BERMINGHAM
FOUNDATION SOLUTIONS
SINCE 1897

IN THIS ISSUE OCTOBER 2009

CN CONTRACTS BERMINGHAM

FOR WEST TORONTO DIAMOND RAIL GRADE SEPARATION

Bermingham added another chapter to its history and raised the bar in its level of business with a contract from CN to take part in the $277-million West Toronto Diamond rail-to-rail grade separation. West Toronto Diamond is a Canadian railway junction linking tracks of Canadian National Railway with those of Canadian Pacific Railway. The project will convert the West Toronto Diamond into a grade-separated junction by depressing the CN line under the CP track, thus allowing GO Transit, VIA Rail and CN trains to pass through a new underpass.

In January 2009 Bermingham Foundation Solutions invited Anchor Shoring & Caissons Ltd. into a joint venture for their part of the project to install six kilometers of interlocking pipe pile wall. The project is reminiscent of the company's earliest days when in 1897 William Bermingham was awarded his first contract to build Canadian Pacific Railway track in the Rocky Mountains.

Bermingham/Anchor JV is currently installing interlocking steel pipe pile and caisson walls, 36" in diameter and up to 80' deep, over a two-km long compressed corridor. Factoring in the two outer walls and one middle wall, that translates to 6 km (about 4 miles) of wall required. The primary method of installing the piles is with B-6505 hammers on L23 vertical travel leads, with rigs on two 165-ton cranes and one 160-ton crane. "The hammers have a 200,000 ft-lb energy rating and will be set to a depth ranging from thirty to seventy feet," explains CEO Patrick Bermingham. "We're building both a foundation wall and cofferdam, as the train tracks will be passing below grade as well as below the water table."

Peter Smith, Bermingham President, notes, "The project has a tight schedule of approximately eighteen months, but our diesel pile driving hammers are installing the pipes at a faster than anticipated rate." Extremely tight tolerances are maintained by installing five piles sequentially – first, third and fifth are hammered and then the second and fourth, to ensure each pile goes in vertically. "The piles are linked with 'PT' connections which enable the joints to be grouted, forming a water tight barrier. It's a system commonly used in Japan," explains Bermingham.

Approximately fifty to sixty Bermingham people are involved with the project – one of the largest in the company's history. With approximately sixty trains a day passing through the site in close proximity to working crews, they must be extremely attentive to proper safety practices and procedures. Since the job site is in an urbanized area, noise control of the hammers is an issue. Bermingham developed innovative three-level noise control shrouds that have reduced the measured noise levels by more than half. The shrouds are hydraulically activated to open to load the pile and to allow the hammer to breathe. There are also older buildings in close proximity to the tracks – less than ten feet – so it is necessary to control vibration levels. Bermingham is using a variable moment high frequency Vibro feedback circuit from PTC to keep the vibration levels below 8 mm per second.

The first phase of the installation of three permanent walls and temporary shoring walls is expected to be completed in early spring 2010.

CEO'S MESSAGE – Company of Adventurers – Seeks Same

I have always thought of our company as a "Company of Adventurers", a term coined here in Canada to describe the 400 year old Hudson's Bay Company.

Bermingham is currently in Joint Venture with several of our clients. The thing I like most about entering into a Joint Venture is the adventure. The uncertain outcome, the voyage into uncharted water. The dictionary defines a venture as "an undertaking that risks a loss but promises a profit".

Recently, I was undertaking an exercise to characterize our best clients, and in addition to being professionally managed, and well funded, they were all adventurous, and successful because of it. Willing to undertake project in remote locations, willing to implement new technologies and above all, to reach beyond the certain outcome of the proven method.

A Company of Adventurers has described our team of employees, and now by extension, many of our clients. We have recently entered into a JV with a local foundation specialist, Anchor Shoring and Caisson Ltd, to create a JV capable of undertaking $ 100 Million plus contracts. We have also entered into a JV with Deal S.r.l. of Italy to build custom equipment to construct jetties and harbours.

Whether in a formal JV or simply renting equipment, we are part of your team and relish the challenges that your company may face in the year ahead.

Patrick Bermingham, CEO

WASHINGTON BYPASS COMPLETED AHEAD OF SCHEDULE

"Thanks to everyone at Bermingham for your contribution and assistance. It takes a good team to make a project like this successful."

