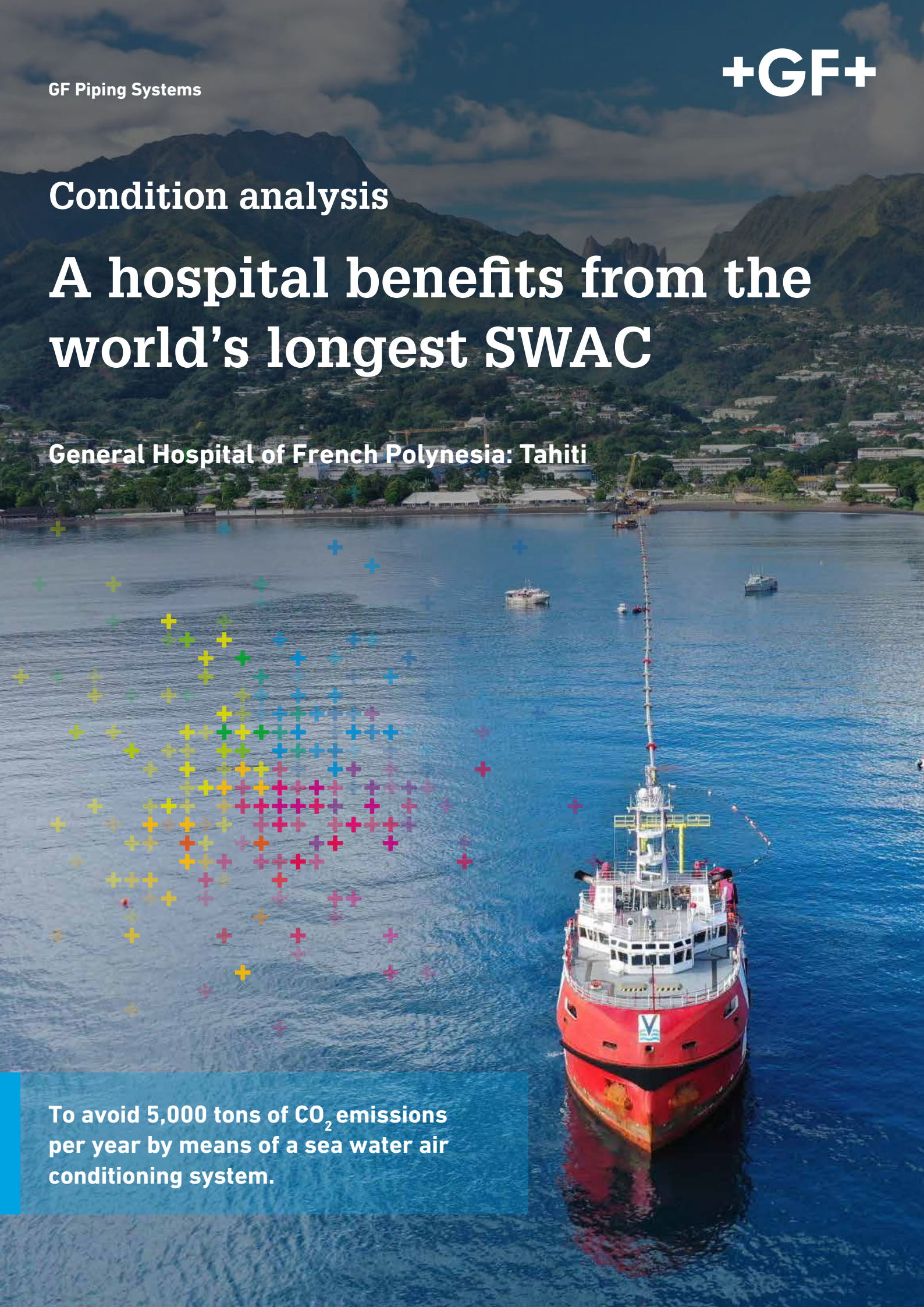


Condition analysis

A hospital benefits from the world's longest SWAC

General Hospital of French Polynesia: Tahiti

To avoid 5,000 tons of CO₂ emissions per year by means of a sea water air conditioning system.



Secure and sustainable: air conditioning straight from the seabed



A SWAC uses the temperature difference between surface water and deep water to create sustainable air conditioning systems. GEOCEAN has taken on the challenge of installing the world's longest SWAC for the General Hospital of French Polynesia in Tahiti. For this project—which had to overcome additional complexities associated with the pandemic—the company turned to GF Piping Systems France for the provision of ultrasonic non-destructive testing to ensure that the system was watertight.

Project history

The General Hospital of French Polynesia asked the maritime works specialist GEOCEAN to install a Sea Water Air Conditioning (SWAC) system that is less energy intensive than traditional systems. Starting in 2019, qualification testing gave GEOCEAN and its customer the necessary assurances that GF's technology and long-term success/failure analyses were operating as expected. The part of the project carried out by GF was completed in late May 2021. To meet the tight deadlines, the NDT inspectors worked on-site six days per week from January 2021. Despite the challenges posed by the travel restrictions implemented in response to the COVID-19 pandemic, the solution allowed the customer to meet all of their installation deadlines.

Solution

GEOCEAN ordered a solution comprising pipes, branch fittings, welding machines, and dataloggers. HDPE was chosen for the plant's underwater pipelines as it is an ideal material for use in sea water, due to the fact that it does not rust. GF offered a service solution comprising ultrasonic non-destructive testing (NDT), which assesses the strength of welding and ensures that it is free from defects, backed up by GF's exclusive success/failure algorithm. This method was used in combination with GF welding machines to ensure that the welding process complies with international standards.

Improvement achieved

GEOCEAN specializes in the construction of offshore structures, especially at nearshore sites. GF had been working with this customer for two years when they requested a quotation for the provision of a complete solution. This project confirmed that GF and GEOCEAN are a well-matched partnership. This system will help to avoid 5,000 tons of CO₂ emissions per year and reduce electricity consumption by 12 GWh, resulting in energy cost savings of €2.9 million per annum.



The team of engineers prepares for the sea launch.



The tugboat tows the piping system prior to its submersion.

Benefits for the customer

- Assurance that a system will not leak prior to being put into operation.
- Reduced operating costs: low in terms of maintenance and preparation, maximum use of the system.
- Compliance: the ultrasonic NDT testing was required to meet the end customer's specifications.

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