

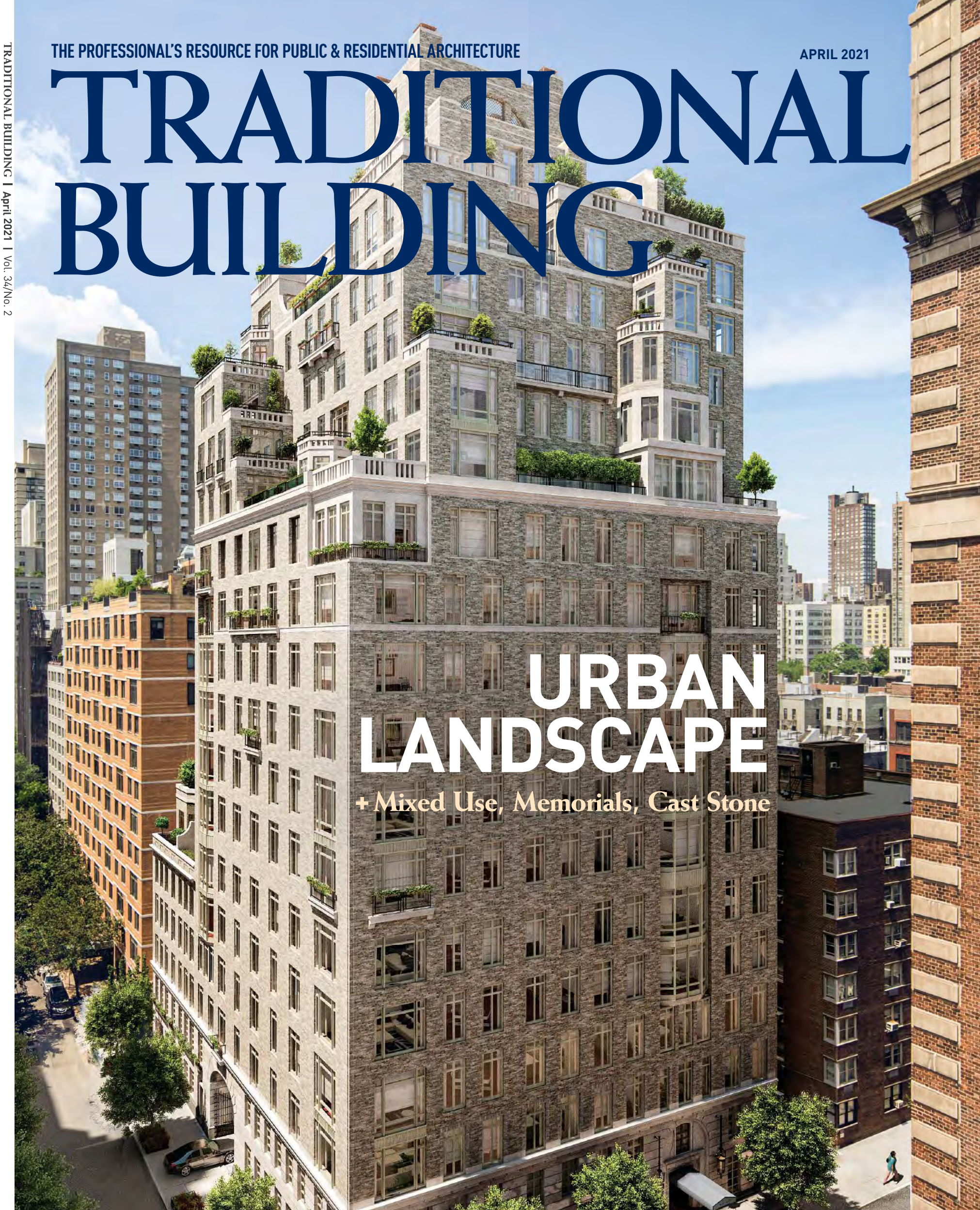
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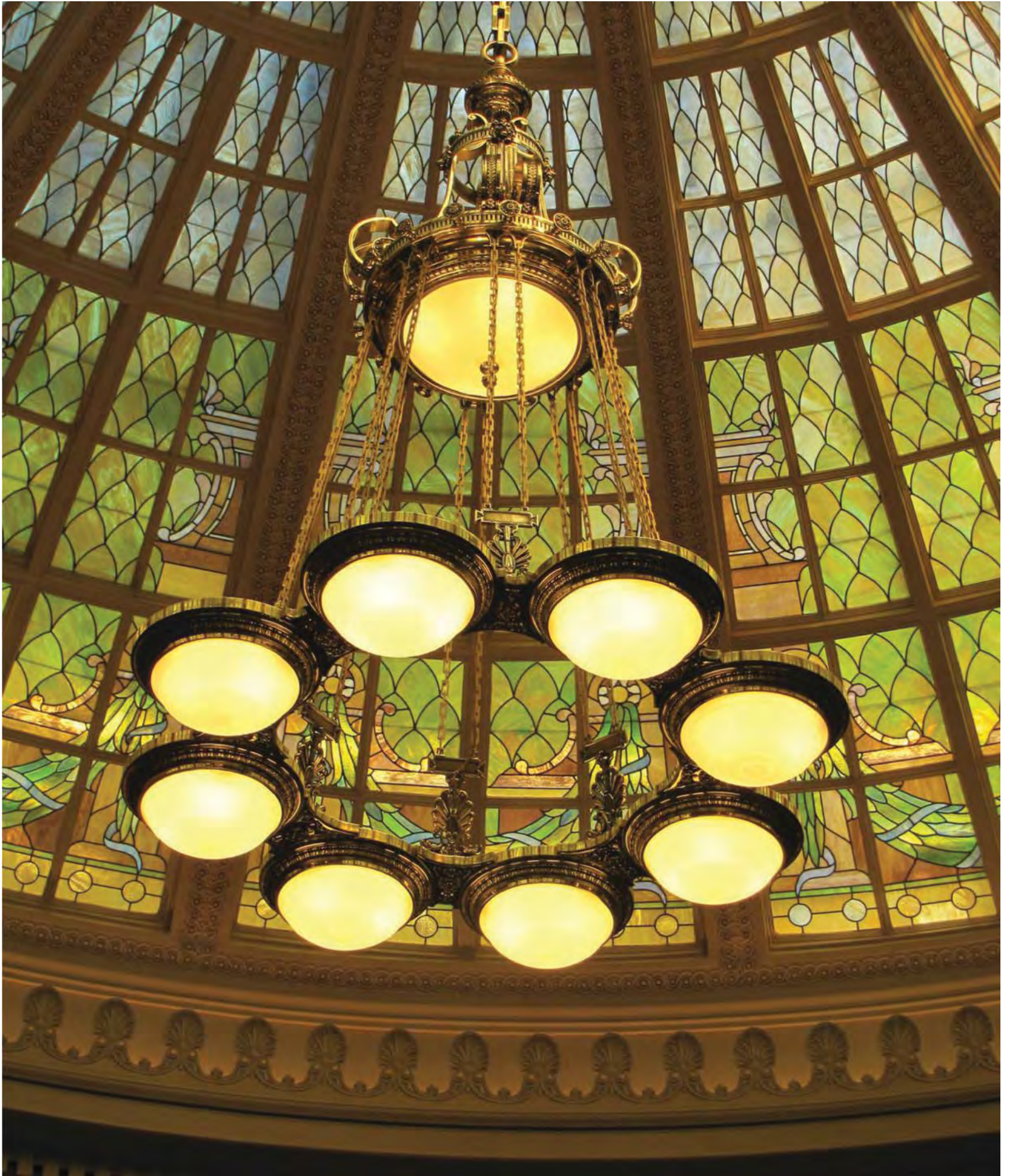
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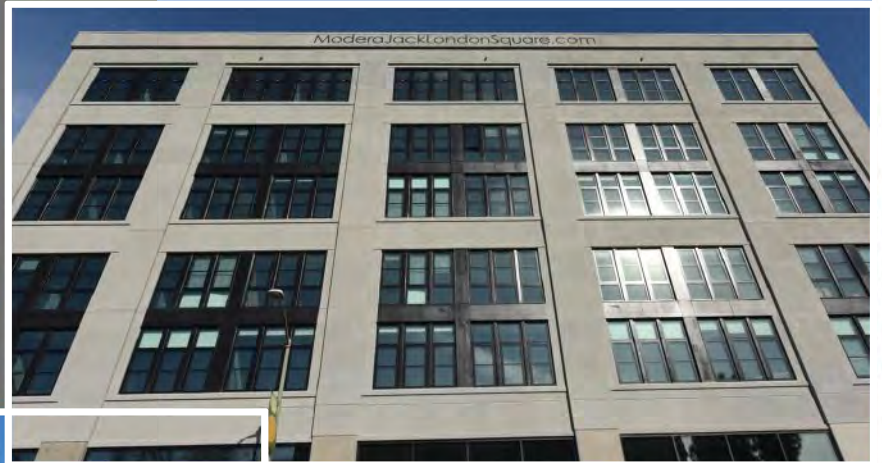
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## Fairfax & Sammons Architects: Vista del Porto

The 2020 Palladio Award for Restoration and Renovation goes to Fairfax & Sammons Architects.

## The Latest



### News

#### ICAA Washington Mid Atlantic Member Survey

A new survey conducted by the ICAA Washington Mid Atlantic chapter takes the temperature on its members' current industry.



### News

#### Brooklyn Bridge Redesign Competition

The competition features virtual showdown and online voting.



