Difficult Operations
New Stanford Hospital Project Demands Surgical Precision

More Health Care Projects

→ BUSINESS SENSE
Crafting a Social Media Strategy That Works

→ DETAILS
Streamlining Insulation Work on Commercial Installations

→ SAFETY
CERTA Minimizes Risks of Torch Applications
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— Mitch Clifton, Director of Sales, NCFI Polyurethanes

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CIRCLE NO. 5 / RoofingMagazine.com
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The new Stanford Hospital project demands both versatility and surgical precision. Located in Palo Alto, Calif., the 824,000-square-foot facility features 16 different roofing systems on 12 different elevations.

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- Ralph H. Johnson VA Medical Center, Charleston, S.C.
- Acute Medical Care Facility, Florida
- Beiler Medical Research Building, Weill Cornell Medical College, New York
- Middleton Assisted Living, Granville, Ohio

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102 | COMMERCIAL
TPO system speeds installation time and boosts energy efficiency for company headquarters.
8 OUT OF 10 CONTRACTORS AGREE!
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“Game-changing innovation…”
—Brad Corbin, Excel Roofing Systems

“The customer was astounded…”
—Gerry Anderson, Quality First Home Improvement Inc.

“Set me apart from the others.”
—Matthew Lebad, MLB Construction LLC

*Based on a survey of GAF contractors who field-tested the EasyPro Selling System.
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THIS ISSUE IS INTERACTIVE
Download the free Layar Augmented Reality app. (The QR code will help you find the app.) Then, hover over page 97 with a smartphone or tablet and watch a video that brings the content to life.

ON THE COVER
The new Stanford Hospital in Palo Alto, Calif.
Photo: Stanford Health Center.
As I attended the 2017 International Roofing Expo with the team at Roofing, I thought back to my first roofing trade show. I had covered plumbing and HVAC for six years, but I had just joined a roofing publication and was looking to make a good first impression. Just a few minutes into my time on the trade show floor, I found myself talking with a group that included an NRCA executive officer, a regional sales director for a national distributor, and a marketing manager with a major manufacturer. After I introduced myself, they asked if I had any experience covering roofing, and I was forced to admit that I was new to the industry.

They could not have been more helpful. They all welcomed me warmly, asked about my previous experience, and told me how they entered the field. They all gave me their business cards and told me to feel free to call them if I had any questions.

As the conversation began to break up, the distributor shook my hand. “Welcome to the roofing industry,” he said. “You see, people enter the roofing industry, but they never leave it. There’s something about it that keeps people hanging around. It’s like a family. You might see someone with a different color shirt at a different booth at the next trade show. People might move around, but they almost never leave the roofing industry—and when they do, they usually come back.”

The roofing industry is amazingly close-knit, and it has been an honor to be a small part of it for the past 12 years. It has been inspiring to share stories about people, companies, products and services that have improved the lives of families and building owners. It has been a pleasure to document the improvements in an industry that continues to raise the bar on professionalism and safety.

It’s rare in the business world to encounter genuine feel-good stories, but they are easy to find in the roofing industry. How about products that are better for the environment, provide a better value to the building owner, and a bigger profit margin for the installing contractor—a true win-win. In this issue, we share the story of a manufacturer and contractors who teamed up to help people in need (page 94) and profile a contractor who makes philanthropic work the cornerstone of his company’s mission (page 110).

When I was in college, I had no idea about the world of business-to-business publishing. I thought journalists just covered politics or sports. At that time, I never dreamed I’d cover the construction industry for 18 years, and that I’d hope to cover it for many more. As the reputations of politicians and athletes have declined over the last couple of decades, the reputation of roofing contractors has been elevated, one roof at a time. There is something so elemental, so important in the concept of the roof—what is the goal of working, after all, but to “put a roof over your head.”

I know what an excellent job my predecessor, Christina Koch, has done here, because I watched her do it. I’ll do my best to live up to her expectations. After all, she’s still in the family as editor in chief of retrofit. Like me, she’ll just be wearing a different color shirt.
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<td><strong>Caroline Trautman</strong> is an attorney with Raleigh, N.C.-based Anderson Jones PLLC. She concentrates on areas including construction law, construction litigation, lien and bond claims, and contracts. In &quot;Business Sense,&quot; page 28, Trautman outlines the pros and cons of different types of contracts when it comes to considering fluctuations in the price of materials.</td>
<td><strong>Diane Helbig</strong> is an international business and leadership change agent, author, award-winning speaker, radio show host and web TV channel host. As president of Seize This Day, based in Cleveland, she helps businesses and organizations operate more constructively and profitably. In &quot;Business Sense,&quot; page 36, Helbig explains the keys to implementing a successful social media marketing plan.</td>
<td><strong>Todd Bairstow</strong> is an entrepreneur and online marketing expert with 18 years of experience in the field. This concentration led him to found Keyword Connects in 2005, a company that develops a business plan to generate leads for his clients based on his &quot;pay per lead&quot; business model. In &quot;Business Sense,&quot; page 40, he explains how mobile technology has changed the landscape of online marketing.</td>
<td><strong>Carole Callahan</strong> is an executive coach based in Stonington, Conn. As principal of Callahan Associates, she works with leaders in a wide range of industries to increase team and personal effectiveness and build cultures that support change and innovation, employee engagement and leadership diversity. In &quot;Business Sense,&quot; page 44, she explores how employees and businesses can benefit from assigning women to more challenging, high-profile roles.</td>
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<td><strong>Louisa Hart</strong> is the director of communications for the Washington-based EPDM Roofing Association (ERA). In &quot;Tech Point,&quot; page 50, she reports on the results of a research study at Virginia Tech designed to measure the effect of roof membrane reflectivity on air temperatures at various heights above the roof surface, as well as its effect on the temperatures of adjacent and perpendicular walls.</td>
<td><strong>Michael McAuley</strong> is the president of Insulfoam. He has more than 20 years of experience in building material sales and production management, including 14 years at Insulfoam’s sister company, Versico Roofing Systems, as the national sales manager and general manager. In &quot;Details,&quot; page 86, McAuley provides some tips for streamlining insulation work to save time and money on re-roofing jobs and new construction projects.</td>
<td><strong>Sue Burkett</strong> is a marketing leader with Owens Corning based in Toledo, Ohio. She has worked with the company promoting products and other initiatives for more than 35 years. In &quot;Manufacturer’s Perspective,&quot; page 98, she explores the ways homeowners are using color choices to make a statement and shares third-party research that documents the effect that the roof can have on the perceived value of a residence.</td>
<td><strong>Harry Dietz</strong> is director of risk management for the National Roofing Contractors Association. At NRCA, his responsibilities include serving as staff liaison to the Health and Safety committee, updating and developing content for NRCA’s Safety Manual and other safety products. In &quot;Safety,&quot; page 106, he shares the successes of the Certified Roofing Torch Applicator (CERTA) program and details some of the ways it helps ensure safe torch applications in the field.</td>
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SOPREMA offers a comprehensive line of roofing, waterproofing, wall protection and civil engineering solutions combining superior products and systems with decades of proven performance. Our solutions include industry leading SBS-modified bitumen membranes, polymeric PMMA/PMA liquid applied membranes and synthetic single ply PVC membranes. For applications as diverse as roofing, below grade waterproofing, plaza deck and balcony waterproofing, air and vapor barriers and bridge and parking structures, SOPREMA has the solution. SOPREMA’s relentless pursuit of technological advancement, sustainability and product quality has been known and respected around the world for over 100 years.
2017 International Roofing Expo Sets Attendance Records

The 2017 International Roofing Expo (IRE) was the largest show in the event’s 62-year history, with a record crowd on hand to tour the sold-out show floor. The event took place March 1-3 in Las Vegas, and the annual trade show and conference drew a total attendance of 11,273 roofing construction professionals.

According to show management, the IRE set records for attendance and the number of exhibitors. “This was an amazing show to find leading-edge products, high-level education and numerous networking opportunities,” said Tracy Garcia, CEM, IRE show director. “The show floor square footage was up 9 percent over last year, exhibiting companies were up 3 percent, and total attendance was up 19 percent, making this our largest, most attended show in the 62-year history.”

In addition to the show floor’s buying and selling activity, the show’s educational conference offered 44 educational sessions addressing a multitude of industry issues. Conference attendance increased 39 percent over last year.

The 2018 IRE will be held February 6-8, at the Ernest N. Morial Convention Center in New Orleans. For information about the IRE, visit TheRoofingExpo.com.

RCI Names Board of Directors for 2017-18

The RCI board of directors includes (seated, left to right) Scott Hinesley, Robert Card, Michael Williams, James Birdsong, Michael Clark, Robert Hinojosa (standing, left to right) Michael Violette, Christopher Giffin, Gene Keeton, Steven Drennan, Michael Gardner, Paul Kompauer, and Bryan Fishburn.

RCI elected its 2017-18 board of directors at the annual meeting of the members during the RCI 32nd International Convention and Trade Show in Anaheim, Calif. The following are members of the board:

- President: Michael L. Williams, RRC, RWC, RRO; Building Envelope Consulting LLC, Leesburg, Va.
- First Vice President: Michael E. Clark, RRC, RWC, REWC, RBEC, RRO, PE, CSRP; Michael E. Clark & Associates Inc., Macon, Ga.
- Second Vice President: Robert D. Card, RBEC, RRC, RWC, REWC, REWO; Wetherholt and Associates Inc., Olympia, Wash.
- Secretary/Treasurer: Scott M. Hinesley, RRC, PE; REI Engineers, Charlotte, N.C.
- Immediate Past President: Robert Hinojosa, RRC, RWC, REWC, RBEC, RRO, PE, CDT, FRCI; RJH and Associates Inc., Miramar Beach, Fla.
- Executive Vice President & CEO: James R. Birdsong, RCI, Inc., Raleigh, N.C.
- Region I Director: Michael Violette, RRC, PE; Violette Engineering, Dillsburg, Pa.
- Region II Director: Christopher Giffin, RRC, AIA; Wiss, Janney, Elstner Associates Inc., Duluth, Ga.
- Region III Director: Gene Keeton, KDENT Inc., Monett, Mo.
- Region IV Director: Steven C. Drennan, Conley Group Inc., Irving, Texas
- Region V Director: Michael Gardner, RRC, RRO; Wiss, Janney, Elstner Associates Inc., Lakewood, Colo.
- Region VI Director: Paul Kompauer, PEng; Calysta Consulting, Abbotsford, British Columbia, Canada
- Region VII Director: Bryan Fishburn, RRO; Fishburn Building Sciences Group Inc., Hornby, Ontario, Canada

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University of Florida Wins Student Competition

The University of Florida team received the trophy at the NRCA convention from NRCA Chairman Dennis Conway (third from left) and team liaison Kyle Thomas (center).

FOR THE second consecutive year, a team from University of Florida, Gainesville, was selected as the winner of The Roofing Industry Alliance for Progress’ third student construction management competition, which took place during the NRCA’s 130th Annual Convention held in Las Vegas. Members of the winning team were Will Foster, Caleb Strauss, Schaffer Weeks, Forest Wilson. The faculty advisor was Jim Sullivan.

Six schools of construction management participated in this year’s competition: McWhorter School of Building Sciences at Auburn University, Auburn, Ala.; Department of Construction Management at Colorado State University, Fort Collins, Colo.; Louisiana State University, Baton Rouge, La.; Tuskegee University, Tuskegee, Ala.; the University of Cincinnati; and M.E. Ringer Sr. School of Building Construction at the University of Florida.

The goal of the outreach to the construction management schools is to raise awareness of the roofing industry by developing roofing-related curriculum, scholarship programs and internship programs with interested Alliance members. Plans are now underway for the 2017–18 Alliance student competition in at NRCA’s 131st annual convention in New Orleans, Feb. 6–8, 2018.

NRCA INTRODUCES 2017-18 OFFICERS AND DIRECTORS

The NRCA announced its 2017-18 slate of officers and directors at the association’s 130th Annual Convention held in Las Vegas.

Jim Barr, president of Barr Roofing Co., Abilene, Texas, has been elected NRCA chairman of the board. Kent Schwikkert, senior vice president—national business unit, Schwikkert’s Tecta America of Mankato LLC, Mankato, Minn., was elected chairman of the board-elect. Elected as vice chairmen were David Hesse, vice president of Kalkreuth Roofing and Sheet Metal Inc., Wheeling, W. Va.; Nick Sabino, president of Deer Park Roofing Inc., Cincinnati; J.J. Smithey, president of Frost Roofing Inc., Wapakoneta, Ohio; and David Tilsen, president, Tilsen Roofing Co. Inc., Madison, Wis.

Additionally, the following were elected NRCA directors:

- Charles Antis, founder and chief executive officer of Antis Roofing & Waterproofing, Irvine, Calif.
- Chad Collins, president of Bone Dry Roofing Co., Bogart, Ga.
- Alex Hernandez, president of Clark Roofing Inc., Broadview, Ill.
- Erica Jackson, president of CYE Enterprises, Jacksonville, Fla.
- Bryan Karel, project manager/supervisor at Garlock-French Corp., Minneapolis
- Hunter Merrill, owner of Mountain Roofing Inc., Roanoke, Va.
- Bob Morgan, chief executive officer of Upstate Roofing and Painting Inc., Rochester, N.Y.

All of the 2017-18 officers and directors will assume their roles June 1, 2017.
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Western States Roofing Contractors Association
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12-14
MCA SUMMER MEETING
Chicago, IL
Metal Construction Association
MetalConstruction.org

22-24
FRSA’S 95TH ANNUAL CONVENTION & EXPO
Orlando, Fla.
Florida Roofing and Sheet Metal Contractors Association Inc.
FloridaRoof.com/convention/

JULY

11-15
NRCA’S MIDYEAR MEETINGS
Chicago
National Roofing Contractors Association
NRCA.net

19-21
RCMA SUMMER MEETING & LOBBY DAY
Washington, D.C.
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**Materials & Gadgets**

**Liquid-Applied Coatings for Modified Bitumen and Metal Roofs**

Roofing contractors can transform existing modified bitumen roofs or metal roofs into white reflective cool roofs with two new roof recovery options from Kemper System. Roof Guardian RG-170 (SRI 109) is a Class A fire-rated elastomer-based coating system for prolonging the life of modified bitumen assemblies. Roof Guardian RG-180 system (SRI 108) is ideal for recovering metal roof assemblies. The Roof Guardian line of liquid-applied elastomer-based roof coatings also spans solutions for smooth-surfaced built-up roofing (BUR), polymer-modified asphalt (PMA), and single-ply roof systems. Both RG-170 and RG-180 are formulated using an acrylic polymer base that provides outstanding adhesion and superior reflectivity.

KemperSystem.net | Circle No. 13

**Structural Adhesive Designed for Wide Range of Uses**

Chem Link offers the M-1 multi-purpose structural adhesive and sealant, which is designed for bonding and sealing a wide range of construction materials. M-1 offers 400 psi shear strength, 575 percent elongation and a Class A fire rating. M-1 is most often used to provide tough, waterproof seals for flashing, coping, skylights and HVAC applications, as well as an emergency repair sealant for temporary repair of leaks.

ChemLink.com | Circle No. 14

**New Polyiso Formulation Has Eco-Friendly Benefits**

Firestone Building Products recently released a new formulation of polyiso insulation. Firestone’s new formula offers the same high-performing insulating capabilities with even more added benefits. It’s equipped with the highest R-value per-inch in low temperature performance. According to the manufacturer, it not only delivers significant cost savings for building owners, but it won’t soften or melt when exposed to extreme weather conditions. Additionally, it’s easy to install and requires less embodied energy to manufacture, providing an environmentally-friendlier option for architects, contractors and building owners concerned with reducing a building’s carbon footprint.

