Battling the Elements

Design-build professionals overcome harsh weather to create a multi-level water feature

By Paul Oliveira / Contributor

During the hustle and bustle of the workday, employees appreciate a relaxing and peaceful area outside to take a break or enjoy lunch. With that in mind, Gentex Corp. decided to include a water feature at its new headquarters in Zeeland, MI. The main outer wall of the cafeteria and conference center is primarily glass and would have looked out onto an empty, uninspiring space. The company knew a water feature designed to surround the building’s two outdoor patios, cafeteria and conference center would be welcomed by its 2,200 employees who work in the headquarters and nearby facilities.

Gentex brought in Landscape Design Services of Holland, MI, to develop a multi-level water feature design.

"Because the water feature was going to be located in a very visible area, it was important to Gentex to have a calming and aesthetically pleasing view for their employees," says Rick Timmer, vice president of Landscape Design Services. "Gentex has water features at two other locations and recognizes the importance of providing employees with a serene environment."

For additional design insight, Timmer reached out to local design and supply company, EasyPro

WHETHER THE PROJECT is a small backyard pond or a multi-acre water hazard on a golf course, water features have the ability to transform otherwise mundane environments into appealing and scenic landscapes.
Pond Products, a division of Stoney Creek, Inc., Grant, MI.

“When we were approached with this project, I knew that we could create something unique that the employees would enjoy for many years,” says Dave Ouwinga, vice president of EasyPro Pond Products.

The design
The water feature was designed to have three levels. The first was a 60-x-25 ft. upper pond. Water from the upper pond would then flow into a 110-x-30 ft. middle pond before falling into a 220-x-40 ft. lower pond on either side of a wooden bridge. Also included in the design were two dramatic waterfalls using 200 tons of rock.

While preparing the water feature design, Landscape Design Services also worked with EasyPro Pond Products on a liner referral. The total square footage of the pond surface was about 18,000 sq. ft., but the project needed 5,000 sq. ft. of extra liner for the concrete walls, waterfall spillways and pond edges. Ouwinga recommended 45-mil PondGard Rubber Liners from Firestone Specialty Products. The liners are made of flexible EPDM rubber, making them suited for shaping around pond contours. They also resist punctures and will not crack or split in down to -40°F.

Installation challenges
The Landscape Design Services crew began working on the project in late fall of 2005, when the average temperature in Zeeland ranges from the low 40s during the day, to the teens at night. With a typical installation, liners are installed in the pond and under waterfalls first to ensure that water drains properly into the ponds. Knowing that they would not be able to get the pond finished before winter, and not wanting the liner to sit exposed, Landscape Design Services took a different approach and installed the waterfalls first. The crew began the project by digging a small portion of the pond surrounding the waterfalls, enabling them to
continue work through
the early winter months.
A 10-x-12-ft. bunker
was poured under-
ground behind each wa-
terfall, which drew
water from three 4-ft.
manholes at the bottom
of the ponds with 12-in. intake pipes. These pipes
carried the water back to the reservoir and,
through the use of gravity, the water traveled to
the pumps installed under the waterfalls, pushing
the water through. After the waterfalls were com-
pleted in the early winter, the job was put on hold
due to extremely cold and damp weather condi-
tions.
In the spring of 2006, the crew excavated the
pond and installed approximately 680 sq. ft. of flexi-
ble PVC pipe for the plumbing system. Two motors
were installed to pump a steady water supply to the
waterfalls, while another motor supplied the upper
pond. Each motor has a 950-gal.-per-minute capac-
ity, allowing for greater energy savings in the short
and long term.
The crew then laid the liner, seaming the panels
with Firestone QuickPrime Plus, QuickSeam Tape
and 6-in. Batten Cover Strips to ensure the pond
would resist leaking at the seams. Because Gentex
did not want the liner to appear above the water
level, the crew installed aluminum termination bars
below grade, anchoring into the concrete every 4
in. around the edge of the deep pond facing the
building. Then, 3 in. to 5 in. of small, lightly col-
ored stones and larger rocks were added in the shal-
low pond to conceal the liner there as well.
Completed in May 2006, the water feature was
landscaped with various shrubs, small and large
trees, wild grasses and plants to enhance its aes-
thetic appeal. The water feature received great re-
views from Gentex employees and others visiting
the headquarters.
"We are extremely pleased with the work of
Landscape Design Services and EasyPro Pond
Products, because they designed and implemented
a plan for exactly what we were looking for, and
we now have a beautiful water feature with a
durable liner that will last us for many years to
come," says Jeff Sluiter, facilities maintenance su-
ervisor for Gentex.

Oliveira is Systems Manager for Firestone Specialty
Products, Indianapolis, IN.
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