ARCHITECTURAL METAL

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ARCHITECTURAL METAL EXPERTISE
PERFORMANCE · TRAINING · STANDARDS

Oregon Contractor Helps Restore Historic Courthouse

Completed Restoration of the Franklin County Courthouse.

FRANKLIN COUNTY COURTHOUSE, PASCO, WASH.

Architect: *CKJT Architects, Kennewick, Wash.*

Sheet Metal Contractor: *McBride Sheet Metal Inc., Portland, Ore.*

Time and nature had not been kind to the appearance of the Franklin County Courthouse. The original courthouse was built in 1913 and was badly in need of an upgrade.

McBride Sheet Metal, of Portland, Ore., was called in to complete the historical restoration work on the courthouse, which included the removal of the old galvanized and zinc roof as well as the ornamental metal.

McBride tackled the job of matching the existing roof and ornamental metal objects – not an easy assignment. The job was challenging because all of the ornamental pieces had to be reproduced to match the existing ones. McBride was able to do this by making molds and forming the metal in the molds and then finishing each one by hand. The only items outsourced were the crestings.

For the restoration work McBride used Revere Classic Copper metal – 350 sheets of 20-ounce copper and 24 sheets of 24-ounce copper for the hammer work. They also used rosin slip sheet as well as a high temperature ice and water underlayment.

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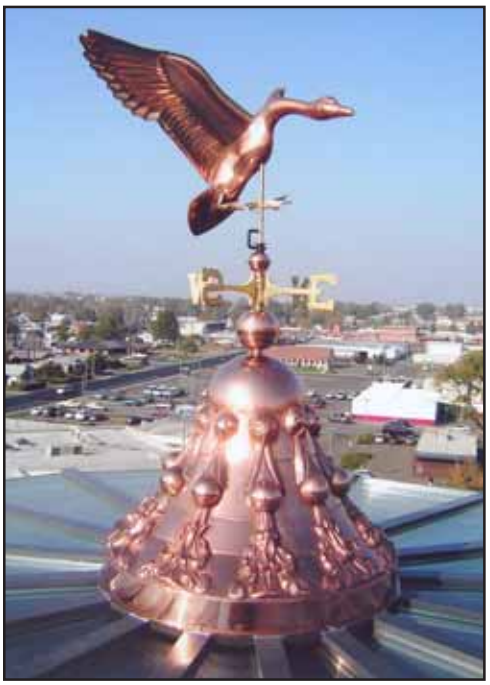
Oregon Contractor Helps Restore Historic Courthouse

Continued from cover

While working on the roof, the temperature reached an unbearable 122 degrees in the late afternoon. The men were able to stay cool by using wet towels and wrapping them around their heads as turbans.

Overall the restoration of the courthouse was a huge success thanks to the cooperation with the general contractor, Lydig Construction and CKJT Architects. "By teamwork and cooperation we were able to turn a very challenging project into one that was a pleasure to work on," noted Shirley McBride, owner of McBride Sheet Metal.



The dome top was handmade.

The existing dome was galvanized with zinc ornamentation.

FAB FOCUS

Custom Copper Hood Takes Kitchen From Ordinary To Extraordinary

Custom Fab Project: *Custom Copper Kitchen Hood, Private Residence, Windermere, Fla.*

Sheet Metal Contractor: *Vickers Metal Works, Orlando, Fla.*

Vickers Metal Works Inc., of Orlando, Fla., took a design concept and turned it into a custom copper kitchen hood for a private residence in Windermere, Fla.

The project scope was to take a design concept from a photograph supplied by the custom home builder and interpret the design from the photograph in order to plan and fabricate a custom copper kitchen hood. Prior to fabricating the hood, Vickers Metal Works prepared and submitted the details for approval to the builder.

The sleek work of art is constructed of 48-ounce copper and measures 28 inches by 60 inches tall. The hood was given an antique finish and required 100 man-hours to fabricate. The custom antique finish was completed by American Metal Refinishers of Orlando, Fla.

