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# The Eyes of the Building

The next Traditional Building Conference, scheduled for May 7-8 in New Orleans, will focus on windows.

Following a successful first conference in Washington, DC, the second of this year's Traditional Building Conferences will be held in New Orleans, LA, and will focus on one of the profession's most interesting and controversial topics – Windows: Old and New, Historic and Traditional. It will be held at the Marriott Hotel, 555 Canal St., May 7-8.

The event is sponsored by *Traditional Building* and *Period Homes* magazines, published by Active Interest Media (AIM), and by the U.S. National Park Service. It is the second conference on windows; the first was held last year in Washington, DC.

"It has been said that windows are the eyes of a building," says Judy Hayward, education director, Traditional Building Conference Series. "Windows are architectural features that help define the style and importance of historic and new buildings, alike. They perform critically important functions such as day-lighting, ventilation, comfort and protection. Their preservation or replacement in historic buildings excites more debate amongst practitioners than almost any other treatment choice. Their design for additions and new construction raises an equal amount of contention."

The goal of the conference is to create a dialogue about repair and replacement of windows that convey a traditional character. "Perhaps at no other time in United States history, have those who restore, replace and build anew needed to work more collaboratively," says Hayward. "As we move into the 21st century, the construction industry is confronted with new laws concerning lead safety, a surge in storm-related damage, challenges to protect Mid-century modern structures, and a demand to replace windows that are in and of themselves, replacements. This conference brings together leading practitioners from the worlds of manufacturing, building trades, government and industry to offer practical advice when answering the question, 'what should we do about the windows?'"

## WEDNESDAY, MAY 7

**8-9 am – Networking, Sponsor Exhibits and Continental Breakfast**

**9-9:15 am – Welcome and Introductions**

**9:15-10:15 am – How Industry Revolutionized Window Design and Construction**

**Speaker:** Sally Fishburn, S.A. Fishburn, Inc., Danville, VT; 1 AIA HSW Learning Unit

This lecture will explain how window construction, design and style were the product of our industrial heritage by bringing together a history of industrialization and how that influenced window construction. Fishburn will consider materials including wood, glass and paint, along with the finer architectural details in the window units such as single vs. double-hung units, balance systems and hardware.

**10:15-10:40 am – Break**

**10:40 am-12:15 pm – Wood Window Repair Techniques: Selected Best Practices**

Join a team of America's leading trades people for an informative discussion of their best practices to restore, repair and maintain historic windows. They will share their insights in brief presentations on such topics as material selection, repair methods, putty, glazing removal and installation, weather stripping, budgeting, scheduling and worksite safety.

**12:15-12:55 pm – Lunch**

**12:55-2:30 pm – Trends in Wood Window Design and Manufacture**

This session will feature brief presentations by leading manufacturers of wood windows on design matters, energy and code requirements, regulatory issues and commercial pressures that drive the industry today. A Q&A session will follow the presentations.

**2:30-2:55 pm – Break**

**2:55-4:30 pm – Bronze, Steel, and Aluminum: History, Repair and Fabrication**

Metal windows are an important part of the history of windows, particularly when working on late 19th- and 20th-century historic preservation projects. When it comes to new traditionally inspired work – whether residential, commercial or institutional, metal windows have many advantages. Join a team of industry leaders for their insights on repair, replacement, substitute materials and installation and maintenance.

**4:30-5:30 pm – Glass and Windows: Past, Present and Future**

Glass or glazing is critically important to preserving historic character, making compatible additions to historic buildings, and in the creating an authentic appearance for traditionally inspired new construction. The use of glass in windows reflects the technological advances of building history in general. New technology applied to glass manufacture is making all kinds of sizes, shapes, colors, tints and efficiencies possible. So what should a building practitioner in the 21st century know about glass? Get answers here.

**5:30-6:30 pm – Reception**

## THURSDAY, MAY 8

**8-9 am – Sponsor Exhibitions and Continental Breakfast**

**9-9:15 am – Welcome and Introductions**

**9:15-10:15 am – Sunny Weather: Awnings, Shades and Shutters**

**Speaker:** John Sandor, Technical Preservation Services, National Park Service

Before the advent of high-tech glass coatings, shutters and awnings were added to windows to manage the impact of the sun. As these traditional devices have become distinctive decorative features contributing to the historic character of many buildings, their functional benefits are often forgotten. This session

## FOR MORE INFORMATION

and to register for the windows conference, go to [www.traditionalbuildingshow.com](http://www.traditionalbuildingshow.com), or contact **Carolyn Walsh**, 781-779-1560, [cwalsh@aimmedia.com](mailto:cwalsh@aimmedia.com).

Group rates and single-day tickets are available.

Education inquiries should go to **Judy Hayward**, 802-674-6752, [jhayward@aimmedia.com](mailto:jhayward@aimmedia.com).

Sponsor inquiries go to **Peter H. Miller**, [pmiller@aimmedia.com](mailto:pmiller@aimmedia.com).

will look at the history of shutters, awnings and shading devices that have developed over time, and how to add them appropriately to historic and traditional buildings. Issues such as energy efficiency and durability will also be considered.

**10:15-10:40 am – Break**

**10:40-11:45 am – Testing Windows in the Laboratory and in the Field**

Getting good verifiable data to document the performance of windows, whether new or old, is an important ethical consideration when advising clients about energy efficiency, climate response and durability. This session will provide an examination of contemporary standards, field testing and laboratory analysis of windows.

**11:45 am-12:25 pm – Lunch**

**12:25-1:30 pm – Big Windows: Geometry for Traditional New Windows**

Join an experienced architect for a discussion about and exercise in the application of Classical and traditional geometric proportions to satisfy the demands of today's clients for more light and bigger windows in new contemporary residential buildings inspired by history, Classicism and tradition. Get the geometry right, and the appearance will be right.

**1:30-2:30 pm – Windows and Wood Technology: Exterior Finishes, Treatments and Durability 1 AIA HSW Learning Unit**

Whether protected by storm windows or not, wood windows face the often harsh realities of exposure to sunlight, moisture and pests. This session will examine surface preparation strategies and preservation treatments for old and new wood. The use of paint, stain and varnish will be discussed. Wood treatments including acetylation and water repellents will be reviewed as well.

**2:30-3 pm – Break**

**3-4 pm – Stormy Weather: Hurricanes, Codes and Efficiency**

Windows are part of the shelter and envelope that buildings offer and are part of the defense against the elements. This session will feature practitioners who balance codes, energy improvements, performance factors and historic preservation. Information about storm windows will be included. Special attention will be paid to weather patterns in the South and Southeast.

**4-5 pm – Repair and Replacement: Making the Crucial Decisions**

This interactive session between the audience and presenters at the conference will discuss, debate and clarify the sessions already presented. The idea is to have participants leave with some clear guidance on making decisions about repair versus replacement in preservation projects.





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## **Palaces For The People: Guastavino and America's Great Public Spaces Exhibit, Now-September 1, 2014.**

This traveling exhibition examining the work of Rafael Guastavino Sr. (1842-1908) and his son, Rafael Jr. (1872-1950) will set up at the Museum of the City of New York in NYC. It features the innovations of the Guastavino Fireproof Construction Company (1889-1962) and has been expanded to include 20 key Guastavino spaces in the five boroughs. For more information, visit [www.mcny.org](http://www.mcny.org).

### april

## **National Preservation Institute: Historic Preservation Seminars, April – May 2014.**

The National Preservation Institute will conduct a series of training seminars for professionals in management, development and historic, cultural and environmental preservation in many cities across the country. Seminars, case studies and small group exercises will highlight state-of-the-art practices in historic preservation. For more information, visit [www.npi.org](http://www.npi.org) or email [info@npi.org](mailto:info@npi.org).

### may

## **ICAA'S Private Morocco: Casablanca and the Imperial Cities, May 10-18, 2014.**

ICAA will be leading an eight-day guided tour through Morocco. The itinerary includes many UNESCO World Heritage sites, monuments, mosques and private residences and gardens in Rabat, Casablanca, Fes, Meknes and Marrakech. For more information, go to [www.classicist.org](http://www.classicist.org).

## **Traditional Building Conference Series, May 7-8, 2014.**

The second stop of this year's Traditional Building Conference Series will be in New Orleans, LA. The two-day event will focus on Windows: Old and New, Historic and Traditional. For more information, call Carolyn Walsh, 781-779-1560 or Judy Hayward, 802-674-6752 or go to [www.traditionalbuildingshow.com](http://www.traditionalbuildingshow.com). For sponsorships, contact Peter Miller, [pmiller@aimmedia.com](mailto:pmiller@aimmedia.com)

## **National Main Streets Conference, May 18-20, 2014.**

The 2014 National Main Streets Conference will be held in Detroit, MI. The event theme, "Works in Progress," will focus on Detroit's resilience, innovation and hard work in building on its cultural and heritage assets to overcome economic challenges. For registration and conference updates, visit [www.preservationnation.org](http://www.preservationnation.org).

### june

**CNU 22 Conference, June 4-7, 2014.** The Congress for the New Urbanism will host its 22nd annual conference in Buffalo, NY. This event for designers, developers, planners, architects and advocates of walkable, mixed-use neighborhoods will focus on Buffalo's revitalized neighborhoods and case study of architecture. For more information, visit [www.cnu.org](http://www.cnu.org).

## **SGAA Annual Summer Conference, June 9-12, 2014.**

The Stained Glass Association of America will host its summer conference at The Elms Resort & Spa in Excelsior Springs, MO. This year's theme "The Artists' Retreat at the Elms," will feature workshops on stained-glass windows, church symbols and restoration painting as well as an optional winery and stained-glass tour of historic St. Joseph. For registration and conference updates, visit [www.stainedglass.org](http://www.stainedglass.org).

## **APT Historic Finishes Workshop, June 13-14, 2014.**

The Association for Preservation Technology will conduct a workshop on historic decorative finishes at the University of Colorado Denver. Participants will learn about different types of finishes, deterioration mechanisms, repair/treatment techniques and conservation practices. For more information, contact Nathela Chatara, 217-529-9039 or email [administration@apti.org](mailto:administration@apti.org).

## **AIA 2014 National Convention and Design Exposition, June 26-28, 2014.**

The AIA 2014 National Convention & Design Exposition will be held at the McCormick Place in Chicago, IL. The event, "Design with Purpose," will allow participants to explore new trends with over 800 exhibitors and will have the chance to earn Learning Units through entrepreneurial and business-focused education classes and tracks. For more information, visit [www.aia.org](http://www.aia.org).

### july

## **Traditional Building Conference Series, July 16-17, 2014.**

The third stop of this year's Traditional Building Conference Series will be in Boston, MA. The event will feature an intensive two-day symposium for architects, contractors and design professionals, as well as the chance to earn AIA continuing-education credits. For more information, call Carolyn Walsh, 781-779-1560 or Judy Hayward, 802-674-6752 or go to [www.traditionalbuildingshow.com](http://www.traditionalbuildingshow.com). For sponsorships, contact Peter Miller, [pmiller@aimmedia.com](mailto:pmiller@aimmedia.com)

### september

## **Traditional Building Conference Series, September 25-26, 2014.**

The fourth and last stop of this year's Traditional Building Conference Series will be in St. Paul, MN. Earn AIA continuing-education credits and meet fellow design professionals at this two-day event. For more information, call Carolyn Walsh, 781-779-1560 or Judy Hayward, 802-674-6752 or go to [www.traditionalbuildingshow.com](http://www.traditionalbuildingshow.com). For sponsorships, contact Peter Miller, [pmiller@aimmedia.com](mailto:pmiller@aimmedia.com)

## **Preserving The Historic Road 2014 Conference, September 26-28, 2014.**

Historic Roads will host its biennial conference in Savannah, GA. The three-day event is structured around educational sessions, seminars and field tours of the host city's historic roads' sites. For more information, visit [www.historicroads.org](http://www.historicroads.org).

### october

## **DesignDC 2013, October 1-3, 2014.**

DesignDC 2014 will be held at the Walter E. Washington Convention Center in Washington, DC. This three-day conference is designed to connect attendees to cutting-edge technology and projects, as well as provide opportunities to mingle with AIA members of the Washington, DC, Northern Virginia and Potomac Valley areas. For more information, visit [www.aiadesigndc.net](http://www.aiadesigndc.net).

## **GREENBUILD 2014, October 22-24, 2014.**

Greenbuild's international conference and expo will be held at the Morial Convention Center in New Orleans, LA. It is dedicated to green building products and services and will feature three days of educational sessions, green building tours and seminars. For registration and conference updates, visit [www.greenbuildexpo.org](http://www.greenbuildexpo.org).

## **APT Québec City 2014 Conference, October 26-30, 2014.**

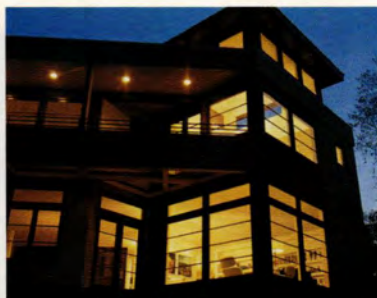
The Association for Preservation Technology International will host its annual conference at the Fairmont Le Château Frontenac in Québec City, Canada. The event theme will be "Métissage: The Fruitful Encounter of Differences," which reflects both the spirit of the host city and the coming together at this year's conference. For conference updates, visit [www.apti.org](http://www.apti.org).

## **ARCHITECTUREBOSTON Expo, October 28-30, 2014.**

The Boston Society of Architects will host their tradeshow and conference at the Boston Convention and Exhibition Center, Hall C, in Boston, MA. Workshops will cover topics such as building materials and technology, software and code. Participants will have the chance to earn continuing education and AIA/CES Learning Units. For more information, visit [www.abexpo.com](http://www.abexpo.com).



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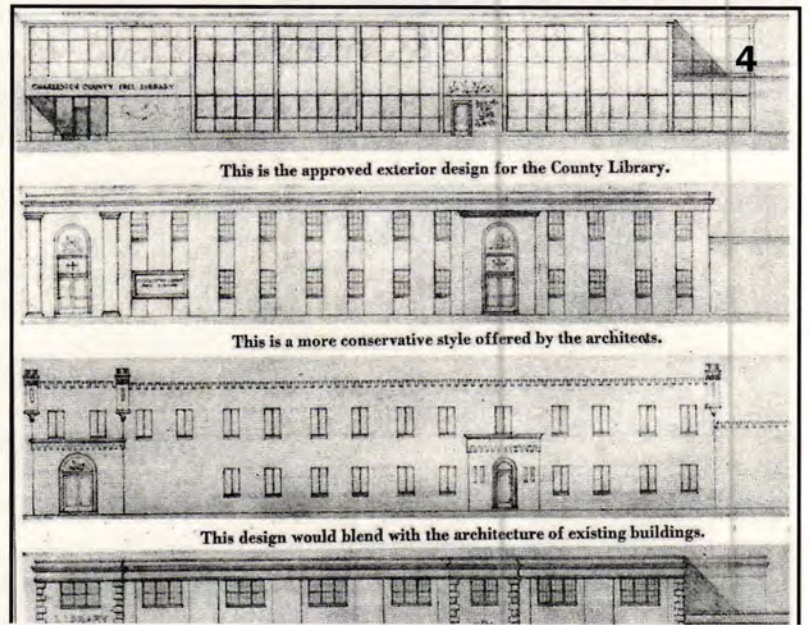
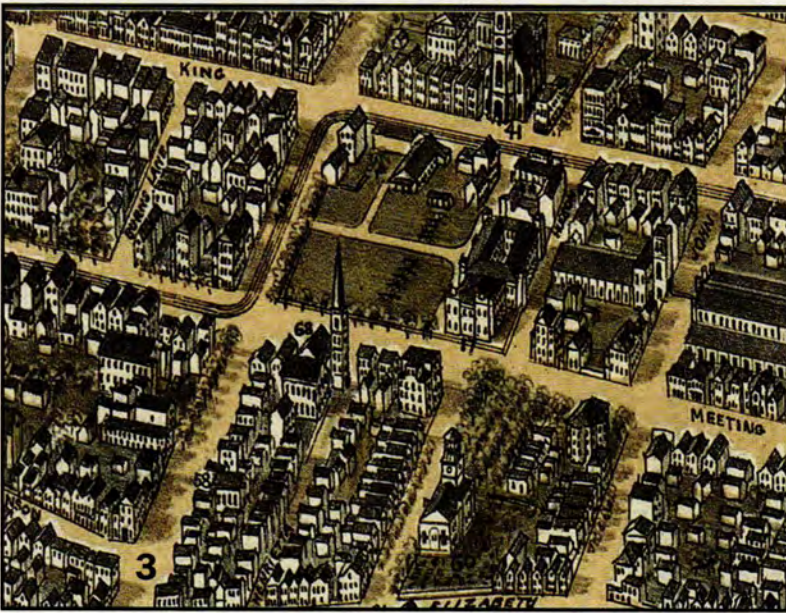
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# Appropriate Architecture

The history of 404 King Street in Charleston, SC, illustrates the conflicts between Modernism and traditional design.

BY DAVID PAYNE

WHAT IS CONSIDERED APPROPRIATE ARCHITECTURE for the 21st century? Is it, as the Modernists would have us believe, only architecture that represents the latest in technological trends and cutting-edge design – or is there still room for architecture rooted in tradition, yet unmistakably 21st century? The evolution of the built environment at 404 King Street in Charleston, SC, provides a case study of architecture and historic preservation theories and practice through its several centuries of existence.

The most recent building on the site, the old Charleston County Library was built in 1960 in a controversial Modernist design; it replaced a traditional building. It was recently demolished in August, 2013, to allow construction of a Classically-inspired hotel building more fitting with the character of Charleston.

The site at 404 King Street borders Marion Square, Charleston's major open space, on the west and has had a succession of buildings. The history of 404 King Street begins with the incorporation of the city of Charleston on August 13, 1783. At that time, land just outside of the original boundary of the city and bounded by King, Hutson, Meeting and Boundary Streets (the current site of Marion Square) was given to the city. Six years later, on August 18, 1789, the northern portion of the site, consisting of 1.5 acres and bounded by King, Hutson, Meeting and Tobacco Streets, was deeded to the Commissioners of Tobacco Inspection for the State of South Carolina to build a brick warehouse for their use. In 1822, an aborted slave uprising prompted the establishment of a city guard house where the tobacco inspection building was located.

In 1829, a fortress known as The Citadel was completed by architect Frederick Wesner on the north side of Marion Square. It still stands today. The site is most significantly associated with this building, which later evolved into the Military College of South Carolina. 404 King Street was later occupied by both the west wing of The Citadel, constructed in 1854 and rebuilt in 1889 after a fire, and a police station built in 1887 after the earthquake of 1886. Both of these buildings were torn down for the construction of the new library building in 1959.

