



## FABCON HELPS PRESERVE WETLANDS WHILE MOVING TOWARD WATER SUSTAINABILITY

FABCON, A MAJOR PRODUCER OF pre-cast concrete walls and a leader in green construction, has built an innovative storm-water management system on its Minnesota manufacturing site to help protect a nearby wildlife preserve. The award-winning project carries another environmental plus: It allows Fabcon to recycle rainfall run-off, a major step toward sustainability in the water-thirsty concrete industry.

The system includes a state-of-the-art, 360,000-gallon storage tank that captures storm runoff, and cleans out contaminants. The crystal-clear water is then discharged into the Minnesota River tributary that literally runs through the site, located in the Minneapolis suburb of Savage.

The company's operations have been based there since its founding in 1970, and today the plant manufactures upscale, highly insulated pre-cast concrete walls systems for big-box retailers like Target, as well as for office, institutional and public works buildings. Fabcon also operates manufacturing facilities in Indiana, Pennsylvania and Ohio.

Working closely with general contractor Outland Builders Inc., environment protection agencies, and system designer Barr Engineering, Fabcon created the treatment system to stop sediment-laden storm water from flowing off its site and into sensitive wetlands.

The site itself created a major challenge. Fabcon and its partners had to construct the swimming-pool-size storage tank over a former swamp on the property, and lay nearly a half-mile of reinforced concrete pipe. And because nearby plant production continued during the system's construction, managers and crews on both sides had to closely coordinate their adjacent operations.

The results made Fabcon's efforts worthwhile. The water discharging from the site is now cleaner and more sediment-free than natural runoff from the wetland upstream. Instead of using water from the city of Savage, which suffers from a small supply, Fabcon can rely more on its own recycled water. Because of its success in Minnesota, Fabcon is looking at installing similar water treatment systems at its three other plants.

In recognition of this project's success, the Minnesota chapter of Associated Builders and Contractors honored the project this fall with a Pyramid Award in the public works/environmental category.

### How the system works

Imagine an above-ground swimming pool that's 42 feet wide, 170 feet long, and 10 feet deep. This is the size of Fabcon's storage tank. Its concrete floor is 20 inches deep and the walls are one-foot thick. Inside are six individual cells. Each cell holds 60,000 gallons of water.

Two large pumps can push a combined 1,000 gallons of storm water per minute into the tank. The water comes from catch basins on the side of the property that would normally drain toward the wetlands. These catch basins channel all runoff to a central pumping station that "lifts" the water into the storm water treatment tank.

As the runoff is lifted into the tank by the two large pumps, two smaller pumps inject acid into the water at a predetermined rate to balance the pH of the water, thereby making it chemically neutral by the time it enters the tank.

After the water enters the tank, it flows through individual holding cells, where the water is tested. If required, chemical treatment is done at this point to remove any contaminants. After treatment, the water is left to stand for five days, which allows any remaining sediment to settle out to the bottom of the tank. Then it's allowed to drain off-site.

### Construction challenges

The two biggest project challenges were laying 2,200 lineal feet of reinforced concrete pipe while minimally interrupting Fabcon's production, and working over the poor soils that existed below the surface in Fabcon's yard.

Approximately 4,000 cubic yards of poor soils were exported, while more than 700 cubic yards of rock and sand were imported to support the reinforced concrete pipe, and



over 3,500 cubic yards of rock were hauled in to support the water-treatment tank. During all underground work, continual dewatering was required.

### **Benefits industry-wide**

The storm-water treatment has proven so successful that Fabcon is now investigating ways to use the treated water in its processes within the plant itself. In the near future, treated storm water could be used for washing and even within the mix to make concrete.

The successful capture and use of storm water for plant process could have huge long-term effects within the industry. Manufacturers would benefit as operational costs are lowered because they don't have to buy water from strained municipal sources.

*For more information, contact Fabcon at 1-800-727-4444.*