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Minnesota's 1905 state capitol has been restored and updated. *Photo: Paul Crosby Photography.* See page 14.







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INSTITUTIONAL "Benjamin Franklin College and Pauli Murray College, Yale University" - Robert A.M. Stern Architects LLP

LANDSCAPE ARCHITECTURE "John L. Gardner Estate" - LeBlanc Jones Landscape Architects, Inc.

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Coming in our April issue

An examination of the Historic Tax Credit under the new tax law. Find out what architects and others are saying and how they are moving forward.

What's in a Façade? Suppliers talk about materials and options for historic buildings.

Steve Semes writes about Notre Dame's Master of Science in Historic Preservation.

Plus: The Forum, Buying Guides, and a review of *Cities Alive* by Michael Mehaffy.













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Subscriptions & Subscriber Service: 800-548-0193 Traditional Building, P.O. Box 3000, Denville, NJ 07834-9965

Traditional Building (ISSN # 0898-0284) is published bi-monthly by Active Interest Media, 5720 Flatiron Parkway, Boulder, CO 80301

Subscription rate to professionals in architecture, interior design, construction and landscape design in the U.S. and possessions: \$24.95/yr. (6 issues). Not available outside the U.S. postal system.

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Traditional Building's Hit Parade

The Year in Review – 2017

By Martha McDonald

he year 2017 brought thousands of viewers to the *Traditional Building* website, looking for new products, projects, book reviews, features and opinions from our bloggers as well as from the Forum. While the site is fairly new—launched in March of 2016—it has found its niche among the traditional architecture community.

We recently reviewed our web statistics to better understand what people are searching for when they come to www.traditionalbuilding.com. Keep in mind that while the website is drawn primarily from the print magazine, it isn't organized by issue dates. It is organized by topics such as Buying Guides, Features, Palladio Awards, etc. with older as well as newer articles available. Also, we often post timely web-only articles that never appear in print.







Speaking of print, the year 2017 marks an almost anniversary for *Thaditional Building* magazine. The first issue was published October 1988, so next year will be our 30th year in print! We continue to have six issues a year, alternating with our sister publication, *Period Homes*.

Here are some of the highlights of the year. The February issue, as usual, was our Annual Buyers Guide with a list of more than 200 companies that supply traditional products, along with photos of many of their products organized by product category. April brought stories about the U.S. Capitol dome, and a feature about young (under 40) preservationists, while June highlighted the five 2017 Palladio winners.

In August, the magazine honored Duncan Stroik as its eighth Clem Labine Award laureate, and offered tips and guidelines from stone cutters as well as recent projects. It was followed by a look at the Jeffris Foundation and the restoration of the rotunda at the University of Virginia in the October issue. December, as usual, focused on religious buildings. Featured were projects such as the restoration of Frank Lloyd Wright's Unity Temple, and new churches in Lincoln, NE, and Ridgway, IL, along with a profile of David B. Meleca Architects of Columbus, OH. ABOVE: The Annual Buyers Guide published every year in February is always a popular issue.

TOP LEFT: Chris Heim was instrumental in launching the hand drawing program at Robert A.M. Stern Architects (RAMSA) last year.

LEFT: Historic hardware continues to be a hot topic in our Buying Guides.



ABOVE: Duncan Stroik was featured in the August issue as the eighth winner of the Clem Labine Award.





Back to the Web

The analysis, however, involves readership on the website. The total number of page views for the year reached just under 300,000, almost double what it was in 2016, but many of the patterns were similar. There was a high level of interest in products such as windows, doors, hardware, metalwork, lighting and columns, as well as various features and blogs. The major tabs on the site, such as Buying Guides, Palladio Awards and Opinion were all highly rated, especially Buying Guides.

A number of oldies but goodies made the top of the list last year. A story posted in November of 2015, "Column Construction: Materials and Methods," by Gordon Bock, and an all-time favorite, "Rebuilding Penn Station" by our founder Clem Labine from the April 2015 issue, continue to interest readers. A story published in 2016, "Historic Syracuse Hotel Saved," was also popular.

A more recent story about hand drawing by the architects at Robert A.M. Stern Architects (RAMSA) hovered near the top of the list. It appeared in the August issue. Another recent article, "A Dome for All Time," about the amazing restoration of the U.S. Capitol dome was very popular with web visitors.

The 2017 Palladio Award winner stories that

appeared in the June issue were big web hits this year. These included "Seaside Tradition: Beauport Hotel," (OLSON LEWIS + Architects) the winner in the category of New Design and Construction, more than 30,000 sq.ft.; "Saving History in Soho," (Scott Henson Architect) in the Adaptive Reuse category; "Gilded Age Gem" (PBDW Architects and Herzon & de Meuron) in the Restoration and Renovation category; and two winners in the category of New Design and Construction, less than 30,000 sq.ft., "Historic Watchbox Returns Home," (EYP Architecture & Engineers) and "Sacred Jewel Box" (O'Brien & Keane).

Other recent project articles also garnered quite a bit of interest and clicks. One of these was "Adaptive Reuse Spurs Urban Renewal," the cover story in the April issue, along with "Making Sense of Mid-Century Modern" in the same issue.

Readers were also drawn to a variety of religious buildings stories, such as "A New Traditional Roman Catholic Church in South Carolina," (McCrery Architects), and "New Neoclassical Revival Mormon Temple," (FFKR and Perkins+Will), both published in the December 2016 issue.

Three web-only stories, "The Trades Turn Out for PTN's 2017 Meeting," "Bryn Athyn College Offering BFA in Building Arts," and "Window Preservation Summit III" also made the hit parade.

Products

The column story mentioned earlier was not the only popular product article. Windows are always a popular topic, as shown by the large number of hits for windows stories such as "The Challenges of Reproducing Historic Wood Windows," which continues to get a lot of hits even though it first appeared a few years ago. Other popular features were "Historic Window Repair: Sash Joint Dutchman," by window expert John Leeke, and "Metal Windows in Historic Buildings."

Doors are also a perennial winner, as witnessed by the audience for "Wood Doors for Historic Buildings," also originally published a couple of years ago. And the Doors, Windows, Hardware & Shutters Buying Guides continue to draw readers searching for historic products.

Lighting is another hot topic, as seen in two typical product reports, "Exterior Lighting for Historic Buildings" and "Lighting for Historic Buildings," as well as numerous clicks on Buying Guides for lighting. The Buying Guides for Doors, Windows and Shutters, for Exterior Elements, Ornaments & Finishes and for Metalwork, also appeared near the top of the hit list.

Techniques

A surprise this year was the popularity of two articles about fresco painting, "Fresco Painting Techniques" and "A Glossary of Fresco Painting Terms and Materials" from the September issue.

Meanwhile, plaster continues to be a big topic, as shown by the number of hits for a feature by Gordon Bock, "Historic Plaster in Today's Traditional Market," and "Historic Plaster Myths" by Bill Denis of Decorators Supply Corp.

Blogs

Our bloggers are also frequently read. Plaster blogs such as "Roman Cement and Pozzolans, also Known as Pit Sand" and "Vintage Plaster RIGHT & BELOW: Many readers come to the *Traditional Building* website looking for historic lighting fixtures.







RIGHT & BELOW: Looking for traditionally styled doors? The Buying Guides offer numerous options.



Traditions" by Patrick Webb, for example, drew many readers. "The Problem of the House Museum," by Vincent Michael was another hit this year, as was a blog by Carroll William Westfall, "Confederate Monuments and Lost Cause Urbanism" and "Traditional Urbanism and the Common Good."

David Brussat's "Ode to a Tuscan Column" and

Clem Labine's "The Bare Brick Mistake Will Not Die!" were also highly rated.

These articles and blogs and many others contribute the content of *Traditional Building* magazine, both in print and on the web. Many thanks to our writers, bloggers and readers for all of your contributions during the past year. We look forward to continued success in 2018!

Minnesota Capitol Gets a Facelift

Cass Gilbert's historic capitol has been restored and updated by HGA Architects and Engineers with Schooley Caldwell as the historic design consultants. Completed in 2017, the \$310-million project was many years in the planning and four years under construction. All photos unless otherwise noted: Paul Crosby Photography

OMPLETED IN 1905 AT A COST of \$4.5-million, Cass Gilbert's Renaissance-Revival Minnesota State Capitol in St. Paul, MN, had served the community in a grand fashion for many years. The 43,560-sq.ft. building is characterized by its prominent white marble dome. Inspired by St Peter's Basilica in Rome, the towering structure is one of the largest self-supporting domes in the world, rising 220 ft. above the ground and measuring 70 ft. wide at its base. Another highlight is the gleaming golden sculpture group at the base of the dome, "The Progress of the State," known as the Quadriga, designed by Daniel Chester French with Edward Potter

The years had taken a toll on the historic building. The roof was nearing the end of its serviceable life and water penetration was causing damage to historic interior finishes and valuable decorative art murals. Exterior sculptural features carved from Georgia White marble were sufficiently deteriorated to raise legitimate life safety concerns. Functionally, the demand for office and meeting space exceeded available square footage. Diminished building performance and archaic engineering systems fell short of meeting today's standards for both sustainability and contemporary office space.

Now, more than 100 years after it opened, the building is once again ready to serve the community in a grand fashion, thanks to a five-year, \$310-million renovation and restoration completed in 2017. The restoration was led by HGA Architects and Engineers of Minneapolis, MN. Schooley Caldwell Associates (SCA) of Columbus, OH, was the historic consultant and Wiss Janney Elstner provided technical consulting services.

Construction got underway in 2013, but the project has a long and complex history. Although the growing need for extensive rehabilitation was anticipated in the early 1990s, work completed in recent decades concentrated on focused repair and restoration projects (1990-2005). Comprehensive preservation planning efforts began in 2005. Commissions were established and over the next several years, a diverse group of stakeholders including administrators, historians, designers and preservation professionals were involved in the ongoing discussion of the building's future.

MOCA was brought on board as the client's

RIGHT: The White Georgia marble on the exterior of the building had deteriorated over the years. In some cases, it had become a safety issue. Photo: HGA Architects and Engineers





representative for the interior. "Our goal was to establish the comprehensive master plan and the design guidelines and imperatives which included the identification of the four preservation zones within the building," notes David H. Hart, FAIA, Executive Vice President, MOCA.

Overall goals developed for the restoration included (1) improve the functionality of the building, (2) upgrade life-safety initiatives and improve accessibility (3) upgrade mechanical systems and infrastructure, and (4) preserve and restore the architectural integrity of the historic building. "It took an incredible amount of patience to build a consensus to move forward," says Michael Bjornberg, FAIA, Historic Architect at HGA until 2016. "It was a fiscally conservative era, and with elections every two years, it took a very long time to build the story that it needed a comprehensive restoration."

While discussions, negotiations and construction pertaining to overall rehabilitation continued, several preservation projects were undertaken to protect the building from further damage.

Exterior

"One of the first preservation projects was water mitigation at the main dome," says Ginny Lackovic, project architect for the exterior. "Large volumes of water had been penetrating the marble dome for years and excessive water infiltration was starting to affect the interior finishes. The water infiltration project, completed in 2009, was our first opportunity to get a close up look at the exterior stone."

PROJECT

Minnesota State Capitol, St. Paul, MN

ARCHITECTURE AND ENGINEERING:

HGA Architects and Engineers, Minneapolis, MN; Debra Young, AIA, Senior Project Manager; Michael Bjornberg, FAIA, Historic Architect; Kimberly Sandbulte, AIA, Project Architect (interior); Ginny Lackovic, AIA, Project Architect (stone); Angela Bateson, Dustin Harford and Ben Walters, Architectural Interns (plaza and site); and Stephen Peper, (roof)

DESIGN TEAM HISTORIC CONSULTANT:

Schooley Caldwell Associates (SCA), Columbus, OH; Robert D. Loversidge, Jr. FAIA, President/CEO; Melinda Shah, AIA, Project Architect; Timothy Velazco, RA, Project Architect

DESIGN TEAM TECHNICAL

CONSULTANT: Wiss Janney Elstner, Associates (WJE), Minneapolis, MN; Paul Whitenack, AIA; Chelsea Karrels, AIA; Remo Capolino, PE (copper roof)

OWNERS REPRESENTATIVE FOR

THE INTERIOR: MOCA, Salt Lake City, UT; David Hart, FAIA, Executive Vice President; Paul Brown, RA, Director of Project Definition; Joe Stahlmann, Project Manager

CONSTRUCTION MANAGER: J.E. Dunn Construction, Kansas City, MO

"The extent of deterioration observed at the drum column capitals, carved from solid blocks of Georgia White marble, was serious enough to compel a comprehensive building assessment," she continues. "Tooled sculptural elements, with relatively large surface areas exposed to sun and water, typically demonstrated the highest levels of distress. Testing revealed that deterioration was accelerated by cyclical temperature change, a process called thermal hysteresis, and was further influenced by original carving and tooling practices, subsequent wetting and drying cycles, frost action, wind and organic growth."

Lackovic notes that nothing was budgeted for exterior work in 2005. "Investigation and a series of condition assessments demonstrated the need for repair but defining the scope of the rehabilitation was

The Numbers

EXTERIOR

Number of marble pieces marked and cataloged: more than 30,000

Tons of White Georgia marble hand selected: 800

Estimated number of Dutchman marble exterior repairs completed: **8,000**

Number of other types of marble repairs, exterior: **20,000**

Original number of Cass Gilbert windows: 242

Weight of each granite tread on the south plaza stairs: **15,000-20,000 lbs.**

Reclaimed skylights: 8

INTERIOR Weight of scaffolding in Rotunda: **265,000 lbs.**

Height of Rotunda scaffolding: **120 ft**.

Pieces of custom hardware for Capitol doors: 620

Approximate number of works of art removed and stored during restoration: **40**

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Murals conserved: **57**

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THIS PAGE: One of the outstanding features of the building is the golden sculpture group at the base of the dome, "The Progress of the State," known as the Quadriga. It was designed by Daniel Chester French with Edward Potter.

OPPOSITE: After repair, the exterior stone on the building once again gleams. Approximately 8,000 Dutchman repairs were made and 800 tons of new marble were added. Architects Ginny Lackovic and Paul Whitenack visited the historic Southern Marble Quarry several times. Working side by side with Polycor's Project Manager Sylvie Beaudoin, they hand selected previously quarried stone blocks that had physical qualities that were the best match for this particular project.



one of our biggest challenges." Scope options were explored across a wide spectrum—from low impact repair at \$9 million, to high impact, comprehensive rehabilitation in excess of \$80 million. Finding the right balance required consideration from a number of perspectives: cost, constructability, long-term stewardship and preservation goals, overall appearance and historic character.

Schedule and unit pricing were established during full-scale field trials. The schedule, based on the number of pieces that could reasonably be installed each month, was driven by scaffolding costs. The scaffolding, which was moved around the building as the work progressed, averaged slightly less than \$1 million a year so pressure was on to work efficiently. The project, which began with one production carving studio, ultimately required the efforts of eight masonry contractors, including four additional fabricators, to meet the aggressive schedule.

The Capitol is constructed of more than 30,000 stone units, Lackovic explains. During the course of the restoration, nearly every piece of stone on the building was touched and approximately 60% received some level of general repair. An additional 5,000 pieces of new stone repair pieces were installed.

The new Georgia White marble for the building was quarried from the same county as it was in 1905, Pickens County, GA.

Fabricators took advantage of CNC technology to expedite production but sculptural pieces were typically finished using traditional carving techniques and then carefully fitted and detailed on site to blend seamlessly with adjacent work. Excessively deteriorated or "sugared" surfaces were ground smooth to facilitate water shedding.

Other exterior work included removal and reconstruction of all exterior grand stairways; complete roof replacement, including all copper chamber domes; copper roof replacement and gilding of the lantern and finial globe with 18k gold; replacement of all non-historic aluminum window assemblies with energy-efficient historically accurate wood sashes, and replacement of 12 monumental drum windows. The Quadriga statue, the focal point of the primary façade, was also repaired and re-gilded.

Interior

The team identified four historic preservation zones, which served as a guide for the interior work. The most historically significant spaces were classified as Zone 1 and the least historic spaces, such as the basement, which had originally been a crawlspace, were classified as Zone 4.

Zone 1 included the public spaces that everyone sees, the governor's reception room (the most highly decorated room), the Senate and House Chambers and the Supreme Court Chambers, says Bjornberg. Zone 2 included transition spaces, such as secondary corridors and the spaces directly off Zone 1. "They were to be sympathetic with Zone 1," he says. "Zone 3 spaces, such as the office spaces, had experienced change throughout the years, so we wanted them to be compatible. Everyone seemed to understand this approach. It also helped us maintain a budget."

"We had a beautiful palette to work with," says Kimberly Sandbulte, project architect for the interior. "We had a lot of artwork and materials, including stone from all over the world, that we had to restore and protect."

"In the secondary spaces, we found most of the original material intact," Bjornberg adds, "such as tile that had been covered with carpet and was in good shape. It was a surprise, and a treasure."

Over the years, water leakage through masonry joints, skylights and the stone dome had dam-









of the building, plaster, murals and decorative paint were meticulously evaluated by conservators. "It was all much more fragile than any of us anticipated," says Sandbulte.

Wiss, Janney Elstner was brought on as the team's paint and plaster and historic materials expert. Every effort was made to preserve original material. Significant paint research allowed corrections to numerous over-painting campaigns. The decorative painting and plaster was then painstakingly preserved by Conrad Schmitt and general painting by the painting contractor Swanson & Youngdale.

In addition, the Minnesota Historical Society secured additional funding and brought in a conservator to conserve and restore the murals and 57 paintings and to restore the original 1905 stencil patterns and colors. The Guastavino tile in the east porte cochere, damaged by insensitive mechanical system upgrades, was restored. Stencil patterns and decorative

1: Artisans from Conrad Schmitt restored 57 historic murals in the Capitol on site. Credit: Courtesy MN Dept. of Admin., Cathy Klima photographer

2: Approximately 40 works of art were removed and stored during construction. Credit: Courtesy MN Dept. of Admin.. Cathy Klima photographer

3: Ten of the building's 30 skylights were uncovered and repaired. Credit: Courtesy MN Dept. of Admin., Cathy Klima photographer

4: Over the years, various changes had hidden the original beauty of the interior. Credit: HGA Architects and Engineers

pant and were restored by Conrad Schmitt, while fine art murals were the conservator's work.

To keep the entire team on target, MOCA and HGA held regular workshops, "open forum meetings where we discussed a variety of topics to define the project and goals," Sandbulte says. "By having open workshops, we could bring in all stakeholders and they were able to discuss what was important. This got everybody on the same page. That was important for the project. Everyone felt their needs would be addressed. That was key to the funding."

"All of these capitol buildings projects are different," says Hart. "And all are complicated. There's nothing simple about a capitol restoration. There are many unknowns, and today's codes are much different. You are working with a building that's 100 years old that has been lovingly abused and used by changes and adjustments. We had to take it apart and put it back to together in a way that it can continue to be used going forward. These buildings are not museums; they are used by the public, school children, legislators and the common person to communicate to elected officials."

"Throughout the building we tried to re-establish order." says Robert D. Loversidge, Jr., President/ CEO, Schooley Caldwell. "Through a series of well-meaning decisions over the years, the building had been chopped up; it had become a maze. Plus, the mechanical systems were tired and old and lifesafety and accessibility were marginal. Cass Gilbert was a great architect, so the fundamental bones of the building are nicely designed and arranged. We tried to make it more orderly, and to do it in a way that's compatible with the historic building, especially





within the preservation zones. We wanted to create a sense of convenient spaces and add all of the things that a modern office building needs to have."

The designers were also able to open up 40,000 square feet of space for public use when the State decided to move the Senators out to a separate new building. (The house offices had moved out of the building many years ago.) "We added new public spaces, a new dining area, a public gathering space in the basement and a new space on the third floor for rotating art exhibits," says Sandbulte.

One big issue was the lighting. Crenshaw restored the historic fixtures and manufactured hundreds of new, compatible fixtures, designed by HGA, SCA and lighting consultant Schuler Shook. LED modules were added to 99% of the lighting. In addition, the new lighting control system allows users to switch to one of four lighting levels.

"The original lighting level was not up to today's standards," says Debra Young, HGA Senior Project Manager. "Historically, lighting was dimmer. While the Historical Society wanted people to be able to see the Capitol at a dimmer level, the legislators had different light level needs. The lighting controls system provides four pre-programmed settings, allowing people to change the lighting at the push of a button."

New mechanical systems were also a big part of the project. All of the systems had to be replaced. In many areas, this was difficult because of the historic nature of the building. Sandbulte explains that the design team built a complete BIM model of the building that included the original systems as well as all of the work from previous renovations over the past 50 years. This helped them understand where to route mechanicals where it would have the least impact on historic materials. The team also found that Cass Gilbert had "left behind" concealed routing that could be used to hide some of the new systems.

One big move was to put all of the mechanical systems in the basement, in Zone 4. "The basement had originally been a crawlspace," says Young. "Over time, there had been campaigns to update the building by lowering the crawlspace floor. It was piecemeal, with some mechanicals on the roof and some scattered all over the basement. We were able to locate all mechanical services in the north side of basement, freeing up space on south side. We were also able to remove louvers on the south wall, allowing us to place windows in the existing louver openings at new office suites in the basement." "The big coup was recovering a lot of space in the basement," says Loversidge. "We had a statute that said we couldn't expand the footprint of building, so this was the solution to getting more space. We raised the ceilings, exposed structure to see stone, brickwork and vaulted arches. And we opened the space under the rotunda to reveal huge stone piers. This created an aesthetic for the basement, made it feel like a ground floor."

"This is one of a few state capitols that has held on to its roots," says Hart. "The House had moved out years ago to state office building across the street. One of the goals was to return as much public space to the public as possible, so the idea of moving the Senate across the street opened up lot of space, and returned much of it back to the public, so they could enjoy the building."

Another important part of the project was uncovering 10 of the 30 skylights and laylights that had been covered in previous renovation projects. "We tore out all of that ductwork and repaired the skylights and laylights," says Young. "They were repaired or replicated, so now they bring natural light into the building."

One of the challenges was working while the



building was partially occupied. "The basement was mostly vacant while we worked," says Sandbulte, "but other areas such as the house chamber had to be kept running during the legislative session. In addition to these activities, we installed a 117-ft. tall scaffolding tower in the main rotunda during the Easter break. They were able to build this in five days."

Site Work

While the original statute limited the project scope to the footprint only, subsequent findings and water leak investigations determined that the plaza and site also required extensive work. This resulted in comprehensive waterproofing at the plaza, terraces and stairs on the south, east and west sides of the building.

"One of the most challenging aspects of the exterior waterproofing was managing unknown conditions and expanding the scope within the constraints of the schedule," says Dustin Harford of HGA. "Proximity to the project and close collaboration with the contractor and subcontractors enabled the waterproofing scope of work to stay on schedule. A significant amount of challenging stone work was also involved in the exterior waterproofing."

This work included "removing and resetting

each of the granite treads onto newly waterproofed foundations, removing and resetting portions of the marble balustrade along the edge of the plazas, and performing granite Dutchman repairs at the granite base along the building perimeter to properly terminate the waterproofing system."

The waterproofing and stonework completed at the plaza stairs and foundation are nearly invisible to most who visit except for relatively discreet tie-ins protected below copper flashing. The most noticeable transformation beyond the building perimeter is the closure of Aurora Avenue on the south side of the building. The avenue was closed and transformed into a pedestrian promenade to provide improved accessibility, which Harford says "gives a clear view of the building."

The citizens of Minnesota do indeed now have a clear view of their Capitol. Whether they are inside or outside the building, they can once again observe and enjoy Cass Gilbert's original design in an improved updated environment, thanks to the dedication of the architects, hundreds of workers and craftspeople and the enduring building itself. "It's an amazing building," says Loversidge. "In the end, it is so strong that it survived everything." **OPPOSITE:** The restoration of the 220-ft. dome included drum and dome waterproofing, stone and plaster repair, new LED lighting, mural restoration and painting.

