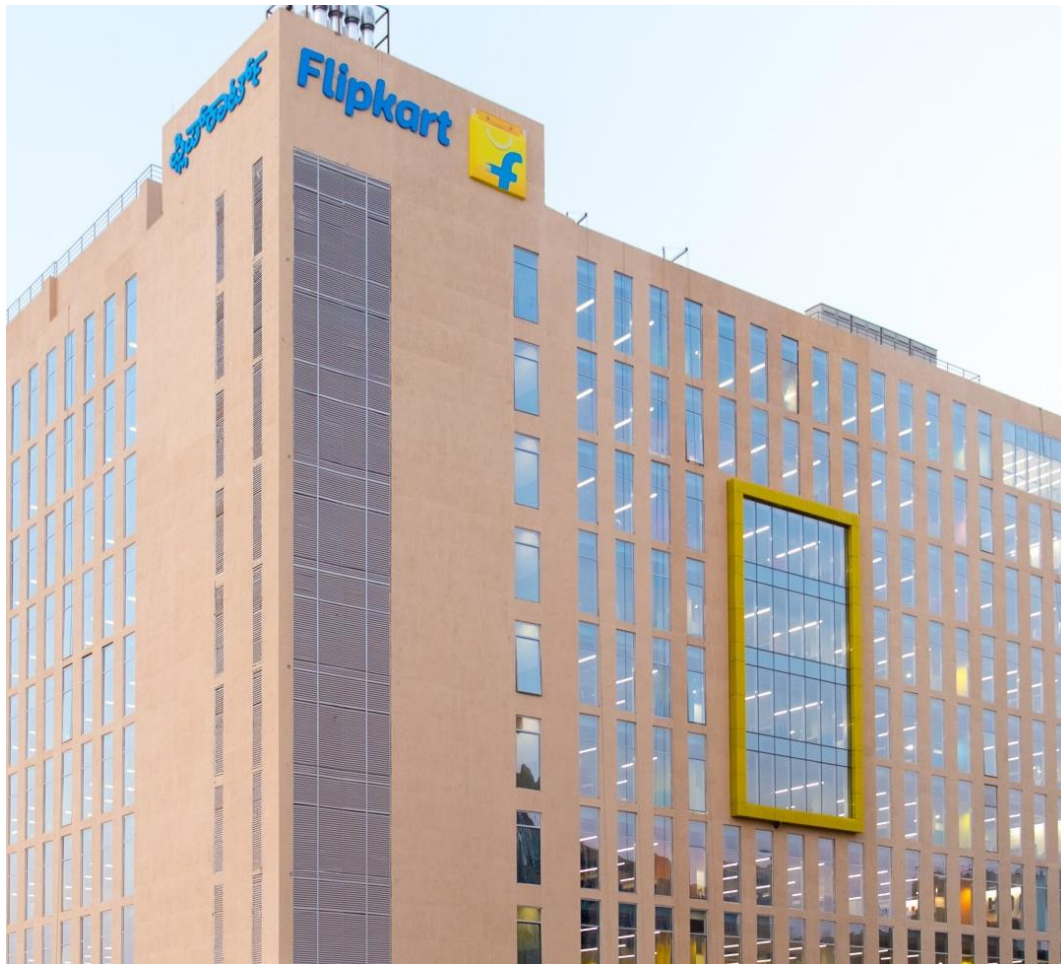


FLIPKART CASE STUDY

Flipkart partnered with 75F to save up to 24.8% on energy efficiency and deliver exceptional comfort to its employees.



THE BACKGROUND

Flipkart, an online retail Indian company headquartered in Bangalore, has its main office campus in Embassy Tech Village (ETV), Kadubeesanahalli. The campus comprises 3 blocks, A, B, and C, with an approximate total carpet area of 837,279 sq. ft.

The space cooling across all floors in the building was managed by the centralized air conditioning system, which was distributed by Air Handling Units (AHUs).

THE CHALLENGE

When Flipkart approached 75F, one of the primary problems they faced was inconsistent hot and cold spots across the office spaces in their buildings. Additionally, they lacked the scheduling of the AHUs. Also, there was no building management system (BMS) in place. The site was managed by a small thermostat to control the valve, with all of their 60 AHUs manually controlled. The client wanted a solution that could help them save on energy costs and improve the energy efficiency of the HVAC operations.

AT A GLANCE

Location	Embassy Tech Village (ETV), Bangalore
Area	837,279 square feet
75F® Solutions	75F® Dynamic Airflow Balancing 75F® Dynamic Chilled Water Balancing 75F® Indoor Air Quality Monitoring 75F® Facilisight
75F® Products	75F® SmartNode™: 1,063 75F® HyperStats™: 216 75F® Central Control Units™: 60 75F® OTNs: 43 75F® SmartStats: 12
Turnaround Days	180 Days from installation to handover

THE SOLUTION

In one of the largest and one-of-its-kind, retrofit energy-saving projects, 75F competed against a legacy BMS provider and won the project based on technical and installation competencies. For the project, 75F provided DAB, DCWB, and IAQ applications to all three blocks in Flipkart's ETV campus to save energy, eliminate thermal discomfort, deliver end-to-end automation, and provide completely customizable energy dashboards.