## The Original Controversy

Few architectural controversies in Charleston have reached the intensity of the fight over the design of the new Charleston County Library in the late 1950s. The controversy was especially interest-



1. This 1865 photo shows The Citadel building four years before the original west wing burned down and 22 years before the new police station was built on the west edge of the property. Photo: Margaretta Childs Archive, Historic Charleston Foundation

2. In 1934 The Citadel was complete. The aerial photo of Charleston shows Marion Square at the center. Photo: Margaretta Childs Archive, Historic Charleston Foundation

3. An 1872 bird's-eye map of Charleston shows The Citadel with the east wing intact, but missing the west wing that burned in 1869. The stables are located at the corner of Hutson and King Streets. Note also the other buildings on Marion Square, before it was formalized by 1902. Photo: Library of Congress

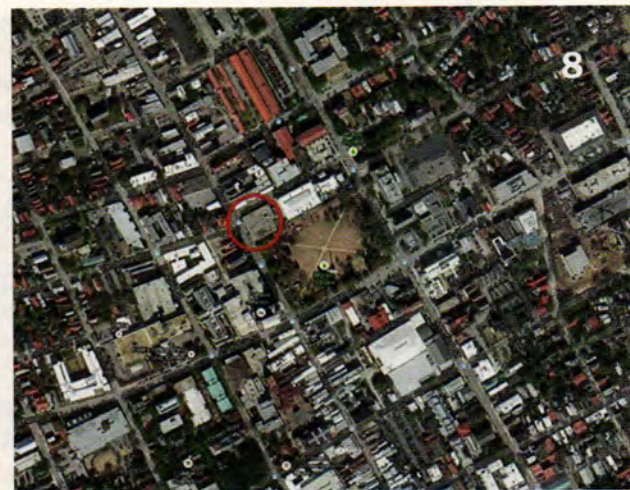
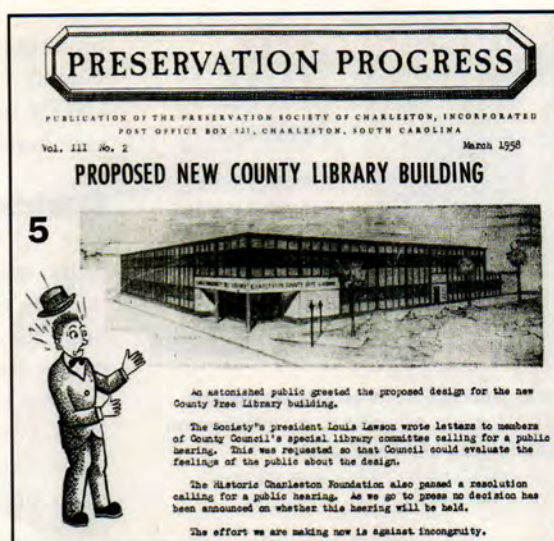
4. The approved library design and other options offered by the architect. Source: *Evening Post* (Charleston, SC), March 31, 1958

5. The March, 1958, issue of the Preservation Society of Charleston's newsletter, *Preservation Progress*, reveals the public reaction to the design of the new County Library building. Source: Proposed New County Library Building, 1958. *Preservation Progress* 3, no. 2, March 1, 1958

6. The condition of the 1950s library building at 404 King Street in 2012 just before demolition. Photo (& 7): David Payne

7. The old Charleston County Library at 404 King Street was demolished on August, 2013

8. An aerial map of Charleston today shows the location of 404 King Street in relation to Marion Square. Source: Google Maps



ing, considering that the purview of the Board of Architectural Review did not even reach this section of the city at this point in time. On April 20, 1957, the *News and Courier* published an editorial agreeing with the site for the new library, but arguing that the current building should be preserved. They believed that it represented a central location, accessible for all citizens, and made their position about the building very clear. The editorial stated: "Tear down the Old Citadel? No, a thousand times no!"

A later article in the *Evening Post* on June 2nd brought up the same issue of reuse or demolition, but seemed to begin to accept the inevitable when it commented that it hoped the new building would reflect Charleston's architectural atmosphere. It commented that the west wing of the building was still being used as faculty quarters and the old police station was now county and public offices and that both sections were being discussed as a site for the new library.

An earlier structural report in 1947 had found that it was not economically feasible to repair the building and architect C.T. Cummings – ironically, the architect later given the commission for the new library building – was quoted as saying that the buildings could be converted to a library that "would have been considered adequate 100 years ago."

By August of 1957, the decision to tear down the west wing of the Old Citadel and the police station had been made by the library committee, based on the recommendations of architect C.T. Cummings. He clearly preferred a new building, stating in an August 9, 1957 *News and Courier* editorial, "In my opinion, it would be more economical to tear the

building down completely and start anew. Then you can start a new building and you're not confined. You can't plan well if you're confined."

The plans and elevations prepared by the local Charleston firm of Halsey and Cummings were approved by the County Council on February 5, 1958, and they were instructed to begin preparing details and specifications. The new building was to be built of steel, concrete and masonry using curtain-wall construction. This meeting of the County Council was the first time that the plans were made available to the public – and the outcry was fierce and immediate.

## Public Response

The day after the plans for the new building were revealed to the public, the Preservation Society of Charleston (PSC) immediately stated its opposition to the new design and stated that the proposed library design would not be in tune architecturally with the rest of the city.

Within a week, editorials began to appear in the Charleston newspapers both for and against the new design. Anthony Harrigan wondered in a February 12, 1958 editorial in the *News and Courier*, "Must public buildings be glass and steel bird cages?" and "What's so good, after all, about modernistic design that reduces home and factory, church and school, office and library to the same pattern: a flat roof, unrelieved masses of concrete, and strip windows?"

He stated that economy was not a good argument for the new building, since Charleston had always built beautiful warehouses and other utilitarian structures. While he acknowledged the need for a new

library building, his opinion was that new buildings in Charleston should be modern on the interior and traditional on the exterior.

On the other hand, John Jeffries from Clemson College questioned reusing the Old Citadel building and advocated for a modern design, even though he had not even seen the proposed design. He felt that designing new buildings in old styles devalues the existing historic architecture and that the historic and modern provide a contrast that highlights each of them. In an argument that sounds like it could apply as equally to the current controversy in Charleston regarding Clemson's proposed new architecture building, Jeffries commented in a February 14, 1958 editorial "Why should we pass up the opportunity to be the 20th century and return to one that can never return?"

The PSC and the Historic Charleston Foundation (HCF) asked for another public hearing on the design in order to gauge public opinion on it. The County Council agreed to a meeting where the design of the new library could be debated by the public in an open forum and this took place in March, 1958. While there was a brisk debate on the design of the new library, no change to it was made by the County Council.

This decision, however, did not prevent citizens from continuing to express their opinions on the design. Editorials continued to appear in the Charleston newspapers up until the time when construction actually started. Additionally, there was no lack of alternative designs proposed by the architects selected for the job, as well as others.

The PSC did not feel that the County



Council was expressing the will of the citizens of Charleston in building the new, Modernistic library design and disagreed again with the County Council's points. Their position seemed to be supported by a straw poll conducted by the *Evening Post* in November of 1958 that found that of 2,099 votes cast, 1,787 (85%) were against the Modern design. The County Council responded that changing the design at this stage would be costly and unfeasible.

The library building finally opened to the public on November 26, 1960, with 75,000 books and a modern mechanical system. By the mid-1980s, however, the library system was determined to be inadequate for the county and voters passed a referendum committing \$15.75 million to build new library buildings.

Initially, the plan was to add the additional floor to the existing library building at 404 King Street, but it was determined that the building could not survive an earthquake with the additional third floor. Mayor Joseph Riley of Charleston suggested that land be purchased on Calhoun Street for a new library, construction of which was to begin in the fall of 1994 and last two years. The once-controversial library at 404 King Street was to be sold to a private developer and demolished. That sale occurred on March 15, 1995, although the library continued to occupy the site until February 8, 1998, when it finally closed for good.

While referred to as undistinguished by some, the new library building at 68 Calhoun Street was praised in 1998 by *Post and Courier* architecture critic Robert Behre that its grandeur could more easily be seen by comparing it to the old building. Commenting on the old building, he noted in a March 30th, 1998 story: "Widely loathed, the old library's most luxurious feature – pink marble siding – became obscured by a black ooze seeping from the aluminum window frames. It looks like the Blob is working away on the inside."

## Return to Classicism

Articles discussing the future of Marion Square treated 404 King Street as if it were already a foregone conclusion that the building would be demolished. A conceptual project in 2003 sponsored by the Committee to Save the City, which advocated a return to Classical architecture that was more appropriate for Charleston, showed a series of new buildings around Marion Square. One of these new buildings, based on the architecture of the Old Citadel and including a 10-story-tower, replaced the library building.

The first actual plan to demolish the building was put forward by the owners, Bennett Hofford Construction, in early 2004. Their plans called for the demolition of the existing building and construction of a new, eight-story, \$35-million hotel that would contain 185 rooms. The plan received unanimous approval from the Board of Zoning Appeals and widespread approval from the community, although there was some concern expressed at the number of rooms. Bennett Hofford announced its intention to demolish the old Charleston County Library building by 2005 and open the new hotel by 2006.

After zoning approval, the next step was to bring it before the Board of Architectural Review (BAR) for conceptual approval. The BAR would



Rendering of the proposed hotel on Marion Square, designed by Goff D'Antonio Associates in collaboration with Fairfax and Sammons.

Rendering: courtesy of Goff D'Antonio Associates

also have to approve the demolition of the existing library building. Despite the criticism from preservationists, including the PSC and the HCF, that the new building was too tall, the hotel proposal was given BAR conceptual approval based on the height, scale and mass of the new building on December 14, 2005. The next step was to get a height variance although, at 104 ft., the new building would still be shorter than nearby buildings, including the Federal Building at 113 ft., the Francis Marion Hotel at 165 ft., and the steeple of St. Matthew's at 297 ft.

To some degree, the hotel proposal brought out many of the same issues that the design of the library did 50 years previously. Citizens were concerned that the construction of such a large building in historic downtown Charleston would ruin the historic character and set a dangerous precedent.

Interestingly, there seems to be no evidence to show that anyone was particularly interested in preserving the old Charleston County Library building at this point, despite the fact that it was nearing the 50-year cutoff to be considered eligible for the National Register of Historic Places. An editorial in the September 11, 2010 edition of the *Post and Courier* stated: "It's unlikely that many people want the derelict former Charleston County Library building to stay at 404 King Street. And it appears that most do not object to a hotel taking its place." On February 20, 2008, the BAR granted preliminary approval to the project by a 5-1 vote.

At that point, the demolition of the old library building and construction of the new hotel was being delayed by lawsuits regarding the zoning approvals that were given to the project. Although the Charleston Planning Commission, the BAR and the Charleston City Council had all approved zoning variances, the PSC and the HCF sued the city, claiming that the parcel was illegally spot-zoned. Reversing a lower court decision, the SC State Supreme Court issued a ruling on October 17, 2012 allowing the hotel project to proceed.

Aside from being used temporarily as a haunted house in the late 1990s, the old Charleston County Library building had been vacant for at least 10 years. The first mention of any interest in preserving the building came from the PSC, which announced its second annual "Seven to Save" list on May 10, 2012. The second item on the list was Mid-century Modern Architecture, which was described as "controversial and misunderstood." The old library building was one of the specific examples of this period mentioned as deserving of recognition and

protection. Despite this publicity, the old Charleston County Library was torn down in August of 2013 and the site is currently awaiting construction of the new hotel building.

## Context vs. Architectural Fashion

The old Charleston County Library building is a prime example of ignoring the existing context and building to suit the immediate architectural fashion. Since the building was completed, traditional architecture has begun to make a comeback, partially as building more sustainably has become an important focus. Preservation cannot continue to work against the tradition that built the buildings that the movement preserved in the first place. And it cannot prevent the current generation from constructing buildings that future generations will want to preserve – unlike the vast majority of buildings that are being built now early in the 21st century.

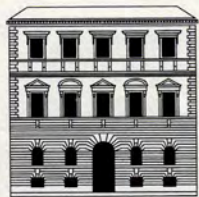
Due to the flaws in its ideological background, historic preservation is attempting to further separate contemporary practice from architectural tradition. While tradition is a living thing that changes and adapts over time, historic preservation seeks to capture a moment in time rather than perpetuating the tradition that created that moment in the first place. One of the issues with current preservation policies is that they were developed during a completely different architectural culture. The guidelines are ambiguous and meant to prevent uninformed and sloppy traditional architecture. However, the preservation standards have not kept up with the recent interest and growth in knowledge of traditional architecture.

The recent history of 404 King Street provides numerous lessons for the theory and practice of architecture and historic preservation in the 21st century. While the historic preservation movement has been enormously successful in preserving both individual buildings and historic districts in the United States, its philosophy, policy and practice have struggled to incorporate Modern buildings. The Modern movement emphasized a complete break from the past and produced buildings that, in some cases, replaced historic buildings that early preservationists fought vainly to save.

In short, current preservation philosophy is advocating for the preservation of existing buildings like the old Charleston County library that contradict the original aims of the movement and hamper efforts to build new buildings like the new hotel at 404 King Street that are more similar to buildings that inspired preservationists in the first place and more likely to be treasured landmarks in the future.

*David Payne is a Professor of Architecture and Design at the American College of the Building Arts in Charleston, SC, and an adjunct faculty member at the College of Charleston. He holds master's degrees in Historic Preservation from the University of Vermont and Architecture from the University of Miami. He recently completed his doctoral degree in the Planning, Design, and the Built Environment program at Clemson University and his dissertation was entitled Charleston Contradictions: A Case Study of Historic Preservation Theories and Policies. His research interests include the impact of Modern architecture on historic preservation and the role of traditional architecture in the 21st century.*





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1



2

1. At a two-day workshop held at A. Ottavino stone yard during the APTI conference in October 2013 in NYC, a team of craftspeople built two Guastavino vaults. Here they are working on vault #1. All photos: Ken Follett unless otherwise noted



3



4



5

2. The team starts work on vault #2, a barrel vault with two lunettes.

3. Benjamin Ibarra Sevilla photographs vault #2 after completion. Note the lunettes.



6



7

4. Vault #1 nears completion. Photo: Berta de Miguel

5. A father and son team, Brian VanNostrand (father, a potter) and Bryson VanNostrand of VanNostrand Architects, work on vault #1. Mallory Taub is in the background with his camera. Photo: Berta de Miguel

6. Lisa Howe of Consigli works on the almost completed vault #2. Photo: Berta de Miguel

7. As in a picture puzzle, the last tile fits in and completes the vault. Here a member of the team holds the tile in place on vault #2. Photo: Berta de Miguel

# Guastavino Thin-Tile Vaults

A master craftsman takes us through the steps of building a Guastavino vault. **BY KEN FOLLETT**

UNDER THE HEADING OF ESOTERIC MASONRY, there are a few items that stand out: columns, lintels, arches, bridges, aqueducts, serpentine brick walls, corbels, carved stone, flying buttresses, fireplaces and in the far exotic end of the spectrum, Guastavino tile vaults.

Guastavino tile is a masonry construction using thin tile built up in multiple-layers to form a composite of thin shells in various configurations of self-supporting masonry arches and vaults. The building technique was brought to the United States by Rafael Guastavino from Catalonia, Spain, in the late 19th century. The construction compa-

ny that he formed, along with his son to follow in his footsteps, remained in the business of building Guastavino vaults up into the early 1960s. A most notable example of Guastavino tile is the Oyster Bar in Grand Central Terminal in New York City.

Prior to and in coordination with the Association for Preservation Technology International conference in October 2013 in New York City, a two-day hands-on workshop at the A. Ottavino stone yard in Ozone Park, Queens, NY, gathered a number of craftspeople to build two Guastavino structures. One was an intersection of two barrel vaults and the other a barrel vault with

intersecting lunettes (little moons).

The workshop leaders were Kent Diebolt (Vertical Access, NYC), Berta de Miguel (Vertical Access), Mallory Taub (Arup, San Francisco), David López López (Catalonia), Benjamin Ibarra Sevilla (University of Texas, Austin), Marta Doménech Rodríguez (Catalonia), Ken and David Follett (Follett-PCLS), and Kevin Dalton (Vertical Access). Sponsors included Orchard Park, NY-based Boston Valley Terra Cotta, which supplied the tile; APT (Association of Preservation Technology) and Vertical Access. The National Center for Preservation Technology and Training



(NCPTT) provided a grant.

Here's the process for building a Guastavino vault:

You take a tile in one hand, left or right as needed, and in the loose hand take a trowel, which you then dip into wet, white plaster. Butter two edges of the tile and then briskly, or at least without too much hesitation, lift up and set the thin piece of baked-clay masonry sort-of flat up in the air and squeezed against the other tiles you have already set. The tiles set over the last few minutes hang out into the air. You gently wiggle and prod the tile with your fingers and your palms to where it needs to be, and then you hold it there for a bit.

Hold the thin tile there just long enough for it to stay in place as it reaches out along where you imagine and desire the vault surface to be. As best as you are able, that is, as this is a workshop for non-masons to gain an inherent appreciation of the craftsmanship of this masonry technique. As you stand and hold the tile, you look around and talk to your neighbor. You get to know each other as you build together. On the wet saw, tiles are being cut in halves, slivers and triangles. You feel the weight of the tile and the plaster on your hands as it changes from wet and squishy to hard. Timing is important; the materials can be impatient.

Listen to the tap-tap of the trowel against the drum of the vault. There is no formwork. You have to feel through the structure of the masonry as it

sets and cures. At this stage there is no support, only the magic of adhesion of the plaster as it sets hold to suck in and grasp the tiles that freely reach out into space. That is, until you get to the last tile, which, as in a picture puzzle, fits in and completes the whole reality of the vault.

Another layer of tile is offset over the first layer, set in a cementitious mortar, with a whole lot less dramatic flair. Slick it with the mortar and plop it down, wet, squiggle it into place and move on. There are, for this workshop, only two layers of tile. The last tiles are set in place. Then everyone adjourns to an interior room for lunch and a talk about the history, mystery and tradition of this architectural form.

But hold on! There are many mysteries when it comes to Guastavino vaults and one of the first is their remarkable strength and durability in form – when everyone has almost left the work area, and only minutes since the last tile has been set, a really big guy in an impish stir of impatience jumps up and runs from corner to corner across the top of one of the freshly built vaults.

For more information, the definitive book on the subject is *Guastavino Vaulting, The Art of Structural Tile*, by John Ochsendorf (New York, Princeton Architectural Press, 2010). See Clem Labine's review in the April 2011 issue of *Traditional Building* magazine.



Ken Follett has been involved with heritage masonry restoration for several decades. He is a founding member and was the first president of the Preservation Trades Network. He currently resides in Brewster, NY, and primarily works with his son-partner, David Follett. They are hands-on consultants for architects, engineers and conservators during the design phases in their investigation of historic structures, wood, masonry, metal or otherwise. He can be reached at [ken.follett.pcls@gmail.com](mailto:ken.follett.pcls@gmail.com).

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## ROOFING

# Timeless Beauty

Traditional roofing materials continue to lead the pack when it comes to historic public buildings.

**T**raditional roofing materials – think sheet metal, clay tile and slate – continue to crown public buildings large and small not only because of their timeless beauty but also by virtue of their proven durability. However, even though these traditional materials are typically best installed with traditional methods, more than ever, changes in the roofing industry, environment and especially in historic buildings themselves have to be taken into account.

## What's Used Where?

Over their long history, the big three materials have developed such a universal appeal and tremendous versatility that, typically, their choice is governed less by the high-minded dictates of architectural style than the practical considerations of a building's use, place and image.

According to Michael Lukis of Tile Roofs Inc. in Frankfort, IL, clay tile generally appears on more permanent structures such as churches, libraries and village halls. "You'll find Spanish or Mission tiles, for instance, on a Greek church and even a lot of Catholic churches," he says, "but not necessarily coordinated historically with the architecture." Lukis adds that, in his experience, churches and public buildings that went up in Chicago and the Northeast in the 1920s and '30s were often roofed in tile. "Certainly Spanish tile but even some French and interlocking tile – all the types equally popular at the time for houses."

A. Tab Colbert at Ludowici RoofTile, Inc. in New Lexington, OH, adds that clay tile in large measure historically followed a building's type and where it was located. "An awful lot of banking institutions and government buildings predominantly use what's called a pan-and-cover system," he says, "where there's a pan – usually a radius product such as a straight barrel Mission tile – and then a cover that gives the opposite radius going over the top of that."

