



Driving sustainable living in high-rise residential towers with Grundfos solutions

The Situation

A prestigious high-rise residential complex, comprising three 55-story towers with 630 apartments, sought to optimize its water supply systems and invited Grundfos to conduct an Energy Check across its infrastructure. The evaluation focused on 12 hydropneumatic systems, with four systems per tower tasked with delivering consistent water pressure to all residents across the expansive development.

Through a detailed performance analysis, including real-time measurements of flow, pressure, and power on selected pumping systems, the Grundfos team uncovered critical inefficiencies. The installed pumps were found to be significantly oversized and operating well outside their Best Efficiency Point (BEP). Although fitted with Variable Frequency Drives (VFDs), the pumps were still running inefficiently, resulting in excessive energy usage and elevated maintenance demands. These insights highlighted a clear opportunity for system optimization and long-term cost savings.

The Solution

Grundfos proposed a comprehensive pump optimization strategy to tackle the inefficiencies uncovered during the energy check. This involved replacing the existing pumps with right-sized units that aligned closely with the building's actual flow demands, ensuring they operated nearer to their Best Efficiency Point (BEP). By also optimizing the system's pressure set point, Grundfos was able to achieve significant energy reductions while maintaining consistent and reliable water pressure across all floors.

To enhance cost-efficiency, the solution made use of the existing Grundfos MPC controller, avoiding unnecessary capital expenditure. The control system was fine-tuned for improved responsiveness and efficiency, contributing to further energy savings without compromising performance. As part of the pilot phase, two of the original pumps were retained as standby units, providing operational redundancy and ensuring uninterrupted water supply during the transition to the optimized configuration.

Our optimized solution ensures long-term savings and creates lasting value for both customers and the environment.

Vimal Raj
Business Developer, Energy Optimization

GRUNDFOS 

Possibility in every drop



Up to 32,339 kWh
Annual energy savings

23 ton
Annual CO₂ reductions

The Outcome

Grundfos' optimized pumping solution helped the residential complex to realize substantial energy savings and a marked reduction in operational costs. The refined pressure management strategy ensured a steady and reliable water supply to all apartments while eliminating unnecessary energy use, supporting the property's drive toward greater sustainability.

By reusing the existing Grundfos MPC controller and retaining standby pumps from the original system, the customer achieved cost-effective modernization with minimal capital investment.

The optimized setup not only reduced maintenance needs but also prolonged the lifespan of the pumping systems, securing long-term operational reliability and value for the high-rise development.

Grundfos Supplied

Grundfos Hydro MPC E system*
Energy optimization solutions



*Product image is for representation only

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