

# green scene

**There is no silver bullet when it comes to creating a LEED-certified facility.** It requires the will of the owners, skill of the designers and builders, and the right materials to meet the rigorous requirements set by the Washington, D.C.-based U.S. Green Building Council. In the case of the East Grand Rapids Community Center in Michigan, however, another element was added to the mix—the community itself helped bring the building's LEED certification to fruition.

"If there was one element that earned LEED certification, and it may sound hokey, it would be the community of East Grand Rapids," said Bill Rapson, LEED coordinator on the project with Cox Medendorp Olson Architects, Grand Rapids, Mich. "They were given the op-

tion to have a LEED-certified building or not ... and they voted for the LEED-certified building."

The East Grand Rapids Community Center is home to the town of East Grand Rapids' library, city hall and public safety department. The \$9.4 million project involved gutting the library and city hall, according to Rapson. The library and city hall buildings were connected with new construction, which also tied in an adjoining abandoned water reservoir. The public safety building is still free-standing on the main level and still connected on the lower level.

Rapson said it was important to save a lot of the existing building because the soil on the site has very little bearing capacity, so everything has to be on pilings (even the wood boardwalk along the lake). Environmen-

tal considerations of having to tear down a building just to rebuild a new one had a lot to do with that decision, as well. Approximately 3,222 tons (2,900 metric tons) of building structure were left on-site and reused.

## Metal's Contribution

While a number of factors led to LEED certification for the 58,000-square-foot (5,388-m<sup>2</sup>) expansion, one important element was 17,000 square feet (1,579 m<sup>2</sup>) of steel Tite-Loc Plus Panels with a zinc-colored Kynar paint finish from Petersen Aluminum Corp., Elk Grove Village, Ill.

"The existing roofs were a compound slope similar to a Pizza Hut restaurant and were covered with asphalt shingles," Rapson said. "As

part of this project we left the existing roof structure and built over top of it to provide a single slope to update the aesthetics a bit and covered it with standing-seam metal.

"The standing-seam roof contributed to the [LEED Heat Island, Roof] credit. Steel also has a high recycled content. Both the wall and roof panels also contributed to achieving the [LEED] Local/Regional Materials credit."

Grand Rapids-based Metal Tech Building Specialties Inc., the metal installer on the project, custom fabricated 2,500 square feet (232 m<sup>2</sup>) of terra cotta-coated steel from Petersen for the wall panels.

Rapson points out that there were four roofing materials used: the standing seam, a vegetative green roof, white EPDM and a rub-

ber paver on the pedestrian area of the part of the reservoir roof that is at grade level. He said it was a combination of these elements that earned the LEED Heat Island, Roof, credit.

"In regards to the LEED process, everything really needs to work together or the whole process falls apart. For example, the zinc-colored standing-seam roof counted toward the Heat Island, Roof, credit, but without the white EPDM, we wouldn't have achieved the credit. And vice versa. The roofing materials also help with the building's cooling load," he said.

Because of the emissivity of the zinc-colored paint on the steel, the heat from the sun is rejected back into the atmosphere rather than radiating into the building, which causes heat to build up and can

lower the life span of the building system.

## The Look

The standing-seam metal was all zinc-colored. The wall panels were a mix of zinc and terra cotta. The colors were chosen based on a couple of considerations, according to Rapson. One consideration was meeting the requirements of the LEED Heat Island, Roof, requirement. The other was aesthetic. The terra cotta complemented the brick color on the building's exterior, and the zinc complemented the storefront framing and several other finishes inside and outside the building.

"Plus, I think metal roofing, especially, tends to have a little more commercial feel to it than a shingle product," Rapson said.

# Metal Makeover

By Stefan Schumacher



A community center uses coated steel to help achieve LEED and looks

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"This building wanted to have a little more of a contemporary feel."

The use of metal was helpful in covering the area of the roof that was curved, which can be very difficult with a shingle installation, Rapson said. Metal roofing is also relatively low-maintenance and has a longer life span.

"In general the metal was selected because it fit well with the palette from a texture standpoint, as well as a color standpoint," Rapson went on.

## Something Extra

Winner of the 2007 Outstanding Facility Design Award from the Michigan Recreation &

Park Association, the East Grand Rapids Community Center project was a few years in the making. It had to be voted on by the public, and selecting from several different possible levels of quality and cost, they chose the LEED-certified option, according to Rapson.

Meanwhile, he said several private donors stepped forward to offer more money toward pursuing the goal of meeting LEED. After the project was completed, one of the major donors provided funding for a photovoltaic installation on the roof—Thin-Film Silicon modules manufactured by Kaneka Corp., Osaka, Japan, on the white EPDM membrane roof and Poly-Crystalline Silicon modules manufactured by Sharp Corp.,

Osaka, on the standing seam. Mainly for educational purposes, there is a display in the library and on the city's Web site ([www.eastgr.org](http://www.eastgr.org)) that monitors and explains the PVs. Rapson said they don't offset too much of the building's energy demands, but any amount of renewable energy is a good thing.

The standing-seam metal roof made it easier to install the PVs.

"I'm not real sure how you would do it on an asphalt roof without penetrating the roof," Rapson said. "Any architect is really going to have reservations when you start talking about putting penetrations in the roof."

Furthermore, in terms of LEED, the vertical

fins and sunshades on the exterior of the building play multiple rolls. They provide aesthetic interest and frame views to Reeds Lake and they are designed to block summer solar gain while allowing winter solar gain. They also block solar glare. The fins and sunshades work with the tinted, low U-value glazing of the glass. The tinted glazing also helps decrease solar heat gain and solar glare.

Despite needing to keep much of the existing buildings intact, the center still got the makeover the community desired. And along with the many elements and people that went into achieving the LEED certification, both aesthetically and practically, metal played no small part in making that happen. **MBD**



## East Grand Rapids Community Center, Michigan

**Architect:** Cox Medendorp Olson

Architects, Grand Rapids, Mich.,

[www.cmoarchitects.com](http://www.cmoarchitects.com)

**General contractor:** Triangle Associates

Inc., Grand Rapids,

[www.triangle-inc.com](http://www.triangle-inc.com)

**Metal installer:** Metal Tech Building

Specialties Inc., Grand Rapids,

[www.metaltechbuilding.com](http://www.metaltechbuilding.com)

**Photovoltaics:** Kaneka Corp.,

Osaka, Japan, [www.kaneka.com](http://www.kaneka.com),

and Sharp Corp.,

Osaka, [www.sharp-world.com](http://www.sharp-world.com)

**Metal roof and wall panels:** Petersen

Aluminum Corp., Elk Grove Village, Ill.,

[www.pac-clad.com](http://www.pac-clad.com)