MARINE DISCOVERY CENTRE
ENVIRONMENTALLY FRIENDLY

Green is the operative word in new construction projects today as government agencies push for environmentally friendly buildings.

The new Marine Discovery Centre, located in Hamilton on the shores of Lake Ontario, meets the criteria thanks to Bermingham utilizing European thermal energy technology. Bermingham is the first company in North America to install a system of polyethylene loops in foundation piling to capture thermal energy from the ground to heat and cool the building. As well as the environmental advantages, it is estimated the thermally active pile solution saves about $100,000 over the cost of conventional drilled holes.

Project highlights:

- Fifty-one 10-inch diameter closed end pipe piles, supplemented with 20 thermal piles, provide the necessary loop lengths needed to supply the heat pumps
- Berminghammer B3505 diesel hammer drove one piece piles approximately 100 ft to rock
- Twin Polyethylene loops lowered into piles and then grouted
- Special thermal additives in the concrete and special spacers to keep plastic pipes close to the steel wall, maximize the heat transfer from the saturated ground to the heating/cooling loop
- The loop was charged with 85 psi pressure during the entire installation
- The loop material, made special for this application, has a 50-year warranty
- The pipes encased in concrete and embedded in a steel pipe provide a long life span
- This revolutionary technology, developed by Nagele Energie-und Haustechnik of Austria in 1980, has been perfected over the years for all types of soil

PEOPLE ARE OUR DRIVING FORCE

People – over 100 skilled and talented professionals – are the power behind Bermingham's foundation solutions world-wide.

PETER SMITH – VICE PRESIDENT AND GENERAL MANAGER
Peter joined Bermingham in 2002 with 25 years experience as a Civil Engineer in Construction, Engineering & Sales of Construction Products. One of his goals is to unify Bermingham's construction and manufacturing operations by "fielding the best team we can". Commenting that "Bermingham is the most innovative company I've ever been involved with", Peter says "the depth of experience and loyalty of their people" also impresses him. "It's rewarding being associated with some top people who take on major projects such as pile driving for the U.S. Army and installing thermal piles for the Marine Discovery Centre – a couple of our recent highlights." On a personal front, this self-proclaimed outdoorsman enjoys spending time at his cottage with wife Maureen, son Jake and daughter Laura.

TROY SMITH – TECHNICAL SALES COORDINATOR
Customer service is a top priority for Troy whose main focus at Bermingham is coordinating a diversified range of business and technical information for clients. "It's a fun job," says Troy commenting on responsibilities that include sales, accounting, engineering products and construction of equipment. "Having everything flow smoothly is very rewarding, as is interacting with different customer personalities," says Troy noting that 90% of his job is communications. "We have a very good team at Bermingham. Everyone is willing to jump in and help out." Troy began his Bermingham career in 2000 as a mechanical designer. Although a long way off, he plans to stay until retirement. He and wife Stacey have a four-year-old daughter Alexis.

MICHAEL JUSTASON – PRODUCT MANAGER
Working on leading edge technology is rewarding for Michael who travels the world "providing customers with high level technical support". Mike joined the company's Berminghammer division in 1995 with a degree in civil engineering and a masters in earthquake engineering from McMaster University. Currently Product Manager for the innovative Statnamic technology Mike has been involved with foundation load testing of some of the tallest structures in the world. "I train people on how to use the technology and analyze the data." He has made presentations on Statnatic products and uses at numerous conferences and specialty seminars, has papers published in many industry journals, and serves on several industry standards committees. The most satisfying accomplishments of his Bermingham career are helping to develop the clean diesel hammer in 2000 and duplicating the technology in another model – the B21 hammer last year. Off-shift, Mike enjoys playing soccer and hockey. He and his wife Nancy have two children – 4-year-old Eric and three-year-old Scott.

NIELS CHRISTENSEN – PLANT MANAGER
Since taking on the role of Plant Manager in March 2003, Niels has been instrumental in successfully linking the construction and manufacturing divisions of the company. His years of experience as Project Superintendent responsible for field operations has proved valuable to effectively manufacture equipment to clients' specifications "mainly because I know first-hand how it works". He emphasizes, "Taking a concept, turning it into reality and having the equipment installed and functioning efficiently on the job site is very rewarding." Niels, who is also responsible for yard services, pre-fabricating structural components for construction sites, equipment repair and maintenance and rerouting of material and equipment to various job sites, takes great pride in "improving our quality control and on-time deliveries and the results are showing when the customer starts to use our equipment." Away from the job, Niels rides ATVs and motorcycles, a hobby he enjoys with his two sons. He also enjoys Sunday rides in his nostalgic muscle car with his wife and daughter.

