

*9 Captivating
Projects Inside*

*Blair Graphics
Monroe Hall
Ritz Carlton
Half Moon Bay*

*PLUS...
Special Feature on Pre-patinated Copper*

LOS ANGELES METRO RAIL STATIONS LOS ANGELES, CALIF.

Architects: Dworsky Associates, Los Angeles, Calif.
Miralles Associates, Altadena, Calif.
The Tanzman Associates, Los Angeles, Calif.

Sheet Metal Contractor: San Diego Sheet Metal Works
San Diego, Calif.

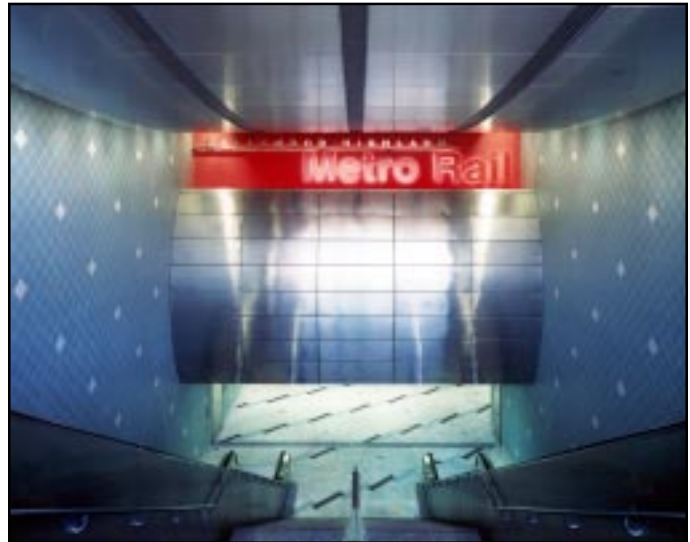
In one of the busiest cities in America, commuters and visitors are now treated to a beautiful environment while traveling underground. Completing work on several metro stations for the Los Angeles Metropolitan Transportation Authority, San Diego Sheet Metal Works assisted three different architectural firms in bringing their designs to life.

The Hollywood/Vine Station designed by Miralles Associates reflects the historic movie district it serves. Decorative palm leaves were installed onto the concrete palm tree trunks. Fabricated from .125-inch aluminum plate, the palm leaves were cut with a CNC CO₂ laser and finished with a powder coating. The station also has stainless steel star accents applied to the wall where beams intersected and crossed above the rail tracks. The stars were fabricated from stainless steel, cut with lasers, welded, ground and finished. Stainless steel panels seen over the stairway were 18 gage Type 316.

The Hollywood/Highland station, designed by Dworsky Associates and the North Hollywood station, designed by the



The Hollywood/Vine station features decorative palm leaves laser cut from .125-inch aluminum plate and powder coated.



The Hollywood/Highland station features diamond-etched elliptical-shaped perforated aluminum wall and ceiling panels along with aluminum clad beams.

On the Cover



The North Hollywood station's hypnotic circular pattern was achieved with .090-inch aluminum panels placed in a radius pattern with a graduating perforations.

Tanzman Associates, each feature custom perforations and various radius shapes. The intricate detailing was achieved with the use of punch presses at the San Diego Sheet Metal Works shop. Each row of curved panels at the North Hollywood Station is perforated in graduating sizes above the railway.

In addition to the detailed architectural elements, San Diego Sheet Metal Works fabricated and installed stainless steel waste and ash receptacles, fire hose cabinets, ticket cabinetry, telephone enclosures as well as the wall and beam cladding.

SMACNA Exhibits At AIA Convention

To bring greater visibility to the SMACNA architectural metal contractor, the Architectural Sheet Metal Council sponsored an exhibit booth at the American Institute of Architects' (AIA) annual convention and exposition. This year's convention was held May 17-19 in Denver, Colo. Each year the convention is attended by architects, designers, interior designers, landscape architects, engineers, developers, builders, architectural educators, and building/design product manufacturers.