Key Suppliers

Historic Lighting: Crenshaw Lighting, Floyd, VA

Lighting Consultant: Schuler Shook, Chicago, IL

Mural Restoration, Decorative Painting: Conrad Schmitt, New Berlin, WI

Decorative Painting: EverGreene Architectural Arts, New York, NY

Ceramic Tile: **American Restoration Tile,** Mabelvale, AR

Stained-glass repair: Gaytee-Palmer Stained Glass Studio, Minneapolis, MN

Ironwork: **Robinson Iron Corp.,** Alexander City, AL

Window repair: **Re-view,** Kansas City, MO

Custom Hardware: Kendall Doors and Hardware, Mendota Heights, MN

Stone Suppliers: White Georgia Marble: **Polycor, Inc., Quebec City, Quebec**; Tennessee Pink Light Rose Marble: **Tennessee Marble Co., Friendsville, TN**; Diamond Pink Granite: **Coldspring, Cold Spring, MN**

Masonry Subcontractors: Twin City Tile and Marble Company (TCTM), Eagan, MN – Procurement (field measuring, shop tickets), fabrication coordination and field carving; Mark-1 Restoration Company, Dolton, IL – Selective demolition and installation; Advanced Masonry Restoration, St. Paul, MN- General stone repair and re-pointing; Grazzini Brothers & Co., Eagan, MN

Stone Fabricators: **Traditional Cut Stone**, Mississauga, Ontario, Canada; **Paulo Costa & Sons**, Massa, Italy; **Cutting Edge Stone**, **Inc.**, Alpharetta, GA; **Tennessee Marble Company**, Friendsville, TN; **Art Cubus International**, Sherbrooke, Québec, Canada

European Stone Broker: **Italmarble Pocai SRL, Massa, Italy**

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House (and Senate) Cleaning By Martha McDonald

HAT STARTED OUT AS A simple radiator repair job turned into a complete restoration of the House and Senate Chambers at the Colorado State Capitol in Denver, CO. This three-year, \$5,389,500 project returned both chambers and the connected offices in this historic building back to their original beauty. Completed in 2016, it involved quite a bit of research, many tradespeople, and some serendipitous good luck.

The historic, 1894, six-story structure incorporates a tower that reaches a height of 272 ft. and contains almost a quarter of a million square feet of space. With its gold dome (added in 1908, it was originally copper), the building is a beacon in the Rocky Mountain state. It was designed by Elijah E. Myers in the Neoclassical style to be reminiscent of the U.S. capitol and is constructed primarily of Colorado white granite.

"Actually, we started work in the capitol in

House and Senate Chambers, Colorado

ARCHITECT: Anderson Hallas Architects, Golden, CO; Dave Anderson, AIA, LEED **AP, Principal**

GENERAL CONTRACTOR: Spectrum General Contractors, Denver, CO; Tom Cella, President/Senior Project Manager

CLIENT: State of Colorado Department of Personnel and Administration: Lance Shepherd, Manager, Design and **Construction Programs**



LEFT & BELOW: Anderson Hallas Architects and Spectrum General Contractors working with a team of craftspeople in a design/build project restored the historic Senate and House chambers at the Denver Capitol to their original grandeur. The Senate now has its original red color, while the House is once again a historic green. All photos: Caleb Tkach unless otherwise noted

LEFT & BELOW: These two before photos show that both the House and Senate chambers had been painted a dull beige color and the original stencils had been covered with acoustic tile. Photos: Anderson Hallas Architects



2011," says Dave Anderson, AIA, LEED AP, principal, Anderson Hallas Architects. "Our initial involvement was to assess the condition of the plumbing throughout the building. In the process of doing this, a 3D Revit model of the entire capitol was generated. This was done with only a laptop and laser tape measure. In doing that, everyone became familiar with the whole building,"

Then in 2013, the capitol management team decided to repair one of the radiators in the House Chamber. The removal of acoustical tiles near the radiator led to the discovery of beautiful, handstenciled original plaster walls. The client's decision to restore the original historic character of both chambers with a full rehabilitation evolved as discoveries were made during initial investigations. House Chamber Administrator, Marilyn Eddy, was an early proponent of the expanded rehabilitation project.

'We started the radiator repair by taking a look at the painted cork panels (acoustic tile) on the walls that had been added in the 1950s," says Anderson. "They covered everything and were painted beige. When we checked behind the tiles, we discovered that the original stencils and original painting was still intact behind these panels." Research of historic

documents and photos confirmed that the walls of both houses had been beautifully finished with stencils around 1905.

This original filigree stencil work had been done by Denver artist Manuel Hill. The design team also found that each 1x1-ft. 1950s acoustical tile was attached with dobs of horse glue, which could only be removed by hand rubbing. They also discovered ghost images of murals that would have been painted even before the stencil designs. These were thought to be mock-ups or mural options before the final decision was made.

The craftspeople began by carefully removing



these acoustic panels and restoring the walls to their original colors—green for the House and red for the Senate—and recreating Hill's stencil designs. During the exploration, they found that there were 12 different custom-mixed paint colors in the House and 10 in the Senate. All were reproduced from paint analysis.

When the tiles came down, the original skylights in the House and Senate chambers were uncovered. These two skylights, each 30x30-ft., were restored as was the metal trim work around them.

It should be noted that although the 1950s tiles were also removed from the upper portion of the walls and the ceiling, they were replaced by a new acoustic plaster treatment, and then the original stencil designs were applied. "One of biggest issues was trying to balance the loss of acoustic material without the loss of the acoustic properties of the space," says Anderson. "This was made possible by adding a layer of acoustic plaster over the original stenciling in the upper areas and then reproducing all of the stenciling that had been behind that. The speakers and electronics were also upgraded and adjusted so that the sound was better managed."

Another challenge involved lighting. "We

brought back the incredible colors from the 1900s, but they are very light absorbing. We wanted the legislators to be able to see the volume of space and be able to read papers down on the floor," he explains. "It was a challenge getting more light and reducing energy use, while also maintaining the building's LEED certification."

The lighting plans also called for the restoration of the two 50-ft. chandeliers, one in each chamber. While work was going on, by chance Anderson happened to meet a man at a Christmas party who said he owned one of the original etched globes from one of the chandeliers, which had been removed in the 1950s.

"You could tell from the historic photos that this was original," says Anderson, noting that the globes were about 10 in. tall x 5 in. dia. The globes were reproduced (without the etching because of budget reasons) and put back on the chandeliers, which were restored and updated with LED lighting. Each chandelier has eight arms with six globes on each arm, for a total of 48 globes on each fixture.

All of the windows in the chambers were cleaned and restored, including the 17 stained-glass panels each measuring $4.5 \ge 7.5$ ft., located in both

Key Suppliers

Paint Analysis: Built Environment Evolution, Boulder, CO

Window Restoration: Watkins Glass, Denver, CO

Historic Paint, Stencil Reproduction: **EverGreene Architectural Arts**, New York, NY

Refurbishing of Historic Chandeliers: **St. Louis Antique Lighting, St.** Louis, MO

Stencil, Metal and Other Finish Restoration: **Historic Surfaces**, **LLC**, Milwaukee, WI

Art Conservation: WCCFA, Inc. (Western Center for the Conservation of Fine Arts), Denver, CO

Electrical Engineering, Lighting Consultant: **AE Design, Denver, CO**

Mechanical Engineering: **360** Engineering, Golden, CO

Infrared camera documentation: **Denver Art Museum, Denver, CO**

chambers. This work was done by Watkins Glass of Denver, a third-generation firm that has been working on the capitol over the years. The stainedglass windows honoring different legislators had been originally built by Watkins.

"There were a number of windows in the Senate that needed to be restored," says Anderson. "These were originally installed when they were still smoking in the chambers. Also, the original gas lights created a lot of soot."

One of the most challenging aspects of this project was having to work with the House and Senate schedules. "They had to be able to use the chambers January through May, so the work had to be done June through December," he says. "The scaffolding had to be taken down at the end of each construction season. The construction crew had to be able to mobilize and de-mobilize, working around the legislative session. They had to cover desks and build scaffolding around and over them, and then take it down again."

The work was done in phases over three years. The first phase was the work in the lower levels, including the demolition of the acoustic panels, and restoring the wall paint and stencils,

In the second year, the scaffolding went up again and the ceilings and skylights were restored.

No scaffolding was required for the third year when the gallery seating was replaced and fireproofing was addressed.

The restoration of the House and Senate chambers is just one step in a long list of work that







continues on Denver's historic capitol building. "A life-safety project was completed 11-12 years ago," notes Lance Shepherd, Manager, Design and Construction Programs, State of Colorado Department of Personnel and Administration. "The dome project was completed five years ago, and we are currently working on restoring and replacing the roof. We also put in a ground-source heating/ cooling system (geothermal)."

Shepherd adds: "The Denver capitol is the first—and only state capitol building—to be certified LEED EB, and we have since gone to LEED Dynamic Plaque to maintain that." Currently work is in progress in committee rooms and on the windows.

"Everyone is very happy with the restoration of the House and Senate chambers," Shepherd says. "It's the first time since the 50s that the skylights have been open. It was a design/build project and it worked out very well."

"This was a design/build project, which is relatively unusual in historic preservation, and we were really fortunate to put together a great team with Spectrum General Contractors," says Anderson. "And we all had great support from the State throughout the entire project. Lance gets real credit for having the vision and holding on to the historic preservation through all of his work at the Capitol building."

LEFT: All 17 of the stained-glass windows in the chambers were restored.

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Brass Light Gallery, Inc. 800-243-9595; Fax: 800-505-9404 www.brasslight.com

Milwaukee, WI 53233

Designer & manufacturer of lighting: sconces, pendants, chandeliers & alabaster fixtures; Neoclassical, Prairie, Rustic & Arts & Crafts styles; 15 metal finishes & hundreds of European shades: ADA & compact fluorescent options.

Bridger Steel

877-783-3568 www.bridgersteel.com Belgrade, MT 59714

Supplier of architecturally accurate metal roofing & siding; available in a wide range of colors including prints & vintage inspired patinas: LEED certification is available on some products. Click on No. 2082

Brosamer's Bells

517-592-9030; Fax: 517-592-4511 www.brosamersbells.com Brooklyn, MI 49230

Supplier of pre-owned bells: more than 40,000 lbs. in stock: restoration of cast-bronze bells: vard, fire engine. railroad, church & tower bells; many styles; all sizes.

Brusso Hardware 212-337-8510; Fax: 212-337-9840 www.brusso.com Belleville, NJ 07109

Designer & manufacturer of architectural & fine hardware: commercial & residential; precision tolerances; made with premium materials; pulls, latches, knobs & hinges; made in USA.

Building Conservation Associates 212-777-1300: Fax: 212-777-1606 www.bcausa.com

New York, NY 10016

Consulting firm: project management, conditions survey, plans & specs, cost estimating & feasibility reports, materials testing & paint/finishes analysis; for historic buildings, monuments & fine art.

Burnham & LaRoche Associates 800-540-5047; 781-395-5047; Fax: 781-391-7543 www.burnhamlaroche.com Medford, MA 02155

Designer & installer of stained glass: protective coverings, slumping & lamp repair; restoration; religious/institutional projects.

Campbellsville Industries, Inc. 800-467-8135; Fax: 270-465-6839 www.cvilleindustries.com

Campbellsville, KY 42718 Manufacturer & installer of architectural metalwork: steeples, columns, cupolas, street clocks, railings, balustrades, finials, domes, weathervanes & louvers; aluminum, copper, zinc & lead-coated copper.

Carlisle Wide Plank Floors 603-446-3937; Fax: 603-446-3540 www.wideplankflooring.com Stoddard, NH 03464

Custom fabricator of traditional wide-plank floors: hand-selected antique & old-growth pine & hardwoods; deals directly with homeowners, builders, architects & specialists in historic restoration & reproduction.

Carlson's Barnwood Co. 309-522-5550; Fax: 309-522-5123 www.carlsonsbarnwood.com Cambridge, IL 61238

Supplier of antique barn wood & salvaged materials: planks, beams, dimensional lumber, re-milled flooring & architectural antiques; pine, oak, heart pine & mixed species; salvaged doors, windows & shutters; antique lighting & art glass; hardware.

Cathedral Stone Products 800-684-0901; 410-782-9150; Fax: 410-782-9155

www.cathedralstone.com Hanover. MD 21076

Manufacturer of Jahn restoration mortar: compatible patching mortars for repairing any masonry surface; cementitious, non-polymer mortars; breathable at any thickness; easy to apply; standard & custom colors.

Cave Company

800-989-2283; 516-333-3659; Fax: 516-676-9695 www.churchgoods.net Old Westbury, NY 11568

Complete interior services for churches; painting, decorating, restoring; artwork & murals, statuary; also manufactures fiberglass religious statuary & electric devotional candle stands.

CertainTeed–Roofing Products Group 800-233-8990; Fax: 610-341-7940 www.certainteed.com

Valley Forge, PA 19482

Supplier of steep- & low-slope roofing products: the patented Shangle; laminates; durable three-tab shingles; Symphony slate series mimics look & feel of natural slate; an Energy Star product; long warranties.

Chadsworth Columns 910-763-7600; Fax: 910-763-3191 www.columns.com Wilmington, NC 28401

Manufacturer of authentically correct architectural columns: complete line of columns, piers, pilasters & posts for interior & exterior use; variety of sizes, styles & materials, including wood; more than 20 years, Click on No. 1580 for PolyStone; 180 for wood

Champlain Stone, Ltd. 518-623-2902; Fax: 518-623-3088 www.champlainstone.com Warrensburg, NY 12885

Manufacturer of building & landscaping stone & stone flooring: guillotined & hand-split granite, guartzitic sandstone & limestone; for fireplaces, building veneer, wall stone, flagging, paving, step slabs, benches & retaining walls.

Chelsea Decorative Metal Co. 713-721-9200; Fax: 713-776-8661 www.tinman.com Houston, TX 77074

Manufacturer of pressed-tin ceiling & wall panels: tin-plated steel has shiny silver finish, can be painted with oil-based paint; 3-, 6-, 12- & 24-in. patterns ranging from Art Deco to Victorian; easy-to-install 2x4-ft. sheets.

Chestnut Specialists, Inc. 860-283-4209: No fax www.chestnutspec.com Plymouth, CT 06782

Manufacturer of antique wood for flooring: chestnut, oak, pine & hemlock; hewn barn beams, weathered siding & sheathing planks.

Christoph Paccard Bell Foundry 800-849-6670 www.christophpaccard.com

Charleston, SC 29414

Specializing in the installation of cast bronze bells, chimes, carillons, electronic carillon systems, tower clocks & turn-key bell & clock towers: custom design & installation services; restoration & repairs for new & existing bell & clock systems.

Cityproof Windows

718-786-1600; Fax: 718-786-2713 www.cityproof.com

Long Island City, NY 11101 Manufacturer & installer of custom-made interior window systems: aluminum, storm/screen combo, arched & custom shapes; mechanical fastenings; acrylic, lexan, UV-resistant, standard, low-E, tempered, laminated & etched-glass glazing.

Classic Cast Stone of Dallas 972-276-2000: Fax: 972-272-6400

www.classiccaststone.com Garland, TX 75042 Custom manufacturer of cast-stone architectural ornament: columns, capitals, copings, balustrades, wall caps, mantels & more; interior & exterior.

Classic Ceilings 800-992-8700; Fax: 714-870-5972 www.classicceilings.com Fullerton, CA 92831

Supplier of decorative wall & ceiling ornament: pressedmetal wall & ceiling tiles, tin ceiling panels, cornices & backsplashes; decorative stampings; perforated tin ceiling panels & tin ceiling imitations; crown moldings & more.

Cleveland Quarries

440-963-4008; Fax: 440-963-4011 www.clevelandquarries.com Vermilion, OH 44089

Stone quarry: processor of Berea Sandstone into slab, split or diamond-finished products; sandstone is squared, shaped, finished & carved to detailed specs by skilled craftsmen.

CoCo Architectural Grilles & Metalcraft 631-482-9449' Fax: 631-482-9450 www.cocometalcraft.com

Farmingdale, NY 11735 Fabricator of grilles & architectural metal products:

stainless steel, brass, aluminum & steel; linear bar grilles, perforated; custom work.

Compass Ironworks 717-442-4544; Fax: 717-442-1948 www.ironworkclassics.com

Gap. PA 17527 Fabricator of wrought-iron metalwork: gates, fences, railings, décor; family owned; hand crafted; historical styles: recycled content.

Concealite Safety Products 605-542-4444; Fax: 605-542-3333 www.concealite.com Elkton, SD 57026

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Conklin's Authentic Antique Barnwood 570-465-3832: Fax: 570-465-3835 www.conklinsbarnwood.com

Susquehanna, PA 18847 Supplier of reclaimed & re-sawn antique lumber: flooring in white pine, chestnut, heart pine, antique oak & hemlock; weathered barn wood, hand-hewn beams, pole rafters, used metal roofing & other antique barn materials.

Connor Homes 802-382-9082; Fax: 802-382-9084 www.connorbuilding.com Middlebury, VT 05753

Home builder: homes & more; follies, garden houses, pool houses, storage sheds; mantels, kitchen cabinets, barns, millwork, paneling, windows, stairs & stair parts.

Conrad Schmitt Studios, Inc. 800-969-3033; Fax: 262-786-9036 www.conradschmitt.com

New Berlin, WI 53151

Creator, conservator & restorer of decorative painting: stained & art glass; ornamental plaster work & ceilings; gilding; murals, mosaics & statuary; for public & religious buildings; since 1889. Click on No. 8040; 1841 for art glass; 1839 for ecclesiastical specialties

Coppa Woodworking 310-548-4142; Fax: 310-548-6740 www.coppawoodworking.com

San Pedro, CA 90731 Manufacturer of wood screen doors & storm doors:

more than 300 styles; pine, Douglas fir, oak, mahogany, cedar, knotty alder & redwood; any size; many options; arch & roundtop, double, French doors, doggie doors, window screens & more. Click on No. 9600

Copper-Inc.com 888-499-1962; Fax: 888-499-1963 www.copper-inc.com Galveston, TX 77551

Manufacturer & distributor of copper products: cupolas, finials, weathervanes, roof vents, conductor heads, chimney caps, chimney pots & more; large production facility.

Coppersmythe, Josiah R. 800-426-8249; Fax: 508-432-8587 www.jrcoppersmythe.com

Harwich, MA 02645

Supplier of handcrafted Early American & Arts & Crafts reproduction lighting fixtures: lanterns, chandeliers, sconces & post lights; copper, brass, tin, wrought iron & wood; catalog \$3.

Country Carpenters, Inc. 860-228-2276; Fax: 860-228-5106 www.countrycarpenters.com Hebron, CT 06248

Manufacturer of pre-cut, pre-engineered New Englandstyle post-&-beam carriage houses, garden sheds & country barns: family owned & operated; since 1974; catalog \$5.

Country Traditions Lighting 800-828-6990; 413-664-7141; Fax: 413-664-0312 www.countrytraditionslighting.com Clarksburg, MA 01247

Manufacturer of lighting fixtures: contemporary & country styles; made in the US; UL listed; many color & custom options.

Craftsman Lumber Co. 978-448-5621; Fax: 978-448-2754 www.craftsmanlumber.com Groton, MA 01450

Manufacturer of wood flooring & custom millwork: wide-plank flooring & clapboards; eastern white pine, red pine, red oak & other native hardwoods; all drying & milling done on premises.

Crenshaw Lighting

540-745-3900; Fax: 540-745-3911 www.crenshawlighting.com Floyd, VA 24091

Designer & manufacturer of fine lighting since 1957: custom designs; historic restoration & replication; contemporary; residential; government; university; worship; theatre; museum. Interior & Exterior. Handmade in the USA.

Crittall Windows, Ltd. 011-44-1376530800; Fax: 011-44-1376530801 www.crittall-windows.com

www.crittall-windows.com Witham, Essex CM8 3UN U.K.

Manufacturer of steel window & door systems: single hung, casement, pivot, awning, projecting, fixed lite & round top; historical restoration & renovation; minimum maintenance; custom shapes & sizes; recycled/ recyclable steel content.

Click on No. 2016

Crown Point Cabinetry 800-999-4994; Fax: 603-370-1218 www.crown-point.com Claremont, NH 03743

Manufacturer of custom cabinetry in period styles: Shaker, Victorian, Arts & Crafts, Early American & traditional styles.

Custom Home & Commercial Accessories 800-265-0041; Fax: 916-635-0228

www.customhomex.com Rancho Cordova. CA 95742

Manufacturer of metalwork accessories: decorative, locking & commercial mailboxes in aluminum, brass, copper & stainless steel; signs made of brass, bronze & stone; copper weathervanes & cupolas.

Custom Shutter Company 800-470-0685; Fax: 251-545-4120 www.customshuttercompany.com Fairhope, AL 36532

Manufacturer of exterior shutters & stainless-steel shutter hardware: decay resistant & historically inspired; unlimited custom options & style selection; advanced finishing process; lifetime finish & unlimited color selection.

Custom Wood Reproductions, Inc. 413-562-8900; Fax: 413-562-4444 www.customwoodreproductions.com Westfield, MA 01085

Window specialist: replicates any design or profile, including round tops & Gothic arches; specialty glazing options.

D.J.A. Imports, Ltd. 718-324-6871; Fax: 718-324-0726 www.djaimports.com Bronx. NY 10466

Distributor of architectural metal components: gates, railings, stairs, gate & door hardware, machinery for the metal industry & specialty items; stainless steel & aluminum; reproductions; riveted gates & railings, operators & more.

DecoCraft USA 718-534-7000; Fax: 718-534-7040 www.decocraftusa.com Brooklyn, NY 11205

Fabricator of plaster molding: crowns, friezes, cove lighting, ceilings, walls, chair rail, panels, mantels, door casing, niches & more.

Decorators Supply Corp. 800-792-2093; Fax: 773-847-6357 www.decoratorssupply.com Chicago, IL 60609

Manufacturer of classic architectural elements: 13,000 appliqués for woodwork, furniture & walls; plaster crowns, ceiling medallions, ceilings, niches & swags; 900 sizes of column capitals, plaster capitals, corbels & columns; 15 styles of traditional wood mantels; Classically inspired grilles; since 1883.

Deep Landing Workshop 877-778-4042; Fax: 410-778-4070 www.deeplandingworkshop.com Chestertown, MD 21620

Manufacturer of custom lighting fixtures: chandeliers, sconces, pendants & lanterns; new designs, historic reproductions & custom work; handcrafted in wood, tin, brass or copper; glass, mica or alabaster shades. **Click on No. 809**

Doors & Shutters by Vixen Hill 800-423-2766; 610-286-0909; Fax: 610-286-2099 www.vixenhill.com

Elverson, PA 19520

Custom fabricator of wooden cedar doors & shutters: design, size & price online then print quote; select appropriate hardware from the company's extensive inventory; free catalog.

Driwood Moulding Company 888-245-9663; Fax: 843-669-4874 www.driwood.com Florence, SC 29503

Supplier of molding: Stock & custom moldings for residential & commercial projects; embossed moldings, custom millwork, mantels, entrances, cabinet & panel work, custom doors.

E.R. Butler & Co. 212-925-3565; Fax: 212-925-3305

212-525-5565, rax. 212-525-5565 www.erbutler.com New York. NY 10012

Manufacturer of historically accurate, premium-quality hardware for doors, windows & furniture: brass, bronze, nickel, silver & wrought iron; complete design selections of Early American period hardware; many finishes.

Click on No. 2260

Ecorad 418-598-3273 www.ecorad.ca St-Jean Port-Joli, QC GOR 3G0 Canada Restorer of cast-iron radiators; conversion to electric.

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www.edgecomge.edu Tarboro, NC 27886 USA Community college: Offers 170 cred

Community college: Offers 170 credentials, including a two-year program, in high-demand fields, such as the preservation trades.

Edison Coatings, Inc. 860-747-2220; Fax: 860-747-2280 www.edisoncoatings.com Plainville, CT 06062

Manufacturer of customized repair & repointing mortars, adhesives, breathable coatings & surface treatments: for stone, masonry & concrete; terracotta repair & glaze-replacement materials; custom matching; training services.

EJMcopper, Inc. 407-447-0074; Fax: 407-447-0075 www.ejmcopper.com

Orlando, FL 32804 Custom fabricator of copper products: cupolas, dormers, weathervanes, finials, vents, kitchen hoods, awnings, chimney caps & more.

Elderhorst Bells, Inc. 800-810-7892; 215-679-3264; Fax: 215-679-3692 www.elderhorstbells.com Palm, PA 18070

Manufacturer of clock movements & complete clock & bell systems: cast-bronze bells, mini carillons, digital carillons, bell-ringing equipment & controls furnished & installed.

