The GEAR by Kajima sets new benchmark for smart, sustainable buildings

Client profile

The GEAR by Kajima is the technology services business and the open innovation platform of the Kajima group, bridging world-class engineering expertise, licensed technologies and global-local collaboration to co-create transformative solutions for the built environment.

When planning their new regional headquarters and R&D hub in Singapore, Kajima partnered with NTT DATA to create a fully integrated intelligent building — The GEAR Building. The facility leverages Cisco's Software Defined Access (SDA) architecture and NTT DATA's IoT platform to adapt to user needs and set the standard for global smart buildings.

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The GEAR by Kajima represents our bold commitment to shaping the future of the built environment through innovation, collaboration and purposeful technology adoption. Our partnership with NTT DATA has been instrumental in bringing this vision to life, by transforming The GEAR building into a living lab where smart systems, sustainability and digital infrastructure converge."

Luke Wu, Managing Director, The GEAR by Kajima

10	8,700
building systems managed	data points integrated and analyzed

Business need

Create a regional hub for innovation

As a leading global construction and engineering company, Kajima saw the development of their first overseas headquarters in Singapore as an opportunity to showcase their capabilities and create a foundation for their ongoing research and development efforts. The Kajima Lab for Global Engineering, Architecture and Real Estate (The GEAR) building is a facility that serves as a living lab for Kajima's R&D initiatives and their open innovation platform.

During planning, The GEAR needed a partner who could create a flexible and adaptable IT infrastructure that would support research projects now and in the future. With technology playing a critical role in their business strategy, the lessons gained in Singapore would set the stage for the design of future smart buildings.

Critical to The GEAR's vision for their building was ensuring that they could integrate the management of more than 10 key building systems, including ventilation, lighting, air quality and occupancy monitoring. They also wanted to capture data from all these systems and use them to make informed decisions about building operations.

Solution

Comprehensive IT consulting to optimize and scale

NTT DATA assisted The GEAR on this journey, based on our extensive experience in delivering intelligent-building solutions worldwide. In collaboration with our global vendor partners, we developed a robust and scalable architecture for the new building.

We worked with The GEAR to map out their desired business outcomes, as well as the specific aims they had for their building. Once these insights had been gathered, we developed able to build out a comprehensive roadmap ensuring that The GEAR could achieve all their milestones.

Our network infrastructure, IoT platforms and consulting services helped streamline data flows and automate operations, enabling The GEAR building to function as a responsive, efficient smart ecosystem.

The foundation of this intelligent building is IT infrastructure leveraging Cisco's Software Defined Access architecture. Combined with our AI-driven automated services platform, The GEAR can access analytics-driven insights that allow the network to adapt quickly to any changing needs. The secure network powers all areas of the business, including their collaboration environment, allowing them to work closely with their global counterparts.

Underpinning the smart building is a network of 2,000 sensors that capture the day-to-day operation of the facility, generating more than 8,700 data points. The GEAR leveraged NTT DATA's cloud IoT platform to integrate this data and provide real-time insights that the internal facilities team can use to optimize day-to-day operations and perform preventive maintenance. This advanced monitoring platform helped the building achieve the Singapore BCA Green Mark Platinum Super Low Energy certification.

The seamless view of the insights generated by the platform also allows them to use the lessons from this project across their global operations.

Outcomes

A smart, sustainable HQ with advanced IoT and automation

The smart building enables seamless application access for hundreds of people who enter it each day. The software-defined network architecture ensures the secure coexistence of corporate applications, IoT sensors and IT technologies, making the deployment easy to manage and scalable according to business demands.

Informed decisions with technology and automation

With remote monitoring and real-time notifications, The GEAR can monitor their systems and receive alerts from anywhere, ensuring timely responses to issues and reducing downtime. Centralized data management simplifies access to information, improves decision-making and enhances overall operational efficiency.

Improved occupant experience

Using data to optimize the environment enhances the experience for employees and visitors, boosting satisfaction and wellbeing. With a holistic view of all aspects of the building, The GEAR can create a work environment that promotes productivity and wellbeing.

Enhanced sustainability

Smart systems continue to support the building's BCA Green Mark Platinum Super Low Energy (SLE) certification by optimizing energy consumption, enhancing lifecycle management and enabling data-driven sustainability practices.

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