hrs) % of Total Volume : 66.67

### Data for Segment # 2: Hwy 410 N.B. (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface: 1 (Absorptive ground surface)  
Receiver source distance : 84.77 / 84.77 m  
Receiver height : 1.50 / 4.50 m  
Topography: 1 (Flat/gentle slope; no barrier)

### Result summary (day)

	! source !	Road	Total
	! height !	Leq	Leq
	! (m) !	(dBA)	(dBA)
1.Hwy 410 S.B.	! 1.63 !	68.17 !	68.17
2.Hwy 410 N.B.	! 1.63 !	66.66 !	66.66
Total			70.49 dBA

### Result summary (night)

	! source !	Road	Total
	! height !	Leq	Leq
	! (m) !	(dBA)	(dBA)
1.Hwy 410 S.B.	! 1.63 !	68.92 !	68.92
2.Hwy 410 N.B.	! 1.63 !	67.49 !	67.49
Total			71.27 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.49  
(NIGHT): 71.27

# 67-42

## Unit 31-1: Predicted Ultimate Noise outside living room window daytime and outside bedroom window night

STAMSON 5.0 SUMMARY REPORT Date: 03-12-2007 13:14:39  
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: th31win.te Time Period: Day/Night 16/8 hours

### Road data, segment # 1: Hwy 410 S.B. (day/night)

Car traffic volume : 48902/24448 veh/TimePeriod \*  
Medium truck volume : 1630/815 veh/TimePeriod \*  
Heavy truck volume : 3804/1901 veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 81500  
Percentage of Annual Growth : 0.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.00  
Heavy Truck % of Total Volume : 7.00  
Day (16 hrs) % of Total Volume : 66.67

### Data for Segment # 1: Hwy 410 S.B. (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface: 1 (Absorptive ground surface)  
Receiver source distance : 64.41 / 64.41 m  
Receiver height : 1.50 / 4.50 m  
Topography: 1 (Flat/gentle slope; no barrier)

### Road data, segment # 2: Hwy 410 N.B. (day/night)

Car traffic volume : 48902/24448 veh/TimePeriod \*  
Medium truck volume : 1630/815 veh/TimePeriod \*  
Heavy truck volume : 3804/1901 veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 81500  
Percentage of Annual Growth : 0.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.00  
Heavy Truck % of Total Volume : 7.00  
Day (16 hrs) % of Total Volume : 66.67

### Data for Segment # 2: Hwy 410 N.B. (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface: 1 (Absorptive ground surface)  
Receiver source distance : 84.41 / 84.41 m  
Receiver height : 1.50 / 4.50 m  
Topography: 1 (Flat/gentle slope; no barrier)

### Result summary (day)

	! source !	Road !	Total
	! height !	Leq !	Leq
	! (m) !	! (dBA) !	! (dBA)
1.Hwy 410 S.B.	!	1.63 !	68.63 ! 68.63
2.Hwy 410 N.B.	!	1.63 !	66.69 ! 66.69
Total			70.78 dBA

### Result summary (night)

	! source !	Road !	Total
	! height !	Leq !	Leq
	! (m) !	! (dBA) !	! (dBA)
1.Hwy 410 S.B.	!	1.63 !	69.36 ! 69.36
2.Hwy 410 N.B.	!	1.63 !	67.52 ! 67.52
Total			71.55 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.78  
(NIGHT): 71.55

# 67-43

31-1: Noise predicted @ balcony for 27 Nov 2007, from 18:00 to 19:00

STAMSON 5.0 SUMMARY REPORT Date: 03-12-2007 13:06:33  
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 31winnov.te Time Period: 1 hours

Road data, segment # 1: Hwy 410 S.B.

Car traffic volume : 1881 veh/TimePeriod  
Medium truck volume : 0 veh/TimePeriod  
Heavy truck volume : 3 veh/TimePeriod  
Posted speed limit : 100 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Hwy 410 S.B.

Angle1 Angle2 : -90.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0  
Surface: 1 (Absorptive ground surface)  
Receiver source distance : 64.41 m  
Receiver height : 4.50 m  
Topography: 1 (Flat/gentle slope; no barrier)

Road data, segment # 2: Hwy 410 N.B.