Endless Mountain Stone Co. 570-465-7200; Fax: 570-465-3524 www.endlessmountainstone.com Susquehanna, PA 18847

Quarrier & fabricator of dimensional & natural bluestone: architecturally detailed fabrication, pavers, natural cleft flagging, cobblestones, curbing, medallions, hearths, mantels, treads, coping, veneers, fieldstone & wall stone.

Entol Industries, Inc. 800-368-6555; 305-247-1111; Fax: 305-247-6211 www.entol.com

Homestead, FL 33030

Manufacturer of architectural ornament: ceiling panels (more than 150 designs), moldings & more; polymer, wood, gypsum, GRG, FRP & more; primed or prefinished; stock & custom.

EverGreene Architectural Arts, Inc. 212-244-2800; Fax: 212-244-6204

www.evergreene.com Brooklyn, NY 11232

Decorative-arts studio: murals, decorative painting, gilding, plaster, wood, metal, stone & mosaics; new design, conservation & restoration; ecclesiastical, institutional, public & commercial projects; offices in NYC & Chicago.

Click on No. 2460 for decorative painting; 743 for ecclesiastical specialties; 2678 for plasterwork

Expanko Cork Co. 800-345-6202; 610-380-0300; Fax: 610-380-0302

www.expanko.com Exton, PA 19341

Manufacturer of solid-cork & cork-veneer tile: 12- & 24-in. square tile; 3/16- & 5/16-in. thicknesses; 17 patterns; polyurethane, wax or unfinished.

Felber Ornamental Plastering Corp. 800-392-6896; 610-275-4713; Fax: 610-275-6636 www.felber.net

Parkesburg, PA 19365

Creators & manufacturers of interior & exterior molded ornament: capitals, comices, friezes, niches, keystones, rosettes, coffers, domes & medallions; custom mantels; plaster, gypsum & GRG; GFRC, signage, plaques, sculptors, model makers & casters on staff; stock & custom.

Fifthroom.com 888-293-2339; Fax: 724-444-5301 www.fifthroom.com

Gibsonia, PA 15044

Supplier of garden furnishings: furniture, garden houses, gazebos, greenhouses, pavilions, arbors, benches & bridges; ceiling fans.

Fimbel Architectural Door Specialties 908-534-1732; Fax: 908-534-9259 www.fimbelads.com

Whitehouse, NJ 08888

Manufacturer of garage & carriage-house doors: odd heights & widths in 1-inch increments, extensive standard color palette & custom finishing, commercial & residential sizes are all available. Almost unlimited customization capabilities in regard to design in most models.

Fine Paints of Europe 800-332-1556; Fax: 802-457-3984 www.finepaintsofeurope.com Woodstock, VT 05091

Importer of paints & varnishes from Holland: Eurolux water-based; low VOC content; durable, high-quality coatings.

Fires of Tradition 519-770-0063; Fax: 519-770-1295 www.firesoftradition.com Brantford, ON N3T 5L6 Canada Manufacturer of fireplaces: electric fires, c

Brantford, UN N31 5L6 Canada Manufacturer of fireplaces: electric fires, grates, Rumford fireplaces, mantels & more.

Fishman Mosaics 305-758-1141; Fax: Same as phone www.georgefishmanmosaics.com

Miami Shores, FL 33138 Designer & fabricator of mosaics: traditional glass smalti & stone; pictorial mosaics in the Classical style; custom mosaic artwork for public spaces, hospitality & religious projects.

Flaherty Iron Works, Inc. 703-971-7653; Fax: 703-971-8040 www.flahertyironworks.com

Alexandria, VA 22310 Custom fabricator of hand-forged metalwork: sculpture, gates, railings & furniture.

Forshaw of St. Louis, Inc. 314-874-4316; Fax: 314-874-4339 www.forshaws.com

St. Louis, MO 63044 Manufacturer of handcrafted mantels & overmantels: pine, oak, poplar, cherry & other solid hardwoods; unfinished & ready for paint or stain; precast-stone mantels with 33-, 36-, 42- & 43-in. openings; custom & ground shipped.

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508-867-6100 www.freedomcement.com North Brookfield, MA 01535

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Gaby's Shoppe

800-299-4229; Fax: 214-748-7701 www.gabys.com Dallas, TX 75207 Manufacturer of handcrafted decorative iron drapery

hardware: for curved & angled bay windows & arches; 30 standard finishes; more than 100 finial options. **Click on No. 2520**

Gavin Historical Bricks, Inc. 319-354-5251; Fax: 319-688-3086 www.historicalbricks.com Iowa City, IA 52245

Supplier of antique paving & building materials: specialists in new construction with an Old World look as well as historic restoration projects; pavers, cobblestones, clinker brick & more. Click on No. 8079

Goddard Mfg. Co. 785-689-4341; Fax: 785-689-4303

www.spiral-staircases.com Logan, KS 67646

Custom fabricator of stairs: spiral & curved; balusters & newels; all wood (mainly pine & oak), steel/wood combinations & all steel; wholesale prices.

Good Morning Enterprises Inc. 604-904-7866; Fax: 604-904-7848 www.totalpipesolution.com North Vancouver, BC V7H 0A2 Canada

Importer of IOREX, a water/pipe treatment system: removes & prevents rust, scale & slime in pipelines; environment friendly; uses only water as source of power to clean piples.

Goodwin Company 800-336-3118; Fax: 352-466-0608 www.heartpine.com Micanopy, FL 32667

Supplier of centuries-old, river-recovered, reclaimed harvested wood: for flooring, stair parts, millwork; solid or engineered, finished or unfinished. GUIDEBOOK SOURCELIST

Goodwin International 714-241-0942: Fax: 714-241-1874 www.goodwininternational.com Santa Ana, CA 92707

Supplier of landscape & garden ornament from around the world: stone fountains, benches, planters, urns & sculpture; sandstone planters & terra cotta; various design styles & sizes.

Gotham Metalworks 718-786-1774: Fax: 718-786-7214 www.gothammetals.com

Long Island City, NY 11101

Fabricator of sheet-metal products: cornices, cupolas, skylights, railings, capitals, gutters, domes, dormers & custom ornamental stamping; for replications, renovations & new construction projects.

Grand Light

800-922-1469; Fax: 203-828-6307 www.grandlight.com Seymour, CT 06483

Restorer of historic lighting fixtures & manufacturer of custom lighting fixtures: metal fabrication, glass fabrication, metal finishing, polishing, painting, welding, abrasive blasting; historical replication & reproduction.

Click on No. 2006

Greenstone Slate 802-287-4333; Fax: 802-287-5720 www.greenstoneslate.com Poultney, VT 05764

Quarrier of Vermont roofing slate: wide range of sizes. colors & weights; matches slate for roof restoration, additions & new construction; graduated roofs; blending, contrasting & all effects; slate tools.

Haddonstone (USA), Ltd. 719-948-4554; Fax: 719-948-4285 www.haddonstone.com

Pueblo, CO 81001

Manufacturer of classical & contemporary cast limestone: columns, balustrades, benches, planters, pavers, fountains, gazebos, interior ornament, mantels, statuary & more; 500+ designs; custom designs. Click on No. 4020

HeartWood Fine Windows & Doors 585-340-9085; Fax: 585-254-1760 www.heartwoodwindowsanddoors.com Rochester, NY 14606

Manufacturer of custom architectural wood windows & doors: Honduras mahogany & other species; traditional mortise-&-tenon construction; standard & decorative glazing; related window & door hardware; 68-year-old company.

Heat Registers.com 509-535-1237; Fax: 509-534-8916

www.heatregisters.com Spokane, WA 99223 Supplier of registers & grilles; metal & wood; cast & forged metal, sheet metal, metal plate.

Heather & Little Limited 800-450-0659: Fax: 905-475-9764 www.heatherandlittle.com

Markham, ON, L3R 0H1 Canada Fabricator & supplier of historical sheet-metal specialties & architectural sheet-metal components: finials, cornices, leader heads, cresting, metal shingles, pressed-metal wall cladding, cupolas, steeples, domes, reproductions; capitals & balustrades; Kalemein & lotline metal windows & doors, statuary restoration.

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Atelier of skilled blacksmiths & craftsmen: exclusively to trade; lighting, hardware, gates & railings; custom & signature lines available in iron, brass, bronze, copper, nickel, zinc & stainless steel

Heritage Restoration & Design, Inc. 309-637-5404; Fax: 309-637-5740 www.heritagerd.com Peoria, IL 61603

Historic preservation & replication of wood doors, trim, altars, pews, staircases, stained glass, fine arts; New design/fabrication of custom wood furniture, traditional windows, oil paintings, mosaics; generational company.

Heritage Tile 888-387-3280

www.heritagetile.com Oak Park, IL 60301

Supplier of specialty tile: subway, craftsman, moderne

styles & more: floor mosaics, decorative designs, accessories, trim, moldings in various patterns & color palettes.

Herwig Lighting 800-643-9523; Fax: 479-968-6422

www.herwig.com Russellville, AR 72811

Designer & manufacturer of handcrafted cast metalwork: period-design lanterns, street lighting, posts, custom outdoor lighting, street clocks, benches, bollards, custom plaques, signs & more; aluminum & bronze; since 1908. Click on No. 9130

Historic Doors 610-756-6187; Fax: 610-756-6171 www.historicdoors.com Kempton, PA 19529

Custom fabricator of wood windows & doors: casing: circular & crown moldings; complete entryways; wood storefronts; restoration & period-style construction. Click on No. 3570

Historic Plaster Conservation Services Ltd. 888-624-2854; Fax: 905-885-8330 www.historicplaster.com

Port Hope, ON L1A 11M7 Canada

Supplier of conservation services, products & tools for treatment of fragile plaster in historic buildings: primary consulting services; plaster condition assessment & treatment program design.

Historical Arts & Casting, Inc. 800-225-1414; Fax: 801-280-2493 www.historicalarts.com West Jordan, UT 84081

Designer & custom fabricator of ornamental metalwork: doors, windows, hardware, stairs, balustrades, registers, fences, lighting, gutters, columns, weathervanes, snow guards, cupolas, planters, fireplace tools & more; iron, bronze, aluminum & steel; restoration services. Click on No. 1210

Hochstetler Milling, Ltd. 419-368-0008; Fax: 419-368-6080 552 State Route 95 Loudonville, OH 44842

Supplier of new timbers in oak up to 40 ft. long: planed & rough sawn; 2x6 & 1x6 tongue-in-groove knotty pine.

Homefires, Inc. 800-749-4049; Fax: 704-376-0268 www.homefiresusa.com

Charlotte. NC 28220

US distributor of handmade antique replica English firegrates & firebaskets; grates for use with solid fuels, certified vented or vent-free gas coals; unique gas logs/effects both indoor & outdoor use.

Hope's Windows, Inc. 716-665-5124; Fax: 716-665-3365 www.hopeswindows.com Jamestown, NY 14702

Manufacturer of custom-designed windows & doors: handcrafted, hot-rolled, solid-steel & solid-bronze window & door systems.

Housatonic Hardwoods, Inc. 800-924-5684; Fax: 860-927-3911 www.hhardwoods.com Kent, CT 06757

Supplier of wide plank flooring: up to 20-in.-wide planks: oak, ash, cherry, maple, walnut, birch, heart pine; beech, antique oak & chestnut.

House of Antique Hardware 888-223-2545; Fax: 503-233-1312 www.houseofantiquehardware.com Portland, OR 97232

Manufacturer & supplier of vintage reproduction door, window, shutter, cabinet & furniture hardware & accessories: Federal, Victorian, Colonial Revival. Craftsman & Deco styles; lighting fixtures, push-button switches & plates; bathroom accessories; registers & grilles

Click on No. 1096

Hyland Studio, The 408-748-1806; Fax: 408-748-0160 www.hylandstudio.com Santa Clara, CA 95050

Art glass studio: restoration of stained & leaded glass; design & fabrication of new custom stained glass, leaded glass & etched glass creations; exterior protection & conservation of stained glass; all architectural styles.

idh by St. Simons 800-337-9398; Fax: 800-455-9948 www.idhbrass.com Fullerton, CA 92831

Manufacturer of solid-brass architectural hardware & bath accessories: flush & surface bolts, door pulls, window & cabinet hardware, hinges, catches & latches & more

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503-284-2260; Fax: 503-284-2261 www.indowwindows.com Portland, OR 97227

Manufacturer of handcrafted acrylic interior storms: edged in Compression Tube that presses into place without a track or magnetic system to preserve historic windows while creating comfort, energy efficiency, savings & noise reduction: laser-measured for out-ofsquare openings; for residential & commercial projects. Click on No. 2068

Innerglass Window Systems 800-743-6207; Fax: 860-651-4789 www.stormwindows.com Simsbury, CT 06070

Manufacturer of custom glass interior storm windows for energy conservation & soundproofing; out performs almost any replacement; automatically conforms to the opening, compensating for out-of-square conditions; no sub-frame needed; all glazing options available; easy do-it-yourself installation. Click on No. 909

Jim Illingworth Millwork, LLC 315-232-3433

moldings: for homes & historic buildings; matches any existing wood windows, doors, moldings;

John Canning Conservation & Painting Studios 203-272-9868; Fax: 203-272-9879 www.JohnCanningCo.com Cheshire, CT 06410

Restorer, conserver & designer of decorative finishes, ornamental plaster & wood: historic paint analysis; plaster consolidation & stabilization: decorative paint murals, interior & exterior gilding, wood graining, metal & stone cleaning Click on No. 5100

John Tiedemann, Inc. 877-600-2666; Fax: 201-991-3419 www.iohntiedemann.com North Arlington, NJ 07031

Restorer of interior elements: interior painting & design, liturgical renderings, decorative granite flooring, faux finishes, murals & frescoes, gilding, art glass, fine art, paint & plaster analysis, historic analysis & testing.

John Wright Co. 800-444-9364; Fax: 717-252-3392 www.jwright.com Wrightsville, PA 17368

Manufacturer of reproduction building hardware: cast iron & forged steel; specializes in shutter & window hardware; for fine renovation & guality new construction: since 1880.

Kees Architectural Division 800-889-7215; Fax: 920-876-3065 www.kees.com

Elkhart Lake, WI 53020

Custom fabricator of architectural stamped, waterjetcut & bar grilles & registers: baseboards & radiator covers in stamped & perforated metal; wide variety of patterns & thicknesses.

KEPCO+

801-975-0909; Fax: 801-975-9911 www.kepcoplus.com

Salt Lake City, UT 84104 Custom fabricator & installer of architectural cladding systems: columns, capitals, balustrades, commercial building facades & storefronts: natural stone, tile & terra cotta; commercial, institutional & religious buildings.

King Architectural Metals 800-542-2379; Fax: 800-948-5558 www.kingmetals.com

Dallas, TX 75228

Wholesale supplier of ornamental & architectural metal components: staircases, handrails, gates, fences, furniture, mailboxes, lampposts, finials & fireplace screens; wrought iron & aluminum. Click on No. 418

Klitsas, Dimitrios - Fine Wood Sculptor 413-566-5301; Fax: 413-566-5307 www.klitsas.com

Hampden, MA 01036

Wood carver: capitals, newel posts, furniture (all periods), fireplace mantels, stairs, moldings & other specialty carvings; variety of wood species.

Kolbe Windows & Doors 800-955-8177: Fax: 715-845-8270 www.kolbe-kolbe.com

Wausau, WI 54401

Manufacturer of windows & doors: traditional details; extruded aluminum-clad, roll-formed aluminum-clad, wood & vinyl energy-efficient windows & doors; fiberglass doors.

Kuiken Brothers Company, Inc. 201-705-5375; Fax: 201-475-2175 www.kuikenbrothers.com/classical Midland Park, NJ 07432

Supplier of classical wood molding: KB Classical Moulding includes 70 classic American molding profiles; Early American, Georgian, Federal, Greek Revival, Colonial Revival & Traditional Revival; all in stock; milled from domestic Appalachian Poplar; CAD files available; online catalog; ships nationwide.

L'Esperance Tile Works 518-884-2814; Fax: 518-885-4859 www.lesperancetileworks.com Rock City Falls, NY 12863

Small-batch artisanal manufacturer of ceramic tiles for residential, commercial & special uses: specialists in 19th- & early 20th-century fireplace tile sets & bathroom interior tiles; reproduction designs & designs in the style of Delft, Victorian, Aesthetic movement, Arts & Crafts, Pre-war, Mid Century Modern, Guastivino: many designs & colors; 35 years in business; consultations available

www.jimillingworthmillwork.com Adams, NY 13605 Manufacturer of custom wood windows, doors & custom millwork.

Click on No. 1696

Lantern Masters, Inc. 818-706-1990; Fax: 818-706-1988 www.lanternmasters.com Westlake Village, CA 91362

Custom designer & manufacturer of lighting: interior chandeliers, pendants, ceiling flushes & sconces & exterior lanterns including wall, flush wall, pendant, post & pilaster; many architectural periods; historical reproductions.

Click on No. 1239

Lanternland 855-454-5200; Fax: 480-962-1997 www.lanternland.com Mesa, AZ 85210 Manufacturer of lighting: artisan handmade copper &

brass lanterns & outdoor lighting; many period styles.

LeQuire Studio / Gallery 615-298-4611; Fax: Same as phone

www.alanlequire.com Nashville, TN 37209 Figurative sculptor & portrait artist: monumental,

miniature & life-size work; fountains; all sculptural materials.

Lighting Nelson & Garrett Inc. 416-463-0050; Fax: 416-463-9882 www.lightingnag.com Toronto, ON, M8V 4E6 Canada Manufacturer of lighting fixtures: many sizes, styles & designs; historic preservation; replication & more.

LimeWorks.us

215-536-4482 ; Fax: 215-536-2281 www.limeworks.us Telford. PA 18969

Full-service masonry services & restoration: resources for professional masonry restoration & building sustainable structures.

Lodi Welding Company Inc. 908-852-8367; No fax www.lodiwelding.com

Hackettstown, NJ 07840 Ironworks fabricator: forged ironwork in all styles, especially Old World: expertise in railings, fencing, spiral staircases & gates; also balconies, egresses, furniture, sculpture art, fireplace screens & restoration; founded in 1964 by artisans from Antwerp, Belgium; family owned & operated.

Longleaf Lumber, Inc. 617-871-6611; Fax: 617-871-6615 www.longleaflumber.com Cambridge, MA 02138

Manufacturer of reclaimed wood flooring, beams, paneling, stairs & custom lumber: specializing in Heart Pine, wide plank floors, reclaimed American chestnut, white pine & many other species; historic floor matching.

Lowe Hardware

207-593-7405; Fax: 207-226-2033 www.lowe-hardware.com Rockland, ME 04841

Manufacturer of door hardware: levers, thumb turns, pulls, locks & more. \\

Ludowici Roof Tile, Inc. 800-945-8453; Fax: 740-342-0025 www.ludowici.com New Lexington, OH 43764

Manufacturer of architectural terra-cotta roof tile & floor tile: over 40 standard roof tile profiles including barrel, shingle, interlocking & shake & slate alternatives; customize shape, texture & color; historic renovation program; 75-year material warranty includes color. **Click on No. 2760**

Lumber Liquidators, Inc. 800-HARDWOOD; Fax: 757-566-0621 www.lumberliquidators.com Toano, VA 23168

Supplier of hardwood flooring & accessories: more than 340 varieties; Bellawood pre-finished hardwood offers 100-year transferable warranty; expert advice & installation available at every store; more than 250 locations nationwide.

M&A Architectural Preservation, Inc. 978-683-0880; Fax: 978-683-8370 www.archpres.com Lawrence, MA 01843

Restorer of wood windows & doors: reglazing with antique restoration glass; monumental & tower windows; new custom wood windows & doors; building condition surveys.

Manning Lighting, Inc. 920-458-2184; Fax: 920-458-2491 www.manningltg.com

Sheboygan, WI 53082 Supplier of contemporary & traditional lighting: custom church lighting; restoration of historical fixtures for courthouses & institutional buildings.

Marvin Windows & Doors 888-537-7828; Fax: 651-452-3074 www.marvin.com

Warroad, MN 56763

Manufacturer of wood windows & doors: clad & clad-wood; special shapes; custom sizes & more than 11,000 standard sizes; historical replicas; interior & exterior storm windows.

MCA Clay Roof Tile

800-736-6221; Fax: 909-736-6052 www.mca-tile.com Corona. CA 91719

Clay roofing tile manufactured in a variety of styles, including 1-piece 'S', Straight Barrel Mission, American Flat & Oriental; colors include natural, flashed & glazed finishes as well as custom colors. Click on No. 2101

MetalCeilingExpress 941-723-2288; Fax: 941-729-1470 www.metalceilingexpress.com Palmetto, FL 34221

Manufacturer of ceilings: ornamental; decorative painting & faux finishes; architectural, standard & custom sheet metal.

Mission Tile West 626-799-4595; Fax: 626-799-8769 www.missiontilewest.com

South Pasadena, CA 91030 Supplier of hand-painted decorative Arts & Crafts-style tile: terra-cotta floor tile; handmade for all surfaces; historical reproductions.

Motawi Tileworks 734-213-0017; Fax: 734-213-2569 www.motawi.com

Ann Arbor, MI 48103 Supplier of tile: Arts & Crafts, Art Nouveau, medieval, Celtic & animal motifs; ceramic relief tile for fireplaces, kitchens, baths & floors; specializes in custom-designed fireplaces.

Munns Manufacturing, Inc. 435-257-5673; Fax: 435-257-3842 www.munnsmfg.com

Tremonton, UT 84337

Manufacturer of prefabricated metal architectural products: steeples, cupolas, domes, dormers, clocks & bell towers, cornices & weathervanes; installation services; over 25 years of experience.

MWT Custom Wood Working, LLC 828-322-4061; Fax: 828-322-4364 www.mwtwoodturning.com

Hickory, NC 28603

Supplier of custom wood turnings: roped, twisted, flutes & spiral stairs & stair parts; balusters & columns; newel posts, spiral molding, lamps & tables; Classical & contemporary styles; exterior & interior.

Newstamp Lighting Co. 508-238-7071; Fax: 508-230-8312 www.newstamplighting.com North Easton, MA 02356

Manufacturer & distributor of exterior lantern-style electric & gas fixtures: lamps, bollards & lanterns; copper, brass, cast iron & aluminum; Arts & Crafts style; stock & custom.

NIKO Contracting Co., Inc. 412-687-1517; Fax: 412-687-7969 www.nikocontracting.com Pittsburgh, PA 15213

Custom fabricator & contractor of sheet metal & roofing: slate, tile & other roofing; storefronts, cornices, cupolas, domes, steeples, snow guards & leader heads; copper, lead-coated copper, zinc & stainless steel; metal ceilings.

Click on No. 861 for ceilings; 8300 for roofing North Bennet Street School 617-227-0155; Fax: 617-227-9292

www.nbss.edu Boston, MA 02113

School specializing in preservation trades: intensive

hands-on training in carpentry & preservation carpentry; two-year comprehensive program; cabinet & furniture making, lock smithing, security technology, violin making, piano technology, book binding, jewelry making.

North Prairie Tileworks 612-871-3421; Fax: 612-871-2331 www.handmadetile.com Minneanolis, MN 55408

Manufacturer of custom tile: mosaics; wall, floor, fireplace, kitchen & bath tile; many colors, shapes & sizes; hand painted & cut; custom color matching & reproductions of antique tile.

Northeast Millwork Corp. 401-624-7744; Fax: 401-624-8118 www.northeastmillwork.com Tiverton, RI 02878

Supplier of antique heart pine, old-growth recycled timbers, fir, chestnut & pine: flooring, stair treads, handrails, cabinetry, fine millwork & moldings.

Notting Hill Decorative Hardware 262-248-8890; Fax: 262-248-7876 www.nottinghill-usa.com Lake Geneva, WI 53147

Distributor of high-end hardware: knobs & pulls of handcast pewter or bronze, additional plating options, semiprecious stones, enameling & hand painting; Classical, Old World, island & lodge motifs.

Off The Wall Murals & Decorative Arts 860-575-1306

www.offthewallmurals.com Killingworth, CT 06419 Decorative art studio: custom murals, trompe l'oeil, faux finishes, hand-painted tile & marble.

