WARNERMEDIA-HUDSON YARDS

CASE STUDY

Designing a Smart Building from the ground up to protect WarnerMedia's mission-critical, building, operational, and human capital investments at 30 Hudson Yards.

INTELLIGENT BUILDINGS™

Overview

As a media company that provides broadcast and on-demand programming globally, WarnerMedia's mission-critical services require industry-leading operational infrastructure. With leases on two (2) million square feet of property expiring in 2019, Steve Lefkowitz—WarnerMedia's longtime Vice President Global Facilities Management—also needed to meet a directive to reduce WarnerMedia's real estate portfolio. WarnerMedia's solution was to create a new headquarters at 30 Hudson Yards by purchasing 1.1 million square feet of office condominium space that would allow WarnerMedia to develop and own the infrastructure within its office space. This retained the company control over its building control and informational technology (IT) systems ensuring it could deliver the necessary caliber of performance to support the mission-critical infrastructure to run its media operations.

From the start, Lefkowitz believed that Smart Building technologies would be integral to the long-term success of the building and began exploring products and their benefits. However, neither Leftkowitz nor WarnerMedia had experience in designing Smart Buildings and turned to Intelligent Buildings, LLC (IB)'s Smart Building experience to assist in achieving their operational goals. IB consultants worked with WarnerMedia from the initial planning phase to the commissioning of Smart Building systems.

EXECUTIVE SUMMARY

Building profile
- **Location:** 30 Hudson Yards
- **Office size:** 1.1 million square feet
- **Building type:** Commercial office
- **Owner:** WarnerMedia

Challenge
- Transform WarnerMedia's new headquarters into a smart building supporting high-value business cases by securely integrating diverse building control systems into a single remotely accessible and intuitive control platform

Solution
- Create high-value Smart Building Use Cases that support business objectives
- Develop master system integrator (MSI) requirements to consolidate diverse control systems into a single management platform
- Ensure Smart Building and MSI requirements are correctly integrated into building design and engineering plans.
- Evaluate building control devices for compliance with WarnerMedia's enterprise information systems (EIS) team' security standards
- Commission the functional elements that enable the Smart Building Use Cases across multiple building control systems

Intelligent Buildings Services
- Actionable Strategic Consulting
- Design Assist Services
- Operational Technology (OT) Cybersecurity Consulting and Services

Benefits
- Develop a strategy to more effectively manage building energy use, operating cost and enhance occupant experience
- Provide centralized visibility and analytical functions across numerous building systems.
- Secure and centralized control of building systems and supporting operational software
- Establish a strong OT system security posture concerning the delivery of a smart building operational platform

1.1M	90	20-25%
SQ FT	STORIES	ENERGY REDUCTION

WarnerMedia also prioritized bringin its operational technology (OT) security in line with its IT standards. IB worked with WarnerMedia and manufacturers to increase critical building control device's security to meet the high IT security standards. The resulting Smart Building solution leverages the capabilities of a master system integrator (MSI) to integrate the diverse secured building control systems, such as lighting, metering, critical power management system, and building automation system (BAS), into a remotely accessible univesal dashboard to optimize the operational cost, occupant experience in the building, while managing operational risk.

Designing a media headquarters for the next twenty (20) years

Consolidating NYC division locations into one (1) building

WarnerMedia, with its CNN, HBO, Turner, and Warner Bros. divisions, occupied seven (7) buildings across New York City (NYC) by the mid- 2000s. With two (2) million square feet of property due to expire at the end of 2018, Lefkowitz and the facilities management (FM) team had a directive to reduce WarnerMedia's NYC real estate portfolio. After conducting an extensive discovery process and employee surveys, WarnerMedia announced its plans to consolidate the offices into one (1) building as the anchor tenant at 30 Hudson Yards—one of the sixteen (16) towers in the largest private real estate development in U.S. history—on the west side of NYC. This consolidation into a single headquarters centralized operational resources and reduced WarnerMedia's real estate footprint by one (1) million square feet.

Identifying building operational and environmental requirements

WarnerMedia's move to a single office space brought over 5,000 employees from corporate operations and the CNN, HBO, Turner, and Warner Bros. divisions into the same building. As a media company, these entities have unique operational demands for broadcast and on-demand services and rely on the five nines (99.999%) reliability, allowing only 5.26 minutes of downtime per year. To meet these demands, WarnerMedia's offices developed their own OT and IT systems systems to ensure performance goals were met.

