

Worth their weight in gold

The industry's elite show why they are worth Gold Circle Awards

by Kate Gawlik and Christina Koch

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Completing a successful project often means being innovative or surpassing workmanship expectations. And every year, NRCA recognizes roofing professionals whose work demonstrates the highest standards for the art of roofing. NRCA recently honored Buckley Roofing Co. Inc., Wichita, Kan.; Gooding Simpson & Mackes Inc., Ephrata, Pa.; and Hamlin Roofing, Garner, N.C., for their exceptional efforts by awarding them 2002 Gold Circle Awards.

Buckley Roofing received a Gold Circle Award for workmanship for Exploration Place Inc., Wichita. Innovative solutions awards were presented to Gooding Simpson & Mackes for the Lititz Watch Technicum, Lititz, Pa., and Hamlin Roofing for the First Citizens Bank at Six Forks, Raleigh, N.C.

Gooding Simpson & Mackes

The Lititz Watch Technicum is located on 4 acres (1.6 hectares) of rural land within walking distance of Lititz, Pa. The building's architecture, inspired by the area's character, incorporates barn-like structures and Pennsylvania fieldstone. Built to teach future watchmakers the art of the timepiece, the 40,000-square-foot (3600-m²) arched facility features classrooms, a library, cafeteria and other academic amenities.

When Gooding Simpson & Mackes won the bid to install a RHEINZINK Metal roof system on the Lititz Watch Technicum, the five- to seven-member crew knew it would encounter many challenges that would require some innovative solutions.

For example, the two-story facility features steep slopes; the roof line

slope is nearly perpendicular to the ground. In addition, the roof's shape would make visibility between crew members and other tradespeople nonexistent. And Gooding Simpson & Mackes' roof mechanics would be working with RHEINZINK Metal, a metal that was unfamiliar to them and would have to be formed during cold weather.

Getting started

To complete the Lititz Watch Technicum's barn motif, Gooding Simpson & Mackes was asked to install an arched standing-seam metal roof system. RHEINZINK Metal with a preweathered finish was chosen because it is an alloy of zinc, copper, titanium and aluminum and would protect the roof system from the elements, as well as be recyclable.

To familiarize themselves with RHEINZINK Metal, the superintendent, project manager and two foremen attended a five-day training seminar at RHEINZINK CANADA LTD.'s corporate office in Burnaby, British Columbia.

"The crew members wanted to learn about the composition of the metal; how it would react in Pennsylvania's climate; and ways to avoid potential problems, such as oil canning," says Wendy Klinger, Gooding Simpson & Mackes' office administrator.

After the hands-on seminar, Gooding Simpson & Mackes' crew members were ready to put what they had learned to work in the field. But before they began, safety issues were discussed and a plan was implemented that would ensure the safety of the project's crew members.

Because of the 2-in-12 to 20-in-12 (9- to 59-degree) roof slopes and 55-foot (16.5-m) building height, a ½-inch- (13-mm-) thick steel cable was clamped to permanent safety points along the full length of the ridge. Three 12-foot- (3.5-m-) long steel chicken ladders were bolted together and bent to conform to the roof's contours. The ladders were fastened to the cable with a rigging strap and large snap hook. In addition, roofing workers wore fall-protection harnesses attached to the ridge's steel cable.

Installation

The architect designed the Lititz Watch Technicum's ridge-cap frame as a wooden structure that required installation by carpenters. However, to protect workers not familiar with extreme heights and slopes, Gooding Simpson & Mackes sheet-metal workers designed, fabricated and installed a steel ridge-cap frame.

Because the general contractor was responsible for most of the roof assembly installation, Gooding Simpson & Mackes crew members focused on installing the RHEINZINK Metal panels. Panels had to be 24 inches (609.5 mm) wide by 45 feet (13.5 m) long and installed onto a radius curve of about 40 feet (12 m). In addition, the building consisted of vertical dormers located at 6-foot (2-m) intervals. The panel installation details would



Gooding Simpson & Mackes Inc., Ephrata, Pa., installed a RHEINZINK Metal roof system on the Lititz Watch Technicum.

require innovative thinking by company employees and the RHEINZINK team.

For example, to solve the dilemma of getting panels onto the roof, crew members mounted a roll former on a wooden jig angled at 73 degrees at the roof slope. They placed this, as well as a generator and 1,500-pound (675-kg) roll of RHEINZINK Metal, onto a 50-foot- (15-m-) high scissor lift. This apparatus became the platform from which all the field forming and roof work was completed.

As a roof mechanic standing on the lift fabricated a roof panel, a metal ski was clamped to the end of the panel and a lead line was tied to the ski. The ski then was used to pull the panel


onto the roof where it was guided into place by another roof mechanic positioned on the chicken ladder.

Because the metal work was completed during winter, temperatures often fell below 40 F (4 C) requiring Gooding Simpson & Mackes to install an on-site heater to warm the pan former and seaming machine. In addition, small propane torches were used to heat the metal while it was installed.

Custom-fit stainless-steel gutters also were installed on the roof system. The gutters were designed at RHEINZINK's facility during the training seminar. All edging, coping, s-lock panels and soffits were custom-made at Gooding Simpson & Mackes' sheet-metal shop.

Another challenging aspect of the project was visibility. The roof's arched contours blocked visibility between on-site workers. By using walkie-talkies, roofing workers stayed in constant contact with each other.

In March 2001, after six months of work, the Lititz Watch Technicum's roof system was complete—on time and within budget.

"This building blends with the countryside [and is] unique," Klinger says. "We're proud of it because when people drive by, they are awed by the building's architectural beauty and excellent craftsmanship." 



The building's architecture was inspired by Lititz, Pa.'s, rural character.