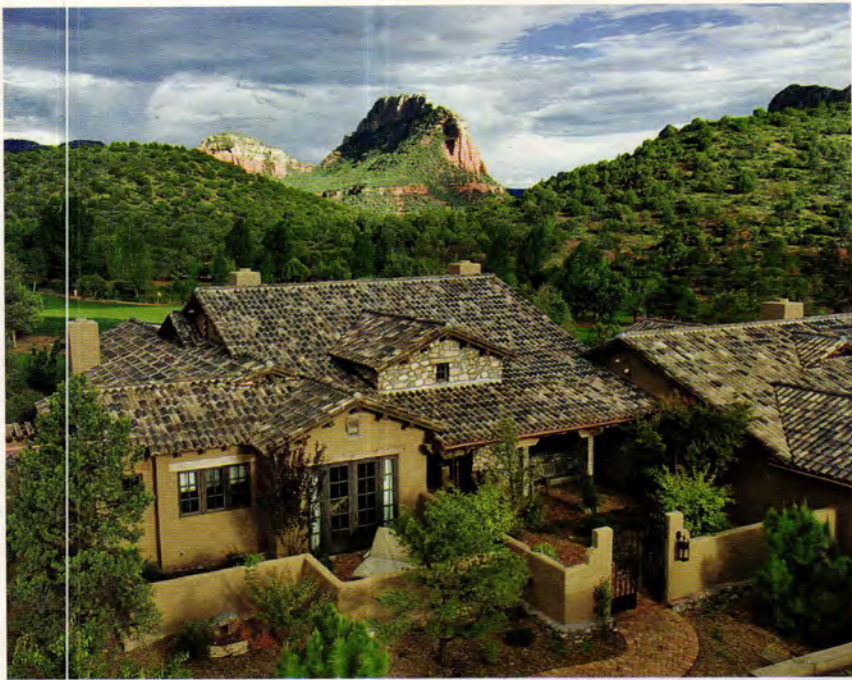
He adds that a straight barrel Mission product is very widely seen on government buildings in Washington, DC. "But when you get to court houses, libraries and banks, they often end up with a pan that may be radius or it may be flat, but it's topped with a Greek cover that is angled, and makes a very strong, sturdy statement that looks like it's been there for centuries." Not surprisingly, he says Spanish and Mission tiles tend to dominate in Texas, "but go to Florida, and you'll find a lot of interlocking flat tiles as well." Chicago, he says, "likes French." "There are little enclaves all over; it really depends."

Robert Raleigh III of Renaissance Roofing in Rockford, IL, adds that some of the same observations apply to slate. "Typically we find slate on church

Renaissance Roofing replaced the copper steeple, slate roof and copper gutter for St. Anthony Catholic Church in Effingham, IL. Photo: Renaissance Roofing







**TOP LEFT:** Ludowici's Spanish tile with the Spanish/Barrel Eave Conversion in a custom color blend was used for the Seven Canyons Resort in Arizona. Photo: Ludowici Roof Tile



**TOP RIGHT:** NIKO Contracting installed the batten-seam and flat-lock copper roof of the Kingswood School in Bloomfield Hills, MI. Photo: NIKO Contracting



**ABOVE:** The historic 1868 Morgan County Courthouse was restored with matching slates provided by Tile Roofs, Inc. Photo: Tile Roofs, Inc.



**ABOVE:** Heather & Little's restoration of the Toronto Old City Hall required 113,900 sq.ft. of copper roofing, cornices, gutters and sheet-lead work. Photo: Heather & Little Limited

structures and court houses – both standard and graduated slates – but it kind of runs the gamut.” He notes that most college campuses have an architectural style, so similar roof materials tend to appear in groups, with one campus having mostly slate while another may be mostly clay tile. “Of course, the more distance you travel from the slate-producing regions in the East, the more transportation costs had an impact on what materials were used, so the farther West you go, I think the use of slate declines. Nonetheless, areas like St. Louis have a large population of slate roofing systems.”

When it comes to slate types, he adds that, in his experience, there is some regionality. The distinctive, lustrous blue-black of Buckingham, VA, slate is “pretty identifiable in color and texture” for

example. “We do see it here in the Midwest, but not extensively – in fact, historically it probably wasn’t distributed widely anywhere in the U.S. other than around the immediate area of the quarries.” In contrast, he says Pennsylvania soft vein and Vermont slates are very common in the Midwest. “We actually also see a few roofs of Monson slate that came out of Maine here in the Midwest.”

Switching to sheet metal, Nick Lardas of NIKO Contracting in Pittsburgh, PA, has similar remarks. He says they are particularly known as specialists in sheet metal, as well as other materials, and for historical roofs they typically see work in copper and terne metal – “traditionally, metals you can solder,” he says – but in the South and Southwest they find more galvanized steel, though that picture has been

#### FOR MORE INFORMATION:

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Revere Copper, Rome, NY  
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**TOP:** Ludowici's 18- and 13-in. Spanish "S" Tile was used for this building. The color is Terra-Cotta Impressionist. Photo: Ludowici Roof Tile

**ABOVE:** NIKO fabricated the copper dormers and mansard roof and also installed the copper penthouse for this building in New York City. Photo: NIKO Contracting

**LEFT:** Renaissance Roofing installed the slate roof, copper gutters and copper cornice replacement for St. Columba Catholic Church in Ottawa, IL. Photo: Renaissance Roofing

changing of late. For ornamental work, such as dormers and cornices, the metals are either copper or a mix of sheet zinc, and galvanized steel. "Galvanized is limited though," says Lardas, "because the metal is not readily formed into more complicated shapes, so you see it more in brake-formed work in making cornices."

He notes that sheet zinc – a material with a long history in Europe, but little seen in America and not previously considered a traditional roof – has been coming on strong in the last 15 years. "Zinc has its idiosyncrasies, such as it can't be installed in a soldered flat seam, so the roof has to be standing seam or batten seam," he explains, "but it has a nice, natural look for a metal as well as long life." The majority of NIKO's work is on existing buildings, ranging from New York, to Michigan, to Florida. "In a historic building, if the roof was metal the owners typically want to stay metal."

## Details, Details

Time-tested and long-standing as these materials are, they nonetheless can face modern issues in installation, restoration or sourcing. The longevity of clay tile, for example, frequently means a roof may have outlived its original manufacturer, but that also translates to re-usability. "Typically the term we use is lift-and-relay," says Colbert, "where the tile is inspected and analyzed and, when in good condition, the

roofer just takes the tile off the roof, puts down new felts, and then puts the same tiles back on the roof."

Colbert explains though that in situations where special pieces were made in the past, those pieces cannot be re-used. "Field tile is usually nailed or screwed down, but the accessories – tiles covering the hips, ridges and so on – are put down in a mortar base. So when you remove these accessories, the mortar may come free of the field tiles but, in many cases, the accessory will come free of the mortar and break, so you will have to re-make those accessories."

Colbert notes that while sometimes difficult, anything once made by his company can be made by them again. "We're constantly making a lot of different products, and doing it in addition- and renovation-size quantities as well as large quantities." What's more, the same applies to long-gone products. "We do exact matches of other tile producers, such as Mifflin Hood," he says. "They made a very good tile used on a lot of public projects throughout the South but, unfortunately they went out of business in the 1950s."

Colbert says the process starts with carefully measuring an actual example of the product. "We need to see the product because that will determine 1) what plant it came out of (and thereby what clay was used); and 2) what we need to do to be able to engineer the tile to today's clay shrinkage rates."

Lukis points out that tile's longevity adds another

dimension to sourcing. "Oftentimes we have a client restoring a 60- or 80-year-old roof who needs replacement tiles and fittings, so for those kinds of projects there's a lot of demand for our recycled and reclaimed materials that provide an exact match in make, design, appearance, age – everything!"

On the other hand, sourcing slate to match historic roofs is not a big problem, according to Raleigh. "Slate requires lead time – sometimes as much as six to 10 weeks to get an order – so it's a matter of planning more than anything. You can't go pick up slate at your local supply yard as you can with other roofing materials. Identifying the colors of original roofs is typically not a problem for us."

As he explains, "Slate is a natural product, so it varies from one day to the next as it comes out of the quarry, so what was quarried 100 years ago is not going to be identical to what is quarried today because it's from a different part of the ground." Raleigh adds that since Pennsylvania slates have an accepted life expectancy of around 80 years, "most of the Pennsylvania slates that we see here in the Midwest are at the end of their service life and have begun to deteriorate and fail. Vermont slates are typically in good condition, but should be considered for complete replacement, and Buckingham slates, which tend to last, are still in excellent condition."

Surprisingly, the supply of sheet metal is not immune to the caprices of the manufacturing-



business world either. Lardas notes that the longtime sole producer of terne-metal roofing – Follansbee Steel of Follansbee, WV – closed its doors in 2012. Terne is a tin alloy that, when plated to sheet steel, has been the source for the iconic and highly durable standing-seam roofs across the U.S. since the early 19th century.

“While traditional terne (or TCS) is no longer available,” says Lardas, “you can still get terne-coated stainless steel and terne-coated copper, now made by Revere Copper, which acquired much of the Follansbee production equipment.” He notes that while effective stand-ins, these materials are not the same. “If you have, say, a built-in gutter, your choice is now either copper, lead-coated copper, terne-coated copper (called Freedom by Revere) or terne-coated stainless steel, which is a little trickier to work with. It’s not only harder to solder for flat seams, because it is prone to hot spots, it is also less forgiving than copper.”

He adds that, in some projects, painted-metal roofing systems are also considered as an alternative to terne, though suitability depends upon the complexity of the roof and the goals of the client. “The detailing of roof intersections is not the same,” he says, “relying more on sealants than traditional seaming techniques. It all depends upon the project and the client.”

## More than Just Materials

When traditional roofing projects hit rough water, however, it’s likely not the materials themselves that are the cause but something off-course in the planning. “Most architects have a good grasp of metal roofing,” says Lardas, “But occasionally we see a disconnect between the specs and the detailing – for example, specifying a standing-seam copper roof but then incorporating details for a painted metal roof system.” He adds that to help with these questions leading industry organizations such as the CDA (Copper Development Association), SMACNA (Sheet Metal and Air Conditioning Contractors’ National Association) and Revere Copper have long published excellent standard detail and practice references.

Raleigh adds another perspective. “There are a lot of idiosyncrasies that can get overlooked at the spec-writing level, but the experienced contractor has a hard time ignoring them,” and in Raleigh’s view, this can be a source of problems long before installation. “When projects specified in this way are then let for bid, you get a large range of results in those bids – due in large part, I think, to inaccurate specifications or documentation of existing conditions.” He adds, “It’s hard to justify such large bid spreads when everybody’s considered an equal or qualified to be bidding the work.”

While roofing projects can suffer when the specs are inconsistent with the desired material, just as problematic is when they don’t match the historic building. “You run into that all the time,” says Lukis, “Someone has not done a good enough survey of the existing conditions.” He cites a project where change orders have run nearly \$100,000 – more than 10 percent of the contract – because of unforeseen existing conditions that were not researched before the project was begun. “Some architects really do their homework and have encountered these things



**TOP:** Tile Roofs supplied the salvaged red French tile and custom-made fittings for this old train depot in Fithian, IL. Photos (both): Tile Roofs, Inc.

**ABOVE:** Salvaged clay Mission tile from Tile Roofs.

before, so they know a little more what might come up on a roof restoration. But then there’s the guy who’s never really been involved in those kinds of projects, didn’t do his homework and is going in blind.”

Taking another step back, Raleigh observes that, “A lot of times when people think of their roof, they don’t give enough attention to the flashing and gutter system, which typically receives 100 percent of the wear and tear on the roof. These are not stand-alones but integral with the roofing system.” He notes that many a built-in gutter system is well over 100 years old, but patched and relined many times so, by today, they have a lot of hidden issues – structural framing, decking – that, if not investigated ahead of time, start to cascade and create a lot of tension when they are opened up. When there’s the opportunity, Raleigh says he’s a firm believer in some destructive testing. “‘Let’s discover all these problems ahead of time,’ we encourage our clients, ‘and discuss them before we have a contract and everybody’s arguing about who’s responsible for what.’”

Gordon Bock, technical editor of *Residential Sheet Metal Guidelines* (SMACNA; [www.smacna.org](http://www.smacna.org)) and co-author of *The Vintage House* ([www.vintagehouse-book.com](http://www.vintagehouse-book.com)), lists his 2014 keynote speeches, seminars and workshops at [www.gordonbock.com](http://www.gordonbock.com).

# Select Suppliers

## GAF

Wayne, NJ  
[www.gaf.com](http://www.gaf.com)  
973-628-3000

## Gladding, McBean

Lincoln, CA  
[www.gladdingmcbean.com](http://www.gladdingmcbean.com)  
800-776-1133

## Heather & Little Limited

Markham, ON, Canada  
[www.heatherandlittle.com](http://www.heatherandlittle.com)  
800-450-0659

## Ludowici Roof Tile, Inc.

New Lexington, OH  
[www.ludowici.com](http://www.ludowici.com)  
800-945-8453

## NIKO Contracting

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[www.nikocontracting.com](http://www.nikocontracting.com)  
412-687-1517

## Ornametals, LLC

Cullman, AL  
[www.ornametals.com](http://www.ornametals.com)  
256-255-0190

## Pfister Roofing

Paterson, NJ  
[www.pfisterroofing.com](http://www.pfisterroofing.com)  
973-569-9330

## Reclaimed Roofs, Inc.

Greenville, DE  
[www.reclaimedroofs.com](http://www.reclaimedroofs.com)  
302-369-9187

## Renaissance Roofing

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815-547-1725

## The Durable Slate Co.

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[www.durable Restoration.com](http://www.durable Restoration.com)  
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## Tile Roofs Inc.

Frankfort, IL  
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888-708-8453

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Nevada, MO  
[www.wfnorman.com](http://www.wfnorman.com)  
800-641-4038





The new North Hall and Library designed by Robert A.M. Stern Architects for CUNY's Bronx Community College completes the school's quadrangle, which was originally designed by Stanford White. All photos: Peter Aaron / OTTO, unless otherwise noted

# Completing the Quadrangle

## PROJECT

North Hall and Library, Bronx Community College, Bronx, NY

## ARCHITECT

Robert A.M. Stern Architects, New York, NY; Robert A.M. Stern, Graham S. Wyatt, Alexander P. Lamis, Augusta Barone, partners; Jeffery Povero, project architect

## LEED

Silver

WHEN THE CLASSICIST STANFORD WHITE designed his iconic 1892 master plan for New York University's Bronx campus on a bluff overlooking the Harlem River, he never dreamed that it would take more than a century for his vision to become reality. His grand domed Gould Memorial Library, the cornerstone of the quadrangle in University Heights, was completed in 1900; his arcing open-air colonnade – the Hall of Fame for Great Americans – joined it six years after his death in 1912; and history records that two classroom buildings were added sometime after that.

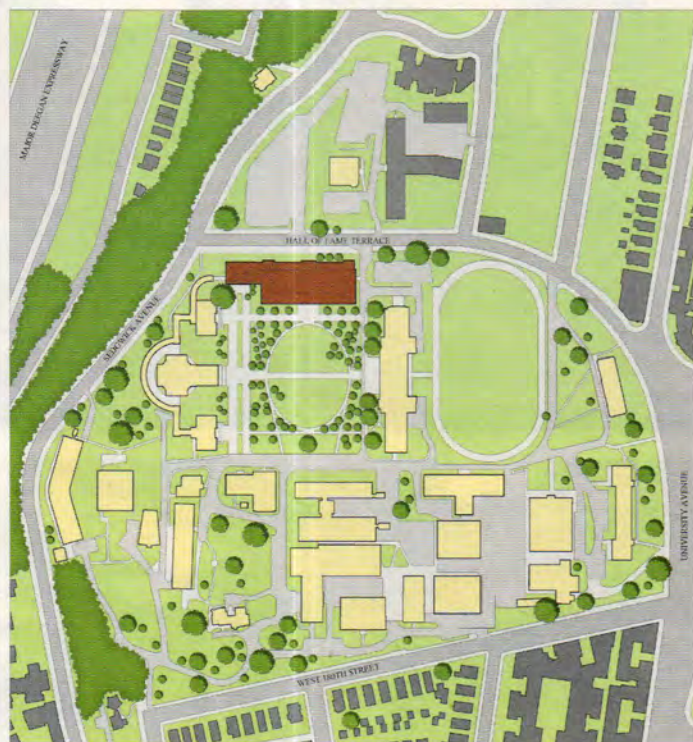
NYU never got around to putting up most of the buildings that White had in mind, and by the time it started its second round of construction in 1956, Marcel Breuer, a master of Modernism, was the architect of choice. The buildings he designed, while

stylistically different from White's, respected White's grand plan. But even they didn't frame the campus's central quadrangle; the north side would remain undeveloped for another 50 years.

Meanwhile, the bucolic 43-acre campus changed hands. In 1973, it became the home of Bronx Community College, a part of The City University of New York (CUNY), which, with 24 colleges and professional schools and some 500,000 students, is the nation's largest urban public university. It was only in 2005, after CUNY commissioned New York City-based Robert A.M. Stern Architects (RAMSA) to do a campus-wide study of the college's building needs, that it was decided to erect a state-of-the-art, historically derived library/classroom/information commons building on the fourth side of the quadrangle. The design team was led by RAMSA partners



**The North Hall and Library honors Stanford White's Gould Memorial Library and completes the quadrangle on the campus. Drawing: RAMSA**



CAMPUS PLAN

■ NORTH INSTRUCTIONAL BUILDING AND LIBRARY  
■ CAMPUS BUILDINGS

NORTH INSTRUCTIONAL BUILDING AND LIBRARY  
BRONX COMMUNITY COLLEGE  
CITY UNIVERSITY OF NEW YORK  
BRONX, NEW YORK



0 50 100 200 FT



**TOP:** North Hall extends the axis and continues the architectural vocabulary established by Stanford White's Hall of Fame for Great Americans, completed in 1900. It and White's Gould Memorial Library are New York City landmarks that are on the National Register of Historic Places.

**ABOVE:** At the entry to the campus, North Hall and Library negotiates the change in grade with a rubble stone base whose historic Manhattan stone wall matches the overall color palette. It also complements the main gate to the campus, which was existing. Photo: Robert A.M. Stern Architects

Robert A.M. Stern, Graham S. Wyatt, Alexander P. Lamis and Augusta Barone.

Although White's plan showed four modest buildings on the site, the college's expanded enrollment mandated a much larger solution, and RAMSA responded with the three-level 98,600-sq.-ft., high-tech North Hall and Library that pays homage to White's other on-campus Neoclassical designs, the Gould Memorial Library and its Hall of Fame for Great Americans, New York City landmarks that are on the National Register of Historic Places.

Designed in association with Ismael Leyva Architects of New York City and built by TDX Corporation, North Hall and Library was completed in 2012, the same year the campus became the nation's first community college to be declared a National Historic Landmark. It was recognized as "a nationally significant example of Beaux-Arts architecture."

"North Hall does not upstage Gould Memorial Library at the head of the quadrangle but rather acknowledges it as the crown jewel of the campus," says architect Graham Wyatt, one of the RAMSA partners in charge of the project. "North Hall's south façade, facing the quad, is a foil to the exuberance of the Gould Memorial Library and to the severity of Breuer's Meister Hall across the lawn."

The Gould Memorial Library, which was inspired by Rome's Pantheon as interpreted in Thomas Jefferson's Rotunda at the University of Virginia, is faced with variegated yellow and cream Roman

brick punctuated with Indiana limestone pilasters. It features a rotunda with 16 columns of rare Connemara Irish green marble, statues of Greek muses, Tiffany art-glass windows and a circular reading room capped by a coffered dome, once skylit but closed in after a fire in the 1960s. The Hall of Fame, a columned Neoclassical promenade featuring bronze busts of 98 famous Americans, including Eli Whitney, George Westinghouse and Alexander Graham Bell, and bronze tablets designed by Tiffany Studios, sits atop its foundations on one of the highest spots in the Bronx, where it commands a breathtaking view across the Harlem River to Upper Manhattan.

