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Metropolitan Industries, Inc.

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SPRING 2007

Pump Solutions Aid Military Training

The United States Navy's newest $82.5 million project known as Battle Stations 21 is a 210-foot replica of a guided-missile destroyer that trains new recruits during scenarios such as fire fighting, flooding and mass casualty exercises, while making them feel as if they're at sea.

The United States Navy is near completion of their newest $82.5 million project known as Battle Stations 21, which is a 210-foot replica of a guided-missile destroyer that trains Navy recruits to deal with real-life war scenarios, while making them feel as if they're actually at sea.

Battle Stations 21, located at the Navy Recruit Training Command in Great Lakes, Ill., serves as the culmination of all training received at the Navy's only boot camp. A grueling 12-hour test of a Recruit's skills on Battle Stations 21 marks the final rite of passage before becoming a Sailor.

Entering a 157,000 square-foot building, recruits find themselves on a pier, gazing at a 210-foot-long replica of a guided-missile destroyer. The pier is complete with a facade that replicates the actual pier in Norfolk, Va. Realism is added with special effects

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Plus...

Relocating a big pond at COD...
Metro forms HVAC Division...

Follow the Time Line

Pump Solutions Aid Military Training

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lighting, sea and diesel scents, surround audio and 90,000 gallons of water sloshing between the pier and the ship. USS Trayer will feel, smell, sound and look like the real thing, with the incorporation of the latest in virtual reality, entertainment technology and modern construction techniques. Once they are in this immersive environment, recruits will proceed through 17 different shipboard scenarios that will test problem-solving, communications and other essential skills, with realistic consequences for their actions.

Metropolitan Industries Inc., of Romeoville, Ill., along with the installing contractor Aspen Plumbing of Streamwood, Ill., was instrumental in designing many of the pump systems that add the realism and dramatics to each training scenario.

The Flood Room pump located in a mechanical room adjacent to the ship helps the Navy to simulate wartime scenarios, such as

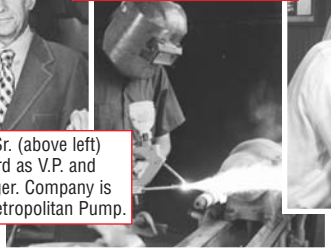
Recruits organize a fire party and extinguish the fire in a storeroom during a scenario based on the actions taken by the crew of the USS Stark (FFG 31), which had to fight shipboard fires after being hit by two Exocet missiles during the Iran-Iraq war in 1987. Hose pressure is supplied by two large Metropolitan centrifugal pumps capable of providing the "Fire-Fighters" with a maximum flow-rate of 400 gallons per minute at high pressure.

1957

1957 Metropolitan Pump Specialists begins in 1957 from a "home office" in Western Springs, IL. Founded by Marty Martinson.

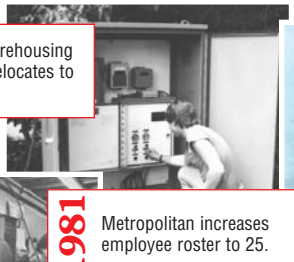
1965 John Kochan Sr. (above left) comes on board as V.P. and General Manager. Company is renamed to Metropolitan Pump.

1967 Metropolitan becomes officially incorporated



1968 Moves to a 2,500 sq. foot facility in Downer's grove.

1974 Doubles warehousing capacity –relocates to Lisle, IL.



1981 Metropolitan increases employee roster to 25.

torpedo or shell attacks, which cause large amounts of water to pour into the compartments, forcing recruits to repair and seal the compartments in mere moments. This Metropolitan system utilizes two large centrifugal pumps, capable of flooding the compartments at a maximum flow-rate of 4000-gallons per minute. This system operates through a Metro-Tech Econo-Plex Variable-Speed control system, which allows the pumps to operate at various flow-rates, depending upon the number of compartments being flooded. The system continually monitors the "ocean" water level, as well as the flood room water pressure levels simultaneously, and automatically adjusts the operation of the large pumps accordingly.

The fire room pump system also utilizes two large centrifugal pumps, capable of providing the "Fire Fighters" with a maximum flow-rate of 400-gallons per minute at high-pressure. This system also helps the Navy to simulate potentially devastating situations, such as galley or machine-room fires. When these situations occur, recruits must double-time to extinguish the blazing inferno. This system is also operated through a Metro-Tech Econo-Plex Variable-Speed control system, which allows the pumps to operate at various flow-rates, depending upon the number of compartments that are ablaze. The system also continually monitors the ocean water level, as well as the fire room water pressure levels simultaneously, and automatically adjusts the operation of the large pumps accordingly.

The ocean-fill pump system utilizes two large submersible pumps, with 6-inch discharge connections, capable of filling the 90,000-gallon "ocean" at a maximum flow-rate of 2000 gallons per minute. This system is operated through a Metro-Tech Econo-Plex Variable-Speed control system, which allows the pumps to operate at various flow-rates, while reacting to various reservoir inflow rates. This system is fed with water, which drains from the Flood Rooms and Fire Rooms described above. The Econo-Plex continually monitors the "ocean" water level, as well as the Lift Reservoir water level simultaneously, and then automatically adjusts the operation of the large pumps accordingly. The designers were careful to avoid situations, which would cause other types of pump systems to experience harmful cavitation and short cycling.