– Phillip LeFave, Construction Manager, Washington Bypass Project

September 9, 2009 marked a milestone on the Washington Bypass project, a highway and bridge construction project in Washington, North Carolina. On that date, all of the piles were successfully driven and the 6505HD hammer and tilting leads system were demobilized. The girder erection was then completed and the final deck pour began a week later. Bermingham's innovative pile driving system and associated beam launcher was a new concept used on the project – a joint venture between Flatiron and United. Despite delays due to the fisheries requirement during the crossing of the Tar River, Flatiron was able to maintain a staggering production timetable, finishing the project many months ahead of schedule.

B32 HAMMER AND L20 LEADS USED IN ARGENTINA

"LINSA needed a system that could drive two piles in one location and then move quickly to the next location 500 meters away – with a goal of four locations per day."

– Bermingham's Mike Justason

LINSA – Lines of the North – a joint venture of three large general contractors building transmission lines across the Northern part of Argentina, purchased a B-32 Hammer with 60-ft of L-20 light weight leads for use on a Terex 60-ton hydraulic boom crane. Bermingham's Mike Justason and Franki Segura of Frontier Endeavors – Bermingham's agent for South America – were on site at the end of July for rig-up and training of LINSA personnel. According to Justason, "LINSA needed a system that could drive two piles in one location and then move quickly to the next location 500 meters away – with a goal of four locations per day." The system was configured to drive 500 mm concrete cylinder piles up to 12 m in length. Training included driving several test piles in the LINSA yard in Resistencia, Argentina. Bermingham will be sending a piling expert for the start-up of production piling scheduled to begin later this year.

PORT EXPANSION LA ROCHELLE, FRANCE

In early September, Bermingham supplied equipment and construction expertise to General Contractor Leduc for a port expansion in La Rochelle, France. Bermingham's Operations Manager, Karl Christensen was on site to rig up the equipment and start the first test hole. It was drilled in just over an hour, exceeding the client's expectations.

The Challenge: To drill 800 mm (32") steel caissons through sloping armour stone and beyond into a soft sandstone. The average length of pile was 16 m (52 feet) and all piles were drilled with the single pass method promoted by Bermingham and Roc Drill Europe. The drill string remains in one piece and is not disconnected from the drill. In addition, thirty 1300 mm (52") holes were drilled through sloping rock at a depth of 26 metres (85 feet) along the front face of the quay. These holes were drilled with our BHD 40 reverse circulation drill and custom rotary carbide bit. The leads, drill and drill string were all designed and supplied by Bermingham.

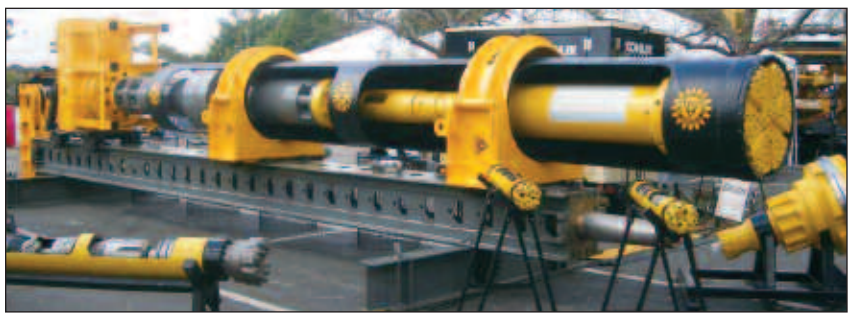
PRODUCTION GAINS
AT NEW ORLEANS FLOODWALL PROJECT

Using Berminghammer leads, Traylor-Massman-Weeks, LLC (TMW) is doubling production output on floodwall structures being constructed for the Inner Harbor Navigation Canal in New Orleans. TMW – a joint venture between Traylor Bros., Massman Construction and Weeks Marine – was selected by Shaw Environmental & Infrastructure to build the approximately 7,500 lineal foot floodwall from the Mississippi River Gulf Outlet to the Gulf Intracoastal Waterway.

Berminghammer supplied a custom made 200 foot set of 57 inch leads for driving 300 foot long, 36 inch pipe piles on a 1:1.5 batter being installed on the inland side of the wall to support lateral loads applied to the wall. Warren Waite, a Senior Sales Representative at Bermingham, has been on site at the project and explains, "Each pile is driven in two pieces with one welded splice. The original production budget for the batter piles was three piles completed over two-12 hour shifts. However, they have been able to obtain the three completed piles with only a single shift, thus doubling the production originally anticipated."

Construction of the wall began in February 2009 and is expected to continue through to July 2010. The Inner Harbor Navigation Canal is part of Project Hope to rebuild and protect New Orleans from future hurricanes and flooding.

