



# Pikes Peak Chapter

The Construction Specifications Institute



September, 2016

Volume 48, No 1

This Month's Program:

Join us for our Fall Kickoff Luncheon—Wednesday, September 28

## American Tile and Stone

American Tile and Stone is 25 years old and is a Berkshire Hathaway Company. Their parent company is ACME Brick, a 125 year old company. They have a warehouse in Denver, and supply many other products besides tile and stone, such as the Triton products.

This month's program is brought to you by American Tile and Stone, and their territorial sales

representative **Bobbie Jo Kinsey**, who has been an NCIDQ certified interior designer for 17 years. Bobbie Jo has worked in all aspects of construction and design, both residential and commercial. She is active in the design community, working with ASID, IIDA, and currently sitting on the Board of CIDC. This month's program covers:



## Triton Watertight Systems

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**The presentation team will be building a watertight shower during the presentation!**

Date: Wednesday, September 28, 2016

Time: 11:30 a.m. to 1:00 p.m.

Southside Johnny's  
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Colorado Springs, CO 80903

No cost to Pikes Peak Chapter members

Please RSVP to Greg Gulliksen at  
(719) 473-7225 or

[gog@csnaarchitects.com](mailto:gog@csnaarchitects.com) by noon on  
Monday, September 26

## SPEAKER BIOS:

### PHILLIP J KOESTER, CTC

- ◆ 40+ years in the flooring industry.
- ◆ A flooring contractor specializing in all facets of flooring both residential and commercial.

### RICHARD ANDERSON

- ◆ 25 years in multiple facets of the building products industry
- ◆ Has led national and international sales groups in excess of \$1 billion for some of the industry's largest manufacturers.



**I** always loved the first day of school – clean notebooks, freshly sharpened pencils and the anticipation of what was to come. New information to learn, new people to meet, old friends to see again. I think of our first Pikes Peak Chapter CSI monthly meeting the same way. I'm very excited and honored to serve as our Chapter President this year, and hope to get a lot of feedback and ideas from our members as we progress through this 2016-2017 season.

**We** have some very exciting new developments that I want to share with you all, but I want to first take a moment and thank our hosts for our August Social Networking-Wine & Cheese Event. Chris and Michelle Lobato, and Trevor Martin from Old World Designs were gracious in hosting our event at their showroom, and Colarelli Construction generously sponsored the wine and cheese for the event.

We had a great turnout and learned a lot about venetian plaster and cast limestone architectural treatments. We were also treated to a presentation that included photographs of a variety of projects that Old World Designs has done in our area. If you were not able to join us for this event, I encourage you to stop by their showroom, see some examples of their work and definitely consider them for future projects.

**This** month's program looks to be equally exciting. Bobbi Jo Kinsey from American Stone and Tile will be presenting information on watertight systems, including CI mat, shower board, and shower pans. They have a new patented system that is waterproof, with shower installation that can be done in 45 minutes.

**Some** of you may have seen a quick announcement we made on our LinkedIn group page recently about our updated website. Over the summer break, we've been hard at work with StarChapter designing our new website. StarChapter is an association management service and website platform that is used by a number of other CSI chapters around the country, and we believe that it will help us tremendously going forward. Some of the changes you will see will include registration for our events on our website and the ability to manage your membership information online. Invitations to our monthly meetings will actually come from the new website platform and will allow you to simply click to RSVP. Guests will also have the ability to register and pay in advance for attending meetings. In addition, we anticipate growing revenue for the Chapter with increased opportunity for advertising on our website. If you are interested in advertising on our new website, please contact Rob Hixon for more information. By the way, the website address will remain the same; the content will just be enhanced. Our go-live date is Monday, September 12 so please take a few minutes to check it out!

**Another** exciting development I want to share is our new Chapter "Business Cards". Some of you may have already seen these cards that were designed to showcase our upcoming programs. We will have a number of them available at our September meeting and we encourage you to grab a few – keep one for yourself and share them with your contacts that are not CSI members to encourage them to join us for future meetings.

**Let** me end by thanking all of you for your membership in our Chapter. Our members are what drives those of us serving on the board. Our goal is to continue to provide programs and information that are relevant to our industry and educational to all. Please don't hesitate to provide feedback to any of the board members, and please also make sure to invite friends, co-workers and colleagues to our meetings.