Old Art Studio 704-234-6608 www.OldArtStudio.com Indian Trail. NC 28079

Ornamental plaster work: restoration, custom project design of 16th through 20th century; custom medallions, trims, panels, fire places, walls, ceilings molding & casting using old school techniques such as bas-relief, 3d stenciling.

Old Fashioned Milk Paint Co. 866-350-6455; 978-448-6336; Fax: 978-448-2754 www.milkpaint.com Groton, MA 01450

Manufacturer of milk paint: for interior use; all-natural, zero-VOC paint in powder form; wash, full cover coat & stenciling; 20 colors; original formula for porous surfaces & SafePaint for previously painted walls.

Old Wood Workshop, LLC

860-655-5259; No fax www.oldwoodworkshop.com Pomfret Center, CT 06259

Supplier of reclaimed & resawn antique wood flooring; antique wood & beams; harvest tables made from antique wood; architectural antiques.

Old World Stone Ltd.

800-281-9615; 905-332-5547; Fax: 905-332-6068 www.oldworldstone.com Burlington, ON L7L 4Y1 Canada

Supplier of dimensional-cut limestone & sandstone: columns, sculpture, mantels, architectural ornament, signage & garden ornament for new & restoration projects.

Ornametals Manufacturing, LLC 256-255-0190; Fax: 256-255-0195 www.ornametals.com Cullman, AL 35058

Fabricator of metal roofing & ornaments: finials, cupolas, crosses, weathervanes, exterior balustrades, cornices & more; copper & zinc; only US manufacturer of the European-style half-round gutter system with seamless-weld downspout in copper & zinc.

Oshkosh Designs 877-582-9977; Fax: 920-582-9971 www.oshkoshdesigns.com Winneconne, WI 54986

Manufacturer of decorative inlay perimeter, compositions, & parquetry: easy installation; custom work; stock line; geometric & laser/water-jet production; various hardwoods & exotics; stone & metal.

Pacific Post & Beam 805-434-0166; Fax: 805-434-3571 www.pacificpostbeam.com Paso Robles, CA 93446

Manufacturer of timber frames & trusses: recycled & new timbers; commercial & residential use; timber frames for wineries & tasting rooms; design, frame construction & more; since 1983.

Pacific Register Company 805-487-7500; No fax

www.pacificregisterco.com Oxnard, CA 93033

Manufacturer of registers: metal, wood & stone; many historic styles; accessories. Click on No. 2070

Palladio Mouldings 888-668-5348; Fax: 905-305-0001 www.palladiomouldings.com

New York, NY 10174 Designer & manufacturer of architectural plaster moldings: produced in-house by skilled craftsmen; works from any reference material to engineer & fabricate custom interior architectural ornamentation.

Parrett Windows & Doors 800-541-9527; Fax: 877-238-2452

www.parrettwindows.com Dorchester, WI 54425

Manufacturer of custom, quality wood & aluminum-clad windows & doors: vast array of options, numerous wood species & complete finishing capabilities; historical replications; screen doors, casings & moldings.

Passaic Millwork 973-210-1862; Fax: 973-458-0431

973-210-1862; Fax: 973-458-043 www.passaicmillwork.com Haledon, NJ 07508

Manufacturer & supplier of stairs, railings & parts: circular, elliptic, spiral & straight stairs; columns & turnings; stock & custom moldings in pine, poplar & MDF lumber cut to size.

Period Lighting Fixtures, Inc. 800-828-6990; 413-664-7141; Fax: 413-664-0312 www.periodlighting.com Clarksburg, MA 01247

Manufacturer of 250+ handcrafted reproduction 18th-& 19th-century fixtures: wood-turned/metal chandeliers, aged-tin/pewter sconces & lanterns; most licensed by Colonial Williamsburg, historic Deerfield & Old Sturbridge Village.

Phelps Company 603-336-6213; Fax: 603-336-6085 www.phelpscompany.com Hinsdale, NH 03451

Manufacturer of traditional hot-forged solid-brass window hardware: sash pulleys, weights, chains, lifts & locks; stop-bead adjusters, spring bolts, window ventilation locks, push-out casement hardware, storm/ screen-door latch sets & more. Click on No. 6001

Phenix Marble 417-840-2281 www.phenixmarble.com Springfield, MO 65806

Quarry & fabricator of historic Phenix marble & building stone: Napoleon Gray marble; finished marble slabs; full depth & thin split-face veneer; dimensional stone.

Pigott Studio 518-541-2008 www.pigottstudio.com

www.pigottstudio.com Mechanicsville, NY 12118

Specialist in sculpting the human form in freestanding or bas-relief formats: from small interior pieces to monumental works; quality portraits; trained in classical architecture & sculpture design.

Player Bronze 404-307-8613

www.playerbronze.com Atlanta, GA 30309

Creator of art art bronze reliefs, icons, crosses & other religious symbols from design to installation; winner of 2017 Shutze Award for artisanship.

Preservation Products, Inc. 800-553-0523; Fax: 610-891-0834 www.preservationproducts.com

Media, PA 19063

Manufacturer & distributor of Acrymax restoration & preservation systems for historic metal roofs: durable weatherproof membrane can be used as complete roof system or for repair; Acrymax is an energy star partner. **Click on No. 8180**

Professional Awning Manufacturers Assoc.

651-222-6948; Fax: 651-641-9334 www.awninginfo.com Roseville, MN 55113

Association for awning suppliers & manufacturers: awning information; awning-manufacturer directory.

PROSOCO, Inc.

785-830-7343; Fax: 785-830-9797 www.prosoco.com Lawrence, KS 66046

Manufacturer of masonry restoration cleaners & sealers: environmentally responsible products safely clean & weatherproof historic terra cotta, brick, stone & other masonry; cleans paint, carbon, graffiti & more; breathable weatherproofers.

ProWood Market

800-915-5110; Fax: 888-540-9610 www.prowoodmarket.com Lilburn, GA 30047

Sales division of Pro Wood Construction: provider of quality wooden exterior architectural products; delivered nationwide; wood brackets, corbels, braces, rafter tails, gable brackets & shutters made of Western Red Cedar; delivered in smooth or rough sawn finish; all made in Lilburn, GA.

R. Alden Marshall & Associates LLC 717-805-3114

www.raldenmarshall.com Cumberland, PA 17070

Material science laboratory & preservation studio for the conservation conservation of art & architecture including monuments, sculptures, paintings & murals; much more; projects include national historic sites as well as a ecclesiastical commissions. Click on No. 2099

Rambusch Decorating Co. 201-333-2525; Fax: 201-433-3355

www.rambusch.com

Jersey City, NJ 07304 Designer & fabricator of public & ecclesiastical art & stained glass: altars, ambos, arks, crosses & more; decorative painting; murals & mosaics; lighting; commercial environments; since 1898.

Rambusch Lighting Co. 201-333-2525; Fax: 201-860-9999 www.rambusch.com Jersey City, NJ 07304

Designer & fabricator of custom & engineered lighting for 100 years: for churches & public spaces; conservation & replication of lighting fixtures.

Re-View 816-741-2876; Fax: 816-746-9331 www.re-view.biz Kansas City, MO 64116

Manufacturer of historic wood windows: all wood species & glass types; wood- & steel-window restoration; can replicate any historic detail; field installation, abatement & finishing; wood doors; commercial projects nationwide.

Reilly Windows & Doors 631-891-6945; Fax: 631-208-0711 www.reillywd.com Calverton, NY 11933

Custom fabricator of wood windows, doors & millwork: large-scale new & historical residential, commercial & institutional construction.

Renaissance Roofing, Inc. 815-547-1725; Fax: 815-547-1425 www.claytileroof.com

Belvidere, IL 61008

Supplier of historic clay tile & slate roof systems: new & salvaged tile; custom fabricator of stock sheet-metal flashing, standing-seam panels, gutters, cleats & decorative moldings.

Renovation Brands/Reggio Register Co., The 800-880-3090; Fax: 978-870-1030 www.reggioregister.com

Leominster, MA 01453

Manufacturer of grilles & registers: for forced-air & high-velocity systems; cast iron, brass, aluminum, steel & wood; handcrafted to last for generations.

Robinson Iron Corp. 800-824-2157; Fax: 256-329-8960 www.robinsoniron.com

Alexander City, AL 35010

Designer & installer of custom metalwork: fountains, columns, fences, doors, railings, sculpture, benches, grilles, cresting, street lighting & gazebos; wrought iron/steel, aluminum, bronze & cast iron; historical restoration. **Click on No. 3240**

Rohlf's Stained & Leaded Glass Studio 914-699-4848; Fax: 914-699-7091 www.rohlfstudio.com

Mount Vernon, NY 10550

Designer, fabricator & installer of new stained & leaded glass: restoration & replication; protective glazing; beveled, carved & fused/slumped glass; steel casement retrofitting; mosaics; established in 1920. Click on No. 6240 for stained glass; 1480 for windows

Rohn & Associates Design, Inc. 800-245-1288; Fax: 412-561-1202

www.rohndesign.com

Pittsburgh, PA 15226 Designer & fabricator of liturgical art: consulting, artwork, project management, renovation, restoration & more; master craftsmen include sculptors, painters &

woodworkers. RoofLanterns.com 773-525-7730; No fax www.rooflanterns.com

Chicago, IL 60613

Manufacturer of aluminum-pvc roof lantern skylights: 42 standard sizes in 5 shapes, with or without side frames, custom sizes also available, standard white or custom colors, cresting & finials.

Rugo Stone, LLC

571-642-2672; Fax: 571-642-2678 www.rugostone.com Lorton, VA 22079 Masonry contractor: exterior stonework & facade restoration

Russ Elliott Gallery 212-758-6632; Fax: 212-759-6750 www.russelliott.com New York, NY 10022

Decorative painter of frescoes & trompe l'oeil: restoration & design services in oil or acrylic; limited edition serigraphs, lithographs & giclee paintings; national & international travel. Saienni Stairs LLC 302-292-2699 www.saiennistairs.net Newark, DE 19713 Manufacturer of wood stairs, architectural millwork & wood turnings: circular & spiral stairs; custom rail parts; design.

San Marco USA 678-907-5811; Fax: 678-618-0437 www.san-marcousa.com Atlanta, GA 30318

Supplier of natural mineral products: paints, primers, glazes, pigments, low-VOC metal finishes, tools; eco-friendly.

Schiff Architectural Detail, LLC 617-887-0202; Fax: 617-887-0127 www.schiffarchitecturaldetail.com Chelsea, MA 02150

Custom fabricator of metalwork: exterior lamps, lampposts, plaques, fences, fountains, sculpture, gazebos, planters, interior & exterior railings & grilles, domes, finials; non-ferrous forged work; machine-shop service; rubber molding & pattern work; capitals; windows, doors & door hardware; mantels, fans, fireplace tools; historical restoration.

Scofield Lighting 610-518-3999; Fax: 610-518-7264

www.scofieldlighting.com Downingtown, PA 19335 Creator of historic lighting: 17th- through 19th-century

inspired lanterns, sconces, ceiling lights & chandeliers; finished in natural, bronzed, leaded, oxidized copper or aged tin; collection is customizable to the specific needs of projects & clients.

SF Metalworks 415-206-9100; Fax: 650-773-9999 www.sfmetalworks.com San Francisco, CA 94124

High-end metal design & fabrication shop: specializing in bespoke architectural metalwork (steel, brass, bronze, stainless, aluminum, pewter); projects include custom furniture, decorative kitchen hoods, ornamental stairs & railings & unique hardware.

Shanker Industries 877-742-6561; Fax: 631-940-9895 www.shanko.com

Deer Park, NY 11729 Manufacturer of decorative metal walls & ceilings: 2x2

ft. & 2x4 ft. for nail-up, 2x2 ft. & 2x4 ft. for lay-in grid; finishes include steel, brass, copper, chrome & prepainted white; perforated for acoustics.

Sheldon Slate Products Co., Inc. 207-997-3615; Fax: 207-997-2966 www.sheldonslate.com Monson, ME 04464

Manufacturer of slate products: roofing, floor tile, flagging, structural applications, signs, plaques, monuments & kitchen counters & sinks; custom cutting; slate flagstone & wall & landscape stone; church work.

Shuttercraft, Inc. 203-245-2608; Fax: 203-245-5969 www.shuttercraft.com Madison, CT 06443

Manufacturer of authentic mortise-&-tenon wood shutters: cedar & mahogany, exterior movable & fixed louver, board & batten & raised panel; cutouts, capping, arches & more; hinges & holdbacks; interior louvers, Colonial panels & open frame; painting services; made in USA; family-owned company since 1986; ships nationwide. Click on No. 1321

SnoBlox-SnoJax 800-766-5291; Fax: 717-697-2452 www.snoblox-snojax.com Mechanicsburg, PA 17055

Supplier of 6 models of polycarbonate snow guards: all feature large, forward-mounted faces to help prevent the movement of snow & ice on metal roofs; vent protection.

Space-Pak

413-564-5530; Fax: 413-568-9613 www.spacepak.com Westfield, MA 01085

Supplier of 2-ft. flexible tubing duct work: allows warm & cool air to reach spaces in historic buildings without disturbing architectural finishes & structures.

SRS Hardware 401-954-9431; No fax www.srshardware.com Dallas, TX 75219 Manufacturer & distributor of tra

Manufacturer & distributor of traditional hardware: for wood windows; full line from weights to pulleys, lifts & locks.

St. Louis Antique Lighting Co. 314-863-1414; Fax: 314-863-6702 www.slalco.com

Saint Louis, MO 63130 Manufacturer & supplier of architectural lighting: all styles; historical reproductions & custom lighting; restoration services; commercial & ecclesiastical projects. Click on No. 6190

Stained Glass Assn. of America 800-438-9581; 816-737-2090; Fax: 816-737-2801 www.stainedglass.org Kansas City, M0 64133

Trade association for stained-glass industry: professional & educational support to promote the use of decorative art glass; publisher of 4-color magazine, reference/technical manual & list of qualified practitioners & studios.

Stairways, Inc. 800-231-0793; Fax: 713-680-2571

www.stairwaysinc.com Houston, TX 77018 Designer & manufacturer of spiral stair

Designer & manufacturer of spiral stairs: in wood (any species), metal, stainless steel, aluminum & brass; stock or custom; any size; ships worldwide.

Stanton Glass Studio 800-619-4882; Fax: 254-744-4337 www.stantonglass.com Waco, TX 76705

Designer & fabricator of custom glass: stained, leaded, beveled, etched & hand-painted; stained-glass restoration & conservation; commercial, church & residential applications.

Stanton Woodworks 254-829-1151; Fax: 254-744-4337 www.stantonglass.com/stantonwoodworks Waco, TX 76705

Designer & fabricator of custom glass: stained, leaded, beveled, etched & hand-painted; stained-glass restoration & conservation; commercial, church & residential applications.

Steptoe & Wife Antiques, Ltd. 416-780-1707; Fax: 416-780-1814 www.steptoewife.com

Toronto, ON, ON M1S 3L2 Canada Manufacturer of the finest quality cast-iron spiral & straight staircases since 1976.

Sterling Staircase & Handrail 802-793-3893

www.sterlingstaircase.com Stowe, VT 05672

Custom fabricator & installer of curved wood staircases: handrails, newel posts & custom turnings up to 9 ft. long & 3 ft. in dia.; products shipped internationally.

Steven Handelman Studios 805-962-5119; Fax: 805-966-9529 www.stevenhandelmanstudios.com Santa Barbara, CA 93103

Manufacturer of hand-forged traditional lighting, grilles & fireplace accessories: many types & styles of lighting & grilles; fireplace screens, grates & inserts; historic reproduction & restoration services. Click on No. 483

Stone Legends 800-398-1199; Fax: 214-398-1293 www.stonelegends.com Dallas, TX 75217

Manufacturer of handmade architectural & landscape elements in cast stone: columns, signage, niches, pool coping, pavers, caps & finials for piers & walls, planters, fountains, gazebos, statuary, benches, mantels & more; restoration.

www.traditionalbuilding.com

Stone Mfg. Co. 310-323-6720; Fax: 310-715-6090 www.stonemfa.com Gardena, CA 90249

Manufactures coordinated fireplace-accessory line; contemporary, traditional, & antique recreations; hand- finished wrought iron & brass. Fire screens, fire tools, andirons, rail & club fenders, gas keys, Victorian grates, etc.

Stonesculpt

650-575-9683; Fax: 650-322-5002 www.customstonecarving.com East Palo Alto, CA 94303 Custom fabricator of hand carvings in natural stone: stone

carving, masonry restoration, custom stone work & sculpture.

Stoneyard.com

978-742-9800; Fax: 978-742-9898 www.stoneyard.com Littleton, MA 01460 Supplier of reclaimed New England fieldstone: veneers,

stone walls & landscaping; veneers are available in 5 different shapes; weathered or natural grain face colors.

Structural Restoration Services, Inc. 717-428-3128; Fax: 717-741-6005 www.restore-it.com Loganville, PA 17342

Restoration contractor: stone, brick & masonry: cleaning, repointing & replacement; concrete repairs, demolition & removals; leak repairs & waterproofing; wood window restoration.

Subway Ceramics

888.387.3280; No fax subwayceramics.com Oak Park, IL 60301 Supplier of historically authentic ceramic tile: field tile, moldings & trim pieces; flooring; mosaics; Victorian style.

Sungloss Marble & Terrazzo Co.

773-661-9070; Fax: 773-661-1902 www.sungloss.com Chicago, IL 60622

Restorer of marble, terrazzo, granite, limestone, slate &

other natural-stone surfaces: interior & exterior; repair & repolishing.

Superior Clay Corp.

888-254-1905; Fax: 740-922-6626 www.superiorclav.com Uhrichsville, OH 44683 Supplier of hand-molded & -extruded terra-cotta

architectural details: chimney pots in traditional styles; clav flue liners: fired-clav Rumford throats, dampers & smoke chambers; refractory mortar.

Superior Moulding, Inc. 800-473-1415; Fax: 818-376-1314 www.superiormoulding.com Van Nuys, CA 91411

Supplier of architectural & ornamental woodwork: molding, straight & curved stairs, rails, balusters, spindles, newel posts, treads, ceiling medallions, furniture legs, columns, capitals & more; custom turnings; all wood species

Swiatek Studios 716-597-6683; No fax

www.swiatekstudios.com

Buffalo, NY 14210

Restoration services: for churches & historical landmarks; decorative painting, statue restoration, brass plating, stained-glass restoration; murals, stenciling, faux finishes, gilding, marbleizing, carpentry, trompe l'oeil & decorative plaster. Click on No. 2054

Team Fritz Clay Roof Tiles, Inc. 250 -768-1921; Fax: 250 -768-1913 www.clayrooftiles.org

West Kelowna, B.C. V4T 1Y7 Canada Supplier of clay roof tile & accessories: Mediterranean, European & slate styles; interlocking flat tiles resemble slate

& shake; 30- to 50-year warranties; clay wall cladding. **The Golden Lion** 310-827-6600; Fax: 310-827-6616

www.thegoldenlion.com Venice, CA 90291 Decorative European hardware for furniture &

residential projects: traditional wrought iron & chiseled bronze to modern lines.; importer of quality Frenchmade doors & windows & classical lighting

Thomas Moore Studios 410-462-4447; Fax: 410-462-4429 www.thomasmoorestudios.com Baltimore, MD 21211

Designer & restorer of decorative painting: full-scope project administration; paint analysis, research, custom design, project management & post-production reports; mural restoration, glazing, leafing & specialty finishes.

Tile Roofs, Inc.

888-708-8453; Fax: 708-479-7865 www.tileroofs.com Frankfort, IL 60423

Importer & distributor of hand-finished European clay roof tile & fittings: custom manufacturing of clay roof tile & fittings to match existing; new & salvaged clay roof tile, concrete roof tiles & fittings; natural slate roofing for new roofs, repairs & additions

Tile Source, Inc. 843-681-4034; Fax: 843-681-4429 www.tile-source.com

Hilton Head Island, SC 29926

Supplier of genuine encaustic tile, simulated reproductions & Victorian-style wall & fireplace tile: economical restoration of 19th-century ceramic floors for public buildings, courthouses & private homes.

Timberlane, Inc. 215-616-0600; Fax: 215-616-0749

www.timberlane.com Montgomeryville, PA 18936

Manufacturer of custom exterior shutters: more than 40 historically accurate, customizable styles; available in premium woods & our own maintenance-free Endurian. along with the large selection of period shutter hardware.

TOI Inc. 708-445-7200: Fax: 708-445-7234 www.toirestores.com

Oak Park,, IL 60302

Historic restoration, conservation & preservation services: decorative finishes, acoustic & historic wallcoverings, murals, gold leaf, wood graining faux marble.

Towne House Restorations 718-497-9200; Fax: 718-361-8537

www.townehouserestorations.com

Long Island City, NY 11101

Manufacturer of molded ornament: columns, capitals, cornices, balustrades, sculpture & more; cast stone & GFRC; pattern restoration, color matching, field molds, field surveys, shop drawings & engineering; terra-cotta restoration.

Triple-S Chemical Products, Inc. 800-562-5958; Fax: 323-261-5567 www.ssschemical.com Los Angeles, CA 90023

Manufacturer of patinas & antiquing solutions: for copper, brass, bronze, aluminum, iron, galvanized steel, pewter, solder & steel; for statues, sheet metal, lamp fixtures, gates, copper roofs & gutters; cleaners & clear coats.

Trow & Holden 800-451-4349; Fax: 802-476-7025 www.trowandholden.com

Barre, VT 05641

Manufacturer of stone-carving tools: air & hand hammers; steel & carbide chisels for soft & hard stone; pneumatic mortar-removal kits for fine repointing work; stone-masonry & -splitting tools.

U.S. Shutter Company 817-975-9333; Fax: 817-886-7262

www.usshutter.com Benbrook, TX 76126

Supplier of shutters: plantation-style hardwood, moveable & fixed louvers; interior & exterior; hardware; molding & more.

Unico System, Inc. 800-527-0896; Fax: 314-457-9000 www.unicosystem.com

Saint Louis, MO 63111 Supplier of mini-duct systems for retrofitting HVAC systems: ideal for historic preservation; quiet, energy-efficient system; takes 1/4 space of conventional HVAC; delivers 12 tons of ac in same space as 3-ton traditional system

Unique Services & Applications 800-270-4248, 412-882-3601; Fax: 412-882-8940 www.higherusa.com

Pittsburgh, PA 15227

Steeplejack & specialty rigging services: unlimited heights, capabilities for any project; decorative-painting services; church restoration.

Vande Hey Raleigh Mfg. 800-236-8453; 920-766-0156; Fax: 920-766-0776 www.vrmtile.com Little Chute. WI 54140

Manufacturer of architectural concrete & slate roofing tile: 9 styles, 20 standard colors & unlimited color combinations; trim flashing, snow guards, copper gutters, cupolas & weathervanes; restoration & new construction.

Victorian Revival / Vintage Lighting 416-789-1704; Fax: 416-789-2279 www.victorian-revival.com Toronto, ON M6B 1E9 Canada

Antique & reproduction of pre-1920 lighting fixtures & architectural details: fully restored vintage lighting fixtures; interior & exterior; salvaged lighting.

Vintage Doors 800-787-2001; Fax: 315-324-6531 www.vintagedoors.com

Hammond, NY 13646 Manufacturer of custom exterior & interior wood doors: door hardware, screen doors & storm doors; traditional, Craftsman & Victorian Styles; solid wood & glass panels available

Click on No. 2034

Vintage Hardware & Lighting 360-379-9030; Fax: 360-379-9029 www.vintagehardware.com Port Townsend, WA 98368

Supplier of door hardware, window hardware: window locks & sash lifts; drapery hardware; bathroom accessories; reproduction lighting; weathervanes. Click on No. 2078

Vintage Woodworks 903-356-2158; Fax: 903-356-3023 www.vintagewoodworks.com Quinlan, TX 75474

Manufacturer & supplier of Victorian millwork: wood porch parts, turned & sawn balusters, posts, railings, brackets, moldings, corbels, custom-length spandrels, screen/storm doors, window caps, wood shingles, mantels & more; cellular PVC profiles.

