## In Hotels | Energy Management

Problem Statement

Located in Kota, one of the prestigious and well-known hotel in Kota, Rajasthan. The hotel operators were facing issues with increasing electricity bills due to inefficiency in ACs, un-ethical activities (managers providing rooms illegally) & downtimes that affected the quality of services. The inefficiency was impossible to identify in their existing methodology. Also, they were lacking the understanding of the energy consumption over time to understand the cost implications. The electrical team wanted to monitor the electrical & energy parameters of individual rooms and common facilities to better understand energy consumption of the rooms.

Solution Architecture

The meters were installed at the main distribution sub-station of the hotel. At the distribution substation, there is main incomer and separate outgoing to each room (54) & corridor (3) that are located in three floors. The main incomer is a three-phase supply from utility and every room/corridor had a separate two-phase supply (one for Air-conditioning and one for lights and rest). IoT devices and Energy meters were installed accordingly & the data was further visualized, monitored & analysed using I/O Sense.
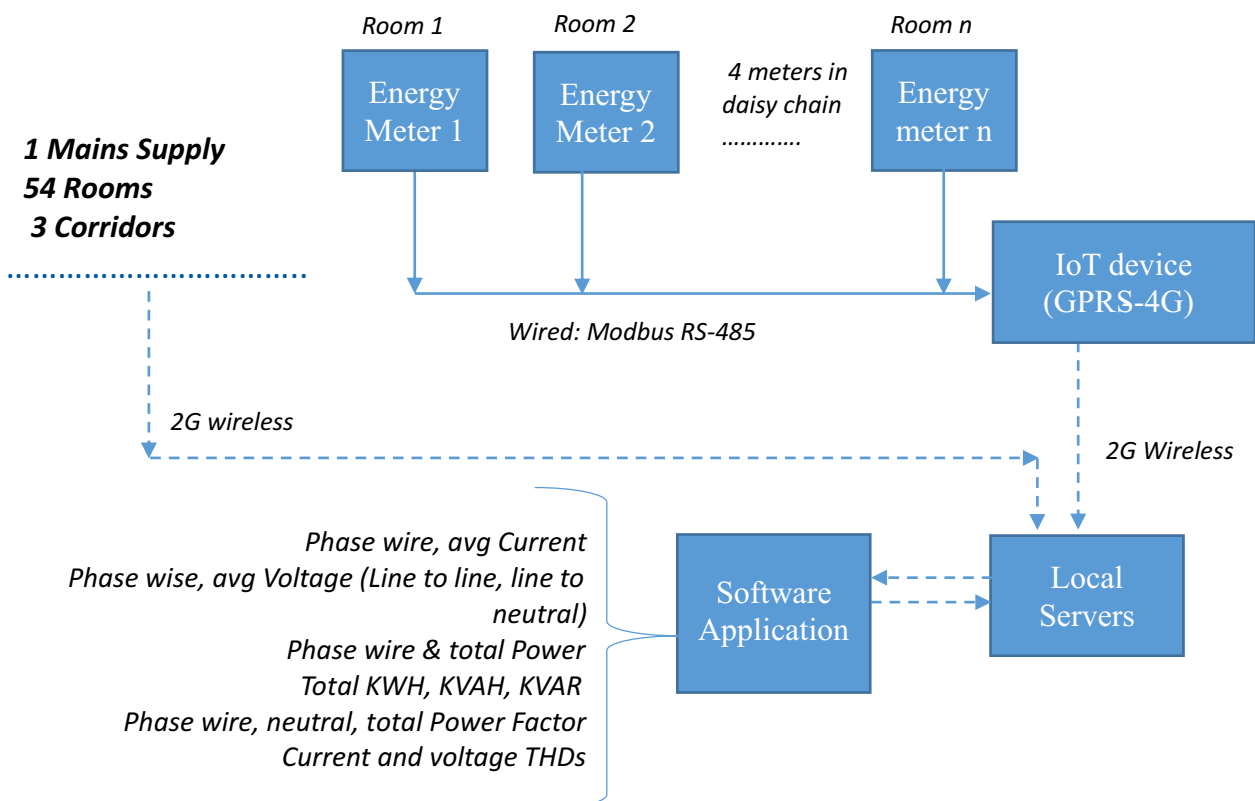
Key Value Addition