FirestoneBPCO.com | Circle No. 15

**Low-Rise Adhesive Spray Rig Cuts Material and Labor Costs**

Amped Equipment, a division of Black Cat Inc., offers the Patriot Junior (PJR), a dual-component, low-rise foam adhesive mobile spray rig. With a lightweight and compact design, this machine replaces bag-in-box carts and allows users the option of using 15-gallon drums and jugs, saving material and reducing labor costs. Small enough to fit through a 32-inch door frame and designed to use a bead or full-spray system, the PJR ships with 50 feet of hose that can be extended to 100 feet. It comes with no-flat tires and has a lockable drawer to hold supplies.

AmpedEquipment.com | Circle No. 16
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![Layered structure diagram](image)

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- Works best for use under Metal, Shake and Asphalt shingles
- 10 times lighter and 25 times stronger than 30# felt
- 30 Year limited warranty

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- 17 mil thickness - a 10 square roll weighs only 37 lbs!
- Works best for use under Metal, Shake, Asphalt, Concrete, and Slate shingles
- 8 times lighter and 35 times stronger than 30# felt
- 40 year limited warranty

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CIRCLE NO. 17 / RoofingMagazine.com
Snow Retention System Designed for Membrane Roofs

The Color Snap-M snow retention system from AceClamp is now available for the low-slope, single-ply membrane roof market. According to the company, this product ships fully assembled and there is no need for cutting the existing roof, wood blocking, adding adhesives or additional flashing. Simply heat weld in place and you have a watertight seal. COLOR Snap-M has been third-party load tested to ensure quality. Engineering layout assistance is available from AceClamp.

AceClamp.com | Circle No. 18

FM-Approved Edge Fascia System Ships Within Three Business Days

OMG EdgeSystems offers TerminEdge, an easy-to-install edge fascia system designed for use with most commercial roofing assemblies. The system includes a Kynar-coated, snap-on, fascia cover and matching splice plates, and either an extruded aluminum or formed galvanized steel rail, depending on the specific product selected. The retainer is self-locating and made with pre-punched slotted holes 12-inches on center for installation efficiency. OMG EdgeSystems has updated and expanded its Express Edge Program. Standard FM-approved TerminEdge Fascia in the most popular nine colors and finishes will now ship within three business days.

OMGEdgeSystems.com | Circle No. 19

New 36-inch Power Broom Showcases Improved Design and Ergonomic Handle

Roofmaster Products Company offers its redesigned 36-inch Power Broom. It is powered by a 5.5 horsepower Honda engine with a 6:1 gear reduction. The brush is 36 inches long with a diameter of 21 inches for longer wear. The brush can rotate and lock at 0 degrees or at 15 degrees to the right or left. Brushes are available in all poly, all wire, or mixed. The Power Broom features an ergonomic handle and sealed bearings for long life and low maintenance. The shipping weight is 365 pounds.

Roofmaster.com | Circle No. 20

Acrylic Roof Coating Offers High Tensile Strength

KM Coatings has added KM Acryl 85 to its line of acrylic roof coatings. KM Acryl 85 is a durable, water-based roof coating with high tensile strength. It is applied over the entire surface of the roof to form a seamless membrane that weatherproofs the roof and can extend the life of the roof. Preparing the roof surface prior to applying an elastomeric coating is crucial for the long-term performance of roof systems, so KM Coatings also launched KM EPDM primer, a low-viscosity sprayable liquid used to pre-treat and promote adhesion to an EPDM rubber roof membrane. KM Coatings also developed KM Min-Prime, a low-VOC, stain blocking acrylic primer formulated to enhance the adhesion of acrylic roof coatings to a variety of substrates.

KMcoteingsmfg.com | Circle No. 21
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New Two-Part Polyurethane Adhesive Cures Quickly

Manufactured by Soprema, DUOTACK 365 is a new low-rise, two-part polyurethane adhesive for adhering insulation boards, cover boards or thermal barriers. It is a higher-performing formulation of the company’s standard DUOTAK and will be universally accepted for use anywhere that the standard formulation was used. According to the manufacturer, DUOTACK 365 meets FM, UL and FBC regulations. The new product can be stored more easily and cures in minutes. The adhesive contains no VOCs and comes in two-part cartridges, 10-gallon container sets and 50-gallon drums.

Soprema.us | Circle No. 23

Self-Adhering Modified Bitumen Membrane Offers High Reflectivity

Manufactured by Polyglass U.S.A. Inc., Polyfresko G SA is a highly reflective, granular surfaced APP modified bitumen roofing membrane meant for self-adhering applications. It is constructed with a high-performance polyester reinforcement and features the company’s patented FASTLap for granule-free roll ends, as well as SEALLap, a factory-applied adhesive treatment at the membrane overlap for easy installation. Polyfresko G SA has a highly reflective granular surface and features patented CURE Technology—a thin film that is applied during the manufacturing process resulting in a roof surface resistant to granule loss and discoloration. Polyfresko G SA membrane has shown after accelerated weathering that it maintains its reflectivity and white appearance. It is listed with the Cool Roof Ratings Council with an initial SRI of 96 and is California Title 24 compliant.

Polyglass.us | Circle No. 24

New Siding Panels Provide More Options for Metal Walls

Petersen expands its Precision Series line of metal wall panels with the addition of seven new Highline products. The Precision Series Highline siding panels feature varying rib patterns and widths for creative architectural effects in residential, commercial, institutional or many other applications. The Highline panels are 1 3/8 inches deep and showcase a range of rib patterns for visual interest and architectural creativity. Options include either 12-inch or 16-inch widths, a no-clip panel, or a clip-fastened panel to accommodate thermal expansion and contraction.

Pac-Clad.com | Circle No. 25

Synthetic Underlayment Designed to Provide Excellent Traction

DuPont Tyvek offers the Protec line of roofing underlayment, which feature a unique embossed pattern allowing for better traction and grip while walking on the roof. Tyvek Protec 120, Protec 160 and Protec 200 provide increasing quality, durability, strength, warranty protection and UV resistance. The portfolio of products is suitable for use by professional roofing and exterior contractors in new construction or re-roofing projects as a secondary water barrier on steep-sloped roofs (2:12 or higher) under asphalt shingle, tile, metal, cedar or slate.

Tyvek.com | Circle No. 26
Lucas Adds Non-Skinning Butyl Sealant to its Product Offering

Single-Component Butyl Provides a Permanent Seal Without Hardening

R

M. Lucas Co. has added a single-component, non-skinning butyl rubber sealant to its product line. Lucas #8660 provides adhesion and a permanent seal between concealed end laps, metal roof panels, standing-seam roof panels, ridge caps, wall panels and other applications where a non-hardening weather seal is desired. This product is also ideal for use with OEM and shop-assembled metal details.

According to the manufacturer, Lucas #8660 creates a non-hardening, weathertight seal. Designed as a non-skinning, non-sag sealant, the product exhibits high moisture resistance, with an exceptional ability to absorb sound and movement. Lucas #8660 comes in a neutral color, guns easily in cold or hot weather, and is packaged in 10-ounce fiber cartridges, 12 per case.

“Lucas #8660 won’t stain substrates and exhibits primerless adhesion to most roofing and building materials, including Kynar,” says Jason Morris, technical sales representative for Lucas. “The product is easy to gun and tool, even in cold weather, and is also self-healing.”

The butyl sealant can be used in a variety of metal roof applications where a low modulus sealant is desired, including metal roof panels, ribs, standing seams, and ridge cap flashing, as well as metal wall panels.

When applying the sealant, the surface to be sealed must be dry and free of dirt or loose corrosion particles. A primer is not needed. Simply apply the sealant to the area as desired. Tooling is not normally necessary. The product can be cleaned with Lucas #125 Safe Solve. It also has a long shelf life, remaining active two years from the date of manufacture.

“We feel that this will be an excellent addition to our product line whether you are restoring, renovating or maintaining building structures,” states Morris.

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Contracting in a Time of Rising Material Costs

Three Types of Contracts Offer Different Benefits and Risks

For the first time in years, construction material costs are rising. In March, the Bureau of Labor Statistics reported numbers showing a 4.8 percent rise in material prices between February 2016 and February 2017.

For contractors who have been working on long-term projects, the price increases could mean lower profit margins, or even losses, as they complete their work. Contractors who are in the estimating, bidding, and contract negotiation stages for new projects will continue on page 30
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want to ensure profitability and manage risk where possible. In particular, selecting the best pricing system for a project and properly drafting the contract to reflect it is essential, especially during periods of material cost increases.

Three prevalent pricing mechanisms are fixed-price contracts, cost-plus contracts, and guaranteed maximum price contracts. Here’s the lowdown on each type and the benefits and risks with respect to cost changes.

**FIXED-PRICE CONTRACTS**

Fixed-price or lump-sum contracts are contracts where the parties, sometimes through extensive negotiation, agree upon a fixed sum for the labor and materials to be furnished. Typically, the contractor will prepare a schedule of values where portions of the work correspond with a certain percentage of completion, and pay applications are submitted for the appropriate percentages (often, minus an agreed-upon amount of retention). If the parties want to change the scope of work, a signed change order will be required, and the parties must negotiate and agree upon the change order pricing before signed.

Fixed-price contracts offer contractors limited protection—and in some cases, no protection—in the event of material price increases. Indeed, “the normal risk of a fixed-price contract is that the market price for subject goods or services will change.” (See Seaboard Lumber Co. v. U.S., a 2002 Federal Circuit Court opinion.) Many contracts contain force majeure provisions that excuse or absolve parties from performing their contractual duties in the event of unforeseeable circumstances that are beyond their control and that make performance impossible or commercially impracticable. Examples of such events include “acts of God” like floods, tornadoes, and earthquakes, as well as events such as riots, terrorist attacks, and labor strikes. However, force majeure clauses can be difficult to enforce, and most courts, like the Federal Circuit in Seaboard, view cost changes as a normal, foreseeable risk and not an event that will excuse contractors from further performance. Therefore, when negotiating a fixed price, contractors generally should plan to be held to that price.
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However, properly drafted fixed-price contracts can give contractors options to mitigate potential losses arising from cost increases. One strategy is drafting the contract to read that the fixed price is based upon material prices as of the date of signing and that significant increases in material prices will or shall (not “may”) entitle the contractor to an equitable adjustment of the contract price through a signed change order.

Contractors should also be entitled to adjust the contract price or time of completion to account for other problems—like delays, material shortages, or other difficulties acquiring materials—that can occur when costs increase. Such provisions will have better chances of being enforced if the contract specifically defines what constitutes a “significant” percentage increase in price. Additionally, contracts should include provisions protecting contractors from liability associated with delays and shortages. Some fixed-price contracts also provide that in the event the parties cannot agree on a price for change orders, the change order work shall be paid for on a time-and-materials basis, including overhead and profit. If contractors are unable to negotiate an equitable adjustment provision, a time-and-materials measure for change orders can provide some protection.

**COST-PLUS CONTRACTS**

For contractors, while the above revisions to fixed-price contracts may be helpful, cost-plus contracts will provide the maximum protection against material cost increases. Cost-plus contracts—also known as time-and-material agreements—are agreements whereby contractors bill for the cost of the labor and materials, plus a fee that is either a percentage of the project costs or an agreed-upon flat fee. When invoicing, contractors include documentation of their payment to subcontractors, vendors, and material suppliers to provide proof of the cost. They then invoice for the cost plus the agreed-upon percentage of the cost.

Unlike fixed-price agreements, cost-plus agreements place the risk of cost overages and increases on the owner. If the contractor’s fee is a percentage of the labor and material costs, these arrangements also create potential for contractors to benefit from cost increases. However, they eliminate the need to negotiate a fixed price, they make change orders much simpler to implement, and in periods of cost decreases, they can benefit owners.

**GUARANTEED MAXIMUM PRICE CONTRACTS**

While some owners will be wary of cost-plus agreements—especially when material prices are on the rise—guaranteed maximum price (GMP) contracts may serve as a compromise that could help both contractors and owners mitigate risk. GMP contracts are a modified cost-plus option in that they function...
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Whether parties decide that a fixed-price or cost-plus agreement is best for their needs, they should take care to draft the price terms clearly in order to avoid ambiguity and confusion.

Like cost-plus agreements—contractors invoice for the labor and material costs, plus their fee—but the contracts establish a maximum price for the entire project. Contractors invoice in the same manner they would for a cost-plus agreement, but once the owner has paid the maximum agreed-upon amount, the remaining costs are the contractor’s to bear.

Often, parties to GMP contracts also agree that if the sum of the cost of work and the contractor’s fee total less than the guaranteed maximum price, the difference in the cost and the agreed-upon maximum fee reverts to the owner or is split between the two parties. This makes some owners more amenable to these agreements than they would be to traditional cost-plus agreements, which can make project costs very unpredictable.

Whether parties decide that a fixed-price or cost-plus agreement is best for their needs, they should take care to draft the price terms clearly in order to avoid ambiguity and confusion. Generally, courts enforce contracts as written if they are clear and unambiguous, but if an ambiguity exists, courts will must look to extrinsic evidence to determine what the parties intended, leaving the fate of the dispute to a jury or fact finder. For example, in Rosa v. Long (a 2004 N.C. Court of Appeals opinion), a homeowner and contractor entered into a contract stating that the contractor would build a turnkey dwelling for the “sum of $193,662.60” but later stating that contractor would receive a commission in the amount of 10 percent of all materials, subcontracts, and labor obtained and expended by the contractor. Because these terms suggested that the contract was both fixed-price and cost-plus, a jury decided what the parties intended instead of a judge enforcing the terms as drafted. Clear, proper drafting is essential to increasing the parties’ chances of a predictable outcome in the event of a dispute. 

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Social media is one of the most effective avenues for marketing your business, no matter what industry you are in. It is low to no cost and provides a business with connection to a wide range of prospects, referral partners, and clients.

One thing to embrace about social media marketing is that the best campaigns are informational; sharing information and knowledge works really well with social media. You are positioning your company as the experts in the field. That’s how you build trust. So, when you are thinking about creating a strategy, think about what you know that you can share.

Start with what you are hoping to accomplish. All marketing should have a goal. What do you want people to do? Social media does not respond well to “buy now” types of marketing campaigns. However, you have a great opportunity to create awareness and action that connects you to your buyer.

So, what do you want people to do? Call or visit your business? Clip a coupon? Watch a video? Attend an event? Be very clear and specific about what you want this particular campaign to accomplish. You will have a chance to implement other campaigns in the future. It’s important to realize that marketing is the kind of thing that changes over time. As your goals change, your marketing will change with it. So, don’t get caught up thinking that you have to have one sensational marketing campaign. Sensational would be great! However, you will want to create and implement marketing campaigns over time. So, focus on the goal at hand.

Now that you know what you want people to do, ask yourself this key question: which people? What does your target audience look like? And please don’t think it’s everyone, or everyone with a roof! It isn’t. Your best clients have things in common. Create the outline of that great client so you know who you are speaking to.
Knowing who you are targeting is instrumental in creating your marketing strategy. You probably have a couple of target audiences. You aren’t going to message to all of them in the same way or the same places. For example, if one of your target audiences is over 80 years old, social media marketing may not be the way to go. Traditional marketing is probably more effective with them. If a target market is women in their 40s or 50s, Facebook is ideal.

