Nowadays, the building sector accounts for 40% of total energy consumption worldwide and 28% of energy-related greenhouse gases emission.
Global warming and increasing air-conditioning demand formed a vicious cycle
In Hong Kong, building accounts for 90% of electricity consumption,
Where air conditioning accounts for the largest proportion of total energy consumption by end-user
As HKSAR set a strategy goal of 40% energy-use reduction for a greener city by 2025
Energy-saving measures in the building sector becomes crucial
Modern buildings often use the Building Management system to control and monitor the building's mechanical and electrical equipment.
We build a platform that integrates with BMS and helps reduce energy consumption, GHG emission and operating cost while maintaining thermal comfort in the indoor area.

We utilize HKUST IoT sensor data to validate our algorithm, where the data is collected from an open-source data sharing platform in HKUST.

These IoT devices, such as temperature, humidity sensors, CO2 sensors, and power metering sensors are connected through the LoraWAN IoT network which are updated hourly.

The data mainly includes temperature, CO2, humidity, power consumption and the sensors' location.
After getting all the data, the data will all be integrated into one dashboard so that users can easily get an intuition of the environment and our system performance in optimizing energy usage by skimming through the dashboard.

To check the data in a specific area in a building, we can click on the area in the 2D floor plan. The result will then pop up and show the most updated data. There are two parts on the dashboard including the environment and system performance.
For environment variables, it includes temperature, CO2 and humidity. And, the performance includes the energy consumption of different appliances in the area such as air-conditioning, humidifier and ventilation system.
By providing this intelligent system to commercial property owners and the government, we anticipate that energy consumption in the HVAC system can be reduced significantly.

We also strive for enhancing individuals' comfort levels in this energy-optimized indoor environment.

Not only do we save more energy and expenses for our users, but we also promote the thinking of spending electricity wisely and thus raise people's awareness on reflecting their own energy consumption patterns.

We hope that this smart system can strengthen the foundation of the smart building in reducing energy usage and lead us to a smarter environment in the near future. Let’s save and make everyone comfy.