



A.I. Powered **Smart** Building

The Future of Property Management : Driving Profitability and Sustainability



Agenda

Oct 2025



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The Future of Property Management : Driving Profitability and Sustainability





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CHALLENGES

1

THE ISSUES ON HONG KONG
PROPERTIES TODAY

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The Problem

Rising Costs and Outdated Property Tech



Soaring energy bills and consumption

Hong Kong **cooling air-conditioning** accounts for a **90% of total building energy consumption**.



Aging & Legacy systems

Older HK office towers and industrial estates often run **without control systems, sensors and optimization** equipment.



Large ageing stock

Hong Kong has around **50,000 buildings** and the number is rising, it may risk lower valuations and tenants without proper handling.



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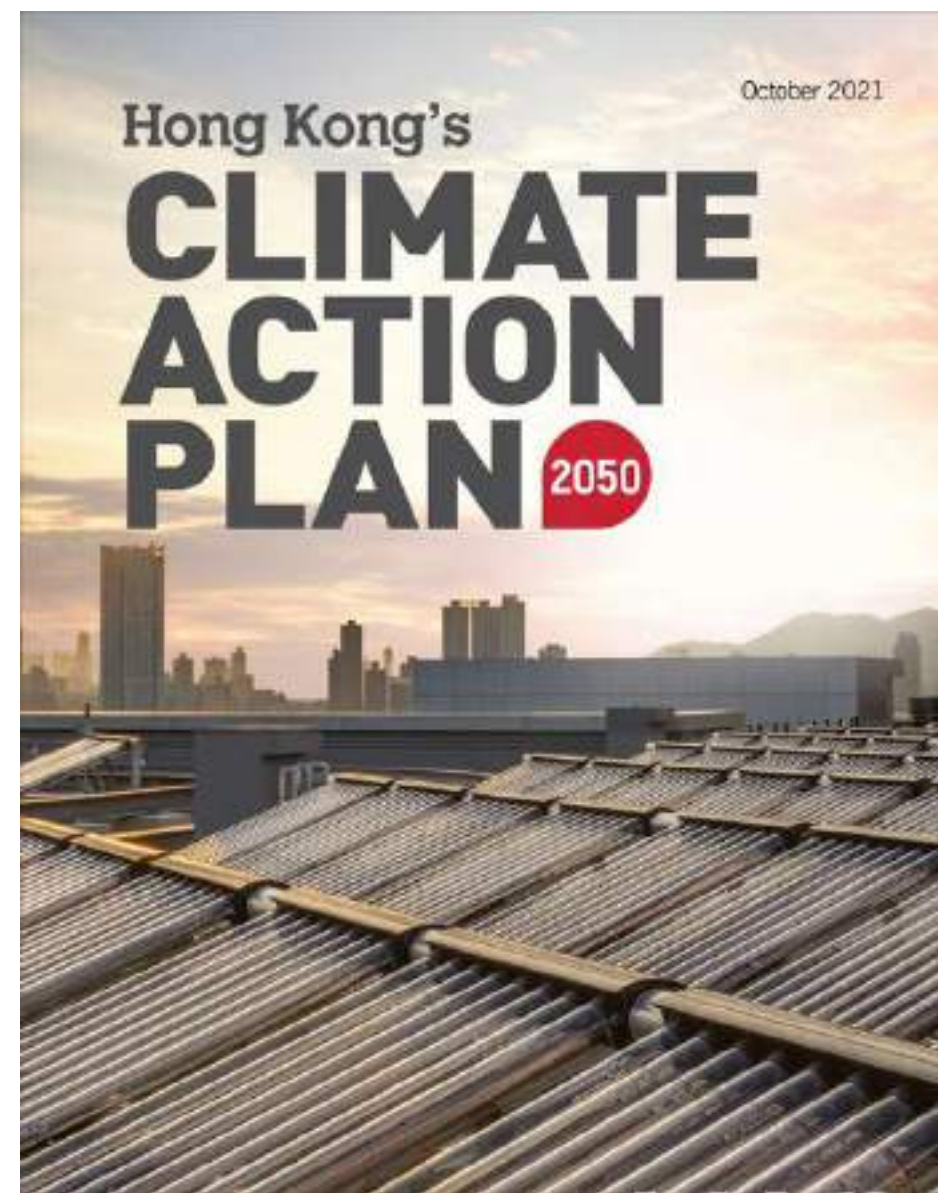
The Risk Going Green is No Longer Optional

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> HK CLIMATE ACTION PLAN 2050

- Government aims at **reducing carbon intensity** by 65–70% (2005 base) by **2030**
- Achieve carbon neutrality by 2050.



> BUILDING ENERGY EFFICIENCY ORDINANCE

Regulates specified buildings undergoing **new construction or major renovation**, requiring that major electrical systems meet minimum energy efficiency standards and comply with energy audit requirements.





The Risk Going Green is No Longer Optional

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> HKEX ESG REPORTING REQUIREMENTS

- From 2026, the **HKEX** requires listed companies to **provide reliable, auditable greenhouse gas emissions figures** with clear calculation methodology.
- **Disclose climate governance and strategy for explaining emissions targets** and progress that investors can use to assess risk.





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THE RISK

2

WHY OLD BUILDING ARE A LIABILITY

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The Risk

The Cost of Waiting



01



Rising operating costs

Every month you delay means

- **higher electricity bills**
- **lower net income.**

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02



Tenant loss and higher vacancies

Occupiers prefer **comfortable, energy-efficient modern spaces** and will reject options that fail to meet those standards.