Car traffic volume : 1881 veh/TimePeriod  
Medium truck volume : 0 veh/TimePeriod  
Heavy truck volume : 3 veh/TimePeriod  
Posted speed limit : 100 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Hwy 410 N.B.

Angle1 Angle2 : -90.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0  
Surface: 1 (Absorptive ground surface)  
Receiver source distance : 84.41 m  
Receiver height : 4.50 m  
Topography: 1 (Flat/gentle slope; no barrier)

Result summary

	! source !	Road !	Total
	! height !	Leq !	Leq
	! (m) !	(dBA) !	(dBA)
1.Hwy 410 S.B.	!	0.63 !	62.02 ! 62.02
2.Hwy 410 N.B.	!	0.63 !	60.15 ! 60.15
Total			64.20 dBA

TOTAL Leq FROM ALL SOURCES: 64.20

67-44

FEB 20 2004 15:30 FR MTU - DPHU

416 235 4936 10 94162493613

P.01/01

Data Management and Analysis Office  
Transportation Planning Branch  
Policy, Planning and Standards Division  
Room 338, 3rd Floor, Building "C"  
1291 Wilson Avenue  
Downsview ON M3M 1J8  
Tel: (416) 235-4131 Fax: (416) 235-4836

20 February 2004

Mr. Kevin Smith, P.Eng.  
Aercooustics Engineering Limited  
50 Ronson Dr.  
Suite 127  
Toronto, ON  
M9W 1B3

Dear Mr. Smith:

**Re: Ultimate Traffic Forecast for proposed Highway 410, between Bovaird Drive and Sandalwood Parkway, Town of Brampton**

In response to your letter dated February 20, 2004, please find below the information that you requested and we were able to develop for you.

Ultimate Volumes = 163,000  
Number of Lanes = 6  
Percentage of Trucks = 10%  
Posted Speed = 100 km/ hr

We do not have information on the ratio of heavy trucks to medium trucks.  
If you require further information, please contact me at (416) 235-3993.

Sincerely yours,



Arthur Tai  
Planner  
Data Management and Analysis Office

**Traffic: 1999 Highway 410 E.A. (existing)**

Traffic: 1999 Highway 410 E.A. (existing)														
Road	Section	Speed In km/h	Daily volumes				Hourly Volumes			Percentages				
			AADT	Cars	Medium Trucks	Heavy Trucks	Cars	Medium Trucks	Heavy Trucks	Total	Cars	Medium Trucks	Heavy Trucks	Total
Hwy. 410	South of Bovalrd Dr. (1988 AADT)	100	78,000	70,200	2,340	5,480	2,925	98	228	3,250	90%	3%	7%	100%
Bovalrd Dr.	East of Hwy. 410	80	37,900	34,110	1,516	2,274	1,421	63	95	1,578	90%	4%	6%	100%
Bovalrd Dr.	West of Hwy. 410	80	37,900	32,973	1,895	3,032	1,374	79	128	1,578	87%	5%	8%	100%
Traffic: 2009 Highway 410 E.A. (future 'do nothing')														

Traffic: 2009 Highway 410 E.A. (future 'do nothing')	3,332	1,374	79
--	-------	-------	----

Traffic: 2009 Highway 410 E.A. (future 'do nothing')														
		Speed In km/h	Daily volumes				Hourly Volumes				Percentages			
Road	Section		AADT	Cars	Medium Trucks	Heavy Trucks	Cars	Medium Trucks	Heavy Trucks	Total	Cars	Medium Trucks	Heavy Trucks	Total
Hwy. 410	South of Bovaird Dr.	100	84,900	85,410	2,847	6,643	3,559	119	277	3,954	90%	3%	7%	100%
Bovaird Dr.	East of Hwy. 410	80	44,100	39,690	1,764	2,646	1,654	74	110	1,838	90%	4%	6%	100%
Bovaird Dr.	West of Hwy. 410	80	48,700	42,368	2,435	3,896	1,765	101	162	2,029	87%	5%	8%	100%
Traffic: 2011 Highway 410 E.A. (future With Hwy. 410)														

