

**From:** Andrew Maas [mailto:gmgr@hlyvr.com]  
**Sent:** August 23, 2010 12:45 PM  
**To:** Brownlee, David  
**Cc:** 'Mick Richardson'  
**Subject:** BMW Wind Turbine - Noise Report

To Development Permit Panel  
Date: AUG. 25, 2010  
Item # 7  
Re: DV 10-535569

Schedule 1 to the Minutes of  
the Development Permit Panel  
meeting held on Wednesday,  
August 25, 2010.

Hi David,

I am writing to you with my concerns in regards to the Wind Turbine at BMW. I am attaching an interesting article from Today's Globe and Mail in regards to Wind Turbines. In the article the Ontario Government states that there is no accepted procedure in measuring noise from wind turbines. There are also comments in the article that relate to health concerns from these turbines from stress and sleep deprivation. I do appreciate the report that you sent to Mick from Kevin McLaren which now seems to be outdated as it is almost 3 years old according to the cover page.

My concern with the turbine being built so close to my hotel is obviously the noise factor along with health problems if that does exist. The window from all of my 01 rooms in the hotel will look on to the potential site of the wind turbine which is something I would rather my guest did not have to look at and also listen to. I am confused as to why BMW would not locate it on a different part of their property as they do seem to have a rather large space to work with and I would think this is something they would want to show off to their customers rather than hide it in the back in view of my customers. I appreciate the report that BMW had done concludes that the noise level will be insignificant from their study although the noise might be significant enough to disturb our guests which in turn might mean next time they come to GVRD that they stay somewhere else and it becomes a loss of revenue for me.

I want to make it clear that a green alternative to power is wonderful but in my opinion would be best suited on a different part of the BMW lot where it has no potential to affect my business.

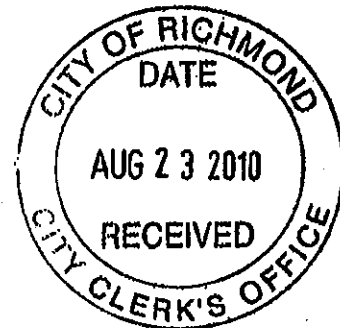
I want to make sure my comments are given to the appropriate people before a decision is made to go ahead with this project. I look forward to your reply.

Regards,

Andrew

**Andrew Maas**

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GLOBE & MAIL,  
August 23, 2010

## **NOISE DETECTIVES ON THE PROWL**

Richard Blackwell

\*Includes clarification Published on Monday, Aug. 23, 2010 6:58AM EDT Last updated on Tuesday, Aug. 24, 2010 7:30PM EDT

A small Toronto company that designed the acoustics of many of Canada's premier concert halls is now figuring out the best way to measure noise from wind turbines, a project that will have major implications for the country's burgeoning wind power industry.

**Aercoustics Engineering Ltd.**, a 30-employee acoustical consulting firm, created the rich sounds of some of the classiest theatres in Canada – the new Four Seasons opera house and the Royal Conservatory of Music concert hall in Toronto, and Vancouver's Queen Elizabeth Theatre, among many others.

Now Aercoustics has won a contract from the Ontario government to develop techniques for measuring the audible noise from wind turbines, and will deliver the results to the province this fall. There is no accepted procedure anywhere for measuring noise from turbines, Ontario officials say, so Aercoustics' report could help set standards across the country and internationally.

But the company is wading into what has become a controversial issue as wind farms sprout across Ontario and the rest of the country. While Ontario long ago set guidelines for the amount of noise turbines are allowed to emit, it has never had a consistent, formal method of measuring that noise.

That has infuriated wind farm opponents. "These wind developments that are now in existence have gone forward without this kind of knowledge," said Beth Harrington, a spokeswoman for the Society for Wind Vigilance. "It's one of those cases of the cart before the horse."

Critics say the noise and vibrations from turbines can cause a variety of health problems – including stress and sleep deprivation – for those who live nearby. With more than 2,000 turbines already built across Canada and thousands more planned, increasing numbers of people will be exposed to the noise.

Many wind developers dismiss worries about turbines' possible effect on health, saying there is no evidence of such a link.

Aercoustics' executives are careful not to take sides in the debate. "[We're] coming at it from an engineering point of view, [so] it's got to be objective," said John O'Keefe, a principal of Aercoustics and one of the company's five shareholders. The idea is to be able to determine "cold hard facts, measured consistently."

In addition to its work with concert halls, Aercoustics has established itself as an innovator in industrial and environmental work. It designed a rubber isolation system that keeps residents of a condo building

constructed directly over Toronto's Bloor subway line from feeling any vibration from the trains below. And it has helped companies ranging from ethanol producers to gravel quarries mitigate their sound problems.

Mr. O'Keefe noted that just because no one has yet made a convincing scientific case for the link between turbine noise and health, that doesn't mean one doesn't exist. "What we have to do as engineers is to keep an open mind," Mr. O'Keefe said.

Essentially, Aercoustics will recommend to the government how best to measure turbine sounds: what kind of measuring equipment to use, where to place the sensors and at what height, and how to filter out the buffeting from the wind.

Mr. O'Keefe said the techniques will allow a consistent "apples to apples" comparison of wind turbine noise at different sites, so the government can see if developers are complying with the rules and investigate noise complaints.

One key issue, said Aercoustics principal Vince Gambino, is to differentiate the sound of a turbine from the background noise of the wind. "There's some difficulty in sorting out what component of the sound is from the wind and what component is from the turbine itself," he said. Aercoustics is developing sophisticated analysis software that can help sort that out.

Most complaints about turbine noise come when wind speeds are low to moderate – below about 25 kilometres an hour, Mr. Gambino said. As wind speeds increase, turbines move faster and produce more noise, but that noise is partly masked by the wind.

Aercoustics already has some experience with wind projects – it helped investigate complaints about noise coming off wind turbines at the Kingsbridge wind farm built by Epcor Utilities Inc. on the shores of Lake Huron. The company's measurements pinpointed the issue as a malfunctioning gearbox on some of the turbines, and Epcor was able to fix the problem.

Mr. O'Keefe noted that in the 1950s and 1960s, designers thought they had figured out exactly how to create perfect concert hall acoustics, but many of those venues ended up with poor-quality sound. Much more has been learned since then about concert acoustics, and that technology has vastly improved newer facilities.

"It could be the same thing here [with turbines noise]," he said, with new technology giving a better picture of exactly how sound is emitted. "We have to keep an objective, open mind."