



IU Health West Hospital is committed to innovative and sustainable initiatives that improve efficiencies and patient experience. We are proud to announce we are seeking Leadership in Energy and Environmental Design (LEED) certification for the expansion of our hospital.

Driven by environmental stewardship, the addition to IU Health West Hospital was designed with present and future impact in mind. Through recycling, water and energy management using environmentally-friendly technology, IU Health West Hospital seeks verification by the US Green Building Council (USGBC) as a LEED-certified building.

**A LEED-CERTIFIED HEALTHCARE FACILITY IMPROVES PATIENT SAFETY AND HEALTH THROUGH IMPROVING KEY ENVIRONMENTAL PERFORMANCE MEASUREMENTS, INCLUDING:**

- Energy savings
- Water efficiency
- CO2 emissions reduction
- Improved indoor environmental quality
- Management of resources and sensitivity to their impacts

These sustainable efforts and investments are considered throughout the lifespan of a building from design and construction through maintenance and improvements.

Indiana University Health West Hospital was designed to create a natural sanctuary of healing environment for patients. Opened in 2004, the hospital was an innovator in the use of natural light, soothing palettes and traffic management to create a peaceful, soothing environment to support patient healing and wellness. A commitment to environmentally-friendly practices around recycling, water and energy management has been fundamental to the operations of the building since day one.

Today, IU Health West prepares to open an expansion that adds new floors and a 50% increase in inpatient bed capacity. In and supporting these new spaces are investments to support our application for Leadership in Energy and Environmental Design, known as LEED, certification.

**WHAT IS LEED CERTIFICATION?**

LEED was developed by the US Green Building Council (USGBC). LEED is an internationally recognized green building certification system, providing verification that a building was designed and built using strategies aimed at improving performance across key environmental performance measurements: energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

LEED certification-focused work and investment occurs throughout the lifespan of a building: from design and construction through operation, maintenance and improvements.

**ARCHITECTURE AND DESIGN**

The IU Health West vertical expansion was designed to utilize sustainable materials to optimize both the buildings performance and the quality of the environment. Materials were selected to be both easy to clean and durable to minimize any off-gassing of harmful chemicals and to ensure safe infection control practices. From a physical perspective, views to nature and access to daylight were prioritized to stimulate healing, and a wellness focused workplace.

The design and construction crews also prioritized:

- Construction and demolition waste management
- Storage and collection of recyclables
- Use of green/renewable energy generated off site
- Outdoor water use reduction
- Indoor water use reduction

**BEHIND THE SCENES**

Like many large facilities, IU Health West's air handling and water systems are managed in its Central Plant—a small, stand-alone building on the hospital campus. Inside this non-descript command center is the machinery and technology that keep the building warm, cool and the air clean. To power these systems across 88,000 additional square feet, significant investments were made to improve efficiency and effectiveness using environmentally-friendly technology.

**BOILERS AND CHILLERS**

A boiler and a chiller do just what their names suggest: a boiler warms water that warms the air pumped into the hospital to keep the chill away during cold weather months; a chiller uses cold water to chill the air to keep everyone comfortable when it's hot out.



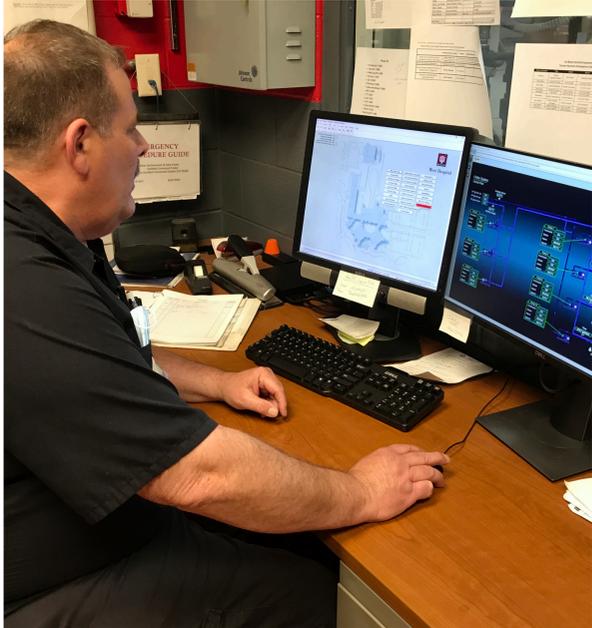
The new boiler was installed to serve the expansion is a much smaller and more efficient model than those installed when the hospital opened.



