HILTON HOTEL
CASE STUDY

Hilton Mumbai partnered with 75F to implement automated building controls which took just 4 months and resulted in energy savings of 1,48,586 kWh, corresponding to 9% over its baseline benchmark.

THE BACKGROUND

Hilton is one of the world's largest hospitality companies operating in 124 countries and territories, boasting a combined portfolio of 7,399 properties globally. The Hilton Mumbai is conveniently located just 1 km from Mumbai International Airport and features 170+ rooms. With respect to sustainability, the Hilton Group has been a pioneering force in hospitality, being the first to set science-based carbon targets aligned with the Paris Climate Agreement, which have been approved by the Science Based Targets Initiative (SBTi). Hilton is committed to reducing its Scope 1 and 2 carbon intensity by 61% and reducing energy intensity of its hotels by 75% by 2030.

THE CHALLENGE

Hilton Mumbai was facing an array of complex challenges in managing HVAC operations using its existing Building Management System (BMS). The Facility Management Team needed more than just a conventional BMS, seeking to transition from manual to fully automated HVAC operations. The team was in search of a best-in-class integrated solution that could offer enhanced control, visibility, and energy savings. Additionally, it required a solution that could facilitate remote management of its HVAC operations.

AT A GLANCE

Location	Andheri East, Mumbai
Building Type	Hotel
Area	1,00,000 Square Feet
75F® Solutions	DCWB Number of HyperStats: 8 Number of CCUs: 8 Number of Smart Nodes: 8
Turnaround Days	120 days from start to commissioning

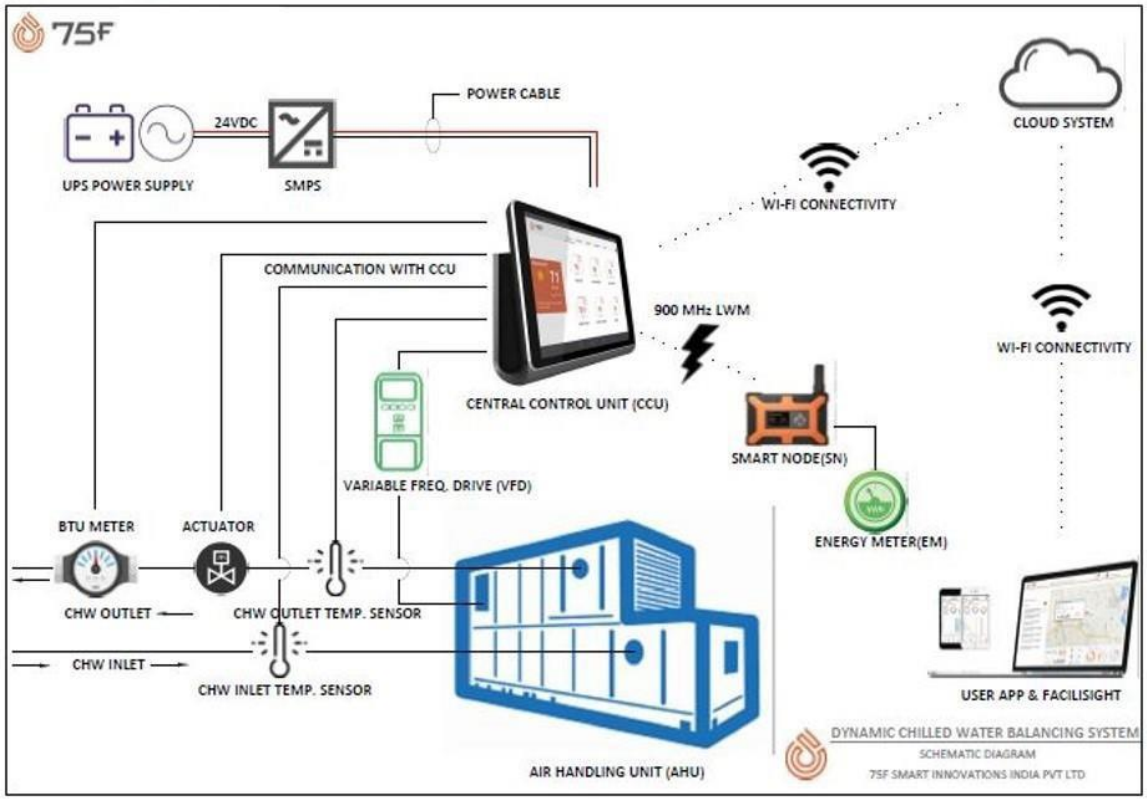
THE SOLUTION

Installation and Execution

Installation and commissioning at a hotel near Mumbai International Airport can be challenging due to the constant flow of travelers and high occupancy rates. However, 75F's out-of-the-box IoT-based BMS suite is known for its quick turnaround time, retrofit-friendly design, and ability to optimize HVAC operations in existing buildings. The installation team had to wait for the opportune moment when the AHUs were shut down to comply with operational requirements. Displaying patience, the 75F team efficiently deployed necessary solutions within a brief window of time.

