



TEMASEK  
POLYTECHNIC

# INTEGRATED SMART FACILITIES MANAGEMENT

Singapore's First Super Low  
Energy Educational Campus

# 30 HECTARES, 49 BUILDINGS ONE INTEGRATED PLATFORM

Across the world, estates are held back by fragmented legacy systems, reactive maintenance and disconnected teams. Security operates in one silo. Facilities in another. Sustainability targets are pursued without the data to track them.

At SJ Group, we take a different approach to facilities management.

Through an integrated digital platform and unified operations model, we bring together facilities management, engineering systems, energy monitoring and user data into one connected ecosystem — one platform, one dashboard, one source of truth.

Building on our long-term partnership with Temasek Polytechnic, we deployed one of Singapore's largest smart facilities management platforms across the campus.

## The Challenge

Temasek Polytechnic manages a 30-hectare campus comprising 49 buildings. Before our engagement, the polytechnic faced the same fragmentation that plagues many large estates.

Manual processes and disparate systems were limiting efficiency. Work orders were handled through legacy systems. Energy monitoring was reactive rather than proactive. Occupancy data was not integrated with building systems.

The polytechnic needed a smarter way to manage operations. Their goal was to digitalise work processes, improve operational efficiency and lower carbon footprint, all while providing a better environment for students and staff.



# OUR SOLUTION

We were appointed to deploy one of Singapore's largest digital integrated facilities management platforms across the Temasek Polytechnic campus.

We built upon our existing six-year partnership as their facilities management service provider.

## Our solution combined:

- Over 3,000 IoT sensors deployed across the campus
- A digital twin that creates a real-time virtual representation of the estate
- Integration of key systems including air conditioning, occupancy sensors, booking systems and energy monitoring
- Our proprietary digital platform acting as the common data environment



## What We Unified:



### Physical Scale

30 hectares across 49 buildings



### IoT Deployment

Over 3,000 sensors across campus



### Systems Integrated

Air conditioning, mechanical ventilation, occupancy sensors, booking systems, energy monitoring and digital twin

# THE RESULTS

Real-time environmental and asset health data now feeds into a digital twin that identifies faults, anticipates risks and predicts changing facility conditions.

## 01

### Operational Improvements

Real-time environmental and asset health data now feeds into a digital twin that identifies faults, anticipates risks and predicts changing facility conditions.

## 02

### Energy and Sustainability

By connecting class timetables with real-time IoT sensor data and the Building Management System, cooling becomes dynamic.

Air-conditioning is activated ahead of a scheduled class, stays on when occupancy is detected and automatically switches off if no activity is sensed after 10 minutes, restarting only when the space is booked again.

The polytechnic went on to achieve BCA Super Low Energy certification, a direct result of integrated, data-informed operations. This certification recognises buildings that achieve energy performance at least 30% better than baseline standards.

## 03

### Workforce Development

Beyond operational improvements, the platform serves as a living laboratory.

Students from the Diploma in Integrated Facility Management gain hands-on learning experience using real data in decision-making, preparing them for the future of the industry.

# OUR METHODOLOGY

Capability	How We Delivered It
Unified Digital Platform	Our digital platform aggregated data from building systems, occupancy sensors and energy monitoring into a single source of truth.
Predictive Intelligence	Over 3,000 IoT sensors enabled real-time asset health monitoring, allowing faults to be identified before they cause disruption.
Sustainability Integration	By connecting energy, occupancy and building systems, we enabled comprehensive energy monitoring and carbon reduction.
Scalable Deployment	The platform was deployed across 49 buildings, demonstrating our ability to scale across large, complex estates.