03



Missed green subsidies or funding support

The **government provides pilot funding and policy guidance to provide incentives.** Banks offer **cheaper green loans** for projects rebates and lowering costs.

04



Regulatory exposure

New Hong Kong rules and disclosure requirements make late action costly and disruptive.



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OUR SOLUTION

3

MAKING YOUR BUILDINGS SMART &
SELF-SUFFICIENT

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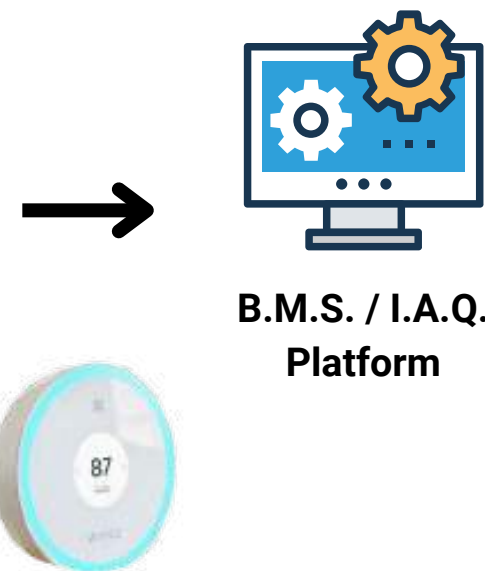




AI-Empowered Platform Making Your Buildings Smart & Self-Sufficient

Use IoT devices
to collect environmental data

- Temperature and Humidity
- Air freshness
- Air conditioner operating parameters
- Power consumption



For A.I.
Training



Self-adjusting
equipment



HOW YOUR BUILDING RUNS ITSELF

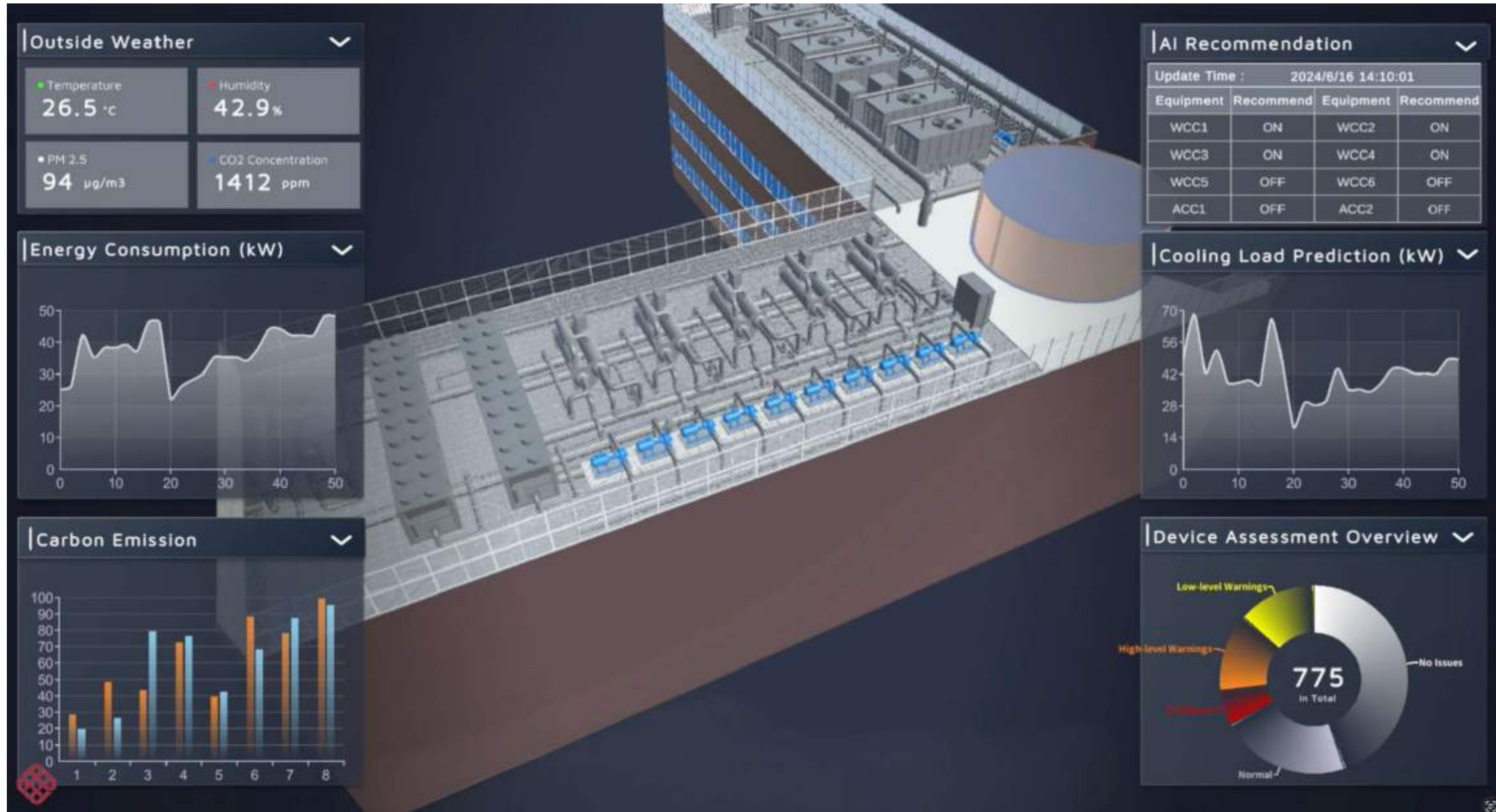
Sense : IoT devices collect real-time data on temperature, air quality, power consumption and more.