BERMINGHAM LEADS
IFCEE SHOW IN FLORIDA



Bermingham's booth at the International Foundation Congress and Equipment Expo, held March 15-19, 2009 at Lake Buena Vista, Florida, featured Berminghammer's clean diesel impact hammers and lead system as well as a 16MN Statnamic device demonstrated by Applied Foundation Testing of Florida.

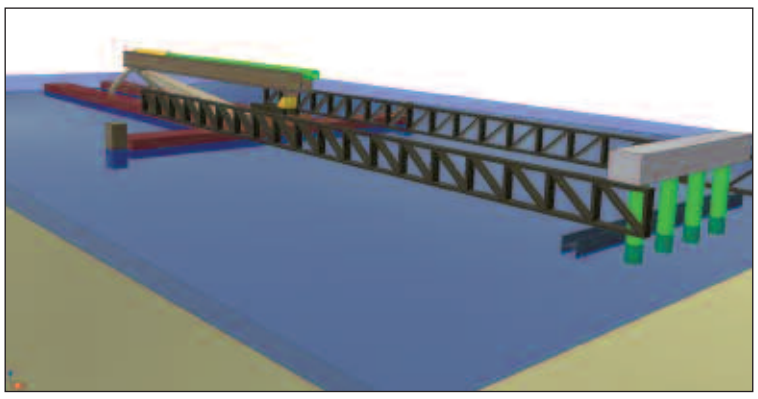
The big hit of the show however was the huge drilling setup at the Atlas Copco booth. Atlas Copco's personnel reported that they had never had booth traffic like that before, and had to send for more Bermingham technical brochures on the very first day of the show. Bermingham's drills are built for the toughest drilling jobs, ideal for the rock-socketing challenges that contractors face around the world. Atlas Copco drill bits and down-the-hole hammers partnered with Bermingham drills leads and drill string have proven up to the challenge.

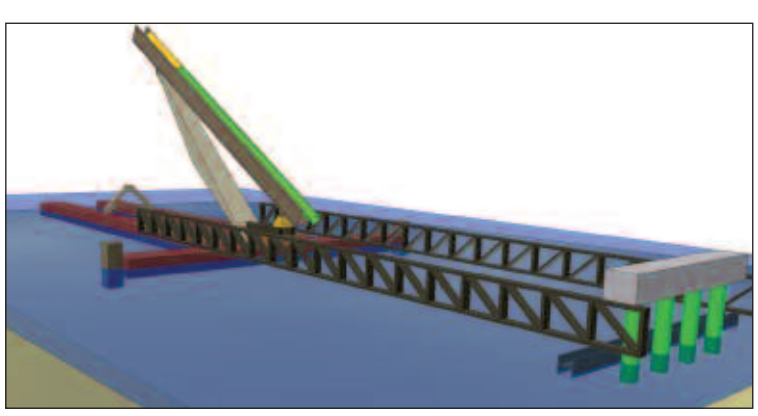
MID-CURRITUCK BRIDGE NORTH CAROLINA

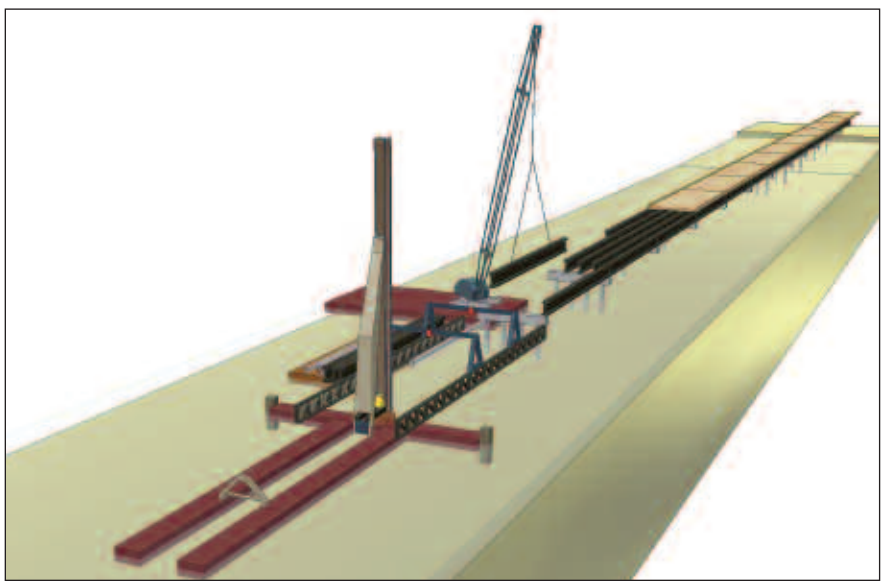
Patrick Bermingham and Stefano Gabaldo introduce the Project Planning and Visualization tool. A three dimensional CAD model to plan the sequence of construction.