"North Hall and Library is a direct response to Stanford White's plan," Wyatt says. "It consists of a principal building centered on White's central campus quadrangle and a wing, conceived as an annex, that is set back from the principal building to mirror the size and placement of White's Havemeyer Hall across the quadrangle." This relationship to the original campus plan is further reinforced by an east-west corridor that extends the axis of the Hall of Fame through the ground floor of North Hall.

The proportion and scale of North Hall and Library "help to break down its mass to complement the scale of the historic campus," says architect Augusta Barone, another RAMSA partner who led the firm's work on the project. "It becomes part of a family of buildings." The family traits continue with the exterior materials. Although the yellow and cream bricks White used were no longer available,

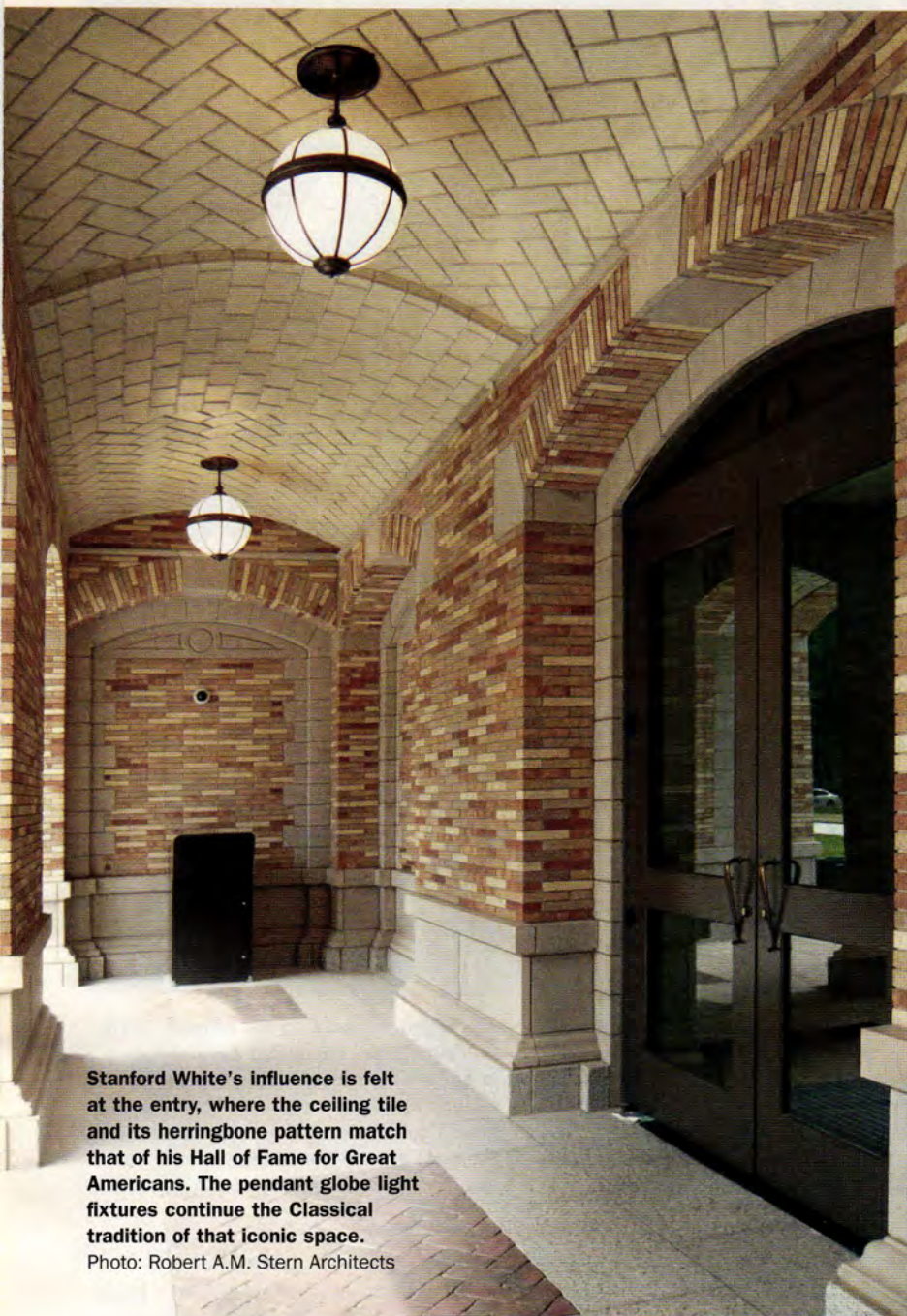
the team developed a blend of buff Roman brick that is consistent with the adjacent historic buildings. These were cast into precast concrete panels fabricated by BPD L of Quebec, Canada, accented with light gray cast-stone trim that matches White's Indiana limestone.

"This panelized fabrication method proved to be an asset," Barone says. "The historic architecture has fine masonry joints that were only 1/8 of an inch thick. Because of New York City's seismic rating, we would have been required to make them at least 3/8 of an inch thick to accommodate steel tie-backs. The precast panels allowed us to use 1/8-in. joints. Joints between the large precast panels are concealed wherever possible. We also saved time and had great quality control because the panels were made offsite in BDPL's factory and shipped to the college for installation."

The references to White's work continue on the interior. The vaulted ceiling at the main entry, for example, features the Guastavino tile White used in the Hall of Fame, arranged in the same herringbone pattern.

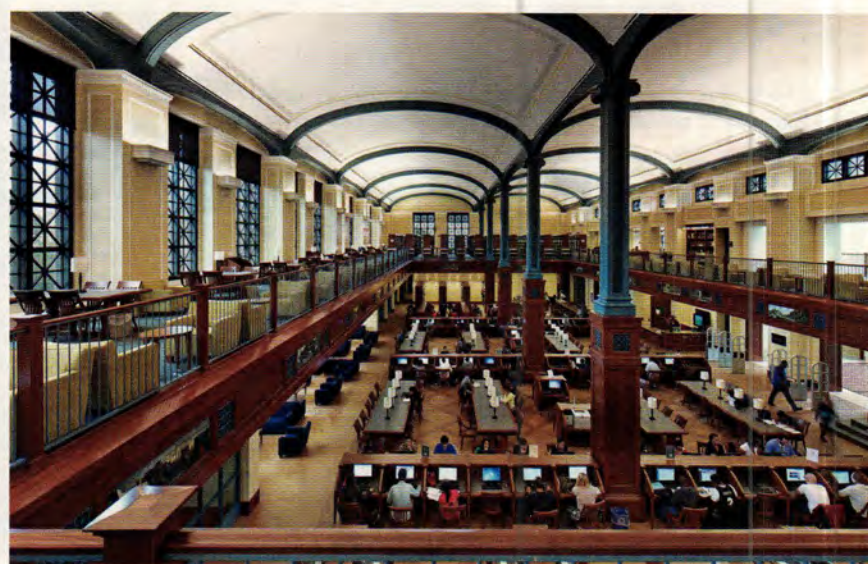
Zinc roofing from RHEINZINK America in Woburn, MA, was chosen instead of tile, White's roofing material of choice, because of its durability, ease of care and lower price. The prefabricated ornamental acroteria and cheneau details were inspired by various White buildings on the campus and elsewhere. The traditional envelope of the building belies the fact that the structure is very much of the





Stanford White's influence is felt at the entry, where the ceiling tile and its herringbone pattern match that of his Hall of Fame for Great Americans. The pendant globe light fixtures continue the Classical tradition of that iconic space.

Photo: Robert A.M. Stern Architects



**TOP:** The double-height reading room is a grand gesture to White's Gould Memorial Library, where the dome predominates. It features a double row of barrel vaults supported by slender columns inspired by Henri Labrouste's St. Genevieve Library in Paris.



**ABOVE:** The first-floor lobby that leads to the classrooms and study rooms features Classical motifs and historical lighting fixtures.

21st century. "The Classical references are not merely skin deep, they run throughout," Wyatt says.

Like other new buildings on other CUNY campuses, North Hall is green. Certified LEED Silver, it complies with New York City and State energy-efficiency codes and is part of the university's commitment to reduce greenhouse gas emissions by 30 percent by 2017. "The sustainability rules did not affect the aesthetics of our design," Barone says, "but in our overall campus assessment, we reviewed the parking requirements at this, a commuter college that relies heavily on mass transit, and we were able to apply for fewer spaces than zoning would have required."

The building also redefines the institutional library for the digital age, creating a cutting-edge template for 21st-century study and reflection. Because Bronx Community College is a commuter college with non-traditional students who may be older, hold down full-time jobs and support families, North Hall and Library was conceived as a community gathering spot for group and independent study.

Classrooms, which occupy 50 percent of the space, flank the hallway on the ground floor; the library, reached by a monumental stairway whose landing offers spectacular views to the north, resides

on the two upper levels. The library's reading room cum information commons is surrounded on three sides by enclosed study rooms that can accommodate less quiet group meetings. "It serves as a home base for the campus," Wyatt says.

Barone adds that the library "features state-of-the-art wireless and digital technology and offers students access to multiple media for learning, though you might never guess that by looking at it."

Wyatt points out that the floor plan was designed to be versatile. "Book storage requirements for the library are lower than they would have been a decade ago," he says. "The book collection is not growing, but it's not shrinking either, because there are many historic collections. When needed, some library space can be converted to classroom or team-room space."

The focal point of the library is the grand double-height reading room inspired by Henri Labrouste's St. Genevieve Library in Paris, a monument that Wyatt says White would have known and appreciated. Its soaring double-row barrel-vaulted ceiling is supported by slender columns and decorated with a stenciled Greek key motif, inspired by detailing at the Gould Memorial Library. This motif is repeated on the end panels of the book stacks and on the

housings of the up-lights that illuminate the vaults.

"We decided not to hang pendant lights from the ceiling because we wanted it to look clean and modern," Barone says. "Instead, working with Cline Bettridge Bernstein Lighting Design, we concealed the lighting in custom housings fabricated by Patella Woodworking and mounted on the pilasters at the upper level."

The deep-set windows, shaded by grilles, turn the information commons into a light-filled space suitable for individual study or quiet conversation. "The grilles, whose designs are based on McKim, Mead & White buildings at Columbia University and other institutions, are made of aluminum, which is painted a bronze color to complement the color of the window frames in the other buildings on the quad," Barone says. The soft blue/grey and gold color scheme, devised by RAMSA project architect Jeffery Povero, who is now in independent practice, is drawn from a 1911 John Singer Sargent painting.

The reading room's tables and chairs were designed by Robert A.M. Stern Architects for David Edward of Baltimore, as was the carpeting for Bentley. The comfortable sofas and chairs, in indigo and gold, were selected by the interior design group of DASNY, the Dormitory Authority of the State of





The building's details, interpretations from profiles of other Stanford White buildings on campus, root North Hall and Library in the past. The brick, a blend of colors, was laid into precast panels, and the cast-stone trim and spring point of the arches are based on interpretations of the Tuscan order. The acroteria and cheneau at the top of the building were inspired by various Stanford White buildings, notably the college's Gould Memorial Library and Philosophy Hall and the Boston Public Library.

New York, in consultation with RAMSA. "We worked very closely with the Dormitory Authority to get approval for colors that are in keeping with the palette we envisioned," Barone says.

The project team also strove to involve the local community, capitalizing upon the type of artist/architect collaborations that would have been popular when White was making his watercolor sketches of the quadrangle in the 19th century. "Buildings – not only with bricks and mortar but also with painting and sculpture – were used to convey civic values to the public," Barone says. "We continued this tradition at North Hall and Library."

Bronx artist Daniel Hauben was commissioned to paint murals for the main stair landings and the reading room's balcony frieze, and artist-painter Cid Mendez stenciled the Greek key pattern on the reading room's vaulted ceiling. These commissions were funded through the Percent for Art program, managed by Jennifer McGregor with input from an art committee assembled for the project that included representatives of CUNY, Bronx Community College, DASNY and RAMSA.

With the opening of North Hall and Library, the



The work of local artists was used to infuse the project with the spirit of artist-architect collaboration that existed when Stanford White was working on the campus. Daniel Hauben painted the murals in the balcony frieze, and Cid Mendez stenciled the Greek key pattern on the vaulted ceiling of the reading room.

RAMSA team began work on landscaping the quadrangle, which is still in the works. "We are excited about this because White's plan for the campus's main quadrangle was never realized," Wyatt says. "The quadrangle project will be a significant step toward giving the entire campus coherence."

Robert A.M. Stern Architects has a long history of working with Ivy League schools, including Harvard and Yale Universities, and Barone says that "we're proud of this campus because it gives community college students a world-class building to complement their efforts and aspirations." The firm sees North Hall and Library as a legacy that will stimulate the conversation about Classical architecture and college learning for generations.

"This is one of the great campus plans of America," Wyatt says, adding that he had visited it long before the firm was hired for the project. "Using the language of architecture, our team worked to say something new while carrying forward the story that Stanford White began. I am proud to have been part of the team that after 120 years completed this important piece of Stanford White's vision for this campus."

– Nancy A. Ruhling

## Select Suppliers

Precast Concrete Panels  
and Architectural Stone  
**BPDL** Quebec, Canada

Zinc Roofing  
**RHEINZINK America**  
Woburn, MA

Lighting Design  
**Cline Bettridge Bernstein**  
**Lighting Design** New York, NY

Roofing and Skylights  
**AFI Glass & Architectural**  
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**Cloud Ceramics** Concordia, KS

Granite Stone at Base  
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**Crenshaw Lighting** Floyd, VA  
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Interior Millwork/Woodwork  
**Patella**  
Orangeburg, NY

Bronx artist **Daniel Hauben**  
was commissioned to paint murals.

At night, the lights turn North Hall and Library into a beacon on the campus.





ARCHITEXAS was the preservation architect for the restoration of the 1910 Beaux-Arts Harris County Courthouse in Houston, TX. The \$52-million, seven-year project included both the exterior and interior of the building. All photos: Nash Baker, Houston, TX

INSET: Over the years, the historic courthouse had lost much of its original exterior material, including the copper cap at the top of the lantern, the terra-cotta railing and brick masonry piers at the base of the dome, and the monumental entry stairs on two sides of the building. All were restored or replaced.

# Deep in the Heart of Texas

## PROJECT

Harris County Courthouse,  
Houston, TX

## ARCHITECT

PGAL, Houston, TX; Ruben Martinez,  
senior associate

## PRESERVATION ARCHITECT

ARCHITEXAS, Austin, TX; Larry Irsik,  
principal in charge; Susan Frocheur,  
project manager

## GENERAL CONTRACTOR

Vaughn Construction, Houston, TX

BUILT IN 1910 IN THE BEAUX-ARTS STYLE, the Harris County Courthouse in downtown Houston, TX, is one of the most significant historic courthouses in the state. It is listed on the National Register of Historic Places, and is a registered Texas Historic Landmark and a State Archeological Landmark.

The elegant, 152,936-sq.-ft., six-story structure was designed by Charles Edwin Bargebaugh of the Dallas firm of Lang & Witchell. It is a square building with a 100-ft. high central rotunda topped with a dome and lantern. The four facades are similar, with pediments, Corinthian columns and monumental stairs leading to the main-floor entries. The base of the building and the monumental entry steps are faced with rough-cut pink Texas granite, and the upper portions are faced with brick with terra-cotta accents at the cornice, railings and sills. It is one of the most prominent historic buildings in downtown Houston.

Throughout the years, however, the courthouse has suffered a number of indignities. Normal factors such as age, use and pollution contributed to the deterioration of this grand building, and a renovation in the 1950s removed most of the historic fabric in the interior and significant elements on the exterior. The good news is that the historic building has been saved and restored, as much as possible, to its original 1910 condition, thanks to a \$52-million, seven-year restoration, completed in 2012.

Leading the restoration and renovation of the courthouse was PGAL of Houston, TX, with ARCHITEXAS of Austin, TX, the preservation architect. "PGAL was the prime architect, and we were the preservation architects," says Larry Irsik, ARCHITEXAS, principal in charge. "We were responsible for historic research and restoration of the exterior and of significant historic interiors, including all of the public spaces such as the courtrooms and the





**RIGHT:** Before restoration, the architects faced a room stripped of all detail. In addition, a concrete slab had been added, dividing the courtroom into two levels.

**BELOW:** The restored third-floor courtroom has been returned to its original two-story height and the art-glass lay-light was reconstructed. A glass panel floor system was installed directly above the lay-light to simulate natural light. All of the details, including the ornamental plaster cornice, pier capitals, wall frieze and balcony face were fully reconstructed.



**BEFORE**



rotunda. We provided general historic consultation throughout the building.”

“The design intent was to restore the exterior and primary interior public spaces back to their 1910 original form, and to renovate secondary spaces to increase functionality, and to introduce modern technology, sustainability, accessibility, fire safety and security features throughout the building,” says Irsik. Original drawings, historic photos and remnant historic materials helped the team accurately restore or reconstruct missing and severely damaged elements, but in many cases, there was very little to go on.

When the ARCHITEXAS team arrived, they faced a six-story historic building that had been drastically altered, mostly by the renovation of the 1950s. Floors had been added at each level in the rotunda, closing off the area to natural light that would have come in through the original 80-ft.-dia. art-glass dome. The art-glass dome was gone too; it had been removed because of hurricane damage.

That was just the beginning of the damage done by this renovation. Floors had been added to the two historic third-floor courtrooms, dividing the once two-story monumental spaces. And, all of the original historic finishes had been removed from these rooms, including plaster capitals, balcony facing, the cornice, wall friezes, book-matched marble wainscot and wood flooring. In the rest of the building, the addition of new (1950s) heating, ventilation and plumbing destroyed the historic detail.

On the exterior, two of the monumental stairs

had been removed, the stone retaining wall at the perimeter of the site had been removed, and open loggias on the second-floor entries had been closed in. In addition, terra-cotta balustrades, brick and stone masonry piers, and ornamental cast-metal lampposts on the third-floor loggia had been removed. All of the wood windows and doors, both interior and exterior, had been replaced, and the skylights over the east stairs had been removed, along with the light courts that had provided natural light into the third-floor courtrooms. And finally, the copper finial capping at the top of the lantern had been removed.

“We started on the project at the end of 2004,” notes Susan Frocheur, ARCHITEXAS, project manager, “and we spent 1½ years just on the demolition of the interior and surveying the exterior, removing non-original walls and finish assemblies that had been added in order to expose original materials. During the demolition, one piece of trim with its original stained finish was found in the interior of the entire building. The finish for stained elements such as the doors, windows, standing and running trim, etc., was based on this piece.”

There were some historical guidelines available. “Early in the 1920s someone had copied the original drawings of the courthouse,” says Irsik. “We also studied two other courthouses designed by the same architectural firm from the same construction period to determine the appropriate design/detailing for elements that no longer existed, including door and window assemblies, hardware, the art-glass dome and

built-in furnishing. It all helped with the interpretative reconstruction.”

The exterior work involved replicating and replacing a number of historic features. The most prominent of these were the monumental stone entry stairs on two sides of the building, on Fannin and San Jacinto Streets. When the stairs were removed in 1952, the entries had also been moved to the basement level. These stairs, and the corresponding entries, were reconstructed by United Restoration and Preservation, Fayetteville, GA. The two sets of entry stairs on the other two facade facades were disassembled and reconstructed on new foundations by United. Although they were still in place, they had settled and developed structural damage over time.

During the survey of the exterior, the architects found that the terra cotta had been coated with a water-proof coating. The coating had to be removed before they could determine the condition. Terra cotta balustrades, brick and stone masonry piers, including the terra cotta railing at the dome level, were reconstructed with replacement material manufactured by Gladding, McBean of Lincoln, CA. The remaining terra cotta was repaired, using products such as Jahn M100, (supplied by Cathedral Stone Products, Hanover, MD), and chemical cleaning products from Prosoco of Lawrence, KS.

All of the exterior windows were reconstructed of mahogany and faced with long-leaf pine on the interior to provide a durable assembly and to match the original wood species where visible. All of the doors were also reconstructed. The windows were reconstructed by Bauhaus, LLC, Lubbock, TX, and the doors were reconstructed by Beaubois, Quebec, Canada.

