



Edwards Engineering, Inc. Improves Creature Comforts for Humans and Animals

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It may not be apparent from Shedd Aquarium's visitor galleries and building exterior but it requires miles of piping and very sophisticated mechanical life support systems to house the more than 22,000 animals and 1,500 species that reside at the aquarium. Add to this the requirement to keep nearly 2 million visitors per year comfortable and simultaneously support another 270 nighttime charity and public events and you have the makings of a formidable challenge. Yet meeting that daunting task is what is required as part of the behind the scenes operations of Shedd Aquarium each year.

In order to meet this challenge, Shedd Aquarium recently began the final phase of a multi-year installation and upgrade of the aquarium's boilers and hot water distribution system. Northwestern Industrial Piping-Edwards Engineering, Inc. and the piping professionals of Local Union 597, are currently completing installation of a third new boiler and new hot water distribution system. The first phase of the current project began nearly two years ago when Edwards Engineering, Inc. replaced two of the three older boilers that had been servicing Shedd Aquarium for many years.

"Coordination and installation of the new boiler and hot water distribution systems with the old must be executed with tremendous care and skill by the Northwestern Industrial Piping-Edwards Engineering, Inc. project team to ensure that the myriad of critical animal life support systems served by Shedd Aquarium boiler plant are not disrupted," explained Randy Felgenhauer, Northwestern Industrial Piping-Edwards Engineering, Inc. Project Manager. "Mission critical is hot water provided to heat exchangers which in turn heat the water to the proper temperature required to support the many exhibits of exotic marine life on display at the aquarium."

And just as the boiler plant operation is critical to the life support of the many fish and animals at the aquarium, the boilers are also critical to human comfort because of the

support they provide to the HVAC systems. Through extensive, detailed project coordination and communication, Shedd Aquarium facilities personnel and the Northwestern Industrial Piping-Edwards Engineering, Inc. team worked to ensure that visitors to Shedd Aquarium enjoy their visit without even recognizing the tremendous effort and construction work happening behind the scenes.

Northwestern Industrial Piping-Edwards Engineering, Inc. and their Local Union 597 Pipefitter workforce have been involved in many projects at Shedd Aquarium over the past several years. They were instrumental in the renovation of the Caribbean Reef exhibit and Rotunda where, among other things, they installed a new life support system for the renovated 90,000 gallon saltwater exhibit. Edwards Engineering, Inc. also worked on the mechanical installation of the Shark Holding and Quarantine Area. For the newly added Wild Reef exhibit, Edwards Engineering, Inc. installed new saltwater and freshwater life support systems. The systems for the Wild Reef exhibit alone contain more than 550,000 gallons of water. The largest of these habitats, a 400,000 gallon shark exhibit, requires 5 sand filters, which are each five-feet in diameter and over fourteen-foot long.

"The Shedd Aquarium is a Chicago icon. Our company is very fortunate and appreciates the opportunity to work with such an important part of our city and area," said Jim Jacobsen, Vice President of Edwards Engineering, Inc. "Our community benefits in so many ways from Shedd Aquarium and its mission. Shedd is a world-class educational organization, community steward and neighbor as well. We know Shedd also supports our city in many other ways and helps make our city a great destination place for conventions and tourists from around the country. "

According to Shedd, the aquarium hosts more than 270 nighttime events ranging from charitable functions to educational forums to private parties. "Shedd boilers are working around the clock, but when it comes to these after-hours events, Shedd Aquarium's boilers are working overtime behind the scenes to support its HVAC, kitchen and food

service activities and we had to take that into account when providing them with the best equipment, materials and service available," added Jacobsen.

Northwestern Industrial Piping-Edwards Engineering, Inc. also recently completed the installation of the piping for a new 4-D theater in Phelps Auditorium, located in the Oceanarium. The piping in this state-of-the-art theater went far beyond the heating and cooling typically required for theater settings. It was the job of the pipefitters from Edwards Engineering, Inc. to provide the film's viewers with bursts of air, sprays of water, and even atomized pickle scent – all choreographed to a high-tech 3-D film. "Our piping systems are run to a jar of what is essentially pickle-scented perfume," explained Randy Felgenhauer. "It is then atomized near the moviegoer to help reinforce the idea that the 3-D pickle they see on screen is really present in the room. Similarly, atomized water and compressed air is choreographed to the movie to provide dramatic effect and fun for the moviegoer. It is these practical effects that create the 4-D environment."



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Exhibits and piping systems are continually changing behind the scenes at the Shedd Aquarium. What is constant, however, is Shedd Aquarium's commitment to its mission and commitment to enhancing the experience of the millions of visitors each year. Northwestern Industrial Piping-Edwards Engineering, Inc. and their Local 597 Pipefitter workforce are equally committed to helping support that mission unobtrusively behind the scenes.