### News

#### Lead Fallout From Notre Dame Fire was Likely Overlooked

A ton of lead dust may have been deposited near the cathedral.

## Product Reports



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#### Restoration of Steel Window Frames and Hardware

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## Blogs & Opinion Pieces



### Judy Hayward

#### Preservation, Place and Protests

There is nothing like Bastille Day to conjure up images of political unrest by crowds. But it is 2020 in the United States, and we don't need to look back to Europe for such imagery; it is with us today.



### Carroll William Westfall

#### Statues in Urbanism, Again

The statues of Confederates that are targets of revised judgments about their subjects often occupy important places in our urbanism, which calls attention to the importance of urbanism in what we build.



### Peter Miller

#### The State of Things

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# CONTENTS

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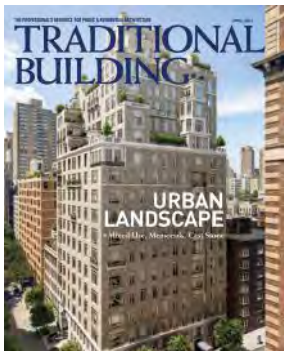
48



54



60



## ON THE COVER

RAMSA's 20 East End Avenue project.  
More on p.38.

Courtesy of Hayles Davidson.

## BUYING GUIDES

Historical Products Showcase . . . . .	64
Columns & Capitals . . . . .	65
Storefronts & Façades . . . . .	66
Pavers . . . . .	66
Metal, Wood & Composite Windows . . . . .	67
Window Accessories & Hardware . . . . .	69
Doors & Door Hardware . . . . .	70
Storms, Screens & Soundproofing . . . . .	72
Landscape & Streetscape Specialties . . . . .	74
Mantels, Fireplaces & Chimneys . . . . .	74
Stairs & Railings . . . . .	75
Lighting & Electrical . . . . .	76
Architectural Sheetmetal . . . . .	78
Bird Control . . . . .	78
Specialty Brick & Mortars . . . . .	79

## FREE INFORMATION GUIDE . . . 62

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## 38 A Contemporary Classic

Stately and intimate, RAMSA's 20 East End Avenue is a modern building rooted in pre-war architectural tradition.

## 48 Mixed-Use in Morristown

Marchetto Higgins Stieve pushes the limits of design of a new residential and retail building in New Jersey.

## 54 Thoughtful Restoration

McMillan Pazdan Smith revives one of the only remaining pre-cast buildings in the Chicago School of Style in the country.

## 60 Savannah's Southside

A team comes together to envision what is possible for revitalizing a Savannah neighborhood.

### INDUSTRY NEWS

## 14 2021 TBCS Hope's One55 Series Expansion

### INTERVIEW

## 16 A Sense of Place

An interview with Lynn Richards, president and CEO of the Congress for New Urbanism.

### THE TRADES

## 22 Crowned in Copper

Time-honored sheet-metalwork replicates an elaborate, early-20th century cornice with authentic—and improved—details.

### HISTORIC MATERIALS

## 26 To Clean or Not to Clean

When it comes to historic buildings, take a measured approach.

### TECHNIQUES

## 30 Sculpted Memorials

Creating and conserving memory in bronze and stone:  
A conversation with Robert Shure.

### PRODUCTS IN-DEPTH

## 34 Cast in Stone

Companies producing architectural concrete for historically-inspired buildings.



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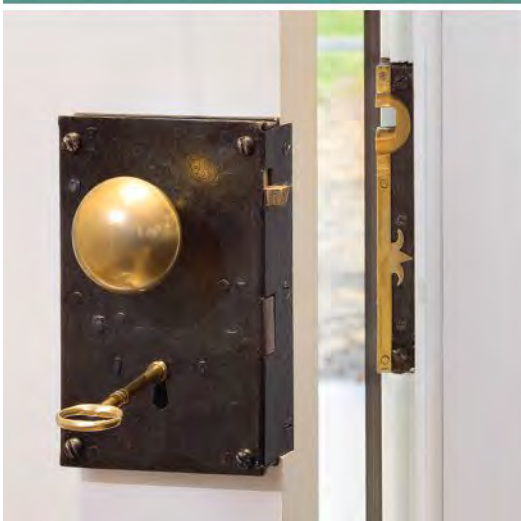
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# A Sense of Place

An interview with Lynn Richards, *president and CEO of the Congress for New Urbanism.*



LYNN RICHARDS

**In her seven years** as president and CEO of the Congress for New Urbanism (CNU), Lynn Richards has activated the CNU community with innovative and aggressive projects that have set forth to transform our cities' landscapes through the power of incremental change. In line with CNU's motto "Building Places People Love," Richards' bookended her tenure at CNU with a brand new mission statement that strengthens the Congress's role in the future of urban development. As she concludes her final months with CNU, we sat down with Richards to talk about the Congress's new directions and initiatives.

## **1 What are the accomplishments you are most proud of during your seven year tenure?**

First is the project for code reform. The Project for Code Reform seeks to meet local governments where they are. Instead of doing an overhaul of your entire code, do the biggest little thing. If you do nothing else, do this one thing to enable a good place instead of guaranteeing a good place. It's this idea of incremental code reform. . . that brings along the political leadership as well as the local government.

The second thing is [something that] John Norquist started for CNU around highway removal in cities. We worked with Congress, both the House and the Senate over the last couple of years. And on December 21, the Senate released the Economic Justice Act, which includes \$10 billion for highway removal. And it's currently being incorporated into the new highway or the new transportation reauthorization legislation that will come through in 2021. It's again this incremental approach.

The construction of the \$75 million Martin Luther King Plaza in Philadelphia began in the late 1990s and was completed during summer 2005. It includes about 250 homes, split between rental and ownership, built in the form of Victorian-style townhouses—the typical housing type in the neighborhood.



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Opticos Design photo

Following a public design charrette run by Dover, Kohl & Partners, construction began on South Main—a New Urbanist town extension that reconnects the small mountain town Buena Vista, Colorado, to the Arkansas River. Today, its central South Main Square is surrounded by mixed-use buildings and provides a gathering space for residents and visitors. Neighborhood streets are oriented to allow views to the mountains and riverfront.

The third thing is our Legacy Projects, which is pro bono design assistance to underserved communities, particularly in the host community of where we're having our annual meeting. But we've expanded it to do it in other areas. Our members have a call to serve the broader movement and donate their design skills in an underserved community.



Opticos Design photo

The design of Daybreak Mews in South Jordan, Utah, was driven by a need to provide attainable housing—achieved by efficiently using 3.2 acres on the interior of two blocks within walking distance of a light rail station. The 147 houses, ranging from 900 to 1,400 square feet at a density of just above 20 units per acre, are oriented onto a European-style pedestrian mews on two blocks within a large, mixed-use, master planned community connected by transit to the Salt Lake City region.

## **2 These sound pretty awesome.**

It moves the needle.... And serves our mission: what can we do together that we couldn't do individually? And to me, those three projects really meet that call. And it brings into sharp focus of how we can leverage all of the talents of the CNU members to move the conversation forward.

## **3 You all have a new mission statement. Tell me about it.**

Our new mission statement really frames CNU's mission "to champion walkable urbanism." And we do that through education, resources, technical assistance, to create environmentally resilient, economically robust, socially just, people-centered places.

We love how concise yet descriptive it is.

## **4 How does the mission statement fit with your new strategic plan?**

We finalized our strategic plan in March and then released it in September 2020. It has three strategic areas: creating more complete neighborhoods, legalizing walkable places, and designing for a changing climate.

The Board and I developed it by constantly asking: What can CNU uniquely do?

## **5 A lot of organizations are engaged in climate. How are CNU's efforts unique?**

We wanted to focus our efforts on the specific design considerations that can increase the resilience at the building block neighborhood scale. The other aspect, which I find actually more interesting and exciting, is working with welcoming cities, for the ongoing, and for the coming climate migration. There's a lot around the designing for a change in climate, that I feel that the CNU's skills on planning, long term planning, scenario planning, being comfortable with the uncertain—that's just what



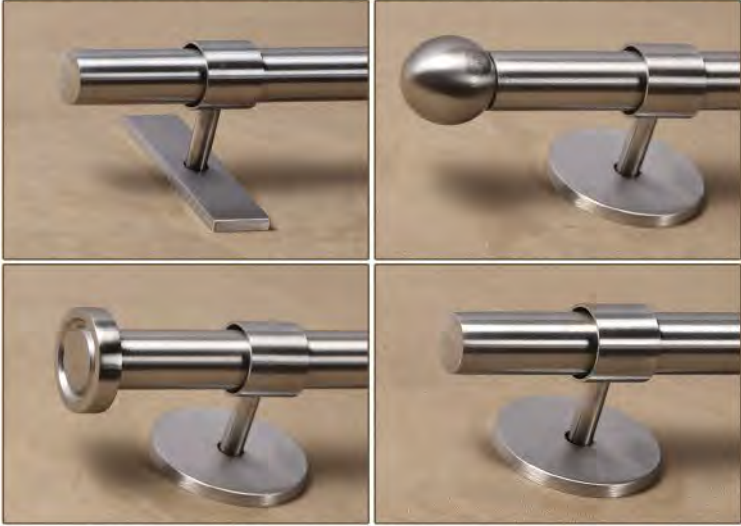
Philip Langdon, Within Walking Distance (Island Press) photo

The Cotton District is a community in Starkville, Mississippi, that stands as an example of Traditional Neighborhood Development. Founded by Daniel Camp, the Cotton District has been praised for incorporating traditional architectural styles in a close-knit, vibrant, and walkable community.