During the three-day trade show, the SMACNA booth was staffed daily by SMACNA Contractor Roger Reed, representing the A. Zahner Co., Kansas City, Mo., as well as Bridgette Bienacker, SMACNA project manager, business management and member services. The booth attracted many attendees interested in the upcoming 6th edition of the "Architectural Sheet Metal Manual." As part of the exhibit, Mr. Reed demonstrated the uses and capabilities of many of the sheet metal samples on display in the booth.

Based on the positive response of convention attendees, the Architectural Sheet Metal Council will exhibit at next year's show May 9-11, 2002, in Charlotte, N.C. ■



The SMACNA booth hosted many visitors interested in the sheet metal industry.

SMACNA and the AIA Develop Contractor's Qualification Checklist

SMACNA's Architectural Sheet Metal Council and the American Institute of Architects (AIA) have developed the Contractor's Qualification Checklist as an addendum to AIA Document A305, Contractor's Qualification Statement. This new addendum provides architects a detailed assessment of skills, training and experience of prospective contractors during the hiring process.

The form was designed to lead architects through a succession of questions to capture the most critical data from the contractor. "By using this form, architects will gain the most data about the contractor and it will lead to better project management," comments Richard Hayes, of the AIA. "While member usage will vary based on the project needs, consistent use of the Contractor's Qualification Checklist will create a clearinghouse of contractor specialties that the architect can maintain for their individual needs."

The data collected about the contractors covers a variety of areas. In the first portion, the questions focus on the experience in the project region and with the project type. The questions then focus on the contractor's staff experience and training. Contractors are asked to provide references and give a profile of their company. The final section collects information about the experience with specific materials, conditions as well as size of staff and availability of additional staff.

The form was distributed as a component of the AIA's "Design/Build Workbook" and is also available at www.smacna.org in the architectural market sector council area. ■

Soldering Certification Under Development

An International Training Institute (ITI) Soldering Certification Task Force met recently to work on establishing a soldering certification standard, that would be similar to the ITI/AWS (American Welding Society) Welding Certification Program.

During the meeting the task force, consisting of SMACNA architectural sheet metal contractors, SMWIA members and

ITI representatives, identified what should be included in the standard and how the certification testing process should work.

A final draft of the standard is due this summer. Once the draft is reviewed, the task force plans to test the certification process. It hopes to have the certification program in place by the end of this year. ■

**GUIDE CORPORATION HEADQUARTERS
ANDERSON, IND.**

Architect: Jung Claus Campbell, Indianapolis, Ind.

Sheet Metal Contractor: Exterior 2000 Inc., Bluffton, Ind.

Achieving a high-end building with a budget-conscious price tag was the goal for this design/build project completed by Exterior 2000 in Bluffton, Ind.

“The owner has a high visibility location on Interstate 69 north of Indianapolis and wanted a high-end final appearance,” explains Chris King, project manager, Exterior 2000.

The design/build team chose Metl-Span horizontal striated 2-inch foam panels. The panels were installed with horizontal and vertical applications. The horizontal color bands were custom fabricated from 22 gage galvanized sheet metal in 16-foot and 17-foot lengths. The corner trims were fabricated from .040-inch extruded aluminum.

“The use of crisp clean trim and transition lines in different colors make this building attractive on a budget,” Mr. King continued. “The aggressive construction schedules on a design/build project of this nature require the flexibility, quick delivery and fabrication that metal provides.”



The exterior view of the Guide corporate headquarters features the clean crisp lines of the Metl-Span panels.



View of the panels and the aluminum color bands that give the building a decorative detail.

**MONROE HALL, EASTERN WASHINGTON UNIVERSITY
CHENEY, WASH.**

Architect: Martin Sweet with Integrus Architecture
Spokane, Wash.

Sheet Metal Contractor: Carlson Sheet Metal Works Inc.
Spokane, Wash.

Preserving the historic architecture of the early 20th century was the primary concern for the team working on the renovation of Monroe Hall for Eastern Washington University.

