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**SONIC** December 2009

**Sonic Rescue Rigs Complete School Installation**

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While students at Surrey's new Woodward Hill Elementary School score goals on their soccer field, the geothermal grid that lies directly beneath will be quietly heating their school and helping to save the environment.

"Geothermal is a good idea for new schools as well as retrofitting for old schools," said Bill Fitzgerald, general manager of Sonic Drilling Ltd., the Vancouver-based company contracted to rescue the project from some challenging ground conditions.

"A school geothermal grid shouldn't need replacing for 50-70 years and it pays for itself quite quickly...after that, you've got free energy," he says.

But, before the school could take advantage of those savings, first, the system had to be installed – a total of 120 vertical holes, drilled to a depth of 180 ft. each, with pipe running all the way back to the mechanical room in the new school.

TR3 Geological Services, based in Abbotsford, B.C., won the tender to install the grid during the summer of 2009 under what would be the brand new school's all-weather soccer field. Unfortunately, Mother Nature had other plans.

With the field already compacted for the installation of the soccer surface, a rainstorm hit (in an otherwise dry summer on the West Coast) forcing the fines in the soil to vibrate up to the surface and turning the field into a giant, squishy marsh. With the clock ticking on an expected school opening, there was only one way to save the day.

With the ground composition, a conventional drill rig worked the site but spent far too long trying to drill through and install the loops.

"The sonic drills did the work six times as fast," says Rick Saari, president and owner of TR3. The two sonics drilled four to six holes a day and they are the only rigs that could do that in the specified time.

"With the geothermal grid now in place, Saari says "the school will save 30-50 per cent on their heating costs and it could be higher depending on how they built it."

"I know they put in a large heat recovery ventilator which will help the building keep the heat. This is more for the operating cost savings. And the technology is not rocket science. It's been around since the turn of the century," he adds.

**Sonic Drilling (Part 1) - The Early Years 1910-1970**



The concept of sonic drilling technology was born nearly 100 years ago, in 1913, when Romanian civil engineer George Constantinesco wrote a treatise for the British Admiralty called the Theory of Sonics.

In May 1918, the British Admiralty decided to back sonic research by establishing a new research facility, built in England, to meet Constantinesco's specifications.

During the next few years, a number of research projects were developed for wartime use. Unfortunately, when WW I ended, so did sonic research and the facility was dismantled.

In 1930, another Romanian engineer, Dr. Ion Basgan applied sonic vibrations to the drill pipe string of a conventional drilling rig. Amazingly, the result was increased drill depth and speed.

The United States took up the torch of sonic research during the 1940's through the efforts of the Drilling Research Institute (DRI) which included American inventor Albert Bodine, supported by the Shell Oil company.

Eventually, Bodine sold his sonic equipment in the early 1970's to the British aerospace company, Hawker-Siddeley, who assigned the next generation of research to one of its Canadian offices.

**How to Hire a GeoExchange Contractor**



A geoechange installation requires the skill and experience of a certified contractor. When looking for a contractor, ask for references and photos of their previously installed systems. Previous clients will be the best indicator of the quality of work and integrity of the company. Ask the contractor about current projects, similar projects to yours, and the length of time that they have been installing geoechange systems. Confirm that your contractor has a generous portfolio of completed and working jobs to show you.

When hiring a contractor, get two to four estimates/quotes to compare. Each estimate should include:

- Cost of labour, equipment and materials.
- Expected payment schedule.
- Estimated work start and completion dates.
- Warranties or guarantees.
- Homeowner vs. mechanical contractor responsibilities.
- A statement that the mechanical contractor will instruct the homeowner on the operation and maintenance of any equipment and supply an operation manual.
- Confirmation that the contractor will work with an engineer regarding letters of assurance and inspections if the municipality requires it.
- Confirmation that the contractor will hire the drilling company and an estimate of the drilling costs.

When you hire a contractor ask for a written contract. Before you sign:

- Read carefully to make sure all details in the estimate have been included.
- Review all terms and conditions and the fine print.

Do not sign an incomplete contract and do not make a verbal agreement. A contract will help resolve any disputes if the work is unsatisfactory. Most contractors will require a signed contract and a small deposit before work can begin on the home.

*Information provided by GeoExchange BC*