**Joni Zimmerman, CSI Pikes Peak Chapter President**



Southwest Breezes is the CSI Southwest Region newsletter. You can find it at:

<http://www.csisouthwestregion.org/news/>

## Check out our LinkedIn Group Page!

In an effort to make communication a little easier for all, we've established a LinkedIn group specifically for Pikes Peak Chapter CSI members and invited guests.

If you receive this newsletter, you have probably received an invite to join the group. If you have not and would like to join the group, please send Joni Zimmerman a request either via LinkedIn or email ([jjzimmerman@tk-architecture.com](mailto:jjzimmerman@tk-architecture.com) or search Pikes Peak Chapter CSI on LinkedIn).

Our hope is that this group page will be a good forum for group discussion, as well as sharing of industry information and updates on coming events.

As always, we encourage everyone to participate and share your thoughts on how we can best use this tool.



IN FUTURE MONTHS WE WILL ASK YOU TO REGISTER FOR THE MONTHLY LUNCHEONS ONLINE INSTEAD OF SENDING YOUR RSVP TO GREG GULLIKSEN. INSTRUCTIONS ON HOW TO DO THIS WILL BE INCLUDED IN THE OCTOBER EDITION OF *THE INTENT*

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September – November Anniversaries

Charlie Lengal

17 years

Ben Pollock

5 years

*Correction: May's Intent incorrectly listed Jim Whitfield's anniversary at five years instead of Jim Whittaker's. Jim Whitfield has been a member of the chapter for 28 years.*



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**Upcoming Program Dates**

Folks, please make sure to mark your calendars for the following dates and join us for our Monthly Meetings!

**Wednesday, October 26**  
**Wednesday, November 30**  
**Wednesday, December 14**

## GAME-CHANGING TECHNOLOGY



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## “6 REASONS WHY CCPR?” By Kent Kile, CSI, CCPR Architectural Manager, PPG Paints

Comments have been bantered about in the CSI community about the value and worth of supporting the CCPR- Certified Construction Product Representative exam as part of the certification offerings of the Certification Committee and CSI. These comments are many times attached to a conversation about the financial viability of the entire Certification program. Granted, the CCPR exam does not get as many exam registrations as do CCS, CCCA and CDT. Many hours of effort and validation have gone into revamping the CCPR exam. I can personally attest to the work done to properly align the exam to the study documents, having chaired the CCPR sub-committee for the past three years. I would like to thank Lee Ann Slatery CSI, CCPR, TJ Gottwalt CSI, CCPR and Tan Diep CSI, CCPR, for the countless hours they have invested in making the CCPR exam overhaul a success. We are seeing an upswing in registration for the CCPR exam. Do numbers of registrants alone give value to the CCPR certification? The answer is no. There are other reasons why the CCPR certification has value and should be considered as part of the overall long term CSI certification offerings. The balance of this article will be devoted to discussing the reasons for “Why CCPR”.

**Reason #1-** The CCPR certification is non-respective of products or industries. The CCPR certification is open to any product representative that passed the CDT exam and can show three years of product representation experience. Most other industry exam programs are for specific products or specialties. The CCPR certification helps all product representatives gain a better understanding of the language of construction. Where the CDT exam gave the basic introduction to the language of construction, the CCPR exam takes it to a more advanced level. Remember taking Spanish I in high school? Well, the CCPR exam is more like Spanish III. It raises the level of conversation to a higher plane.

**Reason #2-** Passing the CCPR exam shows a commitment to product representation and to the industry represented. I have had doors open that were otherwise closed when an architect saw CCPR on my business card. The reason the door was opened was because the architect knew the value of working with a professional product representative. And to him that CCPR on my card was proof of my commitment to my industry. There are many architects that understand the time and study necessary to pass the CCPR exam. It is not an easy exam. But then again, sometimes things that are easy do not have long term value. If everyone can pass it, then what makes it special? The advanced CSI certifications- CCS, CCCA and CCPR should be and are written to a level that the prepared test candidate should be able to pass the exam.

that does not follow the rules and principles set forth by the construction documents. Learning the language of construction and understanding how to apply and interpret that language is powerful. When is the correct time to approach a design firm about a project? When should a product representative contact the general contractor instead of the architect? Is the subcontractor a party to the construction contract? What does being a party to the contract mean? These questions and so many more are answered and a base of knowledge gained that will be a constant help to product representatives, their customers, the rest of the Construction Team and ultimately to their company's bottom line.