The craftsmen of Carlson Sheet Metal fabricated and installed new replicated cornices over a new metal stud and plywood

substructure. Working closely with the project architect, Carlson designed the cornices as well as the non-penetrating snow guards and rain diverters over the doors.

Taking special care to match the original cornices, Carlson fabricated the pieces from .032-inch aluminum sheet with a factory applied customized Kynar paint finish.

The installation was completed using fully concealed fasteners and continuous clips which resulted in a very clean look that allowed for natural expansion and contraction. Cornice seams were lapped 3 inches with a sealant embedded in them. Corners were riveted then vanstoned. Top joints were completed with sealed 1-inch standing seams.



Far Left: Monroe Hall now features renovated cornices that preserve its historical facade.

Detailed view of the cornice renovation completed by Carlson Sheet Metal Works.

AWARD WIENERS, DISNEY'S CALIFORNIA ADVENTURE THEME PARK, ANAHEIM, CALIF.

Architect: Walt Disney Imagineering, Anaheim, Calif.

Sheet Metal Contractor: CMF Inc., Orange, Calif.

Disney's California Adventure joined the Disney theme park family in February. This newest park celebrates the landscape and adventures in California.

Working as part of a design/build project with the Disney Imagineering team, the craftsmen of CMF Inc. fabricated and installed the exterior and interior aluminum and stainless steel components as well as all support framing for Award Wieners, a restaurant in the theme park.

Using radiused 16 gage stainless steel canopy, the exterior fascia were custom-formed, bullnosed center bands with welded and polished miters and joints. The stainless steel window frames were custom fabricated using 16 gage radiused sections and were fabricated to receive bent glass. To ease installation for the glazing contractor, the inside sections were removable.

The exterior serving countertop was custom fabricated from 14 gage stainless steel. The window panels, also custom fabricated, were created using .125-inch aluminum panels all welded with bullnosed miters and 3/4-inch half-round stainless steel bars.

The exceptional craftsmanship of the crew at CMF Inc. earned this project the Thomas Guilfooy

Memorial Award from California-SMACNA. Awarded annually since 1996, the Guilfooy award is presented to a California-SMACNA member firm that epitomizes the quality and craftsmanship of architectural sheet metal set by Guilfooy Cornice Works.



The exterior panels of Award Wieners are powder-coated red aluminum. This project has no exposed fasteners.

SMACNA Issues Custom-Fabricated Sheet Metal Test Report

Achieving uniqueness in building construction should start at the top. When choosing a roofing material, many architects choose custom fabricated metal roofs due to the variety of styles available, the distinct appearance metal offers and its durability.

The time-tested performance of the double-lock standing seam and batten seam metal roofing is demonstrated by thousands of squares successfully installed by SMACNA Contractors over the last century.

With the rise of pre-fabricated roof systems and the specific requirements of Underwriter's Laboratories (UL) Standard 580 and Factory Mutual performance criteria, the SMACNA Architectural Sheet Metal Council chose to test the performance of the metal roof geometries shown in the SMACNA "Architectural Sheet Metal Manual," 5th edition, 1993. The Custom Fabricated Sheet Metal Test Report details the results of the testing performed by Construction Consulting Laboratories, in Carrollton, Texas.

The test sample selected was a 1-inch high double lock with standing seams and 1 1/2-inch batten seams. Transverse seams

were used in unsealed flat-lock form and in soldered form.

Each metal roofing system was subjected to a static-pressure/water-penetration test. This test is similar to tests performed on curtain walls and is a severe test of metal roof seam performance. In another test the effects of dynamic wind loads induced by a slipstream of air generated by a turboprop engine were evaluated while a constant spray of water was introduced over the surface of each metal roof specimen. The metal roof specimens were also subjected to structural load tests. Severe incremental positive and negative (uplift) loads were induced onto the outer surface of the metal roofing in an attempt to demonstrate the ability of SMACNA metal roof configurations to resist (static pressure) uplift loads exceeding those imposed by the UL 90 classification requirements.