The hood was fabricated in two sections, top and bottom, with all seams welded and finished to give a seamless appearance. The custom stainless steel filter and light housing were supplied by the contractor and were installed during fabrication.

Vickers Metal Works is a full-service custom and architectural sheet metal shop offering both fabrication and installation services.

The custom copper kitchen hood took 100 man-hours to fabricate.

FAB FOCUS

SMACNA Contractor's Design Expertise Transforms Homeowner's Vision Into A Stunning First Impression

Custom Fab Project: *Doors for a Private Residence in Winter Park, Fla.*

Sheet Metal Contractor: *Vickers Metal Works Inc., Orlando, Fla.*

The craftsmen at Vickers Metal Works helped the owner of this modern residence turn his vision into a reality with this stunning entrance to his home.

After meeting with the home's owner on several occasions, Vickers Metal Works Inc. created a shop drawing for the project. Before starting on this design-build project, the owner had his interior design firm Ewing Noble & Winn, of Winter Park, Fla., review and approve Vicker's drawing.

A 16 gage #3 stainless steel sheet was used to clad over the existing doors with a 38 inch by 3 inch stainless steel brush finished flat bar. This piece was then attached using 38 inch – 16 stainless steel button allen head fasteners. The existing stainless steel door handles were removed and re-installed.

Overall, this design-build project required approximately 60 man-hours for the fabrication and installation of the doors.

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Vickers Metal Works Inc. created a shop drawing for the project based on the home owners specifications.

Making Architectural Roof And Wall Penetrations Weather-tight

The sixth edition of SMACNA's "Architectural Sheet Metal Manual" illustrates several types of roof and wall penetration construction methods. There are thousands of variations of individual construction details and it would be impractical for SMACNA to include all. Designers must adapt and alter a particular detail or group of details to accommodate an unusual design need.

Figures 6-35 through 6-38 illustrate flashing approaches for a variety of elements penetrating metal wall. Elements of these details can be altered and adapted to other types of wall constructions or other elements that penetrate a wall.

Figures 4-14 through 4-17 illustrate flashing for construction elements penetrating flat roofs. If those details are compared to Figures 6-19 through 6-21 that illustrate penetrations through sloped metal roofs, the similarities between the flashing techniques should be obvious.

Using a separate curb and cap flashing provides some simplification of what may be a difficult to flash penetration. It may also simplify re-roofing if designed with that in mind. A curb helps isolate reworking the upper flashing from the primary roofing surface.

Members may purchase the "Architectural Sheet Metal Manual" at the special member price of $42 for the book, $50 for the CD-ROM, $67 for the CD/book combo and $42 for the PDF download on *www.smacna.org/bookstore*.

Architects and engineers may purchase the new publication at the discounted price of $184 for the book, $220 for the CD-ROM, $294 for the CD/book combo and $184 for the PDF download. The list price for the book is $262, the CD-ROM is $315, the CD-ROM/book combo is $419 and $262 for the PDF download.

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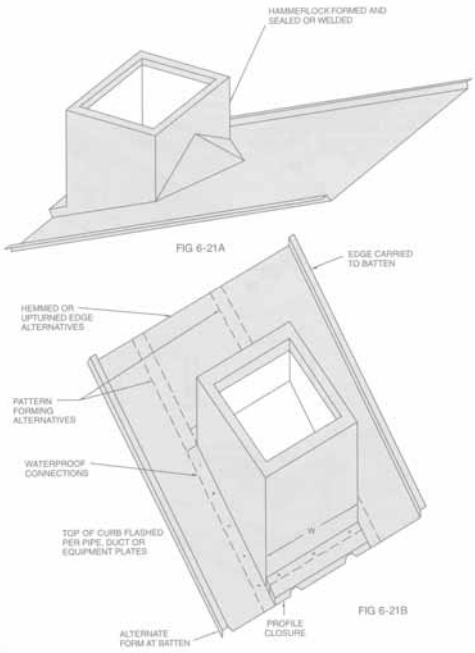

