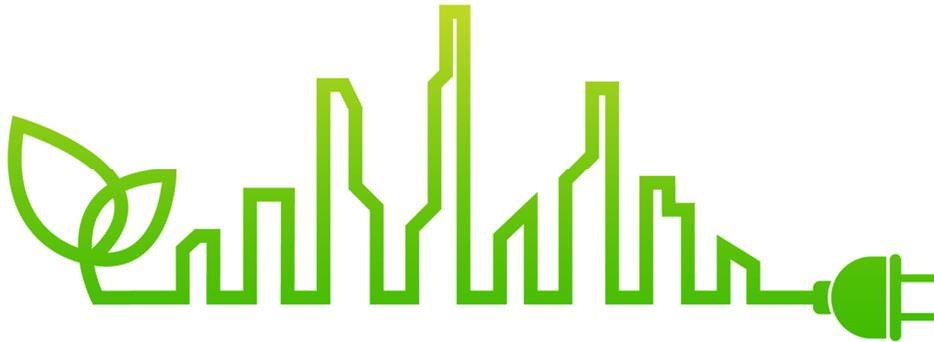


Sustainability at School



STRATEGIES TO OPTIMIZE BUILDING PERFORMANCE FOR HUMAN HEALTH AND OUR ENVIRONMENT

Why is sustainability important for K-12 School districts?

- You are long-term building owners and operators that will see a return on investment on energy and water saving strategies.
- Learning opportunities by utilizing innovative and creative design solutions that students and staff can track and explore.
- Being cognizant of choosing healthy materials, circulating healthy air and measuring healthy water is a proven way to decrease absenteeism and increase focus by the staff and students.
- Healthy indoor environments promote creativity, productivity and mental health.

There are several incentive programs and rating systems that can help districts track and certify that their buildings are built to a higher standard of sustainability.

Incentive Program:



focus on energysm

Partnering with Wisconsin utilities

Overview: The Design Assistance Program provides design professionals and building owners with energy-saving options for the design of new buildings. In addition, the program offers incentives to design teams and to building owners, which can be used to reduce the upfront cost of high efficiency measures that exceed Wisconsin energy code requirements.

Components: Focus on Energy, or the design team, will use energy modeling software early in the design process to explore several energy-saving strategies. The strategies will be explored based on first costs and return on investment estimates. The team will also “bundle” the strategies together to see where synergies can be found between systems. Measures typically considered during the whole-building energy analysis include:

- Improved wall assembly
- Improved roof assembly
- Improved window/glazing assembly
- HVAC system improvements
- Fan and pump improvements
- Automated daylighting controls
- Other lighting controls
- Lighting design to reduce lighting power densities
- Conditioning of outside air strategies
- Service water heating improvements

Benefits: Building Owners will receive an incentive based on forecasted energy savings and estimated incremental costs. The incentive rate is \$0.09/kWh and \$0.55/therm.

Design teams receive an incentive of \$0.012/kWh saved to \$0.015/kWh saved depending on whether the design team does the energy modeling or if Focus on Energy does the energy modeling. The incentive is intended to offset costs associated with the program participation so additional services to the project are not incurred by the owner.

Time commitment by the owner is fairly minimal and includes verification of initial paperwork to register for the program and attending a 1 ½ hour meeting to discuss energy-saving strategies. There are no other fees or registration costs associated with the program.

Rating Systems:

There are numerous sustainable rating systems that can be utilized in your project. The rating systems serve as a tool to guide design decisions and a third-party certification that verifies the projected performance of the building. Each rating system focuses on slightly different building components. Understanding the focus areas of each is important in order to choose the system that best aligns with the mission and goals of the school district.



Designed to ENERGY STAR and ENERGY STAR Certification

Overview: A design project that achieves Designed to Earn the ENERGY STAR recognition meets strict EPA criteria for estimated energy performance. It signifies that, once built, the building is poised to achieve top energy performance and to be eligible to earn ENERGY STAR certification.

Components: The project will set an energy performance goal utilizing the expertise of an integrated team including architect, engineer, construction manager, owner and commissioning agent. The program uses EUI (Energy Use Intensity) as its metric. Goals can be set using a percent above median or ENERGY STAR score between 1-100. The US National Median Reference for K-12 Schools is 141.4 kBtu/sf. The typical energy performance of a school using the ENERGY STAR score would be 50. A score of 75 or higher is required to achieve Designed to Earn the ENERGY STAR recognition.