**Reason #3-** CSI has a broad membership from Architects to General Contractors, Landscape Architects, Specification Writers, Lawyers and yes, Product Representatives. An exam to show the advanced competencies of the product representative component of CSI is as important as Specifications and Construction Administration. To deny product representatives the value of showing their professional knowledge would not be a fair thing for a diverse organization like CSI. The more value that architects give to the CCPR certification, the more product representatives, I believe, will sit for the exam. In the movie “Field of Dreams”, the star of the movie heard the whisper say “build it and they will come”. To paraphrase that classic movie, architects, “honor it and they will earn it.” If a product representative sees opportunity and value, they will invest in it.

**Reason #4-** Where else can a product representative learn the language of construction like they can learn it in CSI? One of the foundational principles of CSI is to educate the construction community. MasterFormat has become the standard for construction specifications. Passing the CCPR exam should be the gold standard for product representatives in the construction industry. CSI has created many “firsts” in communication. CCPR should not be four letters that prompts someone to ask, “What does that stand for?” It should be four letters that set apart those who have that certification to their credit. There was a time not so distant where that was the case. The proper use of the language of construction is needed as much today as ever. What if every product representative that a design or construction firm dealt with were CCPR’s? Do you think there would be a difference in the communication on projects, and thereby an improvement in the process in general? Wouldn’t it be interesting to find out?

**Reason #5-** CCPR certification sets product representatives apart from their competition. Most product representatives are looking for a competitive advantage. Education is one way to differentiate yourself from your competition. Certification programs like CSI’s exist in part to set the bar at a higher level for those who see value and are willing to invest in their futures. Are your competitor’s CCPR’s? If not, think about raising the bar and put yourself in an advantageous competitive position.

**Reason #6-** Knowledge is power. There is a lot that goes on in construction on a day to day basis that does not follow the rules and principles set forth by the construction documents. Learning the language of construction and understanding how to apply and interpret that language is powerful. When is the correct time to approach a design firm about a project? When should a product representative contact the general contractor instead of the architect? Is the sub-contractor a party to the construction contract? What does being a party to the contract mean? These questions and so many more are answered and a base of knowledge gained that will be a constant help to product representatives, their customers, the rest of the Construction Team and ultimately to their company’s bottom line.

We have covered just six reasons as to “Why CCPR” in these last several paragraphs. I challenge you to consider where you stand with the CCPR certification. What would CSI be like without it? What would the communication from your product representatives be like without it? In this day and age of “change is good”, might it be worth thinking about holding onto what has been a valuable tool for educating one component of CSI diverse members? We have a lot to be proud of in CSI. Our certification program is one element along with others that we can certainly use as recruiting tools for new members. I am proud to be a CCPR. Come join the ranks. I think you will be proud to be one too.



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**CSI Pikes Peak Chapter would like to thank **Rob Haddock****

**for agreeing to include his award winning seven part article series on metal roofing in the *Intent* each month. The article series won the Carl G. Cash Award from ASTM D 08 Committee on roofing and waterproofing. Part 1 of the series is included at the end of this newsletter.**

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# WHITE PAPER



## Part 1: Metal Roofing from A (Aluminum) to Z (Zinc)

### History and Materials

The roots and technology of metal as a cladding material date back to Biblical times. It has always been coveted as a premium roofing option but, historically, has been handicapped by a generally higher initial cost than many other options. Today's trends point toward evaluating the long-term costs of owning a roof as more landfills are overburdened with former building components that were discarded because of shortsighted budget-conscious building objectives. The life-cycle costs and environmental appeal of metal truly have some advantages.



▲ A lead roof was chosen for this cathedral in Köln (Cologne), Germany. The cathedral was built in the 13th century.

As metal roofing gains popularity and is specified for more projects, inevitably more failures will occur because of misuse or some perception that metal is magic and will do anything. While material

failures are highly unusual, the common pitfalls are inappropriate product selection to suit job specifics and misapplication of the selected products.

Using metal roofing systems involves a good deal of science, so making uninformed design decisions about materials and systems is a bit like playing Russian roulette. Some knowledge and understanding of basic elements of system design, material selection and installation will certainly improve the odds for a successful roofing project and a satisfied (and dry) customer for many years to come while (hopefully) reducing gainful employment for a slew of trial lawyers.