Installation and Execution

When 75F got on board, Flipkart had already opened its office to its employees. Although the occupancy wasn't as high as that during pre-COVID times, it added to the challenge of the retrofit installation work. However, because of its retrofit-friendly technology stack, 75F could install its solutions without requiring any duct modifications. Indeed, the out-of-the-box solution avoided noisy and space-consuming onsite duct fabrication work.

Dynamic Chilled Water Balancing (DCWB)

75F deployed its Dynamic Chilled Water Balancing Solution at the Flipkart sites to optimize the HVAC system using intelligent controls and to deliver energy savings. 75F Central Control Units, installed at each Air Handling Unit (AHU), acted as the cloud gateway and controlled the chilled water actuators at the AHUs. The chilled water ΔT was managed such that it matched the design set point and ensured no extra flow occurred through the chilled water line, thereby driving savings. The

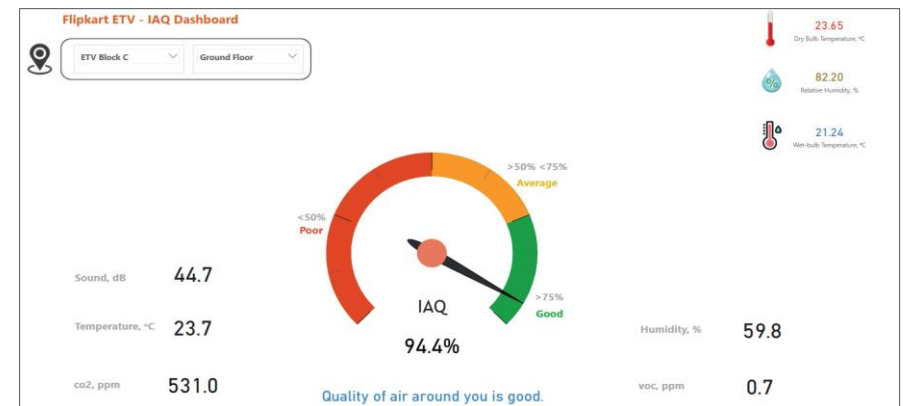
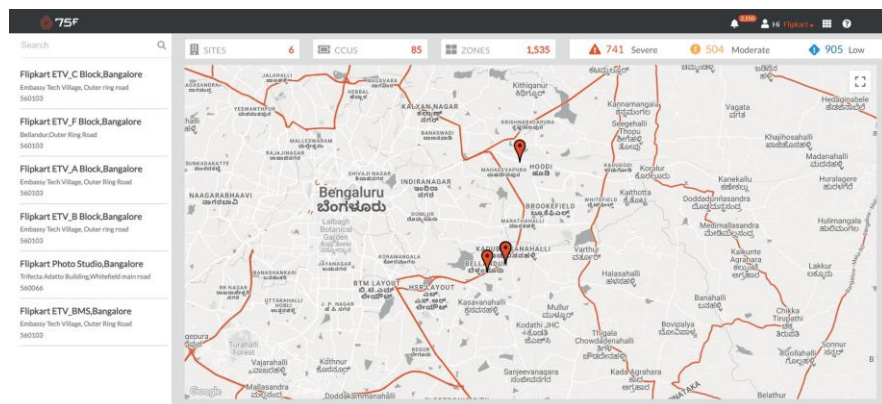
Chiller Management System provided insights into factors such as chiller inlet and outlet water temperatures, compressor current, suction temperature, suction pressure, and discharge pressure.

Dynamic Airflow Balancing (DAB)

Dynamic Airflow Balancing (DAB) uses machine learning algorithms to optimize cooling by redirecting conditioned air away from unoccupied and sparsely occupied areas to zones that require additional cooling. The systems deployed to modulate the variable frequency drives (VFDs) based on sensory inputs helped in maintaining optimal comfort levels while providing significant energy savings. The DAB monitored the comfort for every zone, created a heat map to optimally run the AHU, and maintained a superior level of comfort while reducing the envelope of air required.

