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GEOSPATIAL WORLD FORUM

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Digital Transformation: Redefining Infrastructure Sector



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Master Planner, Developer, and a Valuable Partner

A government agency under the Ministry of Trade and Industry, JTC was founded in 1968 to grow Singapore's manufacturing landscape and support the nation's economic goals.

We build industries and develop clean, green, and smart estates so that Singapore stays innovative, dynamic, and sensitive to global manufacturing trends.

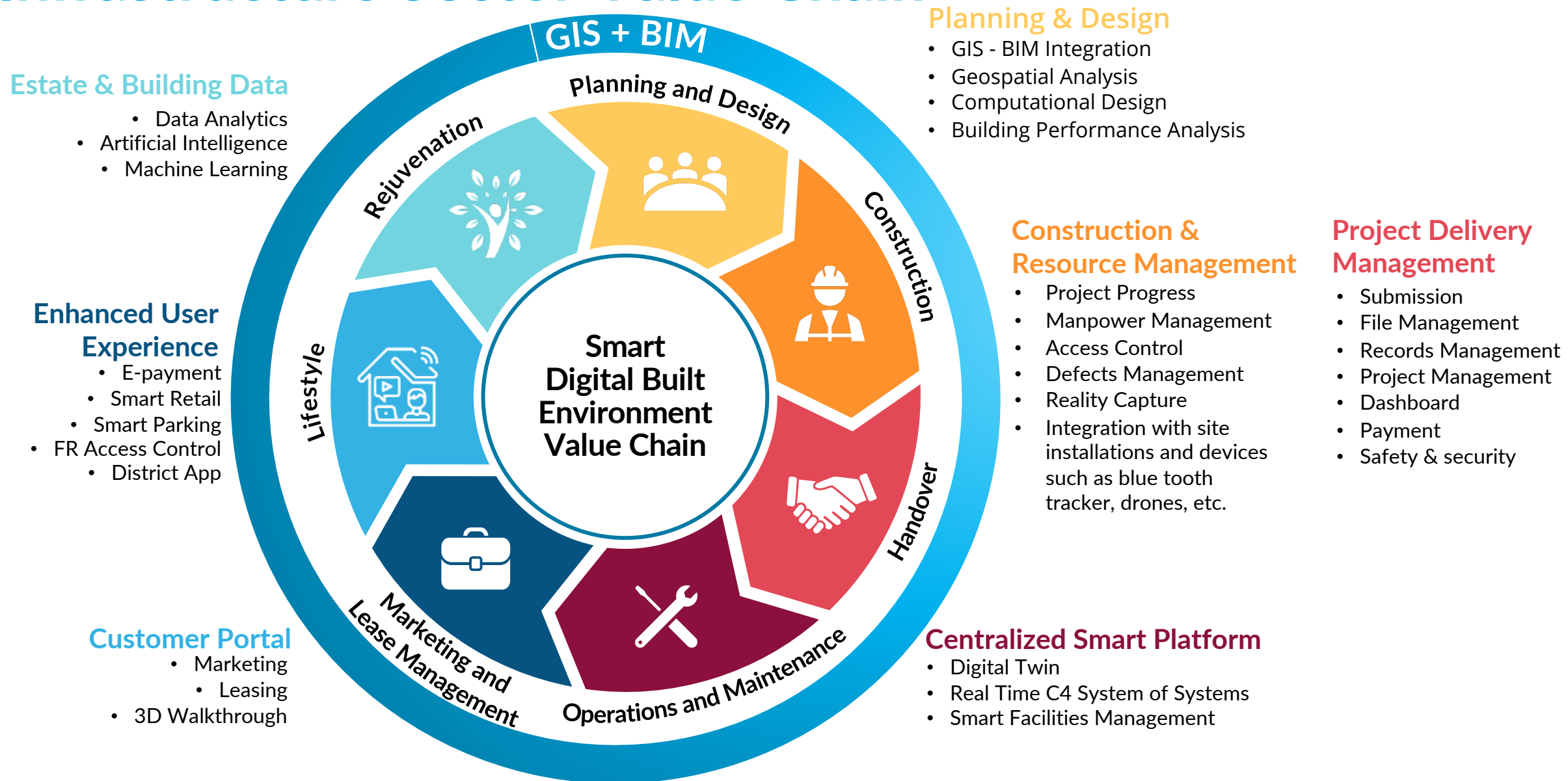
We also foster vibrant ecosystems, bringing businesses and communities together in an environment that nurtures ideas shaping the future.

