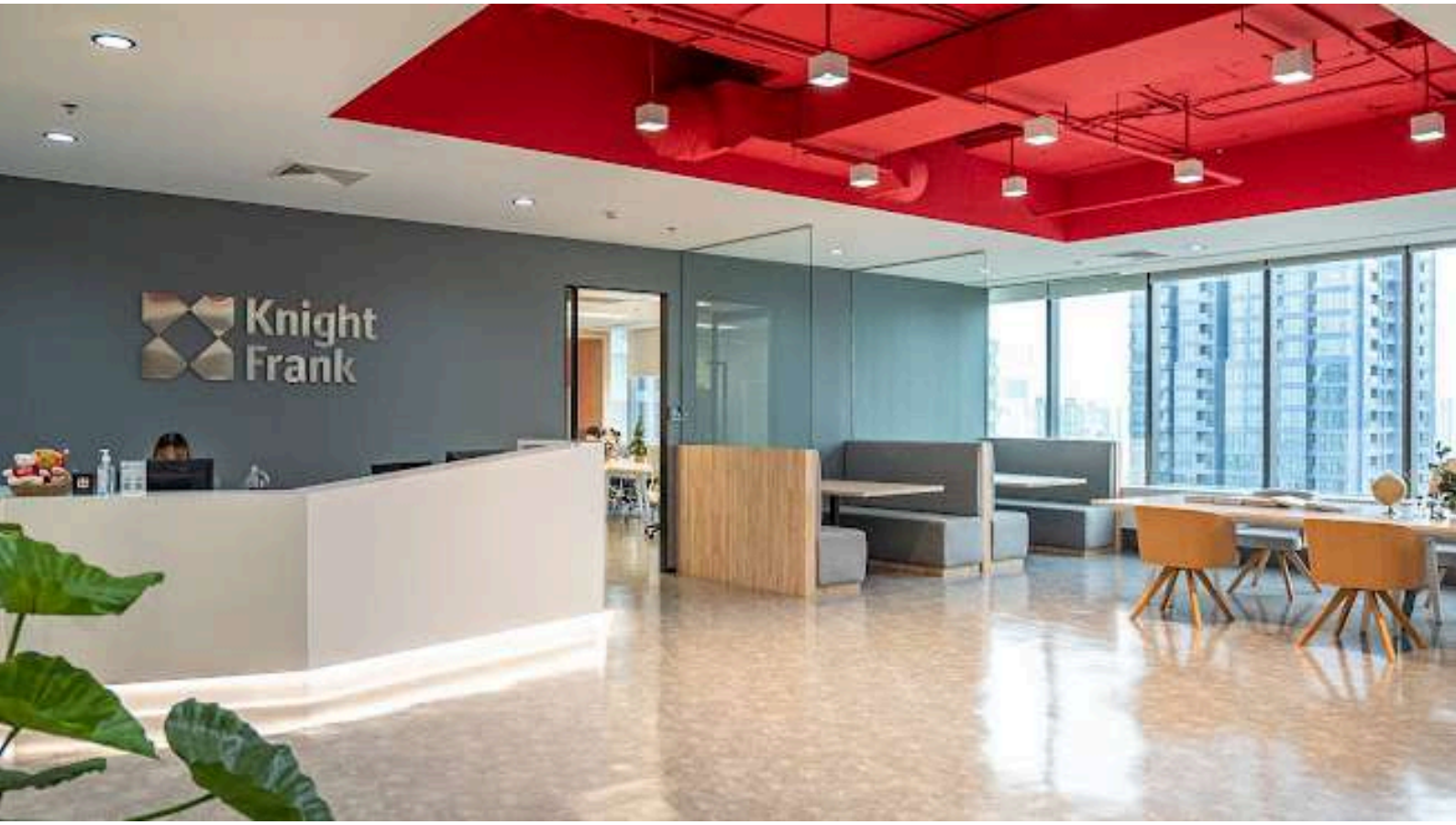
RESYNC

Technical Case Study

Knight Frank

Bangkok, Thailand

PROJECT OVERVIEW



INTRODUCTION

Knight Frank's office at Bangkok sought to improve energy efficiency and optimize its ACMV systems. The focus was on reducing energy consumption while ensuring thermal comfort for employees. The system included multiple AHUs and chillers serving the entire tower.

