

A Chance to LEED the Green Revolution

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As consumer attention turns more toward environmental stewardship, LEED certification is emerging as a growing trend in building design and engineering. At the close of 2009, there were 4,286 LEED certified projects — and only 39 of them were in food manufacturing facilities. The rush to embrace LEED standards may be slower because of the unique sustainability challenges faced by food processors. But its varied scope of operations also places a industry in the position to provide unique solutions to unique challenges.

LEED — or Leadership in Energy and Environmental Design — is a third-party verification system designed to evaluate and approve buildings that meet certain environmental standards. The program was set up by the U.S. Green Building Council, and the certification process is overseen by the group's Green Building Certification Institute (GBCI).

The GBCI evaluates buildings in a number of areas and assigns credits based on environmental success in each category. Many categories focus on energy and resource consumption, the reduction of which often requires a large capital investment and a slow, but quite steady, return on investment.

Not all LEED credits require this investment, however. LEED evaluates buildings as a whole and assesses their ultimate impact on the environment. The USGBC, for instance, awards education credits to companies that take an active role in educating consumers about their project and its environmental impact. Credits can also be awarded to facilities based on location and access to public transit, for example.

Since beginning its LEED certification program for construction of new buildings in

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2000, the USGBC has expanded the program to award four levels of certification — Certified, Silver, Gold and Platinum — in the following areas:

- New construction.
- Existing buildings.
- Commercial interiors.
- Core shell of buildings.
- Residential.
- Retail.
- Neighborhood development.

Because of the unique challenges each of these categories provide, the LEED program allows companies to customize their own certification process, earning credits in the ways that are the most logical for the type and purpose of their buildings. Says Ashley Katz from the USGBC, “That is what LEED is about — it gives you a sense of the intent of credit but allows you to make your own decisions regarding how you fulfill the credit. It’s not a checklist.”

Getting Started

Undertaking the LEED certification of a facility can seem like a daunting task, but there are a number of steps food manufacturers can take when seeking LEED certification of a new or existing building in order to better streamline the process.

1. Be realistic about your ability to achieve certification.

Food manufacturing, like manufacturing in general, is a resource-heavy process. While other buildings may consume most of their energy by simply keeping the lights on and the building functional, manufacturing facilities use their resources to produce products. Mike Walters is the Sustainable Practice leader for AEI Engineering and was involved with the LEED certification of Kettle Foods’ facility in Beloit, Wisconsin, which was the first food manufacturing facility to achieve Gold Level certification through the LEED program. Walters says that food manufacturers should “assess the likelihood of meeting the prerequisites of LEED and the continuously evolving hurdles for energy performance. Projects should execute an energy-planning process, projecting energy use based on program and facility assumptions.”

2. Register with LEED Online.

Once your facility has confirmed its ability to achieve certification and ratified its commitment to the program, you must pay a fee in order to register your project with LEED Online. LEED Online provides technical planning and support to those undertaking the certification process. Through LEED Online, companies have access to information on which specific LEED credits are available and which might be best to pursue for specific types of projects. Once a project is finished, LEED Online even

allows users to submit LEED documentation to the GBCI for review and certification.

3. Hire experts with LEED experience.

Any construction project will require engineers, architects, interior designers and other professionals who bring building projects together. Selecting experts who have worked on LEED projects in the past will give your facility an advantage in attaining as many LEED credits as possible. The GBCI also provides varying levels of LEED accreditation to building professionals who meet certain criteria and undergo training in LEED building principles.

Once the building team members are selected, Katz suggests bringing them together to talk about building and design strategies as soon as possible — and to keep them talking throughout the process. She says, “A building is a system — if you bring everyone to the table in the beginning to discuss the building overall, this enables you to make good, cost effective decisions.”

The Green Food Cycle

On Tuesday, March 30, 2010, Hormel Foods opened the doors to its new \$89 million Progressive Processing facility in Dubuque, Iowa. Progressive Processing now manufactures Hormel® Compl eats®, a line of shelf-stable microwaveable meals. The 348,000 square-foot facility was built in accordance with LEED certification standards and, while the building’s documentation is currently under review by the GBCI, Hormel Foods expects the plant to be the first refrigerated facility to achieve LEED certification status.