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Digitalisation is Foundational Across All Stages of Infrastructure Sector Value Chain

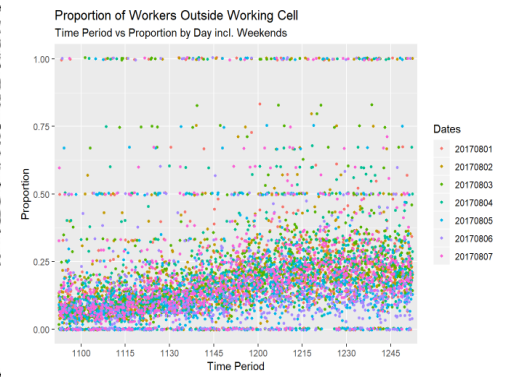


Geospatial Analysis to Guide Planning Decisions

Evidence-Based Planning Supported by Data Analysis

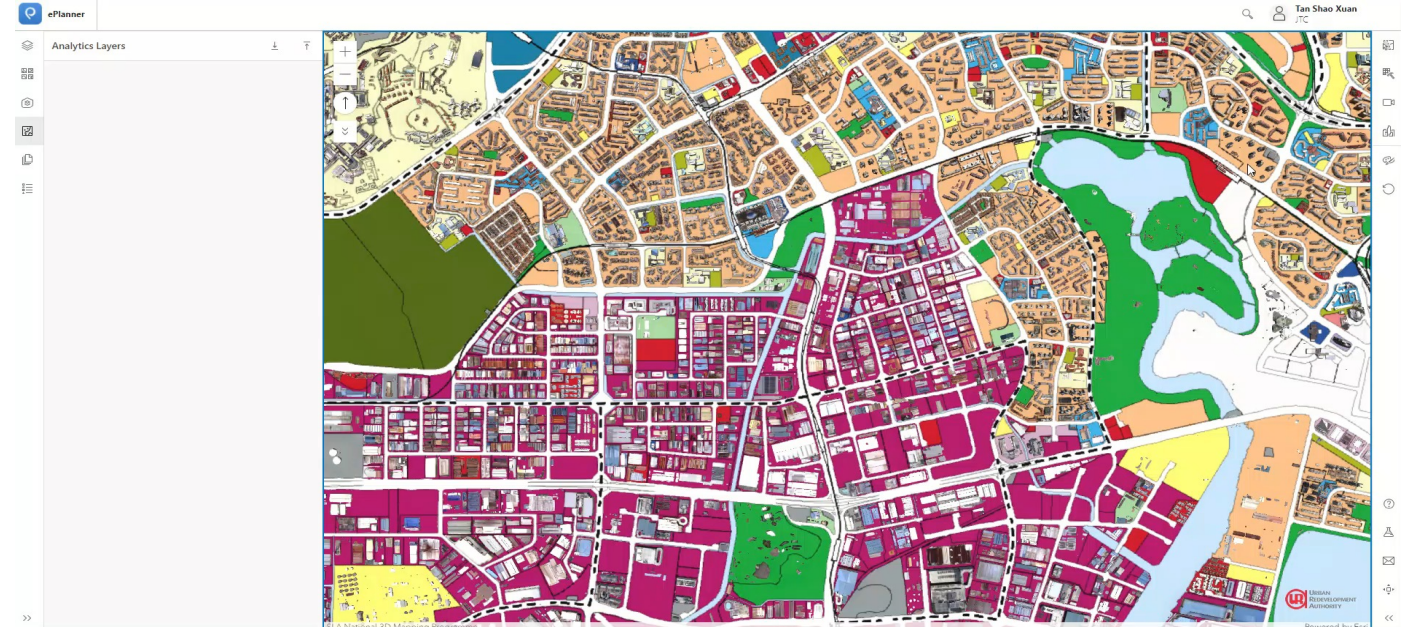
Amenity provision study

Spatial-temporal study of workers' travel pattern during lunch times using near real-time telco data.