Analyze : Our AI platform learns from this data to find inefficiencies and predict needs.

Act : The AI automatically adjusts systems like air conditioning for optimal efficiency and comfort.

➡ **A Smart, Self-sufficient Building that saves energy and cuts costs.**





REAL-TIME BUILDING DASHBOARD

Monitor energy use, temperatures, and equipment performance instantly.



AI-BASED RECOMMENDATION

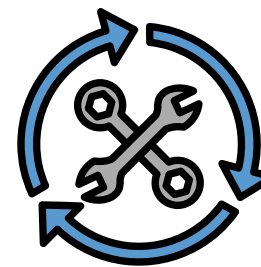
The AI suggests which operations to meet the current demand for improving performance and reduce costs.





SPECIFIC DEVICE MONITORING

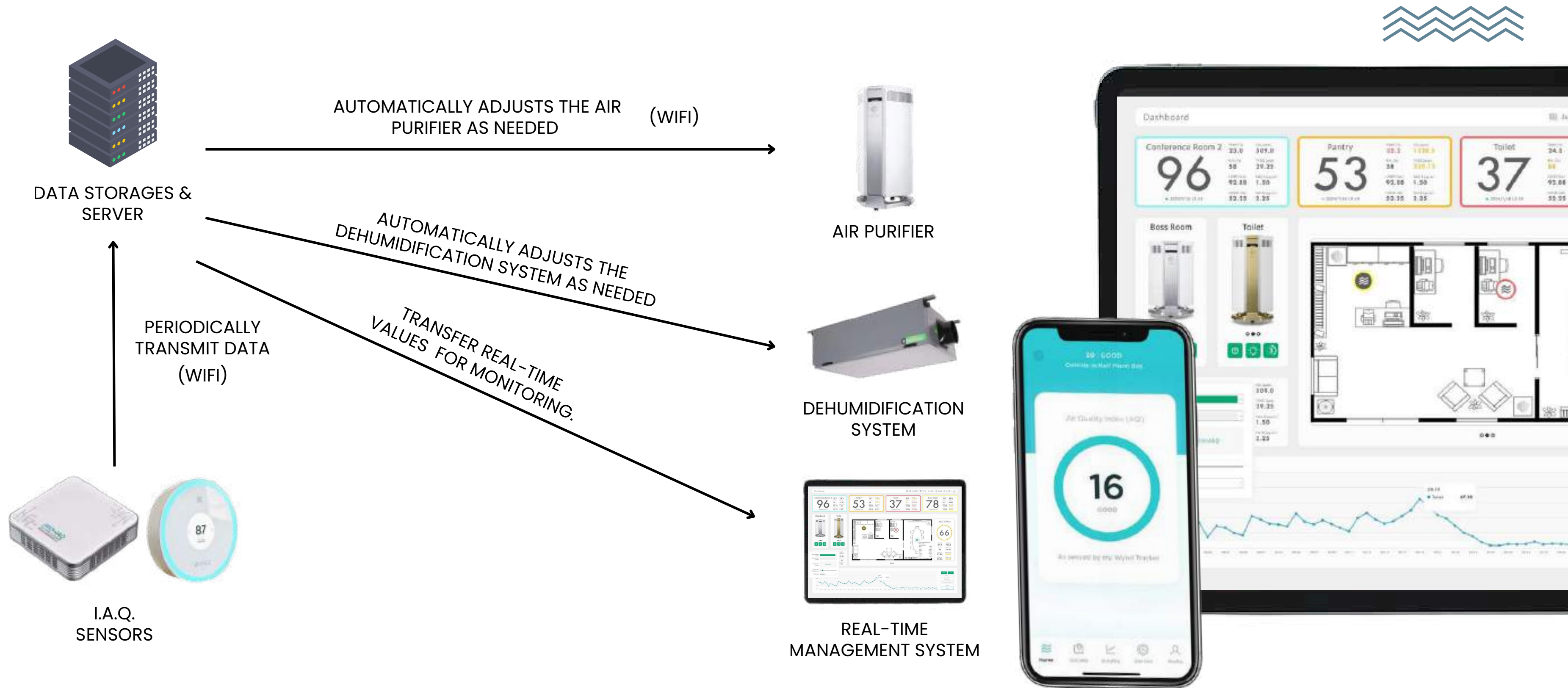
Monitor devices remotely to ensure system running. Reminders for unusual changes .



FULL MAINTENANCE RECORD

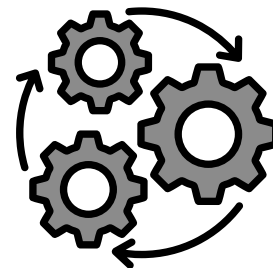
A complete records of which equipment was serviced, what work was done for the accountability.





SMART INDOOR AIR QUALITY SYSTEM

Sensors continuously send air-quality data to server, analyses it and tells devices how to respond.



AUTOMATED ADJUSTMENT

Air purifiers and dehumidifiers adjust automatically while show real-time status for monitoring purposes.