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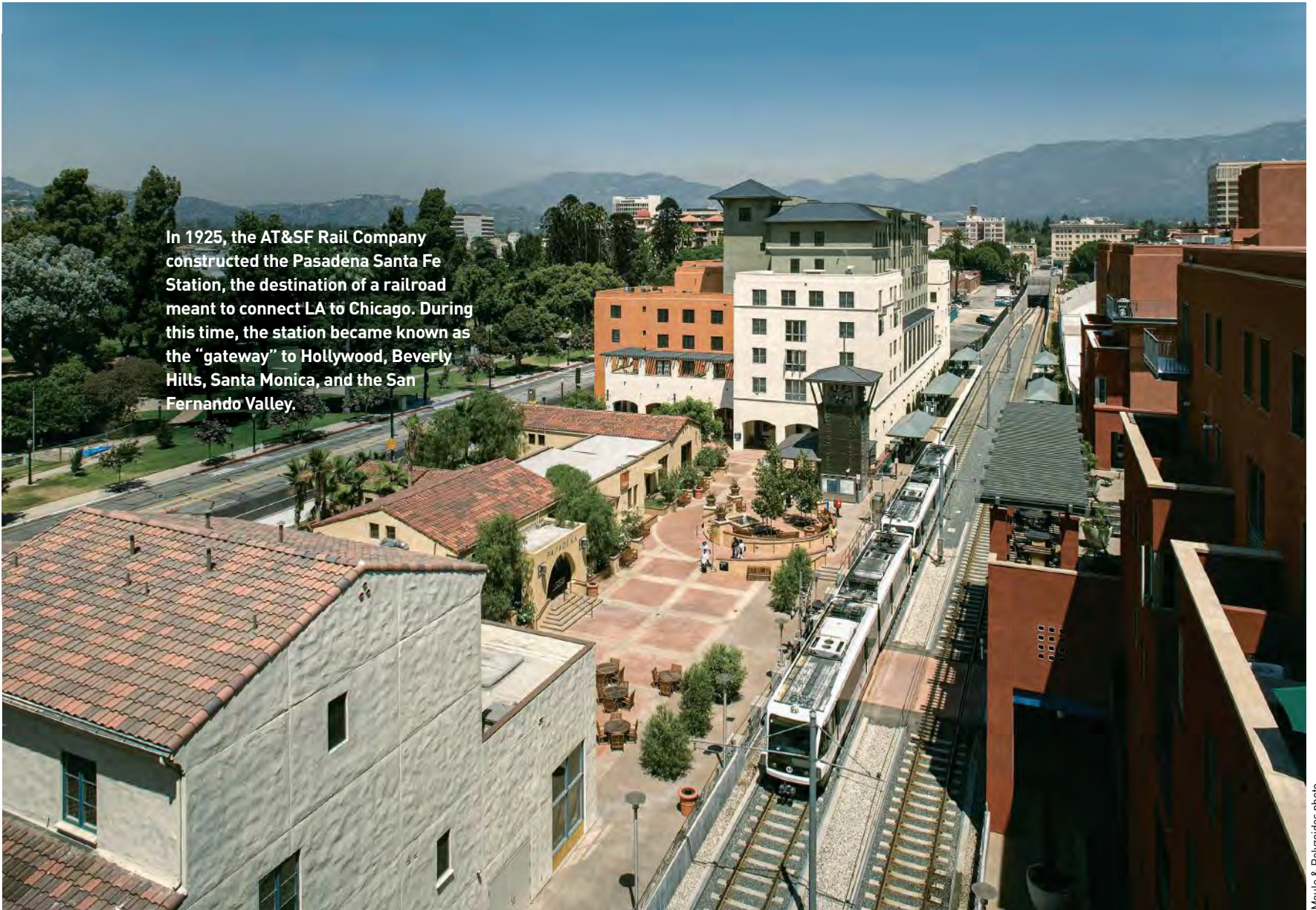
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Iberville Offsites in New Orleans provides affordable housing for moderate-income families, establishes new standards for green historic preservation, and strengthens a city still climbing back from one of the nation’s worst natural disasters.

every new urbanist has been looking at, this kind of where and how you plan your communities, both in terms of the welcoming places as well as those places that ultimately we’ll retreat. I think it’s a really exciting area that we’re going to be hearing a lot more about. And, you know, I for one want CNU to define that realm of conversation.

#### **6 How do you see new urbanism in a post-COVID world?**

I’m a glass-half-full kind of person. I’m always looking for the silver lining. Yes, the global pandemic has been horrible. I wish we hadn’t gone through it. However, I feel that the trends which were kind of creeping along before the pandemic accelerated during the pandemic. For example, how people and cities are reimagining spaces? I think that these trends are going to continue. And the good news is that we’ve been over-retailed for decades and the pandemic has accelerated the trend of hyper localism of supporting your local butcher, your farmers’ market, etc. So, I’m hopeful for the post-pandemic.

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# Crowned in Copper

Time-honored sheet-metalwork replicates an elaborate, early-20th century cornice with authentic—and improved—details.

Cornices come naturally to tall, turn-of-the-20th-century buildings. For Louis Sullivan, the acknowledged father of the skyscraper, “the chief characteristic of the tall office building [is that] it is lofty,” and an attic story and distinct cornice emphasize this loftiness. Unfortunately, loftiness was at a low ebb in 2013 when owners decided to restore The Hadrian, a 10-storey, 1903 apartment building on New York’s upper west side.

Recalls Guenther Huber, president and principal of Ornametals Manufacturing, LLC., based in Cullman, Alabama, “The architects, Jan Hird Pokorny As-

sociates, Inc., were very into the details of the original cornice appearance, but when they called us in, there was nothing there.” Indeed, while the 1903 galvanized sheet steel remained, rust had perforated it with pin holes, all cresting was gone, and the surfaces were nearly devoid of stamped zinc ornaments. “When I saw how the remaining ornaments, the old lion’s heads, were only hanging by wires, I wouldn’t even walk underneath it!” he exclaims. “So this is a 100 percent replica of how the cornice looked in the beginning.”

While the new work is meticulously accurate, the construction, though tradi-

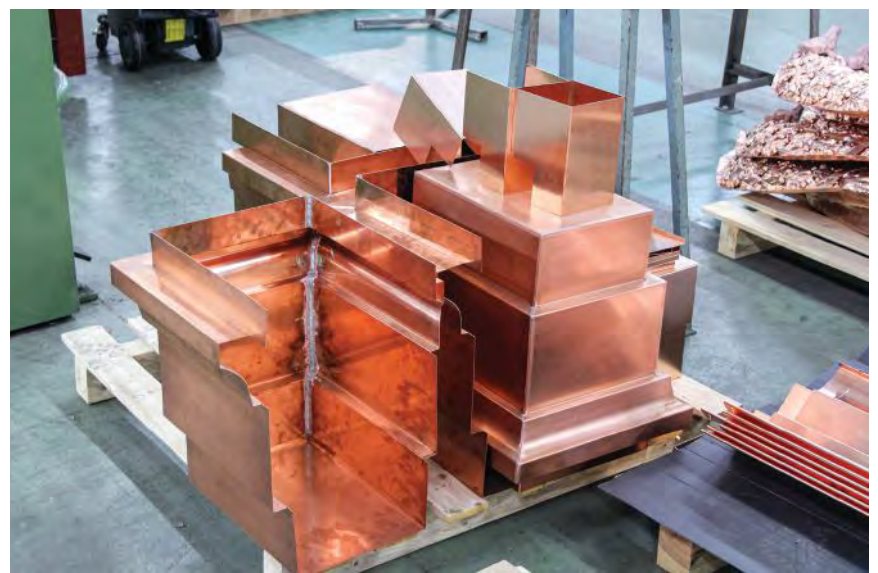
tional, is a big improvement on the original. “Before they used metal sheets as a base, and then wired on the ornaments.” Instead, Huber’s company needed to have fastening points every two feet, so they designed a whole under-construction in stainless steel. “Because copper moves, you always need to think about expansion,” he explains, so to do this, the full cornice is composed of many smaller panels. “It’s all cleated together, so that each panel can move, totally independently.”

Huber, whose family has been in the metals business in Germany since the 1820s, says the method has a long history

there and in France. “You have the back plate on, then the metals get slid together and cleated in, so you can’t see it.” Each panel is about 24 inches high he says—perhaps 30 inches at a maximum—and all of the panels, just clip together. “It’s basically the same method you would use to install a standing-seam roof.”

The supporting under-construction is anchored to existing steel brackets extending out of the wall, and adds stainless steel strips to hold fastening clips every 12 inches to 16 inches for wind lift and the like. “You need to deal with cornice work the same way you deal with roof work,” reiterates Huber, “and





**CLOCKWISE FROM ABOVE** This mock-up of the cornice shows not only its complexity and massive scale, but also the huge, zinc lion's head ornaments.

The large, deep-relief garlands are not single pieces but assembled from multiple leaves, then mounted to a backer plate.

Tools in the VM Zinc facility in France include bending brakes to shape sheet copper in long, linear forms, as well as presses large enough to stamp the zinc ornaments.

Copper must be heavy enough to assemble complex parts or be heated and stretched several times in deep stamping without cracking.