Also on the exterior, ARCHITEXAS replaced the ornamental cast-metal lampposts that had been removed at the third-floor loggias. “The small piers at the entries originally had light posts,” says Irsik. “We had these replicated in cast aluminum. We had only one fuzzy historic photo and we worked with Robinson Iron to get the profile correct.”

Other exterior work included installing the copper finial on the top of the lantern, and replacing the stone retaining wall at the base of the perimeter of the site. The copper cap was reconstructed from the original by the county under an earlier project but had not been installed due to the poor condition of the lantern. Following replacement of the concrete structure and repair and replacement of the terra-cotta cladding, the copper cap was installed.

Clay tile for the roofing replacement work was supplied by Ludowici Roof Tile, Lexington, OH, and the work was done by Gulf Star Roofing and

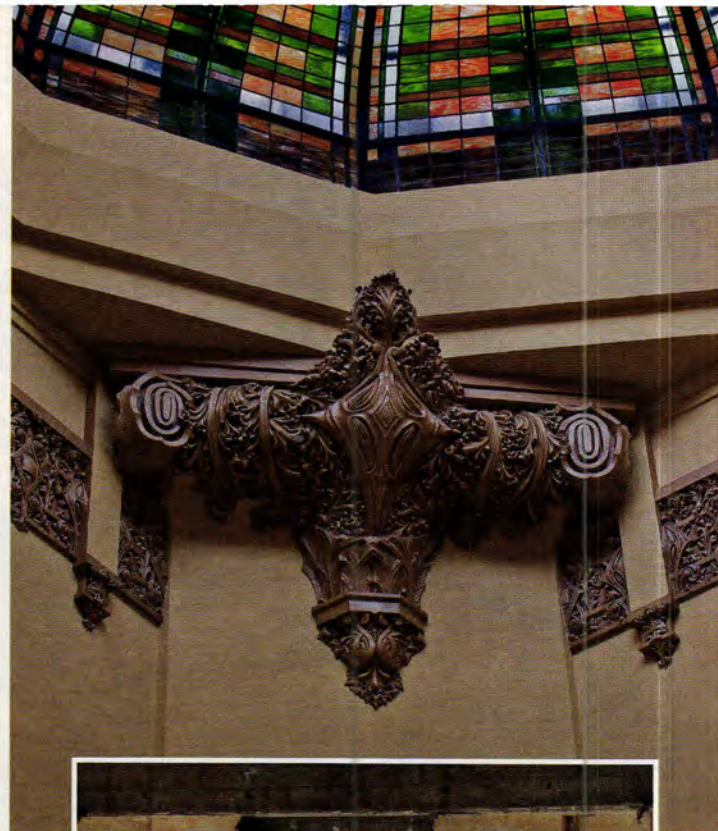




**BEFORE**

**ABOVE:** The design of the new art-glass dome in the rotunda is interpretive. No documentation of the original 80-ft. dia. dome was found so the architects visited two other Texas courthouses to guide them in the design.

**LEFT:** The original art-glass dome had been removed years ago because of hurricane damage.



**BEFORE**

**ABOVE:** The ornamental cast plaster capital at the top of the rotunda was rebuilt. It had been almost completely demolished.

Sheet Metal of Houston, TX. "During the demolition, we found remnants of the original terra-cotta tile and were able to determine the color and shape of the roofing tile," says Frocheur.

Meanwhile, the damage done to the interior by the 1952 renovation was extensive. The first thing the ARCHITEXAS team did was to remove all of the non-historic floor slabs in the six-story rotunda, opening it once again to its 100-ft. high grandeur. Then all details had to be re-created. Marble-clad and cast-iron railings were reconstructed, and damaged and missing marble veneer at the piers was replaced to match existing material. This marble came from the same quarry that had supplied the original material, Georgia Creole Marble, Tate, GA.

In addition, the massive ornamental plaster capitals that had been on top of each pier were severely damaged at the center of each piece by mechanical ducts. Molds of the capitals were made by Matt Henson of Professio, Lubbock, TX, and the missing central ornament was designed based on other plaster ornament found throughout the building.

Reconstructing the art-glass dome was a significant challenge. The architects had no historic evidence or photos to follow, with the exception of indentations in the base of the concrete piers from the original steel structure. These, at least, indicated the shape and general curvature of the dome.

They visited two other Texas courthouses that had been designed at about the same time by the

same architect, the Johnson County Courthouse and the Cook County Courthouse. They both had art-glass domes, but in two different styles – Art Nouveau and Prairie. The ARCHITEXAS team decided to go with a Prairie-style art-glass dome for Harris County. I.H.S. Studios, Fredericksburg, TX, worked with the architects to detail and construct the new art-glass dome.

"The skylight was interpretative," says Frocheur. "It was based on our experience and on other courthouses. We were able to put together something that was in keeping with the style of the courthouse. The colors in the art glass were taken from the borders of the mosaic tile flooring in the rotunda."

Another significant challenge was the restoration of the two historic third-floor courtrooms. Once again, non-historic floor slabs had been added, drastically reducing the ceiling heights. In addition, the curved balcony in the north courtroom had been removed, and art-glass lay-lights had been floored over.

The ARCHITEXAS team first removed the floors, restoring the original ceiling heights. "Both of the courtrooms had sub-dividing floors that had been added in the 1950s," says Frocheur. "Like the non-historic rotunda floors, they all had to come out." Then they began the job of re-creating the rooms, with guidance only from historic photos. There was no historic evidence left in the rooms; built-in furnishings, dividing rails and theater seats were all gone. Ghosting on the wall from the original balcony

helped the designers determine the original profile.

ARCHITEXAS also re-created the laylights between the fourth and fifth floors in these courtrooms with a three-level solution. A plank glass floor was installed above the courtrooms; below that a fire-rated system and below that a decorative laylight that is artificially lit from the space above. "Originally there was a light shaft to provide daylight into the courtrooms," says Frocheur, "but the program did not allow for the removal of valuable square footage to reconstruct the light shafts, so we installed a walkable plank glass floor system in the area above." The spaces above the restored courtrooms, with their new glass floors, are now entry lobbies to office suites.

Replacement mosaic tile flooring for the rotunda and main corridors was manufactured by American Restoration Tile, Mabelvale, AR, and the restoration work was done by Camarata Masonry Systems, Houston, TX.

Interior millwork and exterior doors were fabricated by Beabois Canada, Inc. Flat plaster restoration throughout the building was done by Golden West Enterprises, The Woodlands, TX. Ornamental cast plaster was reconstructed and repaired by Professio, Lubbock, TX.

The restoration work was approved and funded by the Texas Historical Commission under the Texas Historic Courthouse Preservation Program (THCPP). Frocheur notes that this was one of the most extensive restoration projects that she had worked on. "There were so many different





This view from the sixth floor shows the restoration of the central rotunda. It had been stripped of almost all detail during the renovation of the 1950s, including the ornamental plaster, the fifth-floor cornice, wood windows and the marble veneer. The architects restored it to its original condition.



materials in this one building," she says. "We had to find many different craftsmen. That made it really interesting, dealing with so many different trades people. They worked on everything from the grand entry steps to the ornate interior marble and the plaster restoration."

"We used the greatest number of the trades we have ever used on a single project," Irsik agrees.

Although the project did not apply for LEED accreditation, it did follow energy-efficiency guidelines, such as using high-efficiency mechanical systems and low-E insulated glass. In addition, mold, asbestos and lead were remediated and all paints, finishes, furnishings and materials were non-toxic and sustainable. Original materials, where remaining, were restored.

The First and Fourteenth Courts of Appeal now occupy the restored courtrooms, dispensing justice in the historic two-level courtrooms for the first time since 1950s. And, daylight now shines through the new art-glass dome, lighting the restored marble-clad rotunda all the way down through the six-floor rotunda.

— Martha McDonald





#### PROJECT

Carmel City Center Plaza,  
Carmel, IN

#### ARCHITECTS

Pedcor Design Group, LLC,  
Carmel, IN; Stephen P. Sturtz,  
president and senior principal  
designer; James R. Stutzman,  
AIA, vice president and senior  
principal architect; Donald S.  
Selander, Laurence Armstrong,  
James Walls, senior project  
architects

# Unprecedented Teamwork

NEARLY TWO DECADES AGO, when Carmel, IN, Mayor Jim Brainard went door-to-door for his first campaign, the popular consensus was a need for a downtown area where residents could gather with friends and family to dine out and be entertained. On May 1997, a year after Mayor Brainard was voted into office, he announced the ambitious plan to develop a new pedestrian-oriented downtown to attract the city's businesses, shoppers, residents and recreation-seekers.

Fast-forward seven years to 2004, when Stephen P. Sturtz submitted conceptual drawings for an informal competition and won, for Pedcor Companies, the award to develop the Carmel City Center complex at the southwest corner of City Center Drive and Rangeline Road. This led to the formation of Pedcor Design Group, a professional architectural practice division of Pedcor Companies formed by Sturtz as the principal designer and James R. Stutzman, AIA, as the principal architect. There are also three senior project architects,

11 additional professionals and the administrative staff. The City Center project represents Pedcor Companies' first foray into commercial development and construction.

The two primary criteria for the project were the discrete handling of vehicular parking and the aesthetic compatibility of the plaza and the mixed-use retail and residential buildings to Carmel's traditional Georgian style.

Using Old World European villages and piazzas as a springboard, narrow pedestrian ways and vehicular streets were created by positioning buildings in an L shape with another sited on the inside of the ell. Brick herringbone streets (bricks were manufactured by Fraser, MI-based Belden Brick Co.) and concrete and clay paved sidewalks are complemented by a tiered-fountain motor court marking the entrance to an underground parking garage, a roundabout with a spray fountain and a public square.

"The design context is really the beginnings of

an urban environment where businesses are on the ground floor of the buildings with other uses above," says Stutzman. "It's a mixed-use project in the sense of an old town where people lived above the shops." Adds Sturtz, "streets lined with shops was the generator of the design and that's why the vehicle was so secondary in the project."

While the complex's sloping site was ideal to disguise the 93,300-sq.ft. underground garage, digging the foundation for it was a challenge. "It was a massive undertaking just to get down to good soil and avoid the underground water," says Sturtz. "We used 50-ft.-deep piles that were 18-in. in diameter and there were hundreds of them." Senior project architect Donald S. Selander adds that the initial design called for two levels below natural grade but was later redesigned for one level instead due to high volumes of underground water.

"It was also a challenging structural exercise," says Sturtz. "I think of it as more of a bridge than a parking garage because a city street passes over the



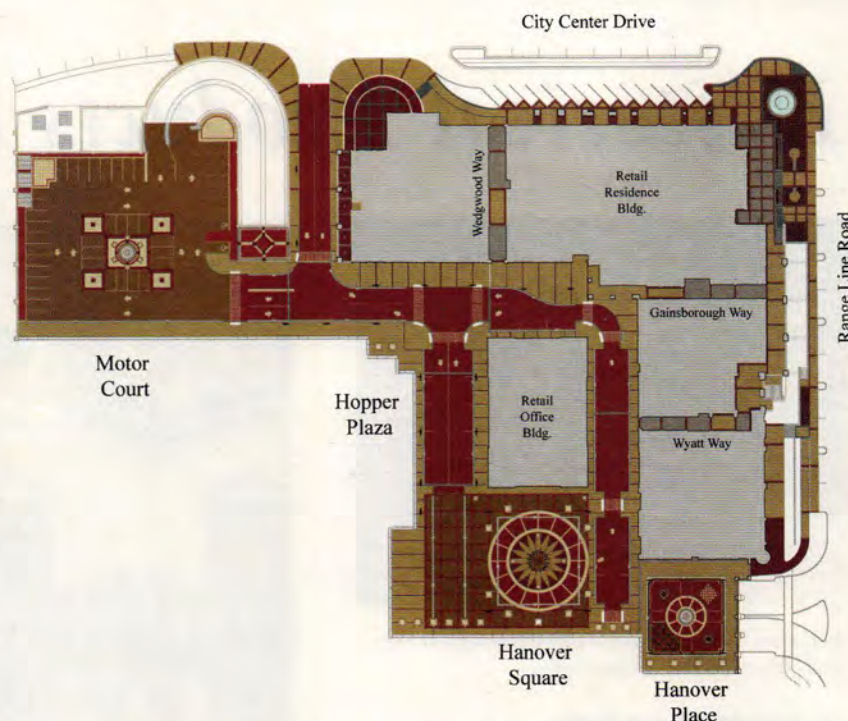


**ABOVE:** A vision of Mayor Jim Brainaird, the Carmel City Center complex in Carmel, IN, was developed by Pedcor Design Group to satisfy the city's need for a pedestrian-oriented downtown. All photos: courtesy of Pedcor Design Group

**BELOW:** The clay and concrete pavers for the sidewalks complement brick herringbone streets.

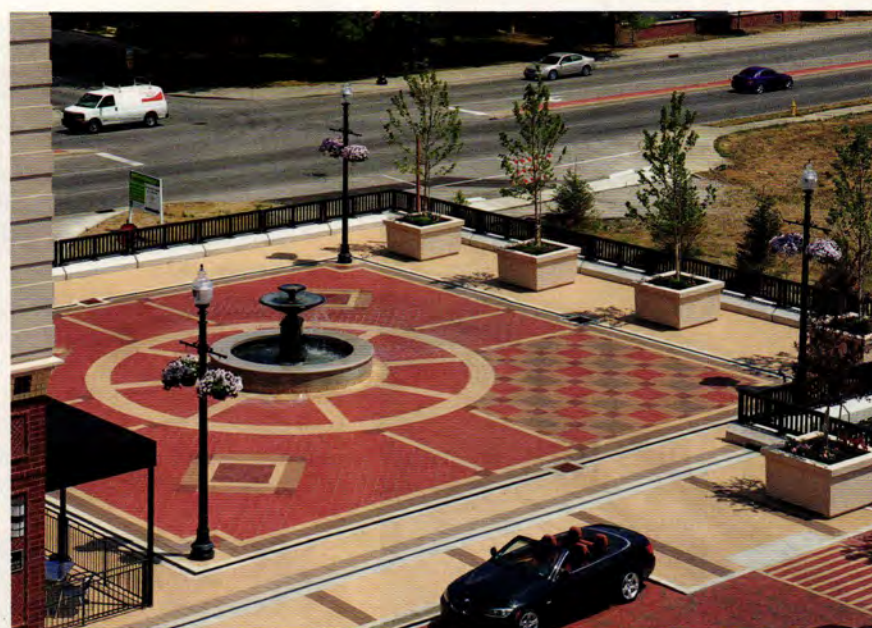
**TOP RIGHT:** Located on the corner of City Center Drive and Rangeline Road, the project's L-shaped building complex features a tiered-fountain Motor Court leading to a 93,300-sq.ft. underground garage, Hanover Square's roundabout with a spray fountain and the Hanover Place pedestrian square. Plan: courtesy of Pedcor Design Group

**BOTTOM RIGHT:** Hanover Place is a pedestrian square designed into quadrants with a tiered cast-iron fountain at the center.



## PLAZA PLAN

N  
A



topside." The plaza deck structure is designed to support a three-axle truck weighing 32.5 tons and is composed of precast concrete double tees, beams and columns on a pile foundation.

Water management was another major concern and three management strategies were put in place. The first involves directing surface water to curb inlets and overflow drains. If water does migrate below the pavers and setting bed, it will encounter a 360-ml. waterproof membrane and a drain board placed over internally sloped mud slabs and will be directed into a series of internal drains, which is above the city street drains. Lastly, the waterproofing membrane is installed with Ontario, Canada-based International Leak Detection's Electric Field Vector Mapping System, which essentially turns the membrane into an electric field. Should there be a leak in the membrane, the company can pinpoint its location to reduce the cost of repair.

Located on the south side of the complex are

two squares – the pedestrian and vehicular Hanover Square and the strictly pedestrian Hanover Place. Hanover Square is designed with a roundabout to facilitate vehicular flow, which frames a 16-ft. diameter spray fountain fabricated by San Marcos, TX-based Fountain People. The fountain surround's flower pedal design is sloped to return fountain water to a perforated trough; it is also where benches will be installed in the future.

The adjacent Hanover Place is separated into quadrants and features a tiered cast-iron water fountain fabricated by Alexander City, AL-based Robinson Iron. "The intent of the quadrants is that some will serve as outdoor dining for restaurants and others will be for public use," says Stutzman. "As we get more development, we expect to have giant chess pieces for the checkerboard, park benches and an outdoor fireplace. Right now, we have temporary landscaping and a movable railing system because there will be future construction to the south."

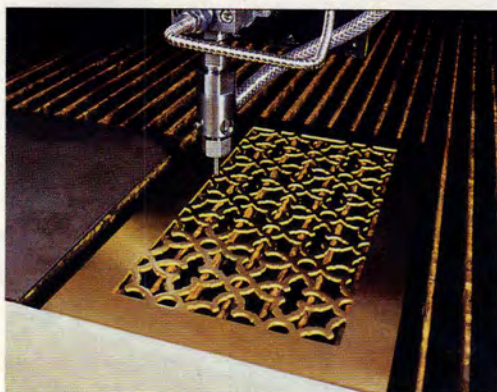
The finished plaza marks the completion of the first phase of the Carmel City Center complex. Future phases will include six buildings for retail and residential spaces, additional parking garages, a museum and a boutique hotel that will front the plaza's motor court and fountain. "One of the most astounding things about our firm is that we started from just two people," says Selander. "Putting together a team and training them to use the 3-D software to produce the drawings necessary to build this extremely complex project is outstanding. I've never seen anything like this and we've each had our own firms."

Adds Stutzman, "The fact that we're all under one roof – the architecture, construction and financial management – and our office is within walking distance of the project, our number of hours on this project from day to day is unprecedented. The collaboration we have with construction is very unusual."

