



# ITT

## Lowara reference list

RESIDENTIAL BUILDING

COMMERCIAL BUILDING

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IRRIGATION

MUNICIPAL SERVICES

Case File No: **ITT Lowara 00013a**

Date: **July 2004.**

Project: **Prins & Dingemans (P&D) Mussel Farm**

City: **Oosterschelde - The Netherlands**

Contractor:

Consultant:

Products: **Hydrovar, LM Units, SH Units**

## ITT Pumps Provide Complete Solution for Dutch Mussel Farm

*Faced with the need to pump a combination of salt and fresh water to clean, cool and package a range of shellfish, the engineers of Prins & Dingemans, a Dutch mussel manufacturer, turned to ITT to address all of their needs.*

Prins & Dingemans (P&D) is the largest mussel manufacturer in The Netherlands and market leader in the Benelux market. P&D brings to market over three million pounds (1.5 million kilos) of mussels, oysters and other shellfish a year.

The culturing of mussels and oysters for the company takes place in the Oosterschelde, an almost 100,000 acre (37,000 hectare) tidal wetland that is part of the North Sea. The Oosterschelde is the largest national park in the Netherlands and an important fishing ground for mussels, oysters, flatfish and crabs. The tides and flora of the park create water that is rich in nutrients, and that gives an intense, desirable flavor to the mussels.

### Reducing Operating Costs With a Single Vendor

Up until about 8 years ago, P&D used pumps from a variety of suppliers and reliability and maintenance created constant challenges for the company. The variable production cycles of the pumps, which was dependent on the flow of shellfish from ships to the processing lines, meant there were periods of time where the pumps sat idle. During these periods, the harbour water, which is rich in microscopic marine life, would cause the pumps to foul and require cleaning.

Using a single brand of pumps simplified the supply and maintenance situation for P&D. The Lowara brand pumps were also equipped with ITT's Hydrovar® "smart pump" control technology, which improved efficiency and reduced operating costs.



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▲ Three ITT Vogel LS pumps with cast iron Duplex impellers and shafts. Two ITT Vogel LM series pumps back up and supply the smaller units.



▲ The unloading platform where containers from the ships are placed above the flush platform



▲ Whatever the water-handling application - water supply, cleaning shellfish, cooling, seed harvesting or packaging - today, all of the approximately 35 pumps used in this P&D facility are supplied by ITT brands including Lowara, Vogel, Flygt and Hydrovar.

### A Wide Range of Applications

After the mussels are fished out of the farming beds, they need to be carefully rinsed for five to 24 hours to remove all sand before packaging. The production process includes separation of the mussels from other items, such as crabs, stones, empty shells, etc. This is done in large metal containers that sit in flushing platforms that capture and filter the rinse water for re-use. Here, P&D now uses three ITT Vogel brand LS 15kW pumps that replaced six existing pumps while maintaining similar performance curves. Each pump supplies 550 M<sup>3</sup> per hour.

Once the washing cycle is complete, the mussels are bathed in constantly circulating cold water – maintained at 2 degrees Celsius - to keep them fresh until they are packaged and transferred to refrigerated and frozen storage facilities. P&D uses ITT Vogel brand model LM and Lowara brand model SH pumps in the production lines to keep the mussels cool and properly aerated.

Oysters are processed in much the same way, but in smaller tanks that are stacked for the washing process. P&D is currently refining a cleaning process that uses two Lowara brand model FH series pumps controlled by ITT's Hydrovar technology to vary the flow of water from 0-100% of capacity, based upon the amount of product in each tank. This will further improve energy efficiency and pump maintenance costs over and above the use of the pumps alone.

### Hydrovar Control Systems Proven to Improve Pump Efficiencies

Hydrovar is a patented ITT smart pump technology that monitors and controls pump operations according to customer specifications. The Hydrovar control system monitors both the supply and demand pressures of a pump or multiple pump installation. Customers find a number of important advantages to using Hydrovar:

- Reduced Operating Costs – Pump duty cycles and operating speeds are dynamically optimized to the application requirements that may vary over time, reducing pump motor energy consumption.
- Reduced Implementation Costs – Since a pump can only operate along its engineered performance curve, constant pressure systems always require additional components in order to regulate the supply of liquid to the application.
- Enhanced Performance Levels – Component reduction, reduced wear and tear on components, and improved monitoring and control all contribute to overall performance level improvements by minimizing down time and out-of-spec operations...all at reduced overall implementation and operating costs.

Details of Lowara's range can be found at [www.lowara.com](http://www.lowara.com).

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