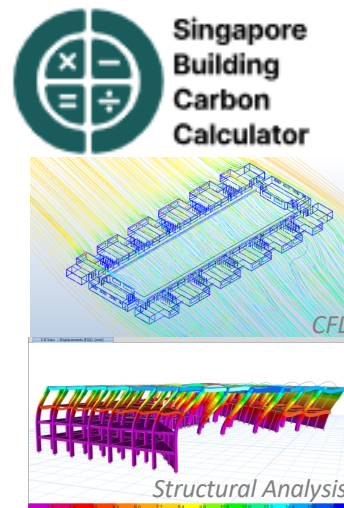
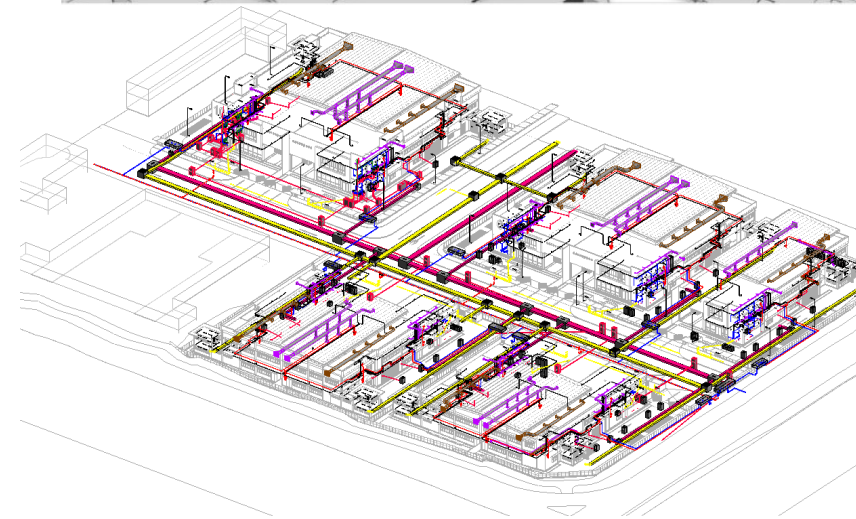
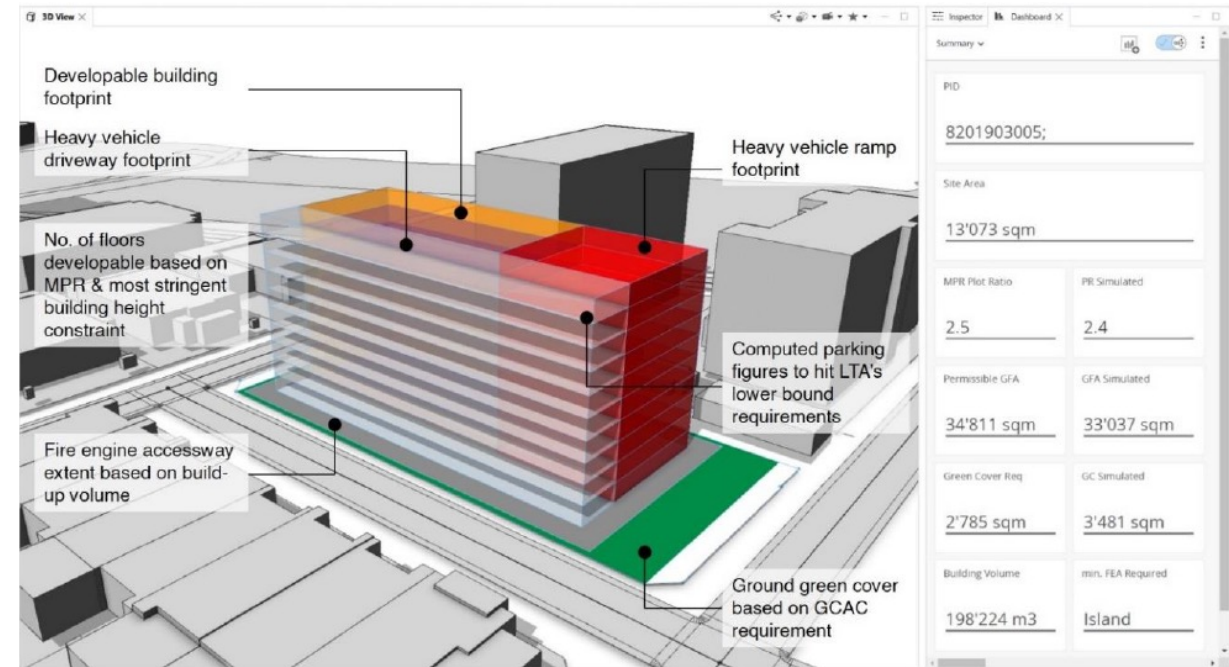
