HEALTHCARE FACILITIES OPTIMIZATION

ENHANCE THE PATIENT EXPERIENCE WHILE IMPLEMENTING DECARBONIZATION STRATEGIES

Stark TECH

TRANSFORMING ENERGY & FACILITY MANAGEMENT THROUGH INNOVATIVE TECHNOLOGY

Hospitals and healthcare facilities worldwide are experiencing unprecedented challenges, from recovering from a global pandemic to global warming to an ongoing push for decarbonization and sustainability strategies.

At Stark Tech, our mission is clear - to enhance the patient experience with cutting edge technologies and solutions while addressing critical concerns in the healthcare sector including safety, sustainability, and efficiency. It is critical for hospitals to properly update and maintain essential building infrastructure and invest in energy-efficient building management technologies to keep their patients and staff safe and comfortable and their Overall Hospital Star Ratings high.

As the world advances, so do our expectations and standards for healthcare treatment.

For hospitals to continuously improve their patient satisfaction and trust, they must focus heavily on four critical factors:

- Enhancing the patient experience by personalizing comfort and infection control through systems integration and smart building technologies.
- Optimizing building infrastructure for reduced downtime and improved operational and energy efficiency.
- Improving safety and security measures for patient and staff protection.
- Integrating renewable energy technologies to reduce carbon emissions and energy costs while promoting sustainability.

THE FUTURE OF HEALTHCARE IS SMART

The Smart Building market industry is projected to grow from $93.1 billion in 2023 to $392.4 billion by 2032, according to Market Research Future[1]. This is a compound annual growth rate (CAGR) of 19.70% throughout the next nine years.

The growing demand for smart building technologies within the healthcare industry is primarily due to increased efforts for decarbonization, energy efficiency, and sustainability. These technologies address the critical need to reduce energy consumption within the healthcare sector while simultaneously keeping patient satisfaction high and secondary infections low.

By embracing technologies like smart LED lighting controls, temperature and humidity controls, nurse call, and energy and power monitoring systems into a single pane of glass, healthcare providers can deliver personalized care experiences that also help achieve their energy efficiency goals.

Smart buildings use Internet of Things (IoT) technology and automation to optimize environments inside facilities using smart sensors and controls to streamline communication protocols into a single pane of glass. The smart sensors automatically adjust to user-specified settings and identify when a space is occupied vs. unoccupied. This capability facilitates energy efficiency and optimization, but also ensures consistent patient comfort and infection control.

Gone are the days of managing facilities blind! The dashboards created within the software ensure compliance and reporting requirements. In addition, investing in these technologies will not only improve operational efficiency and patient comfort day-in and day-out, but it will ultimately save on maintenance and energy costs.

Achieve Your Facility Optimization Goals with Smart Building Technologies

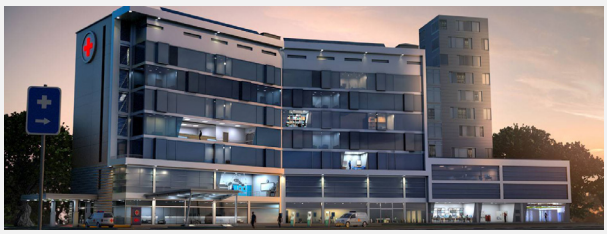
- Master Systems Integration
- Energy Metering, Reporting, & Tracking
- Thermal Control (Temperature & Humidity)
- Smart Lighting Controls
- Mechanical Systems Integrations
- Fault Detection & Diagnostics

1. Market Research Future, https://www.marketresearchfuture.com/. "Smart Building Market Size, Share Report and Industry Trends 2032."

IMPLEMENTING RESILIENCY WHEN EVERY SECOND COUNTS

According to the Federal Emergency Management Association (FEMA)[2], "Facilities that prepare and plan for the unexpected will be less likely to have catastrophic failures and will be able to request and receive temporary assets faster, if needed."

Hospitals and healthcare facilities have extremely complex building operations. This is because, in addition to standard building systems like lighting, HVAC, and security, doctors rely heavily on advanced, life-support systems like ventilators, diagnostic imaging, and monitoring capabilities to treat their patients. This added reliance on power-dependent equipment increases the need for power resiliency.



Climate Central, a nonprofit research organization, reported that the average number of weather-related power outages increased by roughly 78% during 2011-2021. Unfortunately, in the healthcare sector, every millisecond counts. A power outage could not only mean significant monetary loss, but also a loss of critical patient data, communication capabilities, and life. From critical procedural room equipment to elevator and door function, countless systems within a hospital rely on quality power and resilient electricity to operate efficiently.

