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Leading the
Smart Campus
Revolution

Remaining competitive in higher education through smart technology integration

With public health more critical than ever during the COVID-19 pandemic, higher education institutions are seeking out opportunities to enhance their campus and protect the health of their students and faculty. Schools must adapt to the changing needs of applicants and not only provide the optimal environment for student learning, but also create spaces that are safe and healthy.

Through strategic infrastructure improvements and renovations, universities and colleges can transform campuses to deliver a clean environment upon reopening while simultaneously appealing to highly discerning applicants. But these campus-wide efforts can often put a strain on budgets, and applying for grants and loans is simply not a viable option for all institutions, especially during these uncertain times.

Through alternative funding methods such as Design-Build-Finance-Operate-Maintain (DBFOM) or through the Coronavirus Aid, Relief, and Economic Security (CARES) Act, your campus can achieve intelligent infrastructure improvements designed to deliver the best learning and teaching conditions possible. Leveraging the latest in building technology, integration, automation, and services, any campus can create a healthy environment while remaining highly competitive to a progressively more selective applicant pool. Campus leaders can transform their spaces into a smart campus, becoming industry leaders in the process.

SMART TECHNOLOGY FOR SAFER, MORE CONNECTED CAMPUSES

When reviewing their university and college options, prospective students desire safe, connected, and comfortable environments. These attributes are equally as important to parents as they tour campuses with their children. During campus tours, they are looking for clear indicators that the safety and well-being of students is a top priority, and that institutions can deliver the best possible experience, from the first day of classes all the way to graduation. These factors are even more important to parents during the COVID-19 pandemic. Higher education leaders can advance students' experience and well-being by implementing and integrating smart technologies across campus buildings.

For instance, consider how integrated systems can completely transform a college's security strategy. Having detailed information about individuals entering and leaving the school's property is critical to maintaining safety. Advanced access controls deliver this data, allowing security personnel to identify exactly who is accessing the campus, how long they stay, and when they leave. In addition, weapons detection with artificial intelligence (AI) capabilities can be integrated with video surveillance to instantly identify an individual carrying a weapon, allowing security and

local law enforcement to intervene swiftly.

While these technologies primarily allow campuses to prevent emergency situations, these integrations can be equally as powerful during an emergency as well. Fire and life-safety systems, lighting, and mass communication systems can be integrated to activate the moment an alarm is triggered. In this situation, lighting can provide advanced visual acuity for evacuation, and mass communication systems can provide instructions over loudspeakers and through automated text, email, and social media alerts.

In the case of a lockdown, gunshot detection technology can leverage the latest in waveform analysis to identify potential threats across campus, immediately contacting local authorities for a rapid, comprehensive response. During a lockdown, access controls will automatically activate to prevent individuals from accidentally evacuating toward the threat. Ultimately, these integrations are a crucial step in meeting the expectation of students and their families for a safe campus.

In addition, creating a healthy environment for students and faculty is critical to reaching a campus's overall goals, especially during the COVID-19 crisis. Students, their parents, and faculty need the peace of mind that comes from knowing that their university places their health first. One of the best ways to maintain a healthy building environment is by updating HVAC technology, from chillers to rooftop units, to improve indoor air quality (IAQ).

In addition to its role in combatting COVID-19, IAQ also has a major impact on student performance, and poor ventilation can lead to stagnant germs and dust particles circulating in buildings, potentially harming occupant health and causing a rise in illness- or allergy-based absences. By updating HVAC systems to the latest equipment, higher education leaders can feel confident they are providing a healthy learning and living environment.

To further maintain these healthy spaces, these HVAC technologies can be integrated with an advanced building management system, allowing school technicians to closely monitor their performance in order to ensure they remain operational. This level of data analysis allows institutions to avoid costly HVAC equipment downtime, while keeping students and faculty healthy and comfortable.

In addition to security and wellness, technology integrations can streamline and improve students' day-to-day activities and experiences. Within campus classrooms and buildings, lighting and HVAC can be connected with occupancy sensors, allowing them to activate the moment a student or faculty member enters a room. The classroom is instantly prepared for use without anyone having to touch a switch or thermostat.

To save valuable energy costs when a room is unoccupied, smart light-emitting diode (LED) lighting can be automated to turn off, while HVAC systems are programmed to return to an ecofriendly setting. To facilitate effortless campus navigation, advanced access controls allow students and faculty to use smartphone applications in place of physical ID badges, enabling them to swiftly enter and exit buildings.

BEGINNING YOUR CAMPUS RENOVATION THROUGH SMART FUNDING

These infrastructure updates can have an incredible impact on the ability of colleges and universities to appeal to prospective students. But finding the budget to execute these upgrades can be difficult, especially as federal funding becomes less available and economic recovery occurs slowly. Fortunately, there are alternative funding methods that not only grant school leaders the financial freedom to make critical updates without upending their budgets, but also make the entire process streamlined and easy.