When your message is broad because you trying to hit everyone, you hit no one. Your message should be specific and should be directed at a clear target audience. This is how they will hear it. Remember that you can implement other marketing campaigns to reach out to other audiences. Stay away from trying to hit all of them at once. That’s a message that will be so big no one will hear it and you won’t accomplish your goal.

Once you know what you want to say, and who you want to say it to, you have to decide where you should be communicating. This is a critical part of social media marketing success.

There is a danger of getting caught up in trying to do what the business next door is doing. Or what someone tells you to do. However, that’s not necessarily the best thing for your business! You want to be where your target is. And how do they consume information?

Let’s explore some options that you might not be thinking about but have impact:

- **VIDEO** Using video in your social media marketing can have an incredible impact. Video gives you the chance to demonstrate your product, or a how-to on the job site. It also gives your audience a chance to see you. Don’t underestimate how powerful this can be.

People buy from people they trust. One of the best ways to build trust is to talk to people directly. Video gives you this opportunity.

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Social media marketing is really about connecting and building trust.

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Think about where your target audience is going to hear your message, determine what you want them to know and do, and then decide how you want to connect with them.

- **GUEST BLOGGING** If there are blogs out there that you follow, start commenting on the posts. Once you’ve developed a relationship with the blog owner, ask if you can provide a guest article. That can get you in front of their audience, which can elevate your credibility and exposure.

- **PODCASTS** There are a lot of podcasts that seek guests to share expertise. Do some research to find the ones that make sense for your business. Then reach out to the host. Remember that this is not a commercial for your business. You share your expertise around some aspect of your industry. You then have a link you can share through your social media platforms. Being a guest on a podcast can increase your credibility.

- **EMAIL MARKETING** Often overlooked, email marketing is one of the most effective marketing methods available today. Not only does it allow you to stay connected to your audience, but you can now connect your marketing email to your social profiles. This expands the reach of the email.

  If you are new to social media marketing pick ONE avenue and get used to it. Consistency is critical to social media marketing success, so don’t overdo it right out of the gate. Give yourself the chance to get used to the process and to build steam. You can always add to your strategy as you move forward.

Think about where your target audience is going to hear your message, determine what you want them to know and do, and then decide how you want to connect with them. Social media marketing is really about connecting and building trust. That’s why it’s social marketing. As you build awareness around your company you will find that your marketing momentum will build. Your company will become a household name and people will share your information with their networks. The spider web of the Internet will expand your efforts and you will realize a significant impact to your business growth.
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5 Ways Mobile Technology Is Changing Online Marketing for Roofing Companies

It seems like the Internet is changing every six months, doesn’t it? The moment you have a marketing strategy worked out, it is thrown into flux by another Google update or market trend.

Right now, that market trend is toward mobile technology. This shouldn’t come as a shock. In fact, I bet you’ve checked your phone since you started reading this article, and we’re only four sentences in!

Mobile technology has significantly changed the landscape of online marketing. More homeowners are using their mobile phones to search for roofing services than ever before. But between the rapid changes in homeowner behavior, the explosion of mobile devices and the intense local competition most roofing companies have, keeping up with the mobile world can seem daunting, if not impossible.

Fear not! We are going to tackle the five ways mobile technology is changing the residential roofing business, and discuss how each one is going to help you win more business from online homeowners.

1. **MOBILE** is no longer a millennial phenomenon. It was only a few years ago when we were shrugging off the mobile movement. Mobile obsession was primarily a thing for teens and twenty-somethings, right?

   Not anymore. Since mobile devices have become more affordable and accessible, homeowners of all ages are turning to their phones when they have an urgent need, such as a repair or roofing emergency. In fact, that is the first device they turn to.

   For homeowners over 50, mobile phones are the central device in their daily lives, and they are likely using them to make phone calls and submit web forms. And while home ownership among millennials is rising, a hefty number of leads tend to come from the 50-plus crowd. Adapting to mobile technology is going to help you drive leads across all demographics.

2. **GOOGLE** has welcomed mobile with open arms. Google tells us that more than half of the queries on their search engine now come from mobile, and it is only going to increase. As a result, they have revamped their pay-per-click (PPC) advertising to reflect the immediacy of mobile searches. Folks at the top, as they say, get the best fruit.

   In PPC campaigns, roofing companies need to optimize for mobile. This requires more than checking the “Mobile” box in your ad campaign. You will want to use extensions that make it easier for homeowners to call from their mobile devices and determine how close you are to their location.

   Simply stated: homeowners are making their roofing choices at the top of Google’s mobile search pages. To get to the top, you need to have mobile-optimized ads that appeal to mobile users. Being at the top of the page is one of those lead drivers that growing roofing companies cannot do without.

3. **TAP-TO-CALL** is exactly what homeowners are looking for. In the time-constrained world that we’re in, Google
offers homeowners a number of specific roofing choices immediately. However, being at the top of the page means nothing if a person can’t get in touch with you.

Homeowners with roofing needs want to resolve the issue as soon as possible. That’s why it’s important to have a tap-to-call option on your website pages and ads. But, that is only half the battle.

In home improvement, excellent phone work is still necessary. There is nothing more frustrating to homeowners than going to a roofing contractor’s website, liking what they see, dialing the number and then getting no answer. Or a long hold time. Or going straight to voicemail. Or not getting a prompt call back.

All of these non-responses drive the homeowner to do the same thing: call your competitor.

Mobile has made it easier than ever to go down a list, contacting company after company until they get a response. Roofing companies that want to grow and scale need to have tap-to-call options and strong phone practices to make the most of their mobile presence.

4. RESPONSIVE WEBSITES are more than the future—they’re the industry standard. Mobile is now a fact of life for roofing companies. And if your company’s website requires customers to zoom in on teeny tiny letters, they’re going to get frustrated and move on.

At the very least, every company needs to have a responsive website that accommodates all sizes and models of mobile phones. Responsive sites are Google-friendly and they display in ways that are easiest for homeowners to navigate and understand.

If you’re not sure if your website is responsive, try to access the URL on your mobile phone. Can you see the words at a glance? Do you have to slide around to find a phone number? If so, you probably need to upgrade to a responsive design.

Having a responsive website boosts your site’s usability, making it more likely that you’ll be there when a homeowner searches for roof replacement. Plus, customers in the 50-plus bracket will sincerely appreciate text that is easy to read.

5. MOBILE WEB FORMS are your key to connection, so get it right. Homeowners are embracing web forms in greater and greater numbers. And it’s easy to see why. With busy routines and packed schedules, many homeowners simply have limited time to solve their roofing issues. A web form shows the homeowner how responsive you are and how much you value their inquiry.

That is why more and more roofing businesses are turning to online appointment scheduling in their web forms. Letting the homeowner select an appointment time has a number of
For homeowners over 50, mobile phones are the central device in their daily lives, and they are likely using them to make phone calls and submit web forms.

benefits. First, homeowners who can schedule their own appointments are far more likely to complete a web form. Second, it gives you a competitive advantage over other forms that do not offer scheduling. It’s simply more convenient and gives the homeowners a greater feeling of control.

Also, self-schedulers are much less likely to become no-shows. As we all know, no-shows are frustrating, costly and a big headache. Letting the homeowner commit to a time that works also shows that your easy to work with and responsive to their needs.

Lastly, web forms are a big hit with Millennials. The 35 and under crowd loves to schedule everything online—haircuts, spin classes, restaurant reservations, vacations, hotel stays. You name it, they are reserving it online.

This, too, is becoming an ingrained behavior among the next generation of homeowners, so optimizing your web forms is going to become even more important in the years to come.

Dominate the Mobile Market

Many roofing companies are frustrated with the online world. Roofing is already a very local business, which makes it challenging to grow and expand. By embracing the mobile world, roofing companies can stand out and beat the competition. And for roofers looking for replacement leads, it’s 100 percent worth the time and expense to do it right.

While the mobile world is complex and somewhat confusing, so is the rest of running a business. And I’m guessing your company is already doing that well. If you embrace these mobile trends, you’ll learn how to master them and drive more leads—and more business—to your company.

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Are You Placing Women in High-Visibility, High-Impact Roles?

Experience May Be the Most Important Factor in Leadership Development and Diversity

Corporate values. Leader behaviors. Diversity and inclusion training. Hiring goals. High-potential training programs. Affinity groups. Mentoring. While these are all important practices for developing leaders and increasing gender diversity, they are not a substitute for one of the most important, but frequently overlooked, contributors to leader development and leadership diversity—ensuring that women in the pipeline are assigned to the high-impact, highly visible, challenging roles and project assignments that will prepare them for executive management.

EXPERIENCE-DRIVEN DEVELOPMENT
The Center for Creative Leadership (CCL) points to experience as a critical factor in executive development. In the introductory chapter to Using Experience to Develop Leadership Talent, the book’s editors, Cynthia McCauley and Morgan McCall, define “experience-driven development” as “identifying people with potential, giving them challenging assignments, and holding them accountable for both results and growth.”

CCL has devoted an online publication exclusively to the subject titled Experience Driven Development. The organization states that despite being the most important element of the learning process, experience-driven development often gets scant attention in the workplace: “Individuals broaden and deepen their leadership capabilities as they do leadership work. In fact, there are good reasons to believe that learning from experience is the number one way that leader development happens. Yet this number one driver of learning gets the least attention in our leader development systems.”

Experience-driven development reflects the familiar CCL 70-20-10 framework for leader development stemming from the original Lessons of Experience research of the late 1980s. This model states that roughly 70 percent of development can be attributed to challenging on-the-job experiences; 20 percent to mentoring and other developmental relationships; and 10 percent to formal coursework.

The challenging job experiences can include such assignments as:
- Starting something from scratch.
- Turning around a failing or struggling business unit or initiative.
- Special high-visibility projects.
- Roles reflecting increases in scope and scale.
- International assignments.

Ann Morrison, co-author of The Lessons of Experience and author of The New Leaders: Guidelines on Leadership Diversity in America, states that “such assignments involve autonomy, visibility, access to senior management, and control over considerable resources.”

She continues, “They are often used as tests and rewards for the people judged to have high potential; they constitute the ‘fast track’ in many organizations.”

Morrison stresses that to be effective, these developmental challenges need to be balanced by recognition (including pay, promotion, autonomy, resources, and respect) and support. She notes that organizations need to be aware of additional sources of challenges experienced by diverse leaders (for example, unconscious bias, higher performance standards, and family issues).

The sample in the original Lessons of Experience research, upon which the 70-20-10 model is based, was made up almost exclusively of white males. Follow-up CCL research concluded that men had access to a greater variety of challenging job experiences than women.

THE CATALYST RESEARCH ON HIGH-POTENTIAL EMPLOYEES
Recently the Catalyst Organization has undertaken a global longitudinal study of 1,700 post-MBA high-potential employees in companies such as General Motors, IBM, Ernst & Young, McDonalds and UPS. In the research summary entitled “Good Intentions, Imperfect Executions? Women Get Fewer of the ‘Hot Jobs’ Needed to Advance,” authors Christine Silva, Nancy Carter and
Roof Pros know it takes every advantage to be successful. That’s why so many choose IKO Cambridge™ or Dynasty® shingles. They’re loaded with advantages that can help improve your bottom line. They go farther with fewer shingles than most competitors’ comparable products thanks to their large size and 5-7/8” exposure. And with a multitude of colors and our complete PRO4 accessory system, IKO has the tools you need to win more sales. So take your business to the next level, and see for yourself why IKO isn’t just roofing, it’s roofing elevated.

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Anna Beninger refer to the critical job assignments for development and advancement as “hot jobs.” They conclude: “Highly visible projects, mission-critical roles, and international experiences are hallmarks of ‘hot jobs.’ They predict advancement, yet our findings show that women get fewer of these hot jobs than men.”

The authors point out that most global companies have embraced the cause of gender diversity and virtually all of them have established formal leadership development courses. “Despite these efforts, women remain underrepresented at senior levels, indicating that these programs may not be paying off equally for women and men,” they note. “And past Catalyst research shows there is typically little accountability in place to ensure women’s equal access to development opportunities.”

The Catalyst study explored three of the most potent sources of experience-driven development: project leadership, challenging roles and international assignments. The results show that women lag behind men with similar education and organizational tenure in terms of their access to fast-track development opportunities. The study found the projects that men worked on typically had budgets twice the size of the women’s projects, and the men’s projects had three times as many employees assigned to them.

**SHARED ACCOUNTABILITY FOR DEVELOPING LEADERSHIP DIVERSITY**

So, if high-potential, post-MBA women are getting fewer of the high-visibility and high-impact roles that are essential for their development and for increasing gender diversity in the executive ranks, who is accountable for changing the status quo?

According to experts at CCL, experience-driven development should be viewed as a shared responsibility involving the CEO and senior leaders, human resource executives, the immediate manager, and the individual employee. In their conclusion to Using Experience to Develop Leadership Talent, editors Cynthia McCauley and Morgan McCall comment on the critical role of the CEO: “The potential contribution of the CEO cannot be overstated. We’ve seen how important the chief executive is in making leader development a fundamental part of the business strategy, in modeling expected behavior in developing others, and in holding managers accountable for the development of their people.”

McCauley and McCall point out that senior leaders have development accountabilities similar to those of the CEO and must also “make sure that the boundaries among their parts of the business can be crossed for developmental as well as business reasons.” The authors point to immediate managers as an important focus, as they are the gatekeepers to challenging work assignments and often play a role in identifying high-potential talent.
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Finally, they comment on the individual’s role in their own career development: “Ultimately, individuals are responsible for those aspects of development they can influence, most immediately taking developmental opportunities when they arise and proactively seeking them when they don’t, being open to learning from these opportunities, and taking actions (such as seeking out feedback and building accountability) that increase the likelihood of learning.”

**KEY QUESTIONS TO CONSIDER**
Experience-driven development. Hot jobs. Fast track. To increase leadership diversity, it is critical that the résumés of women reflect a variety of challenging, visible, high-risk, high-impact roles in preparation for top management positions.

The research project by the Catalyst organization echoes early research at the Center for Creative Leadership and concludes that post-MBA, high-potential men are more likely than their female counterparts to be assigned to larger, more visible projects. The men are more likely than high-potential women to have profit and loss responsibility, as well as supervisory responsibility. Significantly more men than women are selected for international assignments.

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**To increase leadership diversity, it is critical that the résumés of women reflect a variety of challenging, visible, high-risk, high-impact roles in preparation for top management positions.**

The questions below may stimulate your thinking about leadership diversity and professional development in your organization:

- Are you placing women in high-visibility, high-impact positions?
- What role does “unconscious bias” play in the development of high-potential women? Are women required to demonstrate greater readiness for a challenging role than their male counterparts?
- Do your organization's diversity metrics reflect experience-driven development?
- What role will you play in bringing about needed change?

For links to the studies cited in this article, visit the online version of this column at RoofingMagazine.com.
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For much of the past decade, the debate over when and where to install reflective roofing has been guided by two basic assumptions: first, since white roofs reflect heat and reduce air conditioning costs, they should be used in hot climates. Second, since black membranes absorb heat, they should be used in cool-to-colder climates to reduce heating costs. This reasoning has been broadly accepted and even adopted in one of the most influential industry standards, ASHRAE 90.1, which requires reflective roofing on commercial projects in the warm-weather portions of the United States, Climate Zones 1–3.