During the mission, recruit teams must operate while the room is flooding from overhead and from the deck above, based on events that occurred on the USS Tripoli (LPH-10) after it struck a mine in the Persian Gulf, Feb. 17, 1991. The flood rooms are capable of flooding due to a Metropolitan system that utilizes two large centrifugal pumps capable of pumping 4000 gallons per minute and can operate at various flow-rates depending upon the number of compartments being "flooded."

Metropolitan also designed and manufactured other critical

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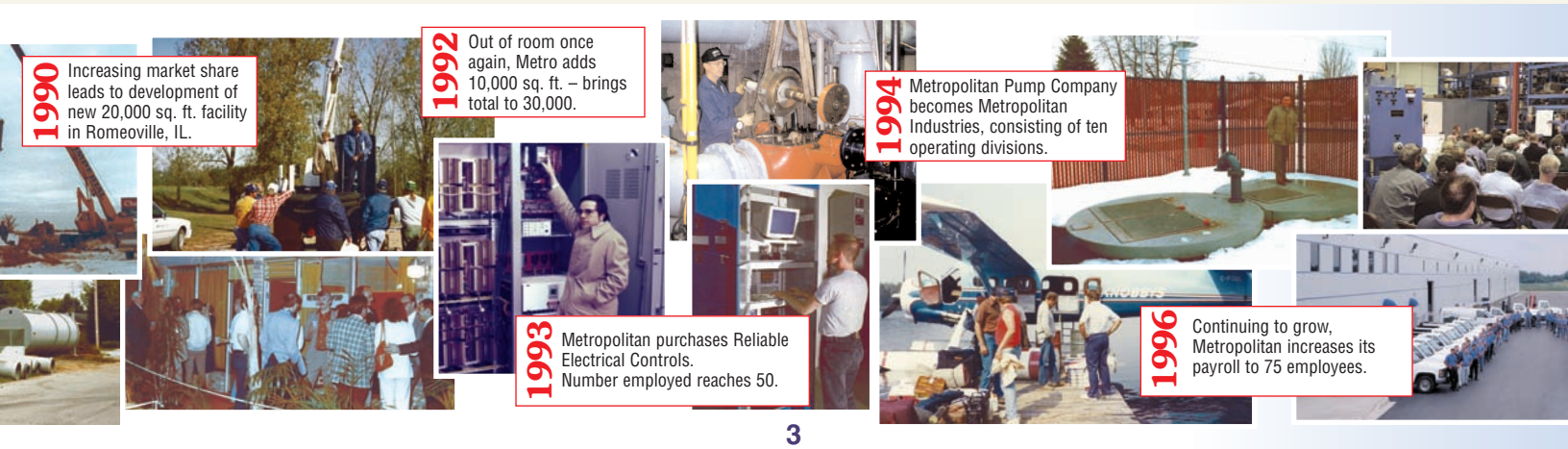

Pond Removal Boosts College's Parking Capacity

The College of DuPage located in Glen Ellyn, Ill., is undergoing a massive $279 million "Master Planned," renovation in order to upgrade buildings, add new buildings, roadways and parking lots.

The College of DuPage, COD, located in Glen Ellyn, Ill., is undergoing a massive $279 million "Master Planned" renovation of the 273-acre campus in an effort to upgrade existing buildings, construct new buildings, add roadways and much needed parking space for the 34,000 students who attend classes there.

One aspect of the project involved acquiring land space to add an additional 300 parking spaces to the existing 7,217. "Parking is at a premium here at COD and the additional 300 spaces will alleviate some of the congestion," said Chief Engineer Skip Seaman who oversees Facilities, Operations and Maintenance at the college.

Acquiring the land needed to add the new parking lot involved a risky task of relocating a large retention pond to an already existing retention pond on the other side of campus. The drained pond would be the location of the new parking lot, however; any mistakes would flood all three nearby campus buildings.

COD hired Dan Fagan, CPD, of Teng Engineering located in Chicago to design a storm water pumping system, which would drain the retention pond. According to Fagan, the retention pond was fed by a reverse siphon system where water would drain into drainage tiles located around nearby buildings and then drain into the pond. Any extended interruption to this water flow would flood three nearby buildings, ultimately requiring a flawless startup of the new system.

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Pictured is the quadruplex submersible lift station that uses four heavy-duty submersible pumps with an 8" discharge.

Pond Removal Boosts College's Parking Capacity Continued from page 4

Fagan chose pump equipment supplier and integrator Metropolitan Industries, Inc., located in Romeoville, Ill., to help design, supply, install and integrate the pumping and control equipment due to their experience overseeing large municipal and commercial applications and our knowledge of variable speed drive control systems.

Variable-speed controls operate the lift station with efficiency, saving money on energy costs. Touch screen operation allows push-button control.