Von Morris by Eric Morris & Company 856-997-0222; Fax: 856-294-5116 www.ericmorrisandco.com

Pennsauken, NJ 08109

Fabricator of architectural hardware: knobs, levers, locks, hinges & cabinet hardware; 30 different finishes. Click on No. 1864

W.F. Norman Corp. 800-641-4038; Fax: 417-667-2708 www.wfnorman.com

Nevada, MO 64772

Manufacturer of sheet-metal ornament: hundreds of stock designs; cornices, moldings, brackets, pressedmetal ceilings, roofing, siding, finials & more; zinc, copper & lead-coated copper; duplication from samples or drawings. Click on No. 520

Wagner Foundry, Inc.

800-276-1084; 773-276-7907; Fax: 773-276-9656 www.wagnerfoundry.com Chicago, IL 60622

Custom fabricator of architectural, art & industrial castings: hardware, sculpture, grilles, signage, plagues, storefront elements & cast-metal ornament: aluminum bronze & brass; sand & lost-wax casting; ecclesiastical work.

Weather Shield Windows & Doors 800-538-8836 www.weathershield.com

Medford, WI 54451 Midwest manufacturer of high-quality, efficient

windows & doors: handcrafted for more than 60 years; a passion for innovation; wide range of products & styles to fit both contemporary & traditional homes & commercial buildings.

Weathercap, Inc. 985-649-4000; Fax: 985-847-1237 www.weathercap.net

Slidell, LA 70459 Manufacturer of soft-lead strips: set & bedded in caulking compound/sealant; forms a cap to create a permanent elastic seal for any masonry joint.

Click on No. 504

Weston Millwork Co. 816-640-5555; Fax: 816-386-5555 www.westonmillwork.com Weston, MO 64098 Custom fabricator of wood doors & windows: sash

replicas; millwork; cornice moldings.

800-558-0119; Fax: 479-444-0406

www.whiteriver.com

Fayetteville, AR 72701

& door-frame components & complete units; storms

& screens; shutters; historical reproductions & exact

White River Hardwoods-Woodworks

authentic hand-carved linden products & adornments for

finials, mantels & range hoods; ceiling medallions.

Wiemann Metalcraft 918-592-1700; Fax: 918-592-2385 www.wmcraft.com

Tulsa, OK 74107 Designer, fabricator, finisher & installer of fine quality custom ornamental metalwork: railings, fences, gates, custom, hot-rolled steel doors & windows, lighting, grilles, bronze & aluminum entry doors; all cast- & wrought-metal alloys, finishes & architectural styles; since 1940. Click on No. 1223

Wood Window Workshop 800-724-3081; Fax: 315-733-0933 www.woodwindowworkshop.com Utica, NY 13501

Custom fabricator of wood windows, doors, storms & screens: any size, shape & species; full mortise-&-tenon construction, true-divided lite, hard-to-find hardware & restoration & insulated glass; factory finishes; millwork; reproductions; for storefronts.

Woodstone Company 603-445-2449; Fax: 603-445-0174 www.woodstone.com/aim North Walpole, NH 03609

Custom fabricator, distributor & supplier of doors, windows & shutters; paneled doors & complete entryways: storm & screen doors: screen windows: most wood species; coped mortise-&-tenon joinery; historical & landmark specifications. Click on No. 8430

Woolen Mill Fan Co. 717-382-4754; Fax: 717-382-4275 www.architecturalfans.com New Park, PA 17352

Manufacturer of decorative ceiling fans: historic & new designs; belt-&-pulley models & beltless single-motor units; iron, bronze & aluminum castings. Click on No. 316

World Class Lighting

Worthington Millwork

800-872-1608; Fax: 850-640-0488

Panama City Beach, FL 32413

www.worthingtonmillwork.com

Zeluck Doors & Windows

www.zeluck.com

www.zepsa.com

Click on No. 1996

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Brooklyn, NY 11234

Zepsa Industries, Inc.

704-583-9220; Fax: 704-583-9674

727-524-7661; Fax: 727-524-7663 www.worldclasslighting.com Clearwater, FL 33760 Manufacturer of chandeliers & wall sconces: crystal, alabaster, traditional, wrought-iron, neoclassical & custom made models for projects.

Distributor of architecturally correct columns: adjusted

pediments, ceiling medallions, niches, pedestals & brackets.

Manufacturer of custom architectural windows & doors: glass,

timber & hardware; garage doors; French doors; residential,

commercial & historical/landmark projects; since 1921.

Supplier of architectural woodwork: stairs, mantels,

CLEM LABINE'S TRADITIONAL BUILDING 33

paneling, wine cellars, furniture, doors & more.

fluting, priming & asphaltum; moldings, balustrades,

800-233-0101; 718-251-8060; Fax: 718-531-2564

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Art Glass

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Furniture Hardware

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House of Antique Hardware idh by St. Simons

The Golden Lion Vintage Hardware & Lighting

Furniture

Bill's Custom Metal Fabrications Carlson's Barnwood Co. Decorators Supply Corp. Fifthroom.com Gaby's Shoppe Housatonic Hardwoods, Inc. Old Wood Workshop, LLC Rambusch Decorating Co. Schiff Architectural Detail, LLC Stanton Wodworks Wiemann Metalcraft Zepsa Industries, Inc.

Mosaics

Bovard Studio, Inc. Conrad Schmitt Studios, Inc. **Fishman Mosaics** Heritage Tile John Canning Conservation & Painting Studios North Prairie Tileworks Rambusch Decorating Co. Stone Legends Subway Ceramics

Murals

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Textiles. Historical Reproductions

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Window Treatments

Architectural Products by Outwater, LLC Bovard Studio, Inc. Burnham & LaRoche Associates Gaby's Shoppe **Professional Awning** Manufacturers Assoc.

SECTION 2: COLUMNS & CAPITALS

Capitals

Allen Architectural Metals, Inc. Architectural Products by Outwater, LLC Balquist Carving Studio B&H Art in Architecture, Ltd. Campbellsville Industries, Inc. Chadsworth Columns DecoCraft USA Decorators Supply Corp. EverGreene Architectural Arts Felber Ornamental Plastering Corp. **Gotham Metalworks** Haddonstone (USA), Ltd. Historical Arts & Casting, Inc. MWT Custom Wood Working, LLC Old World Stone Ltd. Palladio Mouldings Robinson Iron Corp. Schiff Architectural Detail, LLC Stone Legends Stonesculpt Towne House Restorations Wagner Foundry, Inc. Wiemann Metalcraft White River Hardwoods-Woodworks Worthington Millwork

Columns

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Follies, Gazebos, Garden Houses **Connor Homes** Country Carpenters, Inc. Fifthroom.com Haddonstone (USA), Ltd. Historical Arts & Casting, Inc. Robinson Iron Corp. Schiff Architectural Detail, LLC Stone Legends Wiemann Metalcraft

Kiosks

Allen Architectural Metals, Inc. Historical Arts & Casting, Inc. Professional Awning Manufacturers Assoc. Schiff Architectural Detail, LLC

Orangeries, Pavilions, Pool Houses **Connor Homes**

Country Carpenters, Inc. Fifthroom.com Haddonstone (USA), Ltd. Historical Arts & Casting, Inc. Stone Legends Wiemann Metalcraft

Other Conservatories & **Outbuildings**

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Barn Door Hardware

Acorn Forged Iron Aurora Mills Architectural Salvage **Ball & Ball Hardware Brandywine Forge** Carlson's Barnwood Co. Schiff Architectural Detail, LLC

Cabinet Hardware

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Door Hardware

Acorn Forged Iron Allen Architectural Metals, Inc. Arch Angle Window & Door Architectural Products by Outwater, LLC Architectural Resource Center Aurora Mills Architectural Salvage Ball & Ball Hardware Brandt, Sylvan Brandywine Forge Brusso Hardware D.J.A. Imports, Ltd. E.R. Butler & Co. Heritage Metalworks Historical Arts & Casting, Inc. Hope's Windows, Inc. House of Antique Hardware idh by St. Simons John Wright Co. Lowe Hardware Old Wood Workshop, LLC Schiff Architectural Detail, LLC The Golden Lion Vintage Hardware & Lighting Von Morris by Eric Morris & Company Wagner Foundry, Inc.

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Entryways, Wood

Architectural Components, Inc. Architectural Products by Outwater, LLC Artistic Doors & Windows Bovard Studio, Inc. Brusso Hardware HeartWood Fine Windows & Doors Historic Doors idh by St. Simons Reilly Windows & Doors Vintage Hardware & Lighting Weston Millwork Co. Woodstone Company Zeluck Doors & Windows Zepsa Industries, Inc.

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Hardware Restoration

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Metal Doors

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Metal Windows

Allen Architectural Metals. Inc. Allied Window, Inc. Arch Angle Window & Door Bovard Studio, Inc. Crittall Windows, Ltd. Historical Arts & Casting, Inc. Hope's Windows, Inc. **Re-View** Schiff Architectural Detail, LLC Wiemann Metalcraft

Screen Doors

Arch Angle Window & Door Architectural Components, Inc. Artistic Doors & Windows Coppa Woodworking HeartWood Fine Windows & Doors Hope's Windows, Inc. Jim Illingworth Millwork, LLC Parrett Windows & Doors Passaic Millwork **Reilly Windows & Doors** Vintage Doors Vintage Woodworks Weston Millwork Co. Wiemann Metalcraft

Wood Window Workshop Woodstone Company Zeluck Doors & Windows

Screens, Window

Allied Window, Inc. Architectural Components, Inc. Coppa Woodworking HeartWood Fine Windows & Doors Innerglass Window Systems Reilly Windows & Doors SRS Hardware Weston Millwork Co. Wood Window Workshop

Shutter Hardware

Acorn Forged Iron Architectural Products by Outwater, LLC Ball & Ball Hardware Brandywine Forge Chadsworth Columns **Custom Shutter Company** Doors & Shutters by Vixen Hill E.R. Butler & Co. House of Antique Hardware idh by St. Simons John Wright Co. Shuttercraft, Inc. Timberlane, Inc. **U.S. Shutter Company** Vintage Hardware & Lighting

Shutters

Architectural Products by Outwater, LLC Chadsworth Columns **Custom Shutter Company** Doors & Shutters by Vixen Hill Reilly Windows & Doors Shuttercraft, Inc. Timberlane, Inc. **U.S. Shutter Company** Weston Millwork Co.

Storm Doors

Arch Angle Window & Door Architectural Components, Inc. Cityproof Windows Coppa Woodworking HeartWood Fine Windows & Doors Historical Arts & Casting idh by St. Simons Jim Illingworth Millwork, LLC Reilly Windows & Doors Vintage Doors Vintage Woodworks Weston Millwork Co. Wood Window Workshop

Storm Windows, Exterior

Allied Window, Inc. Architectural Components, Inc. Bovard Studio, Inc. Coppa Woodworking HeartWood Fine Windows & Doors Historical Arts & Casting, Inc. Hope's Windows, Inc. Indow Jim Illingworth Millwork, LLC Reilly Windows & Doors SRS Hardware Weston Millwork Co. Wood Window Workshop

Storm Windows, Interior

Allied Window, Inc. Architectural Components, Inc. Bovard Studio, Inc. **Cityproof Windows** Historical Arts & Casting, Inc. Hope's Windows, Inc. Indow Innerglass Window Systems Jim Illingworth Millwork, LLC

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Window Restoration Materials

Allegheny Restoration & Builders Inc. Burnham & LaRoche Associates Jim Illingworth Millwork, LLC Parrett Windows & Doors Professional Awning Manufacturers Assoc. Wood Window Workshop

Window Trim

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Wood Doors

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Wood Windows

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Custom Wood Reproductions, Inc. HeartWood Fine Windows & Doors **Historic Doors** Jim Illingworth Millwork, LLC Kolbe Windows & Doors M&AArchitectural Preservation. Inc. Marvin Windows and Doors Parrett Windows & Doors **Reilly Windows & Doors** Re-view SRS Hardware Weather Shield Windows & Doors Weston Millwork Co. Wood Window Workshop Woodstone Company Zeluck Doors & Windows

SECTION 5: ELEVATORS, LIFTS & DUMBWAITERS

Elevator Cabs Schiff Architectural Detail, LLC Wiemann Metalcraft

SECTION 6: EXTERIOR **ELEMENTS, ORNAMENT** & FINISHES

Balustrades

Allen Architectural Metals, Inc. Arch Fiberglass Corp. Architectural Products by Outwater, LLC Campbellsville Industries, Inc. Chadsworth Columns Gotham Metalworks Haddonstone (USA), Ltd. Heather & Little Limited Historical Arts & Casting, Inc. Munns Manufacturing, Inc. MWT Custom Wood Working, LLC NIKO Contracting Co., Inc. Old World Stone, Ltd. **Ornametals Manufacturing, LLC** Robinson Iron Corp. Schiff Architectural Detail, LLC Steptoe & Wife Antiques, Ltd. Stone Legends Stonesculpt Towne House Restorations Vintage Woodworks Wagner Foundry, Inc. Wiemann Metalcraft Worthington Millwork

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Cast-Stone Exterior Ornament

Architectural Accents Haddonstone (USA), Ltd. Schiff Architectural Detail, LLC Stone Legends Towne House Restorations

Decking

Architectural Products by Outwater, LLC Bear Creek Lumber Vintage Woodworks

Exterior Carved Ornament

Architectural Products by Outwater, LLC B&H Art in Architecture, Ltd. Schiff Architectural Detail, LLC Stone Legends Stonesculpt

Exterior Comices

Arch Fiberglass Corp. Campbellsville Industries, Inc. **Connor Homes Gotham Metalworks** Haddonstone (USA), Ltd. Heather & Little Limited Munns Manufacturing, Inc. MWT Custom Wood Working, LLC NIKO Contracting Co., Inc. Old World Stone, Ltd. Ornametals Manufacturing, LLC **ProWood Market** Schiff Architectural Detail, LLC Stone Legends Superior Clay Corp. Unique Services & Applications

Exterior Molded Ornament

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Exterior Polymer Millwork Architectural Products by Outwater, LLC Chadsworth Columns Vintage Woodworks

Gilding Services

Campbellsville Industries, Inc. Conrad Schmitt Studios, Inc. EverGreene Architectural Arts, Inc. John Canning Conservation & Painting Studios John Tiedemann, Inc. Schiff Architectural Detail, LLC Unique Services & Applications

Paint Analysis Services

Conrad Schmitt Studios, Inc. EverGreene Architectural Arts, Inc. John Canning Conservation & Painting Studios San Marco USA Schiff Architectural Detail, LLC

Porch Parts

Architectural Products by Outwater, LLC Bear Creek Lumber Carlson's Barnwood Co. MWT Custom Wood Working, LLC Passaic Millwork **ProWood Market** Vintage Woodworks Worthington Millwork

Siding

Bear Creek Lumber **Bridger Steel Chestnut** Specialists, Inc.

Stains, Exterior Edison Coatings, Inc. San Marco USA

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Non-Wood Flooring

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Brackets, Wood

Architectural Products by Outwater, LLC **Chadsworth Columns Decorators Supply Corp.** MWT Custom Wood Working, LLC Passaic Millwork Vintage Woodworks White River Hardwoods-Woodworks

Cast-Stone Interior

Ornament EverGreene Architectural Arts, Inc. Schiff Architectural Detail, LLC Stone Legends Towne House Restorations

Ceiling Domes & Medallions Above View

Architectural Products by Outwater, LLC Chadsworth Columns **Classic Ceilings** DecoCraft USA **Decorators Supply Corp.** Entol Industries, Inc. EverGreene Architectural Arts, Inc. Felber Ornamental Plastering Corp. **Gotham Metalworks** Hyland Studio, The John Canning Conservation & Painting Studios Palladio Mouldings Stanton Glass Studio Stanton Woodworks Vintage Hardware & Lighting

Ceilings, Ornamental, Metal

Allen Architectural Metals, Inc. American Tin Ceiling Co. Architectural Products by Outwater, LLC Carlson's Barnwood Co. Chelsea Decorative Metal Co. **Classic Ceilings** Gotham Metalworks MetalCeilingExpress NIKO Contracting Co., Inc. Shanker Industries Steptoe & Wife Antiques, Ltd. W.F. Norman Corp.

Ceilings, Ornamental, Plaster Above View, Inc.

Architectural Products by Outwater, LLC Chadsworth Columns **Classic Ceilings** Conrad Schmitt Studios, Inc. DecoCraft USA Decorators Supply Corp. Entol Industries, Inc. EverGreene Architectural Arts, Inc. Felber Ornamental Plastering Corp. John Canning Conservation & Painting Studios Palladio Mouldings Swiatek Studios White River Hardwoods-Woodworks

Ceilings, Ornamental, Wood

Decorators Supply Corp. EverGreene Architectural Arts, Inc.

Ceramic Tile

American Restoration Tile, Inc. EverGreene Architectural Arts, Inc. **Fishman Mosaics** Heritage Tile L'Esperance Tile Works North Prairie Tileworks **Mission Tile West** Motawi Tileworks North Prairie Tileworks **Subway Ceramics** Tile Source, Inc.

Cornice Moldings

Architectural Products by Outwater, LLC Chadsworth Columns **Classic Ceilings** DecoCraft USA **Decorators Supply Corp.** Entol Industries, Inc. EverGreene Architectural Arts, Inc. Felber Ornamental Plastering Corp. Northeast Millwork Corp. Palladio Mouldings Passaic Millwork Weston Millwork Co. White River Hardwoods-Woodworks

Decorative Painting

Conrad Schmitt Studios, Inc. Edison Coatings EverGreene Architectural Arts, Inc. Fine Paints of Europe John Canning Conservation & Painting Studios John Tiedemann, Inc. MetalCeilingExpress Old Fashioned Milk Paint Co. **Russ Elliott Gallery** San Marco USA Swiatek Studios **Thomas Moore Studios**

Gilding Services, Interior

Conrad Schmitt Studios, Inc. EverGreene Architectural Arts, Inc. John Canning Conservation & Painting Studios John Tiedemann, Inc. Schiff Architectural Detail, LLC Swiatek Studios **Thomas Moore Studios**

Interior Molded Ornament

Abatron, Inc. Architectural Products by Outwater, LLC B&H Art in Architecture, Ltd. **Classic Ceilings** Decorators Supply Corp. Edison Coatings, Inc. Entol Industries, Inc. EverGreene Architectural Arts, Inc. Felber Ornamental Plastering Corp. John Canning Conservation & Painting Studios Palladio Mouldings Schiff Architectural Detail, LLC Stone Legends Swiatek Študios **Towne House Restorations** White River Hardwoods-Woodworks Worthington Millwork

Moldings

Architectural Products by Outwater, LLC Chadsworth Columns **Classic Ceilings** DecoCraft USA **Entol Industries** EverGreene Architectural Arts, Inc. Felber Ornamental Plastering Corp. Palladio Mouldings Stone Legends Vintage Woodworks

Paints, Interior

EverGreene Architectural Arts, Inc. Old Fashioned Milk Paint Co. San Marco USA

Plaster

Above ViewInc. **Chadsworth Columns Decorators Supply Corp.** EverGreene Architectural Arts, Inc. Felber Ornamental Plastering Corp. San Marco USA Stone Legends Swiatek Studios

Plaster Patching Materials

Abatron, Inc. EverGreene Architectural Arts, Inc. **Historic Plaster Conservation** Services Ltd. San Marco USA Swiatek Studios

Venetian Plaster

Conrad Schmitt Studios, Inc. EverGreene Architectural Arts, Inc. John Canning Conservation & Painting Studios John Tiedemann, Inc.

Wallcoverings

Architectural Products by Outwater, LLC Chelsea Decorative Metal Co. EverGreene Architectural Arts, Inc. MetalCeilingExpress

SECTION 9: LANDSCAPE, **MAIN STREET & GARDEN** SPECIALTIES

Arbors Architectural Products by Outwater, LLC **Bear Creek Lumber** Chadsworth Columns Fifthroom.com Historical Arts & Casting, Inc. Schiff Architectural Detail, LLC Stone Legends Wiemann Metalcraft

Awnings

Professional Awning Manufacturers Assoc.

Bells

Aurora Mills Architectural Salvage Brosamer's Bells Campbellsville Industries, Inc. Elderhorst Bells, Inc. Idh by St. Simons Schiff Architectural Detail, LLC

Benches

Champlain Stone, Ltd. Fifthroom.com **Goodwin International** Haddonstone (USA), Ltd. Herwig Lighting Historical Arts & Casting, Inc. Robinson Iron Corp. Schiff Architectural Detail, LLC Stone Legends Wiemann Metalcraft

Bollards & Stanchions

Allen Architectural Metals, Inc. Herwig Lighting Robinson Iron Corp. Schiff Architectural Detail, LLC Stone Legends Wiemann Metalcraft

Bridges

Allen Architectural Metals, Inc. Fifthroom.com Historical Arts & Casting, Inc. Schiff Architectural Detail, LLC Steptoe & Wife Antiques, Ltd. Stone Legends

Clocks

Campbellsville Industries, Inc. Christoph Paccard Bell Foundry Elderhorst Bells, Inc. Historical Arts & Casting, Inc. Munns Manufacturing, Inc. Schiff Architectural Detail, LLC

Curbing & Edging Champlain Stone, Ltd.

Fencing, Antique Original Aurora Mills Architectural Salvage Carlson's Barnwood Co. Old Wood Workshop, LLC

Schiff Architectural Detail, LLC

Fencing, Metal

Allen Architectural Metals, Inc. Architectural Products by Outwater, LLC **Bill's Custom Metal Fabrications** Campbellsville Industries, Inc. Compass Ironworks Historical Arts & Casting, Inc. Lodi Welding Company Inc. Schiff Architectural Detail, LLC Steptoe & Wife Antiques, Ltd. . Wiemann Metalcraft

Fencing, Wood

Bear Creek Lumber

Flagpoles

Historical Arts & Casting, Inc. idh by St. Simons Schiff Architectural Detail, LLC **Unique Services & Applications**

Flags & Banners

Schiff Architectural Detail, LLC **Unique Services & Applications**

Fountains

B&H Art in Architecture, Ltd. Goodwin International Haddonstone (USA), Ltd. Historical Arts & Casting, Inc. LeQuire Studio / Gallery Robinson Iron Corp. Schiff Architectural Detail, LLC Stone Legends Stonesculpt Wagner Foundry, Inc.

Garden Furnishings

Brandywine Forge Fifthroom.com Flaherty Iron Works, Inc. Goodwin International Haddonstone (USA), Ltd. Historical Arts & Casting, Inc. Schiff Architectural Detail, LLC Stone Legends

Garden Ornament

B&H Art in Architecture, Ltd. Goodwin International Haddonstone (USA), Ltd. Historical Arts & Casting, Inc. Old Wood Workshop, LLC Robinson Iron Corp. Schiff Architectural Detail, LLC Stone Legends Towne House Restorations Wagner Foundry, Inc. Wiemann Metalcraft

Gate Hardware

Acorn Forged Iron Architectural Products by Outwater, LLC **Ball & Ball Hardware Brandywine Forge** D.J.A. Imports, Ltd. Heritage Metalworks Historical Arts & Casting, Inc. Schiff Architectural Detail, LLC

Gates, Antique Original

Aurora Mills Architectural Salvage Old Wood Workshop, LLC Schiff Architectural Detail, LLC

Gates, Metal

Allen Architectural Metals, Inc. Architectural Products by Outwater, LLC Bill's Custom Metal Fabrications D.J.A. Imports, Ltd. Historical Arts & Casting, Inc. Robinson Iron Corp. Schiff Architectural Detail, LLC Steptoe & Wife Antiques, Ltd. Wiemann Metalcraft

Landscape Stone

Champlain Stone, Ltd. Haddonstone (USA), Ltd. Old Wood Workshop, LLC Old World Stone Ltd. Stone Legends

Mailboxes

Architectural Products by Outwater, LLC Custom Home & Commercial Accessories Historical Arts & Casting, Inc. idh by St. Simons Robinson Iron Corp. Wiemann Metalcraft

Pavers

Belden Brick Co., The Champlain Stone, Ltd. Gavin Historical Bricks, Inc. Haddonstone (USA), Ltd. Mission Tile West North Prairie Tileworks Stone Legends Tile Source, Inc.

