

Smart Building Solution for a Mixed Development Precinct in Singapore

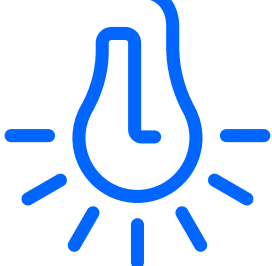


Singapore has emerged as a global leader in leveraging smart technology, and has harnessed smart building solutions in particular, to great effect. In fact, the city-state has been named the Smartest City in Asia and **ranked seventh globally**, for 2023 in the Smart City Index, published by Switzerland's Institute for Management Development (IMD). By integrating technologies such as IoT, data analytics and AI, Singapore has transformed the urban landscape, creating more comfortable and livable spaces for residents and businesses.

This case study features a mixed development precinct project that has achieved the esteemed **Green Mark Platinum rating**, and is dedicated to sustainability and energy efficiency. Operating as a Smart Precinct through the **Open Building System Integration (OBSI)** platform, it seamlessly integrates building systems and equipment. The project aims to provide a modern and efficient environment for tenants, building management teams, and contractors.



Did You Know?



According to Singapore's Building and Construction Authority (BCA), as of 2021, more than 3,100 buildings in Singapore have been certified under the Green Mark Scheme, demonstrating the widespread adoption and success of smart building solutions in the country.

Objectives

- Empower tenants with advanced technology and services
- Create sustainable and energy-efficient buildings and spaces
- Implement lean processes for streamlined operations
- Ensure the quality of systems and processes
- Smooth handover to operations with an operationally ready system
- Reduce maintenance costs
- Implement management by exception
- Enable lifecycle management

Powered by

- Open Building System Integration (OBSI) platform
- iviva software

Solution

Connected all building systems, including



Integration with 3D BIM models created a Digital Twin of each building and the precinct, enabling smart operations and maintenance.

RESULTS AND BENEFITS

Tenant Empowerment

Advanced technology and services provide tenants with enhanced experiences and convenience.

Sustainable and Energy-Efficient Buildings

Promotes energy efficiency and sustainable practices, contributing to Green Mark Platinum rating.

Lean Implementation

Streamlined operations and automated processes improve efficiency.

Quality Assurance

The Digital Twin ensures the quality of systems and processes for optimal performance.

Smooth Handover

The iviva Commission to Operate (C2O) process simplifies delivery and ensures an operationally ready system.

Reduced Maintenance Costs

Predictive, condition-based maintenance minimises costs and maximises system uptime.

Management by Exception

Dynamically assembled operational dashboards enhance critical alarm management and exception-based decision making.

Lifecycle Management

Efficient management of the building's life cycle, from construction to operations.



CHALLENGES

- ✓ Developing operational models for the building's Digital Twin
- ✓ Gaining support from vendors and contractors for the C2O process.
- ✓ Meeting tight deadlines for project completion and handover to operations.



Integration of BIM and building systems to create a Digital Twin for smart operations and maintenance.



Successful validation of the C2O process for delivering an operationally ready Digital and Physical Twin.



Utilisation of the Digital-Physical Twin model for smart operations, maintenance and tenant services.



Achieving Green Mark Platinum rating.



Implementing smart security, surveillance and incident management with intelligent process automation.

SUCCESSSES

A BIT OF TRIVIA



The BCA reports that buildings in Singapore have reduced their energy consumption by 16% on average through the adoption of energy-efficient practices, including the use of smart technologies.