– Annabel Hsin



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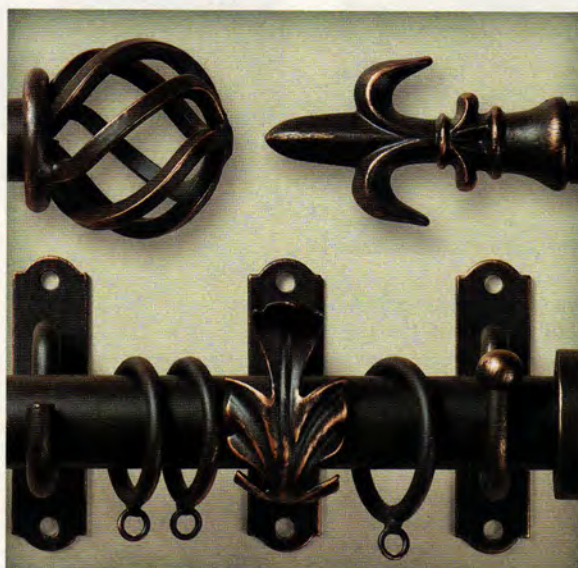
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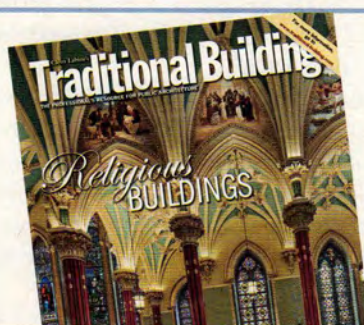
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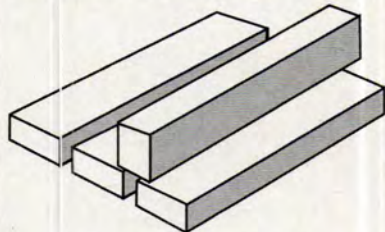
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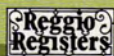
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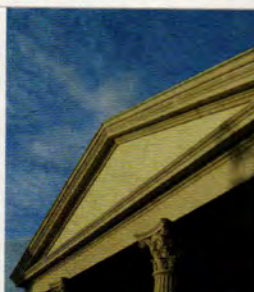
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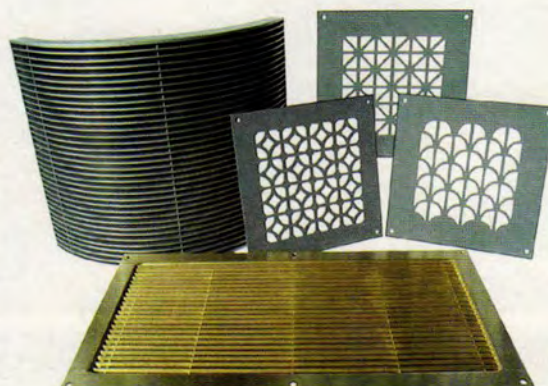
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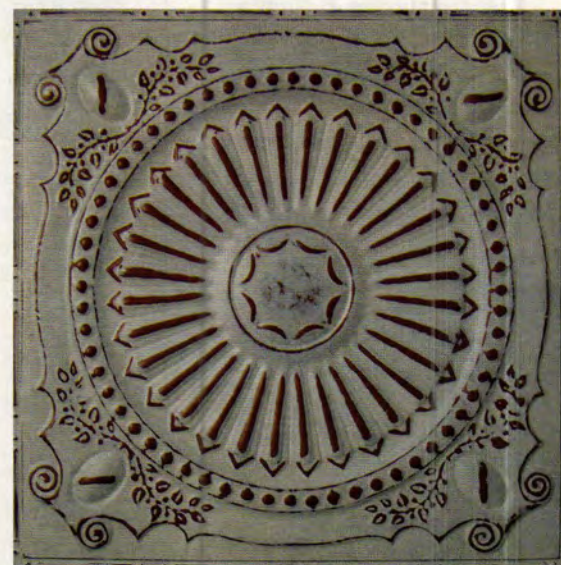
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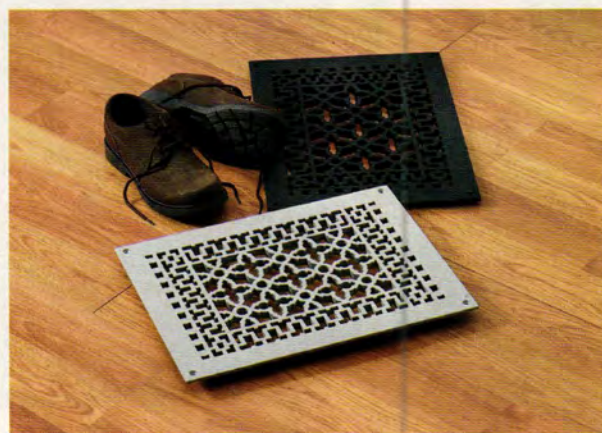
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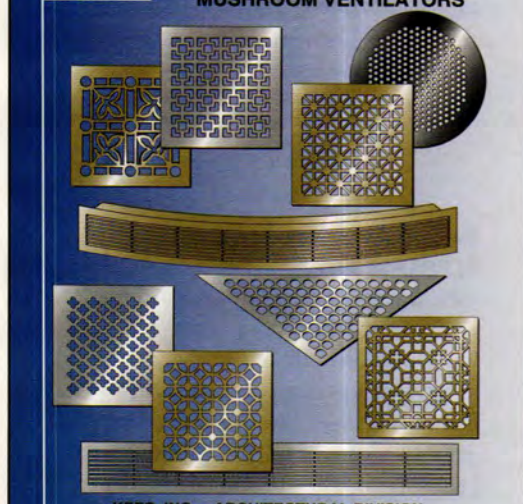
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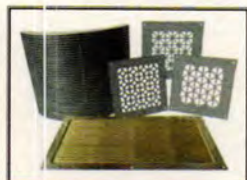
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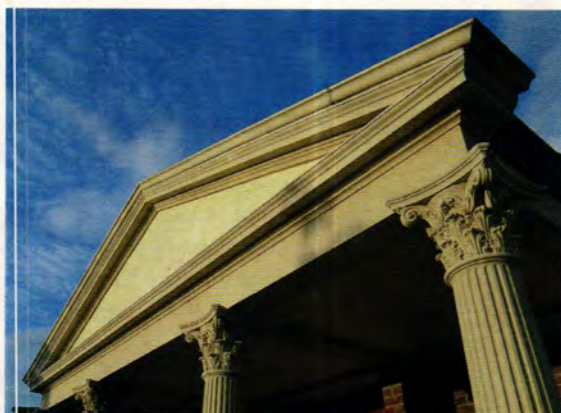
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[www.artisticdoorsandwindows.com](http://www.artisticdoorsandwindows.com)

Avenel, NJ 07001

Custom manufacturer of architectural hardwood windows & doors: profiles from contemporary to exact landmark-approved replication; doors from 1 3/4 - to 3-in. thick, 20-90 min. fire-rated 1 3/4-in. doors; meets IBC 2000 requirements.

**Click on no. 8060**

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Arts & Crafts Hardware and Lighting  
[www.HOAH.biz](http://www.HOAH.biz)

**HOUSE OF ANTIQUE HARDWARE**

CLICK ON NO. 1096



*Craftsman/Mission style doors are available from Coppa Woodworking.*

## Coppa Woodworking

310-548-4142; Fax: 310-548-6740

[www.coppawoodworking.com](http://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**



## E.R. Butler & Co.

212-925-3565; Fax: 212-925-3305

[www.erbutler.com](http://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**

*This ornate door handle and matching escutcheon are the work of E.R. Butler.*

**E. R. BUTLER & Co.**  
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On the Inside Back Cover*

[WWW.ERBUTLER.COM](http://WWW.ERBUTLER.COM)

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[www.historicalarts.com](http://www.historicalarts.com)



## Doors, Entryways & Hardware [continued]



### ◀ HeartWood Fine Windows & Doors

585-340-9085; Fax: 585-254-1760  
[www.heartwoodwindowsanddoors.com](http://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; 64-year-old company.

Click on no. 1911

*This historically styled wood door was fabricated by Heartwood Fine Windows and Doors.*

### Historical Arts & Casting

800-225-1414; Fax: 801-280-2493  
[www.historicalarts.com](http://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



*House of Antique Hardware offers a wide selection of antique-reproduction entry hardware, as well as hardware for interior doors, cabinets, furniture and windows.*

### ^ House of Antique Hardware

888-223-2545; Fax: 503-233-1312  
[www.hoah.us](http://www.hoah.us)  
 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



*The historically styled hardware for these Dutch doors was designed and fabricated by Kayne & Son.*

### ◀ Kayne & Son Custom Hardware

828-667-8868; Fax: 828-665-8303  
[www.customforgedhardware.com](http://www.customforgedhardware.com)  
 Candler, NC 28715

Manufacturer of forged- & cast-metal hardware: strap, H, HL, butterfly & butt hinges; thumb-latch locksets, gate hardware, shutter dogs & more; fireplace tools; grilles; bathroom accessories & kitchen equipment; restoration; catalog \$5.

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### ◀ Kolbe & Kolbe Millwork Co.

800-955-8177;  
 Fax: 715-845-8270  
[www.kolbe-kolbe.com](http://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.

Click on no. 1541

*This raised-panel door was custom fabricated by Kolbe & Kolbe Millwork in mahogany.*



CLICK ON NO. 2034

### Marvin Windows and Doors

888-537-7828; Fax: 651-452-3074  
[www.marvin.com](http://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.

Click on no. 1907 for doors; 1263 for windows



## ✓ Parrett Windows & Doors

800-541-9527; Fax: 877-238-2452

www.parrettwindows.com

Dorchester, WI 54425

Manufacturer of custom wood & aluminum-clad windows: any geometric shape, numerous wood species & complete finishing capabilities; historical replications; custom wood doors in numerous species, finishing options; screen doors, casings & moldings.

Click on no. 3003



The Kaukauna, WI, showroom for Carved Stone Creations features custom French entry doors fabricated by Parrett; they are made of South American mahogany using 2 1/4-in. thick panels and a custom wrought-iron grille.

## 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

## ✓ 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



This exterior door is one of many custom styles by Vintage Doors.

www.traditional-building.com

## 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, fireplaces tools; historical restoration.

Click on no. 7730

## Woodstone Co., The

800-682-8223; Fax: 603-445-0174

www.woodstone.com

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

## 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.

Click on no. 9640

# Shutters & Shutter Hardware



These "S" shutter holdbacks are available in various sizes from Acorn Forged Iron.

## ^ Acorn Forged Iron

508-339-4500; Fax: 508-339-0104

www.acornmfg.com

Mansfield, MA 02048

Supplier of forged-iron & forged stainless-steel decorative hardware: cabinet, shutter, gate & interior & exterior door hardware; cast-iron registers & grilles; hand-forged bath accessories; hand-forged decorative-head nails.

## E.R. Butler & Co.

212-925-3565; Fax: 212-925-3305

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

## House of Antique Hardware

888-223-2545; Fax: 503-233-1312

www.hoah.us

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

www.customforgedhardware.com

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## Shutters & Shutter Hardware [continued]



The D1 shutter dog from Kayne & Son Custom Hardware is hand forged in steel and has a butterfly backplate.

### ^ Kayne & Son Custom Hardware

828-667-8868; Fax: 828-665-8303  
[www.customforgedhardware.com](http://www.customforgedhardware.com)  
Candler, NC 28715

Manufacturer of forged- & cast-metal hardware: strap, H, HL, butterfly & butt hinges; thumb-latch locksets, gate hardware, shutter dogs & more; fireplace tools; grilles; bathroom accessories & kitchen equipment; restoration; catalog \$5.

Call for more information.

### Woodstone Co., The

800-682-8223; Fax: 603-445-0174  
[www.woodstone.com](http://www.woodstone.com)  
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

### Timberlane, Inc.

215-616-0600;  
Fax: 215-616-0749  
[www.timberlane.com](http://www.timberlane.com)  
Montgomeryville, PA 18936

Custom fabricator of exterior shutters: more than 25 historically accurate styles & designs; available in traditional woods or maintenance-free Endurian; large selection of period shutter hardware.

Click on no. 1056; 1925 for Endurian

## Storms & Screens

### Allied Window, Inc. >

800-445-5411; Fax: 513-559-1883  
[www.alliedwindow.com](http://www.alliedwindow.com)  
Cincinnati, OH 45241

Manufacturer & installer of "invisible" storm windows: custom colors, shapes & glazing materials; aluminum; sound-reduction protection from UV & vandalism; interior & exterior; commercial & residential applications.

Click on no. 690



Allied Window supplied the storm windows for the Governor's Mansion in Kentucky.

### Architectural Components, Inc.

413-367-9441; Fax: 413-367-9461  
[www.architecturalcomponentsinc.com](http://www.architecturalcomponentsinc.com)  
Montague, MA 01351

Manufacturer of reproduction & custom wood windows & doors: true-divided lites with insulated glass; wood-framed storm sash & screens; renovation & restoration projects & new construction; paneled walls & storefronts; catalog \$5.

Call for more information.

### Artistic Doors & Windows

800-278-3667; Fax: 732-726-9494  
[www.artisticdoorsandwindows.com](http://www.artisticdoorsandwindows.com)  
Avenel, NJ 07001

Custom manufacturer of architectural hardwood windows & doors: profiles from contemporary to exact landmark-approved replication; doors from 1 3/8- to 3-in. thick, 20-90 min. fire-rated 1 3/4-in. doors; meets IBC 2000 requirements.

Click on no. 8060

### Cityproof Windows >

718-786-1600; Fax: 718-786-2713  
[www.cityproof.com](http://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.

Click on no. 2390

This custom interior insulating window system was fabricated by Cityproof.



### Coppa Woodworking

310-548-4142; Fax: 310-548-6740  
[www.coppawoodworking.com](http://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

### HeartWood Fine Windows & Doors

585-340-9085; Fax: 585-254-1760  
[www.heartwoodwindowsanddoors.com](http://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; 64-year-old company.

Click on no. 1911



## 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; outperforms 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



Innerglass Window Systems supplied interior glass storm windows for this historic building.

## 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.

Click on no. 9640

## Woodstone Co., The

800-682-8223;

Fax: 603-445-0174

www.woodstone.com

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

## Parrett Windows & Doors

800-541-9527; Fax: 877-238-2452

www.parrettwindows.com

Dorchester, WI 54425

Manufacturer of custom wood & aluminum-clad windows: any geometric shape, numerous wood species & complete finishing capabilities; historical replications; custom wood doors in numerous species, finishing options; screen doors, casings & moldings.

Click on no. 3003

## Vintage Doors

800-787-2001; Fax: 315-324-6531

www.vintagedoors.com

Hammond, NY 13646

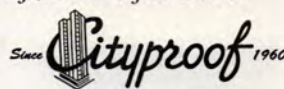
Manufacturer of custom exterior & interior wood doors: door hardware, screen doors & storm doors; traditional, Craftsman & Victorian Styles; solid wood & glass panels available.

Click on no. 2034

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CLICK ON NO. 690



# Wood Windows



*Allegheny Restoration restored and renovated the millwork, windows and entrance of the Dering Building in the historic city of Morgantown, WV.*

## ^ Allegheny Restoration & Builders, Inc.

304-594-2570; Fax: 304-594-2810  
[www.alleghenyrestoration.com](http://www.alleghenyrestoration.com)  
Morgantown, WV 26507

Manufacturer of reproduction & custom wood doors & windows: window replication, restoration & repair; hardware replacement; storefronts & ecclesiastical projects.

**Click on no. 1004**

## ^ Architectural Components

413-367-9441; Fax: 413-367-9461  
[www.architecturalcomponentsinc.com](http://www.architecturalcomponentsinc.com)  
Montague, MA 01351

Manufacturer of reproduction & custom wood windows & doors: true-divided lites with insulated glass; wood-framed storm sash & screens; renovation & restoration projects & new construction; paneled walls & storefronts; catalog \$5.

**Call for more information.**



*This reproduction 12/12 window with fan was manufactured by Architectural Components.*



*This double-hung window unit with a fixed-arch fan was constructed by Artistic Doors & Windows with mortise-and-tenon joinery.*

## ^ Artistic Doors & Windows

800-278-3667; Fax: 732-726-9494  
[www.artisticdoorsandwindows.com](http://www.artisticdoorsandwindows.com)  
Avenel, NJ 07001

Custom manufacturer of architectural hardwood windows & doors: profiles from contemporary to exact landmark-approved replication; doors from 1 3/8- to 3-in. thick, 20-90 min. fire-rated 1 3/4-in. doors; meets IBC 2000 requirements.

**Click on no. 8060**

## Coppa Woodworking

310-548-4142; Fax: 310-548-6740  
[www.coppawoodworking.com](http://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**

## HeartWood Fine Windows & Doors

585-340-9085; Fax: 585-254-1760  
[www.heartwoodwindowsanddoors.com](http://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; 64-year-old company.

**Click on no. 1911**

## ^ Kolbe & Kolbe Millwork Co.

800-955-8177; Fax: 715-845-8270  
[www.kolbe-kolbe.com](http://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.

**Click on no. 1541**



*Kolbe & Kolbe supplied the Magnum Series double-hung (single and twin mulled) windows for Sutton Hall at Indiana University at Pennsylvania, Indiana, PA.*

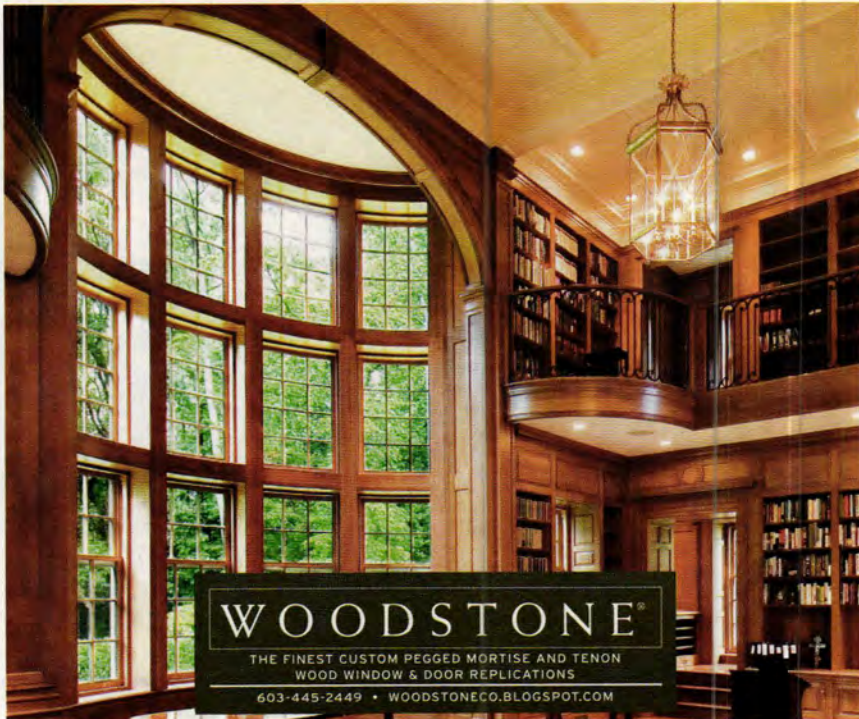
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800-278-3667

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## Wood Windows

[continued]

### Marvin Windows and Doors >

888-537-7828; Fax: 651-452-3074

[www.marvin.com](http://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.

Click on no. 1263



Marvin Windows supplied clad Ultimate double-hung windows for the McLane and Fahey residence halls at Dartmouth College, Hanover, NH, a LEED Gold project.



Parrett Windows & Doors replicated the historical sash windows for the Dallas County Courthouse in Adel, IA.

## ALLEGHENY RESTORATION & BUILDERS INC

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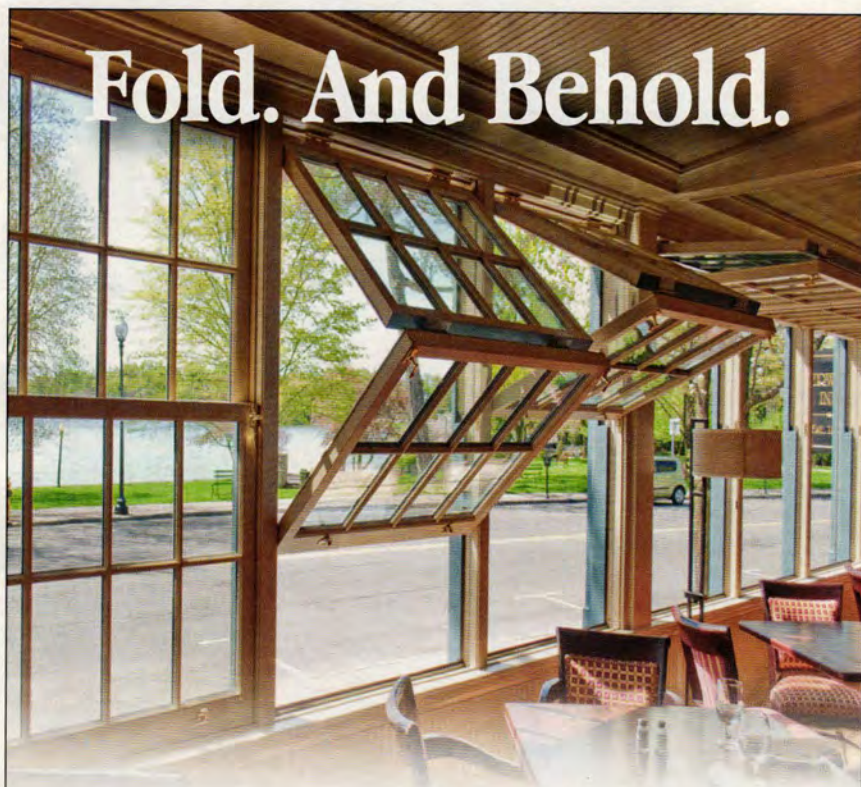


[WWW.ALLEGHENYRESTORATION.COM](http://WWW.ALLEGHENYRESTORATION.COM)

CLICK ON NO. 1004

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[www.architecturalcomponentsinc.com](http://www.architecturalcomponentsinc.com)

### Parrett Windows & Doors

800-541-9527; Fax: 877-238-2452

[www.parrettwindows.com](http://www.parrettwindows.com)

Dorchester, WI 54425

Manufacturer of custom wood & aluminum-clad windows: any geometric shape, numerous wood species & complete finishing capabilities; historical replications; custom wood doors in numerous species, finishing options; screen doors, casings & moldings.