Pergolas

Architectural Products by Outwater, LLC Bear Creek Lumber Chadsworth Columns Haddonstone (USA), Ltd. Historical Arts & Casting, Inc. Professional Awning Manufacturers Assoc. Stone Legends Wiemann Metalcraft

Planters & Urns

Allen Architectural Metals, Inc. Chadsworth Columns Custom Home & Commercial Accessories Goodwin International Haddonstone (USA), Ltd. Historical Arts & Casting, Inc. John Wright Co. Robinson Iron Corp. Schiff Architectural Detail, LLC Stone Legends Wiemann Metalcraft

Signage

Allen Architectural Metals, Inc. Balquist Carving Studio Custom Home & Commercial Accessories Historical Arts & Casting, Inc. idh by St. Simons North Prairie Tileworks Professional Awning Manufacturers Assoc. Stone Legends Stonesculpt Wagner Foundry, Inc.

Site Furnishings

Herwig Lighting Historical Arts & Casting, Inc. John Wright Co. Robinson Iron Corp. Stone Legends

Storefronts

Allegheny Restoration & Builders Inc. Allen Architectural Metals, Inc. Historic Doors Historical Arts & Casting, Inc. Schiff Architectural Detail, LLC Wagner Foundry, Inc. Weston Millwork Co.

Sundials

Haddonstone (USA), Ltd. Historical Arts & Casting, Inc. Stone Legends

Topiary Frames Schiff Architectural Detail, LLC

Tree Grates & Guards Gotham Metalworks Schiff Architectural Detail, LLC

Walls, Retaining Champlain Stone, Ltd.

SECTION 10: LIGHTING & ELECTRICAL

Candles, Electric

B & P Lamp Supply, Inc. Ball & Ball Lighting Country Traditions Lighting Grand Light Lantern Masters, Inc. Period Lighting Fixtures, Inc. Vintage Hardware & Lighting

Exterior Lighting Restoration

Aurora Lampworks Ball & Ball Lighting Brass Light Gallery, Inc. Country Traditions Lighting Crenshaw Lighting Grand Light Herwig Lighting Historical Arts & Casting, Inc. Lantern Masters, Inc. Lighting Nelson & Garrett Inc. Newstamp Lighting Co. Period Lighting Fixtures, Inc. Rambusch Lighting Co. Schiff Architectural Detail, LLC St. Louis Antique Lighting Co.

Exterior Lighting

Allen Architectural Metals, Inc. Architectural Accents Aurora Lampworks Aurora Mills Architectural Salvage Authentic Designs Ball & Ball Lighting Brass Light Gallery, Inc. Coppersmythe, Josiah R. Country Traditions Lighting Crenshaw Lighting Deep Landing Workshop Grand Light Heritage Metalworks Herwig Lighting Historical Arts & Casting, Inc. House of Antique Hardware Lantern Masters, Inc. Lanternland Lighting Nelson & Garrett Inc. Newstamp Lighting Co. Period Lighting Fixtures, Inc. Rambusch Lighting Co. Schiff Architectural Detail, LLC Scofield Lighting Steven Handelman Studios

St. Louis Antique Lighting Co. Triple-S Chemical Products, Inc. Victorian Revival / Vintage Lighting Vintage Hardware & Lighting Wagner Foundry, Inc. Wiemann Metalcraft

Exterior Lighting, Garden & Landscape

Garden & Landscape Ball & Ball Lighting Brass Light Gallery, Inc. Coppersmythe, Josiah R. Deep Landing Workshop Grand Light Herwig Lighting Historical Arts & Casting, Inc. Lantern Masters, Inc. Lanternland Newstamp Lighting Co. Schiff Architectural Detail, LLC Scofield Lighting Steven Handelman Studios

Fans

Fifthroom.com Schiff Architectural Detail, LLC Woolen Mill Fan Co.

Gas Lighting

Allen Architectural Metals, Inc. Ball & Ball Lighting Crenshaw Lighting Grand Light Lantern Masters, Inc. Newstamp Lighting Co. Schiff Architectural Detail, LLC Steven Handelman Studios Vintage Hardware & Lighting Wiemann Metalcraft

Interior Lighting

Allen Architectural Metals, Inc. Architectural Accents Architectural Products by Outwater, LLC Aurora Lampworks Aurora Mills Architectural Salvage Authentic Designs B & P Lamp Supply, Inc. Ball & Ball Lighting Brass Light Gallery, Inc. Coppersmythe, Josiah R. Country Traditions Lighting Crenshaw Lighting Deep Landing Workshop Grand Light Heritage Metalworks Herwig Lighting Historical Arts & Casting, Inc. House of Antique Hardware Lantern Masters, Inc. I anternland Lighting Nelson & Garrett Inc. Manning Lighting, Inc. Newstamp Lighting Co. Period Lighting Fixtures, Inc. Rambusch Lighting Co. Schiff Architectural Detail, LLC Scofield Lighting St. Louis Antique Lighting Co. Stanton Glass Studio Stanton Woodworks Steven Handelman Studios Triple-S Chemical Products, Inc. Vintage Hardware & Lighting Wiemann Metalcraft World Class Lighting

Lampposts & Standards

Allen Architectural Metals, Inc. Ball & Ball Lighting Grand Light Herwig Lighting Historical Arts & Casting, Inc. Newstamp Lighting Co. Schiff Architectural Detail, LLC

Lighting Fixture Glass Architectural Products by

Outwater, LLC Aurora Lampworks Aurora Mills Architectural Salvage Ball & Ball Lighting Country Traditions Lighting Grand Light Herwig Lighting House of Antique Hardware Period Lighting Fixtures, Inc. Stanton Glass Studio Stanton Woodworks Steven Handelman Studios St. Louis Antique Lighting Co. Vintage Hardware & Lighting

Lighting Fixture Parts

Architectural Products by Outwater, LLC B & P Lamp Supply, Inc. Ball & Ball Lighting Herwig Lighting Newstamp Lighting Co.

Street Lighting Globes & Luminaires

Aurora Lampworks Custom Home & Commercial Accessories Herwig Lighting Manning Lighting, Inc. Newstamp Lighting Co.

Street Lighting, Poles

Allen Architectural Metals, Inc. Aurora Lampworks Custom Home & Commercial Accessories Herwig Lighting Historical Arts & Casting, Inc. Newstamp Lighting Co. Robinson Iron Corp. Schiff Architectural Detail, LLC

Street Lighting

Allen Architectural Metals, Inc. Aurora Lampworks Authentic Designs Ball & Ball Lighting Crenshaw Lighting Herwig Lighting Historical Arts & Casting, Inc. Lantern Masters, Inc. Newstamp Lighting Co. Schiff Architectural Detail, LLC Scofield Lighting Steven Handelman Studios Wiemann Metalcraft

Switch Plates

Architectural Products by Outwater, LLC House of Antique Hardware Steven Handelman Studios Vintage Hardware & Lighting SECTION 11: MANTELS, FIREPLACES & CHIMNEYS

Chimney Pots Copper-Inc.com Stone Legends Superior Clay Corp.

Electric Fires Fires of Tradition Homefires, Inc.

Fire Grates

Architectural Accents Fires of Tradition Gotham Metalworks Homefires, Inc.

Fireplace Inserts

Homefires, Inc. Superior Clay Corp.

Fireplace Screens & Tools

Architectural Accents Ball & Ball Hardware Bill's Custom Metal Fabrications Historical Arts & Casting, Inc. Homefires, Inc. Schiff Architectural Detail, LLC Steven Handelman Studios Stone Mfg. Co. Wiemann Metalcraft

Fireplaces, Rumford Fires of Tradition

Superior Clay Corp.

Fireplaces, Stone Haddonstone (USA), Ltd. Old World Stone Ltd. Stone Legends Stonesculpt

Mantels, Carved Wood

Architectural Accents Architectural Products by Outwater, LLC Balquist Carving Studio Chadsworth Columns Decorators Supply Corp. MWT Custom Wood Working, LLC Passaic Millwork White River Hardwoods-Woodworks

Mantels

Architectural Accents Architectural Products by Outwater, LLC Aurora Mills Architectural Salvage Balquist Carving Studio B&H Art in Architecture, Ltd. **Bill's Custom Metal Fabrications** Brandt, Sylvan Champlain Stone, Ltd. Connor Homes Old Wood Workshop, LLC Decorators Supply Corp. Driwood Moulding Company Felber Ornamental Plastering Corp. **Fires of Tradition** Forshaw of St. Louis, Inc. Goodwin Company Gotham Metalworks Haddonstone (USA), Ltd. Historical Arts & Casting, Inc. Homefires, Inc. Longleaf Lumber, Inc. MWT Custom Wood Working, LLC Old Wood Workshop, LLC Passaic Millwork ProWood Market Schiff Architectural Detail, LLC Stone Legends Stonesculpt Worthington Millwork

Stoves

Homefires, Inc. Schiff Architectural Detail, LLC J

SECTION 12: METALWORK

Cast Metalwork

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Allen Architectural Metals, Inc. Architectural Products by Outwater, LLC Ball & Ball Hardware **Ball & Ball Lighting** Campbellsville Industries, Inc. CoCo Architectural Grilles & Metalcraft Flaherty Iron Works, Inc. Gotham Metalworks Heritage Metalworks Historical Arts & Casting, Inc. King Architectural Metals Notting Hill Decorative Hardware Robinson Iron Corp. Schiff Architectural Detail, LLC Steptoe & Wife Antiques, Ltd. Vintage Hardware & Lighting W.F. Norman Corp. Wagner Foundry, Inc. Wiemann Metalcraft

Fabricated Metalwork

Allen Architectural Metals, Inc. Architectural Products by Outwater, LLC Ball & Ball Hardware

Ball & Ball Hardware Ball & Ball Lighting Brandywine Forge Campbellsville Industries, Inc. CoCo Architectural Grilles & Metalcraft Compass Ironworks D.J.A. Imports, Ltd. Flaherty Iron Works, Inc. Gotham Metalworks Heritage Metalworks Heritage Metalworks Historical Arts & Casting, Inc. Lodi Welding Company Inc. Munns Manufacturing, Inc. NIKO Contracting Co., Inc. Ornametals Manufacturing, LLC Professional Awning Manufacturers Assoc.

Manufacturers Assoc. Schiff Architectural Detail, LLC Steptoe & Wife Antiques, Ltd. Unique Services & Applications Wiemann Metalcraft

Forged Metalwork

Ball & Ball Hardware Ball & Ball Lighting Bill's Custom Metal Fabrications Compass Ironworks D.J.A. Imports, Ltd. Flaherty Iron Works, Inc. King Architectural Metals Lodi Welding Company Inc. MetalCeilingExpress Schiff Architectural Detail, LLC Steptoe & Wife Antiques, Ltd. Steven Handelman Studios Wiemann Metalcraft

Grilles, Metal

Acorn Forged Iron Allen Architectural Metals, Inc. Architectural Grille Architectural Products by Outwater, LLC Artistry in Architectural Grilles Campbellsville Industries, Inc. CoCo Architectural Grilles & Metalcraft D.J.A. Imports, Ltd. Flaherty Iron Works, Inc. Gotham Metalworks Heat Registers.com Historical Arts & Casting, Inc. House of Antique Hardware Kees Architectural Division King Architectural Metals Lodi Welding Company Inc.

Renovation Brands/Reggio Register Co., The Robinson Iron Corp. Schiff Architectural Detail, LLC Steptoe & Wife Antiques, Ltd. Steven Handelman Studios The Golden Lion Vintage Hardware & Lighting Wagner Foundry, Inc. Wiemann Metalcraft

Metal Coatings

Allen Architectural Metals, Inc. Historical Arts & Casting, Inc. King Architectural Metals Preservation Products, Inc. San Marco USA Schiff Architectural Detail, LLC Triple-S Chemical Products, Inc.

Metal Repair & Restoration

Services Allen Architectural Metals, Inc. Ball & Ball Hardware Ball & Ball Lighting Campbellsville Industries, Inc. Flaherty Iron Works, Inc. Gotham Metalworks Heritage Metalworks Historical Arts & Casting, Inc. King Architectural Metals Professional Awning Manufacturers Assoc. Robinson Iron Corp. Unique Services & Applications

Railings, Metal

Allen Architectural Metals, Inc. Architectural Products by Outwater, LLC **B&B** Sheetmetal **Bill's Custom Metal Fabrications** Campbellsville Industries, Inc. CoCo Architectural Grilles & Metalcraft **Compass Ironworks** D.J.A. Imports, Ltd. Flaherty Iron Works, Inc. Goddard Mfg. Co. Heat Registers.com Heritage Metalworks Historical Arts & Casting, Inc. idh by St. Simons King Architectural Metals Lodi Welding Company Inc. Pacific Register Company Renovation Brands/Reggio Register Co., The Robinson Iron Corp. Schiff Architectural Detail, LLC Stairways, Inc. Steptoe & Wife Antiques, Ltd. Sterling Staircase & Handrail Wagner Foundry, Inc. Wiemann Metalcraft

Railings, Standard Elements

Architectural Products by Outwater, LLC B&B Sheetmetal Bill's Custom Metal Fabrications Campbellsville Industries, Inc. D.J.A. Imports, Ltd. idh by St. Simons King Architectural Metals Lodi Welding Company Inc. Steptoe & Wife Antiques, Ltd. Wiemann Metalcraft

Registers, Metal Plate

Architectural Grille Artistry in Architectural Grilles CoCo Architectural Grilles & Metalcraft Heat Registers.com Kees Architectural Division Schiff Architectural Detail, LLC Wiemann Metalcraft Registers, Sheetmetal Acorn Forged Iron

Acchitectural Grille Heat Registers.com Kees Architectural Division

Sheetmetal Ornament

Architectural Grille Artistry in Architectural Grilles B&B Sheetmetal EJMcopper, Inc. Gotham Metalworks Heather & Little Limited MetalCeilingExpress NIKO Contracting Co., Inc. Ornametals Manufacturing, LLC Schiff Architectural Detail, LLC Unique Services & Applications

Sheetmetal, Architectural

Artistry in Architectural Grilles B&B Sheetmetal Bridger Steel EJMcopper, Inc. Gotham Metalworks Heather & Little Limited MetalCeilingExpress Munns Manufacturing, Inc. NIKO Contracting Co., Inc. Ornametals Manufacturing, LLC Schiff Architectural Detail, LLC Unique Services & Applications

Stair Balustrades, Custom

Allen Architectural Metals, Inc. Flaherty Iron Works, Inc. King Architectural Metals Schiff Architectural Detail, LLC Steptoe & Wife Antiques, Ltd. Wiemann Metalcraft

Stair Balustrades, Cast & Forged Metal

Allen Architectural Metals, Inc. Architectural Products by Outwater, LLC Bill's Custom Metal Fabrications Compass Ironworks D.J.A. Imports, Ltd. Flaherty Iron Works, Inc. Gotham Metalworks Historical Arts & Casting, Inc. King Architectural Metals Lodi Welding Company Inc. Robinson Iron Corp. Schiff Architectural Detail, LLC Steptoe & Wife Antiques, Ltd. Wagner Foundry, Inc.

Stair Balustrades,

Standard Elements Architectural Products by Outwater, LLC D.J.A. Imports, Ltd. Flaherty Iron Works, Inc. King Architectural Metals Lodi Welding Company Inc. Steptoe & Wife Antiques, Ltd. Wiemann Metalcraft

Stair Handrails

Allen Architectural Metals, Inc. Architectural Products by Outwater, LLC Ball & Ball Hardware Ball & Ball Lighting Bill's Custom Metal Fabrications Campbellsville Industries, Inc. Compass Ironworks D.J.A. Imports, Ltd. Flaherty Iron Works, Inc. Historical Arts & Casting, Inc. idh by St. Simons King Architectural Metals Lodi Welding Company Inc. Robinson Iron Corp. Schiff Architectural Detail, LLC Stairways, Inc. Steptoe & Wife Antiques, Ltd. Wagner Foundry, Inc. Wiemann Metalcraft

Stairs

Flaherty Iron Works, Inc. Goddard Mfg. Co. Historical Arts & Casting, Inc. Lodi Welding Company Inc. Schiff Architectural Detail, LLC Stairways, Inc. Steptoe & Wife Antiques, Ltd. Wiemann Metalcraft

Stairs, Kits

Connor Homes Steptoe & Wife Antiques, Ltd.

SECTION 13: PLUMBING, BATH & HEATING

Bathroom Accessories

Architectural Products by Outwater, LLC Heritage Tile House of Antique Hardware idh by St. Simons Subway Ceramics Vintage Hardware & Lighting

Bathtubs

Aurora Mills Architectural Salvage Brandt, Sylvan Schiff Architectural Detail, LLC Stone Legends

Faucets & Fittings

Aurora Mills Architectural Salvage Schiff Architectural Detail, LLC Vintage Hardware & Lighting

HVAC Systems, Mini Duct SpacePak Unico System, Inc.

Kitchen Cabinets

Architectural Products by Outwater, LLC Connor Homes Crown Point Cabinetry Zepsa Industries, Inc.

Kitchen Sinks, Antique

Original Aurora Mills Architectural Salvage Old Wood Workshop, LLC Sheldon Slate Products Co., Inc.

Plumbing Parts, Antique Original Aurora Mills Architectural Salvage

Radiator Covers Architectural Grille Kees Architectural Division

Radiators, Antique & Salvaged Aurora Mills Architectural Salvage

Wine Cellars, Accessories Architectural Products by Outwater, LLC EJMcopper, Inc. Schiff Architectural Detail, LLC Wiemann Metalcraft

SECTION 14: PROFESSIONAL SERVICES

Books & Publications Historical Arts & Casting, Inc. Stained Glass Assn. of America

Conservation Services

B&H Art in Architecture, Ltd. **Building Conservation Associates** Conrad Schmitt Studios, Inc. Edison Coatings, Inc. EverGreene Architectural Arts, Inc. Fishman Mosaics Gotham Metalworks Historic Plaster Conservation Services Ltd. Historical Arts & Casting, Inc. John Canning Conservation & Painting Studios John Tiedemann, Inc. San Marco USA Schiff Architectural Detail, LLC Swiatek Studios Thomas Moore Studios Wiemann Metalcraft

Education, Training

& Workshops Edgecombe Community College Fine Paints of Europe North Bennet Street School San Marco USA Stained Glass Assn. of America Stone Legends

Historical Preservation Consulting

Allen Architectural Metals, Inc. B&H Art in Architecture, Ltd. Building Conservation Associates Conrad Schmitt Studios, Inc. EverGreene Architectural Arts, Inc. Gotham Metalworks Historical Arts & Casting, Inc. John Tiedemann, Inc. Robinson Iron Corp. San Marco USA

Industry & Trade

Associations Professional Awning Manufacturers Assoc. Stained Glass Assn. of America

SECTION 15: ROOFING & ROOF SPECIALTIES

Bird- & Pest-Control

Products Bell Environmental Services Bird-B-Gone Bird-X, Inc. Renaissance Roofing, Inc. SnoBlox-SnoJax Team Fritz Clay Roof Tiles, Inc. Unique Services & Applications

Caulking & Joint Sealants Preservation Products, Inc. Renaissance Roofing, Inc. SnoBlox-SnoJax

Cresting

Allen Architectural Metals, Inc. Copper-Inc.com Heather & Little Limited Historical Arts & Casting, Inc. Ornametals Manufacturing, LLC Renaissance Roofing, Inc. Schiff Architectural Detail, LLC Wagner Foundry, Inc. Wiemann Metalcraft

Cupolas

Arch Fiberglass Corp. Architectural Timber & Millwork **B&B** Sheetmetal Campbellsville Industries, Inc. Connor Homes Copper-Inc.com Custom Home & Commercial Accessories EJMcopper, Inc. **Gotham Metalworks** Heather & Little Limited Historical Arts & Casting, Inc. Munns Manufacturing, Inc. NIKO Contracting Co., Inc. Ornametals Manufacturing, LLC Passaic Millwork Renaissance Roofing, Inc. **Unique Services & Applications**

Domes

Campbellsville Industries, Inc. Gotham Metalworks Heather & Little Limited Historical Arts & Casting, Inc. Munns Manufacturing, Inc. NIKO Contracting Co., Inc. Ornametals Manufacturing, LLC Renaissance Roofing, Inc. Schiff Architectural Detail, LLC **Unique Services & Applications** Wiemann Metalcraft

Finials

Campbellsville Industries, Inc. Copper-Inc.com Custom Home & Commercial Accessories EJMcopper, Inc. **Gotham Metalworks** Heather & Little Limited Historical Arts & Casting, Inc. Ludowici Roof Tile, Inc. MCA Clay Roof Tile Munns Manufacturing, Inc. NIKO Contracting Co., Inc. Ornametals Manufacturing, LLC Renaissance Roofing, Inc. Schiff Architectural Detail, LLC Team Fritz Clay Roof Tiles, Inc. Unique Services & Applications Vande Hey Raleigh Mfg. Vintage Woodworks W.F. Norman Corp.

Flashing

B&B Sheetmetal Copper-Inc.com Gotham Metalworks Heather & Little Limited NIKO Contracting Co., Inc. Renaissance Roofing, Inc. Unique Services & Applications

Gutter Chains

Copper-Inc.com EJMcopper, Inc. Renaissance Roofing, Inc.

Gutter Hangers

B&B Sheetmetal Copper-Inc.com Heather & Little Limited **Ornametals Manufacturing, LLC** Renaissance Roofing, Inc.

Gutters

B&B Sheetmetal Copper-Inc.com Custom Home & Commercial Accessories EJMcopper, Inc. Gotham Metalworks Heather & Little Limited Historical Arts & Casting, Inc. NIKO Contracting Co., Inc. Ornametals Manufacturing, LLC

Passaic Millwork Renaissance Roofing, Inc. Unique Services & Applications Vande Hey Raleigh Mfg.

Leaders & Leader Boxes

Copper-Inc.com Gotham Metalworks Heather & Little Limited Historical Arts & Casting, Inc. NIKO Contracting Co., Inc. Ornametals Manufacturing, LLC Renaissance Roofing, Inc. Unique Services & Applications

Lightning Protection Renaissance Roofing, Inc. Unique Services & Applications

Membrane Roofing Systems Gotham Metalworks Preservation Products, Inc. Renaissance Roofing, Inc.

Metal Roofing, Shingles

Heather & Little Limited NIKO Contracting Co., Inc. Ornametals Manufacturing, LLC Renaissance Roofing, Inc. **Unique Services & Applications** W.F. Norman Corp.

Roof Coatings & Finishes

Edison Coatings, Inc. Preservation Products, Inc. Renaissance Roofing, Inc.

Roof Repair Contracting

NIKO Contracting Co., Inc. Renaissance Roofing, Inc. Tile Roofs, Inc. **Unique Services & Applications**

Roof Repair Materials

Heather & Little Limited Preservation Products, Inc. Renaissance Roofing, Inc.

Sheetmetal Roofing

B&B Sheetmetal Bridger Steel Gotham Metalworks Heather & Little Limited NIKO Contracting Co., Inc. Ornametals Manufacturing, LLC Renaissance Roofing, Inc. Unique Services & Applications W.F. Norman Corp.

Skylights

Gotham Metalworks Heather & Little Limited Historical Arts & Casting, Inc. Hyland Studio, The Renaissance Roofing, Inc. RoofLanterns.com Team Fritz Clay Roof Tiles, Inc.

Slate Replicas CertainTeed-

Roofing Products Group NIKO Contracting Co., Inc. Renaissance Roofing, Inc. Tile Roofs, Inc. **Unique Services & Applications** Vande Hey Raleigh Mfg.

Slate Roofing

American Slate Co. CertainTeed-**Roofing Products Group** Greenstone Slate NIKO Contracting Co., Inc. Renaissance Roofing, Inc. Sheldon Slate Products Co., Inc. Team Fritz Clay Roof Tiles, Inc. Tile Roofs, Inc. **Unique Services & Applications** Vande Hey Raleigh Mfg.

Snowguards Historical Arts & Casting, Inc. NIKO Contracting Co., Inc. Renaissance Roofing, Inc. SnoBlox-SnoJax Team Fritz Clay Roof Tiles, Inc. **Unique Services & Applications** Vande Hey Raleigh Mfg.

Steeplejack Services

Campbellsville Industries, Inc. NIKO Contracting Co., Inc. Renaissance Roofing, Inc.

