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BUILDING COMMUNITY



HDPE PIPE BRINGS TROPICS, ENVIRONMENTAL KUDOS AND RELIABILITY TO BRONX ZOO

BRONX, NY -- In June 2008, the Bronx Zoo opened Madagascar!, its latest project in a green initiative that selected high-density polyethylene (HDPE) pipe to circulate large volumes of water throughout the exhibit. Housed in the zoo's original 1903 Lion House, the pipe was also used for five, 1,500-foot deep geothermal wells for heating and cooling. The geothermal system also creates the environmental temperatures found in a tropical rainforest.

"This project brought together two of the most powerful movements in architecture," said Shelby Heritage of ISCO Industries, which inspired the concept of HDPE pipe for the project. "The restoration of a landmark building that incorporates green-building practices is an accomplishment that the City of New York can be very proud of."



HDPE pipe was chosen for its material properties that meet the "green" goals of sustainability. The pipe is non-corrosive and connected together with heat fusion to insure the pipe will not develop leaks or allow infiltration at its connection points.

But perhaps the strongest advantage of the pipe is its long life expectancy and zero-maintenance reputation. Most of the pipeline will be buried under small confined areas that will be immaculately landscaped. The costs associated with excavating these areas in the future to repair leaks or failures, would be astronomical.

"The biggest reason they chose to use HDPE for the pipe systems is that they will never have to repair it," said Chuck Connor, sr. project manager for WDF Inc. the mechanical and plumbing contractor that performed the pipeline work. "You just put polyethylene pipe in the ground and forget about it."

One challenging aspect of the piping system was the seawater supply line for the sea lion pool that is adjacent to the Madagascar! exhibit. Saltwater is pumped from a filtration system through 16-inch diameter HDPE pipe to six intake and return stubs located in the wall of the pool. "The location of the pipeline serving the sea lion pool was extremely cramped," said Connor. "With such limited space, the staging of the project was crucial."

Crews first excavated and shored the ditch in preparation. The heavy equipment was then removed to allow space for a fusion staging area. The complex angles of the ditch along with frequently spaced shoring braces required much of the pipe system to be fabricated on site



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and several of the fusion joints had to be performed in the ditch.

“Because of the cramped installation, and difficulty of working in the ditch, WCS could have probably saved a little money using another piping material,” said Connor. “But this pipe is more environmentally sound and will last longer than any other pipe out there and that’s the way WCS does things – they build once, to last forever.”

“HDPE pipe is rapidly gaining acceptance in the water industry as a water conservation tool because of its leak-free reputation,” said Heritage. “Now projects like the Madagascar exhibit at the Bronx Zoo are displaying that the pipe’s long-life expectancy holds to the green standards of sustainability. When lifecycle costs are considered for any piping project, HDPE wins the bid hands down.”

“The Bronx Zoo secured its place as one of the foremost zoos in the world long before anyone envisioned the Island of Madagascar exhibit,” stated Tony Radoszewski, executive director of The Plastics Pipe Institute. “But by taking the extra measures to insure the exhibit stands up to the standards of the U.S. Green Building Council, it is evident that administrators of the Zoo are holding to the original mission of conservation when the Zoo was founded back in 1885.

“The Lion House was given new life by the WCS. This project received the NYC Green Building Award and used green technology materials and products including HDPE pipe, which provides a sustainable and environmentally responsible system that will serve generations to come,” he continued. “Additionally, the project will carry the distinction of being the first landmark building in New York

City to be certified “green” by the U.S. Green Building Council (UGBC).”

Originally opened in 1903, the Lion House has been designated a National Historic District by the New York City Landmarks Commission. This heavily ornamented building was part of a group of buildings built between 1899 and 1920 that epitomizes the Daniel Burnham’s City Beautiful Movement. The design of the new exhibit preserves the architectural craftsmanship of the original building while incorporating the latest construction technologies and green building practices available, including the use of HDPE pipe.



The Plastics Pipe Institute, Inc. (PPI) is a Texas-based, non-profit organization, founded in 1950, that is the major trade association representing all segments of the plastic piping industry. PPI is dedicated to promoting plastics as the material of choice for pipe applications. It is the premier technical, engineering and industry knowledge resource that publishes data for use in development and design of plastic pipe systems. PPI collaborates with industry organizations that set standards for manufacturing practices and installation methods. For more information about PPI and its available information, go to: www.plasticpipe.org.