### Choosing Metal

One of the first issues to address is what sort of metal should be used. There are a number of choices available, including copper, terne, aluminum, stainless steel, carbon steel, zinc, lead and even titanium. All have pros and cons.

Some soft metals—copper, lead and terne-coated stainless—can have a life expectancy measured in centuries. They also carry a premium price tag and call for a high degree of fabrication and installation skill. I refer to these metals as “crafted roofing” metals. They are favored over coated steel in most of Western Europe. They are also favored here in the U.S. for high-end and historical applications. Their inorganic surface finishes and oxidation characteristics give them timeless beauty and maintenance freedom not enjoyed by organic finishes (painted metals), and they are easily solderable.

**There are a number of choices available, including copper, terne, aluminum, stainless steel, carbon steel, zinc, lead and even titanium. All have pros and cons.**

## Zinc

Titanium zinc, the soft, gray metal that enjoys immense popularity in Germany and other European nations, is also increasing in popularity here. It is a crafted metal and available in different surface finishes, including pre-weathered. Popular thicknesses are 0.7 mm and 0.8 mm.

Zinc requires some special considerations in fabrication to avoid fracturing of the finished product, as well as care in detailing and underlayment, because the material has a low tolerance for subsurface moisture. Zinc is also easily soldered, but be careful—its melting temperature is much lower than other solderable metals. With appropriate precautions, zinc can have an expected life of nearly a century. ASTM B69 “architectural rolled zinc” is the specification reference for zinc sheet.

## Terne

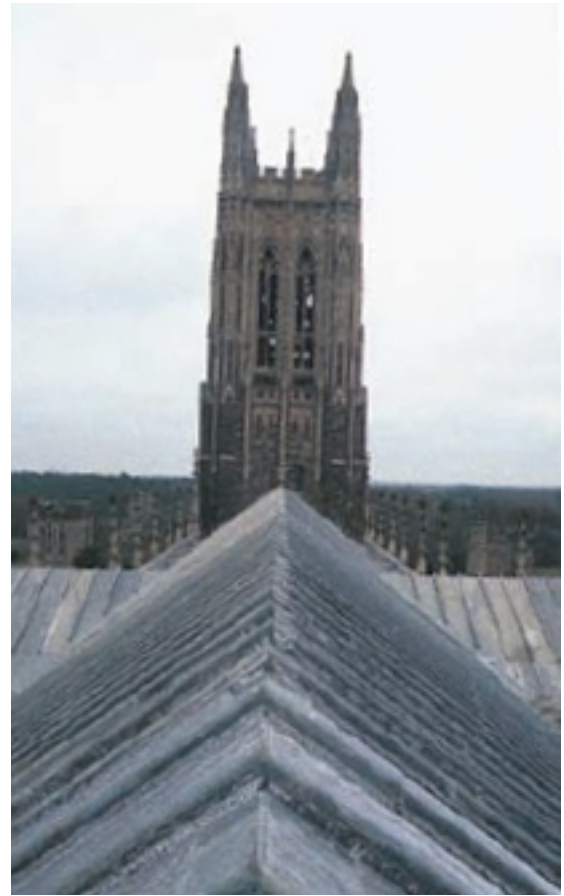
Terne has a life expectancy greater than many other options and a moderate cost, but it requires repeated maintenance (painting). Many early 20th century terne roofs can still be seen all over the eastern U.S. Use of this tin-lead alloy coated steel is responsible for the popular misnomer, “tin roof.”

Terne-coated stainless requires no maintenance and is a solderable material, but it bears a very hefty pricetag as does zinc, lead, titanium and lead-coated copper.

Terne is most commonly used in 28 and 30 gauge, while 26 and 28 gauge are most common for terne-coated stainless. Terne falls under the carbon steel classification of ASTM 625; terne-coated stainless is ASTM A240. There are no federal specification numbers for either of these metals.

## Lead

Lead is one of the longest-lasting metals known to man and has been used for more than a millennium on some of the most elegant castles and cathedrals throughout Europe. It may well outlast any other roof type, metallic or not, even in a salt-spray



▲ Lead-coated copper, one of the longest lasting metals, covers the roof of the chapel at Duke University.