But as reflective membranes have become more widely used, there has been a growing awareness that the choice of roof color is not simply a matter of black or white. Questions continue to be debated not only about the performance and durability of the different types of membranes, but on the impact of other key components of the roof system, including insulation and proper ventilation. The issue of possible condensation in cooler or even cold climates is garnering more attention. Given these emerging concerns, the roofing community is beginning to ask for more detailed, science-based information about the impact of reflective roofing.
Equipment tripods were set up to hold air temperature and EMT temperature sensors. Wall sensors were applied directly to the walls, and the opaque wall sensors can be seen in the background.

One recent area of inquiry is centering on the impact of “the thermal effects of roof color on the neighboring built environment.” In other words, when heat is reflected off of a roofing surface, how does it affect the equipment and any other structures on that roof, and how might the reflected heat be impacting the walls and windows of neighboring buildings? Put another way, where does the reflected heat go?

THE STUDY
To help answer those questions, the Center for High Performance Environments at Virginia Tech, supported by the RCI Foundation and with building materials donated by Carlisle Construction Materials, designed and implemented a study to compare temperatures on the surface and in the air above black EPDM and white TPO membranes. In addition, the study compared temperatures on opaque and glazed wall surfaces adjacent to the black EPDM and white TPO, and at electrical metallic tubing (EMT) above them.

Specifically, the Virginia Tech study was designed to answer the following questions:

- What is the effect of roof membrane reflectivity on air temperatures at various heights above the roof surface?
- What is the effect of roof membrane reflectivity on temperatures of EMT at various heights above the roof surface?
- What is the effect of roof membrane reflectivity on temperatures of opaque wall surfaces adjacent and perpendicular to them?
• What is the effect of roof membrane reflectivity on temperatures of glazed wall surfaces adjacent and perpendicular to the roof surface?

To initiate the study, the Virginia Tech team needed to find an existing roof structure with the appropriate neighboring surfaces. They found a perfect location for the research right in their own backyard. The roof of the Virginia-Maryland College of Veterinary Medicine at Virginia Tech was selected as the site of the experiment because it had both opaque and glazed wall areas adjacent to a low-slope roof. In addition, it featured safe roof access.

In order to carry out the study, 1.5 mm of reinforced white TPO and 1.5 mm of non-reinforced black EPDM from the same manufacturer were positioned on the roof site. A 12-by-6-meter overlay of each membrane was installed adjacent to the opaque wall and a 6-by-6-meter overlay of each was installed next to the glazed wall. At each “location of interest”—on the EPDM, on the TPO, and next to the opaque and glazed walls—the researchers installed temperature sensors. These sensors were placed at four heights (8, 14, 23, and 86 centimeters), and additional sensors were embedded on the roof surface itself in the TPO and EPDM. Using these sensors, temperatures were recorded on bright, sunny days with little or no wind. The researchers controlled for as many variables as possible, taking temperature readings from the sensors on and
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above the EPDM and TPO on the same
days, at the same time, and under
the same atmospheric conditions.

THE RESULTS
The output from the sensors showed
that at the surface of the roof, the black
membrane was significantly hotter than
the white membrane, and remained
hotter at the measuring points of 8 cm
and 14 cm (just over 3 inches and 5.5
inches, respectively). However, the air
temperature differences at the sensors
23 centimeters (about 9 inches) and 86
centimeters (just under three feet) above
the surface of the roof were not statisti-
cally significant. In other words, at
the site the air temperature just above
the white roof was cooler, but begin-
ning at about 9 inches above the roof
surface, there was no difference in the
temperature above the white and black
membranes.

On the precast concrete panel adja-
cent to the TPO and EPDM, temperatures
were warmer next to the TPO than adja-
cent to the EPDM, leading the study
authors to hypothesize that the TPO
reflected more heat energy onto the
wall than did the EPDM. Exterior glaz-
ing surface temperatures were found
to be approximately 2 degrees Celsius
hotter adjacent to the TPO overlay as
compared to the EPDM overlay.

Elizabeth Grant led the team that de-
signed and implemented the study. She
says her findings show that you need to
take the entire environment into account
when designing a roof system. “You need
to think about what’s happening on top
of the roof,” she says. “Is it adjacent to
a wall? Is it adjacent to windows? Is it
going to reflect heat into those spaces?”

Samir Ibrahim, Director of Design
Services at Carlisle SynTec, believes the
study results will help frame addition-
al research. “These findings are an im-
portant reminder that the full impact of
reflective roofing on a building and on
surrounding buildings is not fully un-
derstood,” he says. “Additional research
and joint studies, covering different
climatic conditions, are certainly war-
ranted to broaden the knowledge and
understanding of the true impact on the
built environment.”
A Difficult Operation
Stanford Hospital Project Demands Versatility and Surgical Precision

Dennis Olson is used to dealing with large health care projects with multiple scopes of work, but the new Stanford Hospital project he’s currently working on might be the most challenging job he’s ever faced.

“I’ve never been involved with a project that’s been this complex and this difficult to roof and manage,” says Olson, the owner of Letner Roofing in Orange, Calif. “There are 16 different types of roofing and waterproofing systems, and each one is a little bit different at each location around the building.”

Located in Palo Alto, Calif., the new Stanford Hospital is an 824,000-square-foot facility that connects to the existing hospital by a bridge and tunnel. Olson is convinced his company is perfect for the job. He has been in the roofing industry for almost four decades, and he’s worked at Letner for more than 30 years. Olson worked his way up through the company as a foreman, project manager, and estimator before becoming the president and owner 15 years ago. “I have been estimating and managing health care projects for more than 25 years,” he says. “This job is right up our alley.”

THE COMPANY
Located in Orange, Calif., Letner Roofing specializes in commercial work including all types of roofing and below-grade waterproofing systems. “We are licensed with all of the major manufacturers to install their products,” Olson says. “We install basically every roofing and waterproofing system that’s available to the market. We have a sheet metal division that produces metal wall panels, roofing and general sheet metal.”
This aerial photo shows the new Stanford Hospital, which is currently under construction. When completed in 2018, the complex will showcase 16 different roofing systems on 12 different elevations.
Olson believes the company’s success begins with its great alliances with top general contractors and owners. “Our strengths are our customer service and quality control, and our ability to get projects done efficiently and on time,” he says. “I think that’s why general contractors choose us. We do what we say we’re going to do, we do it efficiently, and we take a lot of pride in the finished product.”

Communication is the key, according to Olson. “We have weekly sales meetings where all of the project managers and sales staff get together,” Olson says. “We share information, which allows us to learn from our failures and successes. It’s a team atmosphere. There is no real competition between the sales guys other than the innate competition that you each have to be better. We don’t compete against each other; we all work together for the common goal. It takes constant communication.”

Keeping the lines of communication open with industry partners is a key part of the puzzle. “As far as communication with the general contractor, that’s pretty simple, but a lot of people miss that,” he says. “You have to return phone calls. You have to return emails. If you have an issue on a project, handle
the issue efficiently. Bring scheduling problems or details issues to the attention of the general contractor early. Nobody likes to be surprised. People like to be informed.”

Due to their expertise in design-build situations, members of the Letner team are often called in by general contractors at the design and budgeting stage to offer advice on the right materials and methods for a project.

That was the case with the new Stanford Hospital project and general contractor Clark/McCarthy—a joint venture of Clark Construction Co. and McCarthy Building Cos. “McCarthy is a contractor I’ve been dealing with for more than 25 years. I’ve done a lot of health care projects with them, so when Stanford came out, they certainly wanted our input and help developing the budgets,” notes Olson.

UNDERGROUND, OVERHEAD
For Letner, the project involved several scopes of work including roofing on the main hospital and below-grade and underslab waterproofing.

Below-grade work included a pre-applied blind-side waterproofing application by Cetco. Letner also waterproofed underground tanks for domestic water, fire suppression, and sewage with a hot rubber system by Gaco Western. “The hospital was built for the worst-case scenario,” Olson notes. “If there is a big earthquake, and services are interrupted, the hospital can sustain itself for a while.”

As the superstructure was being completed, the roofing work began. “As I said, there are 16 different roofing systems on this project. There are 12 different elevations,” notes Olson.

Systems range from urethane and polymethyl methacrylate (PMMA) coatings to split-slab and inverted hot rubber systems, PVC roof systems and hybrid dual waterproofing system. The largest roofing systems include a Sarnafil PVC roof on the main hospital and a hot rubber system by Cetco for use under the garden roofs. Letner is installing garden roofs on the third floor of the main hospital and another on the
“We are very concerned about safety. We have a safety manager, and he does a very good job of identifying possible hazards on each job. We identify those per deck and apply the proper safety measures required for each elevation.”

— Dennis Olson, Letner Roofing

central plant building.
Both of these garden roofs were constructed over flat concrete decks. The first step was to provide positive slope for drainage. "Cell-Crete provided lightweight concrete, and we used the lightweight concrete to pour slope over the flat structural concrete deck," notes Olson. "After the concrete was sloped, we installed quarter-inch cement board over the lightweight."

The hospital’s surgery rooms are directly beneath the garden roof on the main hospital, so the system has to be bulletproof. "This roof area requires intricate detailing along with a Cetco hybrid dual waterproofing system," Olson states. "After the lightweight concrete and cover board are in place, Letner will install 60 mils of Hydrofix urethane membrane, followed by Cetco Corflex, a unique combination of a re-enforced KEE membrane bonded to an active polymer core membrane. Both garden roof areas will be protected with an in-place leak detection system by Internal Leak Detection."

The overburden at the hospital garden roofs will include insulation, drainage mats, various types of plants and trees and pedestal paver systems.

Letner installed PVC roof systems from Sika Sarnafil level three of the hospital and on the main roof of the hospital. The 60-mil PVC membrane was installed over insulation and DensDeck cover board. Insulation was a minimum of R-20 near the drains. Some sections of the PVC were topped by ballast rock.
On the adjoining multi-level parking deck, Letner installed PVC roofs on two office buildings. The rest of the roofing and waterproofing work on the parking structure, including another garden roof, was completed by Courtney Waterproofing and Roofing of Irvine, Calif.

SAFETY PRECAUTIONS
Letner and the general contractor help ensure safety is always top of mind at the site. “On this project, like any other, the safety issues were extremely important,” notes Olson. “We have our crews stretch and flex daily, and everyone must wear the personal protective equipment required for each task. Fall protection is a concern at every elevation, and hot rubber is extremely hazardous activity that requires additional protection and monitoring.”

The perimeter walls were being constructed during the project, so extra precautions had to be taken at the roof edge. “We had to wear harnesses and be tied off at all times,” Olson says. “We are very concerned about safety. We have a safety manager, and he does a very good job of identifying possible hazards on each job. We identify those per deck and apply the proper safety measures required for each elevation.”

Waterproofing the tanks also required special care. “The domestic water, waste and fire tanks and are in the ground, so you have to have people certified to do that work with specialized equipment,” Olson states.

CHALLENGING SCHEDULE
Construction of the hospital is still underway. Work is expected to be completed in 2018. The sheer size and multiple scopes of work were obvious challenges on the project, but the schedule was also tight—and subject to change. Some roof details were changed and others were developed as the job progressed, so Letner’s crews had to make some adjustments on the fly. Letner continues to work with the consultant on the project, ABB, to iron out the details.

“Sometimes you have to adjust the

TEAM

Architect:
Rafael Viñoly Architects in association with Lee, Burkhart, Liu Inc.

General Contractor:
Clark/McCarthy—a joint venture of Clark Construction Co. (ClarkConstruction.com) and McCarthy Building Cos. (McCarthy.com)

Roofing and Waterproofing Contractors:
Main hospital building and offices: Letner Roofing, Orange, Calif. (Letner.com)
Adjoining parking structure: Courtney Waterproofing and Roofing, Irvine, Calif. (Courtneyinc.com)

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schedule when you are coordinating the work with other trades,” Olson notes. “The schedule, coordinating with other trades and the number of changes on the job have been the biggest issues we’ve faced. It’s is still a challenge, as the work is ongoing.”

When it came time to stage equipment and materials, the large job site suddenly seemed small. “The site was kind of tight, so of course logistics came into play with loading and off-loading each different area,” he says. “Some areas were hard to get to, and sometimes we had to wheel the product through corridors to get to the decks. Not everything was easy to get to. Logistics were difficult, but we were able to overcome those problems. Clark/McCarthry helped out quite a bit with logistics and loading.”

Despite the complexity of the job, the installation work has gone smoothly, according to Olson. “As far as the application for our field crews, there’s not that much difficulty for them. They are all very talented at what they do,” he says. “It’s just a very difficult building, and there are a lot of details that are not typical.”

The key to overcoming difficulties? “It’s constant communication,” Olson says. “Our strengths are our management teams, from the field operations to office staff. We’re honest with our customers. They understand the level of customer service and quality we deliver. Our success is a testament to the service we provide to our customers. We are often praised for our service and workmanship, and we are very proud of our quality installations as well.”

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Elastizell lightweight insulating concrete was used to provide slope for drainage on the flat structural concrete decks. It was later topped with cement board.
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Roof Rehab

Restoration Project Keeps Rehabilitation Facility Operating

Bill Steeves (left) and Steve Broda launched Skyline Roof Restoration, a company that specializes in restoring roofs with coatings.
Rehabilitation facilities help their patients stay healthy. Keeping roofs healthy is another matter.

When the roof at a rehabilitation center in Colorado was reaching the end of its service life, roofing contractor Bill Steeves recognized it was the perfect candidate for roof restoration project. Steeves is the president of Skyline Roof Restoration Inc., based in Frederick, Colo. The company specializes in roof coatings. It was launched last year by Steeves and his partner, Steve Broda. Broda is the founder of Skyline Roofing Inc., a full-service commercial roof contracting firm, also located in Frederick, where both men have worked since 2006.

“We formed Skyline Roof Restoration as a vehicle to promote restoring roofs with coatings,” Steeves says. “We have both been involved with various coating projects in the past and wanted to offer our expertise to clients where restoration is their most prudent option.”

In the Denver area, the coatings market is booming in part due to changes in local energy codes, notes Broda. Several municipalities have mandated with that a roof tear-off and replacement, the R-values in the roof have to be brought up to those for new construction. “It was becoming unaffordable for some people to do total roof replacement and upgrade to R-30 or R-38,” Broda says. “We needed another tool to provide them with a roofing option that was economical and did not force them to add the extra R-value to their roof systems.”

In many cases, coating an existing membrane roof can be an excellent option. “It can save the customers a lot of money compared to a roof replacement, and depending on the system and the thickness, we can offer a 20-year NDL warranty,” Broda notes.

According to Steeves and Broda, the
The silicone coating is applied with rollers to the wall flashings and around penetrations prior to the field membrane being restored. All metal coping was masked off prior to the application.

key to the success of a roof restoration is making sure the underlying substrate is a good candidate for the coating. Skyline Roof Restoration will only authorize a coating project if it is the best option for the facility. “Steve and I have a combined 77 years of experience in commercial roofing, and there are very few scenarios we have not run across,” Steeves says. “We have both built very strong commercial companies based on return customers and referrals. We both really care about the final product, value to our customers, and the relationships we have developed over the years.”

THE DIAGNOSIS
Steeves had a hunch that the roof at the Centre Avenue Health & Rehab facility in Fort Collins might be reaching the end of its life span. “We have been doing all of the roofing work for Columbine Health Systems, the owner of Centre Avenue Health & Rehab, for more than seven years and have developed a great working relationship with the owner,” he says. “We had never been called to Centre Avenue for any leaks, but I knew the building was about 18 years old.”