FIGURE 6-21 ROOF PANEL PENETRATION

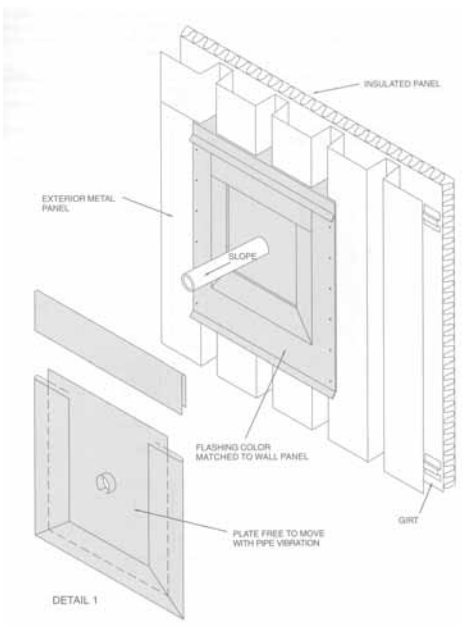

FIGURE 6-35 WALL PENETRATION FLASHING

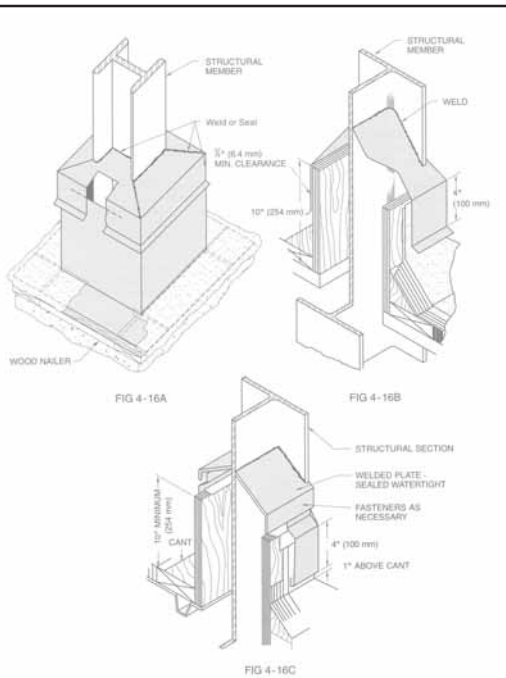

FIGURE 4-16 ROOF PENETRATION FLASHING — STRUCTURAL STEEL

Hospital Receives A More Welcoming Facade

MISSOURI BAPTIST HOSPITAL, ST. LOUIS, MO.

Architect: *Zimmer Gunzul Frasca Architects (ZGF), Los Angeles, Calif.*

Sheet Metal Contractor: *Kuenz Heating & Sheet Metal, St. Charles, Mo.*

When a community hospital needed a new facade, the craftsmen at Kuenz Heating and Sheet Metal worked alongside architects Zimmer Gunzul Frasca to create something that would be visually appealing.

The $1,055,000 job included stainless steel metal flat seam wall panels or metal shingles, Centria foam insulated wall panels and aluminum composite panels. The materials used were Rimex Green stainless steel, Centria foam panels and Universe Corp composite panels. The 420 flat sheets of Rimex material was manufactured (colored) in England and shipped to Kuenz for shearing and fabrication to the required sizes.

For Kuenz Heating and Sheet Metal the project proved to be particularly challenging because they had to be extremely precise when ordering the materials, as they were so expensive and took 14 weeks to get from England. The material was also harder to work with since it was 20-gage stainless and had a green anodized finish that could not be repaired, if scratched.

In addition, the building had numerous openings and vertical aluminum accent fins requiring special notched panels that had to be measured in the field. To keep the field crews going, they measured the accent fins while, the wall panels were being installed. The measurements were faxed to the shop for immediate fabrication. There were more than 300 different shapes and sizes of panels. It took five months to install 10,000-square feet of the metal shingles.