The full mock-up dramatized the cornice's 14-foot height and deep relief. Note the supporting armature and the 6-foot panel lengths, which slide together.

**OPPOSITE** After two years the completed copper cornice has naturally patinated to a rich, chocolate brown that plays off the newly cleaned light-buff brick façade.







**CLOCKWISE FROM ABOVE** Despite being highly ornamental, the way the copperwork was prefabricated meant installing 220 feet of cornice took only three weeks.

The original 1903 galvanized steel cornice still remained by the 2010s, but was rusting through under green paint and had lost almost all applied ornaments.

Viewed during installation, the cornice in cross section shows not only the stainless armature attached to existing steel but the way copper panels slide together at edges.

Many original cornice details, such as ornaments and dentils, were all but gone by the 2010s and had to be meticulously researched, then recreated.

it needs to be wind-proof to 150 miles per hour. In New York City you can have winter storms or even hurricanes.” He adds that the stainless steel probably isn’t even necessary because no water can enter. “Plus, the whole cornice is vented. There are weep holes on everything, so should any water come in the back side, it dries out immediately.”

Turns out, the panel-and-cleat method has advantages beyond allowing for expansion in the complex, 14-foot-high cornice. “Installation was the easy part,” says Huber. “Because the length of each panel is around 6 feet, and the width is 2 feet to 3 feet, the weight is not so much, so it is very

easy to handle in scaffolding.” The actual installation was carried out by a New York company, Preserv Inc., with initial assistance from Huber’s team. “Everything went so smoothly because the New York contractor for the under-construction followed the drawings precisely and knew exactly how to do it. It all fit together like it should.” The cornice runs around three sides of the building for about 220 feet and took just three weeks to install; planning and fabrication was about three months.

Because the cornice required a lot of large, pressed-zinc parts, Huber partnered with VM Zinc (now VM Building Solutions) located in

Bagnolet, France. “I fabricate here in Cullman, Alabama, in Germany, and in France. When I have a big project, like the Kansas State Capital building in Topeka, I fabricate in all three countries, so I’m always commuting on planes!” Fabrication is all traditional sheet-metal methods with bending brakes and related techniques. “When you look at a garland, for instance, it’s not one single piece but pieces of leaves put together. Then we put a back plate on, rounded and bent to the leaves. That’s how you did it 100, 120 years ago.”

As far as materials, Huber says they don’t often settle for light, 16 oz. copper. “When we do work like this

Preserv photos





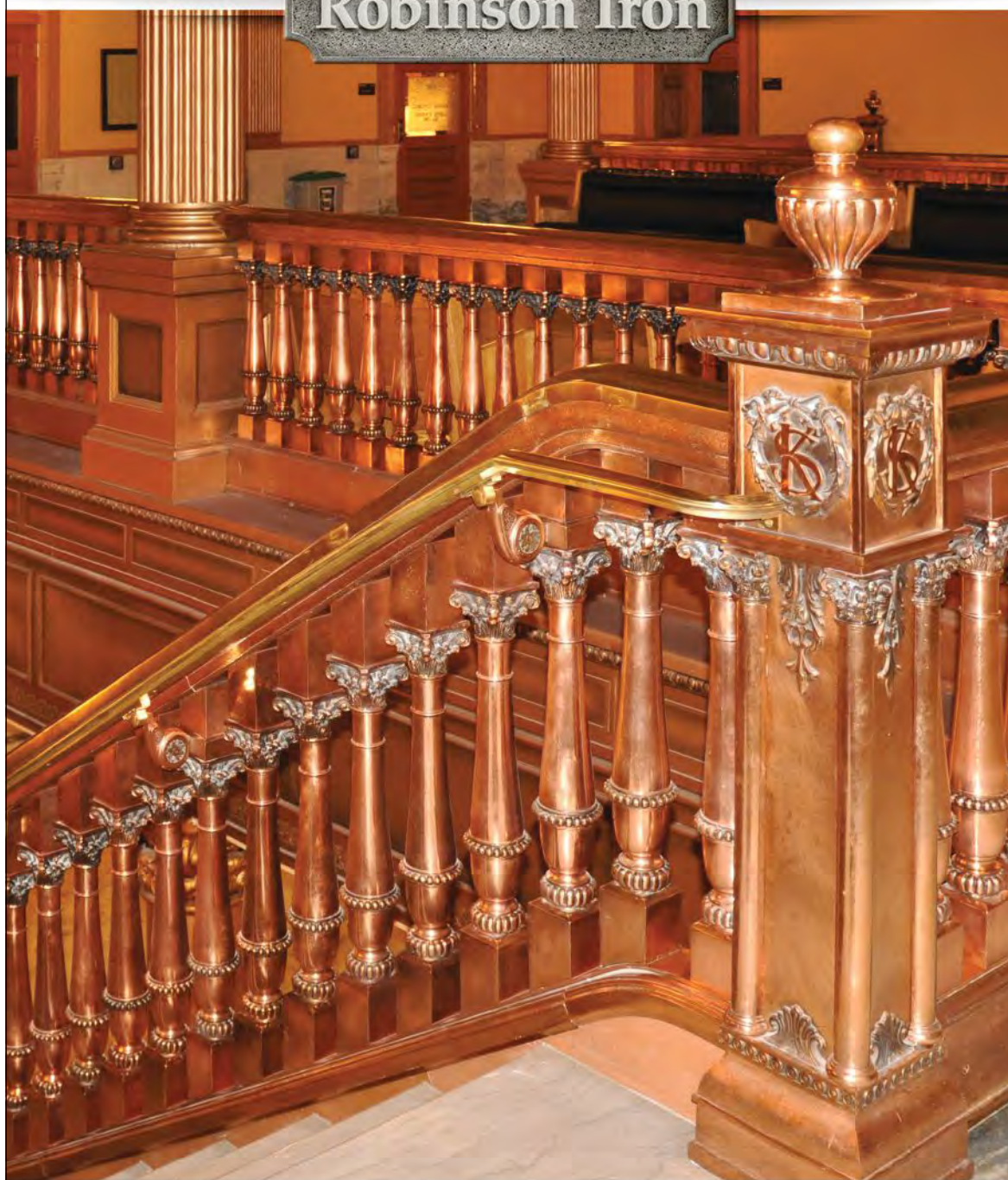
we go with 20 oz. copper, and even up to 24 oz. copper, especially for fabricating ornamental pieces that require deep stamping. For this project, we went with 0.7 mm thickness, which is pretty much 20 oz. copper, and 0.8 mm.”

In the end, the cornice cost a little bit more in fabrication, says Huber, but it was so much faster in installation. “We could prove to the owner, when you do it like this, you have not only a much better product but a cornice that will hold up for the next 150 years.”

**GORDON BOCK** is an architectural historian, instructor, and speaker through [gordonbock.com](http://gordonbock.com).

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# To Clean or Not to Clean

When it comes to historic buildings, take a measured approach.

There are several reasons to clean a historic building. It can be necessary to remove soiling, which is causing on-going deterioration of the stone. Cleaning the stone and mortar joints can be necessary for understanding the original materials for appearance matching and documenting the condition of repairs, stone, and repointing mortars. Localized cleaning can be necessary for prompt removal of graffiti before it attracts other graffiti. If cleaning is being requested for purely aesthetic reasons, the benefits of cleaning should be seriously weighed against the potential harm cleaning could inflict on the building. One often-overlooked option is not cleaning the building at all.

Regardless of the reason, the building owner should carefully consider first,

the advisability of cleaning the building at all, and second, how to perform the cleaning to be effective yet gentle, leaving no damage or conditions behind which would lead to further deterioration of the building. With all historic buildings, the goal of cleaning should not be a “like-new” appearance. The patina of age should be left behind, to tell the story of its history. Merriam Webster’s definition as “a surface appearance of something grown beautiful ... with age or use” fits the context here.

The first step is to identify the types of soiling. Different stains require different approaches. Stains can occur through maintenance and use, hand soiling, and wax build-up, for example. Some staining is caused by moisture issues. Various sources include roof leaks, broken gut-

ters, and downspouts, plumbing issues on the interior of the building close the interior face of the wall, dripping window air conditioners, or condensation in the building envelope, making its way from a warm moist interior to the breathable exterior and depositing efflorescence. Efflorescence is a white chalky patchy crust caused by moisture that picks up solubilized mineral or gypsum; as the moisture evaporates on the surface of the stone, the residue is deposited on the surface. Stone that has been kept moist or habitually salted may have permanent dark stains. Stains can be comprised of chemical damage from previous cleaning campaign, from a bleached appearance to one of patches and streaks. The presence of bronze or copper elements adjacent to stone

can oxidize, and rainwater carries the solution onto the stone causing green staining.

Beyond moisture staining, moisture can attract biological growth, from bacteria to algae to fungi to lichen to mold. Some buildings are known for their ivy-covered appearance, but vines and plants have “fingers” and roots which attach to the stone and dig into any fissure to take hold. Water channels into the crevices and forms ice, which fractures (“ice jacks”) the stone. As roots grow stronger and thicker, they too will force the stone and mortar apart, and direct water inside, further exacerbating the cycle of ice jacking.

Graffiti attracts more graffiti; cleaning eliminates the graffiti artists’ rival claims for the building. Graffiti can be



LEFT Classical stone bank building in London.

BELOW Bronze and ferrous metal fitments on stone will cause green- and rust-colored stains



ABOVE First North American cleaning trial of a micro-abrasive cleaning process removing tar, rust, and salt staining from Bethel White granite.

