Cub Store Goes for Gold

By MICHAEL GARRY

Cub Foods' new store in St. Paul, Minn., which opened on Oct. 31, has applied to become the nation's second supermarket to receive Gold LEED (Leadership in Energy and Environmental Design) certification in the new construction category from the U.S. Green Building Council, Washington. It would follow a Giant Eagle store in Pittsburgh (see Page 42).

The LEED program recognizes buildings designed and built with careful attention to energy savings and the environment. A building can earn Certified, Silver, Gold or Platinum LEED status based on the number of benchmarks it meets. "We're within range of Gold," said Lee Ann Jorgenson, community relations manager at Cub, which will receive word of its status in a few months. The 60,000-square-foot St. Paul store would be the first of Cub's 57 Twin Cities supermarkets to be LEED-certified.

While it waits, Cub, a division of Minneapolis-based Supervalu, has the satisfaction of knowing the St. Paul store has already become the first supermarket in the nation to receive Gold-level Certification from the U.S. Environmental Protection Agency's GreenChill Advanced Refrigeration Partnership.

The certification recognizes superior refrigeration management practices and use of green refrigeration technology. Keilly Witman, communication specialist in the EPA's Stratospheric Protection Division, presented the award to Cub president Brian Huff and Supervalu chairman Jeff Noddle at the store's grand opening. Supervalu and Cub are members of the EPA's GreenChill program.

Among the store's qualifications for GreenChill certification, the amount of refrigerant (or charge) it uses is 65% less than the industry standard (and is on average equal to 1.25 pounds per 1,000 BTUs per hour of total evaporator cooling load). The refrigerant (R-404A) has a zero ozone-depleting potential and is acceptable under EPA's Significant New Alternatives Policy (SNAP) program. In addition, the store's refrigeration systems, which were deemed leak-tight at installation, cannot exceed an annual emissions rate of 15%.

Brian Huff, Cub Foods president, receives an award from EPA's Keilly Witman. With them: store director Mark Halvorson (left) and Supervalu CEO Jeff Noddle.

The Cub store was able to reduce its refrigerant charge by deploying a secondary-loop refrigeration system (from Hill Phoenix, Conyers, Ga.) that uses food-grade glycol as the primary coolant in medium-temperature cases. The R-404A refrigerant used in the system is confined to the compressor room and not circulated to the cases, which also keeps its leak rate low.

One of 44 skylights designed to maximize the amount of sunlight entering the Cub store.

ADVANCED SKYLIGHT

Even with the EPA's GreenChill recognition, the Cub store's primary focus has been on achieving Gold LEED certification. For this it has deployed a wide range of green technologies and environmental features.

Prominent among those technologies is a network of 44 skylights from Ciralight, N. Salt Lake, Utah, each employing a solar-powered GPS tracking system to maximize the amount of sunlight entering the store. "As the sun moves, a reflecting fin tracks the sun," said Patrick Barrett, director of construction, Oppidan, Minnetonka, Minn., which worked with Cub on the design and construction of the store. A diffuser in each skylight makes sure the sunlight is spread out evenly. "This is more advanced than the typical skylight system," he added.

The store's interior fluorescent lighting has an "adjustable ballast" that modifies the light intensity based on the amount of sunlight entering through the 4-foot-square skylights, which reaches 75% of the occupied space. The store manager is able to monitor the percentage of light being generated by the interior fixtures, which so far ranges from 50% to 75% of the total light inside the store during daylight hours. "In the summer, it might go below 50%," noted Barrett.

The skylight system is expected to cut the cost of electricity in the St. Paul Cub store by 35%, Barrett said. Overall, the store is 18% more energy-efficient than a typical supermarket of its size.

Another money-saver for the Cub store is the LED lighting it has installed to illuminate the parking lot, which is the first commercial parking lot in Minnesota to employ this technology, according to Jorgenson. "These lights are expected to last 40 years, so that's a significant savings on replacements and on maintenance," said Barrett.

LED lights were also put in the store's refrigerated cases. The lights are connected to a motion sensor that dims them based on the amount of nearby traffic, saving an anticipated $6,000 annually, said Barrett. LEDs perform well in the cold and produce less heat than conventional lighting.

To measure and verify the energy consumption of each of its in-store systems — and to demonstrate the savings for LEED certification — the store employs an energy measurement system from EMC, Hopkinton, Mass. "This is one of the most important pieces so we can really see the end result of our efforts," said Barrett. "It's a step many companies don't take with LEED."

Jorgenson acknowledged that the St. Paul store was about 5% to 6% more expensive to build than a comparably sized Cub — typical for a Gold LEED certification effort, said Barrett. This includes design costs, technology and $2,650 for LEED registration and certification.

"Cub and Supervalu have looked at each of the LEED items and done an ROI analysis to determine their payback period," he added.

RECYCLED CONCRETE

LEED certification also calls for an environmentally friendly physical structure, foundation and surroundings. To that end, Cub tore down the buildings on the store's site and checked the soil, removing asbestos found there. Concrete from the demolished structures was crushed and reused in the foundation of the Cub store. In the landscape surrounding the store, Cub has planted trees, plants and sod that require 50% less water than a typical store.

Inside, the floor is made of polished concrete and uses no vinyl tile, allowing the store to save $60,000 annually in cleaning costs, said Barrett.

Another LEED-friendly step taken by Cub was to negotiate with the local transit company to have a second bus route make a stop at the store. In the parking lot, space is designed for parking energy-efficient cars and bicycles. The store even has men's and women's showers for employees who opt to bicycle or walk to work.

"We're giving them the ability to choose a green lifestyle," said Jorgenson.

At the same time, given its urban locale, the store is trying to "fit the way people live and commute in this area," Jorgenson said.

To educate shoppers on the green features of the store, Cub has developed special signage. "For example, we explain that the LED parking lot lights don't have to be changed for 40 years," said Jorgenson. At each entrance, a bilingual store map allows shoppers to do a self-guided "LEED tour" to understand "why this is a green store and why that is relevant to them."

Employees at the Cub store have been trained to explain the green features to customers if asked. "They carry a little card with them that is a quick reference to the features," said Jorgenson.

Cub does not have another green store in its immediate plans, but Jorgenson expects green elements of the St. Paul store to be used in future remodels and new stores within Cub, as well as at other Supervalu banners. The new store will "let us see what difference the investment [in a green store] makes over time," she said.