BERMINGHAM FOUNDATION SOLUTIONS SINCE 1897

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Niels Christensen - Plant Manager	ext. 232

EQUIPMENT DISTRIBUTORS
Bermingham Foundation Solutions has over 20 agents and distributors around the world providing sales support.

BERMINGHAM
FOUNDATION SOLUTIONS SINCE 1897

IN THIS ISSUE SEPTEMBER 2004

U.S. ARMY CONTRACT
LARGEST IN BERMINGHAM HISTORY

Over the next three years, Bermingham Foundation Solutions will deliver custom-designed hammers, complete with a custom lead system, to the U.S. Army. It's the largest single order the company has ever received. Seven of the hammers have already been manufactured and shipped during the first two months!

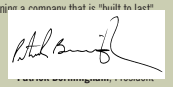
To do business with the U.S. Army a company must meet stringent technical, delivery and operating standards. Bermingham was able to satisfy all of the Army's special requirements. They wanted a true North American supplier that could meet their long-term challenge of supplying multiple missions with a light- duty crane. Bermingham responded by redesigning their diesel hammer and lead to suit a Grove AT 422 crane. Drawing on the experience and expertise of their construction personnel, Bermingham was able to optimize the speed of rig up. "We proposed a system that could be packed into a compact box and shipped anywhere, stored for years and able to drive piles within two hours of opening the sealed box," says Peter Smith, Vice President and General Manager.

Bermingham's experienced construction field crews will assist in training U.S. Army personnel on the **safe and effective equipment operations** over the coming months. Bermingham is optimistic that this new updated equipment will become a standard within NATO countries well into the future.

The U.S. Army commands the best and Bermingham delivers with outstanding equipment design, technical support and training. This is the largest contract in Bermingham history.

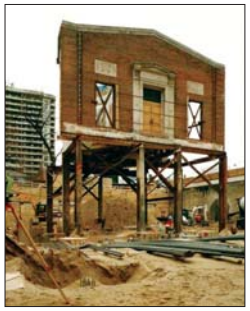
PRESIDENT'S MESSAGE

Bermingham Foundation Solutions, since 1897, has become our new banner under which both Bermingham Construction and Berminghammer operate together. By recognizing our synergies and marketing the success of the company at home in Canada, and around the world, we are able to better serve our customer base. In South America we supply leading contractors with equipment, plus foundation expertise. We build foundations with state-of-the-art equipment developed and manufactured in Hamilton. In order to run this growing and dynamic company, we have recruited Peter Smith to act as the Vice President of both divisions. Peter brings a wealth of experience and knowledge in both manufacturing and construction from his previous post as Vice President of Armtec. Together, with Peter and all of our shareholders and employees, we are strengthening a company that is "built to last".



UNIQUE UNDERPINNING SOLUTION
SAVES HISTORIC CHURCH

Bermingham's unique shoring/underpinning solution was instrumental in preserving the architectural heritage of a church on prime land in Toronto's trendy High Park district.



Developer Daniels Corporation was able to successfully build a new 20-story condominium, incorporating the historical front facade and entranceway of the church and its lobby, thanks to Bermingham's expertise and innovative foundation concept. Bermingham designed the support system to underpin the church while excavation was proceeding and designed the jacking system and determined how it could be suspended 30 ft in the air during operation. They also shored a large excavation to construct the parking garages. Site restrictions created quite a challenge "to getting equipment in and around the church," says David Christensen, Bermingham Site Superintendent. "Trying to maintain the integrity of the building with no cracks or deviation was also interesting. It was an enjoyable project overall." Sam Tassone, P. Eng. & Vice President High Rise Construction with the Daniels Corporation compliments the Bermingham crew. "They were instrumental in developing and evolving the final solution to a very complex problem. We were pleased with the kind of diligence they brought to the process and were an important and valuable part of our team. The work went flawlessly and the results are evident – a job well done."

B-5505 HAMMER
DRIVES NY/NJ PORT

Partnering with Granite-Halmar, Bermingham provided technologically advanced equipment, engineering expertise, technical support and project management for the Howland Hook Container Terminal Expansion Project in the Staten Island Port, New York.

THE EQUIPMENT:
- B-5505 impact hammer
- Pile monitor/recorder
- PTC 30 vibro hammer
- 30/30 drill
- 100ft C-18 vertical travel leads with 16ft kicker

Whether driving H-beam, casings, sheet piles or drilling holes, the lead system proved fast, efficient and cost effective for three separate applications this job required.

"The equipment was very reliable."

"Bermingham performed well under challenging conditions. Their engineering support (3D modeling, template design, capacity and stability calculations and construction sequencing), was very detailed and professional."