TOP The Roman Arch of Constantine, showing deterioration of the detail from acid and/or abrasive cleaning.

surface applied or penetrating, depending on the medium used: permanent marker, to sharp instruments, or various paints. Because of the isolated nature of the stain, removing the graffiti may leave it just as visually prominent by the shadow of cleanliness left behind.

### WHAT IS THE STONE?

It is important to understand what materials you are cleaning. Natural stone is either siliceous, a durable stone such as granite, slate, or sandstone comprised of silica or quartz particles, or calcareous, a relatively delicate stone composed of calcium carbonate. The polished or textured nature of the finish, and porosity and chemical composition of the stone affects the results of cleaning. Some elements of the façade may also be materi-

als made to look like stone, for example terra cotta, cast stone, or pressed metal. Further, the selected cleaning solution for stone may be detrimental to adjacent glass, steel, aluminum, or other types of stone. These materials also need to be understood and protected.

### STONE CLEANING METHODS

There are three basic categories of cleaning, as explained below. Most methods require site protection to contain overspray, to prevent damage to adjacent structures, to collect aggregate and/or runoff, and to prevent nuisance complaints from adjacent property owners. If using an abrasive system, there can also be limitations of reach for hoses, or concerns for noise generated, which should be examined when making a final

selection.

Water based cleaning uses water to soften the soiling to make it easier to remove. Some methods include twenty-four-hour water mist (soaking), low to medium pressure washing, steam, or high pressure washing. While water is typically the gentlest means to clean, it could solubilize gypsum or alabaster present, or saturate deteriorated masonry. It could infiltrate non-weather-tight windows and damage interior finishes, and cause rust on internal anchors. Wet cleaning should never be performed when there is any threat of freezing weather of frost.

Chemicals cleaners are acidic or alkaline solvents which dissolve dirt and suspend it in a solution, either water or organic chemicals-based liquid. Deter-

gents surround and remove dirt which can be rinsed away. Detergents are less harmful for workers than chemicals, as they are non-flammable, and can be biodegradable. Both can be applied as a spray, with higher concentrates of chemical used with a scrub brush or in a poultice in areas of higher soiling.

Abrasive cleaning methods involve combining a granulated media into a pressurized hose, with water and/or air. There is a plethora of devices with which to apply media ranging from crushed walnut shells, to impregnated sponges, to a variety of grit particles which range in size, hardness, and sharpness. Abrasive cleaning got a bad reputation with early sandblasting campaigns that caused a range of damage ranging from removing surface texture and detail, to opening





Multiple stains present: dark discoloration below protrusion is typical of limestone, moss is present in small clumps on the base, and steps are covered in algal growth from moisture and little sunshine.

the pores of the stone, to exacerbating weathering. Aside from the selection of the device and the media, the outcome of this process varies, depending on consistency of application pressure and pattern, the level of pressure used, and the skill and fatigue of the operator.

Lasers use a difference in energy potential between the stone and the soiling to remove dirt. The laser sends pulses of infrared light onto the stone, which heats up the dirt instantly, causing a rapid thermal expansion, which in turn causes the dirt to lift off the surface. In some ways, dry ice, or CO<sub>2</sub> cleaning is like the laser, in that it uses pellets of frozen liquid CO<sub>2</sub> (-78 to -103°F) and propels them against the stone surface and causes an initial thermal shock to the surface dirt, freezing and shrinking it. It is like abrasive cleaning, in that the dry ice pellets impact the surface, they sublime into a mini explosion when the frozen liquid

changes to gas. The physical impact of that same pellet breaks up the brittle frozen dirt and removes it.

While it may seem counterintuitive, any liquid cleaning methods should proceed from the bottom up. This prevents cleaning solution streaking a dirty wall below, which does not happen if the wall is clean and maintained in a wet condition.

#### CLEANING METHODOLOGY

When beginning a cleaning project, proceed with caution, and in an orderly process. Start with surveying the building to determine if it has been cleaned before, if any paint coatings are original, if there is any localized damage, and to document the conditions and locate them on a drawing. Frequently the drawing effort will bring to light the patterns of soiling and/or wetting. Compare survey drawings to plans showing room func-

## Poultice

During cleaning, if the cleaning method does not address stains, a poultice can be used. A poultice provides a longer dwell time of the cleaning material such as water, detergents, solvents, or other chemicals. A poultice consists of inert material, such as diatomaceous earth mixed with the cleaner, the gentlest of which is water. Once thoroughly mixed in a clean plastic container, it is applied to the stone with a plastic spatula or scraper in an even coat and then covered with plastic. As the substrate absorbs the moisture, the cleaner is drawn into the pores where the stain is. Once the plastic is removed, the poultice dries out, wicking the moisture back out of the pores, taking the soiling with it. The poultice absorbs the chemicals and contains the dirt. Once the poultice is fully dry, the crust can be removed with a plastic scraper and swept away, leaving a cleaned surface, once rinsed.

As with all cleaning methods, a small area should be tested in an inconspicuous location and observed after a week once it is fully dry. If it is determined that the process does not bleach the stone, open the pores, or cause a negative chemical reaction, the poultice can be applied on the rest of the stain, if effective.



ABOVE Mosaic stone tile floor with poultice partially in place. The brown discoloration of the white diatomaceous earth is the removed dust and dirt, which was carried onto the floor by a roof leak. To the left is dried poultice partially removed from grey tile. To the right is exposed tile that was already rinsed.

tions, mechanical systems, and plumbing piping. Correlation of the uses and systems to the façade patterns frequently speaks to the cause of these stains. Once the cause has been identified, eliminate the cause by fixing the roof, patching the pipe, controlling moisture in the building, eliminating the air conditioner units, or other solutions as applicable.

Determine the type of the stone and its condition, along with the condition of the mortar.

A particular concern for a cleaning program is the starting and stopping points. Cleaning should never be performed on the front façade first. The method should be proven successful before it is implemented on significant facades. Where there are budget concerns, performing consistent cleaning on the entire structure may not be affordable. In that circumstance, serious consideration should be given to not undertaking any

cleaning campaign on the building at all.

Once all the above is known, research appropriate potential cleaning methods recommended for the stone type. For each selected cleaning method, perform physical testing in a discreet location of the building, such as an areaway, back lane face, inside parapet.

Mock-ups should be ideally performed a year in advance, so that the samples can weather, and any deleterious effects can be observed in the spring. If a contractor has not been onboarded. An experienced masonry cleaner can be hired for the purpose. Or manufacturer's agents for the various cleaning systems can be enlisted to help. While performing cleaning tests, the parameters are tightly controlled; controls on site should deal with hot weather requirements, minimum temperature requirements, and worker comfort, protection, and fatigue. For water cleaning, a variety of



water pressures, distances to the stone face, and uses of non-ionic detergents should be mocked up. For abrasive cleaning, different aggregates can be tested, administered at different pressures, and at different distances. For chemicals, the dwell time and concentration, as well as different types of chemicals can be sampled. All testing should be recorded as to the location of the sample, with photographs taken before and after, and notations of the materials variables involved, with an opinion of efficacy.

Prequalifying contractors with relevant building cleaning experience, and with crew who are also individually experienced, will go a long way in achieving success. Once the project goes into the field, project success is entirely dependent on capable trades performing the work. A lot of cleaning processes are safer with workers wearing full Tyvek suits, and possibly a respirator-type mask, which can cause workers to overheat. Ensuring sufficient water breaks and rest periods will assist in workers maintaining the established distances, pressures and protocols documented in the test trials.

The subject of stone cleaning is extremely broad. Each project is unique, and has its challenges, be it materials combinations, a cramped site, dete-

riorated masonry, and the like. A stone conservator or historic architect well-versed in masonry should be retained to develop any stone cleaning process, because many systems can cause irreparable damage if performed inadvisably or incorrectly. Due diligence in planning and execution is critical to the preservation of the structure.

#### Resources

**National Parks Service Preservation Brief** [www.nps.gov/tps/how-to-preserve/briefs.htm](http://www.nps.gov/tps/how-to-preserve/briefs.htm)

No. 1 - *Cleaning and Water-Repellent Treatments for Historic Masonry Buildings.*

No. 6 - *Dangers of Abrasive Cleaning to Historic Buildings*

No. 38 - *Removing Graffiti from Historic Masonry*

**Historic Scotland Technical Advice Notes** [www.historicenvironment.scot/archives-and-research/publications/?publication\\_type=42](http://www.historicenvironment.scot/archives-and-research/publications/?publication_type=42)

TAN 09 - *Stonecleaning of Granite Buildings*

TAN 10 - *Biological Growths on Sandstone Buildings: Control and treatment*

TAN 18 - *The Treatment of Graffiti on Historic Surfaces*

TAN 25 - *Maintenance and Repair of Cleaned Stone Buildings*



Susan Turner photos

**ABOVE** Strong acids or high pressure aggregates can remove the surface of the stone, causing the erosion of profile and detail.

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# Sculpted Memorials

Creating and conserving memory in bronze and stone: A conversation with Robert Shure.

**W**e witnessed the impact that memorials have on people, with the toppling or removal of many in 2020 along with the installation of the first memorial featuring real women in New York's Central Park. It seems like a good time to reflect on the creation and conservation of public monuments.