A device called an "O2 trim" was installed to upgrade the efficiency of the existing units, allowing it to burn less gas and lower its carbon emissions.



"Variable frequency drives" were installed to allow the use of the chillers to be modulated rather than operating in an all on or all off manner. The drives support data capture for energy use by day and by month for each of the four chillers in service.



**BUILDING AUTOMATION SYSTEM**

The hospital's building automation system is the mechanical brain behind all the major systems. With upgrades to support the expanded footprint of the hospital, the system can auto-adjust valves, motors and temperature based on the constant stream of data the mechanicals are sending from more than 10,000 sources.

The system provides instant access to the data and allows remote trouble-shooting. The ability to act fast improves efficiency and can head off small issues before they become big problems.

**AIR HANDLERS**

Proper air flow through any building is important. In a hospital, managing the movement of air through the building is not only about comfort, it's about patient safety.

By utilizing what's referred to as an "economizer cyclor" in the air handling system, the system can operate smarter. When the temperature is optimal outside, the dampers are auto driven to pull outside air in directly rather than channeling it through the boilers and chillers.

In spaces where positive air pressure is required, such as in operating rooms, the updated system senses when the space is not in use and reduces the number of times per hour the air is pulled out and replaced. As soon as the sensors are triggered by movement, the system resumes its required 20 air changes per hour.

In spaces that aren't occupied 24-hours a day, such as administration and the hospital's breast center, the system can modulate to dial back how hard it is working when no one is there.

Additionally, a new exhaust fan system is direct-drive rather than belt-driven, which means less slippage by mechanical belts and reduced energy consumption in spaces where air pressure must be maintained at a specific level. Once optimal pressure is reached the system's variable frequency drives allow it to stop working while maintaining optimal pressure.

UV light is used in the new air handlers supporting the expansion floors to kill germs and bacteria. The air flows through the UV light, reducing the number of physical filters it must push through to be clean. By forcing air through fewer filters, the system uses less energy.

**ENERGY-SAVING LIGHTING SOLUTIONS**

Work to exchange traditional lighting fixtures for LED-compatible fixtures and bulbs has been a multi-year project across IU Health West Hospital. Coupled with motion sensor technology, LED lighting offers a significant upgrade in efficiency and energy consumption.



In the expansion spaces, innovative LED fixtures generate less heat and take less energy to run. For example, traditional lighting for areas like nurses stations used to use 400 watt bulbs. The new LED fixtures are less than 50 watts.



LED fixtures for key safety installations like exit signs will stay illuminated and likely not require replacement – ever.

**GREEN ROOF**

Plans for a rooftop garden provide both a unique green space placement atop the expanded campus, as well as a continuation of soothing, natural views for patients in the hospital's new Intensive Care Unit. This space has recently been awarded philanthropic dollars to proceed, and is expected to be included in the delivery of the final, completed expansion.

**CHECKING OUR WORK**

Important reviews to confirm the systems installed and utilized improve the efficiency and reduce environmental impact of the IU Health West expansion are conducted by third parties.

They include:

- Building commissioning thermal scan: a drone outfitted with thermal, or heat scanning technology does a comprehensive fly-over of the site. The scan can detect if there is air leaking out of the building any place where there should be no exhaust, and it can determine if the heat of the day is penetrating the building anywhere it shouldn't be. For example, around newly installed windows.
- Mechanical Electrical Plumbing (MEP) commissioning: Engineers not involved in the expansion project conduct a thorough review to confirm all equipment has been installed properly and is running as designed.



West Hospital