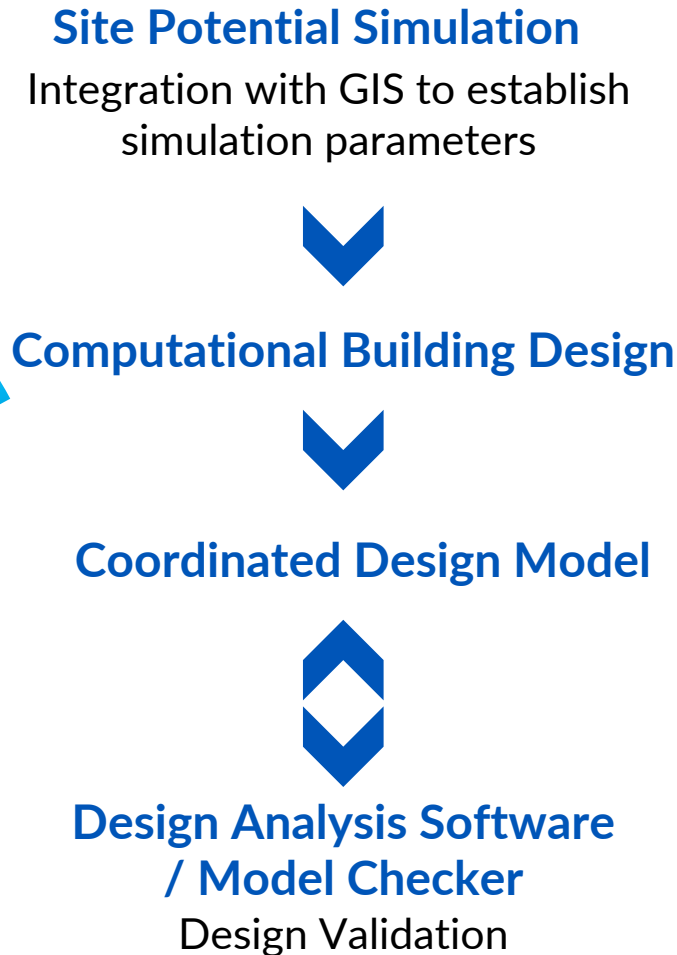
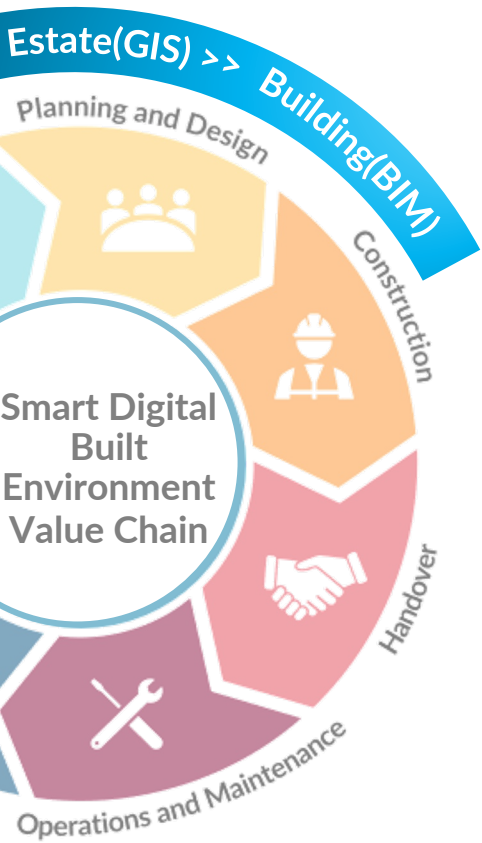
Chimney Assessment Tool

