



Tenth  
Anniversary



# IN THE LOOP

The latest news and updates from the Ontario Geothermal Association

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## Fleming College offers geothermal college certificate

Ontario will be among the leaders in the geothermal world beginning in January, when Fleming College starts classes in Lindsay for one the first college certificate programs of its kind on Geothermal Systems.

Fleming expects continuing interest in the new program from the burgeoning geothermal industry in Canada, the US and elsewhere. It has announced that the program is now accepting registrations, and encourages students to apply immediately to ensure your chance to graduate with one of the first ever GES Ontario College Graduate Certificates.

The two-semester program will introduce students to the fundamentals of geothermal energy, the heating and cooling energy loads of buildings, and geothermal resources, including geological formations, groundwater, lakes and rivers. Students also learn the procedures to install loops – grouting techniques and joining the loops to the internal geothermal system.

The first semester of this program will be held at Fleming's Frost Campus in Lindsay, Ontario. It focuses on the specialized drilling skills and knowledge required to install, maintain and repair the loop field of a geothermal system. This includes construction safety, soil analysis, hydrogeology, drilling, trenching, grouting, and pipe installation. Students undertake hands-on lab and field work, using the on-campus drill rigs.

The second semester, hosted at Fleming's Sutherland Campus in Peterborough, provides students with the skills and knowledge needed to design, install, maintain and repair hydronic systems within a building, and connect the system to the loop field. Labs take place in the state-of-the-art Kawartha Trades and Technology Centre, allowing students to gain hands-on experience in the installation and repair of system components, including hydronics, pipes



and electrical. This semester will also introduce students to technologies related to smart home monitoring.

"There has already been a great deal of interest," says David Belsey, Academic Chair at Fleming's Frost Campus. "I've been speaking with potential students and the conversations have been very positive. There is interest in the technical topics and also in the project management side. We've had enquiries from young people and also from mature individuals who are perhaps already in the construction industry and looking for a way to develop their knowledge in the geothermal area. We expect this program to attract interest all the way up the Eastern seaboard, as demand for geothermal continues to accelerate. The industry has been very receptive. Drilling and other equipment is being shipped to us and the level of excitement is high."

Employers and students can find more information on the new program [here](#).



## President's Message

### FLEMING COLLEGE GES CERTIFICATE PROGRAM

The geothermal program at Fleming in Lindsay/Peterborough is a triumph for our organization, our province and our country. It also could not have come a moment too soon. The long hoped for geothermal revolution is now well underway worldwide, with plenty of demand in Canada and the USA for this technology and for qualified professionals. A GES Certificate will become a key credential very quickly.

Congratulations to everyone involved in development of this program, including members of the OGA Board and Education committee, Brian Beatty, David Belsey, Antje Burness, Terri Geerincx, Brett Goodwin, Andrew Gordon, David Hughes, Jason Jackson, Mark Metzner, Trish O'Connor, Mary Overholt, Linda Poirier, Eva Rees, Matt Wiesenfeld, and Steve Wilkinson. Apologies to anyone I've missed.

**A GES Certificate will become a key credential very quickly.**

I encourage everyone in our industry, especially in Eastern Canada and Northeastern United States to recognize the opportunity offered by this first program. Send promising young people for the training, offer professional partnerships to Fleming College, consider developing similar programs elsewhere as demand accelerates.

The importance of quality education and credible credentials in our industry cannot be overstated. Despite the long history of our technology, the current surge in global interest in decarbonization means we are now seen as a 'new industry.' In addition, powerful oil interests still invest heavily every year in misinformation designed to discredit clean energy of any kind. Ensuring we have the skills and successes expected by the public is a critical part of winning that battle.



*Patrick Amorim, Project Coordinator, with the geothermal manifold at The Plant in Toronto's Liberty Village.*

### DEPARTMENT OF ENERGY

New DOE study: At the end of May the U.S. Department of Energy released an analysis showing how the US could benefit from the potential of geothermal energy and geothermal heating and cooling. It mentioned district energy projects and said more than 17,500 geothermal district-heating installations nationwide, and 28 million U.S. households could realize cost-effective heating and cooling solutions through the use of geothermal heat pumps. By extension the Canadian picture could be something on the order of 3 million households. Let's get going.

### GET INVOLVED WITH OGA

We are now looking for speakers and people to help plan our spring conference. Please contact the office if you know someone who has a great geothermal story to tell, or join our conference committee.

Bruce Nagy, our communications director, is now ramping up dissemination of our geothermal customer stories. He will soon ask you to post these on your social media and web sites. Storytelling is a key to industry success. Please help out.

*-Stanley Reitsma President and OGA Chair*

## News & Advocacy

### GOVERNMENT PROGRAMS

The OGA has recently updated the Advocacy section of our web site with more details on this impressive lineup of programs we have been working on with government, including:

1. Market Transformation Roadmap for Energy Efficient Equipment in the Building Sector
2. Substantial new commitments (\$1.01 billion) to the Green Municipal Fund at the Federation of Canadian Municipalities
3. The carbon pricing and rebates of the Pan-Canadian Framework, developed by Canadian and provincial governments
4. Immediate Expensing for Clean Energy Equipment (Canada Revenue Agency)
5. Electric Vehicle and charger incentives
6. A Canada Training Benefit for clean energy technology launching in 2020.
7. Toronto Green Standard and HOME program upgrades

### LONDON SCHOOL GETS GEOTHERMAL

When the useful life began running out for HVAC systems at John Paul II, a 25-year-old school in London, Ontario, it was determined that they should be replaced with modern clean energy, and it should also become a learning opportunity for students.