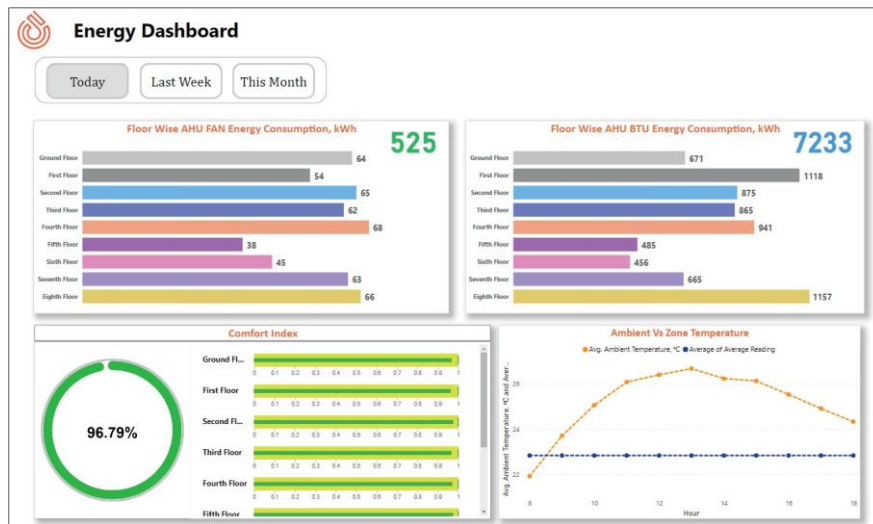
Indoor Air Quality Management (IAQM)

For a campus comprised of 3 buildings, 75F installed 216 Hyperstats, making the site a highly dense RF environment. Smart Stats were provided to monitor the IAQ parameters such as CO₂ VOC, PM 2.0, temperature, relative humidity, lux levels, PIR occupancy, and sound levels. Hyperstats also provided visibility on the IAQ conditions experienced by the occupants instead of merely measuring the IAQ levels at the return air duct. The IAQM solution provided visibility to facility managers so that they could take necessary steps to ensure a healthy workplace.



Facilisight

The powerful 75F Facilisight solution enabled multisite visibility and insights into the HVAC energy consumption through proactive monitoring and automatic control system capabilities. The AI-backed data analysis tool provided a single-pane view of key metrics in real-time to analyze critical factors such as heat maps and occupancy trends for granular-level reporting. The insights and analysis offered in an intuitive graphical user interface empowered the facility team of Flipkart to control their buildings with minimal intervention while increasing energy efficiency and maximizing occupant comfort. As per the client's request, 75F provided in-depth energy management, IAQ, and AHU level monitoring dashboards.



THE RESULTS

The 75F solutions engineered to meet Flipkart's facility management objectives resulted in **reduced energy consumption** while ensuring superior ambient air quality. Added features such as live reporting and insight-driven data metrics with intuitive user interface dashboards **optimized operational efficiency** and enabled the e-commerce brand to deliver an **excellent working environment** to its employees.

Incremental Saving in Energy Efficiency

75F's smart solution has brought significant savings and efficiencies to the Flipkart campus achieving **energy savings of 17,86,848 kWh**. That is a **24.8% saving** as compared to the baseline consumption. In the graph below, the green graph represents expected energy savings till date.

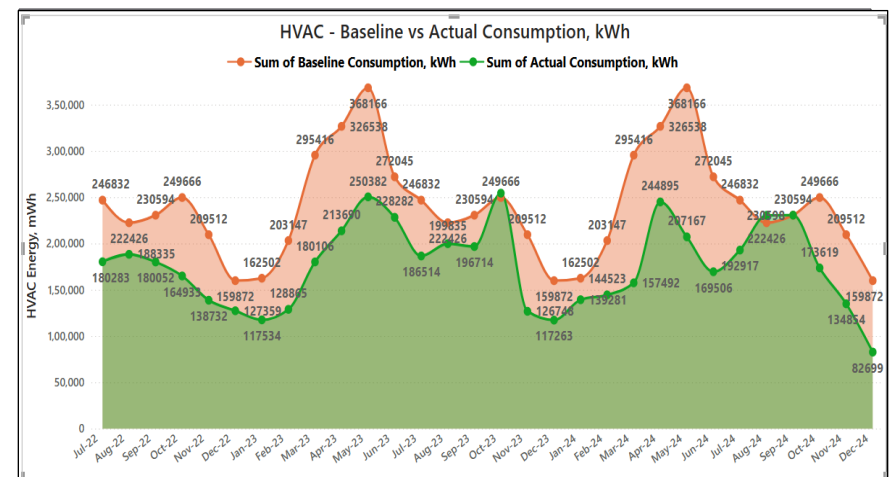
With this concerted effort, **CO₂ emissions** have been **substantially reduced by 1,413 tons**, an accomplishment equivalent to **planting 16,548 trees**. Furthermore, this reduction has facilitated the **annual electrification of 1,598 homes** in rural areas, marking significant progress towards sustainability and environmental stewardship.

Fast and Uninterrupted Installation

Installation of sensors or controllers in an operational site is a difficult task. However, due to 75F's wireless communication devices, it was relatively easily achieved. The entire end-to-end installation took merely 45 days.

Elevated Comfort Levels

Within a short span of the project commissioning, the client witnessed a reduction in the hot and cold spot complaints from facility occupants. Additionally, the improved air quality brought the Flipkart campus accolades by earning the prestigious UL Certification for IAQ management.



To learn more about our intelligent building solutions, visit www.75f.io