Click on no. 3003

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# Parrett

## Windows & Doors

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**Parrett Manufacturing, Inc.**

Phone: 800-541-9527 Fax: 1-877-238-2452

[www.parrettwindows.com](http://www.parrettwindows.com) [info@parrettwindows.com](mailto:info@parrettwindows.com)



## Wood Windows

[continued]



*Wood Window Workshop built this bent window sash in mahogany with true-divided lites and flat insulated glass for a project in Connecticut.*

### ^ Wood Window Workshop

800-724-3081; Fax: 315-733-0933  
[www.woodwindowworkshop.com](http://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.

Click on no. 9640



*Woodstone used elements of the original windows and old photos to replicate the original 1930s windows for the former Hotel Windham in Bellows Falls, VT.*

### ^ Woodstone Co., The

800-682-8223; Fax: 603-445-0174  
[www.woodstone.com](http://www.woodstone.com)  
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

## Metal Windows

### Allied Window, Inc.

800-445-5411; Fax: 513-559-1883  
[www.alliedwindow.com](http://www.alliedwindow.com)  
Cincinnati, OH 45241

Manufacturer & installer of "invisible" storm windows: custom colors, shapes & glazing materials; aluminum; sound-reduction protection from UV & vandalism; interior & exterior; commercial & residential applications.

Click on no. 690

### ^ Crittall Windows, Ltd.

011-44-1376530800;  
Fax: 011-44-1376530801  
[www.crittall-windows.co.uk/us/](http://www.crittall-windows.co.uk/us/)  
Witham, Essex U.K. CM8 3UN

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.



*These steel windows were manufactured by Crittall Windows.*

### Heather & Little Limited >

800-450-0659; Fax: 905-475-9764  
[www.heatherandlittle.com](http://www.heatherandlittle.com)  
Markham, ON, Canada L3R 0H1

Fabricator & supplier of historical sheet-metal roofing & specialty architectural sheet metal: finials, cornices, leader heads, cresting, metal shingles, pressed-metal siding, cupolas, steeples, domes, reproductions; capitals & balustrades; Kamein & lot-line metal windows & doors.

Click on no. 2470

### Historical Arts & Casting, Inc.

800-225-1414; Fax: 801-280-2493  
[www.historicalarts.com](http://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

### Kolbe & Kolbe Millwork Co.

800-955-8177; Fax: 715-845-8270  
[www.kolbe-kolbe.com](http://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.

Click on no. 1541

### Parrett Windows & Doors

800-541-9527; Fax: 877-238-2452  
[www.parrettwindows.com](http://www.parrettwindows.com)  
Dorchester, WI 54425

Manufacturer of custom wood & aluminum-clad windows: any geometric shape, numerous wood species & complete finishing capabilities; historical replications; custom wood doors in numerous species, finishing options; screen doors, casings & moldings.

Click on no. 3003



*This hollow metal window was built by Heather & Little.*

### Schiff Architectural Detail, LLC

617-887-0202; Fax: 617-887-0127  
[www.schiffarchitecturaldetail.com](http://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.

Click on no. 7730



*This vintage 1930s steel window was restored by Seekircher.*

### ^ Seekircher Steel Window Corp.

914-734-8004; Fax: 914-734-8009  
[www.seekirchersteelwindow.com](http://www.seekirchersteelwindow.com)  
Peekskill, NY 10566

Repair & restoration of steel casement windows & doors: work done in place and off site; large selection of vintage steel windows & doors for sale; restored windows & doors at Fallingwater & countless other landmarks.



*Steel windows from Steel Windows & Doors offer energy efficiency and traditional styling.*

### ^ Steel Windows & Doors USA

203-579-5157; Fax: 203-579-5158  
[www.steelwindowsanddoors.com](http://www.steelwindowsanddoors.com)  
Stratford, CT 06615

Supplier of steel, bronze, stainless steel & corten windows & doors: hot rolled, cold formed, thermally broken, fire rated; custom colors; variety of finishes available.

[www.traditional-building.com](http://www.traditional-building.com)



# Window Hardware

## **Allegheny Restoration & Builders, Inc.**

304-594-2570; Fax: 304-594-2810

[www.alleghenyrestoration.com](http://www.alleghenyrestoration.com)

Morgantown, WV 26507

Manufacturer of reproduction & custom wood doors & windows; window replication, restoration & repair; hardware replacement; storefronts & ecclesiastical projects.

**Click on no. 1004**

## **Architectural Resource Center >**

800-370-8808; Fax: 603-942-7465

[www.aresource.com](http://www.aresource.com)

Northwood, NH 03261

Supplier of historically styled hardware: sash pulleys, lifts & locks, sash chain & rope; weather stripping; patented sash weights.

**Click on no. 1670**

*Sash pulleys from Architectural Resource Center are available in cast brass or bronze in a range of sizes and finishes.*

## **E.R. Butler & Co.**

212-925-3565; Fax: 212-925-3305

[www.erbutler.com](http://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**

## **HeartWood Fine Windows & Doors**

585-340-9085; Fax: 585-254-1760

[www.heartwoodwindowsanddoors.com](http://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; 64-year-old company.

**Click on no. 1911**

## **Historical Arts & Casting**

800-225-1414; Fax: 801-280-2493

[www.historicalarts.com](http://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**



## **House of Antique Hardware**

888-223-2545; Fax: 503-233-1312

[www.hoah.us](http://www.hoah.us)

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**

## **Sash locks**

[www.phelpscompany.com](http://www.phelpscompany.com)

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## Window Hardware [continued]

### Kayne & Son Custom Hardware

828-667-8868; Fax: 828-665-8303  
[www.customforgedhardware.com](http://www.customforgedhardware.com)  
Candler, NC 28715

Manufacturer of forged- & cast-metal hardware: strap, H, HL, butterfly & butt hinges; thumb-latch locksets, gate hardware, shutter dogs & more; fireplace tools; grilles; bathroom accessories & kitchen equipment; restoration; catalog \$5.

Call for more information.

### Marvin Windows and Doors

888-537-7828; Fax: 651-452-3074  
[www.marvin.com](http://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.

Click on no. 1263

### Wood Window Workshop

800-724-3081; Fax: 315-733-0933  
[www.woodwindowworkshop.com](http://www.woodwindowworkshop.com)  
Utica, NY 13501

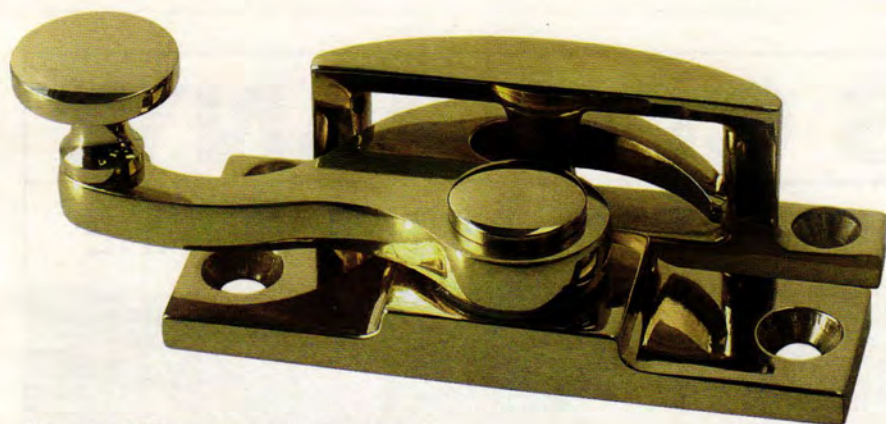
Custom fabricator of wood windows, doors, storms & screens: any size, shape & species; full mortise-&-tenon construction, true-divided lite, hard-to-find hardware & restoration & insulated glass; factory finishes; millwork; reproductions; for storefronts.

Click on no. 9640

## restoration & new construction



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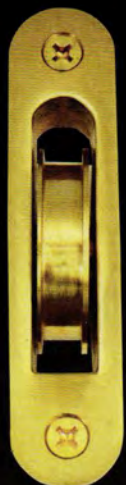


The model LK381 patented sash lock from Phelps Company is made from hot-forged solid brass, which is precision machined and hand polished.

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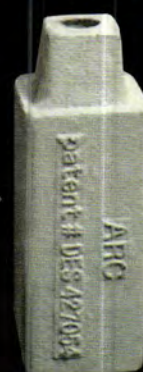
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## Abatron, Inc.

800-445-1754; Fax: 262-653-2000

www.abatron.com

Kenosha, WI 53144

Manufacturer of products for restoration & repair: wood consolidation & repair, window & door restoration, concrete patching & resurfacing, metal restoration, moldmaking & casting, structural adhesives, protective coatings, strippers & related products.

Click on no. 1300

## Gotham Metalworks

718-736-1774; 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.

Click on no. 2042

## ✓ 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



This custom cast-stone pedimented entrance to a shopping mall was fabricated by Haddonstone.

## 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.

www.traditional-building.com

## 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.

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# Balustrades

## Gotham Metalworks

718-786-1774; Fax: 718-786-7214

[www.gothammetals.com](http://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.

Click on no. 2042

## ▼ Haddonstone (USA), Ltd.

719-948-4554; Fax: 719-948-4285

[www.haddonstone.com](http://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



*Haddonstone's line of architectural stonework includes a wide range of balustrade systems.*

## ▼ Heather & Little Limited

800-450-0659; Fax: 905-475-9764

[www.heatherandlittle.com](http://www.heatherandlittle.com)

Markham, ON, Canada L3R 0H1

Fabricator & supplier of historical sheet-metal roofing & specialty architectural sheet metal: finials, cornices, leader heads, cresting, metal shingles, pressed-metal siding, cupolas, steeples, domes, reproductions; capitals & balustrades; Kamein & lot-line metal windows & doors.

Click on no. 2470



*These copper balustrades were fabricated by Heather & Little.*

## Historical Arts & Casting

800-225-1414; Fax: 801-280-2493

[www.historicalarts.com](http://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

## NIKO Contracting Co.

412-687-1517;

Fax: 412-687-7969

[www.nikocontracting.com](http://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. 8300

## Robinson Iron Corp.

800-824-2157;

Fax: 256-329-8960

[www.robinsoniron.com](http://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.

## Stonesculpt

650-575-9683;

Fax: 650-322-5002

[www.customstonecarving.com](http://www.customstonecarving.com)

East Palo Alto, CA 94303

Custom fabricator of hand carvings in natural stone: mantels, sculpture, fountains, monuments, flooring, balustrades, columns, capitals, signage & landscape & other architectural ornament; traditional & contemporary styles.

Click on no. 371

# Landscape & Streetscape Specialties

## Belden Brick Co., The

330-456-0031;

Fax: 330-456-2694

[www.beldenbrick.com](http://www.beldenbrick.com)

Canton, OH 44702

Manufacturer of brick: variety of colors, textures, sizes & stock & custom shapes; color matching; jack arches, water tables, bullnoses, coping caps, pavers, face brick, brick sculpture/murals & more.

Click on no. 1891

## ▼ Fine Architectural Metalsmiths

845-651-7550; Fax: 845-651-7857

[www.iceforge.com](http://www.iceforge.com)

Chester, NY 10918

Designer & custom fabricator of ornamental metalwork: period-appropriate motifs; custom lighting; curved, straight & monumental stairs; driveway & garden gates; grilles; hand-forged & wrought iron, bronze & aluminum.

Click on no. 2640



*This garden gate was fabricated by Fine Architectural Metalsmiths.*

## ▼ Bill's Custom Metal Fabrications

516-333-3562;

Fax: Same as phone

[www.ironcrafters.com](http://www.ironcrafters.com)

Westbury, NY 11590

Manufacturer of ornamental metalwork: railings, furniture, fireplace doors, mantels, hardware & candelabras; handcrafted & hand forged.



*Bill's Custom Metal fabricated this historically styled gate.*

## › Compass Ironworks

717-442-4544;

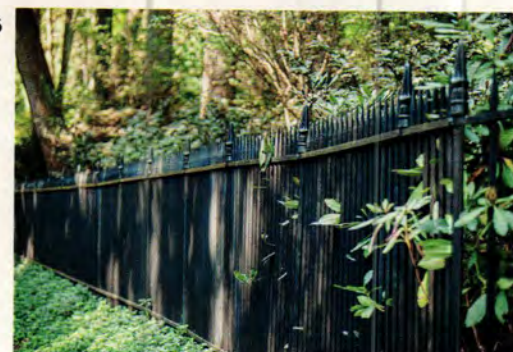
Fax: 717-442-1948

[www.ironworkclassics.com](http://www.ironworkclassics.com)

Gap, PA 17527

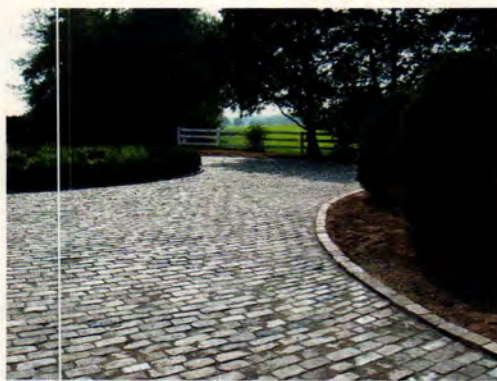
Fabricator of wrought-iron metalwork: gates, fences, railings, décor; family owned; hand crafted; historical styles; recycled content.

Click on no. 2048



*Wrought-iron traditionally styled fences are available from Compass Ironworks.*





*Antique European blend cobblestones from Gavin were used for this driveway in Charlottesville, VA.*

#### ^ 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

#### 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.

Click on no. 2042

#### ^ 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



*This cast-stone fountain from Haddonstone features a pool surround, triple-dolphin centerpiece and conch-shell planters, the latter of which can be plumbed to spray water.*

#### 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

www.traditional-building.com

#### ^ Historical Arts & Casting

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



*Historical Arts & Casting created this intricate two-tiered fountain with a fish motif on the base and birds on the first tier.*

#### Kayne & Son Custom Hardware

828-667-8868;

Fax: 828-665-8303

www.customforgedhardware.com

Candler, NC 28715

Manufacturer of forged- & cast-metal hardware: strap, H, HL, butterfly & butt hinges; thumb-latch locksets, gate hardware, shutter dogs & more; fireplace tools; grilles; bathroom accessories & kitchen equipment; restoration; catalog \$5.

Call for more information.

#### Monarch Stone International

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Fax: 949-498-0941

www.historiceuropeancobblestone.com

San Clemente, CA 92673

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#### 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.

#### O.K. Foundry Co., Inc.

804-233-9674;

Fax: 804-233-6240

www.okfoundrycompany.com

Richmond, VA 23224

Supplier of cast-iron elements: sculpture, columns & capitals, fencing, bollards, stanchions, mantels, fireplaces, chimneys & accessories.

Click on no. 1894

#### UgMO Technologies

484-690-0570; No fax

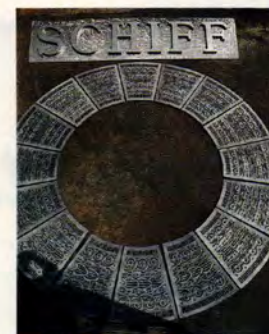
www.ugmo.com

King of Prussia, PA 19406

Supplier of UgMO

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system: underground sensors monitor soil & maintain soil moisture at root level.



*These ornamental grates were cast by Schiff Architectural Detail for a large public fountain project.*

#### ^ Schiff Architectural Detail

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.

Click on no. 7730

#### Stonesculpt

650-575-9683; Fax: 650-322-5002

www.customstonecarving.com

East Palo Alto, CA 94303

Custom fabricator of hand carvings in natural stone: mantels, sculpture, fountains, monuments, flooring, balustrades, columns, capitals, signage & landscape & other architectural ornament; traditional & contemporary styles.

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304-594-2570; Fax: 304-594-2810  
[www.alleghenyrestoration.com](http://www.alleghenyrestoration.com)  
Morgantown, WV 26507

Manufacturer of reproduction & custom wood doors & windows: window replication, restoration & repair; hardware replacement; storefronts & ecclesiastical projects.

**Click on no. 1004**

## Architectural Components

413-367-9441; Fax: 413-367-9461  
[www.architecturalcomponentsinc.com](http://www.architecturalcomponentsinc.com)  
Montague, MA 01351

Manufacturer of reproduction & custom wood windows & doors: true-divided lites with insulated glass; wood-framed storm sash & screens; renovation & restoration projects & new construction; paneled walls & storefronts; catalog \$5.

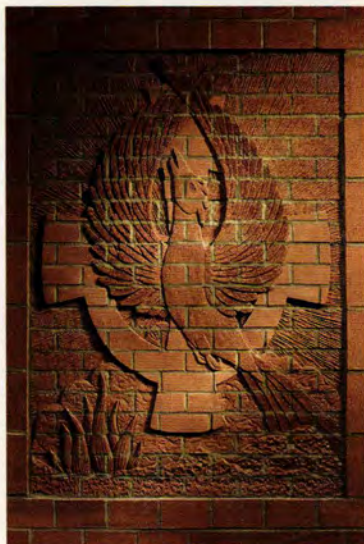
**Call for more information.**

## ✓ Belden Brick Co., The

330-456-0031; Fax: 330-456-2694  
[www.beldenbrick.com](http://www.beldenbrick.com)  
Canton, OH 44702

Manufacturer of brick: variety of colors, textures, sizes & stock & custom shapes; color matching; jack arches, water tables, bullnoses, coping caps, pavers, face brick, brick sculpture/murals & more.

**Click on no. 1891**



*This image was created on a building façade using brick from The Belden Brick Co.*

## ✓ Historical Arts & Casting, Inc.

800-225-1414; Fax: 801-280-2493  
[www.historicalarts.com](http://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**



*This monumental gate and storefront was fabricated by Historical Arts & Casting for a Gianni Versace store in New York City.*

## Schiff Architectural Detail, LLC

617-887-0202;  
Fax: 617-887-0127  
[www.schiffarchitecturaldetail.com](http://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.

**Click on no. 7730**

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330-456-0031 :: CANTON, OHIO

[www.beldenbrick.com](http://www.beldenbrick.com)



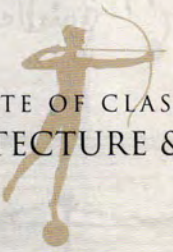
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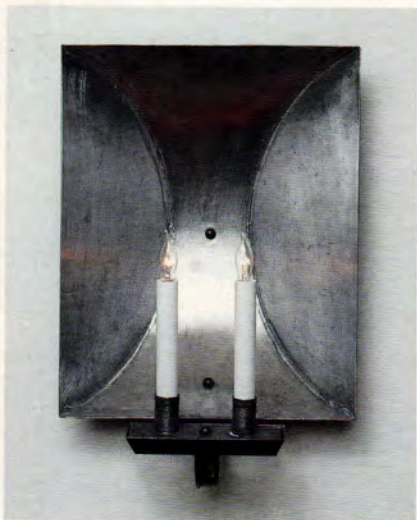
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# Exterior Lighting



*This wall sconce is one of many traditionally styled light fixtures offered by Authentic Designs.*

## ^ Authentic Designs

800-844-9416; Fax: 802-394-2422  
[www.authenticdesigns.com](http://www.authenticdesigns.com)  
 West Rupert, VT 05776  
 Manufacturer of historical lighting fixtures & specialty metal products: chandeliers, lanterns, sconces & table lamps crafted in brass, copper, terne metal & Vermont maple; Early American & Colonial; CUL/UL listed for wet & damp locations; library binder \$30.