Steeples

Architectural Timber & Millwork Campbellsville Industries, Inc. EJMcopper, Inc. Heather & Little Limited Munns Manufacturing, Inc. NIKO Contracting Co., Inc. Ornametals Manufacturing, LLC Renaissance Roofing, Inc. Team Fritz Clay Roof Tiles, Inc.

Tile Roofing Ludowici Roof Tile, Inc. MCA Clay Roof Tile NIKO Contracting Co., Inc. Renaissance Roofing, Inc. Team Fritz Clay Roof Tiles, Inc. Tile Roofs, Inc. **Unique Services & Applications** Vande Hey Raleigh Mfg.

Vents

Architectural Products by Outwater, LLC **B&B** Sheetmetal NIKO Contracting Co., Inc. Renaissance Roofing, Inc. Team Fritz Clay Roof Tiles, Inc.

Waterproofing Materials

Edison Coatings, Inc. Preservation Products, Inc. Team Fritz Clay Roof Tiles, Inc.

Weathervanes

Custom Home & Commercial Accessories EJMcopper, Inc. Heather & Little Limited Historical Arts & Casting, Inc. John Wright Co. Munns Manufacturing, Inc. NIKO Contracting Co., Inc. Ornametals Manufacturing, LLC Renaissance Roofing, Inc. Schiff Architectural Detail, LLC **Unique Services & Applications** Wiemann Metalcraft

Wood Shakes, Hand Split

Bear Creek Lumber Renaissance Roofing, Inc. **Unique Services & Applications** Vintage Woodworks

Wood Shingles

Bear Creek Lumber CertainTeed-**Roofing Products Group** Ludowici Roof Tile, Inc.

MCA Clay Roof Tile Team Fritz Clay Roof Tiles, Inc. Unique Services & Applications Vande Hey Raleigh Mfg. Vintage Woodworks

SECTION 16: SALVAGED MATERIALS & ANTIQUES

Architectural Antiques

& Salvage Aurora Mills Architectural Salvage Carlson's Barnwood Co. Old Wood Workshop, LLC Schiff Architectural Detail, LLC The Golden Lion

Back Bars, Antique Aurora Mills Architectural Salvage

Barn Siding, Antique

Aurora Mills Architectural Salvage Brandt, Sylvan Carlson's Barnwood Co. Chestnut Specialists, Inc. Conklin's Authentic Antique Barnwood Longleaf Lumber, Inc.

Building Materials, Salvaged

Aurora Mills Architectural Salvage Brandt, Sylvan Carlson's Barnwood Co. Chestnut Specialists, Inc. Conklin's Authentic Antique Barnwood Gavin Historical Bricks, Inc. Old Wood Workshop, LLC Tile Roofs, Inc.

Glass, Antique Original

Aurora Mills Architectural Salvage Burnham & LaRoche Associates Carlson's Barnwood Co.

Green-Building Products

Allied Window, Inc. Architectural Components, Inc. Aurora Mills Architectural Salvage Ball & Ball Lighting Bear Creek Lumber Bendheim Brandt, Sylvan Carlson's Barnwood Co. CertainTeed-**Roofing Products Group** Chestnut Specialists, Inc. Conklin's Authentic Antique Barnwood Edison Coatings, Inc. Expanko Cork Co. Fine Paints of Europe Gavin Historical Bricks, Inc. **Goodwin Company** Greenstone Slate Haddonstone (USA), Ltd. HeartWood Fine Windows & Doors Kolbe Windows & Doors Longleaf Lumber, Inc. Ludowici Roof Tile, Inc. Marvin Windows and Doors Northeast Millwork Corp. Old Fashioned Milk Paint Co. Old Wood Workshop, LLC Parrett Windows & Doors Renaissance Roofing, Inc. Sheldon Slate Products Co., Inc. St. Louis Antique Lighting Co. Steven Handelman Studios Team Fritz Clay Roof Tiles, Inc. Tile Roofs, Inc. Tile Source, Inc. Unico System, Inc. Weston Millwork Co.

Wood Window Workshop

Timbers, Antique

& Salvaged Aurora Mills Architectural Salvage Bear Creek Lumber Brandt, Sylvan Carlson's Barnwood Co. Chestnut Specialists, Inc. Conklin's Authentic Antique Barnwood Goodwin Company Longleaf Lumber, Inc. Old Wood Workshop, LLC Schiff Architectural Detail, LLC

Wood Boards, **Antique & Salvaged**

Aurora Mills Architectural Salvage Bear Creek Lumber Brandt, Sylvan Carlson's Barnwood Co. Chestnut Specialists, Inc. Conklin's Authentic Antique Barnwood Goodwin Company Longleaf Lumber, Inc. Northeast Millwork Corp. Old Wood Workshop, LLC

SECTION 17: STONE, BRICK & MASONRY

Brick

Belden Brick Co., The Gavin Historical Bricks, Inc. Stone Legends

Cast Stone, Custom Casting

Abatron, Inc. **Cathedral Stone Products** Haddonstone (USA), Ltd. Pacific Register Company Stone Legends **Towne House Restorations**

Masonry Cleaners

Cathedral Stone Products LimeWorks.us PROSOCO, Inc. San Marco USA

Masonry Coloring Materials

Cathedral Stone Products Edison Coatings, Inc. LimeWorks.us San Marco USA Structural Restoration Services, Inc. Triple-S Chemical Products, Inc.

Masonry Paint Strippers

Cathedral Stone Products PROSOCO, Inc. San Marco USA

Masonry Repair Materials

Abatron, Inc. Cathedral Stone Products Edison Coatings, Inc. LimeWorks.us San Marco USA Structural Restoration Services, Inc. J

Masonry Restoration Contracting B&H Art in Architecture, Ltd. John Canning Conservation & Painting Studios LimeWorks.us

Rugo Stone, LLC Stone Legends Structural Restoration Services, Inc. Sungloss Marble & Terrazzo Co.

Masonry Waterproofers Edison Coatings, Inc. Weathercap, Inc.

Mortar Colorants Edison Coatings, Inc. LimeWorks.us

Mortar Joint Protection Edison Coatings, Inc. LimeWorks.us Weathercap, Inc.

Mortar

Cathedral Stone Products Edison Coatings, Inc. LimeWorks.us

Stone, Building

Champlain Stone, Ltd. **Cleveland Quarries** Endless Mountain Stone Co. Old World Stone Ltd. Rugo Stone, LLC Stoneyard.com

Stone, Dimensional Cut

Champlain Stone, Ltd. **Cleveland Quarries** Endless Mountain Stone Co. KEPCO+ Old World Stone Ltd. Rugo Stone, LLC Stone Legends Stonesculpt Stoneyard.com Sungloss Marble & Terrazzo Co.

Stone, Fieldstone

Endless Mountain Stone Co. Old World Stone Ltd. Stoneyard.com

Stone, Hand &

Machine Carved Champlain Stone, Ltd. Endless Mountain Stone Co. KEPCO+ Old World Stone Ltd. Stone Legends Stonesculpt Sungloss Marble & Terrazzo Co.

Stone, Veneer

Champlain Stone, Ltd. **Cleveland Quarries** Endless Mountain Stone Co. Old World Stone Ltd.

Rugo Stone, LLC Stone Legends Stoneyard.com

> **Stucco Finishes Cathedral Stone Products** Edison Coatings, Inc. San Marco USA

Terra-Cotta Restoration Materials **Cathedral Stone Products** Edison Coatings, Inc. Ludowici Roof Tile, Inc.

Terra-Cotta Substitutes Edison Coatings, Inc. **Towne House Restorations**

Terra Cotta Edison Coatings, Inc. Ludowici Roof Tile, Inc. **Towne House Restorations**

SECTION 18: TIMBER FRAMING & BARNS

Barns Aurora Mills Architectural Salvage Bear Creek Lumber Carlson's Barnwood Co. **Connor Homes** Country Carpenters, Inc. Pacific Post & Beam

Insulating Panels Pacific Post & Beam

Timber-Frame Design Services Hochstetler Milling, Ltd. Pacific Post & Beam

Timber Frames Architectural Timber & Millwork Aurora Mills Architectural Salvage **Bear Creek Lumber** Carlson's Barnwood Co. Country Carpenters, Inc. Goodwin Company Hochstetler Milling, Ltd. Pacific Post & Beam Unique Services & Applications

Timber Trusses

Hochstetler Milling, Ltd. Pacific Post & Beam

Chadsworth Columns Heat Registers.com Passaic Millwork Register Co., The

Millwork

Safety Equipment **Concealite Safety Products**

Tools, Conservation San Marco USA Trow & Holden

SECTION 19: TOOLS

& EQUIPMENT

Tools, Decorating Architectural Products by Outwater, LLC San Marco USA

Tools, Masonry Cathedral Stone Products San Marco USA Trow & Holden

Tools, Roofing Team Fritz Clay Roof Tiles, Inc.

Tools, Slate Greenstone Slate

Tools, Stone Carving Trow & Holden

Water-Jet Cutting Architectural Grille

SECTION 20: WOODWORK

Cabinets, Custom Connor Homes **Crown Point Cabinetry**

Carvings Architectural Products by Outwater, LLC **Balquist Carving Studio** Chadsworth Columns Decorators Supply Corp. Klitsas, Dimitrios Fine Wood Sculptor MWT Custom Wood Working, LLC Rohn & Associates Design, Inc. White River Hardwoods-Woodworks Zepsa Industries, Inc.

Casework

Architectural Products by Outwater, LLC MWT Custom Wood Working, LLC Vintage Woodworks

Grilles

Renovation Brands/Reggio Vintage Woodworks

Architectural Accents Architectural Components, Inc. Architectural Products by Outwater, LLC Architectural Timber & Millwork Bear Creek Lumber **Chadsworth Columns Connor Homes Goodwin Company** Decorators Supply Corp. Goodwin Company Jim Illingworth Millwork, LLC Northeast Millwork Corp. Passaic Millwork Saienni Stairs LLC Superior Moulding, Inc. Timberlane, Inc. Vintage Woodworks Weston Millwork Co. White River Hardwoods-Woodworks Wood Window Workshop Worthington Millwork

Moldings

Zepsa Industries, Inc.

Architectural Products by Outwater, LLC **Bear Creek Lumber** Chadsworth Columns Decorators Supply Corp. Driwood Moulding Company **Goodwin Company** Jim Illingworth Millwork, LLC Klitsas, Dimitrios -Fine Wood Sculptor Kuiken Brothers Company, Inc. Northeast Millwork Corp. Passaic Millwork Superior Moulding, Inc. Weston Millwork Co. White River Hardwoods-Woodworks Wood Window Workshop Worthington Millwork Zepsa Industries, Inc.

Moldings

Architectural Products by Outwater, LLC Driwood Moulding Company Entol Industries, Inc. **Goodwin Company** Historic Doors Jim Illingworth Millwork, LLC Kuiken Brothers Company, Inc. Northeast Millwork Corp. Passaic Millwork Saienni Stairs LLC Superior Moulding, Inc. U.S. Shutter Company Vintage Woodworks Weston Millwork Co. White River Hardwoods-Woodworks Worthington Millwork

Paneling

Architectural Products by Outwater, LLC Architectural Timber & Millwork Bear Creek Lumber

Connor Homes Decorators Supply Corp. **Driwood Moulding Company** Goodwin Company

Registers

Architectural Products by Outwater, LLC Heat Registers.com Pacific Register Company Vintage Hardware & Lighting

Staircase Parts

Architectural Products by Outwater, LLC Goddard Mfg. Co. Goodwin Company Klitsas, Dimitrios -Fine Wood Sculptor MWT Custom Wood Working, LLC Northeast Millwork Corp. Passaic Millwork Saienni Stairs LLC Stairways, Inc. Sterling Staircase & Handrail Superior Moulding, Inc. Vintage Woodworks Sterling Staircase & Handrail Superior Moulding, Inc.

Stairs

Connor Homes Goddard Mfg. Co. Goodwin Company Passaic Millwork Saienni Stairs LLC Stairways, Inc. Sterling Staircase & Handrail Zepsa Industries, Inc.

Stairs, Kits **Connor Homes**

Timbers

Architectural Timber & Millwork **Bear Creek Lumber Goodwin Company**

Turnings

Architectural Products by Outwater, LLC MWT Custom Wood Working, LLC Passaic Millwork Saienni Stairs LLC Vintage Woodworks Zepsa Industries, Inc.

Veneers & Inlays

Architectural Products by Outwater, LLC **Goodwin Company**

Wood Finishes

Edison Coatings, Inc. Fine Paints of Europe Old Fashioned Milk Paint Co. Zepsa Industries, Inc.

Wood Restoration Materials

Abatron, Inc. Carlson's Barnwood Co. Zepsa Industries, Inc.



Artwork, Art Glass & Furnishings

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This religious image was created for an outdoor area using materials from **Belden Brick. Click on No. 1891**



Bovard Studio restored "Angel Among the Lilies," by Louis Tiffany and Co., for St. Luke's United Methodist Church in Dubuque, IA. **Click on No. 7690**



For the restoration of historic St. Genevieve, Lafayette, LA, **Conrad Schmitt Studios** created new sanctuary and arch murals. Photo: Danny Izzo **Click on No. 8040**



This Adirondack-style chair and matching footrest are available from **Coppa Woodworking. Click on No. 9600**



EverGreene Architectural Arts recreated six monumental WPA-era murals, which had been destroyed by a fire in 1942, for Fair Park in Dallas, TX. **Click on No. 2460**



Gaby's Shoppe custom manufactured this wrought-iron, queen-sized bed, which measures 114x65 in. Click on No. 2520



Andromeda, model #E640 from **Haddonstone**, is a replica of a 19th-century Italian whitemarble statue. **Click on No. 4020**



Historical Arts & Casting created this sculpture for the city of San Francisco. Click on No. 1210



Canning Studios executed the trompe l'oeil at the Academy of Music in Philadelphia, PA. **Click on no. 5100**.



Robinson Iron restored this pair of late-19th-century French cast-iron stags flanking the grand stair at the Nemours Mansion in Wilmington, DE. **Click on No. 3240**



This leaded-glass panel was restored by **Rohlf's** for a New York City townhouse. **Click on No. 6240**



Swiatek Studios designed and painted this custom chapel for St. Casimir church in Buffalo, NY; the work includes decorative painting, murals and gilding. Click on No. 2054



This cabinet detail from a custom interior shows the skill of the artisans at **Zepsa**. **Click on No. 1996**

Columns & Capitals



1.800.COLUMNS supplied the 19-ft.-tall, 30-in.-dia. plain Tuscan fiberglass columns for this house. **Click on No. 1580**



These Classically modeled sculptures, column and mantel are available from **Haddonstone**. Click on No. 4020



Heather & Little fabricated this copper capital.

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Custom columns and capitals from **Historical** Arts & Casting, Inc. can be used in a variety of applications. Click on No. 1210



Canning Studios marbleized these enormous columns in the National Building Museum in Washington, DC. **Click on no. 5100**.



This ornate wood acanthus capital is the work of master carver **Dimitrios Klitsas.**



Worthington Millwork makes wood columns for interior and exterior applications.



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This traditional wood-frame garden house is the work of **Glass House**.



The Venetian Folly from **Haddonstone** includes Tuscan columns, a pedimented arch, quoins and balustrading. **Click on No. 4020**



This gazebo features **W.F. Norman Corp.'s** style A shingles with its continuous hip finish and a custom-made finial on top. **Click on No. 520**



This trellis was fabricated by **Wiemann Metalcraft** for the historic square of La Placita de Delores in Los Angeles, CA. **Click on No. 1223**





Abatron's LiquidWood restoration system regenerates and waterproofs dried out or spongy wood. Click on No. 1300



Allied Window supplied the Magnetic One Lite (MOL) "invisible" storm window for an historic building in Dumbarton Oaks, Georgetown. Click on No. 690



Arch Angle Window & Door manufactured these traditionally styled storm windows and doors.



This traditionally styled window is typical of the historic work done by **Architectural Components. Call 413-367-9441 for more info**.



Sash chains are available from **Architectural Resource Center** in various materials and finishes including brass, bronze, copper-dipped steel and brass-plated steel. **Click on No. 1670**



These doors feature rustic hinges and hardware custom made by **Ball & Ball Hardware.**



These chancel windows were restored by **Bovard Studio** for an historic chapel at Baker University in Baldwin, KS. **Click on No. 7690**



Robinson Iron fabricated the Woodruff Pavilion in Olympic Park, Atlanta, GA; it features cast columns topped with a transparent glass dome on a steel frame. **Click on No. 3240**

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These steel windows were manufactured by Crittall Windows. Click on No. 2016



Conrad Schmitt Studios. Click on No. 8040

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CLICK ON NO. 2016

E.R. Butler offers a variety of hardware such as these butterfly pulls. **Click on No. 2260**



EverGreene Architectural Arts re-created the entrance to the Great Overland Train Station in Topeka, KS. **Click on No. 2460**



Gaby's Shoppe offers a selection of drapery hardware designs in six powder-coated finishes. Click on No. 2520



Haddonstone created the custom window surround for this building in Kent, U.K. Click on No. 4020



Historic Doors fashioned these entry doors using mortise-and-tenon joinery. Click on No. 3570



This 11-ft. custom bronze door was manufactured by **Historical Arts & Casting** with a patina formulated to age gracefully in any climate. **Click on No. 1210**



Phelps Company provides sash pulleys, sash chain and other hardware to many of the high end custom window manufacturers in North America. All of the hardware they manufacture is kept in stock in five different finishes for quick shipment. Click on No. 6001



This traditional door set and steeple-tip door hinge are available from **House of Antique Hardware** in nine finishes. **Click on No. 1096**



These eliptical arched-top French doors with double pane insulated glass were fabricated by **Illingworth Millwork. Click on No. 1690**



Interior window systems from **Indow** can be made to fit any window. **Click on No. 2068**



Glass interior storm windows from **Innerglass Window Systems** solved the draft problems for these windows. **Click on No. 909**



Shuttercraft offers exterior shutters in cedar and interior models in basswood, poplar and red oak. Click on no. 1321.



These Bermuda shutters from **Timberlane**, **Inc.**, available in any louver size with the option of large or small tilt-rods, are designed for sun screening and moderate storm protection.



Vintage Doors fabricated this solid Spanish Cedar double door, model DB100, to match the original doors of this early Victorian home. Click on No. 2034



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Victorian Style Brass Heraldic Door Plate, cast in solid brass and paired with two Roaring Lion doorknobs by Corbin from their Circa 1900 catalog, called the Pavia Pattern; this complete door set is hand finished in Antique Brass Finish all from **Vintage Hardware. Click on No. 2078**



This small bamboo bell push is available from **Von Morris. Click on No. 1864**



Wiemann Metalcraft fabricated these bronze Art Deco door panels. Click on No. 1223



Woodstone uses a century-old method of wood joinery to fashion its windows to build legacy projects with a selection of finishes. Click on No. 8430



Zepsa Industries designed and built these historically styled wood doors. Click on No. 1996



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CLICK ON NO. 8430



CLICK ON NO. 3950

COMING THIS YEAR

State capitol restoration updates. The Minnesota and Colorado projects appear in this issue, and we found that there's lots more going on in other states as well. More Capitol building projects will appear in future issues.

Flooring



Resawn flooring from **Sylvan Brandt** is cut from old beams to match the grain and character of antique floors. **Click on No. 3950**



Conklin's Authentic Antique Barnwood supplied this skimmed pine and hemlock flooring, which is made from reclaimed wood.



Craftsman Lumber supplied the white pine boards for the flooring and paneling in this room.



This conservatory flooring from **Haddonstone**, available in a number of different sizes, can be used to create different patterns. **Click on No. 4020**



Valencia terra-cotta tiles from **Ludowici** were used to create this Moroccan-inspired quatrefoil design. **Click on No. 2760**

Exterior Elements, Ornament & Finishes



Abatron's brush-on epoxy Mastermold moldmaking paste produces an elastic mold with high-tear strength; it can be easily peeled from intricate and undercut shapes. **Click on No. 1300**



Bridger Steel provides full metal siding solutions such as the one shown here. Click on No. 2082



Chadsworth offers PolyStone[®] composite balustrades in a variety of applications, including radial, straight, stairway, balcony and rooftop. **Click on No. 1580**



Haddonstone's extensive line of architectural cast stonework includes cornices. Click on No. 4020



NIKO Contracting restored these copper dormer surrounds. Click on No. 8300



Robinson Iron cast and fabricated this new storefront façade in aluminum to match the surrounding historic neighborhood in Washington, DC. **Click on No. 3240**



This stamped sheet-metal cornice was fabricated by W.F. Norman. Click on No. 520

Landscape, Streetscape & Garden Specialties



Paving from **Belden Brick** was used to create this decorative pattern. **Click on No. 1891**



Chadsworth's Classic pergola creates a smooth transition between interior and exterior spaces. **Click on No. 1580**



Gaby's Shoppe fabricated this wrought-iron gate. Click on No. 2520



Reclaimed Metropolitan street pavers from **Gavin Historical Bricks** were used to create this circular drive in Birmingham, AL. **Click on No. 8079**



The design for **Haddonstone's** Versaille selfcirculating fountain, model #HC800, was inspired by the Bosquet de la Colonnade at Versailles. **Click on No. 4020**



This Vixtorian II Bench from **Herwig Lighting** is available in a 4-ft. overall length with cedar support. **Click on No. 9130**



This custom garden gate was designed by Charles Hess Landscape Architects and fabricated by **Historic Doors. Click on No. 3570**



Historical Arts & Casting custom fabricated this fountain in cast bronze for the Governor's Mansion in Annapolis, MD. Click on No. 1210

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HADDONSTONE



Forged-steel bowed balusters created by King Architectural were used to construct this fence. Click on No. 418



Ludowici's landscape paver system is designed for use on green roofs. The Diabolo[®] system is an architectural idea specially developed by TERREAL and world-renowned architect Renzo Piano. Click on No. 2760



Robinson Iron's Pineapple mailbox is 7 ft. 3 in. tall and weighs 135 lbs. Click on No. 3240



Rohlf's removed and restored the Tiffany clock at Grand Central Terminal, NYC, replicating missing parts. Click on No. 6240



This detail is from a cast-iron gazebo that was recast and fabricated by **Wiemann Metalcraft.** Click on No. 1223

Coming in the June 2018 issue:

The 2018 Palladio winners will be featured in our June issue. This year's winners in Restoration & Renovation; New Design & Construction, and Adaptive Reuse/Sympathetic Addition will be highlighted.



Interior Elements, Ornament & Finishes



Abatron offers a selection of coatings designed for garage floors, including the colors shown here – Beige, Charcoal, Glacier and Beach. Click on No. 1300



American Tin Ceiling's pattern #22 in silver washed pewter, bordered by F1 filler and C2 crown molding, was used for this parlor ceiling.



This specialty interior column base is one of many offered by **Chadsworth Columns.** Click on No. 1580



Chelsea Decorative Metal Co. manufcatures pressed-tin ceiling panels in a variety of finishes, including bright copper.



This historic plaster was repaired by the artisans at **Conrad Schmitt Studios** and Chicago Ornamental Plastering Co. **Click on No. 8040**

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Pictured above: Interior Restoration of the Minnesota State Capitol, St. Paul, Minnesota Decorative Painting • Stained Glass • Conservation • Restoration • Interior Design • Murals • Fundraising • Historic Paint Analysis conradschmitt.com • 800-969-3033

Image courtesy of David Oakes, Senate Media Services

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Join us on Twitter for news and views about the world of traditional building and design.



EverGreene Architectural Arts developed the methodology to clean tobacco-stained Italian marble in the three-story-tall double grand staircase of the Allen County Courthouse in Fort Wayne, IN. **Click on No. 2460**



Haddonstone's parapet screening can be used for indoor use as well as for exteriors to provide a less formal and more decorative alternative to balustrading. Click on No. 4020



John Canning and David Riccio of **Canning Studios** are shown here preparing the decorative finishes, conservation and restoration sample at The Cosmos Club, Warne Ballroom in Washington, DC (built 1901). **Click on No. 5100**



NIKO fabricated and installed the decorative ceiling and ornate cornice moldings for this building. Click on No. 8300



Pacifc Register offers a selection of historically styled laser-cut wood panels for ceilings and floors. Click on No. 2070



R. Alden Marshall & Assoc. restored the Texas Heroes monument in Galveston, TX. Click on No. 2099



Swiatek Studios conserved this mural at Corpus Christi Church in Buffalo, NY. Click on No. 2054



W.F. Norman Corp.'s expansive stock of sheetmetal ornament includes pressed-tin ceiling and cornice panels. Click on No. 520







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Lighting & Electrical



Shown here from **Arroyo Craftsman** is an 18-in. Prairie Floor Lamp in a bronze finish with mica glass.



