

# **Empowering Green Energy-Saving Transformations in Star-Rated Hotels**

#### Project Background: Embracing the Trend of Green Development, Shangri-La Hotel Initiates Energy-Saving Renovation

With the introduction of "Dual Carbon" goals, the hotel industry in China has witnessed a wave of green transformation. Many high-end hotels are undertaking energy-saving renovations tailored to their unique characteristics, and the Jing An Shangri-La Hotel in Shanghai is one such example. The Jing An Shangri-La Hotel officially began operations in 2013, and after ten years of service, its hot water system required an upgrade for improving energy efficiency to ensure guests continue to enjoy the same high-quality accommodation experience while enhancing the hotel's green and low-carbon performance.

To address the needs of the Jing An Shangri-La Hotel, Grundfos collaborated with professional energy-saving service partners to conduct a comprehensive energy consumption diagnosis. Together, they explored energy optimization and energy-saving and emission reduction solutions, ultimately helping the hotel achieve a complete upgrade of its domestic hot water and air conditioning heating systems. This initiative played a significant role in advancing the hotel's green transformation.

#### **Challenges:**

As a service-oriented industry catering to the public, the hotel sector faces unique challenges in energy-saving renovations. Especially for high-end hotels that prioritize customer experience, the key concerns are minimizing the impact of renovations on daily operations and achieving a balance between enhanced user comfort and energy efficiency post-renovation.

# High Energy Consumption of Traditional Steam Boiler Systems

Prior to the renovation, the hotel relied on steam boilers to provide heat for domestic hot water and heating in winter, resulting in high energy consumption. Additionally, the steam boiler system posed issues such as excessive noise, difficulty in condensate recovery, and steam loss, making equipment maintenance challenging.

### • Simultaneous Operations and Renovation: Dual Challenges of Time and Space

The renovation of the hotel's systems could not disrupt its normal operations. To minimize the impact, the construction team had to significantly reduce the on-site renovation and new system commissioning timeline. Moreover, the new equipment had to be installed in confined spaces across various equipment floors of the building, adding to the complexity and pressure of the renovation due to limited time and space.

## Solution:

## **Empower Green Transformation Through Collaboration** • Partnering with Strategic Allies to Deliver Customized Innovative Solutions for the Hotel

In this project, Grundfos collaborated with an energy-saving service partner specializing in energy management for high-end hotels to provide a tailored, efficient water distribution solution and a flexible business cooperation model. The energy-saving service company handled the overall design, coordination, and implementation of the renovation plan, while Grundfos enhanced the solution with its high-efficiency and intelligent pump skids. Together, they enabled the hotel to quickly recover renovation costs through system, service, and operational energy savings, maximizing the hotel's green transformation.



Possibility in every drop



Compact, Convenient, and Advanced Hydraulic Modules Quiet, Efficient, and Intelligent E-Pumps Energy Efficiency Exceeding Traditional Solutions by Over 15%

#### 1. Compact, Convenient, and Advanced Hydraulic Modules

This renovation project replaced the original steam boiler system with air-source heat pumps and water-source heat pumps as the new heat sources. Air-source heat pump skids are typically installed outdoors, and most of the circulators in the pump skids also need to be installed outside. Traditional outdoor pump installations face challenges such as poor protection, susceptibility to corrosion, rapid aging, short lifespans, and high failure rates. Additionally, finding suitable locations for electrical equipment like power distribution and control cabinets is difficult and costly.

Grundfos' integrated intelligent pump skids perfectly address these issues:

► The pump skids are equipped with a protective enclosure that is windproof, rainproof, and corrosion-resistant, with a compact structure for easy installation.

► The pump skids include Grundfos' E-pumps, which combine the pump, VFD, and controller into one module. This design requires a single power supply only and significantly reduces electrical and control costs for the water distribution system.

► The modules offer high cost-performance, low overall costs, and excellent energy-saving performance.

#### 2. Quiet, Efficient and Intelligent E-Pumps

In this project, the water-source heat pump skids not only serve as the heat source for domestic hot water and heating but also produce cold water to supplement the air conditioning system. These pump skids are installed on various equipment floors, and the circulators that come with it are required to have low noise levels, minimal vibration and high energy efficiency. The superior performance of Grundfos' E-pump has earned recognition from the customer:

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Road, Minhang District, Shanghai 201106, China Tel: 400 920 6655 E-mail: saleschina@sales.grundfos.com www.grundfos.cn  Quiet operation with minimal vibration, equipped with IE5 permanent magnet VFD motors for high energy efficiency.
Integrated equipment combining the pump, VFD, and controller, eliminating the need for a separate pump control cabinet. The system can be directly integrated into the customer's BMS and cloud platform through communication modes, reducing overall costs.

► The prefabricated E-pump system enables swift on-site installation, reducing construction time and conserving space. This approach effectively minimizes disruptions to the hotel's regular operations during renovations.

### • Innovative System Solutions Help the Hotel Significantly Reduce Energy Consumption of Hot Water System

The application of Grundfos' green and efficient solutions has played a significant role in the low-carbon transformation of the Jing An Shangri-La Hotel, Shanghai. Through practical operational comparisons, the energy efficiency of the Grundfos intelligent E-pump system has exceeded that of traditional solutions by more than 15%, and the hotel is expected to achieve considerable annual energy savings.

As a global leader in pump and water technology solutions, Grundfos is always at the forefront of green development in the industry, committed to continuously providing customers with green and efficient solutions, and setting an excellent example for energy-saving renovations in the industry. In the future, Grundfos will establish closer cooperation with upstream and downstream partners in the industry, helping companies strengthen their core competitiveness and achieve ultimate victory in green transformation.