Assess the impact of chimney height controls on development potential of surrounding industrial plots.



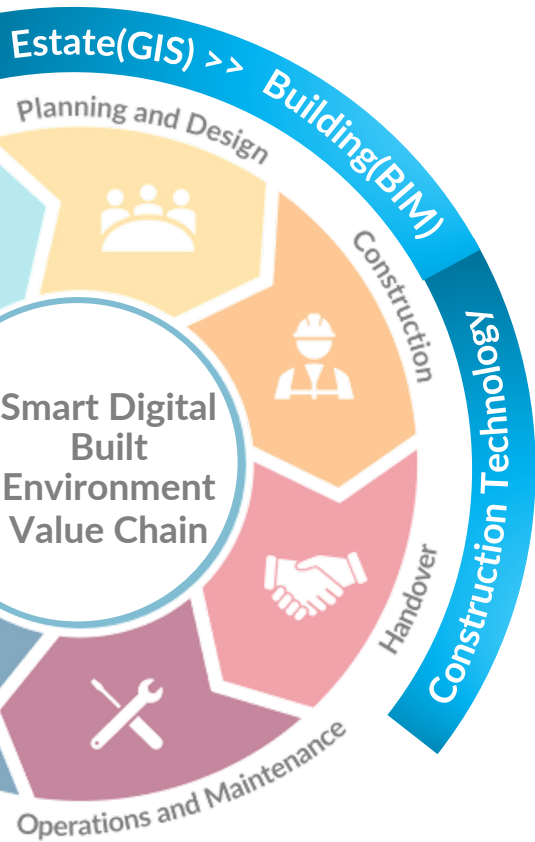
Integrated Digital Delivery

From Site Potential to Detailed Building Design



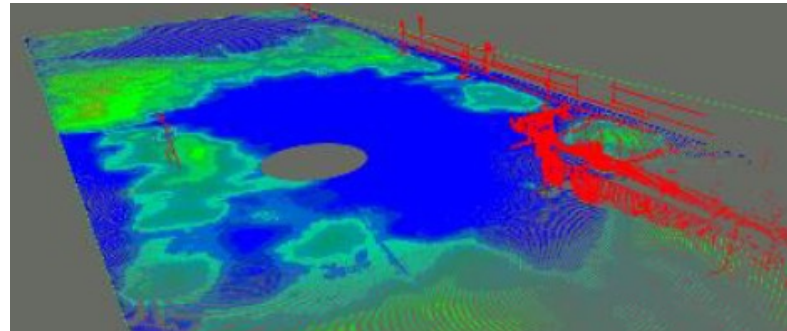
Digital Construction

Harnessing Technology for Increased Efficiency



Quality Control ▾

Point cloud scan converted to heat maps, contours, grid points for **analysis of levelness and flatness** to counter water ponding & improper water flow



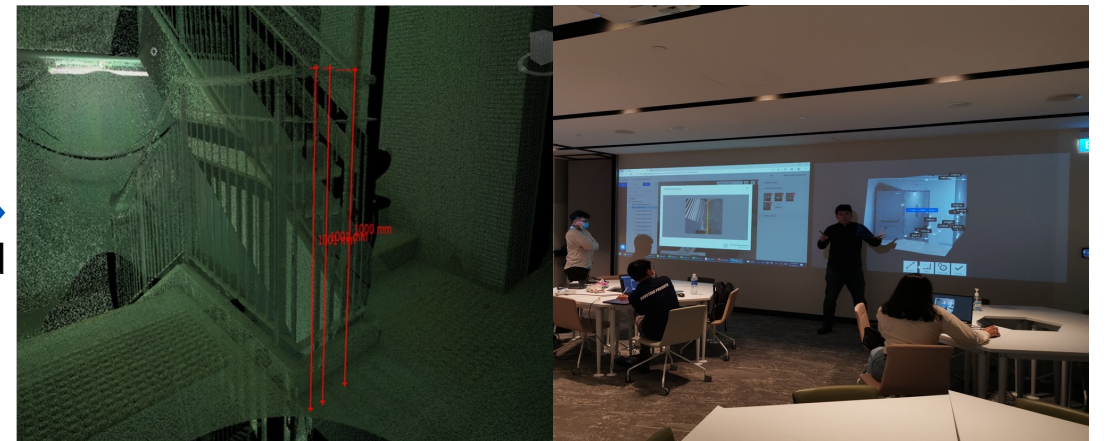
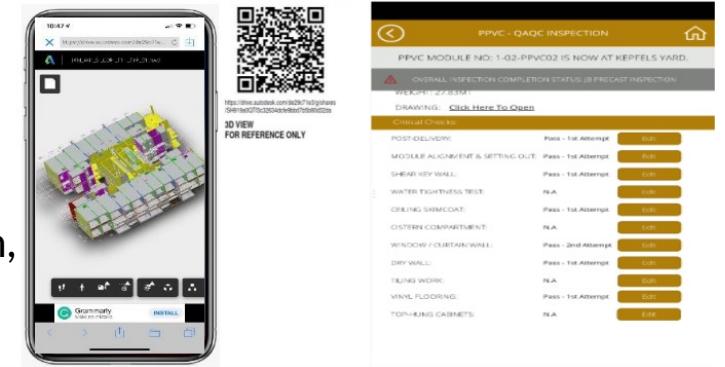
LiDAR Scan of Driveway