360-Degree Visibility | Accurate & Continuous Data | No Manual Reading

Near real-time visibility of energy and electrical parameters of the entire hotel. Energy meters are tagged with respective rooms/corridors & further to their loads – (AC and Lighting)
(Pic: Live energy meters)
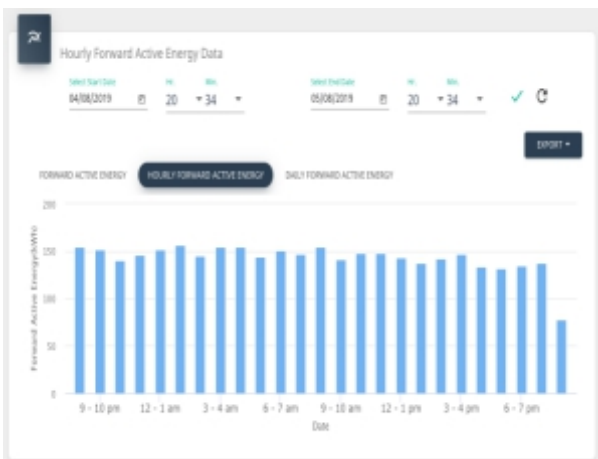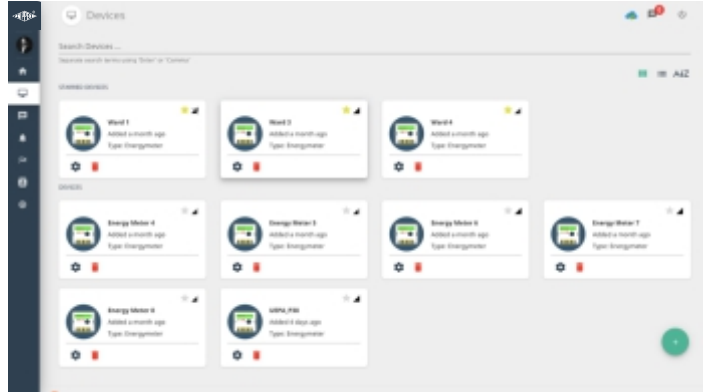
Energy Consumption & Intensity Management

The electrical team is now able view the trends of energy consumption and intensity (Kwh/sq. foot) of the entire hotel. They are able to view the AC and lighting consumption trend of all the rooms, corridors & the entire hotel.
(Pic: Hourly KWh consumption)

Consumption Reports & Theft detection

Tabular daily MIS reports are generated automatically & sent via email by I/O Sense to concerned operators. The reports essentially show the energy consumption of AC and lights of every room & corridor. The reports helped the owner to monitor the occupancy illegal usage of rooms.
(Pic: PDF report templates: Tabular previous day consumption, Load analysis reports)

Maintainance Scheduling for the ACs & Load Analysis

The operator can view the trends of current, voltage, power factor & power for any selected period. This helped the operation to analyse the performance & runtime of all the ACs. This essentially helped them proactive take measures of replacement or maintenance. Tracking the main supply provided the key understanding about the penalties incurred due to poor power factor & reactive losses. (Pic: Power & PF Analysis)
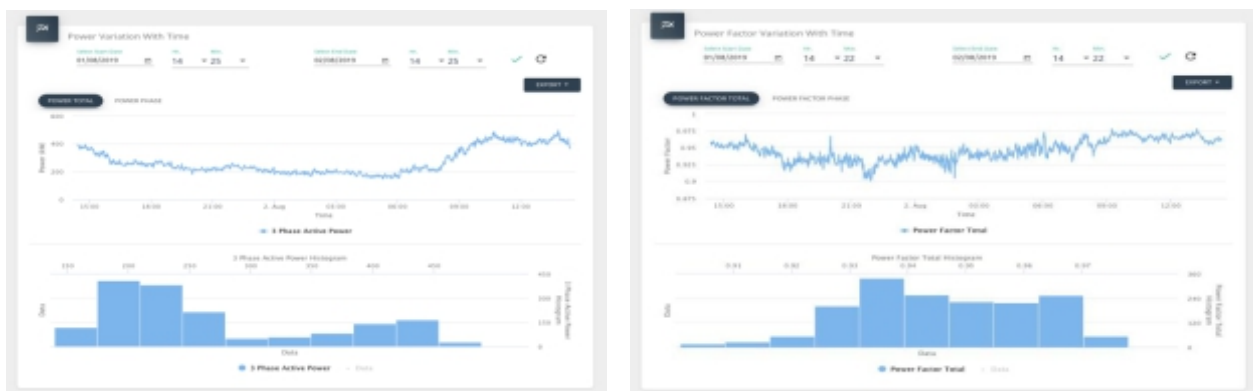
SMS Alerts for Proactive Maintenance
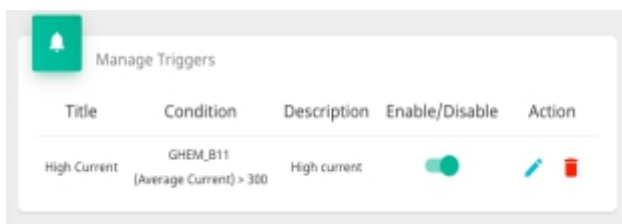
Condition based SMS alerts of over current, high power intensity, low power factor, AC failure, over current in ACs etc. helped the electrical team to proactively avoid system failures.
 (Pic: High current alert, configuration)