In addition to infrastructure efficacy and reliability, WarnerMedia aimed to provide a modern office environment that would promote collaboration, comfort, and employee wellbeing. Previously, WarnerMedia's offices were split evenly between open and enclosed office layouts, but the new headquarters would feature 83% open office layouts. "We really looked at how we can create spaces where people don't have to look at their desk or office as their home base," said Joel Brenner, Vice President and Head of Global Project Management.[1] This shift included over 300 collaboration and meeting spaces, an abundance of whiteboards, and private telephone rooms. The open office layouts would also deliver more light to tenants and provide a comfortable, residential feel.

Incorporating Smart Building concepts from the start

Lefkowitz felt that Smart Building technologies should be a fundamental component of modern buildings. Not only do Smart Buildings help achieve the designed building performance, but they also act as long-term investments that provide an enhanced experience for employees while reducing operating and energy costs for years to come. WarnerMedia's approach made it possible to design a Smart Building in NYC from the ground up with the future flexibility to develop an industry-leading solution as space requirements evolve.

While the FM team had an idea of the outcomes they wanted for the new headquarters, they faced multiple challenges. These challenges included identifying the key Smart Building capabilities necessary for Use Cases, navigating available technology options, and approaching decision points required for implementing the desired system. To navigate these challenges, WarnerMedia engaged IB based on their experience with Smart Building Use Cases, strategies, business cases, design and alignment, and commissioning. IB's work began with developing the Smart Building Use Cases and their associated business cases. This extended to joining the design team to align the architect, MEP engineers, and vendors around those Use Cases and ensure that the other trades included the Smart Building requirements and configurations for the integrated solution and aligning the Smart Building systems with WarnerMedia's stated business objectives.

Defining high-value Smart Building Use Cases and OT Cybersecurity

Supporting Smart Buildings Use Cases with proven strategies

As the design of the Smart Building system began, the company looked to IB for end-to-end guidance throughout its journey. IB collaborated with key WarnerMedia stakeholders to develop functional Use Cases focused on establishing or improving operational and business-based outcomes. The project team proceeded to determine and prioritize the identified capabilities of its Smart Building system, including integration points to ancillary systems such as its conference room scheduling software and cloud-based computerized maintenance management system (CMMS).

With IB's guidance, WarnerMedia was able to focus on high-value Use Cases that aligned with its business objectives. Given the scale of the project and the reliability requirements, WarnerMedia preferred a system comprised of proven enterprise technologies and platforms that could extract data into a single, user-friendly dashboard for quick analysis and data-driven decisions.

IB assisted WarnerMedia in working backward from its defined goals to build out each Use Case and began the process of educational and alignment meetings for key stakeholders. These meetings led to WarnerMedia's corporate headquarters strategy documents and design guidelines, which incorporated requirements across a diverse stakeholder group to include architects, engineers, and contractors. IB applied its proven methodology for validating the behavior, reliability, and interoperability of Smart Building technologies to begin identifying potentially beneficial technologies for WarnerMedia's Smart Building system.

Developing the Smart Building system for 30 Hudson Yards

The Smart Building system envisioned by WarnerMedia and developed by IB would have several components working to prioritize building performance, operational efficiency, and healthy tenant experience. To enable precise building controls, the BAS, HVAC, and lighting systems converged by an MSI, running the Niagara platform and using the DGLux building visualization platform to create a universal dashboard. With the unified platform, the FM team can trend and monitor building performance, control the BAS, HVAC lighting, metering, fire alarm, and critical powering, and monitor mission-critical technical equipment. However, these capabilities are not limited to these monitoring and control functions. The MSI approach also connects to a fault detection and diagnostics (FDD) system, CMMS, and business scheduling system to provide the FM team the tools to optimize operations.

With the Smart Building strategy finalized, WarnerMedia looked to IB to act as the company's representative and advisor in bringing the system online. This process began with translating the strategy into architectural and engineering specifications, followed by contractor selection, product procurement, equipment installation, and commissioning. IB met with architecture and engineering firms to align and educate team members on the Smart Building strategy—in particular, the design requirements of the secure converged corporate network.

