

Major savings for utility with plant design solution from IFS

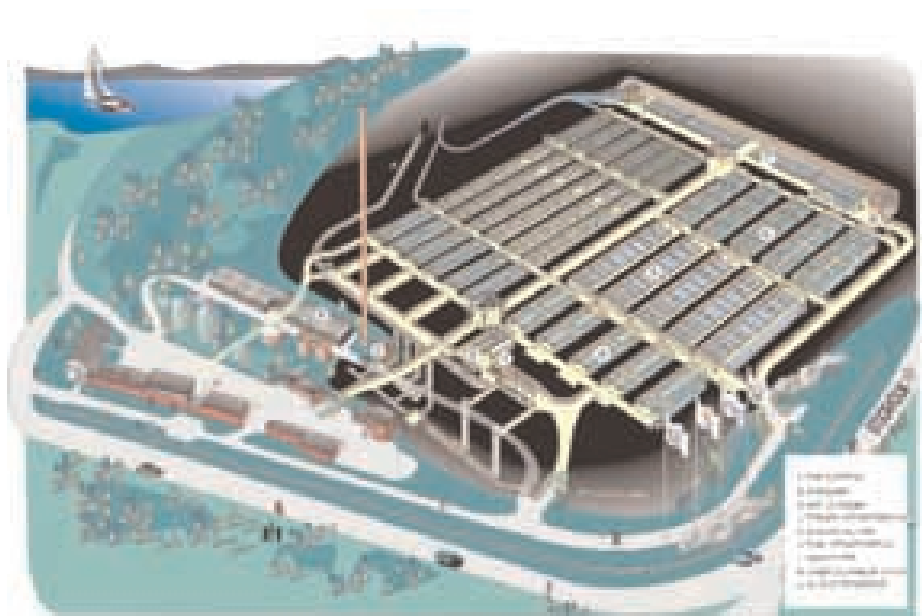
Käppalaförbundet is one of the most efficient water treatment systems in the world. Using an integrated plant design and maintenance system from IFS, Käppalaförbundet has an IT solution that matches its own processes in terms of efficiency and re-use of input material. The result is major savings and complete insight into all aspects of plant maintenance and design—not just at present but even in the long-term.

Käppalaförbundet, founded in 1957, is a municipal utility responsible for wastewater treatment in 11 municipalities in Stockholm, Sweden. With a 60-km long tunnel system, numerous pump stations and treatment plants, it is considered one of the most efficient water treatment systems in the world. The utility recycles wastewater and produces in the process a range of products such as clean water, biogas, soil improvement material and soil nutrients—waste treatment at its most environmentally friendly.

Using an integrated plant design and maintenance system from IFS, Käppalaförbundet has an IT solution that matches its own processes in terms of efficiency and re-use of input material. The result is major savings and complete insight into all aspects of plant maintenance and design—not just at present but even in the long-term. And the component architecture of IFS Applications means that whenever the system needs to be expanded, it is simply a matter of adding on the modules required.

The problem

In the early 1990s, the original system, then 25-35 years old, was no longer able to deal with the requirements of modern society and the population growth in the municipalities it served. For example, newly introduced environmental and labor legislation placed entirely new demands on the utility. New technology was required to improve the treatment processes, which included the processing of surplus nitrogen. And the population in the 11 municipalities had outgrown the capacity of the old system. Lars Färnstrand, production manager at Käppalaförbundet, explains the situation: “We knew we had to build a whole new plant to meet these demands, but we wanted to run the project ourselves. We know our business best. We wanted a system that would document every step we took so that we could anticipate problems and solve them in the planning and design stages.” The system would also become the company’s document database for maintenance.



The solution

Käppalaförbundet opted for in 1994 is now known as IFS Plant Design™, a totally integrated, component-based solution that facilitates the planning and design of complex plants by coordinating the various design teams in one system. What was particularly appealing about the solution was the promise it offered of being able to become the basis for a future enterprise asset management system. At the time, this approach was pioneering, but was totally in line with Käppalaförbundet's future-oriented outlook.

Implementation

The system took only a year to implement despite the fact that this was a completely new approach to operating a complex project of this size. Many of the consultants were used to working in a more traditional manner, where they had complete control and the final say over their designs. In the new system, all drawings had to be approved by Käppalaförbundet. Furthermore, the communication technology used was not as efficient as modern web-based communication. However, those involved, over 140 consultants, soon came to appreciate the possibilities offered by the new system. The close collaboration of the implementation team was also another positive factor.

Benefits

Lars Färnstrand has no doubts about the benefits of the plant design solution: "We got a better plant at a cheaper price. All phases of the project have paid off already." The go live time was cut by 50%, and costs for copying documents have been reduced by 90%. The database means that all information is stored electronically so there is no need to distribute drawings on paper, which saves more than money. It is also fully in keeping with Käppalaförbundet's focus on environmentally friendly solutions. And reports can be published directly on the web site.

Moreover, there were no costs incurred due to problems during the assembly phase since all issues

had been confronted and dealt with during the design process. This was one of the greatest benefits. Traditionally, in projects of this magnitude—the total budget amounted to SEK 2-3 billion—consultants often worked independently of each other, making it difficult to spot design problems until the assembly began. Here, with everyone working in the same system, incompatible designs were spotted immediately, and designers were forced to rethink and compromise.

It was also possible to standardize materials and methods. The plant looks as if it had been designed and constructed by one single entrepreneur, although in fact over 140 consultants were involved.

And from the first day of operations the entire plant has run without problems. One reason for this is that maintenance data have been available in the system from the very start. Instead of the unwieldy, and all too often unfinished, process of manually transferring design data to the maintenance system, this vital information has been entered automatically into the database during the course of the project and was ready to use when the plant went live. Now, thanks to the database, all changes are recorded, so that everyone who works with the plant can access its actual status whenever required. Today, the system works so well that 9 out of 10 issues can be handled by either of the two technicians on call without them having to leave home.

In the future, the utility plans to integrate components for financials with the maintenance system, further expanding it into a fully-fledged enterprise asset management solution. The flexibility of IFS Applications will enable this to be done without disrupting the operations of the plant. And even more paperwork will be eliminated.

Hardware

Unix Server

Software

IFS Plant Design