Virtual Inspections >

Integrating **GIS** with **point cloud** data and **360 photo** capture solutions so that detailed inspections can be conducted offsite

Digital Tracking >

Geotagging precast modules, drawings, delivery, installation, payment

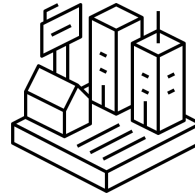


Digital Construction

Beyond Common Data Environment to Connected Data Environment for Integrated Digital Delivery

JTC's Corporate Systems

GIS
Payment
Data Lake
Plan Processing
Facilities Management
Sustainability Tracking & Analysis



Project Specific Systems

Authorities
Submissions

Construction
Scheduling
Supply Chain Mgmt

Site Supervision
Drones
CCTV, AI Cameras
Wearables

Operations
Vertical Transport
Delivery Robots
HVAC Control

Design/Construction Model in GIS/BIM



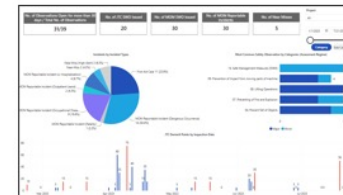
Safety/Quality | Project Delivery | Site | Contract



Cost



Quality



Safety



Authority Submissions



Submittals & Transmittals



Project Progress

Data. Dashboard. Decisions.

Digital Twin and Open Digital Platform (ODP)

