



From energy drain to intelligent gain: How smart pumping transformed a High-rise complex

The Situation

A large commercial residential complex in India was experiencing ongoing challenges across its domestic water transfer, irrigation, swimming pool, and hot water circulation systems. The development comprised three high-rise towers of 41 floors each, supported by shared amenities including a gymnasium, swimming pool, and sports facilities. With operational demands increasing, the facility management team grew concerned about aging pump infrastructure and steadily rising energy costs, prompting a detailed system audit.

The assessment revealed multiple inefficiencies: most pumps were over 10 years old and operating well below optimal efficiency, irrigation pumps ran continuously without demand-based control, and hot water circulation pumps were significantly oversized. As a result, the systems consumed an excessive 528,155 kWh annually, leading to unnecessary energy expenditure and inconsistent performance. These findings underscored the need for a holistic optimization strategy, that could stabilize operations, improve efficiency, and substantially reduce long-term operating costs.

Convincing a residential apartment association is always challenging, but with our detailed energy audit report, we proved our value and secured the order with promised savings.

Vimal Raj,
Business Developer-Energy Optimization
Grundfos India

The Solution

Grundfos responded by carrying out a detailed Pump Audit, capturing actual flow, head, and power consumption across all systems. Based on these findings, the legacy domestic water transfer pumps were replaced with two CR units, while the treated water pumps were also upgraded to two CR units. For the irrigation and carwash applications, Grundfos introduced two CRE pumps equipped with integrated VFDs, enabling constant-pressure, demand-based operation and eliminating unnecessary running during zero-demand periods.

Further optimization included the installation of four NB pumps for the swimming pool system and the de-staging of ten existing CR hot water circulation pumps to align with actual head requirements. These targeted interventions addressed the core issues like excessive energy use, oversized equipment, and uncontrolled operation, while improving overall reliability and reducing maintenance effort. The customer selected Grundfos over competing options due to its integrated VFD technology, intelligent control capabilities, proven energy-saving performance, and a cost-effective solution with a short return on investment, supporting both operational stability and long-term sustainability goals.

GRUNDFOS 

Possibility in every drop



Reduced 27%
Annual energy consumption

144,690 kWh
Annual energy savings

Reduced by 118 tons
Annual carbon emission

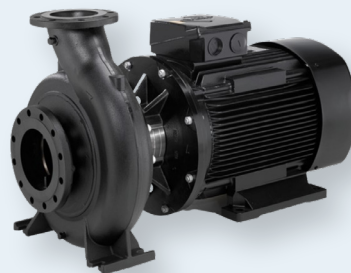
The Outcome

The optimization delivered measurable and sustained results. Annual energy consumption dropped by 27%, from 528,155 kWh to 383,465 kWh, translating into energy savings of 144,690 kWh per year and a reduction in electricity costs of ₹1,160,414 annually. In parallel, the upgrade helped cut carbon emissions by 118 tons each year, reinforcing the complex's environmental commitments.

With a total investment of ₹2,277,000, the project achieved a payback period of just two years. Beyond the financial gains, the systems now operate with greater stability and intelligent control, reducing maintenance requirements and downtime. Overall, the solution delivered higher efficiency, lower operating costs, and long-term sustainability for the entire complex.

Grundfos Supplied

CR
CRE
NB



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