	1,000	101
<b>Traffic: 2011 Highway 410 E.A. (future With Hwy. 410)</b>		

Traffic: 2011 Highway 410 E.A. (future With Hwy. 410)														
Speed In km/h			Daily volumes				Hourly Volumes				Percentages			
			AADT	Cars	Medium Trucks	Heavy Trucks	Cars	Medium Trucks	Heavy Trucks	Total	Cars	Medium Trucks	Heavy Trucks	Total
Hwy. 410	South of Bovaird Dr.	100	95,400	85,880	2,882	6,678	3,578	119	278	3,975	90%	3%	7%	100%
Hwy. 410	Bovaird Dr. to Sandilewood Pkwy.	100	53,200	47,880	1,596	3,724	1,995	67	155	2,217	90%	3%	7%	100%
Hwy. 410	Sandilewood Pkwy. to Mayfield Rd.	100	37,900	34,110	1,137	2,653	1,421	47	111	1,579	90%	3%	7%	100%
Hwy. 410	Mayfield Rd. to Old Hwy. 10	80	28,700	24,030	801	1,869	1,001	33	78	1,113	90%	3%	7%	100%
Bovaird Dr.	East of Hwy. 410	80	47,900	43,110	1,916	2,874	1,796	80	120	1,986	90%	4%	6%	100%
Bovaird Dr.	West of Hwy. 410	80	58,300	50,670	2,252	3,378	2,111	94	141	2,346	90%	4%	6%	100%

67-46



# Planning, Design & Development Department

John A. Marshall, MCP, MCIP, RPP  
Commissioner, Planning, Design & Development

2 Wellington Street West, Brampton, Ontario L6Y 4R2

City of Brampton

March 31, 2004

Aerocoustics Engineering Ltd.  
50 Ronson Drive, Suite 127  
Toronto, Ontario  
M9W 1B3

Attention: Kevin Smith

Re: Traffic Forecasts  
For proposed subdivision Chinguacousy Farms Ltd.  
Noise Impact Study  
NO5NOIS

Further to your request for information, the table below summarizes the traffic data for ultimate conditions on the specified sections of Sandalwood Parkway, Great Lakes Drive and Heart Lake Road:

	ROW Width (m)	Posted Speed (km/h)	Projected Number of Lanes	Projected Volume (AADT)	Assumed % Trucks (med/heavy)
Sandalwood Parkway West of Hwy 410 to Heartlake Road	45	60	6	40000	5-10%
Sandalwood Parkway East of Hwy 410	45	60	6	40000	5-10%
Great Lakes Drive South of Sandalwood Parkway	30	50	4	17000	3%
Heart Lake Road South of Sandalwood Parkway	30	60	4	28000 (after Hwy 410 ext.)	3-5%

Ultimate traffic forecasts for the Hwy 410 ramps should be obtained from the M.T.O.

If you have any further questions or concerns, please contact the undersigned.

Sincerely,

**RANJIT REHSI**

Transportation Planning Assistant

Tel: (905) 874-2548 Fax: (905) 874-2599

Email: [ranjit.rehsi@city.brampton.on.ca](mailto:ranjit.rehsi@city.brampton.on.ca)