ENERGY STAR provides useful online tools to help evaluate the project goals and compare the energy performance of your building to other K-12 schools across the country. The data is normalized for climate and location. Target Finder is a quick tool that does not require log-in that can provide fast feedback on goals. Portfolio Manager is the tool that can be used throughout the life of the building to track energy design goals and real-time energy use, once the building is operational. Both tools calculate and track the following:

- Energy Use Intensity (EUI) target required to achieve your goal
- Annual absolute energy use required to achieve your goal
- Associated annual energy costs and greenhouse gas emissions
- Estimated 1-100 ENERGY STAR score of the design and building

Benefits and Costs: Reduce carbon footprint and lower operating costs with nationally recognized program. Minimal additional fee to design team to administer the program. No fees to ENERGY STAR to register or participate. Commissioning is required.



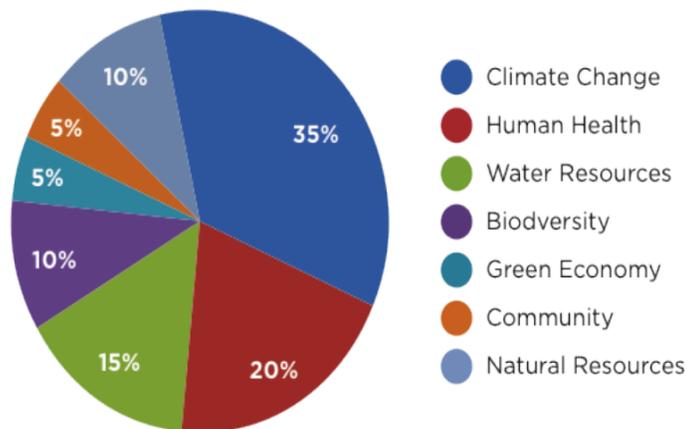
Leadership in Energy & Environmental Design (LEED)

Overview: LEED is the most widely used green building rating system in the world with 1.85 million square feet of construction space certifying every day. LEED certification provides independent verification of a building or neighborhood's green features, allowing for the design, construction, operations and maintenance of resource-efficient, high-performing, healthy, cost-effective buildings. LEED is the triple bottom line in action, benefiting people, planet and profit.

Components: The US Green Building Council (USGBC) strove to develop LEED in a transparent, consensus-based process that includes several rounds of public comments and approval from USGBC members. The rating system is currently on its fourth version. Each release of the system builds upon the last version and requires higher minimum requirements to meet the levels of certification. There are six credit categories for LEED: Location & Transportation, Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials & Resources and Indoor Environmental Quality.

They developed, through consensus of the members, a weighting system on which the credits are allocated points. Depending on how much the achievement of a certain credit contributes to the impact categories, will determine how many points that credit can earn. Therefore, the credits that reduce energy use and provide a healthier indoor environment have the largest amount of points available to earn. The following shows the impact categories LEED uses:

LEED V4 IMPACT CATEGORIES



Benefits and Costs: Reduce carbon footprint, lower operating costs and healthier indoor environment with an internationally recognized program. There are associated registration and certification fees that go directly to USGBC for the certification and increased fees to the A/E for administering the documentation process. Commissioning of the building and systems is required.



Overview: Green Globes is an online assessment protocol, rating system and guidance for green building design, operation and management. It is interactive, flexible and affordable, and provides market recognition of a building's environmental attributes through third-party verification.

Components: Green Globes encourages green building decisions through their online questionnaire (environmental assessment) that encourages the building team to discuss and consider green features in the project. The environmental assessment helps the project teams evaluate opportunities to benefit from energy savings, reduced environmental impacts and lower maintenance costs. The process provides early feedback while decisions are being made.