Robert Shure, sculptor, conservator, and president of Skylight Studios in Woburn, Massachusetts, creates

sculpture using traditional methods and materials and compositions that help viewers reflect on people and places. He has also conserved important historic monuments; Shure worked on the conservation of Augustus Saint-Gaudens' memorial to Robert Gould Shaw and the Massachusetts 54th Regiment, a fixture across the street from the Massachusetts State capitol, during the turbulent summer of 2020.

## COMBINING ACADEMIC STUDY WITH A TRADITIONAL APPRENTICESHIP

Shure exhibited a talent for drawing as a child growing up in Brooklyn. He graduated from the New York Institute of Technology in 1970 and earned a master's degree in fine arts from the School of the Museum of Fine Arts and Tufts University in 1973. He embarked on the traditional path of working in a studio or atelier under a master's direction when upon graduation, he went to work for

two renowned sculptors in their studio in on Tavern Road in Boston. Under the guidance of Arcangelo Cascieri (1902-1997) and Adio di Biccari (1914-2009), Shure worked on projects for the National Cathedral, the restoration of Daniel Chester French's (1850-1931) Concord Minute Man, and made his first encounter with the work of Augustus Saint-Gaudens (1848-1907) when he helped to conserve a plaster cast of the Amor Caritas. During his years at the





**LEFT** Liberty at American Village in Alabama.

**BELOW** Robert Shure cleans Augustus Saint-Gaudens' "Amor Caritas" or "Angel with a Tablet" as part of gilding conservation project at Saint-Gaudens National Historical Park, Cornish, New Hampshire, during the summer of 2020. The conservation project is funded by the Trustees of the Saint-Gaudens Memorial, the US National Park Service, and the New Hampshire State Council on the Arts.



Cascieri-di Biccari Studio, he worked on all aspects of sculpture from building armatures to making molds and plaster casts to restoring plaster, stone, and bronze sculptures. He became acquainted with Lino Giust (1928-2020), who had purchased P.P. Caproni and Brother, the highly regarded studio that produced reductions and reproductions of sculptures and architectural ornament. All three of his mentors retired around the same time and in 1990, Shure along with his wife Kathleen, opened Skylight Studios. Mr. Giust had passed on the Caproni company to the Shures as well. By 1995, Skylight Studios had become one of the largest studios in the US—the same year Shure was honored with a Federal Design Achievement Award for his heroic-sized sculpture of George Washington, installed at the Washington Monument.

Skylight Studios, Inc. photo

Judy L. Hayward photo





LEFT Liberty and the Fallen, American Village, Alabama.

BELOW Robert Shure at work in his studio in Peabody, Massachusetts, sculpting a Public Safety Memorial.



## THE PROCESS

Robert Shure is not an artist working “alone in a garret.” He says with great delight, “I enjoy people and the committees that I work with whether it is made up of one person or 20.” He says the process of a public memorial begins with the desire to honor the memory of someone or something. So, his process begins with listening—and communication remains important. Robert says it really helps to know the location of the memorial, from which he can judge scale and compatibility with surroundings or take advantage of the site’s features. He is a firm believer of “putting pen to paper” after the preliminary discussions take place. His sketches form the basis of the “give and take” that follow between client and artist.

When a concept is agreed upon, he begins to produce a clay model in miniature, referred to as a maquette. Once finalized, he builds more detailed small models—often with complete armature

and very detailed elements. He says that this step is crucial for a few reasons. “It is important to find out if a particular detail will need extra support while using a small amount of clay. I can’t fight gravity and when we move into modeling at a heroic scale, if a large section of clay is supported poorly, it can be costly in terms of days or weeks of work.”

## A SCULPTURE STUDIO IS A BUSINESS WITH MANY TRADES AT WORK

Shure employs a curator who works on the archival research for his designs and cataloging his work and photos of work in progress. Robert says his work is dependent on highly skilled tradesmen. He works in the style of Renaissance and Gilded Age American masters of sculpture—he has a team of skilled professionals and apprentices working on specific aspects of multiple monuments at any given time. He employs people who specialize in mold-making and cast-

ing, woodworkers to build platforms and custom crates, granite carvers who work in stone, pipe fitters for welding armature and rigging specialists who design transport and installation. He currently employs 12 people and works with many others. He works routinely with architects for specific installation needs in given settings. Robert works with many foundries depending on their specializations—some are preferred for casting small objects; some for large. He often does his own finishing for the patina.

Conservation is another important part of his studio work. This past summer, I caught up with Robert at the Saint-Gaudens National Historical Park in Cornish, New Hampshire, where he was regilding the “Angel with a Tablet” or “Amor Caritas.” He says that “working on the work of master sculptors from America and Europe is an honor.” He gets to observe the details of master works up close and comes to know the artists through their techniques and details. He

produces treatment reports that serve as part of the object’s permanent record to guide future conservation work.

You can learn more about Robert’s work at [skylightstudiosinc.com](http://skylightstudiosinc.com). If you are interested in the Caproni Collection of reproduction sculpture, visit [capronicollection.com](http://capronicollection.com).

**JUDY L. HAYWARD** is executive director of Historic Windsor, Inc., and the Preservation Education Institute. She serves as education director for the Traditional Building Conferences Series and Online Education Program. She blogs and writes this Techniques column regularly for Traditional Building. She specializes in the development of educational programs for builders, architects, and tradespeople. She can be reached at [peihwi@gmail.com](mailto:peihwi@gmail.com) or 802.674.6752.





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## PRODUCTS IN-DEPTH

BY NANCY A. RUHLING



Haddonstone makes a variety of cast-stone products, including architectural stone and garden ornaments.

Haddonstone photo

# Cast in Stone

Companies producing architectural concrete for historically-inspired buildings.

**W**hen it's not practical or appropriate to use natural-cut stone in projects, architects often specify architectural cast stone, which has been a prime building material for hundreds of years.

Although the oldest example of its use is in the remains of a medieval fortification in Carcassonne, France, dating back to 1138, cast stone didn't become an architectural building unit until much later. By 1900, it was used extensively in London, and by 1920 it had crossed the Atlantic to America.

Although there are several products on the market that simulate stone and are made of concrete, not all of them can be classified as architectural cast stone, according to Jan Boyer, executive director of the Cast Stone Institute, an in-

dustry group whose mission is to assure that the highest quality architectural cast stone is used in projects.

By institute standards, architectural cast stone is defined as "a refined architectural concrete building unit manufactured to simulate natural cut stone and used in unit masonry applications."

Architectural cast stone, which generally is non-structural and anchored to load-bearing masonry wall systems, can be made from white and/or gray cements, manufactured or natural sands, carefully selected crushed stone or well graded natural gravels, mineral coloring pigments, and admixture. It achieves the desired color and appearance while maintaining durable physical properties that exceed most natural-cut building stones.

It can be fabricated by one of three methods—dry tamp, wet cast, or machine made—and is specified to meet or exceed the standards of ASTM C1364, Standard Specification for Architectural Cast Stone.

Calling architectural cast stone "a truly superior alternative to natural-cut building stone," Boyer points to its versatility. "Used as an architectural feature, trim, ornament, or veneer for buildings or other structures, it has a fine-grain texture to simulate all types of natural-cut stone, including limestone, granite, slate, travertine, and marble."

She adds that "it's often the material of choice for restoration projects where it can easily replicate intricate stone original pieces. As such, it tends to be on buildings of great stature."

### THE CAST STONE INSTITUTE CASTSTONE.ORG

A non-profit trade association, the Cast Stone Institute was formed in 1927 to develop standards, disseminate information, and educate designers and users of the inherent value, quality, and best practices in the use of architectural cast stone.

The Cast Stone Institute does not just make industry recommendations—it works within recognized reference standards documents, such as ASTM, to assure the specifier of the highest quality cast stone.

To enhance this effort, Standards for Architectural Cast Stone (TMS 404-504-604 for the Design, Fabrication and Installation) were developed in 2016 through The Masonry Society. These new



BELOW Cast stone is used in a variety of commercial and residential applications.

BOTTOM The beautiful arches at Our Lady of Washington Catholic Church in Houston are made of cast stone supplied by Siteworks.



standards were adopted into the 2018 version of the International Building Code.

Recognizing the importance of quality cast-stone production to the viability and longevity of a building or landscape project, 18 years ago, the institute developed a plant certification program. Over the years, it has been enhanced to make it one of the most rigorous certification programs in the construction industries.

The institute's members provide a 10-year limited product warranty on their products.

Technical specification, technical bulletins, and related materials are included in the Cast Stone Institute Technical Manual that is available for free download from their website.

### CAPITAL CAST STONE CAPITALCASTSTONE.COM

This family-owned company, which is based in Lebanon, Indiana, has been in business since 2008. It has 17 employees and specializes in commercial, residential, and landscape/hardscape projects.

"My wife and I run the main portion of the day-to-day operations," says president Troy A. Deppe, adding that the artisans have many years of combined casting and mould-making experience. "Our main priority is the craftsmanship and attention to detail that results in a product that stands the test of time. We strive to provide material to you when needed and to give you the best customer service possible."

### HADDONSTONE HADDONSTONE.COM

A specialist in hand-crafted architectural stonework and home and garden ornaments, Haddonstone offers over 500 standard designs in traditional, contemporary, and classical styles as well as made-to-order cast-stone products.

The 50-year-old company, which has facilities in Pueblo, Colorado, and the United Kingdom, is managed by David Barrow, the son of the founder.