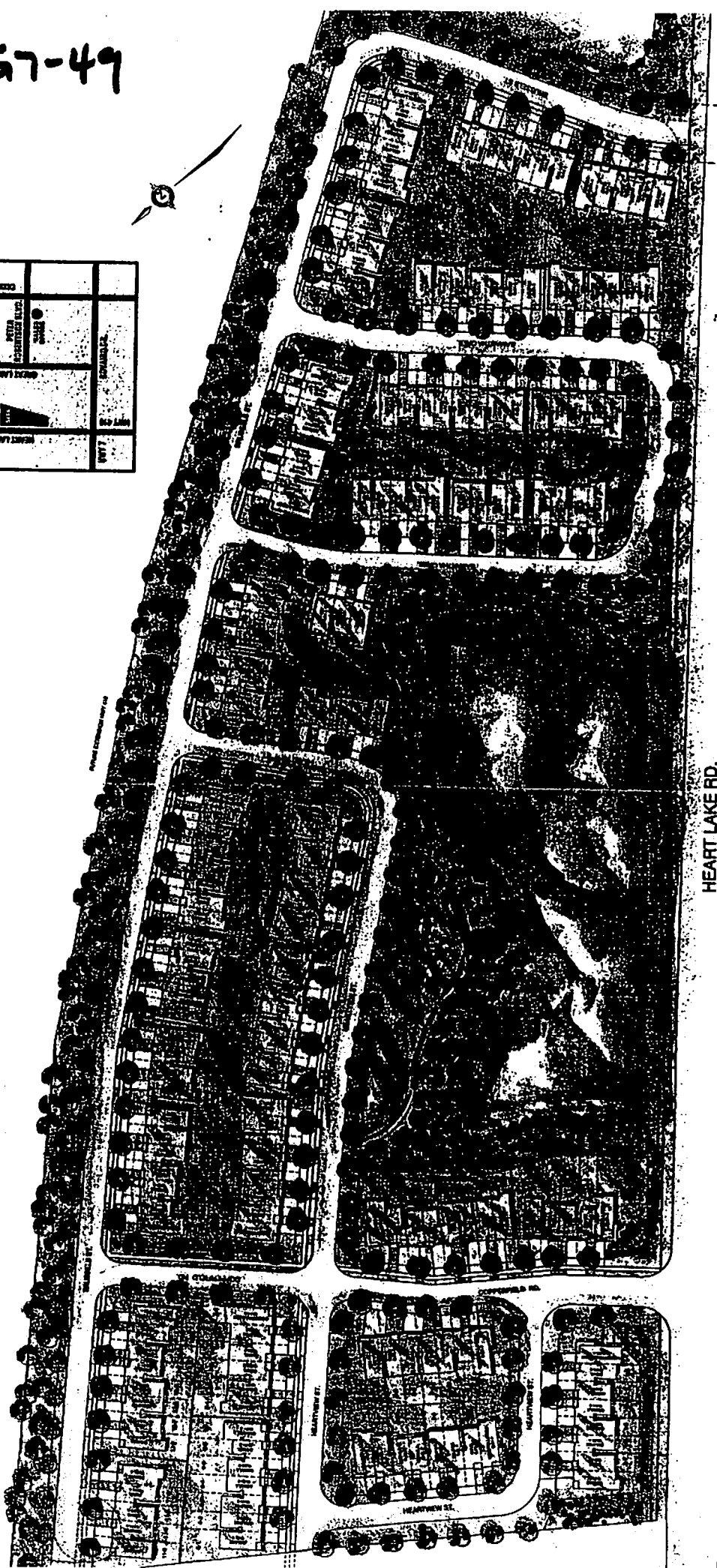
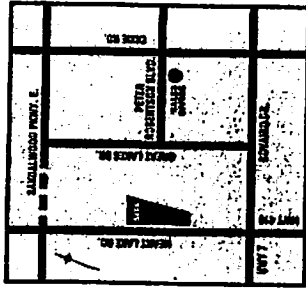
/rr

**Appendix 5: Community Information Map &  
Senator Home's Conceptual Plan**





67-49



HEART LAKE RD.



DISCOVERED

SENATOR  
H O M E S

**67-50**

**Appendix 6: Discovery Homeowners'  
Association Submission to  
Committee of Council,  
January 21, 2009**

## Discovery Home Association



*Date: Jan 21, 2009*

### Introduction

## Overview

- **Current Situation**
  - Unbearable Noise
  - Extra trees planted
  - Doors replaced
- **Pictures worth a thousand words**
- **Proposed Solutions**
  - Noise attenuating wall
  - Reduce speed limit
  - No trucks on 410 north of Bovaird
  - Raise burn
- **Next Steps**
  - How do we work together ?

