APPENDIX B

From the desk of

Dave de Sylva

MEMO

To: Scott Heaslip/ Val Shuttleworth

From: Dave de Sylva

Subject: EMNPH/ Energy Measures- formerly MICAH

Date: April 18th, 2008

Scott/Val,

By now you have seen an e-mail to Christine Pacini regarding Scott's comment on the new "green direction" that the Town is attempting. We applaud this move. We, however caution against any thoughts to require LEED enrollment. It will not happen on any of our projects in Markham. LEED is a good idea, but it is process oriented. Both of you may have heard my thoughts about processing in our business and we do not need another one.

Having said that, I would like to outline the details of why this project will be a model for other developments to follow in the field of energy and the environment.

A. Energy Conservation

1. ICF Construction - the entire building from footing to parapet is built using Insulated Concrete Form technology. This provides a wall sandwich superior to any other in the industry in energy savings and STC's. The energy loss is reduced by as much as 50% and with ICF dividing each unit as well, noise transmission is never a concern.

2. Roof Insulation - Typical roof insulation is R20. EnerBuild means at least R60 or better, thereby arresting virtually any energy loss through the roof(most susceptible interface area). No energy loss.

3. ICF Basement - DelRidge is under appeal to the Building Code Commission on an application to eliminate all Natural Gas unit heaters which the Town of Markham Building Department is

requiring to be installed. DelRidge have completed a 2 year monitoring experiment on eliminating unit heaters in basement garages, by disconnecting heaters completely and monitoring the average, minimum and maximum ambient temperatures. The result is conclusive proof that they are not needed in ICF basements as the thermal mass of the basement and ground energy maintain an acceptable average ambient temperature of 16-19 degrees C. This is more than enough to protect services, and eliminates the wasteful use of natural gas and the resultant carbon emissions.

4. Energy Saving Windows - using Low E3 panes to reduce energy loss.

5. Motion Sensored Lighting - garage lighting has a primary and secondary system. The later engages when motion is detected in or around a stall, and prevents wasting light. The same system takes place in the hallways.

6. LED and CFL Lighting - Most of the lighting uses LED or CFL systems. Such lighting uses between 70% to 90% less energy for lighting.

7. Solar Parking Lot Lighting - state of the art Solar LED light standards requiring no underground cabling or any electrical usage at all. Battery bases provide up to a 9 day supply. These units are currently used by the US armed forces.

8. Dual Flush toilets - thereby using less water than normal American toilets and adding new meaning to the term #1 & #2. (standard in Australia and NewZ).

9. Low Flow shower heads, energy saving appliances, and insulated water piping.

10. Water Reservoir - storm sewers which are already used as storage facilities will have a "first-step" overflow facility underground to be used for any formal landscape irrigation.

11. Turf Reduction - less grass areas mean less grass cutting meaning less pollution. More mulched shrubbery with less maintenance.

B. Energy Generation

While conservation is usually the easiest and cheapest, Enerbuild includes 3 different types of clean energy generation.

1. Geo-thermal - all DelRidge Enerbuild projects are heated and cooled using modern geo-thermal technology. DelRidge is proud to have been the first large scale residential condo builder to pay the price for geo-thermally heating and cooling over 100 units on one project. Geothermal technology fits extremely well with the ICF building technology in all Enerbuild 7000 projects. Current technology projects an efficiency of 4.3 for every kwh of electrical energy required for operation. Enerbuild 7000 units are expected to use between 20-35% of normal energy amounts. Geo-thermal uses no direct fossil fuels and thereby greatly contributes to carbon emission reduction. Geo-thermal heating of garage ramps is standard, as is make-up air required for the hallways. Geo-thermal technology is the fastest growing and cleanest renewable heating and cooling option available on the planet.

2. Solar Energy - through Enerbuild 7000, DelRidge will be erecting a 50KW Solar grid on top of the building. Since no HVAC units will be needed, the entire roof surface will be available for this use. DelRidge along with Arise Technologies, a Canadian manufacturer of advanced "thin cell" polycrystalline solar modules will provide this at no cost to the EMNPH Corporation. Arise and DelRidge are currently building other solar arrays outside of Markham but within the GTA. Arise is a public company currently building a $100M solar production facility in Germany and hopes to ship new modules to DelRidge sites within the year.

   The entire solar array will be fed directly to the Markham grid under Ontario program and the building itself will be receiving the revenues based on production at a provincial rate of $0.42/kwh while purchasing back from the grid at a rate of about $0.10/kwh. At peak times, this project will not have to pay for as much as 210kw of power, or alternately, they will be generating clean renewable energy for other users benefit.

   Although frozen for 20 years, carbon credits flowing from the grid-feeding array will be available to the building at the end of the 20 years. These credits will become valuable long before the expiry of the mandated period, and provide extra value for this "affordable"

project.

3. Wind Energy - DelRidge through Enerbuild 7000 will be installing at least 2 - 3kw HAWT generators per floor on the roof of this building. At a peak capacity of 6 kw per floor, each floor will have it's own battery bank to store this clean energy to power up the common lighting. By way of example, the typical total lighting demands are about 390w or 0.39hwh. This is subject to the fluctuations of motion generated use. 3KW HAWT generators are ideally situated on the top of this building as they can take advantage of prevailing and valley uplift air currents.

Other Items

1. All parking lots and driveways will be built using recycled aggregate despite the fact that the Town still has no policy on it's use in municipal roads.

2. The overall shape and size of the project maximizes the floor area to energy interface area. This ratio is about 4 times that of single family buildings which can be categorized as one of the most inefficient types of building when it comes to energy loss/sf of space produced. This ratio goes down as the move to point towers goes up. Many of the DelRidge buildings built to date use little energy owing to this and the Enerbuild 7000 standard.

I have taken the liberty of forwarding this to all councillors for their comment We are almost completed our working drawings for the project, and intend to start shortly. If the Town is thinking of requiring LEED enrollment, we need to know now. In fact we would like to know by the end of the month if the Town is taking any other position other than approval for all these innovative measures. I would be pleased to answer any questions that any councillor or staff member has. DelRidge is committed to any new idea that can improve on the standards that **we** set forth.

Regards

Dave de Sylva P. Eng.