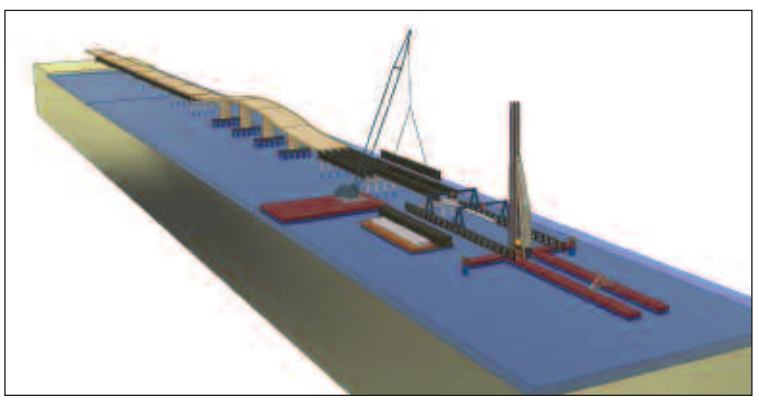
Bermingham was instrumental in helping ACS Dragados/Iridium, a leading Spanish construction corporation, win a proposal in April 2009 from the North Carolina Turnpike Authority for project development and construction of an 11 km. (7 mi.) bridge for the Outer Banks Mid-Currituck Toll Bridge. Patrick Bermingham and Stefano Gabaldo suggested all methodology, equipment and technological requirements to do the foundations and introduced the Project Planning and Visualization tool which uses three dimensional CAD modeling to plan the sequence of construction. They are currently working as consultants to the team advising on construction methodology.

Once constructed, the $700 million Mid-Currituck Bridge will be a two-lane toll crossing linking the Outer Banks across Currituck Sound with the mainland at US158 near Aydlett with NC12 on the Outer Banks south of Corolla. The Outer Banks are a recreational area south of Tidewater, Virginia within driving distance of Washington DC/Baltimore and Philadelphia.









BOT RELIES ON BERMINGHAM DRILLING AND DRIVING EXPERTISE WHY HIRE TWO CONTRACTORS WHEN ONE CAN DO THE JOB?

General Contractor Bot Construction relied on Bermingham's foundation drilling and pile driving expertise for the portion of highway they are constructing as part of the Ministry of Transportation's infrastructure development in Northern Ontario. Bermingham has been assisting Bot with different phases of this project for a couple of years, but most recently was involved with foundations for several structures on Highway 11 south of North Bay, Ontario.

Typically, on a job such as this, two contractors would be hired for drilling and driving. However, Bot utilized Bermingham's expertise for both functions. The most challenging aspect of the job was drilling up to 32 inch diameter rock sockets up to five meters into granite, installing bearing piles and grouting them into one of the hardest rocks in the world. Berminghammer manufactured L18 leads and BHD-40 hydraulic drills with 18 inch drill string were used in conjunction with Atlas Copco's down-the-hole hammer and ROTEX system, the only one to guarantee success in drilling such hard fractured rock. Bermingham's portion of the job will be completed by the end of October, while Bot's work will continue throughout next year.

BURANO CONDOMINIUMS AGGRESSIVE SCHEDULE MET FOR SHORING PROJECT

Bermingham crews are conscientious about meeting aggressive timelines and the Burano Condominiums shoring project for H&R Developments/Land Terra is no exception.

The shoring project involved a continuous caisson wall to permit the excavation of a five-story subterranean parking garage for the construction of the high-rise condo located at Bay and Grosvenor Streets in downtown Toronto.

At depths up to 65 feet below grade, this is one of the deepest excavations to be completed in Metro Toronto. It involved the use of two Bermingham Bauer rigs, BG36 and BG22, drilling to depths of 85 feet. The retention system consisted of 240 tiebacks and 12 sets of corner braces and the majority of the tieback work was self-performed by Bermingham crews. "We prefer to keep quality and scheduling control within our realm," emphasizes Todd Barlow, Project Manager, mentioning that at peak there were fifteen Bermingham people on site.

The project started in December 2008 and was completed in the beginning of August 2009. "For a job that size, the schedule was pretty aggressive," says Barlow pointing out that there was the added challenge of accommodating an adjacent neighbour. "The owner had to make design changes for an additional method of doing the retention, involving an extra 100 tie rods, to benefit the neighbour tying into the shoring in the future. We worked with the owner and the designer to come up with a system that could be readily installed and incorporated into the construction process without sacrificing our schedule."

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