Building on GIS & BIM



GIS + BIM



Digital Twin & ODP

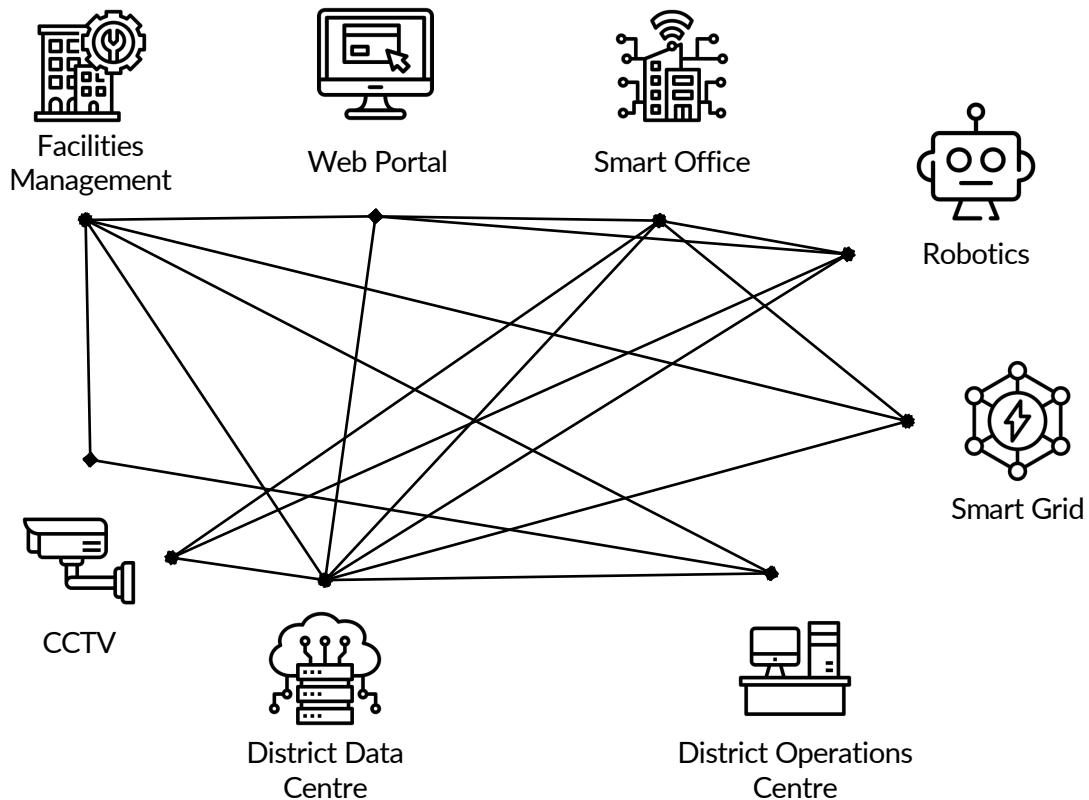


A New Way of Estate & Building Management

Open Standard Multi-Protocol Middleware

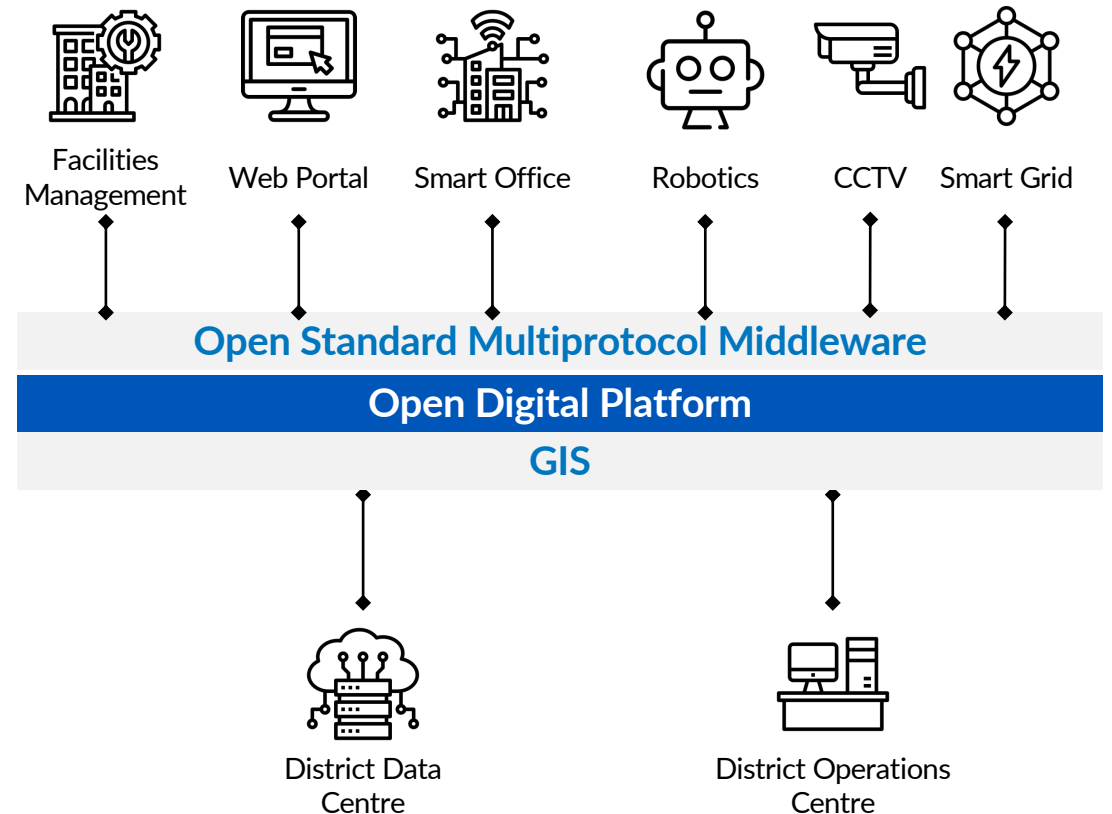
BEFORE

Each vertical must integrate with many systems one at a time, so **multiple integrations are required**



AFTER

Each vertical only needs to integrate with the Open Digital Platform **once**



Concept of the Open Digital Platform

Real-time connectivity, interoperability and automation on 1 single platform



Security Counter





Thank You



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