In what could be the beginning of a trend for about 5,000 elementary and secondary schools in the province, John Paul II is now being refitted with a geothermal heating and cooling system, solar panels, electricity storage batteries and electric car chargers. The geo system is reportedly 50,000 feet of drilled piping. There will be 2,300 solar panels on the roof and carports, an energy microgrid, and an energy storage system.

The federal government is footing about half of the \$9.7 million bill and the school board has been able to finance the balance. The faculty has incorporated information about the system into its curriculum. They say it's a very popular topic with students.



### HUGE EXPANSION IN RICHMOND, BC

When it was built a few years ago the geothermal-based Alexandra district energy system in Richmond, BC was considered large and significant at 3.9 million square feet of residential, commercial, office and institutional space; including 3100 residential units, a Wal-Mart, some other big box stores and a daycare. The system consists of 385 boreholes, each 76m (250') deep, and is now part of the portfolio of the Lulu Island Energy Co. Lulu (municipally-owned entity) recently signed a memorandum of understanding with the Canada Infrastructure Bank that could result in 50 million square feet of heating and cooling from geothermal!

### DANDELION TARGETS RESIDENTIAL AFFORDABILITY

Ryan Carda, Principal Engineer for New York's Dandelion (Google/Alphabet) says the company is developing its own drilling technology that employs a special sonic drill and a methodology to avoid costly casing. With its equipment partner Aeon, it has developed its own heat pump, with an on-board sensor package that includes monitoring of flows on the air side and ground side, power usage, plus refrigeration circuit pressures and temperatures.

The company raised \$16 million in its last financing round and its main strategy in New York is to reduce the total cost of a system, and to offer financing packages. It sells the system outright for \$11,433 after tax credits and rebates. It finances systems over 20 years at about \$135 per month.





## School teachers fight climate breakdown & big bills with geothermal

Vanessa and Michel R. are schoolteachers who live with one daughter near Hamilton, Ontario. Michel teaches high school science and physics and says "I've been telling the class that climate change is a big problem and everything has to go electric and renewable. So I wanted to learn about what it would take for us to go zero emissions in our own lives, in our own house. I was sure that you could be carbon neutral and live a good life. At first I didn't know if geothermal was a practical solution, but then I started looking into it and I think I've become a geothermal expert."

"He lives for sustainability," says Vanessa. "He's in charge of the Ecoteam at school." "It's true," says Michel. "If I have any spare time I spend it on this, it's a huge focus for me. I like to design projects for students based on real world stuff, things that we can actually do. As I became more interested in geothermal I connected with Gaston Minetti at Green Method Energy Systems in Ancaster. He has been so helpful and our home is now a project that I can use for the students."



*Gaston Minetti with Vanessa & Michel R.*

We crunched the numbers and found out pretty quickly that geothermal is by far the best thing you can put into a building. It would give us heating, cooling, hot water... a COP of 4.0 or 4.5 compared to less than 1.0 for our gas furnace."

Their system includes a five ton variable speed WaterFurnace Series 7 heat pump and two geothermal wells in the yard, each about 450 feet deep. The variable speed is the latest improvement. "It's better than two stages which are either 60% speed or 100%," says Michel. "This one has 12 speeds, providing stable, efficient performance. It runs silently at about 41 watts, then ramps up as needed. We save on the cost of our electric water heater and we also replaced a 12 SEER air conditioning unit. The geothermal is four times more efficient than that. Our AC bill was about \$40 for the whole summer."

"Climate change is the most pressing issue of our time. And it's also a quality of lifestyle choice," says Vanessa. We love our 21st century digital life, especially if it can be grounded in nature. Geothermal is from Pachamama." Vanessa's ancestry is Peruvian. 'Pachamama' means 'Mother Earth' "It's like getting a big hug from Mother Earth."

### PROJECT INFORMATION

#### Customer

**Vanessa & Michel R., green school teachers**

#### Project

**Family home (and science class case study)  
Hamilton, Ontario**

#### OGA member - Installer

**Gaston Minetti  
Green Method Systems, Ancaster, Ontario**

#### Tech details

**WaterFurnace Series 7 ground source heat pump  
2 x 450 foot boreholes**

#### Financial benefits

**Well ahead of financing interest, AC \$40 year.**

## Participate in our Customer Stories online ramp-up !

Calling all modern entrepreneurs! It's almost 2020. Time to awaken from your slumber and move on from the 1900s. We're ramping up geothermal storytelling on social media, blogs and web sites, and it will only work well if members get involved.

The OGA is now posting your customer stories on OGA, HRAI, and other web sites, Facebook, LinkedIn, Instagram, and Twitter pages. We want you to do the same and we've made it really easy.

We've created a new page on the OGA web site called Customer Stories where you'll find tweets, posts, blogs and articles that you can pick up for your online properties in seconds.

We're adding a couple of new customer stories to this page each month, so you always have fresh content to promote on your sites. Storytelling is critical to our success. Get involved!

*Info: [bruce.nagy@rogers.com](mailto:bruce.nagy@rogers.com)*



### Free E-Newsletter Subscription

Keep up-to-date on changes to the industry. Sign-up for our monthly e-newsletter by e-mailing [office@ontariogeothermal.ca](mailto:office@ontariogeothermal.ca).

### OGA Membership

Take advantage of member benefits such as province and nation-wide recognition on HRAI's online contractor locator, discounted OGA conference rates, exclusive industry deals & HRAI news updates. Learn more [here](#) or get in touch by contacting 1-(800) 267-2231 or [sales@hrai.ca](mailto:sales@hrai.ca).

### New & Current Members

Check out our list of current OGA member companies and brand new member recruits [here](#).

### Board Members

Get to know the OGA Board of Directors [here](#).

### More Information

Contact [office@ontariogeothermal.ca](mailto:office@ontariogeothermal.ca) for more information on the Ontario Geothermal Association.

### Association Partner