**Click on no. 60**



*Designed by Mark Finlay Architects and fabricated by Deep Landing Workshop, the model L-9800 stands 29 in. tall and projects 19 in. from the wall.*

## ^ Deep Landing Workshop

877-778-4042; Fax: 410-778-4070  
[www.deeplandingworkshop.com](http://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.

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*The Artisan Drumcliff Pendant Bowl from Crenshaw Lighting features a solid brass bead and reel banding, heavy gauge quatrefoil appliques, individually custom-slumped glass bowl lens panels, and custom-machined stem break beads arranged in the Fibonacci sequence.*

## Crenshaw Lighting ^

540-745-3900; Fax: 540-745-3911  
[www.crenshawlighting.com](http://www.crenshawlighting.com)  
 Floyd, VA 24091  
 Manufacturer of decorative lighting fixtures: period & custom designs; historical restoration & reproduction; lighting for worship.

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## Fine Architectural Metalsmiths

845-651-7550; Fax: 845-651-7857  
[www.iceforge.com](http://www.iceforge.com)  
 Chester, NY 10918  
 Designer & custom fabricator of ornamental metalwork: period-appropriate motifs; custom lighting; curved, straight & monumental stairs; driveway & garden gates; grilles; hand-forged & wrought iron, bronze & aluminum.

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## ^ Herwig Lighting

800-643-9523; Fax: 479-968-6422  
[www.herwig.com](http://www.herwig.com)  
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 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.

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*Herwig Lighting supplies traditionally styled lighting fixtures, such as these cast-aluminum Art Deco post lamps.*

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*Historical Arts & Casting, Inc. custom fabricated this cast-metal gas-burning lantern.*



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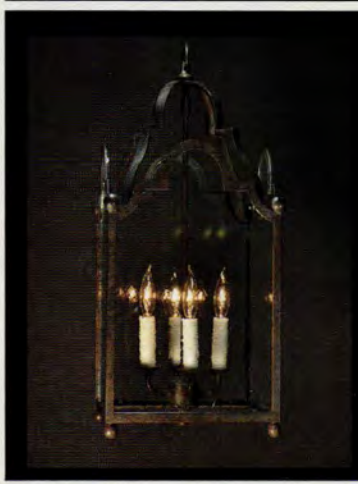


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# Metal Roofing



Gotham Metalworks fabricated this precision plasma-cut replication domed roof for a NYC landmarked building.

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718-786-1774; Fax: 718-786-7214

[www.gothammetals.com](http://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.

Click on no. 2042



This project completed by Heather & Little won a North American Copper in Architecture Award for restoration projects from the Copper Development Association.

## ^ Heather & Little Limited

800-450-0659; Fax: 905-475-9764

[www.heatherandlittle.com](http://www.heatherandlittle.com)

Markham, ON, Canada L3R 0H1

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## Metal Roofing [continued]



NIKO Contracting installed the batten-seam and flat-lock copper roof of the Kingswood School in Bloomfield Hills, MI.

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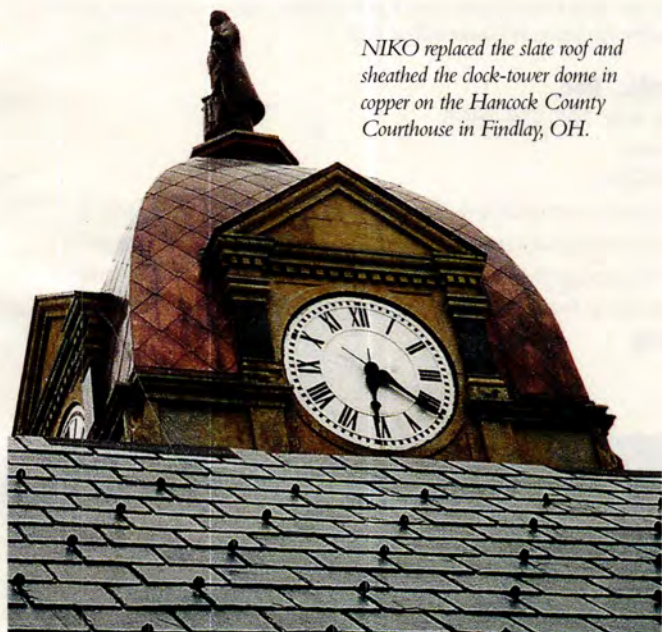
## ^ GAF

973-628-3000; Fax: 973-628-3865

www.gaf.com

Wayne, NJ 07470

Manufacturer of roofing: Timberline fiberglass asphalt shingles with look of wood; TruSlate real slate roofing tile; Designer Shingle collection with variety of styles replicating wood shakes, slate & tile.



NIKO replaced the slate roof and sheathed the clock-tower dome in copper on the Hancock County Courthouse in Findlay, OH.

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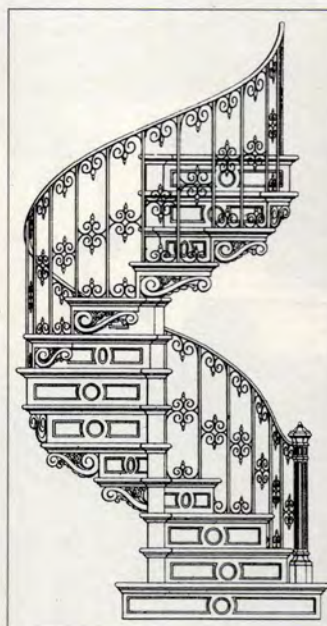
## Renaissance Roofing, Inc.

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www.claytileroof.com

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## Tile Roofing [continued]



Tile Roofs supplied new custom hand finished clay shingle tiles matching the existing tiles for the restoration of the roof on the historic Winnetka Village Hall.

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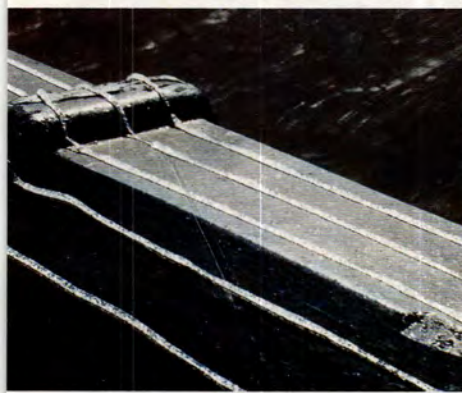
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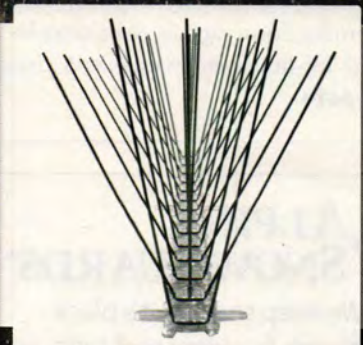
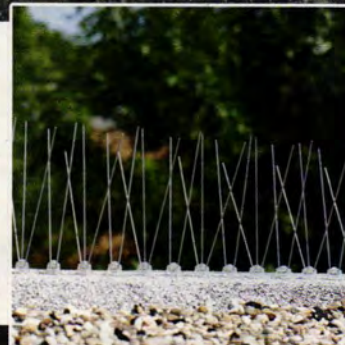
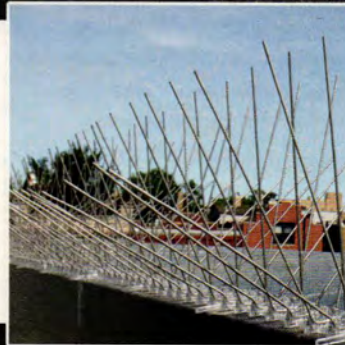
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NIKO Contracting crafted this 37-in.-tall copper cupola, available with or without a weathervane.

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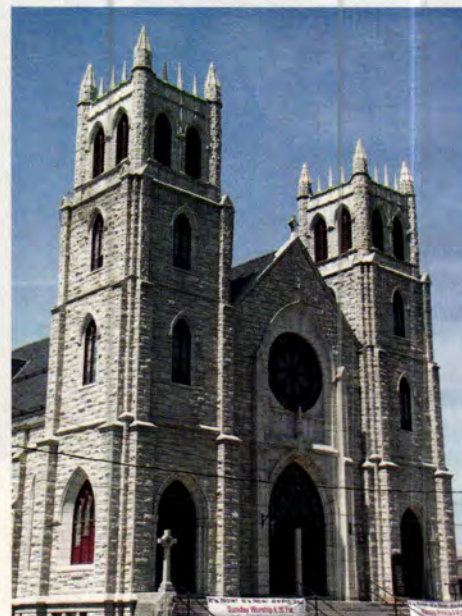
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Prosoco's EK2010 was used to repair this concrete patio.

### ^ 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.

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www.trowandholden.com

Barre, VT 05641

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985-649-4000; Fax: 985-847-1237

www.weathercap.net

Slidell, LA 70459

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## Paradise Planned . . . Lost . . . and Regained

### Paradise Planned: The Garden Suburb and the Modern City

By Robert A. M. Stern, David Fishman and Jacob Tilove

The Monacelli Press, New York; 2013

1,072 pp; hardcover; over 3,000 color and b&w images; \$95

ISBN: 978-1-58093-326-1

**D**o you believe suburban sprawl is deadly to both the environment and social cohesion? Well, possible cures are contained in a pioneering new work by Robert A.M. Stern and co-authors David Fishman and Jacob Tilove. Their massive volume (1,072 densely packed pages) constitutes the first comprehensive review of nearly two centuries of the garden suburb movement in Europe and the U.S. – a time in which innovative planners found ways to reconcile cultural benefits of urban life with the solitary pleasures of nature. Even though the successes of those early garden suburbs were forgotten during the second half of the 20th century, the authors contend that those models hold lessons for creating more people-friendly and earth-friendly developments today.

Lest potential readers be daunted at the prospect of plowing through 1,072 pages of text, we should point out that the bulk of the volume – illustrations and descriptions of hundreds of garden suburb developments – is mainly reference material, to be dipped into as needs dictate. The balance of the book is primarily historical background on various strands of the garden suburb movement, such as the garden city, the resort garden suburb, the industrial garden village, the streetcar suburb, etc.

Taking pains to distinguish the garden suburb typology from today's suburban subdivision, the authors define the garden suburb as a carefully planned community existing in relationship to a nearby city. The garden suburb is built around strong planning aesthetics and social principles, with clear borders and a defined center. Any analysis of a garden suburb plan has to take into account sociology, infrastructure, architecture and landscaping.

For each of the hundreds of garden suburb developments delineated, three types of information are given: street maps and plans, photos of architecture and landscaping (both historic and contemporary), and descriptive text outlining history and prominent features of the village. (One might wish for larger images – but then the book would have been 2,000 pages!) Space devoted to each suburb can range from a paragraph to several pages, depending on the importance of the development to the authors' narrative.

For example, there is a particularly detailed section devoted to Forest Hills Gardens in New York City's borough of Queens because the authors consider it to be the pre-eminent American expression of the garden suburb ideal. Forest Hills is a semi-self-sufficient suburban village embedded in the largely unplanned matrix of surrounding Queens. A station of the Long Island Railroad, which connects Forest Hills to the center of Manhattan, forms the nucleus of the village. Started in 1909, its sophisticated plan (by Frederick Law Olmsted Jr.), diversity of architecturally refined buildings, railroad station, hotel, apartments, shops, grouped townhouses, plus semi-detached and single family residences combine to keep Forest Hills Gardens one of New York City's most desirable residential neighborhoods.



Forest Hills Gardens in New York City's borough of Queens is one of America's most successful urban garden villages. Begun in 1907 to a plan by Frederick Law Olmsted, Jr., with architecture by Grosvenor Atterbury, the center of the community is built around its Station Square connection to the Long Island Railroad – shown here with the tower of the Forest Hills Inn in the background.

Photo: Robert A.M. Stern Architects, 2012

### Paradise Lost and Regained

The building boom after 1945 marks the demise of the garden suburb. By that time, Modernist ideology, with its anti-historical rejection of traditional forms, had captured the imagination of planners. The "towers in a park" theory of Le Corbusier and the Broadacre City scheme of Frank Lloyd Wright became the hot ideas. Wright's spread-out Broadacre City was automobile-centric – the polar opposite of transit-oriented communities of the garden suburb era – and provided the philosophical underpinnings for frenzied construction of rambling subdivisions that have consumed so much of our countryside.

The book's Epilogue provides a concise reprise of the troubles visited upon the U.S. as a result of higgledy-piggledy growth. The unlikely hero singled out as a prime mover in putting rational thinking back into urban planning is Walt Disney! Disney's personal vision for Main Street in the original Disneyland (1955) was the first development to draw attention to the enduring emotional power of traditional urbanism.

A far more developed version of that vision sprang up as the town of Celebration, FL, in the 1990s, which the book describes in some detail since Stern's firm was involved with the town's master plan. The book also recounts capsule histories of other developments in the traditional town movement including Seaside, FL, Poundbury in the UK, and the founding of the Congress for the New Urbanism. Many aspects of these new urbanist projects, e.g., transit-oriented development, borrow ideas that originally blossomed in the garden suburb movement.

In the book's concluding section, the authors assert some intriguing possibilities of the garden suburb and traditional town planning for the modern city. Many older cities, especially in the Northeast and Midwest, contain empty urban wastelands between urban cores and surrounding suburbs. These depopulated areas, which the authors call "Middle City," still possess their street grids and buried utilities, making them logical candidates for transit-oriented redevelopment with pedestrian-friendly streets, town centers, small yards and expansive public areas – all characteristics found in earlier garden suburb models. For planners and developers attracted to this option, the research compiled by Robert Stern and his associates provides an impressive array of time-tested templates for building better communities.

*Clem Labine is the founder and editor emeritus of Traditional Building. He is also the founder of Period Homes and The Old-House Journal magazines. He is currently an independent consultant.*



# Humane Architecture

**W**ith this issue, we are announcing winners of the 2014 Palladio Awards for excellence in traditional design in the public architecture categories. On this 13th anniversary of the awards program, it's worth noting that the Palladio Awards were the first architectural honors to focus exclusively on traditional design. In addition, the Palladio Awards continue to be the only *national* honors for traditionally rendered projects.

Prior to introduction of the Palladio Awards in 2002, architectural design competitions were won almost exclusively by projects in the Modernist vein. Even though most of the competitions were theoretically style-neutral, jurors were carefully selected from among professionals imbued with Modernist orthodoxy. So it was no surprise that the winners were invariably architects who totally avoided any Classical or traditional references. (The sole exceptions were projects involving historic preservation.) As a result, the Palladio Awards were inaugurated specifically to counteract irrational prejudice against humane, context-sensitive design.

It's unfortunate that the bifurcation of the architectural profession made parallel award systems necessary. But the plain fact is that the architectural establishment is controlled by professionals who have drunk deeply from the cup of Modernist Kool-Aid. They ardently believe that design which rejects historical reference is intellectually superior to architecture that builds on tradition . . . preferring the "shock of the new" over the emotional resonance of the true.

Modernism's claim to exclusive contemporary relevance was thoroughly debunked a year ago in these pages by Dr. Mark Gelernter, dean and professor of architecture in the College of Architecture and Planning, University of Colorado Denver (*Traditional Building*, February 2013, page 12). Gelernter showed that Modernist design is by now nothing more than another historical mode with no more claim to intellectual superiority than Classicism or Arts & Crafts or any of the other tradition-based styles.

Still the taste-making elite continues to ignore the growing number of architects – and members of the general public – who desire contemporary architecture that creates pleasing human environments through legible connections to previous generations. The abstract geometric fundamentalism that dominates international architecture today glorifies technology rather than the history of humankind. No wonder that the geometrical solids – ranging from the bland to the bizarre – that litter the world's cities are perceived as cold and soulless.

It's ironic that Andrea Palladio, who's been gone from the architectural scene for nearly 500 years, still provides a valid model for producing contemporary architecture that is both humane and functional. Palladio created revolutionary new architecture in his own time – but did so in an evolutionary way. Through careful study of the remains of the ancient world, he built upon Classical and vernacular traditions to bring forth beautiful, appropriate, comfortable, durable and functional buildings. Rather than rejecting historical precedent and tradition – as do so many of today's practitioners – he embraced and adapted tradition to create innovative contemporary design.

Palladio's principles are timeless; he had a design method – not a design style. Most of his compositions do not incorporate the temple-front portico that has come to be thought of as "the Palladian Style." Rather, he showed a fluid design hand that blended modernity and human scale with dramatic exterior motifs. Harmony and

balance, combined with strong tectonics, can be more accurately said to be the "Palladian Style."

He absorbed the best ideas from the past, and applied them in new ways to solve the problems of his era. The majority of Palladio's villas achieved their sense of majesty not through expensive materials (most are made of stucco-covered brick) but through the clarity, simplicity and originality of the design. His buildings exhibit fine craftsmanship, cultural identity and clear rules of proportion, scale and composition.

Equally important, Palladio displayed great site-sensitivity and incorporated many energy-conserving features centuries before the idea of "green architecture" was invented. So in naming our awards program after Andrea Palladio we commemorate the master teacher and the architect whose principles are perpetually modern. Paradoxically, even today's taste-making establishment concedes that Palladio was a great architect, but in the next breath they will vilify tradition-based design – the very process that Palladio used to attain his niche in architecture's pantheon.

We are proud to salute these winners of the 2014 Palladio Awards, whose project stories will be published in the June issue. They are worthy heirs of Palladio's legacy.

---

## 2014 Palladio Winners for Public Architecture

### *Restoration & Renovation*

**ZGF Architects LLP, Seattle, WA.**

For the King Street Station, Seattle, WA

### *Adaptive Reuse & Sympathetic Addition*

**Voith & Mactavish Architects LLP, Philadelphia, PA**

For The Barn student center at Millbrook School, Millbrook, NY

### *New Design & Construction, more than 30,000 sq.ft.*

**Tsoi/Kobus & Associates, Cambridge, MA**

For Stokes Hall at Boston College, Chestnut Hill, MA

### *New Design & Construction, less than 30,000 sq.ft.*

**Archer & Buchanan Architecture, Ltd., West Chester, PA**

For Rathburn Hall at Grove City College, Grove City, PA

### *Special Award*

**Duncan G. Stroik Architect, LLC, South Bend, IN**

For the Cathedral of Saint Paul Organ Case, St. Paul, MN

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**The Jurors:** **Stephen T. Ayers**, FAIA, LEED AP, Architect of the Capitol, Washington, DC; **Matthew S. Chalifoux**, AIA, principal, Sr. Historic Preservation Expert, EYP Architecture & Engineering, Washington, DC; **Carl Elefante**, FAIA, LEED AP O+M, principal, Quinn Evans Architects, Washington, DC; **MK Lanzillotta**, FAIA, LEED AP, partner, Hartman-Cox Architects, Washington, DC.

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*Editor Emeritus Clem Labine is the founder of Traditional Building, Period Homes, and Old House Journal magazines. He also launched the Palladio Awards program in 2002.*



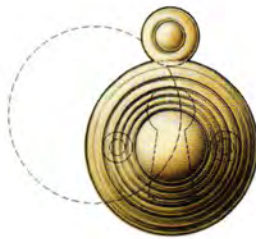
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1) Historic photograph of original corner post finial at Prospect Park 2) Corner post housing 3) Railing connector housing  
4) Solid cast iron railing with rope molding detail 5) CNC machined railing connector housing 6) Pattern detail of rope molding



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