The Rimex green stainless steel material arrived in varying shades of green. Kuenz had to submit a color range to the architect for approval and Rimex had to color the sheets within that range. It is this variance in color that makes the finished product so interesting. The seam pattern and panel size are visible due to the range of colors and the panels change color depending on the light conditions.

The $1,055,000 job included stainless steel, metal flat-seam wall panels or metal shingles.

The Rimex green stainless steel material was challenging to work with due to its green anodized finish that could not be repaired if scratched.

Forward-Thinking Yields A Creative Space For One Architectural Firm

HOK SPORTS OFFICE BUILDING, KANSAS CITY MO.

Architect: *HOK Sports Facilities Group, Kansas City, Mo.*

Sheet Metal Contractor: *FCM Custom Metals Lee's Summit, Mo.*

As the world's largest sports architecture firm, HOK Sports Facilities Group is known for its ongoing commitment to innovation and excellence. When it came time for the firm to design their own office space, they embraced their design philosophies.

"Designing our own space afforded us the ability to include elements, such as the grandstand, unique to our culture," said Jon Knight, principal and lead designer of the office space.

FCM Custom Metals' work on the project included wall panels, vertical perforated sunshades, horizontal sunshades and interior light shelves.

The $1,020,000 job included the fabrication and installation of 104,696 pounds of aluminum as well as 53,082 square feet of post clear anodized aluminum.

HOK Sport's new office in Kansas City's River Market Place serves as the medium for creative energy.

HOK Sport's new office in Kansas City's River Market Place serves as the medium for creative energy with seven dedicated design labs, an open, communicative floor plan and a colorful, modern environment. The building also houses a two-story grandstand space that is large enough to hold staff meetings for 200-plus employees in the Kansas City office.

SMACNA contractor, FCM Custom Metals Inc., was the sheet metal contractor chosen to complete the job for HOK Sports. FCM Custom Metals' work on the project included wall panels, vertical perforated sunshades, horizontal sunshades and interior light shelves. Overall, their work on the project resulted in 5,600 combined shop and field hours.

The $1,020,000 job included the fabrication and installation of 104,696 pounds of aluminum as well as 53,082 square feet of post clear anodized aluminum. There were 335 mullions that were fabricated from 3/16 inch aluminum and 3 inch x 4 inch x ¼ inch extruded aluminum angles. The mullions were each cut and assembled into ten different configurations.

FCM custom fabricated more than 500 perforated panels using in-house programming and punching via a Nisshinbo HIQ1250 33-ton hydraulic 37-station turret punch and FabriWin software. There were 149, 1/8-inch custom perforated wall panels that had 3/4-inch-diameter holes on 7/8-inch staggered centers and 404 3/16-inch aluminum perforated vertical sunshades with 5/8-inch diameter holes on 3/4-inch staggered centers.

In addition, they also fabricated and installed 480 1/8-inch aluminum panels, 148 3/8-inch aluminum plate outriggers for the horizontal sunshades and 62, 42-inch x 96-inch sunshade grates fabricated from 1/8-inch aluminum punched into 2-inch strips and then notched to create an egg crate design.

For FCM Metals the most challenging aspect of this project was working on a building owned, designed, as well as occupied by a group of architects. This meant that an entire workforce was paying attention to every detail of the building. FCM Metals rose to the challenge and completed their work in October of 2005.

FCM Metals takes great pride in being able to share in the experience of creating an exceptional forward-thinking office space for the HOK Sports Facilities Group. Their new office building symbolizes HOK Sport's ongoing commitment to creating exceptional public assembly spaces and bringing people together.

