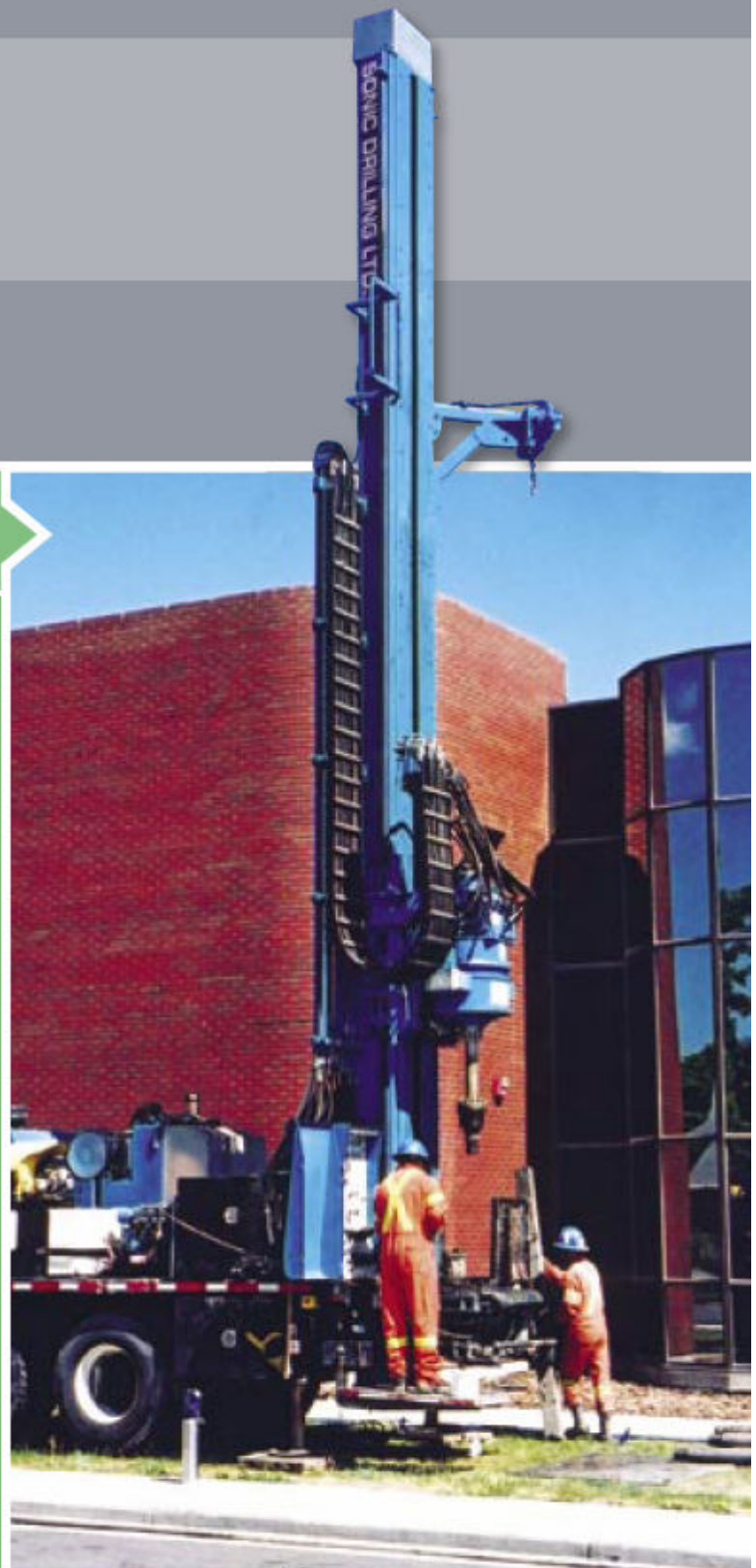


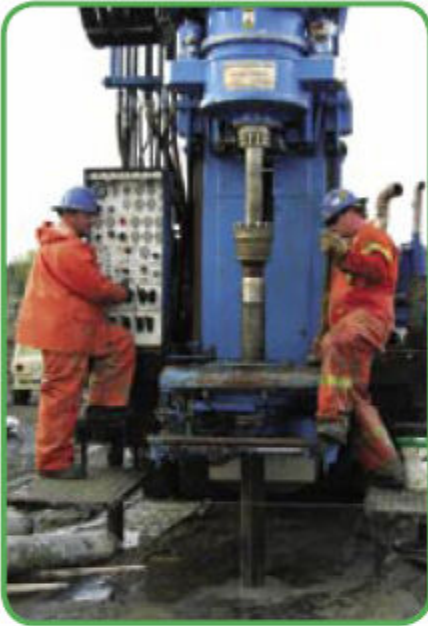


ADVANTAGES OF SONIC DRILLING FOR GEOTHERMAL INSTALLATIONS:

- Fastest drilling method on earth for geothermal installations
- World's most advanced drilling technique
- Patented drilling technology exclusive to Sonic Drilling Ltd.
- Holes are drilled to the desired depth by rotating and vibrating the casing at resonant sonic frequencies while keeping the bit face open with high-pressure fluid
- Ability to:
 - simultaneously drill and case holes to full depth
 - drill in any geological formation
 - drill very straight holes
 - drill without using drilling mud, which provides a much cleaner and safer work environment
- Economical drilling rates due to the efficient sonic drilling method, especially in gravel and boulder ground where other rigs experience great difficulty due to loss of drill mud through gravel zones and where other rigs must case the hole to prevent collapse of the borehole wall
- Full length cased hole allows for:
 - easy installation of one or a multitude of geo loops in the same hole
 - quick and efficient installation of pre-coiled geo loops without the leading edge hanging up against the sidewall of a mud drilled borehole
 - installation of any size geo loop or copper heat exchanger
 - ease of grouting by the tremie line method or pressure grout method and provides accurate monitoring of the grouting process
 - complete grout coverage around the geo loop (no need to worry about heaving sands or sidewall collapse of cobble and boulder zones)
- Vibrates the steel casing out of the ground after the geo loop installation and placement of thermally enhanced grout
- Outstanding ability to provide continuous core samples that can be used to create an accurate geological site profile before the final design of the loop field



GEO LOOP INSTALLATION



■ Drilling in progress.



■ Lowering of geo loop.



■ Completed geo loop installation.