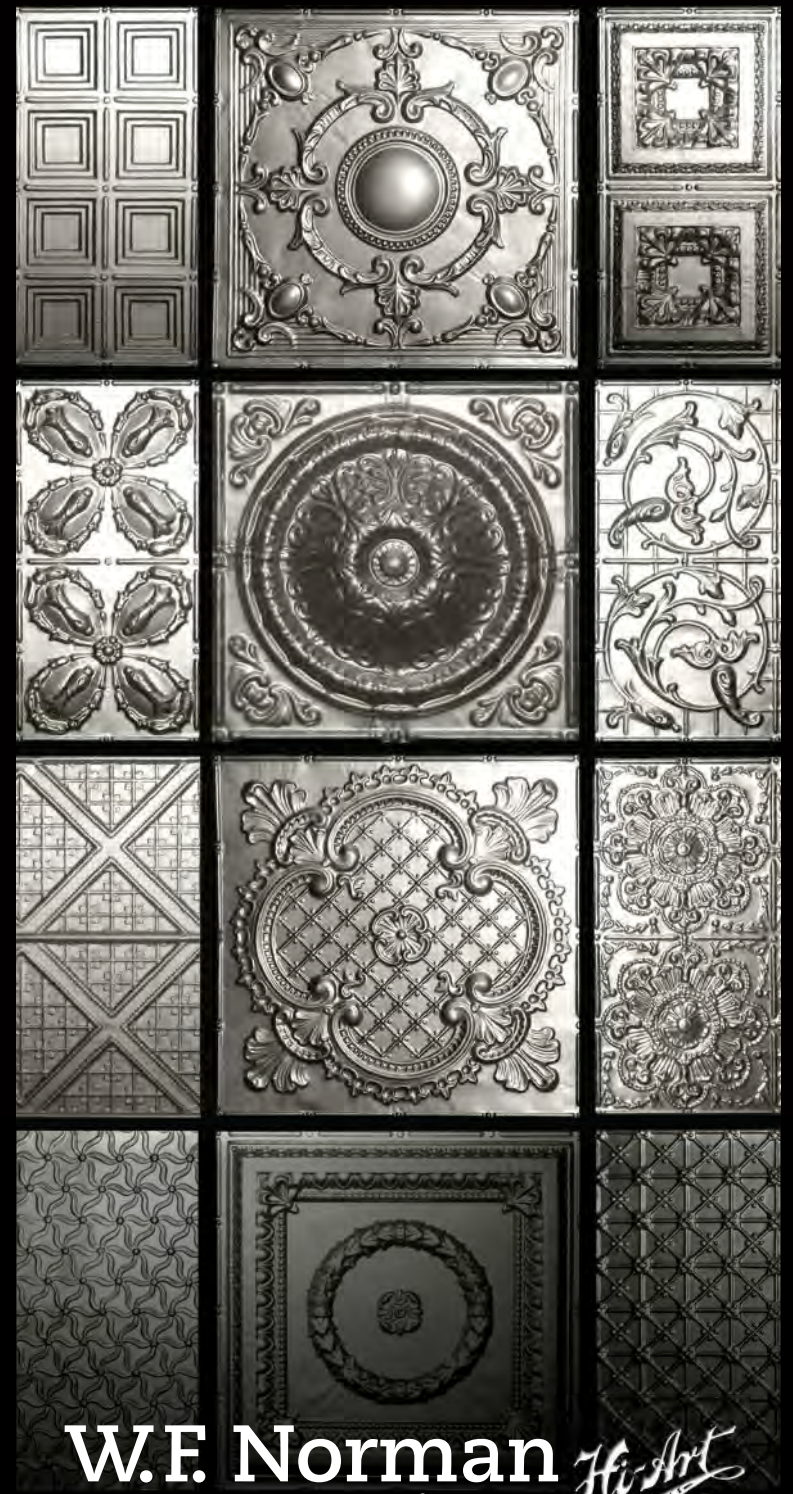
"We pride ourselves on our classic designs, which were Greek and Italian historically," says president David West, adding that Haddonstone's seven original garden designs are still in production. "We're able to achieve a lot of detail because the molds for our ornaments are rubber in Fiberglass surrounds. We use timber molds for simpler profiles."

Haddonstone is a member of the United Kingdom Cast Stone Association and the Institute of Classical Architecture & Art.

### SITWORKS SITEWORKSCASTSTONE.COM

A full-service company for commercial and residential projects, Siteworks supplies everything from modular stone veneer, window and door trim, and hardscapes to custom medallions and entries as well as a line of bespoke cast-limestone fireplace mantels.

"We are capable of handling projects sized from simple neighborhood



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**BELOW & RIGHT** Siteworks' cast stone was used on the façade of the Brockman Music and Performing Arts Center at Rice University in Houston.



monuments up to complex governmental, institutional projects that use in excess of \$1 million of cast stone," says president Troy McCune, adding that Siteworks has supplied stone for the Brockman Music and Performing Arts Center at Rice University in Houston, the Reed Arena and Kyle Field at Texas A&M University and the National Memorial Cemetery of the Pacific in Honolulu.

He notes that cast stone is "most appropriate for any masonry project looking to add elegance and longevity in a cost-savings manner compared to natural dimensional stone" and adds that it's a suitable replacement for calcium silicate.

Siteworks, which was established in 1989, produces cast stone products that exceed the industry's highest ASTM standards.

#### **SUN PRECAST CO.** **SUNPRECAST.COM**

A specialist in historical restoration, Sun Precast Co. fabricates cast stone for commercial, residential, institutional, and landscape projects.

The company, which is based in Central Pennsylvania, was established in 1978 and has supplied stone for a variety of sites on the East Coast, including the Edison Memorial Tower in New Jersey, West Point's Taylor Hall, Princeton University Press, Yale University, New York City's Central Park Bandshell, Bucknell University, and Longwood Gardens.

"Our company is 100 percent employee-owned, and over 35 percent of them have been with us for more than 20 years," says Joe Schmadel, president and CEO. "The experience of our employees is instrumental in the premium quality of our products."

Siteworks photos



BELOW & RIGHT Sun Precast Co. fabricated the stone for the restoration of this 9-foot-tall, 10-foot-wide eagle for West Point's Taylor Hall. The original was in pieces, and Sun Precast was commissioned to combine them to create a more water-tight installation.



Sun Precast Co. photo



Lupini Construction photo

FORTY THIRD 1783 GENERAL WASHINGTON  
 BY GENERAL KNOX AND GOVERNOR  
 VAN CORTLANDT MANSIONKINGSBRIDGE.

ON THE FOLLOWING DAY HE PROG  
 RIVER TO THE OCCUPATION OF NEW  
 BY THE BRITISH ON NOVEMBER T

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PROJECT 20 East End Avenue  
ARCHITECT RAMSA





# A CONTEMPORARY *classic*

**Stately and intimate, RAMSA's 20 East End Avenue is a modern building rooted in pre-war architectural tradition.**

BY JANICE RANDALL ROHLF | PHOTOS BY PETER AARON / OTTO



**LEFT** Gray brick and limestone, 20 East End Avenue carries forward the vocabulary of great New York apartment houses with the special inflection of the East End neighborhood.

**ABOVE** The traditional entrance on East End Avenue is embellished with classical curled volutes and custom vertically attenuated bronze-colored sconces inspired by 1930s French ironwork.





**A**s densely populated as it is, New York City has long been regarded as the place to live if you covet privacy. So when it came to replacing a featureless municipal outpost on the Upper East Side with a 17-story condominium building, the conversation between architect and developer revolved around connection, belonging, and intimacy—in terms of both the architectural programming and the occupants' lifestyle.

Designed inside and out by Robert A.M. Stern Architects, 20 East End Avenue embodies the firm's signature modern classicism inflected with an element

of nostalgia—a nod to the Astor-Vanderbilt-Rockefeller era—that connects to taller buildings in RAMSA's high-end residential portfolio, such as 15 Central Park West, 520 Park Avenue, and 220 Central Park South. Sharing Gracie Mansion's hidden-gem neighborhood, tranquil blocks stretching from 79th to 90th streets along the East River, 20 East End exudes the rarefied charm of a private townhouse, masterfully combining gracious pre-war proportions and 21st-century amenities. The intention behind 20 East End Avenue, say RAMSA partners Paul Whalen and Michael Jones, was to be a good neighbor, in the sense of fitting in while still making a visual statement.

"This is the first time we've designed a building that hews so closely to the classic pre-war Candela massing strategy," says Whalen, citing the influence of architect

Rosario Candela's 1920s apartment buildings with their magnificent terraced setbacks and rambling penthouses. The two were particularly inspired by Candela's 720 and 778 Park Avenue; they also looked at the restraint and sophistication of nearby 120 East End Avenue, designed in 1931 by Charles Adams Platt, another of a group of early 20th-century New York architects who, observes Whalen, "deeply understood classicism but also deeply understood how people of their time wanted to live."

Nearly a century later and similarly motivated, Whalen and Jones photographed and studied the architectural characteristics of the classic pre-war Park Avenue building from 34th Street to the 90s. Equally focused was their client, Edward Baquero, President of Corigin Real Estate Group. "Ed is very fond of classical





**LEFT** In all 43 residences scaled for family living, twelve-foot ceilings and large, low-silled windows bring the outside in.

**RIGHT** Setback terraces crowning the building give the irregular upper massing the appearance of a series of stepped gardens.







**ABOVE** A limestone spiral staircase connecting three floors of amenities evokes a private townhouse ambiance.



**LEFT** The intimate octagonal lobby's ceiling, a shallow handkerchief vault, was inspired by 19th-century English architect Sir John Soane's neoclassical style.