This chandelier is one of many custom-made fixtures from **Authentic Designs. Click on No. 60**



The model #W136-E14 brass electrified chandelier from **Ball & Ball Lighting** is a reproduction of an 18th-century candle-burning fixture.



Deep Landing Workshop's model L-CLD0203B is shown here with the LB-20 bracket; the lantern is 32-in. tall by 13 3/4-in. wide. Click on No. 809



This chandelier, model #18007 from **Gaby's Shoppe's** Louis XV collection, measures 56 in. wide x 37 in. tall. **Click on No. 2520**



Grand Light has been restoring, replicating and manufacturing custom lighting fixtures since 1929. **Click on No. 2006**



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Herwig Lighting designed and manufactured this cast-metal light fixture. Click on No. 9130

Historical Arts & Casting fabricated this handfinished bronze pendant lamp. Click on No. 1210



House of Antique Hardware manufactured this English Victorian chandelier with etchedglass shades. Click on No. 1096



The Slaven sconce from **Lantern Masters** is one of the company's many period-style fixtures. **Click on No. 1239**



Robinson Iron Corp. designed and fabricated the Grand Rapids street lamp. Click on No. 3240

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CLICK ON NO. 9130

CLICK UI



This pendant is one of many models offered by the **St. Louis Antique Lighting.**



This 12-in. outdoor iron lantern from **Steven Handelman Studios** is the Andalucia model; it is available in two sizes and a variety of finishes.**Click on No. 483**



Vintage Hardware & Lighting fabricated this polished unlacquered brass neo rococo six-arm chandelier gasolier; shown here with glass ball shades. Click on No. 2078



Wiemann Metalcraft custom manufactured this lantern in bronze. Click on No. 1223



This ornate ceiling fan, the Peacock from Woolen Mill Fan Co., features solid-mahogany blades. Click on No. 316





CLICK ON NO. 316

When contacting companies you've seen in the issue, please tell them you saw them in *Traditional Building*.

Mantels, Fireplaces & Chimneys



Fireplace accessories available from **Ball** & **Ball** include andirons, fireplace tools, spitjacks, trammels and fire-tool stands and stones.



This fireplace mantel is one of many styles available from **Decorators Supply.**



Driwood provided the wood mantel for this old South Carolina vernacular farmhouse outside of Darlington, SC.



Fires of Tradition offers the Oak Barrington granite hearth with its arched Hamilton backpanel.



Haddonstone's Classic chimney piece is the latest design to be launched in partnership with Robert A.M. Stern Architects and has been created specifically for the American market. **Click on No. 4020**



These forged steel fireplace tools and the stand are available from **King Architectural Metal. Click on No. 418**

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Historical Arts & Casting supplied this 13 ft. 10^{4} -in. finial. Click on No. 1210



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Decorative paving from **Belden Brick** was used to created this pattern. **Click on No. 1891**



Gavin Historical Bricks supplied its reclaimed Brewery Bricks for this home in Dallas, TX. Click on No. 8079



IOREX from **Good Morning Enterprises** is a system that helps remove rust from pipes. Shown here are before and after photos of the system installed at the Hermitage Museum; these are the results after being in use three months.

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Coming in the April 2018 issue:

"The Perils in Paris" is the topic of the Forum in our next issue. Mary Campbell Gallagher will show how contemporary high-rise buildings could destroy the historic skyline in the city of light.

Timber Framing & Barns



Architectural Timber and Millwork provided the antique white oak beams and distressed pillow-edge white oak flooring for this room.



This 45x34-ft. barn was constructed by **Sylvan Brandt** using four bents and eight major outside posts, most of which are hand-hewn hardwood. **Click on No. 3950**



The hand-hewn beams on this ceiling were supplied by **Carlson's Barnwood;** the firm also supplied the antique stained glass window and the rusty antique corrugated tin in the dormers.



This 18x20-ft. post-and-beam barn was built with a kit from **Country Carpenters** using stamped and graded timbers and premium-grade, kiln-dried siding.



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Dimitrios Klitsas hand carved this historically styled piece.



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Jim Illingworth Millwork created this wood custom milled red oak casing door trim molding. Click on No. 1696



Robinson Iron designed and fabricated this stair railing with a leaf motif and swirling newel posts. Click on No. 3240



Stairways, Inc., built this wood spiral staircase with decorative balusters.



This curved staircase was custom fabricated by **Sterling Staircase** to fit into a small space.



These base moldings, $1x7\frac{1}{2}$ in. (left) and $\frac{3}{4}x7\frac{1}{4}$ in. (right), are fabricated by **Superior Moulding** in red oak and poplar. **Click on no. 138**



Zepsa Industries fabricated these custom cherry stairs. Click on No. 1996



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Life-Long Learning: Woodworking with Hand Tools

By Judy L. Hayward

hen it comes to the practice of traditional building, curiosity is an essential trait for all practitioners. It is a trait that has served Ted Ingraham well in his nearly life-long pursuit of mastering hand-crafted woodworking.

After studying hotel management in college and giving it a try professionally, Ted returned to Vermont having decided his chosen field was not for him. He went to work for a builder and found success in remodeling. It was a good career and it paid well, but it didn't seem to capture his imagination. From time to time, his boss was asked to work on older buildings and Ted increasingly found himself assigned to these jobs because he had "the patience" to work on older buildings.

At first, his work focused on the ample mid-19th-century housing stock of Rutland, VT. He found beautiful woodwork and began to wonder how such fine workmanship was done before the advent of electricity. He began to frequent libraries and buy books about tools and historic buildings. The buildings, he learned, were crafted mostly on machines that were developed during the early years of the Industrial Revolution and powered by hand, water or steam.

His studies, done mostly in isolation, pushed him further back in time. Inspired by Eric Sloane's books, he began to delve into the world of hand tools and he frequented antique shops and flea markets in search of planes and more tools.

When it came time to build a home for his family, he crafted more than 30 double-hung windows by hand and the next step in his career was launched. He acknowledges that he works in all aspects of construction to be successful at his trade. The jobs to fabricate work entirely by hand are few and far between, but he credits the research and opportunities to build by hand to cultivating an appreciation for hand-crafted woodwork that improves all his projects.

Appreciation of the conditions under which our forbears worked is another quality that has served Ted well. When asked just what it is about 18th and early 19th century sash-he is most interested in the period of 1750-1820-that inspired him most, he replied without hesitation that "windows are the most vulnerable element" in the building envelope, yet the windows performed admirably despite rapid cycles of heat, cooling, light, darkness, rain, snow and wind. We asked a lot of them. Walls are thicker and comprise a frame, sheathing, clapboards on the exterior and usually plaster and lath on the interior; there is more depth of material to thwart the elements. Windows of the 18th-19th century transitional period vary in thickness from 7/8-in. to at most 1¼-in. Each window has numerous joints depending on the numbers of panes in each sash. Double-hung windows are made up of two operable sashes. The panes or lights of glass are held by muntins-hand-crafted crosspieces exhibiting their profiles to the inhabitants of the interiors of the homes they illuminated. A small amount of wood and glass combine to offer protection and light.

When asked why many of them performed as well as they did, he credits the use of slow-growth hardwoods and northeastern white pine to their longevity, in addition to the craftsmen who fabricated the windows. Nevertheless, extant 18th-century sash has become harder and harder to find. Deterioration, rapid advances in glass technology of the 19th and early 20th century made larger panes of glass possible and humans gravitated toward the resulting increase in light afforded by the larger lights of glass.

When asked if he had a favorite window, Ted said, "any Palladian or Venetian window." The combination of shape and molding profiles of these surviving windows inspire him with respect and appreciation for earlier



craftspeople. Readers of *Traditional Building* are smiling and nodding their heads in agreement while reading this, no doubt.

He no longer studies this passion in isolation. Due to a rising interest in hand-craftsmanship that began in the last quarter of the 20th century, Ted has many like-minded souls to share his knowledge and skills with in public settings. He usually demonstrates at an annual event at Historic Deerfield in October.

He also became the director of a seasonally operated museum in South Hero, VT, that houses 3,000 tools, The Arnold Zlotoff Museum. It houses the collection of Arnold Zlotoff who taught industrial arts in the New York City public school system after a stint in the army in the 1940s. Zlotoff started collecting historic tools while in college and assembled a collection that his family now stewards and shares with the public.

The museum is housed in a restored 19th-century barn on the grounds of Apple Island Resort and admission is free. There is a video on the museum's website that illustrates the way in which a joiner, a craftsman who works primarily on a bench, fabricates a traditional window sash. It shows Ted Ingraham at the bench at work.

To learn more about Ted's work, contact him at joyner@together.net. He is particularly keen to continue examining extant mid-18th century window sash. He is most interested in the earliest Georgian era double-hung windows that succeeded earlier casement windows from the First Period in American architectural history.

For additional links to resources mentioned in this article, visit this story online at: www.traditionalbuilding.com.

This article launches a new column that will appear in each issue of Traditional Building as well as at www.traditionabuilding.com. Judy Hayward, executive director of Historic Windsor and its Preservation Education Institute and education director for the Traditional Building Conference Series and Online Education Center will author the column. With 35 years of experience in historic preservation education, she will profile many of the people she has worked with and share the details of craft process and building materials that enrich the lives of those who live, work or steward historic and new traditionally-inspired buildings. Contact her at jhayward@aimmedia.com.

Reviewed by Patrick Webb

Traditional Masonry Technology

Introduction to Early American Masonry: Stone, Brick, Mortar and Plaster

by Harley J. McKee, FAIA; new forward by John G. Waite, FAIA, John G. Waite Associates, Architects

Second Edition published by The Association for Preservation Technology International (APTI), 2017; \$34.50; Originally published by the National Trust for Historic Preservation and Columbia University, 1973

Paperback; 94 pages; Numerous photos and illustrations

ISBN 978-0-9986347-0-8

et me begin by saying that this publication is an absolute treasure that should be on the shelf of and accessible to all professionals working in contemporary traditional architecture, design and building, those working in historic preservation and especially being of particular and inestimable value to those traditional craftsmen working in masonry or what is otherwise called the "trowel trades."

This is a book about traditional architectural technology. You will find

virtually no commentary about aesthetics or formal design. Neither will you encounter much reference to historical context or social influences. *Introduction to Early American Masonry* maintains a laser beam focus on pre-Civil War, circa 1860 traditional American craftsmen working in masonry from production of raw materials to methods of application.

The author, Professor Harley J. McKee, well known for his field documentation methodology and supervision of the Historic American Buildings Survey (HABS), was a highly respected architect having studied in the U.S. and abroad at the University of Paris as well as having been classically trained at the Beaux Arts Institute of Design in New York. He was renown for his practical know-how and exhaustive knowledge of methods of traditional craftsmanship, particularly in the fields of slate roofing and masonry.

The Association for Preservation Technology International, of which the author was a cofounder and president, has after more than 40 years taken the initiative to republish *Introduction to Early American Masonry*, which had been long out of print and largely forgotten. Let's take a few moments to consider the circumstances of its original publication and why this book remains so relevant today.

Mid-Century Historic Preservation

While the architectural avant garde was going gaga over the possibilities of mass produced concrete, glass and steel, the mid-century also had its fair share of practitioners and academics who were justly concerned with what was being deliberately discarded, literally bulldozed in the industrial stampede of all things Modernist. These concerns found resonance with the public leading to political support culminating in the National Historic Preservation Act of 1967.

One of the first orders of business was to commission a report on the state of both professional and public education in historic preservation with a notable emphasis on "Restoration" that is to say, traditional building craft skills.

The Whitehill Report on Professional and Public Education for Historic Preservation acknowledged that as of 1967 there were no known "centers for the traditional building crafts within the United States." Below is one of the findings under the heading "Conservation of the Traditional Building Crafts":

"Written and illustrated publications describing early craft methods and techniques. A few publications of this kind are available, though scarce. However, a vast body of essential knowledge is available in the minds and notes of specialists. A systematic program should be developed to get this information written down and duplicated for general use."

The report continues, "Publications on various levels are essential to both professional and public education. On the professional level they are necessary both for the training of architects and craftsmen."

The following year, 1968, the Graduate Program in Restoration and Preservation of Historic Architecture at Colombia University initiated a new course in early American building where Professor McKee developed a lecture series covering early American masonry. By 1973, Columbia University and The National Trust for Historic Preservation jointly published the subject of this review, Professor McKee's *Introduction to Early American Masonry*, as the first (and unfortunately only) in a planned series on the technology of early American building.

A Peek Inside the Treasure Chest

One of the first things that struck me was the precision in terminology exercised by the author. He makes a point of immediately establishing a vocabulary, highlighting American uses of important terms for materials and methods, noting occasional differences in usage or vocabulary between America and England.

Approximately two thirds of the book is devoted to traditional craft methods, the remaining third to materials. Stone is given slightly more attention than brick masonry and plaster. This is understandable as the quarrying and carving of stone is considered, in addition to the masonry. Having personal experience in plaster, stone and brick masonry, I can testify that the information presented is quite accurate and well presented, enriched by the many hand drawn illustrations by the author himself.

Quite unique is the identification of numerous historic American quarries for sandstone, limestone, granite and marble. In addition to hand drawings, the book is replete with photos highlighting exceptional examples of craftsmanship from around the country. The book concludes with an Appendix that points to a number of valuable 19th- to early 20th-century sources for further study.

Superbly researched yet presented in a manner easily accessible to students and laymen

alike, I would recommend *Introduction to Early American Masonry* as a mature work built on a lifetime of teaching, documentation and the practical hands on experience of historic preservation.

To order a copy of *Introduction to Early American Masonry: Stone, Brick, Mortar and Plaster,* go to: www.apti.org.

Patrick Webb is a traditional and ornamental plasterer, former Professor of Plaster Working at the American College of the Building Arts in Charleston, SC. He is currently working with the Director of The Academy of Classical Design, Jeffrey Mims, to develop a School of Ornament and Mural Guild as well as serving as a trustee for The Classical Design Foundation.



Reviewed by Clem Labine

Insights from a Traditionalist Superhero

Classic Columns: 40 Years of Writing on Architecture

By Robert Adam; Edited by Clive Aslet with a foreword by Sir Roger Scruton Cumulus Books, London, 2017 264 pp; Hardcover; 356 Color images; \$85 ISBN: 978-0-9564-1464-9

raditional architecture doesn't have many "superheroes"—but architect Robert Adam is about as close as they come. That's why his latest book, *Classic Columns*, deserves serious study by every professional who believes respect for tradition has relevance for creating a beautiful, livable, sustainable built environment.

Adam is not all that well known in North America—although his winning of the 2017 Driehaus Prize for classical architecture has certainly raised his profile. Robert Adam is the founder of ADAM Architecture, an architecture and urban design practice in Britain with offices in Winchester and London. With a staff of around 70, the firm is the largest in Europe specializing in classical and traditional architecture, along with urban planning and design.

Unlike many classically oriented design practices, ADAM Architecture is not limited to designing costly manor houses for wealthy clients. Adam's firm has also created numerous public and commercial buildings, and is also deeply involved with urban housing and civic planning. Thus, he has developed the rhetorical skills needed for dealing with zoning officials, design review boards, and Modernist tastemakers who insist that historically inspired design is "ersatz architecture."

In addition, Adam has not been confined by his role as co-director of a major architectural practice. Besides being an award-winning designer, Adam is also a scholar, theorist, author, philosopher, teacher, lecturer, architectural activist—and an excellent writer. He is a tireless missionary for traditionalism in a digital world that's spellbound by Modernism and its endless quest for "the shock of the new." As Richard H. Driehaus said in presenting the 2017 Driehaus Prize: "Robert Adam has made seminal contributions to establishing a dialogue between tradition and modernity,"

What elevates Adam to the level of traditionalist superhero has been his long-running vigorous (but civil) debate with die-hard apostles of Modernism throughout the realm, especially those at the highest levels of the British architectural establishment.

Adam is a member of Royal Institute of British Architects (RIBA), the citadel of English Modernism. Despite being vastly outnumbered within RIBA, he has been an ardent and consistent advocate for the "modernity of tradition." Even though the majority of his RIBA colleagues strongly disagree with him, through his collegial good nature Adam is regarded well enough within RIBA to have been twice elected to its Council, and from 2001 to 2003 became Honorary Secretary.

It was during this period he founded the RIBA-linked society, the Traditional Architecture Group (TAG). TAG is "committed to developing the values established by traditional and classical architecture, and developing them as a language relevant to the modern world." (Can you imagine an AIA-affiliated group dedicated to such a mission?) Adam is also a founder of the influential International Network for Traditional Building, Architecture and Urbanism (INTBAU) and several other architecturerelated organizations.

As if running a successful practice coupled with teaching and architec-



Robert Adam has spent a career designing highly refined residential and public buildings in historically inspired styles. Equally important, he has an ongoing public debate with architectural tastemakers who insist only Modernism is appropriate for "our time."

tural activism wasn't enough, Adam has also found time to write numerous books and articles. And that's where this current volume, *Classic Columns,* comes in. The book is a compendium of 26 essays and lectures Adam has produced over the years and which might otherwise be lost if they weren't gathered between hard covers.

The breathtaking scope of ideas from this architectural super-achiever provides a rugged intellectual underpinning for any traditionalist who finds himself or herself needing rhetorical ammunition to ward off Modernist adversaries. Because of the range of subjects, most users won't start at page one and read straight through to the end. Rather, it's a great book for browsing—dropping in to read an essay or two on issues you're confronting today.

Editor Clive Aslet divides the material into seven major topic areas: Tradition; Classicism; Cities; The Disappearing Architect; Globalization; Dreams of Arcady; And Tomorrow. Topics range from micro-subjects like challenges facing today's architect up to worldwide subjects like the growing tension between globalization and localism, as well as China's growing influence in the architectural universe.

Although frequently called a Classical architect, Adam is more properly termed a traditionalist because of his fluency with many historical and vernacular idioms. Many (like this reviewer) will find Adam's in-depth exploration of tradition to be of exceptional interest. Adam goes far beyond "style wars" to examine the psychic and cultural reasons why the general public still prefers traditionally informed buildings despite a century of brainwashing by Modernists.

In his closely reasoned essay on "Buildings of our Time," he carefully dissects the absurd notion that architecture "of our time" automatically dictates Modernist geometric abstractions. In similar fashion, his article on "Can Restoration be too Authentic?" demolishes Modernist insistence that interventions on older buildings must be glaringly different from the historic original.

Practitioners who need to publicly defend the importance of placemaking and creation of soul-satisfying architecture should have this compendium at their fingertips.

Clem Labine is the founder of Old House Journal, Traditional Building and Period Homes magazines. He has received numerous awards, including awards from The Preservation League of New York State, the Arthur Ross Award from Classical America and The Harley J. McKee Award from the Association for Preservation Technology (APT). He was a founding Board Member of the Institute of Classical Architecture. Labine is also the recipient of the 2012 Newington-Cropsey award for contribution to the arts.

The Neuroscience of Architecture: The Good, the Bad—and the Beautiful By Michael W. Mehaffy and Nikos A. Salingaros

ecently many architects have begun to take note of remarkable new findings emerging from the field of neuroscience, the study of the brain and nervous system and how those react to stimuli. We are learning that this complex system has powerful perceptual capabilities, enabling us to be able to better protect and enhance our own well-being.

The implications for those of us who work in the built environment are far-reaching. The new research is helping us to better understand how the structure of buildings affects human experience and well-being—how we can treat the human environment as a whole system, coupling the environment and the human.

Other disciplines, including anthropology, sociology and environmental psychology, have also recently revealed a great deal about the effects of the environment on human beings, including aesthetic impacts. The emerging topic of "biophilia" demonstrates the importance of characteristics like plant and animal forms, water, fractal patterns, coherence and legibility, and mathematical complexity [1, 2].

These characteristics are abundant in both natural and traditional built environments. Revealingly, however, they are largely absent from contemporary buildings based on minimalist industrial geometries. These designs often rely more on dramatically "pure" shapes, simple repeated abstractions, and sometimes shocking contrasts. We previously referred to this doctrinaire use of "purified" minimalist forms as "geometrical fundamentalism" [3].

This is not without an impact on human well-being—as neuroscience is demonstrating. Through eye-tracking devices, we learn that most people look at the same features of a building or street scene, often in the same sequence. In a remarkable verification of traditional insights, we apparently gaze only at regions with contrast, curves, detail and ornament, and other specific "biophilic" features.

The new sciences also cast a new light on the age-old topic of beauty. It now seems that what we experience as beautiful is a sharable perception of beneficial conditions in our environment. We see beauty in a healthy meadow or fresh fruit, for example, whereas rotten fruit or a fire-swept meadow will likely be experienced as ugly. Beauty is not simply "in the eye of the beholder," as was once held; it is the result of a complex structural interaction between the viewer and the environment, with significant impacts on our health and well-being.

Research also shows us that it is architects who are often in the minority about what constitutes good (or beautiful) design from a user's perspective [4, 5]. Eye-tracking experiments reveal that built structures that follow the contemporary esthetic of "geometrical fundamentalism" are often ignored as if they weren't there [6]. Other evidence shows that such structures can be stress-inducing, and consequently degrade the quality of life of people who live around them.

Of course, it's also possible to use "geometrical fundamentalism" to create structures that are attention-getting, exciting, even entertaining. It's possible to play an "inside game" of abstract ideas translated into artistic objects. But that isn't the same thing as creating places that improve the quality of human life—a crucial point that the new findings illustrate.

Sociology and anthropology also show us that as a group, architects and architectural academics exert considerable authority and power, imposing their own professional narrative (and their own unique and sometimes arrogant artistic preferences) as to what is supposed to be good design [7]. There is no small irony in this, since it's maintained (often by the same professionals) that architecture is a "subjective" art form whose aesthetic quality is only in "the eye of the beholder." When new fashionable projects are criticized by citizens as ugly, out of character, or even anxiety-inducing, such criticism is often dismissed as "mere opinion."

On the other hand, architectural authorities often summarily reject new projects of traditional character, as not expressing the "spirit of the age"—a dubious criterion that nonetheless sidesteps the question of taste. Our time, it is unquestioningly assumed, demands a unique style (i.e. "geometrical fundamentalism"), like it or not. And if you don't like it, that too is merely your subjective opinion.

In this dogmatic intellectual environment, the new findings from neuroscience and other fields are game-changing. They establish independent and shareable evidence by which we may evaluate built environments, new or old, and their effects on people, quite apart from anyone's dogma or cant. We also learn that traditional environments are much more rich and sophisticated than we thought, offering us highly evolved repositories of beautiful, well-adapted, and successful design patterns.

A word of caution is warranted however: like the results of any science, such findings can be used for good or ill. Advertisers, for example, test which colors and patterns arouse viewers' brains. That information can be used to better position products so that consumers who will benefit can become better aware of them—or it can be used to manipulate and distort, resulting in forms of consumption (like, say, junk food in brightly colored packaging) that degrade our health and well-being.

The question is, then, whether we are applying such knowledge merely to excite, entertain, and drive commodification and consumption. Ultimately these manipulative practices reinforce the trivialization and degradation of community life, resulting in what the anthropologist Edward Sapir termed "spurious culture."

In the same way, neuroscience can be used for good or ill in structuring the built environment. Instead of promoting human well-being, design could merely enhance "excitement" as a shallow gimmick, a more extreme kind of environmental "novelty act" by self-rationalizing artists. Indeed, some recent applications of neuroscience to "high fashion" architecture appear to be little more than elaborate marketing devices to provide more exciting costumes for the same inadequate buildings—more manipulative packaging to help sell them to gullible clients.

If neuroscience is co-opted as merely another "bag of tricks" to spice up and keep promoting the same old architectural pathologies, then we will continue to degrade and fragment an increasingly unsustainable, unhealthy human environment. But as a part of a more professionally responsible approach, neuroscience can be a powerful tool to help achieve needed progress toward a world of healthier, more coherent, more enduring—and more beautiful—human environments.

Links to research citations can be found at: www.sustasis.net/neuroscience.htm and at www.traditionalbuilding.com.

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