Smart Indoor AIR Purification

HALO WYND

Air Quality Monitors



- **Real-time monitoring** of multiple health-related parameters in the air
- IAQ : Volatile Organic Compounds (**VOC**), Carbon Dioxide (**CO2**), **PM2.5** Concentration
- Environmental: **temperature, humidity, light intensity** etc.
- The **outer ring color** of the display indicates different levels of air quality.
- Supports **identification of air pollution** such as **pollen, dust, smoke, or haze**





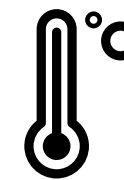
Smart Indoor AIR Purification

AIR Quality Sensor

Sensor & Monitoring



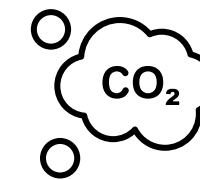
BASIC AIR PARAMETERS



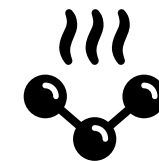
Temperature



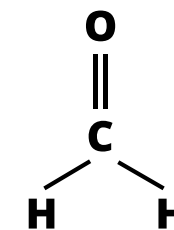
Humidity



Carbon
Dioxide



TVOC

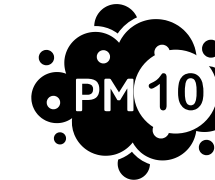


Formaldehyde

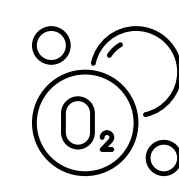


PM2.5

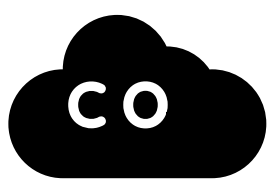
OPTIONAL CHOICES*



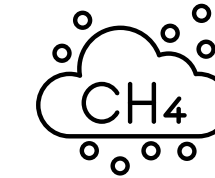
PM10



Oxygen



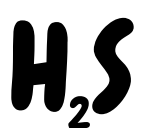
Carbon
Monoxide



Methane



Smoke



Hydrogen
Sulfide

Usecases



Office



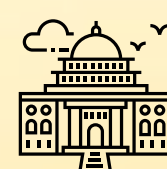
School



Clinic



Retail



Public
Area



Precise Indoor Data for
Enhancing Air Quality
Improvement



Ensuring a **Safe Venue** for
Employees and External Visitors



Realtime Notification on Web
Portal, Email & SMS.





Smart Indoor AIR Purification

AirProce AI300/600

Smart Air Purifier

- **High clean-air delivery**

Delivers a **strong clean-air flow** (CADR) and **throughput** for **large rooms coverage** roughly 700–1,200 sq.ft.

- **Medical-Grade filtration**

H13-grade HEPA filter helps remove tiny airborne **particles**, with **capture efficiency of 99.95%**

- **Pollutant and odor removal**

Dedicated TVOC media layers to **adsorb and neutralize organic gases and odors**

- **Low-noise**

Installed **German ebm-papst motors** with various options **balancing performance and acoustic comfort.**

- **Modular system**

Easy to Install and **tool-free replacement for swapping filters.**



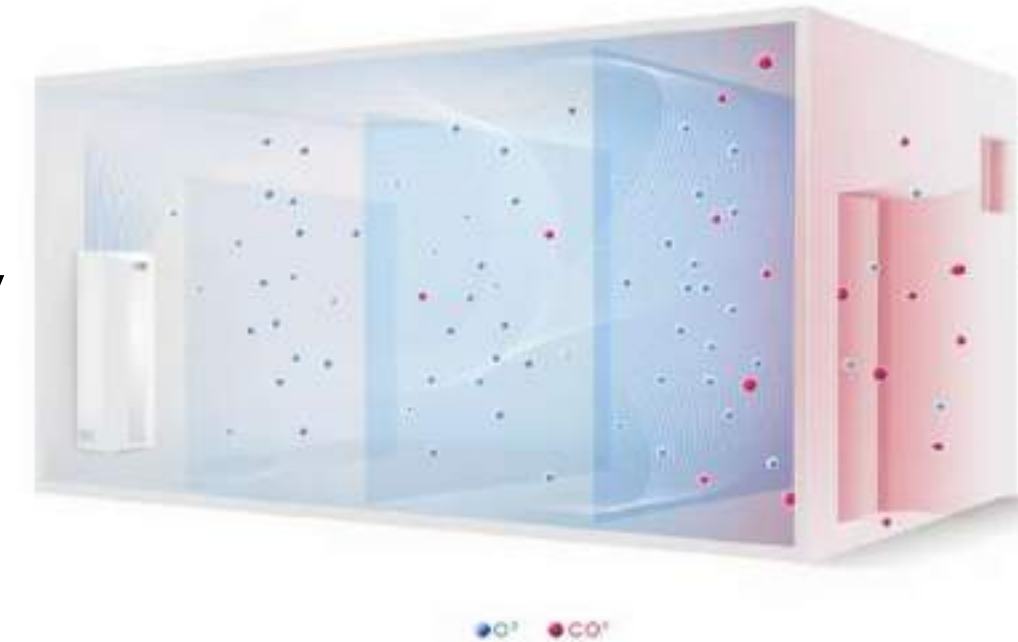
Smart Indoor AIR Purification

AirSmart SmartVent



- **Pressurised AirTurbo technology**

Pressurised **AirTurbo** uses a focused, high-efficiency fan and shaped outlet to raise air pressure. Pushes clean air deeper into rooms, reducing dead zones that standalone purifiers can leave behind.



- **Multi-layer stack**

Washable front screen, coarse and fine particle **filters**, an **odor-absorbing layer**, and a final **medical-grade HEPA** — all easy to swap.