Says Jeffrey Ettinger, chairman, president and CEO of Hormel Foods Corp., “Even prior to the construction of the Dubuque facility, we’ve had a very active, focused sustainability effort throughout our plant system aimed at trying to find water reductions, energy reductions and recycling enhancements.”

Ashley Katz from the USGBC sees LEED certification as a way for companies to apply a more verifiable standard of sustainability to the green efforts — like the ones Mr. Ettinger discusses — that they may already be employing. Katz stresses that the third party verification of a company’s commitment to environmental stewardship is key and compares implementing sustainability measures without seeking certification to going through four years of college but forgoing the degree. Says Katz, “LEED was developed by the industry for the industry to define green building holistically.”

Industry-Specific Strategies

The food manufacturing industry faces its own set of unique challenges when looking to reduce consumption and improve efficiency. The manufacturing process requires the use of many pieces of equipment, all of which require energy to operate. In looking for ways to make these processes more sustainable, manufacturing companies seeking LEED certification are often faced with the

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opportunity to employ unique solutions to problems uncommon in other businesses.

Strategic use of compressed air is one way that food manufacturers are finding ways to better conserve resources. Progressive Processing has installed variable speed air compressors with a flow controller in order to produce and conserve compressed air using a nominal amount of energy. The facility also utilizes high efficiency motors and variable speed drives in order to get the most out of the power the plant is using. Additionally, by recovering the heat generated by the manufacturing process and using it for later purposes — like heating water — the facility is able to avoid sourcing new energy in cases where power can be recycled.

Mark Zelle, Plant Manager of Hormel's Progressive Processing facility says, "Progressive Processing is able to maintain 120-degree water primarily using the heat we reclaim off of the cooling process in our retort area. This is a major benefit because the water would have had to be heated anyway, so we're able to save on energy costs."

Due to the need to wash vegetables and other products used in recipes, as well as sanitize equipment, the food industry also uses a massive amount of water, even compared with other industries within the manufacturing sector. Food manufacturers are thus provided with greater opportunity for creative solutions to water conservation hurdles.



Walters says, "Consumption of waste streams is usually where food processing facilities can push the envelope of innovation. For Kettle Foods, we were able to reuse the potato wash water in a variety of other ways throughout the facility." Those uses including repurposing the water as gray water for flushing toilets.

Zelle also sees first-hand the benefits of repurposing waste. He says, "Waste produced in the form of water or heat is seen as an asset at Progressive Processing. It is my team's job to manage this asset because we understand that there is a distinct environmental and economic advantage to reusing or reclaiming heat, water and energy."

At the Progressive Processing facility, water recovered from boiler blowdown, for example, is stored for later uses, including cooling and rinsing the facility's wastewater screen.

Walters says, "The food processing industry is indeed energy-intensive and also extremely varied. Any challenge revolving around energy or other resource

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consumption is an opportunity for improved efficiency and a correspondingly varied range of sustainable strategies and technologies.”

To Build or Retrofit

The USGBC opened up LEED certification to existing buildings in 2004. Subsequently, food manufacturers considering LEED are provided a variety of options when choosing the certification path best for them. While the possibility for innovation is much greater for new construction projects, Katz understands the needs of companies who are still committed to sustainable business practices but don't necessarily have the available capital to begin a new construction project.

What's important, Katz says, is that companies who are interested in mitigating their environmental impact are able to do so with the means available to them. She says, “The impact that the existing building already has on the environment is huge, so any change we are able to make to reduce the footprint of existing buildings is an important thing to do.”

Walters agrees. He says, “Naturally, a retrofit lacks the full flexibility of a conventional new construction project. However, using existing construction — and the embodied energy therein — is a great first step to optimizing the life-cycle impacts of the overall facility.”

A Green Future

While deciding how best to mitigate the environmental impact of a resource-heavy industry presents many complex challenges, leaders in the food industry are finding creative solutions to everyday problems, and slowly raising the sustainable bar. While the industry has some significant LEED ground to make up, higher resource and materials prices, coupled with heightened environmental awareness on the part of consumers, are guiding the food industry towards a greener future.

For more information, please visit www.usgbc.org [1].

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