SMACNA's Architectural Sheet Metal Council witnessed all the tests. It was the intent of the Council to subject the metal roofing to performance tests as severe or more severe than those required by the industry.

The complete report is available by visiting www.smacna.org and selecting "technical services." ■

Customized Architectural Metal Newsletters Available!

Architectural Metal is the only SMACNA publication dedicated to the architectural sheet metal market sector. Featuring projects ranging from custom roofs to historic restorations, this publication has become a first class promotional piece for the SMACNA Contractors featured in each issue.

As an additional benefit, SMACNA Contractors whose projects appear in Architectural Metal may now purchase a one-page special edition newsletter. The special edition disk will feature the project that appeared in this issue with the Architectural Metal masthead and SMACNA logo. The special edition disk costs \$500 and is available to SMACNA Contractors featured in this publication.

SMACNA Contractor Paul Keohane of CMF Inc. was one of the first members to take advantage of this new offer. "Our company used the flyer to inform our clients of a new address," explained Mr.

Keohane. "The flyer received more attention than a postcard and many of our clients called us with compliments on our work."

All SMACNA Contractors with a featured project in this issue will receive five complimentary copies of the issue with a request form to purchase the customized special edition disk. Contractors with projects featured in previous issues of Architectural Metal may also purchase the special edition disk.

For more information on the special edition disk of Architectural Metal contact, Danielle Dobiesz, SMACNA communications manager at (703) 995-4036 or ddobiesz@smacna.org. ■



The Architectural Metal Special Edition was used as an upscale change of address notice for this SMACNA Contractor.

COURTHOUSE SQUARE GAZEBO, TAMPA, FLA.

Architect: Wannemacher-Russell Inc., Tampa, Fla.

Sheet Metal Contractor: Morrell Sheet Metal Inc., Tampa, Fla.

The Courthouse Square Gazebo in Tampa reflects the design of onion domes of the historic 18th century buildings on the neighboring campus of the University of Tampa.

The main dome was constructed of 48 equal sections of custom flat seam and double "S" radius panels. The dome panels and flashing were fabricated from 24 gage 304 stainless steel with a 2b finish. The upper minaret was formed from 18 gage 304 stainless steel in 24 equal sections, custom flat welded with the seam ground smooth.

Morrell Sheet Metal provided engineering services and shop drawings, fabricated and formed cornices as well as the low and high drum, dormers and dormer framing. The company also installed the roof on the dome and custom crafted all the flashing. The intricate welding of the minaret atop the gazebo was completed by Metalfab of Clearwater, Fla. The final installation was completed by Morrell.

One of the major challenges of this \$163,000 project was the tight deadline required by the organizers of Super Bowl XXXV held in Tampa this past January. Entertainment was scheduled on the site throughout Super Bowl weekend. "In order to have the gazebo ready to house three Super Bowl festivities, we completed this project in record time," commented Jack Morrell, of Morrell Sheet Metal. The gazebo was finished just in time on January 25, 2001.



The Courthouse Square Gazebo was an ideal location for Super Bowl XXXV festivities in Tampa, Fla.

Get in the “Green”

Pre-patinated Copper Offers the Beauty Of Aged Copper Now!

Copper roofs are certainly not a new idea; they’ve been around for years. In the past few years, copper roofing has been undergoing a spectacular boom in popularity. Consumption of copper for roofing has risen an average of 8 percent per year since 1992—more than twice the rate of new housing starts. From 1996 to 1997 it jumped more than 14 percent, and it looks like the accelerating trend will continue, at least for awhile. In addition to traditional uses in public buildings, copper is now gaining wide acceptance in small office structures, shopping malls, sports arenas and even private homes.

Why is this centuries-old product—copper roofing—suddenly becoming so popular? Two important reasons are the public’s increasing demand for quality and American architects’ growing awareness of copper’s unique characteristics. Another factor is the easier installation made possible by new onsite construction methods. And copper roofs simply look good, especially once the copper matures and displays the characteristic green patina.