Current Situation	<h2>Current Situation</h2> <ul style="list-style-type: none"> <li>• <b>Noise from 410 expansion</b> <ul style="list-style-type: none"> <li>– <b>Concrete versus Asphalt</b></li> </ul> </li> <li>• <b>Reducing our 'livable space'</b> <ul style="list-style-type: none"> <li>– <b>Rooms facing the 410 are not 'livable'</b></li> </ul> </li> <li>• <b>Health issues</b> <ul style="list-style-type: none"> <li>– <b>Lack of sleep</b></li> </ul> </li> <li>• <b>Safety issues</b> <ul style="list-style-type: none"> <li>– <b>Numerous cases of people running across the highway to Trinity Common</b></li> <li>– <b>Kids playing near chain fence</b></li> </ul> </li> </ul>
	3

Current Situation	<h2>Current Situation....continued</h2> <ul style="list-style-type: none"> <li>• <b>City planted more trees on burn</b> <ul style="list-style-type: none"> <li>– <b>No improvement</b></li> </ul> </li> <li>• <b>Replaced balcony doors on homes facing 410</b> <ul style="list-style-type: none"> <li>– <b>No improvement</b></li> </ul> </li> <li>• <b>World Health Organization (WHO) acceptable internal noise level is significantly less than the City of Brampton</b> <ul style="list-style-type: none"> <li>– <b>WHO bedroom noise for 8 hours sleep is an average of 30 dB(A)</b></li> </ul> </li> </ul>
	4