Smart Building Use Cases focused on high-value solutions

IB provided Use Cases that aligned with WarnerMedia's business objectives. These solutions included:

- When a conference room is reserved, the room is pre-heated or cooled based on the next reservation time to improve occupant comfort.
- Automated risk avoidance sequences, such as if a chiller fails in the HVAC system, preprogrammed sequences divert remaining cooling and power resources to mission-critical infrastructure by lowering power and cooling demand in less critical areas throughout the building.
- Automatic responses to utility load shedding requests, reducing electricity load to a predefined level and using the buildings gas generators to provide supplemental power.
- Enabling the FDD system to automatically generate work orders in the CMMS.

Traditionally, OT and IT have had have had opposing priorities in regards to communication and security requirements. OT systems prioritized data availability throughout the network over its confidentiality to ensure that systems can interact with each other in milliseconds. This ensures a quality occupant experience, such as having lights turn on quickly in response

to occupancy sensors. IT traditionally prioritizes information confidentiality over availability, such as ensuring the security of credit card data instead of its ready availability within a network.

As a result, current OT systems are more vulnerable to compromise compared to IT networks. As few OT systems have been designed for security, raising OT device security to meet IT security standards is a monumental effort, a challenge that commercial building owners have rarely taken on. WarnerMedia's approach acknowledged 30 Hudson Yards as a potential high-profile target for both internal and external security threats and placed the appropriate value on OT security as it did IT security. For more information on the OT Cybersecurity efforts in relation to 30 Hudson Yards, please reference IB's cybersecurity-specific case study on the project.

Realizing the benefits of Smart Building automation at WarnerMedia

Aligning network integration processes and commissioning systems

Construction of WarnerMedia's new headquarters at 30 Hudson Yards began in 2014 and currently holds an occupancy date of March 2019. As the Smart Building infrastructure began installation, the engagement of IB's resources provided WarnerMedia the assurance that each problem or question would be quickly and accurately resolved. Communication between IB and WarnerMedia maintained process alignment and project status. As the Smart Building installation came to completion, IB's work shifted to validating components of the Smart Building platform.

Bottom line, risk avoidance, and environmental health benefits

Enabled by WarnerMedia's decision to develop an integrated strategy and solution, the Smart Building systems unified by the MSI platform increase energy efficiency by reducing light levels when sunlight is present and turning off unnecessary lighting and HVAC resources, such as in unoccupied spaces. They also optimize building performance by leveraging the FDD software to automatically create work orders. For WarnerMedia, this means that the FM team no longer reacts to employee complaints of burned-out lights or uncomfortable temperatures, but instead can proactively address building system issues using actionable data. This saves time, avoids energy waste, and keeps equipment running optimally.

OT systems converged on the corporate network also allow building control systems to interact with external systems. The mix of Use Cases that guided the selection and design of WarnerMedia's Smart Building system provides building system capabilities to react automatically to changing conditions within the building while reducing operational costs and enhancing the occupant experience.

Inspiring an industry by taking Smart Buildings to a larger scale

By integrating Smart Building strategies from the beginning and prioritizing OT security, WarnerMedia brought industry-leading Smart Building technologies and security to a larger scale. Through IB consulting and services, the enablement of ongoing organizational alignment, and a vision of data-driven operations in the building and FM team, Lefkowitz was able to bring together, Lefkowit was able to bring together architects, structural engineers, control system vendors, IT teams, and data center engineering teams to provide a robust, cost-saving, and highly transparent Smart Building solution. The selected Use Cases provided a guidepost to the combined 50,000 data points merged into the unified MSI platform that can deliver continuous commissioning of building systems at a granular level to keep the WarnerMedia headquarters running optimally for decades to come while enhancing the occupant experience and managing operational risk.

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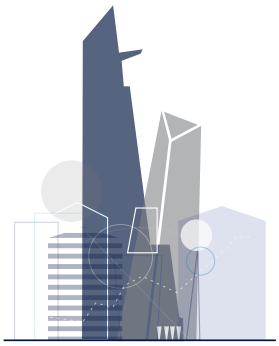
> IB's approach to Smart Building design and strategy focuses more on why technology is used, and less on what it simply does.

References

[1] Colburn, Randall. (2018, May 5). Four divisions, one roof. *American Builders Quarterly*. Retrieved from https://americanbuildersquarterly.com/2018/05/29/time-warner/



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