Type of building	Office building: The 9th Tower
Location	Bangkok, Thailand
HVAC/ACMV:	AHU + Chiller
Hardwares	IAQ IPC, 4G Router, LoRaWAN Gateway

PROBLEM

CHALLENGES

HIGH CHILLED WATER USAGE

Excessive cooling leading to unnecessary energy consumption.

INCONSISTENT THERMAL COMFORT

Employees reported varying comfort levels, with some areas over cooled and others warmer.

MANUAL ADJUSTMENTS

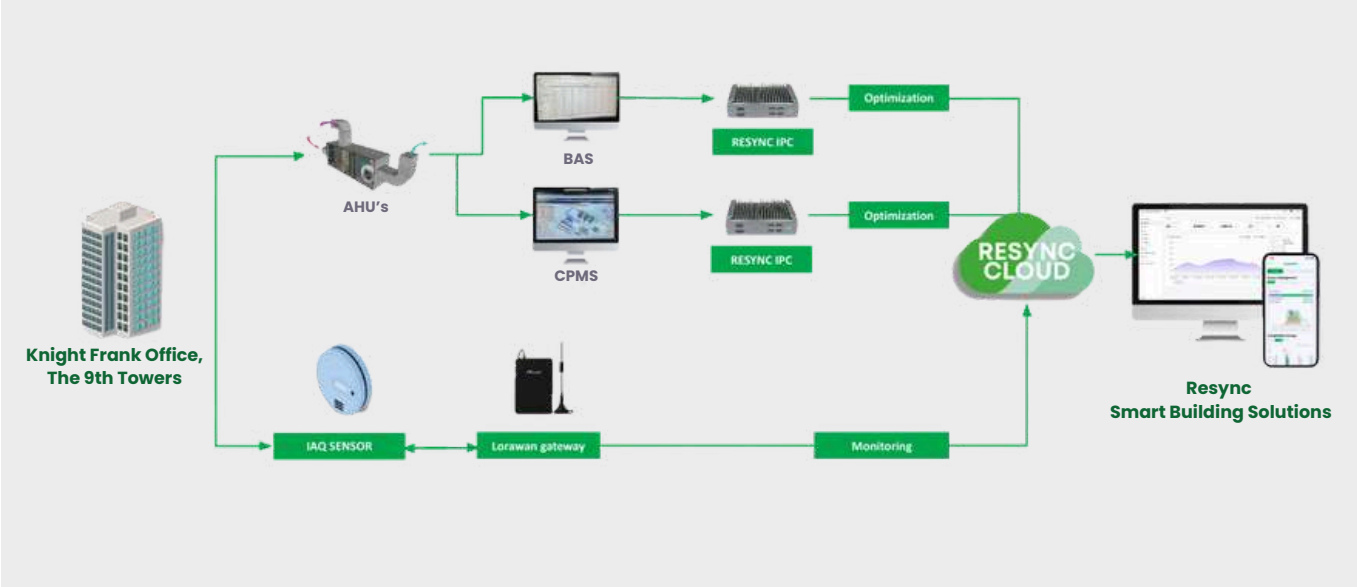
Adjustments were made manually, leading to operational inefficiencies.

ENERGY INEFFICIENCY

The system ran at full capacity, regardless of occupancy levels.

→ IMPLEMENTATION

SOLUTION



3 KEY SOLUTIONS FOR ENHANCED ENERGY MANAGEMENT

01 Digitalization of HVAC System

All AHUs were connected to a centralized system allowing for automated control based on occupancy and environmental conditions.