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ARCHITECTURAL SHEET METAL INSPECTION GUIDE

An invaluable inspection resource for owners of standing seam, batten seam, or Bermuda-type roofs. Presents practical troubleshooting and corrective tips for typical problems of roof panels, gutters, downspouts, fascia, copings, flashing, ridges and hips, valleys, expansion joints, penetrations, fasteners and soldering. Also provides relevant information regarding construction of these architectural elements, the purpose of each, as well as what to look for during periodic inspections. Sealants, moisture transfer methods and air leakage are also covered. Emphasizes the importance of regular and appropriately timed inspections because a small problem discovered early can be fixed at a low cost, preventing minor damage from becoming a substantial problem until the cost of repair and remediation becomes excessive. Contractors will find this book a valuable resource to provide owners or facility managers along with the standard building completion documents. 52 pages. 1st Ed., 2004

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- Book Order #1973, Member Price: $42
- CD Order #1973-CD, Member Price: $50
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CADD VERSION 2.0 ARCHITECTURAL SHEET METAL MANUAL

A CADD version of the illustrations in SMACNA's 6th edition of the Architectural Sheet Metal Manual is available for use in CAD programs. This CD-ROM contains all 169 figures in DXF format that are used to illustrate the best practices in architectural sheet metal work. Architects and designers are encouraged to use this invaluable resource to assure that their specifications reflect the proper design details. A 496-page Architectural Sheet Metal Manual is included in PDF format with every CADD version CD. 2004.

- CD Order #1923, Member Price: $125
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STANDARD PRACTICE IN SHEET METAL WORK

More than a history book! This handsome publication contains a collection of 1929 system design data and graphic illustrations, including pattern layouts representing the best-known practices in the industry that have been proven over a period of years. With today's emphasis on restoration, refurbishing, rebuilding and retrofitting, architects will find this publication more than of just historical interest. Architectural sections include elaborate cornices, skylights, domes, spires, spun balusters, gargoyles, marquise, storefronts, metal buildings and metal roofs. A majority of drawings are to scale. Another section is on heating and ventilating systems including gravity furnaces. Blowpipe sections cover design, layout, construction and equipment. (Not available on CD-ROM.) 768 pages. Reprint of 1929 Ed.

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Pittsburgh Contractor Helps Transform Lives With New Children's Hospital

CHILDREN'S HOSPITAL OF PITTSBURGH OF UPMC – CSB BUILDING

Architect: LD Astorino, Pittsburgh, Pa.

Sheet Metal Contractor: Ralph J. Meyer Co., Pittsburgh, Pa.

The new Children's Hospital of Pittsburgh campus is all about changing lives for the better. The new hospital is grounded in five principles: family-centered care, technological sophistication, environmental sustainability ("green" campus), quiet building and patient safety and quality.

The Ralph J. Meyer Co., of Pittsburgh, Pa., was selected as the architectural sheet metal contractor for the hospital's Clinical Services Building.

Using 20-ounce copper sheet, Ralph J. Meyer Co. fabricated and installed Revere's Evergreen pre-patinated copper in a flat-seam wall cladding system. The copper sheet was placed over Tyvek commercial wrap and a #30 felt damproofing on ¾-inch plywood.

Installation was achieved using aerial lifts and suspended scaffolding.

The intricate characteristics of copper are revealed using a simple SMACNA seam detail from the Architectural Sheet Metal manual.

Approximately 32,000 square feet of 20-ounce evergreen copper flat-seam panel was shop fabricated by Meyer. Installation was achieved using aerial lifts and suspended scaffolding.

The $760,000 project shows the intricate characteristics of copper on a large scale by using a simple SMACNA seam detail that has been in existence for many decades. This SMACNA seam detail is illustrated in figures 6-3 and 6-4 in the "Architectural Sheet Metal Manual," sixth edition.

Overall, the craftsmen at the Ralph J. Meyer Co., found this project special in many ways. Not only was it special for the lives it would change for the better but also for its natural beauty and welcoming facade for patients, families and staff.

Established in 1958, the Ralph J. Meyer Co. has integrated classic craftsmanship with state of the art technology to provide their customers with a complete line of roofing and architectural sheet metal products and services.

The Best of 2007 Architectural Metal newsletter is an annual publication of SMACNA's Architectural Sheet Metal Council Steering Committee.

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