Unfortunately, in several climates, copper’s characteristic green patina may take many years to develop. Experts estimate the process can take anywhere from eight to 50 years depending on weather conditions.

As many construction professionals know the problems associated with coloring copper in the field are numerous. Many of the factors that affect patina color, uniformity of color and durability are beyond the contractor’s control. Many times, despite the best efforts of sheet metal contractors, the results do not meet the expectations.

Attaining the desired patina effort is now achieved with the use of pre-patinated copper. Unlike efforts to artificially patinate copper in the field, these products are pre-patinated at the mill and develop a mature patina once installed and exposed to weather conditions.

In the U.S., there are two leading producers of pre-patinated copper, Revere and Hussey Copper. While each mill has licensed its own product, the theory behind pre-



Pre-patinated copper installation by A. Zahner Company of Kansas City, Mo. The Tsing Yi Mass Transit Station is the largest copper roof installation in China.

patinated copper is essentially the same. Instead of applying chemicals to the copper in the field and experiencing varying results, pre-patinated copper receives a crystalline coating at the mill, similar to the natural crystals that form on copper. Once the copper is installed, the crystalline coating absorbs moisture and the patina deepens in shade and texture. As with natural patina, the pre-patinated copper does not appear uniform. The pre-patinated cop-

Continued on page 11

RITZ-CARLTON HALF MOON BAY, HALF MOON BAY, CALIF.

Architect: Hill Glazier, Palo Alto, Calif.

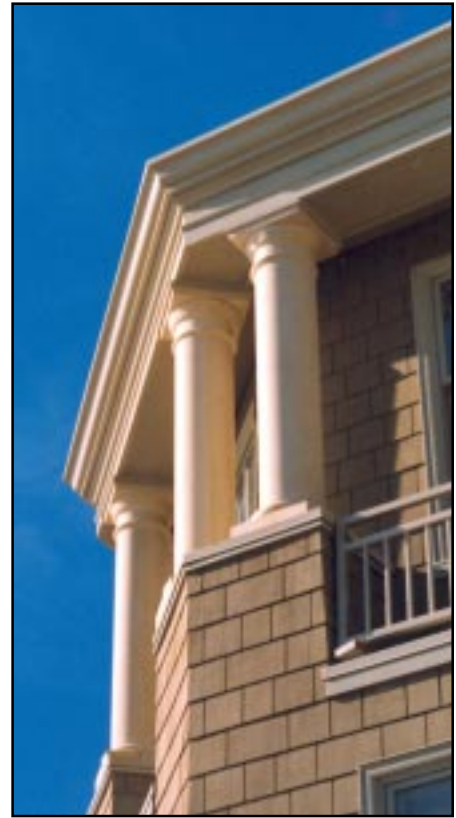
Sheet Metal Contractor: Delcon Heating and Air Conditioning Inc., San Jose, Calif.

Completed in April, the Ritz Carlton Half Moon Bay is the first five-star property to open on the northern California scenic coast in ten years. Resembling a grand 19th-century seaside lodge, the property features 261 guest rooms as well as more than 17,000 square feet of event space.

The \$60 million construction project included more than \$650,000 of sheet metal work, including the metal gutters, cornices, flashing, building expansion joints and louvers. As part of a design/build construction team, the craftsmen of Delcon Heating and Air Conditioning worked closely with the owner and architect to upgrade the facility's waterproofing. As the costs of the wood trim cornice work escalated during construction, Delcon craftsmen offered the substitute of galvanized cornices and saved thousands in material costs.

The resort features shingle style architecture, with natural cedar shingles and

redwood trellises. Hardwood floors, large stone fireplaces, contrasting redwood trim and beamed ceilings offer a rustic yet refined feeling throughout the resort. Over two-thirds of the resort's guestrooms feature ocean views, and most include a built-in window seat, fireplace or walkout terrace, providing a residential ambience.