HEPA Stack Filter



Turbocharger Duct



Intelligent Adjustment



Complete Unit sealing



Intelligent Adjustment



Enhanced airflow

Designed to mount in ceilings and walls

Work alongside existing ventilation systems, SmartVent fits into building air plans

Dehumidifying System



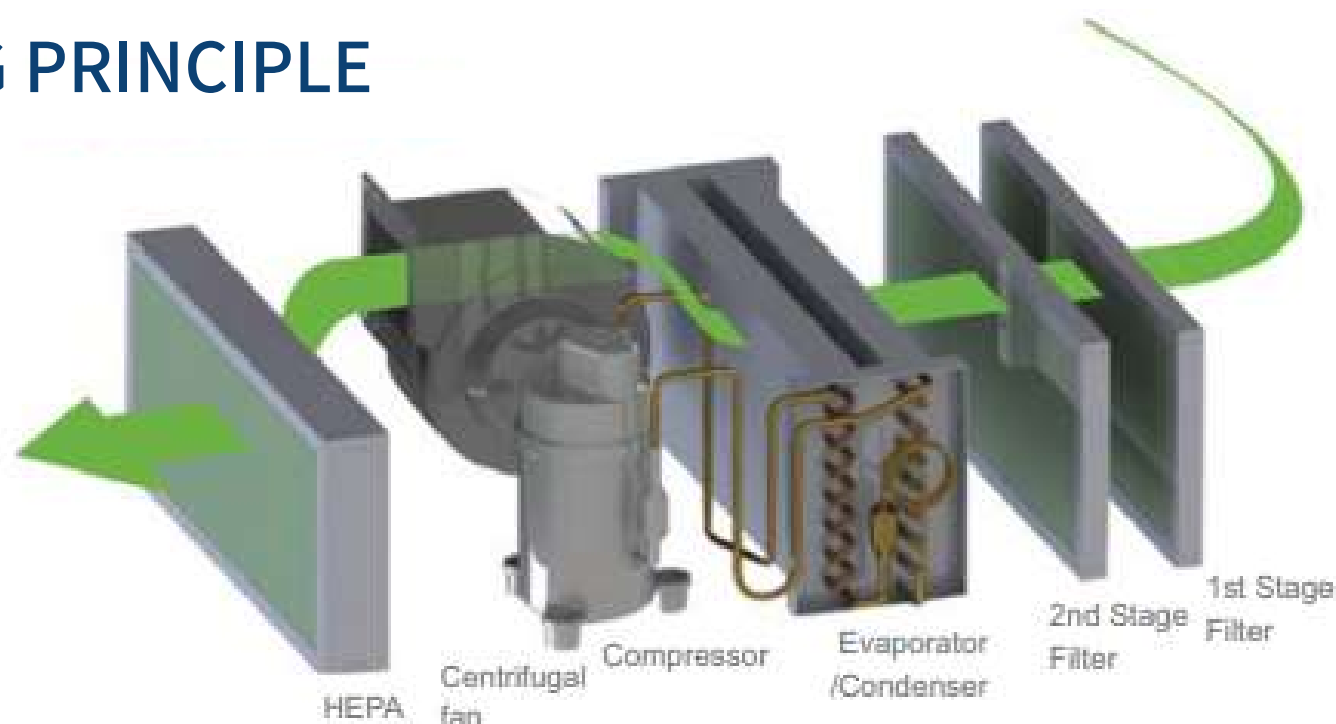
Hong Kong's environment is **humid, hot, and densely populated**, **increasing transmission risk**. The system helps ensure the safety of the premises and protect everyone on site.

Headquartered in Germany, **LUKO's** R&D team designs products based on ErP (Energy-Related Product) principles, focusing on temperature and humidity control and improving indoor air quality.

Product Overview

- **Automatic dehumidification** and positive-pressure drainage
- Smart control module for simple setup, supports RS485 & Apps
- **Equipped with negative-ion generator and UV sterilization**
- High-efficiency inner-threaded coil with blue fins for **excellent dehumidification performance**

WORKING PRINCIPLE

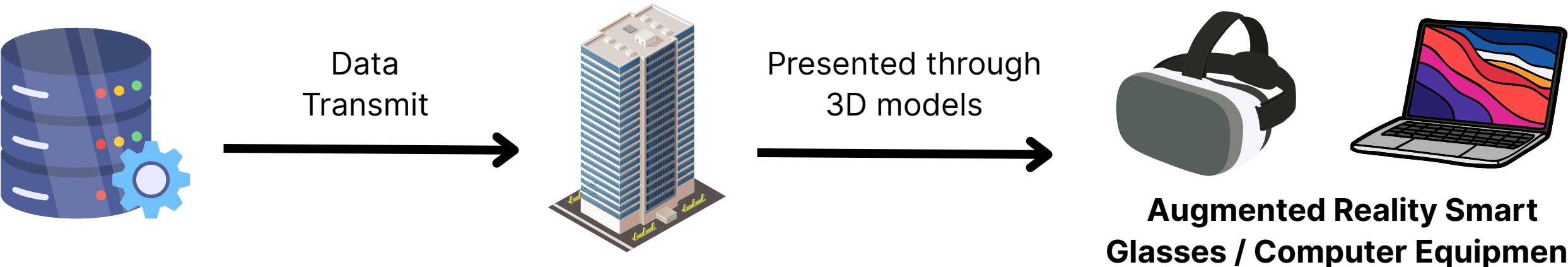


Benefits

- Lowers indoor humidity and airborne particle load
- Reduces infection, mold, and allergen risks
- Concealed installation with low acoustic impact
- Energy-efficient operation (heat recovery option)

See Your Entire Building in 3D

The Digital Twin



**IoT
Database**

3D BIM Model

**Augmented Reality Smart
Glasses / Computer Equipment**

- Monitor environmental parameters
- View hidden ventilation ducts

A live, interactive 3D digital twin of your property displayed on screen.