“It was a perfect candidate for a roof restoration.”
— Bill Steeves, president, Skyline Roof Restoration Inc.

Steeves suggested it was time to conduct a roof inspection at Centre Avenue but was told to wait. Sure enough, the next time it rained, a leak was detected. When Steeves met his repair crew on the site, he noticed that the fully adhered EPDM roof system on the flat roof sections was just beginning to exhibit signs of oxidation. A few stress fractures were visible in the membrane. “It was a perfect candidate for a roof restoration,” he says.

In a meeting with the owner, Steeves suggested the application of a high-solids silicone restoration system from GE Momentive. “I explained that the restoration process would, in effect, freeze the aging process of the EPDM by protecting it from further UV degradation,” Steeves says. “I had also, prior to our meeting, completed some research and found out that the local power company was offering a rebate for any Energy Star-qualified roof covering, which further reduced his total capital outlay.”

continues on page 68
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When Steeves detailed the costs involved with the coating project as opposed to a tear-off and replacement, the owner gave him the go ahead on the roof restoration plan and opted for a 15-year NDL warranty.

“That’s one of the huge benefits of a restoration versus a replacement or re-cover—it’s so non-intrusive.”

—Bill Steeves, president, Skyline Roof Restoration Inc.

Broda and Steeves note that there are cases in which the existing roof is too far degraded to work well with a coating, and in those cases, the only viable option is a roof replacement. The silicone coating can be used on membranes including EPDM, TPO, PVC, modified bitumen and smooth built-up roofs, as well as metal. “It works with all types of membranes, but you have to catch these roofs before the end of their serviceable life,” says Broda. “They have to have some life left in them to coat them. If we are not comfortable putting a coating on a roof, we won’t do it.”

Often all that is needed is minor repair of wall flashings, curb flashings and penetrations. Wet insulation is another problem to look out for. “We’ll do an infrared scan of the roof before we coat it to make sure we don’t have any wet insulation in there.”

Every proposal is also contingent on a successful adhesion test. A sample area is set up and a pullout test is conducted to determine if the product will adhere well.

APPLYING THE COATING

The Center Avenue project involved an existing EPDM roof that was surrounded by a standing seam metal roof, which was in excellent shape. The first step was to have a service crew go over the existing EPDM roof and repair any stress fractures and separating seams. The roof was then thoroughly cleaned with a pressure washer. For EPDM roofs such as this one, a cleaning solution is applied and the roof is power washed a second time to remove all residue.

Once the prep work was completed, crews applied the high-solids silicone coating at a rate of 2 gallons per 100 square feet of membrane area.

Because the flat roofs were so close to the standing seam roof sections, the coating was applied with rollers continues on page 70
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to minimize the chance of overspray. “As Northern Colorado is known for its wind, the decision was made very early in the proposal process that we would opt for a roller-applied method versus spraying,” says Steeves.

Steeves notes that the application was ideal for this location because it resulted in minimal disruption to the facility. The application has no fumes or toxic chemicals, so the site could remain open to serve patients during the project. “We didn’t disrupt the employees or the patients one bit, except for the day we blocked the parking lot with the crane,” Steeves says. “That’s one of the huge benefits of a restoration versus a replacement or re-cover—it’s so non-intrusive.”

Workers wore standard personal protective equipment and safety glasses. “The safety issues were pretty straightforward,” Steeves says. “The perimeter walls were short, so we had to have safety lines and warning flags set up, and we used a safety monitor.”

Logistics were the biggest challenge on the project, which covered 21,863 square feet of membrane on 10 separate roof levels. Cranes were used to bring materials to the roof and take away any trash or debris. Material was staged in three different spots so the roof was not overloaded, and the setup was designed to optimize efficiency. “Coordination of materials, equipment and personnel was critical,” says Steeves.

In addition, there were more than 300 concrete pavers that had to be moved out of the way temporarily for different phases of the project. “The continues on page 72
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2-foot-by-2-foot pavers were 2 inches thick,” Steeves notes. “They were about 90 pounds apiece. We moved them by hand twice to complete each walkway area.”

The surface temperature of the black EPDM membrane was also an issue. “With the use of an infrared camera, we determined the surface temperatures were hitting in excess of 180 degrees, and we had to adjust our plan of action as to apply the coating either early in the day or late in the day to help retard the surface cure process.”

According to Steeves, Columbine Health Systems is pleased with the restored roof, which has the added benefit of lower surface temperature with the white coating, which reduces summer cooling costs. “The surface temperature showed a dramatic change from black to white,” he says. “The white roof surface temperature has never exceeded 105 degrees.”

**TIMING IS EVERYTHING**

For Skyline Roof Restoration, the project was just another case of doing what was best for the client. “It demonstrates our ability to recognize the condition of a particular roof system and to propose productive, proactive, cost-effective measures to enable property owners to maximize their investment,” Steeves says. “The silicone restoration application is also environmentally friendly in that in its use eliminates bringing all the debris from a tear-off to a landfill and all the associated environmental impacts associated with a new roof system.”

Steeves points out that timing is a crucial consideration with a roof coating. “No roofing system out there works on everything, but in the right situation, a roof restoration can be an excellent option,” he concludes. “Whenever a membrane roof is about to come out of its warranty period, I’m always suggesting that a building owner look at this option. If you wait until you start developing leaks, you might miss the opportunity to use a coating.”

**ROOF MATERIALS**

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CIRCLE NO. 64 / RoofingMagazine.com
Insulated Metal Panels Save Time and Labor in Construction of Inmate Hospital

UNDER PRESSURE from the federal government, the state of California had to build a new health care facility for its prison inmates—and do it fast. The logistics were daunting.

Planning for the 144-acre construction site that became the California Health Care Facility Inmate hospital in Stockton, Calif., had to account for 1,700 personnel on the site at any one time. Physically, it was an imposing project: 23 buildings adding up to 1.2 million square feet, with 792,000 square feet of roofing.

Since there was very little space to store roofing material on site, it became clear in the planning stages that production had to be paced with installation, and a choreographed dance of trucks, forklifts, and installation crews had to be executed well in extremely compact areas.

That’s when using an insulated metal panel (IMP) system from All Weather Insulated Panels (AWIP) of Vacaville, Calif., dawned on the team at Roland Construction in Stockton.

The team realized using IMPs could save in both onsite manpower and installation time. “This being the largest project Roland has ever completed, as well as the demand for over 50 of our
workers on site, plus personnel from other companies, the challenges were formidable,” said Jim Hoagland, the owner of Roland Construction.

**ROOF MATERIALS**

Representatives of Roland and the general contractor firm of Clark/McCarthy worked with the California Department of Corrections and Rehabilitation (CDCR) prior to the bid date to make sure that the IMP roof system would be acceptable to the state. Not only was it deemed acceptable, the state considered IMPs an upgraded component in the final design-build package submitted for consideration. The specification was amended to include insulated metal panels for the architectural roofing before sub-contractors submitted bids.

After the bids were opened, Roland Construction and AWIP earned the opportunity. In January 2012, work began immediately on the design of the 23 buildings. AWIP’s 4-inch thick SR-2 standing seam insulated roof panel with a 22-gage outer skin coated in Natural Green Kynar paint became the choice. The excellent insulating properties of the sandwich-style panel with an R-value equal to 32 in the darker color complied with the project’s LEED Silver Certification.

**ROOF REPORT**

In May 2012, three five-man crews began work on adding the insulated metal panels to the roof. It soon became apparent that each crew could install panels quickly, safely and efficiently.

Over the course of six months, each crew using a small crane could install up to 7,650 square feet of roofing, meaning 15 workers added a total of nearly 23,000 square feet of roofing per day. Following behind the roof paneling crews were several other crews installing AWIP 2-and-half-inch DM40 wall panels, flashings, and trim to encapsulate the 192 fixtures that allowed natural light into the buildings.

The use of a vacuum lifter provided by Automatic Panel Lifting System (APLS) of Auburn, Calif., proved essential in the installation of the panels. The APLS lifters are designed to be hung from a crane or forklift. With the proper attachment setup, they are capable of raising panels up to 60 feet long weighing approximately 600 pounds each.

With the panels being able to be lifted and released in a matter of seconds, production was increased dramatically to meet the project’s breakneck schedule.

With a total cost of $906 million, the project was California’s largest public works project in 2012. Hoagland points out that the reduction in installation man-hours not only saved schedule time, but more than made up for the additional material cost over a more traditional built-up insulation and metal roof system.

“With all the pre-planning with our supplier, AWIP, and their going the extra mile for us, we could not have accomplished this project in such an efficient and timely manner,” notes Hoagland. “The use of AWIP’s insulated metal roof panels for this project proved to be the decision that made this job feasible.”
AWIP Ready for 2020 Regulations in 2017

BY 2020, as regulated by the California (CPUC) Public Utilities Commission, all new residential construction in California will have to meet Zero Net Energy (ZNE) requirements. In essence, the regulation stipulates that the amount of energy a residential building takes off the power grid must be balanced by energy the residence generates and returns to the grid.

William Lowery, the president of All Weather Insulated Metal Panels in Vacaville, California, says his company “is ready for 2020 in 2017.”

Lowery believes that insulated metal panels (IMPs)—the “sandwich-style” roofing component consisting of closed-cell foam composite encased by two pieces of galvanized steel—can propel the North American construction industry into a new era.

“Insulated metal panels are better, faster and cheaper, and we’re at the forefront of changing construction in the United States,” says Lowery.

As an example, AWIP’s SR2 roof panel has a trapezoidal design that increases the panel’s overall rigidity, making it safe for longer spans and foot traffic despite using a lighter-than-usual 26-gauge steel, which reduces overall weight.

Furthermore, according to Lowery, insulated metal panels require far less specialized equipment to install than traditional building materials and, due to their self-aligning, tongue-in-groove joinery, they are a snap to fit together. Once assembled, they provide insulating values above R-50, securing the building’s thermal envelope.

“The SR2, to name one, not only meets the new CPUC energy needs, its means a savings in needing fewer solar panels,” says Kim Harrell, vice president of sales for AWIP. “Roof panels reduce the cost of materials and construction time. They will play comply with the CPUC’s aspirations for California and have significant role in helping new and existing construction projects all over the country.”

Finally, AWIP’s SR2 roof panel with the S-5! Clips makes attaching solar panels quick and easy without piercing the underlying substrate, thereby preventing and air, vapor or water leakage.

For more information, please visit AWIPanels.com.

PHOTOS: ALL WEATHER INSULATED METAL PANELS
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Green Roof Brightens the View for Patients at VA Hospital

MICHAEL WHITFIELD was fascinated by the concept of green roofs, but he didn’t encounter many of them near his home in Charleston, S.C. He knew green roofs benefitted the environment, extended the life of roof systems and were aesthetically pleasing, so he was sure he could tap into the market in the Southeast as a green roof installer. When he couldn’t find a modular green roof system he liked, he designed his own. Whitfield is now the president and CEO of Green Roof Outfitters. Founded in 2009, the company manufactures components for green roofs installed all over the country. The company also installs green roofs itself, as was the case with a nearby hospital project.

After reading research studies that showed hospital patients recovered more quickly and needed less pain medication when they had a natural setting to look out on, Whitfield was inspired. He checked with local hospitals to see if there were areas that would be good candidates for green roofs. When the PR person at the Ralph H. Johnson VA Medical Center expressed an interest, Whitfield passed along the research material.

Months later he got a call asking him to submit a bid. While the hospital’s budget did not allow for a green roof to be installed on the entire building, there was a section of the roof that could be worked on right away. It was a 3,000-square-foot area on a wing for extended care patients, who looked out on a white TPO roof. “We put a green roof on that whole strip outside their windows so the patients would have something nice to look at,” Whitfield says.

ROOF MATERIALS
Construction took place on a weekend, when traffic would be lighter. A crane was used to load the material on the roof, including 4-inch-deep trays for the extensive modular green roof system and 2-inch-thick rubber pavers to go around the perimeter. Plants in the pre-grown mats included different varieties of sedum. Chives, prickly-pear cactus and other perennials were added later.

Green Roof Outfitters partners with growers around the country to provide pre-grown mats. Different varieties of plants are used in different parts of the country, but in most markets the company has had success with a blend using approximately 14 different varieties of sedum.

Whitfield believes the proper combination of plants is essential. “Two buildings that are right next to each other could have different microclimates, so you don’t know exactly what is going to work perfectly there and what is not,” he says. “We mix these plants with a variety—some do better in shade, some do

RALPH H. JOHNSON VA MEDICAL CENTER
CHARLESTON, S.C.

TEAM
GREEN ROOF MANUFACTURER AND INSTALLER: Green Roof Outfitters
better in sun. With the different tolerances they have, the strongest will survive, so we will always have something there. Many people make the mistake of planting one species they like with a certain pattern or color. But if you plant one species—a monoculture—and it doesn’t like it there, you’ll have a totally dead roof.”

**ROOF REPORT**

The system does not require slip sheets for installation, but some roof manufacturers require them to maintain the warranty on the existing roof. In this project, a layer of 40-mil EPDM was placed on top the existing TPO roof. “We laid the modules on top of that,” says Whitfield. “We have rubber paver walk pads, which have feet on the bottom for drainage. We put those around the outside so we could have a nice-looking barrier and a walking area for the maintenance guys.”

“Many people don’t know this, but a green roof can help the roof last 200 percent to 400 percent longer by preventing UV degradation,” Whitfield says. “It shades the roof and protects it. During the day, exposed roofs get superheated in the sun, and cool at night, so they are constantly expanding and contracting. A green roof system keeps it at a constant temperature.”

Another benefit can come from creating functional space on the roof. “We wholesale a lot of systems that combine a green roof with pavers to add usable space,” he says, “We can supply ipe wood pavers or other pavers in different configurations on our pedestal system to make walkways and patios.”

Depending on the environment, an irrigation system is a common option. “Green roof are a low-maintenance systems, not a no-maintenance systems,” notes Whitfield. “We incorporated irrigation channels into the new design of our modules, so you can put in irrigation during the installation or after it is completed.”

Another change is a smaller module. “Our modules used to be 2-feet-by-2-feet, but they were really heavy for the roofers,” he explains. “Our new modules are half the size—one-by-two—so they are much easier to handle and put in place.”

As they become more comfortable with green roof systems, roofing contractors are finding out they can be a valuable add-on with roofing projects. “Once roofers are on the site with all of the equipment and labor, why not make double the money by installing roofing and a green roof?”

No special training is needed to install this tray system. “It’s easy to install,” Whitfield notes. “The modules come fully vegetated, 40 to a pallet. You just pick one up, put it down, and repeat. It’s like laying down dominoes, honestly.”

The modular system is also easy to move if roof maintenance is necessary. “Our system is so flexible,” he says. “If you need roof maintenance, you can just pick up a couple of trays, move them and move them back. This is such an easy, modern way to do it—and it’s very affordable.”
Medical Center Re-Roofing Project Prevents an Emergency

Maintaining the building envelope is essential to the success of a facility with critical interior space. This is especially true with hospitals and medical centers, where facility managers need to be on top of the building envelope integrity so patients and valuable assets are protected.

When the staff at an acute care medical facility in Florida realized the building’s existing roof was reaching the end of its service life, they knew they had to take action right away. The medical center offers a 24-hour emergency department, surgical services and various other outpatient services, and avoiding interruptions caused by roof leaks was critical. Hospital officials sought out a roofing consultant to offer a recommendation for the best roofing system to protect the facility.