Green Globes utilizes weighted criteria in its assessment tool to comprehensively assess a building's environmental impact within seven categories. Each of the categories has an assigned number of points that quantify overall building performance – including a comprehensive approach to Energy Performance and a practical and objective method for Life-Cycle Assessment. The Environmental Assessment Areas are listed below, along with maximum points assigned to each category:

- Project Management 50 points
- Site 115 points
- Energy 390 points
- Water 110 points
- Materials & Resources 125 points
- Emissions 50 points
- Indoor Environment 160 points

The main areas of focuses for this rating system include:

- Energy conservation
- Lowered water consumption
- Responsible use of materials

Benefits and Costs: Reduce carbon footprint, lower operating costs and healthier indoor environment. There are associated registration and certification fees that go directly to Green Globes for the certification, which includes an onsite assessor visit and increased fees to the A/E for administering the documentation process. Commissioning of the building and systems is not required, but encouraged.



LIVING BUILDING CHALLENGESM

Overview: When developing the Living Building Challenge (LBC), the International Living Future Institute asked: What if every single act of design and construction made the world a better place? The Living Building Challenge is the world's most rigorous proven performance standard for buildings. Living Buildings are regenerative buildings that connect occupants to light, air, food, nature and community, are self-sufficient and remain within the resource limits of their site and create a positive impact on the human and natural systems that interact with them.

Components: LBC buildings generate more energy than they use, capture and treat all water on site and are made using healthy materials. The Living Building Challenge framework helps design teams create spaces that reconnect occupants with nature. The LBC is divided into seven performance areas called petals:

- Place – Restoring a healthy interrelationship with nature.
- Water – Creating developments that operate within the water balance of a given place and climate.
- Energy – Relying solely on renewable forms of energy and operates year round in a safe, pollution-free manner.
- Health & Happiness – Creating environments that optimize physical and psychological health and well being.
- Materials – Endorsing products that are safe for all species through time.
- Equity – Supporting a just and equitable world.
- Beauty – Celebrating design that uplifts the human spirit.

There are twenty Imperatives (credits) within the Petals. LBC allows cooperation between neighbors and community to help achieve some of the Imperatives in the hope that the cooperation creates more solutions that benefit more people. Certification also depends on actual performance criteria which is audited by a third party.

LBC provides three pathways to certification:

1. Living Building Certification: All twenty Imperatives, therefore all seven Petals, are achieved.
2. Petal Certification: Three of the seven Petals are achieved, one of which must be either Water, Energy or Materials.
3. Zero Energy Certification: Requires projects to generate all energy on site without combustion.

Benefits and Costs: Zero carbon footprint, lower operating costs, healthier indoor environment, water balance and support of equitable organizations. There are associated registration and certification fees that go directly to LBC for the certification, which includes an onsite assessor visit and increased fees to the A/E for administering the documentation process. Commissioning of the building and systems is required.



Overview: Since we spend 90% of our life indoors, the buildings where we live, work, learn and relax have a profound effect on our well-being. The way that buildings are designed, constructed and maintained impacts the way we sleep, what we eat and how we feel. The WELL Building Standard uses innovative research-backed strategies to advance health, happiness, mindfulness and productivity in our buildings and communities.

Components: The WELL Building Standard (WELL) consists of features across seven concepts (categories) that comprehensively address not only the design and operations of buildings, but also how they impact and influence human behaviors related to health and well-being. It provides a model for integrating human health features into the built environment. WELL is designed to reach 100% of the people in the building: not just through building design, construction and operations, but by positively impacting human behavior. The seven concepts are:

- Air – WELL promotes strategies to reduce or minimize sources of indoor air pollution.
- Water – WELL promotes high quality water and improved accessibility.
- Nourishment – WELL limits the presence of unhealthy foods and can encourage better food culture.
- Light – WELL promotes lighting systems designed to increase alertness, enhance experience and promote sleep.
- Fitness – WELL encourages the integration of exercise and fitness into everyday life.
- Comfort – WELL creates distraction-free productive and comfortable indoor environments.
- Mind – WELL optimizes cognitive and emotional health through design, technology and treatment strategies.

Successful certification requires integrated design strategies, construction protocols and owner policies for wellness initiatives, operations and maintenance. Within the seven concepts there are 100 features (credits). After meeting the minimum feature requirements for baseline WELL Certification, the team can select from a wide array of optional features to advance individualized project priorities.

Benefits and Costs: Healthier occupants. There are associated registration and certification fees that go directly to IWBI for the certification, which includes an onsite assessor visit with testing and increased fees to the A/E for administering the documentation process. Re-certification is required every three years in order to maintain the building's certification.