Joe McIlhenney, Project Manager, Granite-Halmar

THE NEW B-21
FINDS A HOME IN PRAGUE

Diesel hammers, which had lost ground to the more expensive hydraulic hammers, are making a comeback as a result of recent advancements in technology. That's good news for Bermingham experts who have put a lot of time and effort into developing yet another clean diesel hammer.

Their first, the B6505 built in 2000, has had tremendous success in North America and now the new clean hammer model B-21, completed in 2003, is the first Berminghammer sold in Europe to Zakladani Staveb in Prague.

The B-21 is equipped with a sheet-pile drive adapter and a hydraulic tripping mechanism that allows the hammer to operate free-standing, eliminating the need for leads. It can also be equipped with an on-board impact energy monitor – the Bermingham Pile Driving Monitor (PDM) that provides a record, blow-by-blow of the hammer impact energy. Data from the PDM can be downloaded to a computer and incorporated into driving records and other site reports – satisfying the ever-increasing need for quality assurance in piling.

According to Mike Justason, Product Manager, "It took us two years to duplicate the B-6505 in another hammer. It was a lot of work, but we made it new again. We're happy with the results and the fact that diesel hammers have been reintroduced to the world. The project was certainly a highlight in my career."

B-6505 IMPACT HAMMER
WOODROW WILSON BRIDGE

The Bermingham B-6505 impact hammer combined with its pile driving monitor / recorder, which measures the impact velocity of the ram, were the equipment of choice for the Woodrow Wilson Bridge project in Alexandria, Virginia. R.R. Dawson Bridge Company installed 24" square concrete piles using the Bermingham B-6505 impact hammer and semi-fixed 37" box lead system. The project involved rerouting of I-95 and major interchanges around Route 1.

STATNAMIC REPORT

STATNAMIC "TESTING THE TALLEST"

The Statnamic load test provides an accurate and cost-effective method of determining the load bearing capacity of caissons and high capacity piles. Developed in 1988 jointly by Bermingammer Foundation Equipment and TNO Building & Construction Research of the Netherlands, the technology has been used successfully by the construction industry in projects the world over. Here are some examples of Statnamic "testing the tallest" buildings in the world.

BURJ AL ARAB – WORLD'S TALLEST HOTEL

Wow! What a structure! The Burj Al Arab hotel, rising 321 metres above the Arabian Gulf in Dubai in the United Arab Emirates, is so impressive it's no wonder that it attracts the world's rich and famous. With 202 suites, each covering two floors and featuring floor to ceiling glass windows, it is the world's tallest hotel. Precision Monitoring & Control Middle East, in cooperation with Berminghammer, performed a 16MN Statnamic test on the site of the new hotel in Dubai. The test was performed on a 1.0 m diameter drilled shaft on the bridge connecting the hotel to the mainland. **Contractor: Dutco Belfour Beatty**
Owner: Shiek Mohammad of Dubai

The Burj Al Arab Hotel – one of the signature buildings of Dubai and located 25 km from its International Airport – is the tallest hotel in the world at 321m (1,053 ft).

With 101 floors and standing 509 m (1,670 ft) Taipei 101 Financial Centre boasts three of the world's tallest building titles – tallest to structural top, tallest to roof and highest occupied floor.

The Eureka Tower in Melbourne, Australia, when completed in the fourth quarter 2005 will stand as the tallest residential building in the world at 300 m (984 ft).

EUREKA TOWER
MELBOURNE, AUSTRALIA –
TALLEST RESIDENTIAL BUILDING

Imagine living on the 92nd floor of an apartment building that measures 300 meters (984 feet) above ground. When completed in fourth quarter of 2005, the Eureka Tower, located next to the Yarra River in Melbourne, Australia, will be the tallest residential building in the world and the tallest skyscraper in the southern hemisphere. Testing company Frankipile Australia, with contractor Vibropile Pty, performed two Statnatmic tests on bored piles to 16MN test load in September, 2001. **The 'Big E' is being built by Grocon of Australia and was designed by Fender Katsalidis Australia.**

TAEPEI 101
THE TALLEST BUILDING IN THE WORLD

At 509m, Taipei 101 is not only the most elevated financial center in Taiwan, but boasts as the tallest building in the world. The 20MN Statnamic device used to perform six foundation load tests – ranging from 20.1 MN to 21.4 MN, two at ground level and four at a cut-off elevation of –20m (-66ft) – were supplied by Berminghammer to Diagnostic Engineering Consultants Ltd. (DECL). Three static compression load tests were also conducted on fully instrumented piles, some having as many as 30 embedded strain gauges. With this information, DECL was able to determine the load distribution within each test shaft.

Burj Al Arab Hotel

Eureka Tower