01

UNIFIED VIEW

All systems and data in one place, no more switching between platforms.

03

REAL-TIME BUILDING HEALTH

Monitor energy use, temperatures, and equipment performance instantly.

02

FASTER, SMARTER DECISIONS

Intuitive 3D visuals make issues and upgrade opportunities obvious.





Fixing Problems Before They Happen

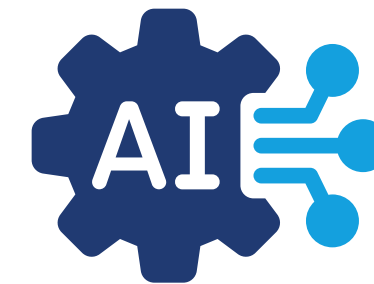
Predict and Prevent Costly Breakdowns

Our AI is like a watchguard for your equipment.
It learns how your machines should sound and feel, so it can tell you when something is starting to go wrong.



Database

For A.I. Training



**A.I.
Algrothim**

Self-estimation
of equipment life



**Predictive
maintenance**

01

LEARN THE BASELINE

Our AI studies months of historical data to learn what "normal, healthy" operation looks like for every piece of equipment.

02

SPOT TINY ANOMALIES

It notices tiny changes—like a machine using a little more power or running a bit hotter—long before you would.

03

PREVENT BREAKDOWNS

You get a simple alert, like: "Warning: Chiller #3 is getting less efficient. It might fail next month if not serviced."





QUERY OF MAINTENANCE RECORDS

Digitizes and centralizes service report into a single, searchable database.





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OUR EDGE

4

WHAT SETS US APART IN THE MARKET

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Our Edge Resolve Real Problems via Recongized Research

Born from Top-Tier University with years of research

Our technology is built on a foundation of **patented research** from The **Hong Kong Polytechnic University**. It's not just a product; it's proven science, tested and **refined over years in real-world building environments**.

Deliver Guaranteed, Measurable Savings

We don't just promise efficiency; we prove it with real, audited results.
Our systems consistently achieve **15-30% energy savings, directly boosting operating income**.

AI-empowered optimal control
Energy saving potential

15-30%

Fast & Easy Deployment

Our unique **"plug-and-play" AI integrates** with your existing systems. Go from contract to active savings in as little as **2-3 weeks**.





Our Edge Supported by Trusted Experts



Professor Xiao Fu

FASHRAE, FIBPSA, Associate Dean of FCE

- Associate Editor of Building Simulation, subject editor of Advances in Applied Energy, and editorial members of Automation in Construction, Energy and AI.
- Work has been funded by the Ministry of Science and Technology (MOST) of China, Hong Kong Research Grant Council (RGC), Innovation and Technology Fund (ITF), National Science Foundation of China (NSFC), Environment and Conservation Fund of Hong Kong and more
- Over 30 competitive research grants as the PI or Co-PI worth HK\$30.0+ million
- Applied to a large number of existing and new buildings and achieved significant energy savings





Our Edge Supported by Trusted Experts



KC Wong 黃勁松

Chairman, IAQ Committee, GHM Greater Bay Area Institute of Urban Architecture (HK)

- Over 20 years of experience in indoor air quality management
- Was appointed to provide air-quality consultancy on infection control for 41 Hospital Authority hospitals during the 2003 SARS outbreak.
- Previously served, concurrently or separately, as a technical consultant and director of sales strategy for several air purifier manufacturers.
- Applied to a large number of existing and new buildings and achieved significant energy savings





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THE PROOF

5

REAL RESULTS FROM REAL CLIENTS

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AI-Model based Optimization Massive Savings at a HK University

- **The Challenge**

- An cooling system that costs 11 Million HKD a year.

- **The Results**

- Average monthly improvement in the overall chiller plant COP is **22.2%** with all AI-empowered chiller plant control strategies developed, projecting a savings of **2.5 million HKD/year**.
- Projected cost saving **8.6 million HKD/year** if implemented **campus-wide**.