Power Monitoring software like Schneider Electric's *Power Monitoring Expert* is designed to monitor, analyze, and manage the energy consumption and power quality of the facility. The software provides real-time data by collecting information from meters, sensors, and other connected devices. Equipment connected may include electrical systems, power distribution units, circuit breakers, transformers, and utility meters.

Benefits of Investing in Power Quality

- Real-time monitoring of energy consumption, which facilitates trending data and demand patterns for proper automation setpoints and for root cause identification.
- Historical data for analysis of energy usage trends that assist with future energy management strategies.
- Power quality analysis, including voltage sags and disturbances.
- Alarming and notifications to identify abnormalities in the energy consumption and/or power quality. This facilitates proactive maintenance and more efficient troubleshooting.

2. Federal Emergency Management Agency. "Healthcare Facilities and Power Outages Guidance for State, Local, Tribal, Territorial, and Private Sector Partners." 2019.

OPTIMIZE SAFETY AND SECURITY

The Overall Hospital Quality Star Rating[3] summarizes a variety of measures across five areas of quality into a single star rating for each hospital. In 2023, those five measures include Mortality, Safety, Readmission, Patient Experience, and Timely and Effective Care.

In order to rank high in all of these categories, doctors, administrators, and staff must be fully equipped with the right systems to streamline processes and provide a positive patient experience. A patient's safety, comfortability, and protection are critical aspects to consider when working towards improving their experience within the facility. Give the patient and their loved ones one less thing to worry about by investing in security and protective systems that instantly notify staff, administration, and emergency personnel if an unforeseeable situation occurs.

Protective systems like infant protection systems, CCTV/surveillance cameras, access controls, fire alarm, weapons detection, and emergency response mechanisms are vital in keeping patients and staff safe and protected at all hours of the day. By implementing master systems integration, building security infrastructure can unify with building management systems for faster, more efficient, and potentially life-saving decisions in the field. A centralized platform provides proactive risk management and enables real-time monitoring and quick response to potential threats. As a result, patients can focus on getting healthy knowing that they are safe and protected.

Protective Systems that Keep Your Facility Safe

- Cuddles Infant Protection System
- Access Control
- Video Surveillance/CCTV
- Public Address/Intercom
- Crisis Management Systems
- Weapons Detection
- Intrusion Detection
- Visitor Management
- Fire & Life Safety
- Vape & Chemical Detection

3. "Overall Hospital Quality Star Rating." Data.cms.gov, data.cms.gov/provider-data/topics/hospitals/overall-hospital-quality-star-rating/#measure-included-by-categories.

INCREASE DECARBONIZATION EFFORTS TO MITIGATE CLIMATE CHANGE

The ten warmest years in historical record have all occurred since 2010, with the last nine years (2014–2022) ranking as the nine warmest years on record, according to the National Centers for Environmental Information.[4]

As the global temperature continues to rise, so does the rapid increase of associated public health-related issues that come from air pollution and extreme weather events. In recent years, the healthcare sector has taken significant strides towards decarbonization, recognizing the critical role it plays in addressing the global climate crisis. This shift towards sustainability is a strategic move to improve public health and the overall well-being of communities. Hospitals and healthcare facilities can significantly reduce their carbon footprint by implementing clean energy and renewable solutions into their day-to-day operations.

The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) has released updated guidelines and standards to increase decarbonization efforts in new and existing buildings. These guidelines help hospitals of all sizes navigate the decarbonization process while also realizing resiliency goals. By following ASHRAE's recommendations for designing and operating buildings that produce as much energy as they consume, hospitals can reduce greenhouse gas emissions and energy costs while creating healthier environments for patients and staff.

Renewable Solutions that Future-Proof Your Facility

- Energy Benchmarking & Master Planning
- Renewable Energy Source Integrations
- Heat Pump Installations
- Smart LED Lighting Installations
- Battery Energy Storage
- Electric boilers and energy efficient HVAC systems




4. "Assessing the Global Climate in 2022." National Centers for Environmental Information (NCEI), 11 Jan. 2023, www.ncei.noaa.gov/news/global-climate-202212.

CREATING PEOPLE-CENTRIC CARE FOR A MORE SUSTAINABLE FUTURE

At Stark Tech, our commitment to a sustainable and healthier future goes beyond innovation; it's about collaboration. We proudly partner with hospitals and engineering firms to forge a path towards sustainability, decarbonization, and electrification in healthcare facilities. Our dedicated and experienced team works tirelessly with our valued customers, ensuring not only compliance with standard building codes but also the creation of environments that prioritize the well-being of patients and staff. Through this unwavering partnership, we are not just shaping the future of healthcare infrastructure, we are fostering a healthier, more sustainable world for all. Together, we're not just changing the industry, we're transforming lives.

For more information on how Stark Tech can help advance your hospital or healthcare facility, visit our website at starktech.com.

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