McEnany Roofing, located in Tampa, Fla., has been providing commercial and industrial roofing solutions for more than 27 years. “We worked on the medical facility’s behalf to recommend a roofing system for this environment,” says Mark Sloat, vice president and senior estimator at McEnany Roofing. “We used the services of an engineer to conduct an uplift test to help us determine the best roof to suit their needs.”

Roof Report

The sensitive environment of the hospital setting also had to be taken into account during the installation, so a water-based adhesive was used to adhere the 45-mil FiberTite Fleeceback membrane to the main hospital roof.

Acute Medical Care Facility

Florida

Team

Roofing Contractor:
McEnany Roofing, Tampa, Fla., McEnanyRoofing.com

Roof System Manufacturer:
FiberTite Roofing Systems, Seaman Corporation, Wooster, Ohio, FiberTite.com

Durability, wind uplift and severe weather protection supported McEnany Roofing’s recommendation and after careful review of the data, the medical facility agreed. In 2016, McEnany Roofing installed more than 130,000 square feet of Elvaloy KEE membrane on the main hospital and two adjacent medical buildings.

Roof Materials

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CIRCLE NO. 66 / RoofingMagazine.com
The Belfer Medical Research Building on the campus of New York’s Weill Cornell Medical College was designed to be a 19-story model of eco-social construction. Designed by Todd Schlomeil of Ennead Architects, the building showcases a number of sustainability features, including a storm water detention system on the roof.

Built for a cost of more than $630 million, the tower includes 13 stories of research laboratories. The tower has three roof levels at the 17th, 18th and 19th floors. The rainwater detention system, known as a “blue roof,” not only helps regulate storm water discharge, but it feeds a water fountain and irrigates planters on the second-floor terrace.

In general, rainwater detention systems can either collect water in holding tanks and then meter it to the public sewer system, or retain it on a waterproofed roof expanse. The blue roof on the Belfer Research Building uses the latter strategy. It complies with New York City requirements and can hold up to 3 inches of water.

**Roof Materials**

Proper waterproofing on the project is essential. The solvent-free and odor-free KEMPEROL 2K-PUR cold, liquid-applied membrane system was used for waterproofing the blue roof. It was also used on the terrace and fountains on the lower level. The reinforced membrane system is designed for long service life and backed by an extended-wear warranty.

Eagle One Roofing Contractors Inc. of Astoria, N.Y., a certified applicator of the Kemper System, applied the waterproofing system. The two-part resin system is designed to fully adhere to the substrate, and is fully reinforced with fleece. The resulting membrane is completely seamless and unaffected by ponding water and ice. According to the manufacturer, it resists exposure to UV light, chemicals, oils and solvents. It is impervious to bio-deterioration and is both root- and rot-resistant, so it is also ideal for green roofs and landscaped areas.

The supporting structure below the roof was designed to carry the water load, with an allowance for heavy snow or ice buildup. The roof deck is concrete slab and includes a layer of rigid insulation below the waterproofing.
With a price tag of more than $630 million, the Belfer Medical Research Building is a 19-story model of eco-social design. Sustainability features include a storm water detention system on the roof.

membrane for added energy efficiency. The gravity-fed drainage system was carefully sized to control the speed of drainage without the use of pumps, sometimes required for rainwater detention systems that use holding tanks. On the roof sections, the waterproofing sections were topped with concrete pavers on a pedestal system.

**LEED GOLD PROJECT**

Construction at the Weill Cornell Medical College, both interior renovations and new construction, is designed to meet a minimum LEED Silver status. This project achieved Gold certification, the nationally accepted benchmark for the design, construction and operation of high-performance green buildings.

On the south side of the building, Ennead created a double-skin, fritted glass curtain wall with openings and sun-shading devices that absorb the sun’s heat before it gets trapped inside, which would require the HVAC system to pump out more cold air. Continuous ribbon windows flood the building with natural light, and energy-efficient HVAC, lighting controls and water-conservation systems save on power and resources. The building’s green infrastructure is expected to shrink Weill Cornell’s energy bill for it by about 30 percent and reduce carbon dioxide emissions by about 26 percent compared to a building complying with the minimum requirements set by typical industry guidelines and standards.

**HIGH-TECH SUSTAINABILITY**

The building includes a high-tech, multi-zoned HVAC control system to manage the indoor environment within different spaces. Biomedical laboratories, for example, generally require special air filtration systems supported by high-volume air circulation. Each of the laboratory levels includes four fume vents to the outside, except for the chemistry laboratory on the top floor, which uses 40 vents. In addition to thermostats and humidity sensors, indoor spaces utilize occupancy sensors to assist in regulating the ambient indoor environment and lighting to improve energy efficiency.
Composite Slate Roof Key to New Construction Project

JACK LUCKS has an “architectural eye.” His dedication to creating attention-grabbing projects has served him well during the past 43 years as he makes design and product decisions related to a variety of projects with different architectural styles.

In recent years Lucks and his group, Continental Real Estate Companies, have focused on the creation of senior/assisted living facilities. A recently opened facility in Granville, Ohio has been well received, and Lucks, a founding partner with the group, credits the distinctive look of the building’s composite slate roof as a key to its curb appeal.

ROOF MATERIALS

The design goals included integrating the building with the surrounding area. “Granville is an older town, founded in the early 1800s,” Lucks notes. “There are lots of slate roofs in town that complement the Greek Revival style of this area. Having a composite slate roof on our facility that so perfectly replicates real slate was a smart decision.”

A composite slate roof from Davinci Roofscapes was chosen for the project. “The black Bellaforé Slate roof has the aesthetic look we wanted without the weight of real slate,” says Lucks.

Lucks points out that the Middleton project is a single-story building with a roof that’s highly visible from the street. “When you look at this building, half of what you see is the roof,” he says. “That made the roofing decision especially important for us.”

According to Lucks he has been “enormously pleased” with the authentic look of the composite slate roof. “It’s not an exaggeration to say that the Davinci roof has helped us gain tenants,” he says. “People look at the structure, see the brick and ‘slate’ exterior. It makes them take that crucial step to walk in our door.”

With 94 rooms, Middleton offers six levels of support for residents at the 92,000-square-foot structure. The facility provides restaurant-style dining, daily activities, an on-site theatre and nature paths, as well as laundry and housekeeping services, 24-hour licensed nurses and a beauty salon. “America’s population is aging,” says Lucks. “Our facilities help Americans age gracefully in beautiful settings that cater to their changing needs.”

PHOTOS: DAVINCI ROOFSCAPES

MIDDLETON ASSISTED LIVING
GRANVILLE, OHIO

TEAM

ROOF SYSTEM MANUFACTURER:
Davinci Roofscapes,
DavinciRoofscapes.com

PHOTOS: DAVINCI ROOFSCAPES
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Tips for Reducing Insulation Labor Time and Costs on Commercial Jobs

It’s no secret that the roofing industry continues to suffer a severe shortage of skilled labor, resulting in lost business and profits. Former National Roofing Contractors Association (NRCA) chairman of the board Nelson Braddy Jr. was quoted in the Wall Street Journal last fall saying his Texas roofing company had to decline $20 million in projects over the past two years due to worker shortages. “It’s the worst I’ve seen in my career,” he said.

While there is no silver bullet to fix this problem, using materials and methods that simplify installation can help you maximize the people you do have, and potentially even reduce material costs. It’s a win-win for improving profitability.

This article highlights some simple-to-use options for streamlining insulation work on re-roofing jobs and new construction.

MEASURING WHAT MATTERS
When it comes to insulation, roofers can choose from several commonly used rigid foam insulations: polyisocyanurate (polyiso), extruded polystyrene (XPS), and expanded polystyrene (EPS).

The first step in reducing insulation costs is to consider which metric matters most to your bottom line. As the job of insulation is to reduce heat loss through the roof assembly, many manufacturers promote their products’ R-value per inch of thickness. Although this can be helpful if the goal is to build the thinnest roof assembly possible, it says nothing about the material’s benefit vs. cost. To figure out which insulation products will give you the biggest bang for your buck, it is important to evaluate the R-value per dollar.

The table in Figure 1 (page 88) compares how rigid foam insulations stack-up for R-value per dollar. While specific R-value per dollar figures change frequently, EPS consistently rates highest when compared to other rigid foam insulations.

EASY, ECONOMICAL INSULATION SOLUTIONS
For roofing pros who select EPS insulations for their benefit/cost advantages, along with outstanding moisture performance and stable long-term R-values, following are five practical ways to help save tens of thousands of dollars, or more, depending on your job’s size.

1. BUILD-UP OF LOW-SLOPED ROOFS.
Converting a flat or low-sloped roof to a greater slope for better drainage typically requires roof crews to stack...
multiple layers of insulation. This can be a labor-intensive process with XPS and polyiso, as crews must haul and place numerous rigid foam sheets of only a few inches of thickness. By comparison, EPS insulation is available in blocks up to 40 inches thick. As some manufacturers will cut those blocks to virtually any slope and any shape to fit roof crickets, saddles, valleys and ridges, tapered EPS speeds insulation installation, and can reduce roof insulation costs up to 30 percent compared to other tapered insulations. The saved man-hours can be deployed to other jobs to help you build your business.

Additional cost savings result from reduced dumpster fees to dispose of insulation cut-offs.

2. ROOF RE-COVERS.
An easy-to-use option for roof re-covers is EPS panels pre-folded into bundles, and with polymeric facers on both sides. Such products are available in standard sizes up to 200 square feet, comprised of 25 panels that are 2 feet by 4 feet each. A typical two-square bundle weighs less than 11 pounds, so is easy for one person to carry.

Fan-folded bundles of EPS require fewer fasteners per square foot than most roofing insulations, and are less expensive than virtually every re-cover board. The man-hours needed to install fan-fold bundles are about 60 percent less than individual sheets. Material costs are also lower than wood fiber, perlite, or gypsum board. On large projects, the total savings can add up to tens of thousands of dollars.

3. METAL ROOF RE-COVERS.
Up to 70 percent of metal roofing jobs involve standing seams. Both architectural and structural standing seams make it challenging to create a flat, stable surface during roof re-covers. A simple way to insulate the roof and provide an even surface for other parts of the roof assembly is to install “flute fill” insulation. Such products fit between the spaces of the metal roof’s flanges and are designed to fit into place easily.

An advantage of EPS flute fill over other insulations is that it can be custom-cut to fit any metal roof flange profile. It also comes in a range of compressive strengths suitable for nearly any roofing application. EPS flute fill can save up to 25 percent in costs compared to similar polyiso products.

4. HIGH-TRAFFIC ROOFS.
For roofs that need additional strength to withstand foot traffic and severe weather, an ideal option is composite insulation. One product incorporates EPS as a lightweight, insulating and resilient insulation, while a polyiso layer serves as a durable, insulating cover board. Some composite products of this type carry a UL Class A fire rating for both combustible and non-combustible decks, and are compatible with a range of roofing membranes, including EPDM, TPO, PVC, CSPE, as well as low-sloped, built-up and modified bitumen membrane systems.

5. PLANTED ROOFS.
For planted roofs that include landscape contours for hills and valleys, roofers face the challenge of not adding excess weight while defending against moisture intrusion. An effective solution is provided by EPS geofoam. Successfully used in civil engineering and building projects for decades, the material is an ultra-lightweight engineered fill that can be used to create contoured landscape features such as hills and valleys. EPS geofoam weighs from 1 to 3 pounds per cubic foot.
depending on the product type specified, compared to 110 to 120 pounds per cubic foot for soil.

And, as EPS geofoam dries quickly and has minimal long-term moisture retention, it helps defend planted roofs from moisture intrusion.

The project team for Facebook’s MPK 20 building in Menlo Park, California, used EPS geofoam in the building’s 9-acre landscaped roof. Landscape contours, more than 400 trees and a half-mile walking trail create a relaxing, park-like setting.

SELECTING AN INSULATION SUPPLIER
Many domestic and foreign companies manufacture EPS insulation, but quality and capabilities can vary widely. To help streamline your insulation material and labor costs further, while ensuring a quality roofing job, it is important to evaluate manufacturers for the following:

- Technical support: What support services does the manufacturer offer that can reduce roofing contractor costs? Examples include design expertise, material take-offs, consultation on product substitutions, and in-field support.
- Customized products: Can the manufacturer supply custom-cut insulation components to help reduce field labor?
- Code compliance: Does the manufacturer have code acceptance reports for its products, including testing to industry standards? R

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<th>Insulation Type</th>
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Figure 1. R-Value per dollar for common types of insulation, including materials and labor.

* Because insulation material and labor costs vary by region, specific R-value per dollar figures change frequently, but EPS consistently rates highest when compared to other rigid foam insulations.

Flute fill insulation helps reduce labor costs on covers of standing seam metal roofs.
Composite Shake Roof Is the Answer for Re-Roofing Projects
It can be tiring to own real cedar shake roofing. There are cedar roof shingles that need replacing from time to time due to popping or warping, and insect infestations need to be dealt with regularly.

For Dave and Jeanne Schwab, the effort of cleaning and applying shake oil to their massive cedar shake roof every five years or so eventually wore them down. They loved the look of shake on their home in Mt. Vernon, Wash., but hated the maintenance aspects.

“Our home was built in 1993, and there’s a lot of roofing involved in its design,” says Dave Schwab. “Eventually the roof really needed to be replaced. We liked how the natural cedar roofing looked on the house, but when we went shopping for a new roof we wanted a cedar shake alternative.”

THE RE-ROOFING PROJECT
The Schwabs discovered DaVinci Roofscapes composite shake roofing tiles and were sold. “The authentic appearance of the DaVinci fake cedar shake sold us right away,” says Schwab.

“Then you add in the Class A Fire Rating, the impact resistance and the lifetime limited warranty and it was easy to make our decision.”

The large roof on the Schwab home is broken up visually by seven skylights and the addition of decorative European-designed ridge vents. The DaVinci Multi-Width roof, in the Mountain blend, now covers the home and attached three-car garage.

The house was re-roofed in 2015. “Every time I pull up to the house I still get a ‘wow’ experience,” says Schwab. “The color is perfect for our home. It looks so natural, yet we know we’ll never again have to spend another hour maintaining this roof. That’s the real joy of selecting synthetic shake shingles.”
**THE SEQUEL**

The Schwabs were inspired to build an outdoor shed by the cover of an old issue of Country Living magazine. “When we saw this potting shed on the magazine cover in 2002, we knew the style matched our home perfectly,” says Dave Schwab. “We purchased the plans from the magazine and constructed it in 2004 to hold our snow blower, bicycles, lawn mower and gardening tools.”

In 2016, the real shake shingles on the shed needed replacing, and the Schwabs knew exactly what they wanted to do.

“It was very exciting to complete this DIY project a decade ago,” Jeanne Schwab says. “We wired it with electricity, and added insulation and pine tongue and groove. For the floor, we put in a black and white checkered vinyl. Now, up on the roof we’ve replaced the shake and added DaVinci simulated shake roofing that matches our home. We even used it on top of the cupola.”

“Now we have two structures on our property with unified looks,” says Dave Schwab. “Having the potting shed completed gives us a great deal of satisfaction ... and we’re sure the new DaVinci roof will serve us well for many years to come.”

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**ROOF MATERIALS**

ROOF SYSTEM MANUFACTURER: DaVinci Roofscapes, DavinciRoofscapes.com
Shingles, Shelter and Security

 Contractors and Manufacturer Team Up to Make Life Better for Those in Need

In a small town in Florida, a disabled Army vet received help when he was on the verge of losing his home because he couldn’t afford a new roof. In Kansas, proceeds from the raffle of a new home went to help fight childhood cancer. In Texas, victims of a damaging storm and unscrupulous swindlers had new roofs installed and their faith in people restored.