Dynamic Chilled Water Balancing (DCWB)

DCWB offers a unique control solution for the chilled water line of Air Handling Units (AHUs). Leveraging the heat load demand from the DAB algorithm, it optimizes chilled water flow by monitoring inlet and outlet temperatures and controlling the CHW actuator. This solution minimizes CHW usage while maintaining the desired temperature. Integration of the Central Control Unit (CCU), existing BTU meter, and a new Actuator significantly reduces chilled water usage, saving on energy costs.



Smart VFD Control

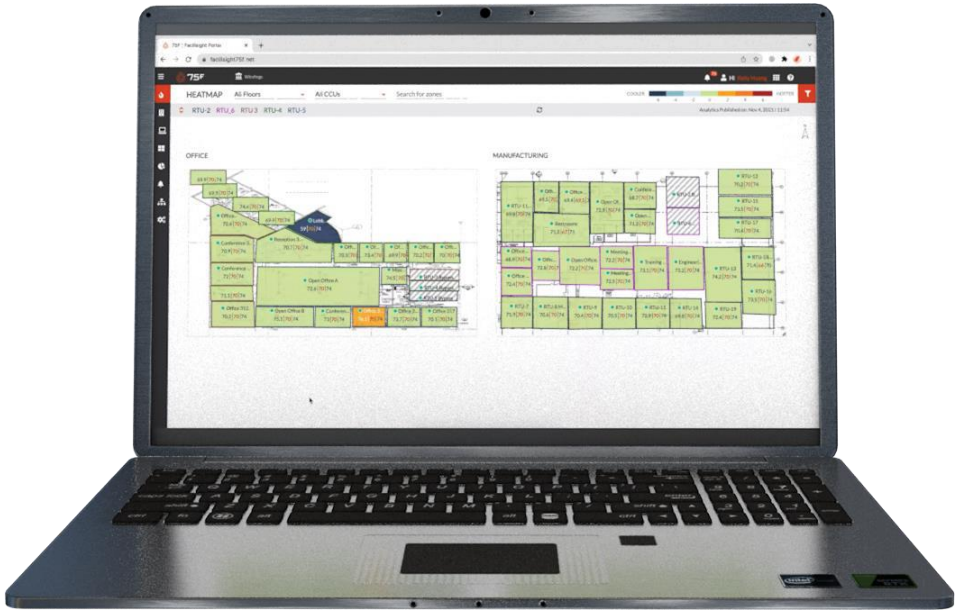
Designed for centralized HVAC systems, 75F's Smart VFD Control uses sensors at the AHU level to relay data wirelessly to the CCU. This unit then optimizes AHU motor and CHW actuator operations. Energy savings are achieved through precise temperature monitoring and control sequences. 75F's proprietary algorithms optimize control strategies, modulating VFD and CHW actuators incrementally for stable building temperatures, preventing overcooling. The algorithm also prioritizes different AHUs based on actual usage, helping to avoid energy waste.

75F Facilisight

Facilisight provides multi-site visibility into HVAC energy consumption, enabling proactive monitoring and automated control. This AI-powered data analysis tool offers real-time insights into key metrics, including heatmaps and occupancy trends, through an intuitive graphical interface. This allows for minimal intervention facility control while enhancing energy efficiency and occupant comfort.

HyperStat for Smaller Capacity CHW AHUs

For smaller capacity CHW AHUs, 75F's HyperStat offers enhanced control and energy savings. It also controls TFA valves and is the world's most advanced thermostat. HyperStat measures and displays IAQ and other key parameters like temperature, humidity, CO_2, VOC, PM2.5, Lux level, sound, and occupancy. These devices replace old-generation thermostats and can connect to the 75F IoT Platform for remote monitoring and control.



THE RESULTS

Energy Savings

The Hilton Mumbai installation commenced in mid-June 2023 and was successfully completed by the end of October 2023, achieving full installation and commissioning within just four months. Energy data collection began in January 2024. Over a span of **12 months**, the 75F solution delivered significant energy savings, **reducing consumption by 1,48,586 kWh** on the Chiller plant and AHUs—equating to a **9% reduction compared to the baseline benchmark**. This initiative also led to a notable decrease in **CO_2 emissions by 117 tons**, equivalent to the carbon sequestered by **1,738 tree seedlings over a decade**. Additionally, the energy savings contributed to the **annual electrification of 168 rural homes**, reinforcing a commitment to sustainability and environmental stewardship.

Fast and Easy Installation

The deep knowledge and rich expertise of the 75F installation and technical teams supported the Hilton facility management team with rapid installation, with just over 120 days for the installation and commissioning of the entire Hotel.

Energy Management Dashboards

To give complete visibility on all the key performance energy parameters, 75F's Managed Services delivered customized dashboards to the Hilton facility management team.

Managed Services

75F's Managed Services Team took care of the complete site post-commissioning and made sure that the site operated at peak levels of energy efficiency.