Average daily energy saving

22.2%/day

Average daily cost saving

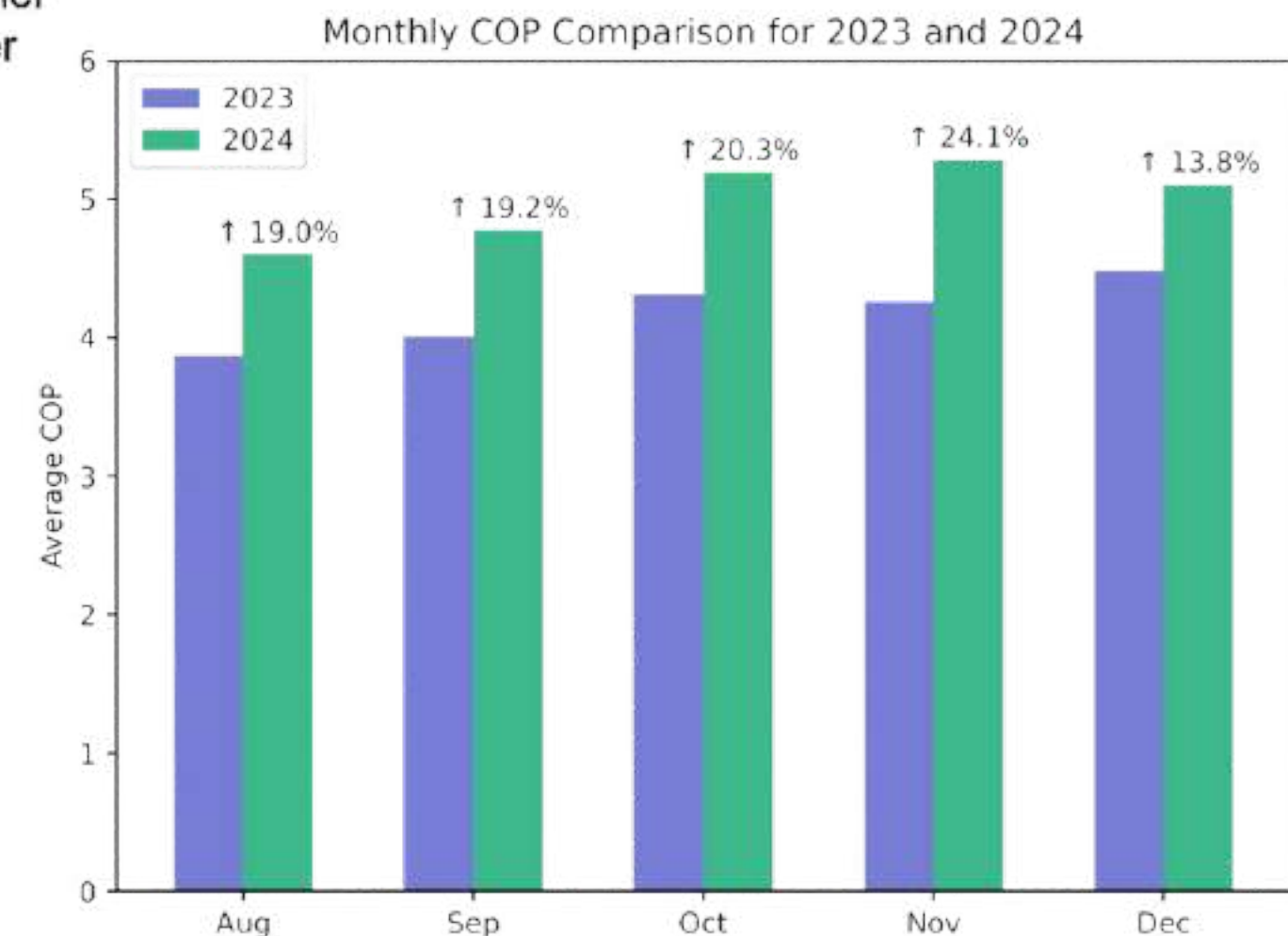
HK\$7,353/day



Chiller Plant
冷水機房

- **Method**

- AI-empowered Chiller Load Prediction by probabilistic prediction





AI-Model based Optimization A 56 Floor Government Office (HKIsland)

- **The Challenge**

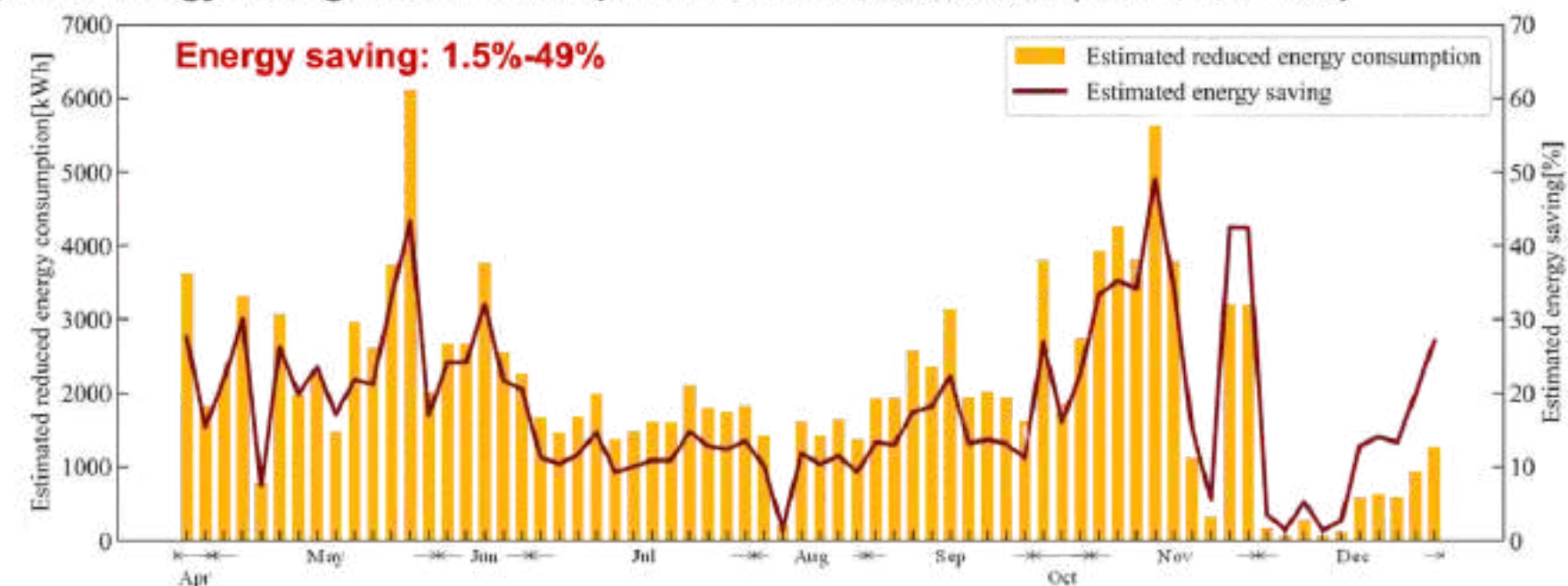
- Chiller System consumes 1.6M kWh costing 1.9M HKD annually