One such example of an alternative funding method is the DB-FOM model. Through this approach, a partner assumes the full risks and responsibility of the project, including design, building, financing, operations, and ongoing maintenance. This allows campus leaders to remain focused on their primary mission: the education and well-being of their students. At the same time, a team of experts manages infrastructure improvements.

The project is paid for over time through the resulting energy and operational savings, meaning that campus budgets remain unimpacted and that there is no need to apply for grants or loans. DBFOM is powerful because it places the entire project life cycle in one partner's hands, removing common barriers to success, such as poor communication between vendors. In addition, DBFOM ensures that the partner maintaining the technology for years to come is the same partner that installed it, allowing them to provide the best possible service.

DBFOM is only one option out of many. Other funding approaches include energy performance contracting (EPC), in which energy-efficiency projects are paid for through the resulting energy savings; Buildings-as-a-Service (BaaS); and public-private partnerships (P3) between a public or private institution and a private partner.

In all these examples, institutions are empowered to leverage the expertise of a partner to transform their campuses without sacrificing their valuable and often overwhelmed schedules. They can make vital infrastructure upgrades that can have long-term effects on application rates, student performance, and cost reduction—without upsetting their school budget.

In addition, Section 2307 of the CARES Act allows for taxpayer-funded buildings to qualify for bonus depreciation, allowing them to undergo interior renovation. If certain conditions are

met, these improvements can be fully expensed in the current year. Universities with buildings qualifying for the depreciation are empowered to make the necessary infrastructure updates—such as improved HVAC ventilation or new UV-lighting cleansing technology—to create safer, healthier environments upon reopening.

"PERFORMING A NEEDS ASSESSMENT AMONG THE CAMPUS POPULATION GIVES STAKEHOLDERS A NEW PERSPECTIVE ON HOW SMART TECHNOLOGIES CAN IMPROVE THEIR CAMPUS EXPERIENCE."

EARLY ENGAGEMENT FOR A STREAMLINED CAMPUS IMPROVE-MENT PROJECT

Whichever method you and your fellow leaders choose, there are steps you can take to help your partners keep the project on track and proceeding smoothly. Before any technology is implemented, work closely with your stakeholders and partner to define desired outcomes upfront. These outcomes can range from maximized efficiency, to reduced deferred maintenance, to improved building security. Establishing these outcomes at the start of the project allows them to guide the entire process, ensuring that all parties are united in their goals and initial vision.

From there, work with your partner to evaluate the current infrastructure in place. It is easy to be daunted by the prospect of starting such a large retrofitting project, resulting in infrastructure upgrades repeatedly being placed on the back burner. However, you might be better prepared than you think; by evaluating current systems and technologies, your partner can determine what you already have in place and what will definitively need updating.

For instance, smart lighting acts as a key integration point for a variety of sensors, including motion, temperature, and even gunshot detection. Discovering that this lighting infrastructure is already in place means you are already ahead of schedule. If it is not already in place, your partner is now prepared to make the update sooner rather than later. This step is vital to ensuring efficiency throughout the project, by reducing redundant technologies and keeping costs low.

Consider performing a needs assessment as well. Consulting with the end users early in the planning process ensures student, faculty, and staff satisfaction. Perhaps parking lots require more lighting to help commuting students feel safe at night, or maybe classrooms are becoming too cold during the winter. Performing a needs assessment among the campus population gives stakeholders a new perspective on how smart technologies can improve their campus experience.

Once desired outcomes have been established and an infrastructure evaluation and needs assessment has taken place, you can begin building your project roadmap. This roadmap should be incredibly detailed and include information such as ownership, success KPIs (key performance indicators), and an in-depth timeline. This is a critical time to consider what can be achieved with new technologies, what can be achieved with new process-

es, and what will require a little of both. This roadmap must be approved by all stakeholders to ensure that all parties are unified.

Beginning an infrastructure upgrade project does not have to be daunting. By engaging with your partner early in the process, you set the entire project up for success. These steps allow the infrastructure upgrades to proceed on time and under budget, enabling schools and their partners to maximize their efforts and investment.

TRANSFORMING ANY COLLEGE OR UNIVERSITY INTO A SMART CAMPUS

Higher education leaders are now tasked with finding new opportunities to appeal to prospective students while protecting students and faculty, and one of the best ways to do so is through smart technology implementation. Installing and integrating smart technology across a campus can transform how students learn and live, allowing institutions to remain competitive in a crowded field.

From smart classrooms to the latest in emergency preparedness, intelligent technology implementations create optimal learning environments that set the standard in the higher education industry. Smart campuses are absolutely the future of the industry, and the new leaders will be those schools who make updates the fastest.

For any educational institutions that are interested in making these infrastructure renovations but wary of applying for additional grants or loans, there are alternative funding approaches that can meet their unique needs. These models place responsibility for the project entirely in the hands of expert partners, allowing school leaders to focus on their core mission of education. Whether you select DBFOM or P3, or leverage the CARES Act, you have the power to create the smart campus that will help your students thrive.

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