

CASE STUDY

Hydroscreen®
Minneapolis Zoo



Hydroscreen® creates a better environment for beaver pond

Challenge

The Minneapolis Zoo's beaver pond is a popular exhibit that is home to up to 40 birds and mammals. It is designed as a closed-loop system with an internal cleaning system to conserve water and minimize maintenance. The original recirculation system utilized a Diatomaceous Earth (DE) filter.

The DE filter was expensive to operate. It required 40 to 60 pounds of media daily and utilized energy. Operation was very dirty and the process required 15 to 30 GPM of backwash water daily that was sent to municipal wastewater treatment. Over a 365-day period, the amount of wasted water became significant. The filter was also maintenance intensive. It required a great deal of manual attention, and clean-up consumed five to eight hours a week. The major problem was that the beavers shed hair, gnawed bark, and chewed leaves, and this created too many solids for the DE filter to handle efficiently.

Solution

The zoo's environmental engineer determined that the best way to remove the coarse solids was through mechanical gravity screening, and the best choice for the job was a Hydroscreen® – a static screen

with no moving parts, so immediately it eliminated maintenance and operation costs. The Hydroscreen is designed with a special biwave wedgewire screen surface that provides maximum capacity with high solids capture in a compact area.

With this, they ordered two Hydroscreen® units, Model HS36 with 0.040" openings. Each screen handles an average of 330 GPM 24 hours a day, 365 days a year. The screens easily remove bark, leaves, hair and protect the sand filters. The zookeeper was surprised at the amount of hair captured; undoubtedly, all these fine hairs contributed to the high maintenance associated with the DE filter. The Hydroscreens® are easy to clean. Solids wipe right off and cleanup is finished in three hours once a week. These solids go to compost. The filtrate is polished through two sand filters that were transferred to the beaver pool from another area.

Results

The Minneapolis Zoo has a low cost, easy to maintain life support system for its beaver pond. This process is applicable for other pond-type exhibits for hippos, alligators, turtles, manatees, penguins and polar bears. ■



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