▲ Greater detail and weather integrity can be accomplished with soft-crafted metals as shown on the Kronborg Castle in Denmark.

environment. But lead has a very high thermal coefficient and significant weight, so it must be appropriately designed. The most popular lead applications are “batten-roll” profiles using gentle, radiused folds and joints. Lead has many unique qualities and installation methods. “Lead burning” is practiced by fewer mechanics. Because of these facts, lead’s high cost and the bad rap it is receiving from environmental protagonists, the application of sheet lead is becoming a lost art in North America. It’s a pity. Metals like terne, copper and stainless, which have typically offered lead or lead alloy coatings, are now using other alloys like tin-zinc to have more “politically correct” public appeal.

### Copper

Architectural copper is specified as ASTM B370 and lead-coated copper is ASTM B101. Copper is designated by the ounce-weight, or the weight of 1 square foot of copper in ounces. A 12- by 12-inch piece of copper may weigh 12 to 48 ounces, depending on its thickness. The most common roofing sheet is 16 or 20 ounce; 16-ounce is 0.0216 inches in theoretical thickness while 24 ounce would be 0.0323 thick.

### Titanium

Titanium is an option that has recently found its way onto the roofing materials list through its use on the high-profile Guggenheim Museum in Bilbao, Spain. It is unique in appearance; has an inorganic finish; features a thermal coefficient even lower than steel; and offers incredible strength, durability and corrosion resistance. It also has an elite price tag above other metals and only one domestic producer, but it will almost certainly grow in use as more designers learn of its benefits.

The reference number for architectural titanium is ASTM B265 and the most commonly used size is 28 gauge in 4-foot widths. It is also available in coils and custom lengths.



▲ The Dome of the Rock, finished in 691 following the Arabian conquest of Jerusalem, is believed to have originally donned a gold roof. It is now gold-leafed aluminum.

### Aluminum

High-tensile aluminum is more affordable as a base metal. It also offers some structural capabilities, but has an extremely high coefficient of expansion, which causes a great deal of thermal movement. Still, this material is a cost-effective alternative for salt-spray coastal environments, as well as acid-rain environments where the longevity of coated-steel alternatives may be a bit lacking and budgets do not allow lead or lead-coated alternatives.

### **Aluminum is a cost-effective alternative for salt-spray coastal environments, as well as acid-rain environments.**

Although it is preferred for salt-spray and acid-rain environments, the detailing must provide for increased thermal movement, and fabrication methods must allow for its more brittle behavior. Aluminum is easily painted by modern coil-coating methods; organic color finishes can be provided at moderate added cost. Another benefit of this metal is that its installation practices are generally consistent with those of coated-steel products; therefore, the availability of installation contractors is widespread.

Aluminum is specified as ASTM B209. The most common thickness for roofing is 0.032 inches

with 0.040 inches running a close second. The most common sheet alloys are 3004 and 3105, and the tempers for these alloys are 3105–H14 and 3004–H36.

## Steel

Of all the available base metals, steel is the lowest cost and has excellent structural characteristics. Because steel rusts, a protective coating must be selected. Coated carbon steel is the most common choice for metal roofing in North America, primarily for economic reasons. It is only logical, then, that significant development and improvements for metallic coatings used on carbon steel have originated here in the U.S.

This does not imply that other materials do not have their place. In fact, when asked “What is the best roof on the market today?” my response is, “Lead, lead-coated copper or titanium on a 12:12 slope.” This response is not often debated in terms of accuracy but often frustrates the inquisitor because such slopes are rather uncommon and few budgets permit the use of these materials.

Because steel dominates the U.S. market at ratios of about ten to one, let’s focus on the alternatives available when using steel, such as gauge, coating type and coating weight.

The most common gauge thickness used in the commercial roofing market-place is clearly 24, although 26 is used on rare occasions. Because stringent wind test standards (such as ASTM E1592, and the new FM 4471) emerged following Hurricane Andrew and others, we also see more 22-gauge material being used. (The lower the gauge number, the thicker the material: 22 gauge is 0.030 inches minimum in thickness, 24 gauge is 0.024 inches and 26 gauge is 0.018 inches minimum.)