In each case, Atlas Roofing and local contractors stepped in to nail shingles and improve people’s lives, just as they do across the nation on a regular basis.

“An installed roof with quality roofing products can represent a big improvement in someone’s life,” says Kirk Villar, vice president of sales and marketing, roof shingles and underlayment at Atlas Roofing Corporation. “Shingles can help build communities, and we are proud to partner with roofing contractors to help make that happen.”

Here are three stories of Atlas Roofing and local contractors making life better for people who needed help.
Assisting a Veteran

On a cul-de-sac in Ocoee, Fla., neighbors still take care of one another. Art Burkholder, a 74-year-old retired and disabled veteran, recently discovered that human kindness, compassion and charity are still alive and well in our world.

Burkholder, a former Army sergeant, has lived in his home since 1989. He suffered a stroke in 1998 and a heart attack just two years later. Now Burkholder, who lives on a modest fixed income, is battling cancer.

When Burkholder’s home insurance lapsed, he couldn’t get it renewed without having a new roof installed. And without insurance, his bank placed him into a state of forced foreclosure.

He couldn’t afford to fix the roof, and he couldn’t afford to move. Burkholder received the foreclosure notice in August of 2016. In a panic, he finally went to neighbor Tami Kneidinger for help.

Those who live on Burkholder’s street are like a close-knit family. Kneidinger, who lived next door to Burkholder for 15 years, and his other neighbors put together a GoFundMe campaign to raise the money needed to install a new roof. They wanted to keep him at home, near the people who care about him.

The campaign raised about a third of what was needed to fix Burkholder’s roof—nowhere near the goal. So Kneidinger and another neighbor started writing letters asking for help.

One of the letters came to the attention of Victor Osage of G & A Certified Roofing in Winter Park, Fla., and Colin Hobbs of Atlas Roofing, who agreed to supply Burkholder with 33 squares of shingles directly from Atlas.

Osage and his G & A Roofing team replaced the roof in November 2016.

“The crew fixed several leaking deck boards, cut away low-lying tree branches and installed Atlas Pinnacle Pristine asphalt shingles and Summit 60 synthetic underlayment.

“It was an honor to be able to do this for Mr. Burkholder,” Osage says. “He is a wonderful man and obviously loved by his entire neighborhood.”

Thanks to G & A Certified Roofing and Atlas Roofing, together with Kneidinger and all of Burkholder’s generous neighbors, the Army vet is no longer facing foreclosure. “If it weren’t for Atlas, none of this would have worked out,” says Kneidinger.

Keeping Dreams Alive

Since 1962, St. Jude Children’s Research Hospital has devoted itself to finding cures for diseases and treating sick children. Founded by stage and screen comedian Danny Thomas and two friends on the premise that “no child should die in the dawn of life,” discoveries at St. Jude’s have changed
the way doctors treat children with childhood cancers and other life-threatening illnesses.

As a nonprofit organization, St. Jude’s depends on events such as the Dream Home Giveaway for ongoing financial support. Held in 30 locations around the nation this year, the Dream Home Giveaway raffles off a new home built by contractors who donate time and materials to the project. Tickets are $100 each and only a limited number are sold in each city. All proceeds go to St. Jude.

The St. Jude Dream Home was constructed in Derby, Kan., a suburb of Wichita, by Nies Homes.

(Inset) Bella Bush is the face of this year’s St. Jude Dream Home project in Wichita.

Bella Bush, the face of Wichita’s St. Jude Dream Home, is a true example of determination and positivity in the face of almost insurmountable odds. At 18 months old, Bella was diagnosed with a tumor on her optic nerve. She had surgery, but doctors were only able to remove a quarter of the tumor because

“The St. Jude Dream Home represents proof that good people can come together for something that is much bigger than any one of us.”

of its location. Had doctors removed the entire tumor, she would have been blind. Bella soon began her first round of chemotherapy, which lasted a full year, sending her cancer into remission.

Unfortunately, in 2016, Bella’s family learned her tumor had returned. Just as Nies was breaking ground on Kansas’ first St. Jude Dream Home Giveaway house, Bella began treatment again and, despite several different types of chemo, the tumor continues to grow.

Nies Homes Vice President Curtis Cowgill is inspired by Bella’s determination. “When you think about St. Jude Children’s Research Hospital and all it does to provide comfort to families and children facing the battle of their lives, it touches something in all of us,” Cowgill says.

“We are honored to be a part of the St. Jude Dream Home Giveaway builder team. This home-building experience is a community effort,” he continues. “And it’s humbling to build a home together knowing the result will help ensure that the work of St. Jude Children’s Research Hospital can continue, bringing smiles and care to its young patients and families while finding cures to end childhood cancer.”

Dan Phillips, owner of R. Phillips Roofing Inc., has served the Wichita community for 36 years. After working on the first St. Jude Dream Home, Phillips was eager to participate again. Crews installed Atlas Summit 60 synthetic underlayment, followed by GlassMaster Performance Fiberglass Shingles. The roof was then capped with 50 squares of Pro-Cut Hip & Ridge shingles.

The roof of the St. Jude home included all of the components to qualify for the Atlas Signature Select Roofing System. The premium protection period includes full system coverage, non-prorated labor and materials, and tear-off and disposal costs when needed.

“The St. Jude Dream Home represents proof that good people can come together for something that is much bigger than any one of us,” Phillips says. “I made sure to get four of my best guys to lay down the roof in just over a day. We’re all very proud of the work we accomplished.”

Atlas Roofing is proud to be part of St. Jude’s mission and congratulates Nies Homes and R. Phillips Roofing for their support of the St. Jude Dream Home. The quality roofing materials will help the home protect its occupants and also be a symbol of hope for children afflicted by serious illnesses.

of Cypress, Texas, Atlas Roofing and StormScamHelp.com. The new roofs were provided to the homeowners free of charge.

“My husband has heart trouble, and I thought he was going to have a heart attack worrying so about it,” Bobbye Calfee says. “It’s been marvelous that somebody came in and helped us.”

Local media documented the homeowners’ plight and the assis-

Righting Wrongs

Tink and Bobbye Calfee were devastated when they realized they were victims of an $11,000 roofing scam. The couple put their trust in a contractor who took their money and promised to fix their roof after a series of storms ripped through their Conroe, Texas, neighborhood in May 2016.

Today, the Calfees and other swindled homeowners in their neighborhood have new roofs over their heads thanks to Always Great Service (AGS) tance offered by StormScamHelp.com, a watchdog organization founded by Genesis Contractor Solutions (GCS), based in Englewood, Colo. GCS partnered with Atlas Roofing and AGS to put new roofs on each of the affected homes. Atlas Roofing donated the shingles while AGS provided the labor. Diane Peoples, Atlas Roofing’s marketing and communications manager, traveled to the community in Conroe and says “this was a coordinated effort to make things right and give back to the community.”
Since the roof is such a prominent exterior component, figuring out how it plays into the home's color palette is crucial. Karen E. Laine and Mina Starsiak's home is shown here.
Making the Case for Color

ResearchUnderscores the Importance of the Roof on a Home’s Perceived Value

Could anything be more ubiquitous in our daily lives than color? From “feeling blue” to “going green,” color is often used to describe feelings, explain behaviors and describe surroundings.

As a form of self-expression, color has long been a staple of home design and decor, and the roof is no different. Third-party research and focus groups conducted by Owens Corning makes it clear that consumers are seeking inspiration inside and outside their homes. Color can be a critical tool in making a style statement on the home’s exterior.

But there is often a gap between homeowners’ use of color inside and outside their home—particularly when it comes to the roof. Too often, homeowners and contractors opt for the “safe choice”—choosing black, brown, or gray shingles. What are homeowners looking for when it comes to the exteriors of their homes? Who do they trust to guide them in choosing exterior roofing colors? How does a color-coordinated home impact perceived value?

To glean insights regarding these questions, Owens Corning conducted qualitative and quantitative research with homeowners and real estate professionals. In conversations with homeowners, it quickly became clear that consumers are looking for ways to differentiate their homes’ exteriors and express their personal style. Homeowners told us they want to feel proud of their home and the statement it makes about them when they turn into their driveway. They want the exterior of their home to reflect their personality and distinguish their home from others on the block. In fact, some homeowners joked about their homes, saying things like theirs was “the fifth brown house on the left.”

RETURN ON INVESTMENT

Of course, homeowners are also concerned about the return on investment a home improvement—including a new roof—delivers. In the fourth quarter of 2016, Owens Corning retained an independent research firm to better understand how a home’s roof affects perceived value in the minds of consumers and real estate professionals. The conclusion? Color contributes value! Ninety-four percent of consumers and 91 percent of real estate professionals agreed that a color-coordinated exterior increases the value of a home. Additionally, 91 percent of consumers and 87 percent of real estate professionals agreed that a roof with a color coordinating with the rest of the exterior increases a home’s value. Clearly, homeowners are seeking both inspiration and a return on their home improvement investment—and color delivers both.

Despite the power of color to inspire and add value, why are so many roofs black, brown, or gray? Color is personal, and while homeowners confidently make decisions regarding countertop
Consider Color, Contractors
By Chris King

"YOU CAN be a more profitable, more well-liked contractor if you talk to your clients about color."

Those are the words of Karen E. Laine, the mother half of the mother-daughter team who started second careers rehabbing houses in their neighborhood near downtown Indianapolis. Laine and her daughter, Mina Starzak, discovered they had a passion for home restoration and started their own company named Two Chicks and a Hammer. Laine and Starzak also currently star in the HGTV series "Good Bones," which chronicles their projects repairing and rehabbing houses. They shared their insights on exterior design and the importance of roof color with Roofing.

Laine and Starzak note that people have strong emotional connections to color. They often use color to express their personality in both the interior and the exterior of the house. Since the roof is such a prominent exterior component, figuring out how it plays into the home's color palette is crucial.

Residential roofing contractors can set themselves apart from the competition if they can help homeowners find the right color combination for their home, notes Laine. "If a contractor can say, 'I see you have a yellow house and a bright red door. I have some roof choices that will go well with that, and allow you to make changes over time,' your clients are going to think you are a genius."

Laine urges contractors to make the most of expanded color choices in shingles available today. "If you are a contractor, carry samples with you, walk outside the house and show them how the shingle is going to enhance the exterior appearance and the color of the house," she says. "Because it's not just one-dimensional color; shingles are multi-dimensional. Some of them have red, and brown, and yellow. Some have blue and brown and yellow."

Looked at from a distance, you might not see those distinct colors, but they inform the color spectrum of the roof and how it looks with the house."

Laine recommends using a paint fan to help determine colors for other elements of the home. "There are usually six colors on each blade of a paint fan. The top one is the lightest and the bottom one is the darkest. If you're not secure in your color choices, you can just pick the medium color in the paint fan for your siding, the darkest color in the paint fan for your door, and the lightest color for your trim. Then you are guaranteed that they are all going to coordinate, and you're not going to have something in the end that clashes."

Others might want to consider contrasting colors. "If you are feeling a bit more adventurous, then pick out a different color for the door," says Laine. "For each homeowner, it's a very individual opportunity to be creative and see how color feels to you. And the great thing about the colored roofs out there is because of the way they are made, they complement a wide variety of color combinations on a house."

Taking the time to explore different roof colors gives the contractor the opportunity to connect with the customer and build trust. Starzak recommends that contractors take advantage of online tools that can be customized to demonstrate the ways different colored shingles will look on the house. "You can scan in a picture of your house and see how different paint colors and roof colors would look in just a few minutes," Starzak says. "If you were thinking of painting your house a different color, you can see which roof would go with it. There are online tools for everything now."

The right color combination can also make a home easier to sell when the time comes. "From a real estate perspective, there are a lot of things that go into the first impression of the outside of the house, including the siding and the landscaping or lack thereof," notes Starzak. "A huge part of that initial impression is the roof, so you don't want to miss that opportunity."

Laine agrees. "A prettier house is going to be easier to sell, and the dimension that a colored roof adds to a house makes it prettier," Laine says. "Aesthetics are important. You have to consider color, all you contractors out there. Look at all that alliteration—consider color, contractors! That's your title, right there. I'll give you that for free—it's not trademarked."
granite or bedroom paint colors, they often defer to the contractor when it comes to their home's roof. Contractors have historically not been trained to serve as design experts, so it's easy for a contractor to recommend a “safe” shingle color. But going for a neutral shade can mean a missed opportunity to boost the home's curb appeal. Representing 40 percent or even more of a home's exterior, the roof can be a powerful design element.

While roofing contractors are comfortable talking about the functionality of a roof—how the various parts of the system work to seal the home, defend the home and help a home breathe—they have traditionally been reluctant to take on the role of design expert. How can they move the roof conversation beyond functionality to also include curb appeal?

REACHING HOMEOWNERS
Owens Corning has created complimentary, easy-to-use tools and resources to assist contractors and homeowners in the shingle color selection process. These free color and design tools help homeowners integrate their personal color preferences into their home’s roof. Style boards on the Owens Corning website can help inspire homeowners to visualize how trending colors might be applied to their homes’ exterior, including the roof. Homeowners can also order sample shingle swatches directly from the Owens Corning website, allowing them to place the various swatches against their current trim, paint, and exterior finishes.

A fun place to start for homeowners is the online Roofing Color Compass Color Personality Quiz, which features 10 fun questions that help lead a homeowner to their “color personality.” It also offers up the Owens Corning shingle colors that complement their personality. From there, the Owens Corning Design EyeQ Visualization Tool makes it easy for homeowners to upload a photo of their home and virtually “try on” different shingle colors.

Style-conscious homeowners often await the announcement of spring and fall fashion shades announced by the PANTONE Color Institute. Owens Corning worked with Leatrice Eiseman, global color guru and executive director of the PANTONE Color Institute, to pair popular trending colors with Owens Corning Duration Series shingles to show homeowners how easy it is to coordinate their home’s exterior with popular “fashion” colors used on doors or other exterior accessories, such as shutters.

During the 2017 International Builders Show in Orlando, Owens Corning announced Sedona Canyon as the 2017 Shingle Color of the Year. Sedona Canyon is a good example of a shingle color designed to work with both traditional and fashion-forward exterior colors. A 2018 Shingle Color of the Year will be announced later this year along with inspiring new color pairings.

While the use of color on homes’ rooftops is still expanding, color has long been recognized as an important design element. Consider the following quote from celebrated Spanish architect Antoni Gaudí, whose style defined many late 19th and early 20th century buildings: “Color in certain places has the great value of making the outlines and structural planes seem more energetic.”

Connecting color to a home’s roof can boost curb appeal and potentially increase the home’s perceived value in the eyes of consumers and real estate professionals.
A Hands-on Approach

TPO System Delivers Quick Installation, Energy Efficiency for Company Headquarters

If you want it done right, do it yourself. Company owners Todd Westby and Tim Westby take a hands-on approach to running TurnKey Corrections, the River Falls, Wisconsin-based company that provides commissary and jail management services to county corrections facilities nationwide. The Westby brothers also take pride in the fact that TurnKey manufactures the kiosks it provides to its clients and develops and owns the proprietary software used to run them.

