



Downers Grove Sanitary District, IL Aeration System Improvements

SUSTAINABLE FEATURES

The project has produced energy savings beyond the District's original expectation of 20%. Recent results have shown electric loads have decreased over 33% and experimentation is still taking place to further optimize the process. The District currently expects these improvements to pay for themselves in an estimated five years of reduced energy bills, despite the challenging space and hydraulic constraints.

This project received an Award of Special Achievement from the American Council of Engineering Companies in 2009!



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Background

Downers Grove Sanitary District ("District") hired Baxter & Woodman to implement energy efficiency improvements to the activated sludge aeration system at the District's 11 MGD Wastewater Treatment Center. The goal was to reduce the electric load by roughly 20%.

Challenge

These improvements needed to be constructed quickly in order to be completed before an anticipated electric rate increase. Also, the District's Wastewater Treatment Center is a mature facility that was expanded several times in the past. This presented multiple site, space, and hydraulic constraints.

Solution

Baxter & Woodman designed energy efficient and cost-effective improvements that included the first high-efficiency, single-stage centrifugal blower of its kind in Illinois, and its first hybrid installation with traditional blowers in the entire U.S.

Results

The design was completed in June 2007, and construction in July 2008. Whole-plant electric usage data indicate that a reduction in power consumption by approximately one-third was achieved. SCADA improvements now allow District staff to change the required DO, airflow, and even the process control (PID) parameters from virtually anywhere that has SCADA access, including remotely.

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"Baxter & Woodman listened to our goals, dedicated their expert staff, and exceeded our expectations . . ."

*- Nick Menninga
District Manager*



*Existing Multi Stage
Centrifugal Blower in
Foreground with New
Single Stage Centrifugal
Blower*