Above: The galvanized metal gutters blend into the architecture of the hotel.

Left: The metal cornice work incorporates many intricate curves and angles.

ST. GENEVIEVE COUNTY COMMUNITY CENTER AND LIBRARY, ST. GENEVIEVE, MO.

Architect: P.B. Booker and Associates, St. Louis, Mo.

Sheet Metal Contractor: Sheet Metal Contractors, De Soto, Mo.

With more than 100 buildings listed in the National Registry of Historic Places, St. Genevieve is a community that is proud of its rich history that highlights the influence of French Colonial architecture in the mid-West.

To reflect the French influence, the new community center and library maintain the historic look of the town with its roof design. Inspired by a historic Creole home, the roof of the community center is designed similar to many of the structures in the town. The main portion of the building is covered with a high, hipped roof and spreading all around the main roof is a low-pitched roof. The roof is then supported on all sides by trusses, another influence of French architecture, that cre-

ates a covered walkway on all sides of the building.

Using pre-coated 24 gage steel, Sheet

Metal Contractors created the seamed metal roof and paneled the clock tower pyramid.



The French inspired roof design on the new community center maintains the historic look of St. Genevieve, Mo.

BLAIR GRAPHICS, LOS ANGELES, CALIF.

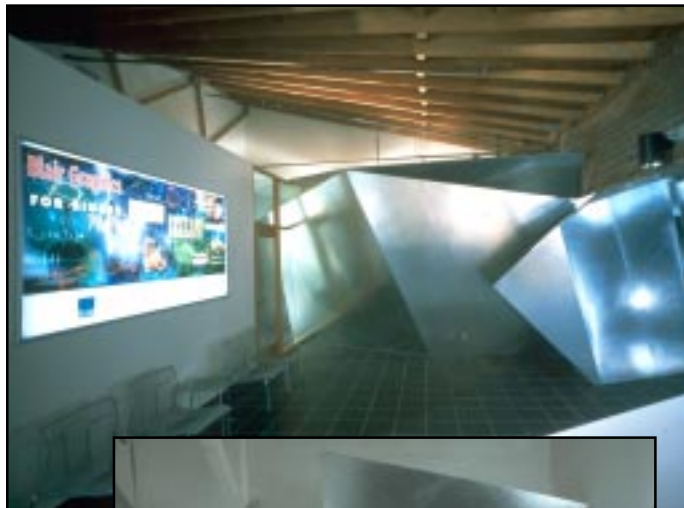
Architect: *Randall Stout Architects, Los Angeles, Calif.*

Sheet Metal Contractor: *Cimco Sheet Metal
Santa Fe Springs, Calif.*

After completing a transition into high-tech printing, Blair Graphics wanted to modernize its office space to reflect their updated capabilities. Working with the metal craftsmen of Cimco Sheet Metal, the Blair Graphics building was transformed using sheet metal to create spaces inspired by origami, the Japanese art of paper folding.

The new lobby features industrial skylights, exposed wood structure and new finishes. The Cimco crew fabricated and installed 24 gage galvanized steel panel display walls which display products and services of the company.

The most dramatic change is the front entry of the building. The red brick is a backdrop for the dramatic folded 14 gage galvanized metal entry canopy and glass lobby. Artificial and natural lighting of the canopy surfaces enhances this architectural feature establishing it as a company icon for both day and night.



The 24 gage steel panel walls fill the office space with origami structures.

The metal entry gives Blair Graphics a unique window on the world.



The earthquake-resistant steel substructure of the outdoor entrance canopy.

Metal Selection and Avoiding Pitfalls Provide Focus of Architectural Contractors Forum

Exterior architectural environments can be very demanding and the design and exposure to other metals can complicate the selection of appropriate metal. Providing assistance in metal selection will be one topic covered during the Architectural Contractors Forum on Tuesday, Oct. 23 at SMACNA's 58th annual convention in Boca Raton, Fla.