*Pictures*

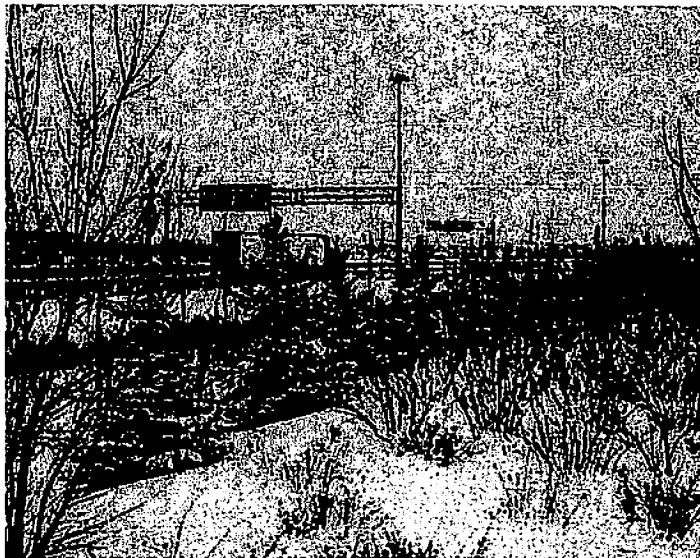
Pictures



5

*Pictures*

Pictures

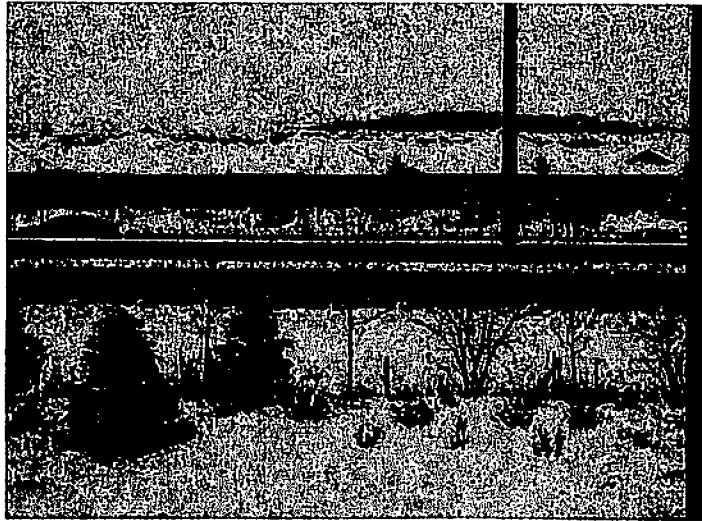


6

67-54

*Pictures*

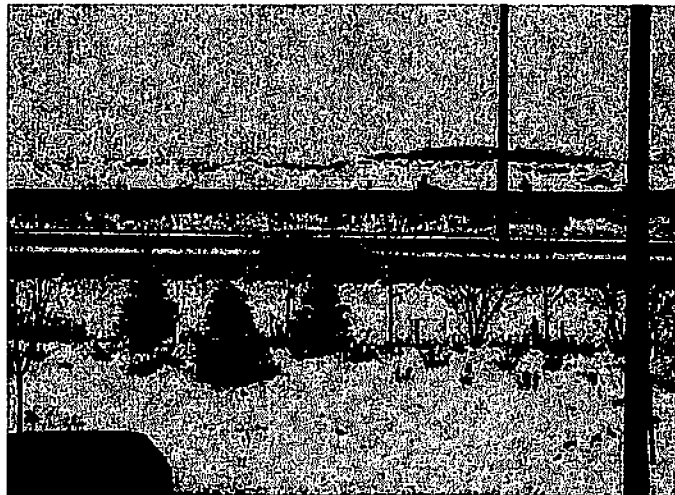
Pictures



7

*Pictures*

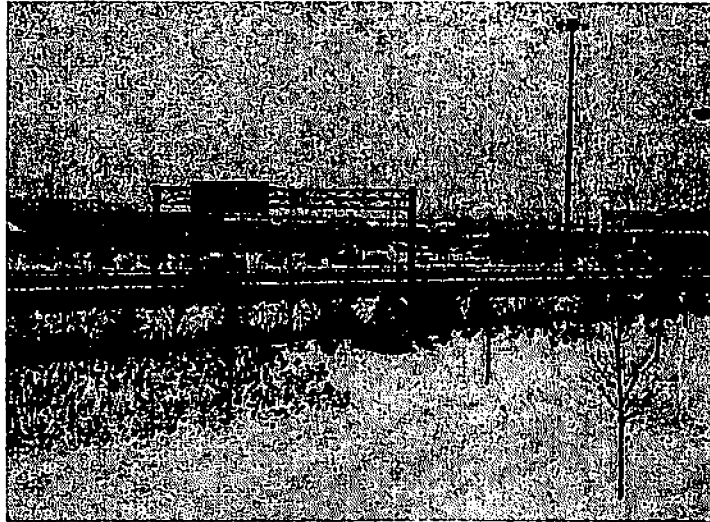
Pictures



8

## Pictures

Pictures



9

## Proposed Solutions

Solutions

- **Noise Attenuating Wall**
  - Reduce noise
  - Keep neighbourhood safe
  - City Engineers recommended a 20 ft wall
- **Reduce speed limit on 410**
  - Reduced speed will reduce noise
- **No trucks on 410 north of Bovaird**
- **Raise berm with added vegetation**
  - Can act like a Noise Attenuating wall

10

### *Next Steps*

- *How do we work together?*
- *Timeline?*
- *Discovery Home Association will work with City for a solution*
- **Contact:**  
*Discovery Home Association*  
*discovery\_association@rogers.com*  
*Sameer Subedar 289.242.2122*  
*Tariq Sheikh 905.495.4147*  
*Balram Pandey 416.728.9484*

Next Steps



**67-57**

## **Appendix 7: Chronology of Discovery Phase III**

2000 January 14		Proposed Draft Plan of Subdivision and application to amend the OP and Zoning By-Law
2004 May 4	OMB	Draft Approved
2005 February 28		Final Community Information Map Approved
2005 April 25		Noise Report Approved
2005 June 30	COB	Registered
2007 May 16	Mr. Subedar Sameer 142 Brussels Ave.	Contact MPP Linda Jeffery regarding noise & safety concern prior to 410 open
2007 Sep/ Oct		410 extension open
2007 October 25	Mr. Subedar Sameer	Re-address concern to MPP Linda Jeffery
2007 October 25	Councillor John Sprovieri	Request engineering department to investigate
2007 October 30	Daniel Tang	Review original noise report and provide findings
2007 Nov/Dec	Michael Won	Request noise measurement from Senator Homes
2008 January 21	Aercoustics / Senator Homes	Provide findings all units meet MOE indoor noise criteria, except units with upgraded French door. Committed to upgrade the deficiency
2008 Spring?	Senator Homes	Perform upgrade to units with deficiency
2008 June 20	Michael Won	Meet with residents, solution the resident accept, upgraded tree planting
2008 Nov 14	Aercoustics	Send in documentation for assumption
2009 Jan 21	Mr. Subedar Sameer	Presentation to the Committee of council on behalf of the Discovery Home Association