## MR GARY PNG

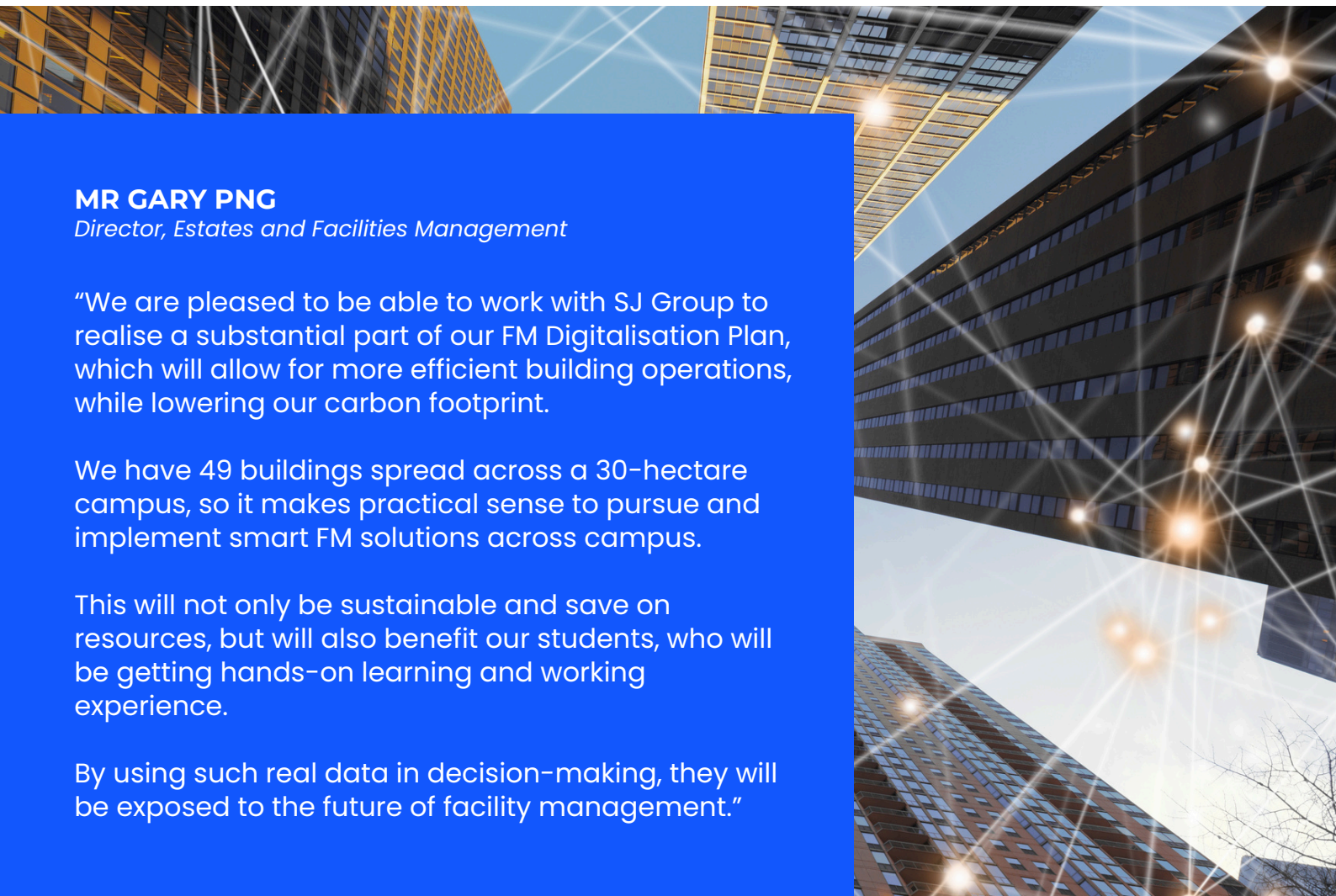
*Director, Estates and Facilities Management*

“We are pleased to be able to work with SJ Group to realise a substantial part of our FM Digitalisation Plan, which will allow for more efficient building operations, while lowering our carbon footprint.

We have 49 buildings spread across a 30-hectare campus, so it makes practical sense to pursue and implement smart FM solutions across campus.

This will not only be sustainable and save on resources, but will also benefit our students, who will be getting hands-on learning and working experience.

By using such real data in decision-making, they will be exposed to the future of facility management.”



# SCALABILITY BEYOND CAMPUSES

Our solution is highly scalable. The possibilities are shaped by your unique context, and we begin by understanding your specific needs. Together, we can reimagine what seamless operational harmony looks like for your built environment.



## RESIDENTIAL TOWNSHIPS

We unify security, utilities, mobility and community services into a single operations centre.

## AIRPORTS

We integrate baggage handling, security, environmental systems and passenger flow for seamless operations.



## RETAIL MALLS

We connect building management, occupancy sensors, tenancy management and security to optimise energy and user experience.

## MIXED-USE COMMERCIAL

We unify offices, retail, hospitality and residential under one integrated platform.



## CITY-LEVEL MANAGEMENT

We scale our IOC model to precincts, townships and entire cities for unified urban operations.

# Let Us Build Smarter, Together

## Unifying Intelligence

Integration is not just about connecting systems.

We design, build and operate integrated smart facilities management solutions that break down silos, automate workflows and turn data into decisions. At Temasek Polytechnic, we have proven that this approach delivers:

- Real-time fault identification and prediction
- Measurable energy and carbon reduction
- Operational efficiency gains
- Workforce development opportunities



**Our integrated approach scales across any estate – from campuses and airports to townships and precincts.**

### **CONNECT DIRECTLY WITH OUR DIGITAL TECHNOLOGY AND FACILITIES MANAGEMENT LEADS:**

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