Material selection decisions are often based on personal experience and budget limitations rather than scientific data. Usually the result is satisfactory, but when the wrong metal is used and problems arise, reputations can be damaged and remedial costs can be high. In 1995, the National Institute of Standards and Technology (NIST) estimated that the annual cost of metallic corrosion in the U.S. was \$296 billion of which \$104 billion was avoidable. Building and construction applications account for 18 percent of that cost.

During this informative session, Catherine Houska, a specialist in architectural metal applications, will review the expected performance of several metals used in architectural projects. She will compare corrosive data, physical and mechanical properties, fire resistance as well as provide examples of metal combinations to avoid. Ms. Houska holds degrees in metallurgical engineering as well as industrial and international marketing and specializes in architectural metal applications for Marketing Resources Inc., in Pittsburgh, Pa.

The forum continues with a second session titled, "The Top Ten Ways to Avoid Major Screw Ups." A talented panel representing the perspective of both architects and contrac-

tors will discuss the top ten ways to avoid major problems on a project.

Using the American Institute of Architects' (AIA) top ten "screw up" list, the panel will address each issue from the contractor's and the architect's point of view and offer solutions to avoid each problem.

The AIA's top ten list includes:

- Assuming everything will be fine
- Overpaying the contractor
- Losing the document war
- Expecting more than the budget allows
- Bad drawings and specs
- Failing to coordinate design
- Failing to understand your responsibilities
- Slow response time
- Ignoring schedule delays
- Getting drawn into an emotional battle

SMACNA Contractors will find this session to be an opportunity to understand "how the other side thinks." With the insight from members of the AIA, attendees will be able to avoid these problems on their next project.

For more information on SMACNA's 58th annual convention, Oct. 21-24, Boca Raton, Fla. and to register, contact the Meetings and Convention Department at (703) 803-2980 or visit www.smacna.org. ■

SMACNA Members Only

Architectural Sheet Metal Projects Requested!

Architectural Metal is seeking high-quality color photos of recent architectural sheet metal projects from SMACNA members for consideration in the next issue.

SMACNA Contractors are encouraged to submit color photos of recent architectural sheet metal projects. The photos may be of a finished project or of work in progress. More than one photo of each project may be submitted, and contractors may submit as many projects and photos as they like. SMACNA Contractors should submit only professional-quality

35-millimeter photos. Digital photos are not recommended because digital photography tends to produce an inferior printed product.

The SMACNA Architectural Metal Submittal Form should accompany all photos sent for consideration and additional project information may be included on a separate page.

Submittal forms may be obtained by contacting Danielle A. Dobiesz, SMACNA communications manager at (703) 995-4036 or e-mail at ddobiesz@smacna.org. ■

Construction Materials Price Movement in 2000-01

		Oct.	Nov.	Dec.	Jan.	Feb.	March	April
Aluminum Sheet	Monthly % chg.	-0.6	-0.6	-0.2	+0.3	-0.1	-0.3	-0.9
	Annual % chg.	+5.3	+4.5	+3.8	+2.3	+0.7	-0.8	-3.9
Sheetmetal	Monthly % chg.	+0.1	0.0	-0.1	+0.1	-0.1	0.0	+0.2
	Annual % chg.	+1.6	+1.4	+1.4	+1.1	+0.6	+0.3	+0.6
Stainless Steel	Monthly % chg.	-0.9	-2.9	-2.4	+2.1	-2.2	-5.8	-0.6
	Annual % chg.	+14.6	+10.2	+5.3	+1.0	-2.4	-9.3	-13.0

Source: Bureau of Labor Statistics

WINDSOR HIGH SCHOOL, WINDSOR, CALIF.