02 AI-Based Control

Smart algorithms adjusted the chilled water valve opening, reducing the overall cooling load.

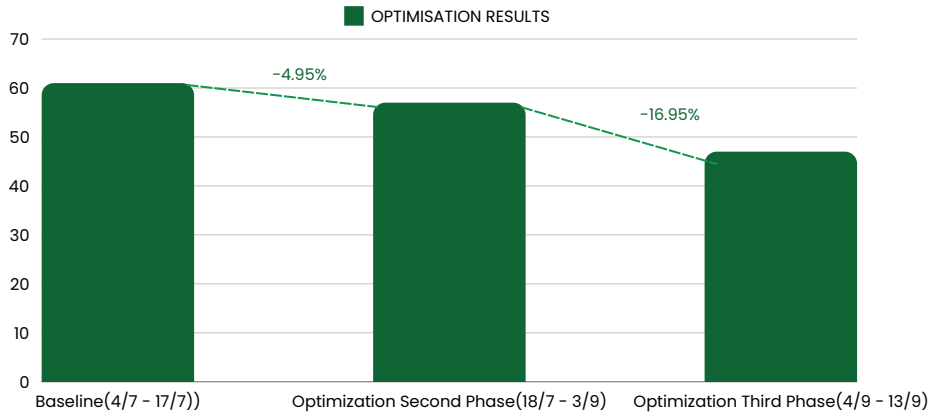
03 Occupant-Centric Strategy

Cooling was dynamically adjusted based on real-time occupancy data derived from CO2 levels, optimizing energy usage during low occupancy periods.

3 KEY RESULTS

01 : ENERGY SAVINGS

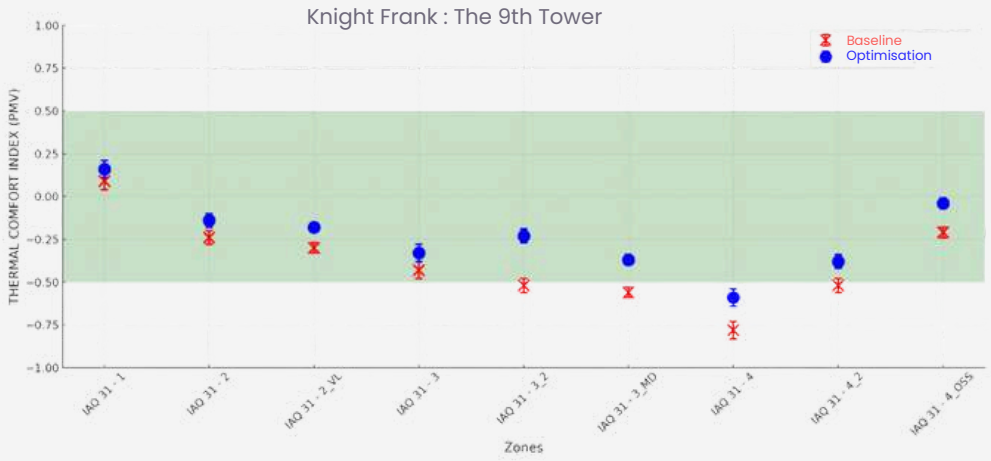
21% reduction in chilled water consumption



02 : THERMAL COMFORT

PMV (Predicted Mean Vote) was maintained within ASHRAE Standard 55-2020 comfort range (-0.5 to +0.5).

Average temperature of 22.5°C and relative humidity of 74%, maintaining indoor comfort.



03: CO2 LEVELS

Average indoor CO2 level of 659 ppm, well below the 800 ppm threshold, indicating well-ventilated conditions.

RESYNC

For more information or to discuss how Resync can optimize your facility's efficiency and comfort, please reach out to us.

Let's Get In Touch

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Visit Our Website

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Scan to schedule a call with us !