



Case Study: Township Office

Taiwan Township Offices Improved Power Efficiency and Office Environment with Billion Indoor Lighting Management System

Background

With the increase of environmental awareness, Taiwanese government launched the “Township Office Light Replacement Project” in early 2016 to replace all traditional T8 tube lights in Township offices nationwide to resolve the problems of high energy consumption and uneven illuminance. Billion installed Indoor Lighting Management system in two township offices at Nankang, Taipei City, and Fuli, Hualien Country, successfully improving the power usage efficiency of the office environment and the reduction of lighting operation costs.



Challenge

Although government agencies broadly used the T8 tube lights for its cost effectiveness and high luminous efficiency, the T8 tube lights often provided unstable flashing light, which was harmful to the human eyes. Also, the Township offices didn't use the same color of T8 tube lights, resulting in the uneven and dazzling light. T8 was no longer the best lighting option due to the high energy consumption.

Therefore, the Taiwanese government launched the project to replace that all the T8 lights in Township offices with LED lights in early 2016 to decrease the power consumption and improve the office experience. Billion InLight - Indoor Lighting Control System has also been implemented in two township offices to improve the energy efficiency and to reduce the operation costs.

Solution

Cooperating with two of the most well-known LED lighting manufacturers, Billion switched more than 100 T8 lights to LED lights and installed Billion Indoor Lighting System-InLight in two Township offices at Nankang, Taipei City, and Fuli, Hualien Country.

The light source was composed of 40W LED panel lights equipped with 1-10V dimmable LED drivers provided by the lighting manufacturer. In the InLight system, Billion installed 105pc Indoor Lighting Control Boxes (SG200), 4pc Smart IoT Gateways (SG 6200NXL), 4pc Smart Energy Meter (SG3015) and 200pc PIR sensors(SG100T) on the 2nd, 4th, 8th and 9th floors in Nankang township offices.



In the Fuli Township office, The light source was composed of 30W LED lights and 0-10V dimmable LED drivers. 4pc PIR sensors (SG100T) were installed near the office window, with the additional 89pc Indoor Lighting Control Boxes (SG200), 5pc Smart IoT Gateways (SG6200NXL), and 5pc Smart Energy Meter (SG3015) deployed across the office area to optimize energy efficiency.

Billion PIR sensors were mounted in the lobby, office area, hallway, pantry, warehouse, and filing room. The PIR sensors sense the human motion and signal the light controller to turn on, off, and automatically dim the lights based on the population density in certain areas. The smart meters were used to measure the power consumption of each electrical appliance and equipment.

Billion Smart Gateway represent a multi-function communication device which collected and transferred the front end sensory data to the backend cloud management system via wired (RS485/Powerline/Ethernet) and wireless (ZigBee/Wi-Fi/3G/4G) communication for real-time data analysis. Users can remotely control and monitor the lighting status, energy consumption, and power efficiency on the InLight APP.

Performance

Billion IoT Indoor Lighting System effectively decreased 20% energy consumption and CO2 emission, while improving the overall office environment.