Many contractors and designers believe that, increasing, the thickness will alleviate the problem of “oil canning,” which is a rippling effect in the panel surface caused by stress. It is most pronounced in very flat panels with wider covering dimensions. The stresses that produce oil canning

are caused by a number of factors of which few, if any, have to do with the thickness of the metal. Hence, increasing thickness adds significant cost but may not eliminate the problem. A more cost-effective approach to resolving the potential for oil canning involves:

- Reducing panel width
- Working with a reputable manufacturer
- Using well-tuned roll forming equipment
- Using a panel profile with stiffening flutes in the flat area, if not objectionable
- Insisting on tension-leveled coil stock with close camber and flat-ness tolerances
- Ensuring there is adequate provision for thermal movement within the system’s design and installation
- Being sure the structure and/or deck is smooth and true-to-line

**Of all the available base metals, steel is the lowest cost and has excellent structural characteristics.**

Another little trick that can be used in architectural installations over a wood deck is to install a strip of backer rod between the deck and panel to cause the “flat” of the panel to arch slightly between seams. See the MCA Tech Bulletin



▲ The Roskilde Cathedral in central Denmark date back to 1170 and features a lead roof.

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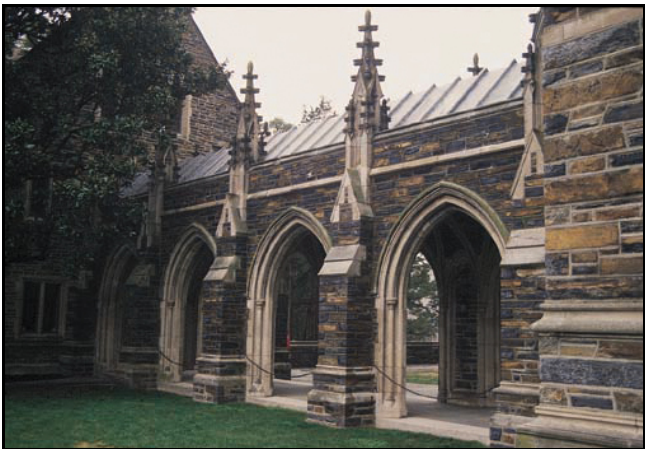
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Other specified variables in steel procurement involve tensile, yield strength, coating type and weight. The mechanical properties relate more to the manufacturing process than end use, so they are often considerations with which the contractor, designer or specifier need not be concerned.



▲ A copper roof tops the Kronborg Castle in Helsingør (Elsinore) Denmark (above, top), which was built in the 1500s and was the setting for Shakespeare's *Hamlet*. This LCC batten roll roof on the chapel of Duke University (above) was installed in the late 1930s. The craft of metal roofing was brought to North America through such European artisans as Paul Revere.

Coating type and weight, however, are rather important decisions, which should be understood by the contractor or specifier. This refers to metallic coating of steel coil, not paint coatings. All steel coil used in exterior applications is coated with a

metallic coating to protect it from corrosion. These coatings are all applied by the continuous hot-dip method and are metallurgically bonded to the base steel. Within the domestic market, there are three distinctive options for coating types: zinc, aluminum and alloys of the two. Within these types, there are also options concerning the rate of application of the coating, designated by weight per square foot (total of both sides). These application rates also result in different thicknesses of coatings.

*Rob Haddock is president of the Colorado Springs, CO-based Metal Roof Advisory Group, Ltd. He is a consultant, technical writer, training curriculum author, inventor and educator. In 2012 he became a charter inductee of Modern Trade's "Metal Construction Hall of Fame" for his many contributions to the industry.*

*Photos courtesy of Metal Roof Advisory Group, Ltd., Colorado Springs, CO, unless otherwise noted.*

Founded in 1983, the Metal Construction Association brings together the diverse metal construction industry for the purpose of expanding the use of all metals used in construction. MCA promotes the benefits of metal in construction through:

- Technical guidance
- Product certification
- Educational and awareness programs
- Advocating for the interests of our industry
- Recognition of industry-achievement awards
- Monitoring of industry issues, such as codes and standards
- Research to develop improved metal construction products
- Promotional and marketing support for the metal construction industry

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METAL CONSTRUCTION ASSOCIATION

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- Publications to promote use of metal wall and roof products in construction

For more information, please visit the MCA Web site at [www.metalconstruction.org](http://www.metalconstruction.org)

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