- **The Results**

- **Method**

- short and long term forecasts to optimize chiller control and reset chilled-water supply temperature.

Long-term energy saving results from Apr to Dec 2024 長期測試結果(2024年4月-12月)



Average daily energy saving

20.0%/day

Average daily cost saving

HK\$2,845/day





AI-Model based Optimization An Office Building in Foshan

- **The Challenge**

- Uneven indoor temperature distribution

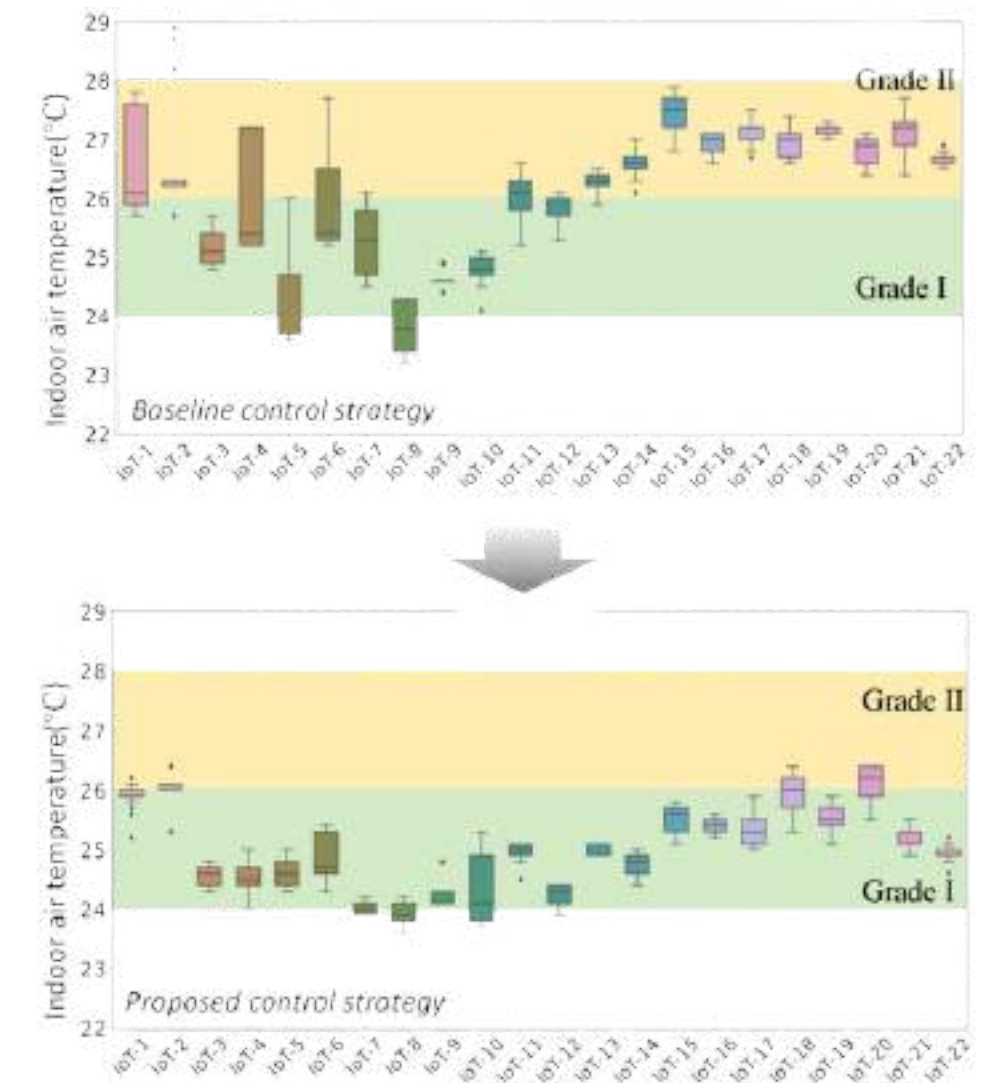
- **The Results**

Alleviating the problem of uneven indoor temperature field distribution
減輕大空間室內溫度分布不均問題，一級熱舒適度時間增加122%

The time of thermal comfort at
Level I on test day
increased by
122%

- **Method**

- Graph nerual-network based optimaztion system



Conclusion

Oct

2

0

2

5

1/ Digital Twins & Mixed Reality

Real-time virtual asset replicas

2/ Automated Indoor Environment Adjustment

Optimization of indoor environment

3/ A.I. Based Chiller Control

ML-optimized chiller efficiency

4/ Predictive Maintenance & Equipements Monitoring

Predict failures, schedule repairs.

5/ AI-Powered ESG Reporting

Automated sustainability metrics and reports

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