The insulation and membrane were mechanically attached using the RhinoBond System from OMG Roofing Products. The specially coated metal plates are used to fasten the insulation to the roof deck and an electromagnetic welder is used to attach the membrane to the plates.
So, it’s perhaps not surprising that, when building the company’s new headquarters, Todd Westby, the company’s CEO, founder and general manager, served as the general contractor. Or that he had definite ideas regarding the roofing system that would be installed. Or that he was more than willing to get his hands dirty during the installation process.

Founded in 1998, TurnKey Corrections helps corrections facilities streamline and lower the cost of delivering a variety of services to inmates, including commissary, email and email-to-text communication, video visitation, law library access, and paperless intra-facility communication and documentation. Following several years of robust growth, the company had outgrown its three existing buildings. So, it constructed a new 115,000-square-foot facility to bring all operations, including 50,000 square feet of office space and a 65,000 square-foot warehouse where commissary items are stored prior to shipment to corrections facilities, under a single roof and accommodate future success.

“We wanted to be involved in the project from beginning to end so we knew what we were getting and how

TurnKey Corrections constructed a new 115,000-square-foot facility in River Falls, Wis. A white TPO roof system was chosen for the project because it would help the company meet its installation and warranty goals while enhancing the building’s energy efficiency.
The TPO roofing system was constructed over a 22-gauge metal fabricated roof deck. In this photo, crews lay out the 60-mil white TPO membrane from Mule-Hide, which was installed over two layers of polyiso insulation.

it was built,” Todd Westby says of the decision to keep construction management in-house. “We wanted to know about anything and everything that was being built for the company in this building.”

In planning the project, Westby initially set two key criteria for the roofing system: that the building would be made watertight as quickly as possible so concrete slab pours and other interior work could be completed, and that the roof would be covered by a warranty of at least 20 years. The design-build firm’s initial plans called for a ballasted EPDM roofing system, but Rex Greenwald, president of roofing contractor TEREX Roofing & Sheet Metal LLC of Minneapolis, suggested a white TPO system, noting that it would meet the quick installation and warranty goals while also enhancing the building’s energy efficiency. Westby was intrigued and, after some research, agreed to the recommendation. In addition to helping reduce cooling costs during summer months, the reflective surface would allow a blanket of snow to remain on the roof during winter months to provide additional insulation.
THE ROOF SYSTEM

The TPO roofing system included a 22-gauge metal fabricated roof deck; two 2.5-inch-thick layers of Poly ISO insulation from Mule-Hide Products Co., with tapered insulation saddles and crickets to aid drainage; and 811 squares of 60-mil white TPO membrane from Mule-Hide Products Co. The insulation and membrane were mechanically attached using the RhinoBond System from OMG Roofing Products. Cast iron roof drains, designed and installed by a plumber, were used rather than scuppers and downspouts—a practice that the TEREX team strongly recommends to prevent freezing during the cold Upper Midwest winters. Walkways lead to the mechanical units, protecting the membrane from damage when maintenance personnel need to access the equipment.

The TEREX team finds the RhinoBond System to be the most efficient and economical attachment method for TPO systems. Specially coated metal plates are used to fasten the insulation to the roof deck and then an electromagneticic welder is used to attach the membrane to the plates. The membrane is not penetrated, eliminating a potential entry point for moisture. And while other mechanical attachment methods require the crew to seam as they go, the RhinoBond System allows them to lay the entire membrane (a task which must be completed in good weather conditions) at once and go back later to induction weld the seams and plates, which can be done when Mother Nature is slightly less cooperative.

Greenwald estimates that the switch from the originally specified ballasted EPDM system to the TPO roofing system and RhinoBond System shaved at least 10 percent off the installation time and reduced the roof weight by 10 pounds per square foot.

Having Westby on-site as the general contractor also sped up the project considerably, Greenwald notes. “He was a huge asset to all of the subcontractors,” he explains. “We could get construction questions answered quickly and could talk through issues and procedures on a timely basis.”

And the most memorable moment in the project for Greenwald was seeing Westby working side-by-side with his crew. “One day we had a delivery truck show up, and Todd jumped on the forklift and helped us unload the truck.”

As sought from the project’s outset, the roofing system is backed by a 20-year, no-dollar-limit labor and material warranty.

With one winter of use in the rear-view mirror, the roofing system has exceeded Westby’s expectations. Warehouse space was doubled, but heating costs have been cut in half. The 10-unit heating system also is able to keep the warehouse a uniform temperature, without the cold spots that were common in the old building.

“It really is a beautiful, very efficient and organized-looking roof,” Greenwald says.

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Roofing Torch Safety

BACKGROUND

In 1986, the Midwest Roofing Contractors Association (MRCA), in conjunction with industry organizations, the Asphalt Roofing Manufacturers Association, and the United Union of Roofers, Waterproofers and Allied Workers, developed a curriculum to train roofing workers in the safe application of torch-applied roof systems. This program was named the Certified Roofing Torch Applicator, or CERTA, program.

In 2003, insurance industry representatives approached NRCA to address concerns about an increase of losses and incidents involving torching activities conducted by roofing workers. One prominent insurer experienced over $7 million in roofing torch-related claims in 2002 spread over more than 30 separate occurrences. The need for enhanced work practices and focused safety training to address torching activities became apparent, and NRCA arranged with MRCA to adopt and revise the nature of and deliverables offered by the CERTA program.

CERTA now offers a unique, comprehensive certification program in which authorized trainers deliver effective behavior-based training to roofing workers who install polymer modified bitumen roof systems. CERTA-authorized trainers undergo a rigorous full-day training session that includes classroom and hands-on instruction in propane safety, hazards related to torch use, proper techniques for safe installation of polymer modified bitumen, and development of training skills. Individuals who successfully complete all aspects of the program then are authorized to deliver training, under the CERTA protocol, to workers who qualify as certified roofing torch applicators.

The latest market survey conducted by the National Roofing Contractors Association (NRCA) shows the use of polymer modified bitumen as a percentage of all new roof systems, installed both in new construction and re-roofing projects, comprises about 10 percent of the total low-slope market, according to members responding. The significance of that share of the market for polymer-modified bitumen also highlights the importance of proper training in the use of roofing torches, the most common method for installation of such systems.
CERTA now offers a unique, comprehensive certification program in which authorized trainers deliver effective behavior-based training to roofing workers who install polymer modified bitumen roof systems.

MRCA continues to work with NRCA to make sure the program is up-to-date and uses the most effective procedures to develop authorized trainers and enhance the curriculum. Since its inception, roofing contractors who have trained their workers under CERTA generally have experienced fewer torch-related fires, injuries and property damage. Insurance industry claims also are a testament to the CERTA program success—the insurer that experienced over 30 torch-related claims in 2002 now can count such average yearly claims on one hand with a significantly reduced average yearly dollar loss.

SAFETY SPECIFICS
Trainees in a CERTA class spend a great deal of time on some specific aspects of the use of roofing torches to install a polymer modified bitumen roof system. Those specifics have a direct correlation to keeping workers and others safe, and minimizing the likelihood of property damage. First, the CERTA curriculum focuses on the inherent danger of roofing torches and discusses assessing job hazards and establishing controls for torching operations. Details cover the proper personal protective equipment to minimize or eliminate exposure to burns and the critical need to handle propane properly and make sure equipment is in good condition.

Pre-job planning enforces the
significance of determining the hazards unique to the particular worksite and developing the necessary controls to address those hazards. In addition to general working conditions and weather issues that may influence job site safety, specific hazards such as the presence of a combustible roof deck, roof penetrations, concealed attic areas and combustible flashing substrates are addressed and suitable controls are suggested and discussed. Also, attendees get comprehensive information on the types and ratings of fire extinguishers and how they are used most effectively along with the minimum CERTA requirements for appropriate fire extinguishers that must be on a roof. In fact, CERTA requires a fire extinguisher capacity far exceeding OSHA’s fire protection requirements during torch operations—two 4A60BC-rated fire extinguishers within 10 feet of torching activity.

Another important fire prevention protocol is the use of a fire watch system. The intent of the fire watch is that a dedicated individual is charged with inspecting the work area after the last torch, or other heat generating tool, is extinguished. Ordinarily, this is accomplished visually, but it can also be done more scientifically with the use of temperature sensing infrared thermometer. These are inexpensive tools that read the temperature of an area that the tool is pointed at and display the reading in degrees on the screen. The fire watch individual would shoot various specific locations where hot work was done—for example, at roof penetrations, flashings or field areas—noting the temperature for each spot. This procedure would be followed for the same spots a short time later, and if the temperature had increased, the possibility that a fire under the roof surface could be a source of the increased heat being generated would require further steps to determine the nature of the heat increase and the proper action to take.

Historically, many industries and building owners have required a 30-minute fire watch be maintained after the last torch or other tool has been extinguished. Under the CERTA protocol, a two-hour fire watch is demanded of a CERTA roofing torch applicator. The fire watch must be maintained not just at the end of the day but at other break times, such as lunch, so that fires do not start when workers may be away from the work area or inattentive during break times.

Another key element of training for the CERTA torch applicator involves installation techniques that are intended to reduce the likelihood of a fire being started. The techniques include specified thermal barriers to protect combustible roof decks and substrate protection for flashing installations, along with an alternative torching technique that minimizes the use of direct torching.

CERTA WORKS
Installation of polymer-modified bitumen roof systems using propane roofing torches requires adherence to a number of safety procedures and an awareness of the hazards that workers may encounter. The CERTA program has a proven track record of enhancing the safe practices of roofing workers who install these systems and the roofing industry, building owners and the general public are all safer because of its development and use.
OCTOBER 12, 2017
Navy Pier, Chicago

OPENING KEYNOTE: Jason Roberts, chair of the Better Block Foundation board of directors. In 2010, Jason organized a series of “Better Block” projects, converting blighted blocks in southern Dallas into temporary walkable districts with pop-up businesses, bike lanes, café seating and landscaping. Better Block now is an international movement.

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Antis Roofing & Waterproofing Is Making a Difference

If the name Antis Roofing & Waterproofing sounds familiar, it’s probably because you’ve seen it in the trade press quite a bit lately. The Irvine, Calif.-based company received several awards at the 130th National Roofing Contractors Association Convention, including first place in the CNA/NRCA Community Involvement Award, which honors NRCA contractor members for charitable works. Two Antis Roofing employees, Narciso Alarcon and Manuel Cortez, received Most Valuable Player (MVP) awards from the Roofing Industry Alliance for Progress, and Alarcon was also named the Best of the Best by the Alliance and Professional Roofing magazine.

In March, the company’s founder and CEO, Charles Antis, was elected to the board of directors for the NRCA. Later that month, he was honored by Alzheimer’s Orange County for his volunteer work on behalf of that organization and his company’s community service projects. In April, Antis was named to the board of the Orange County Ronald McDonald House.

For Charles Antis and everyone else at the company, it’s been a whirlwind year. “Someone was joking that it’s like Academy Award season,” Antis says. “I don’t want to get too caught up in it, but this may never happen again, so I want to enjoy every moment of it. I want to make sure my team enjoys every moment of it. It’s been really nice to be recognized for stuff that we think is important because it shows us that other people think it’s important, too. And there was a period where maybe it didn’t feel that way. It feels like it’s working and we’re making a difference, and that’s why it feels pretty awesome today.”

FILLING A NICHE

For Antis, the company’s community service projects are inextricably linked to its purpose and mission as a company. He says it just took him a while to realize that fact.

Founded in 1989, Antis Roofing has 90 employees and specializes exclusively in work for homeowners associations. Most of the roofing work involves clay tile, but it also does a lot of asphalt shingle roofs, metal roofs, and single-ply systems—primarily PVC.

“Our only focus is HOA,” say Antis. “Our company services approximately 1,200 HOAs that average 200 units each. That’s 240,000 individual homeowners that could call us at any one time, so that’s a challenge.”

The demanding HOA market keeps the business running on all cylinders, notes Antis.

“Because we were focused on this super-high customer care market, we developed some really great qualities as a business,” he notes. “For example, we photograph virtually everything we touch, everything we see, everything we do. We upload about 6,000 images per day because that’s what it takes to protect all of our stakeholders, from our material suppliers to our manufacturers to the individual homeowners association board members and homeowners. We memorialize everything that occurs with photographs and notes in our enterprise resource planning (ERP) system, much like a property manager would.”

In the drive to improve his company, Antis asked himself a lot of questions,
including basic questions about what motivates him and the true purpose of his company. “Somewhere along the line we discovered that our purpose is to keep families safe and dry,” he says. “That’s what helped lead us to our philanthropy. It brought us back to the community.”

**FINDING A PASSION**

Antis believes the company’s community service efforts help employees find their passion and make a connection with the community. “Our philanthropy is tied to our central theme,” he notes. “We believe everybody deserves an opportunity to live in safe, dry home and have a happy family there.”

The first board Antis joined was for Habitat for Humanity in Orange County, which embraces the same goal. He also serves on NRCA committees and will begin serving on the NRCA board for the same reason. “I’m able to give back in a way that lifts me, my people, my stakeholders and my industry,” he says. “I’m also on the board of Ronald McDonald House, which is again giving people a safe, dry place to live while they visit their sick children in the hospital. All of these board memberships that I do are focused on keeping families safe and dry, which is the central mission of Antis Roofing.”

The company has worked with Habitat for Humanity since 2009, and it also helps other nonprofit organizations by repairing, maintaining and replacing their roofs at no charge through the Antis Foundation. “This year we are keeping 15 different nonprofits dry,” he says. “In fact, we have two complete re-roofs we are setting up this summer for the Boy Scouts of America and America Family Housing.”

Everyone at the company has found community service projects personally rewarding, notes Antis. It’s also helped the business grow and thrive. “We’ve discovered that the more we give, the more we grow, the more money we make, and the more we can give,” he says. “We are in this awesome little cycle where we have purpose in our work. We understand that there is something magical happening right now, and we just have a hard time saying no when somebody has a leaky roof.”

Antis believes his purpose in life is to ignite passion in others to create social change. “We believe that we can bring that passion out in every worker in our company and all of our stakeholders. We have this crazy philosophy around here that we are changing the world, and because of that, we are changing the world. And that’s freaking awesome.”

**CHANGING THE WORLD**

Antis is extremely proud of the awards his company has won. He is also extremely grateful. “Winning those awards from the roofing industry just filled my heart with such gratitude,” he says. “It was just awesome to experience the way our whole company received the Community Involvement Award. We all feel like we are making the roofing industry a better place. We all feel at Antis Roofing that we are working to lift the brand and lift the paycheck of all 250,000 roofers in America. We have that purpose in what we do, and it was gratifying to win that award as a team.”
“We have this crazy philosophy around here that we are changing the world, and because of that, we are changing the world.”

— Charles Antis, Antis Roofing & Waterproofing

Alarcon and Cortez, the winners of the individual awards, both lead by example, according to Antis. “It also felt really good to see two of our really hardworking employees honored with MVP Awards, one of them the Best of the Best,” he notes. “We are really proud of our team members achieving recognition because we are family.”

Antis is thankful for the recognition his team has received, especially because it allows him to share his message with others in the industry. “We have this amazing story right now, and it is getting a lot of attention, but I don’t want to miss this opportunity to tell other business owners that this is not very complicated,” he says. “It’s just a slight shift in the way you look at business. It’s bringing a why—why you exist—into the picture. And suddenly, there’s a stronger culture. Everybody wants to come work here because there is purpose here.”

“We don’t consider ourselves lowly roofers anymore,” he concludes. “We consider ourselves roofing professionals that are truly making the world a better place. We have a very important service that we provide, and we provide it in the best way possible.”

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