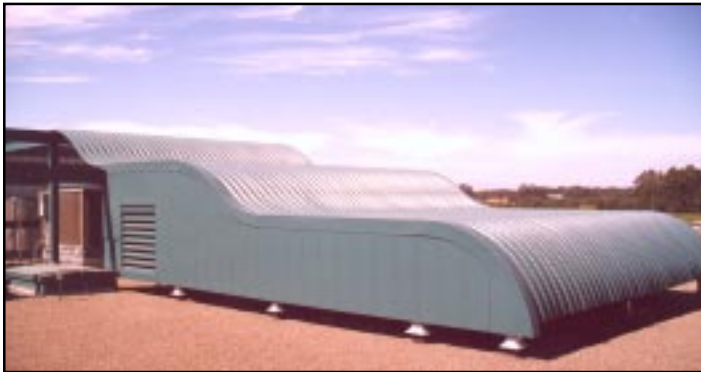
Architect: *Quattrocchi Kwok Architects, Santa Rosa, Calif.*

Sheet Metal Contractor: *Cal-Air Inc., Santa Rosa, Calif.*

With a renewed commitment to the arts, more schools are demanding performing arts facilities, art studios and music classrooms. As part of phase two of construction, Windsor High School unveiled their new performing arts and media/library center.

Cal-Air Santa Rosa Division joined the project to fabricate and install a screen to cover the rooftop mechanical equipment. The project designers required a screen that would not only mask the large equipment, but also add some interest to the building design.

Using AEP-Span 24 gage roll-formed pre-finished galvanized sheet metal, Cal-Air fabricated a 50-foot by 60-foot by 11-foot high mechanical equipment screen. As an added architectural element to the facility, the screen was formed into a curved "roller coaster" wave.



The 24 gage metal is formed into a wave to add interest to this mechanical equipment screen.

SMACNA To Participate In METALCON 2001

The Architectural Sheet Metal Council plans to participate as a sponsor of an education session and exhibitor at METALCON 2001, Oct. 23-25 in Las Vegas, Nev.

The educational session will feature SMACNA architectural contractors and allow for extensive interaction from the attendees. Reaction to the SMACNA program offered last year was very positive, with many attendees expressing appreciation for the unique opportunity to interact with industry experts.

In addition to sponsoring this session, the Architectural Sheet Metal Council will participate as an exhibitor in the tradeshow, which attracts approximately 8,000 professionals involved in metal construction. Among the attendees will be architects, engineers, contractors, developers and building owners. ■

Pre-patinated Copper Offers The Beauty Of Aged Copper Now!

Continued from page 7

per mimics its natural counterpart and brings the differences of shade and depth to a structure.

Pre-patinated copper may be installed using the same tools, machines and working techniques as with mill-finished copper, but a certain degree of care must be exercised to protect the metal, the tools and personnel.

Tools, machines and sensitive equipment should be protected from the patina dust. If combined with moisture, the dust may cause rust in iron and steel. All tools should be cleaned and lightly oiled after each use and the oil should be removed before working with the metal again. A dust collection system should be used whenever possible and personnel working with the copper should wear a respirator and gloves.

Installation techniques remain the same with pre-patinated copper as with natural copper. The metal may be bent and seamed without any special considerations. Folding, forming, dressing and other techniques may cause minor patina flaking, but this will not damage the appearance. The finish will repair itself with exposure to the atmosphere. Grain direction should be coordinated. Double-lock seams may be closed by hand or with a seaming machine. Transverse or cross seams may be formed the same as with plain copper.

Soldering may be performed, but the patina must be removed by wire brushing. Reverse side soldering with pretinning is recommended. Adhesives and tapes will damage the patina, as will cleaning by methods other than water washing.

When selecting a metal for use on a construction project, decisions are made based on a variety of factors. Pre-patinated copper retains all the strength and beauty of untreated copper. The copper remains durable, strong, lightweight as well as economical as untreated copper.

For more information on pre-patinated copper contact Revere Copper at (800) 448-1776 or www.reverecopper.com or Hussey Copper Ltd. at (724) 251-4200.

Source: "Green Roofs for a Greener Environment," Copper Development Association.

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Sheet Metal and Air Conditioning Contractors' National Association



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