Fagan recommended that COD oversize the installation ensuring a back-up safety net in case of any future equipment failures. Metropolitan supplied a quadruplex submersible lift station, using four heavy-duty, 8" discharge, submersible pumps. All four pumps were rated for 2400GPM at 28' total dynamic head. The station has a submersible level transducer with five backup level switches to control pump on and off and alarm levels. As an added safety net, two separate standby generators were installed to ensure continued operation during a power failure.

"Redundancy was the key when determining what equipment to install. We have plenty of pumps and enough generators to ensure 24/7 operation," Seaman said.

To drain the water, the installing contractor, Edwards Engineering of Elk Grove Village, Ill., pre-piped from the pond to its new location across campus in an already existing retention pond. Pre-piping played an important role because it minimized the startup time of the new equipment, which minimized the possibility of flooding nearby buildings. Once the pump stations were installed, a quick change over to the new system allowed a seamless transition in less than a day preventing any costly flood damage.

"Our biggest fear was flooding the buildings nearby. One rainstorm or any unforeseen complication during the switch over could have spelled disaster. The whole process went very smooth," Seaman said.

Once the pond was drained, workers filled in the hole left behind that measured close to three football fields. Now the parking lot is complete and in use by students and staff. The removal of the retention pond provided the much-needed land space thanks to some teamwork and a little pumping ingenuity.

Metropolitan Aids Military Training Continued from page 3

equipment for the facility, such as the Filter Pumps, which help the Navy reclaim the water from the various scenarios, and recycle it back into the "ocean" for re-use during training sessions.

There were also many domestic systems provided by Metropolitan for use by Navy personnel, such as two semi-instantaneous steam-fired water heaters; a Titan Plus duplex variable-speed domestic water pressure booster system, as well as two sets of Metro-Prime duplex sewage ejector and sump pump systems with quick-clean-out suction casings.

An aerial view of the $82.5 million Battle Stations 21 Training Facility at the Navy's Recruit Training Command located in Great Lakes, Ill, about 30 miles north of Chicago.

Four divisions of 88 recruits—352 recruits, along with their facilitators—will be able to move through the facility at once, every day of the year. Multiple events can occur in various spaces simultaneously, many of which must be reset several times within a night so that all participants can experience each event.

Battle Stations 21 addresses a changing war-fighting environment. As the Department of Defense's most cutting-edge trainer, Battle Stations 21 will send a better trained Sailor to the Fleet. Its realistic training will save lives and ships. Battle Stations 21 balances workforce environments within an increasingly constrained fiscal reality.

Full use for recruits is scheduled to begin in June 2007 with testing of the facility taking place February through June.

For more information about Metropolitan Industries, Inc., log onto our website at www.metropolitanind.com.

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Metropolitan Reps New Pump Line

Grundfos CBS Inc., officially announced in January that Metropolitan Industries, Inc is the new representative and distributor for the PACO Pumps brand in the Chicago metropolitan area for the newly formed Grundfos Commercial Building Services business unit (Grundfos CBS).

With the recent appointment as the commercial HVAC distributor of PACO Pumps, Metropolitan Industries, Inc. announced the creation of a new HVAC division specializing in Primary and Secondary Chilled Water Systems, Boiler Feed and Condensate Return Systems, Condenser Water Pumps, Cooling Tower Pumps and Heating Circulation systems.

Heading the new HVAC division for Metropolitan is Rob Brennan, formerly of Affiliated Steam Equipment Company where he served nine years as an outside sales representative selling industrial, commercial and institutional steam systems.

"We are excited about Metropolitan representing the PACO brand in the Chicago area for the commercial HVAC and municipal markets. Grundfos has enjoyed success with them because of their professionalism, dependability and value they add to the Grundfos product line," said Jack O'Connor, vice president of sales and marketing for Grundfos CBS, Inc..

The newly formed Grundfos CBS is comprised of two veteran U.S. pump companies – PACO Pumps of Houston, Texas and Grundfos of Olathe, Kansas. As the newly joined companies find synergies in their distribution network and product line, distributors such as Metropolitan Industries, Inc. will pave the way for Grundfos CBS, Inc., according to O'Connor.

PACO Pumps was founded in San Francisco, California in 1907 offering complete lines of end suction, in-line, split case, non-clog, sump pumps, special purpose pumps, and pumping systems. PACO pumps are sold worldwide through a network of direct sales and service centers, strategically situated regional offices, and through an extensive representative and distributor network.

Grundfos Pumps Corporation is a global leader in the supply of pumps and pump systems for domestic, commercial building services and process industry applications, as well as a major supplier to the water supply and treatment industries. Grundfos Pump Corporation is part of the Grundfos Group, a worldwide enterprise that employs over 14,000 people in sales and production roles in 67 countries.

Metropolitan Industries is a single source supplier of pumps, control systems and ancillary equipment for the municipal, commercial, industrial and residential markets. For more information about their new HVAC division or Brennan's appointment call 800-323-1665 or log onto their website at www.metropolitanind.com.