**RIGHT** Spacious living rooms recall the generous proportions of pre-war New York apartments.



BELOW Balconies in a modern classicist mode and large windows punctuate the limestone facade.



BELOW A penthouse view of the Manhattan skyline.







**ABOVE** From a soaking tub floating in the middle of a penthouse bathroom, the view is spectacular.

**TOP** The look of a number of residences.

architecture and has a passion for every detail,” says Jones. “Clients [including Baquero] seek out RAMSA for the firm’s ability to bring the bespoke attitude of our desirable private houses to multi-family residential buildings.”

Quietly but distinctively announced by a warm gray brick and limestone façade punctuated by large windows—including stacked bays and Juliet balconies—20 East End Avenue has two entrances: a traditional main door on one side and a porte-cochère leading to a

motor court on the other. “On the street, buildings need to present themselves as ‘personalities’; they need to be dressed properly, and they need to be interesting,” says Whalen. To this end, decorative curled volutes—one of the building’s most classical features—and custom vertically attenuated bronze-colored sconces inspired by 1930s French ironwork embellish the stately East End Avenue entrance. At the arched motor court entryway, a hanging light fixture reprises the vocabulary of the sconces.

One of only a limited number in the city, the motor court was inspired by ceremonial French courtyards known as *cours d’honneur*, and one can easily imagine a horse-drawn carriage pulling in where private cars now do. More handsome than showy, the space is paved with Belgian blocks surrounding a multi-colored pebble mosaic. Metal latticework arching overhead and an ornamental fountain suggest an outdoor garden room.

Both entrances lead to the octagonal





lobby, purposefully intimate in size to feel like a foyer in a private home. “For this space, we again looked at other architects and one of our favorites is Sir John Soane,” says Jones, referring to the 19th-century English architect who specialized in the neoclassical style. The lobby’s shallow handkerchief vault incised with classical decoration mimics a similar ceiling in the breakfast room of Soane’s house in London, now a museum. “Soane’s distilled classicism, which many think prefigured 20th-cen-

tury modernism, works perfectly in this modern classical building,” says Whalen. (Whalen is Chairman of the New York-based Sir John Soane’s Museum Foundation.)

Beyond the lobby, a limestone spiral staircase connecting three floors—one up and one down—further evokes the townhouse ambiance both the architect and developer sought for their residents. Descend from the lobby level to reach a wine cellar, wine-tasting room, and dining room; go up to access the library,

a cozy jewel box of a room lacquered in deep blue that contains a 900-book collection curated by Robert A.M. Stern. “Historic New York apartment buildings lured the wealthy away from single-family houses with an array of club-like amenities. Here we’re harkening back to that genteel tradition, taking care to provide architectural variety among the spaces,” says Whalen, which here also include a spa and fitness center, a clubby billiards room, and a teen room.

“People enjoy feeling like they’re liv-

**ABOVE** Large kitchens with Brazilian quartzite countertops and top-of-the-line appliances can accommodate the whole family.





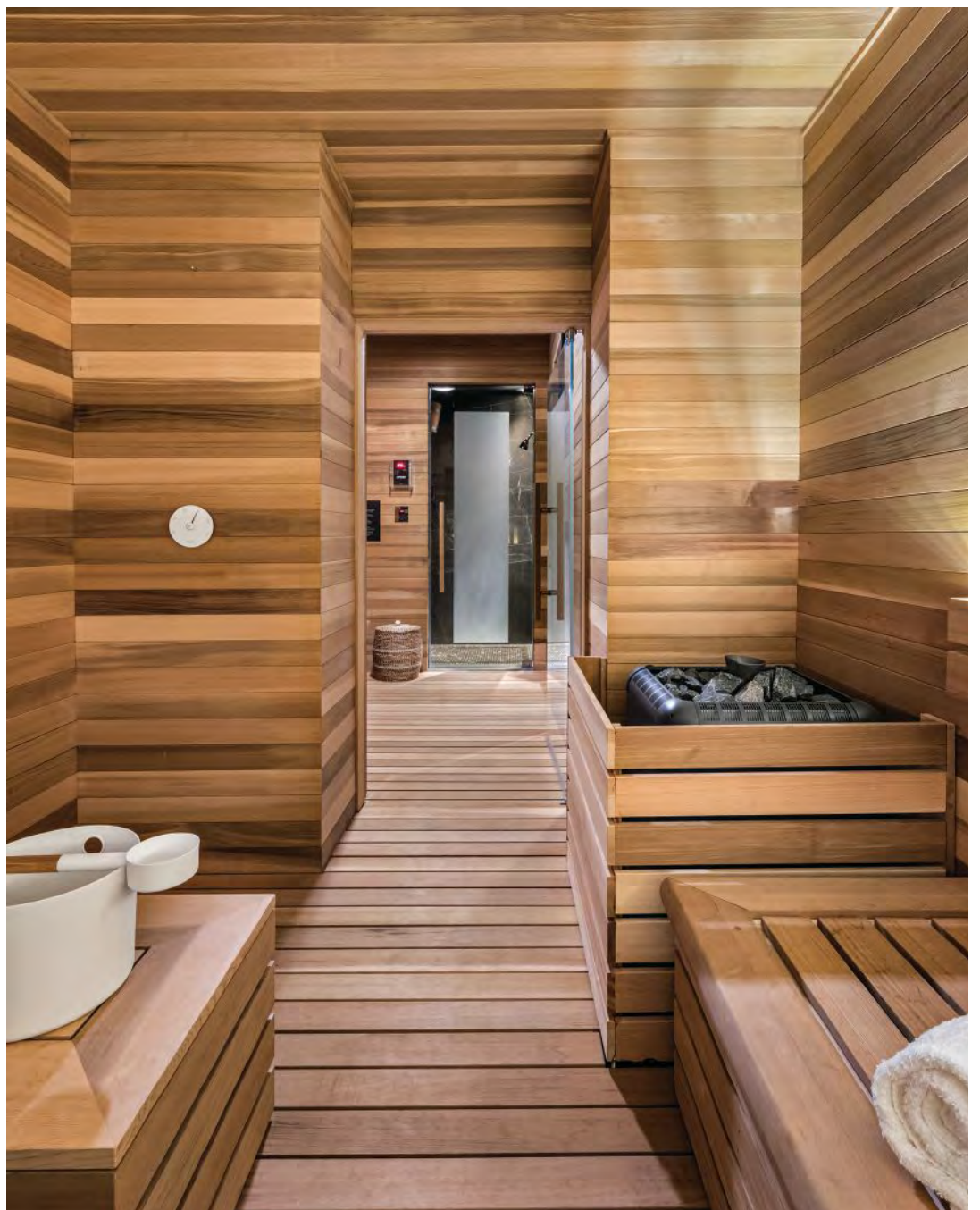
THIS PAGE & OPPOSITE Three floors of amenities include a library, a billiard room, a wine cellar, and wine-tasting room, a 3,000-square foot gym, and a spa.

ing somewhere special, not in a bunch of file cabinets,” says Jones, describing the building as “a little idiosyncratic, a little theatrical, and with a bit of a soul.” Whalen points out that the sense of harmony achieved within complexity carries through from the exterior of the building, through the public spaces, and into the individual residential spaces—41 apartments, three duplex maisonettes, and two penthouses—that range from two to six bedrooms and whose floor plans are rarely repeated. While some may have bigger terraces, gas fireplaces, or octagonal foyers, what they all have in common is a dual sense of privacy and openness. Twelve-foot ceilings and large, low-silled windows bring the outside in. Setback terraces à la Candela give the irregular upper massing the appearance of a series of stepped gardens. More than visually arresting, the silhouette against the sky is magical.

“We focused not only on designing a building that serves its residents, but that also becomes a handsome and engaging participant in its neighborhood,” says Whalen. “20 East End is not simply a machine for living. It’s designed inside-out and outside-in to give something back to the city.”









The Metropolitan Lofts, designed by Marchetto Higgins Stieve, is in the heart of Morristown, New Jersey's historic Central Business District.







# MIXED-USE IN MORRISTOWN

Marchetto Higgins Stieve pushes the limits of design of a new residential and retail building in New Jersey.

BY NANCY A. RUHLING

PHOTOS BY DON PEARSE PHOTOGRAPHY

**T**he Metropolitan Lofts, a new traditional-style mixed-use building in the heart of Morristown, New Jersey, expands the design vision of the town's historic Central Business District.

The residential rental and retail structure, which blends the old and the new in timely perfection, is around the corner from the town's stately classic buildings and the Morristown Green, the grassy gathering spot that serves as the town's heart and soul and acts as the host of a variety of large public events.

While the terms of the town's redevelopment plan call for loft-style buildings with red brick facades and huge windows, high ceilings, and exposed brick walls to pay homage to Morristown's industrial warehouse past, Dean P. Marchetto, FAIA, PP, a founding principal of Marchetto Higgins Stieve, pushed the parameters.

"This loft-style expectation didn't exactly work with the existing context of the site's neighboring properties or the developer's design wishes," he says.

The award-winning firm had already designed one loft structure for Morristown, an urban center about 30 miles west of Manhattan, so Marchetto and his partner, Bruce A. Stieve, AIA, looked to the iconic lofts of New York City's Soho for new inspiration.

They were drawn to the neighborhood's iconic Victorian-era cast-iron buildings and searched for a less expensive, more efficient material to achieve a similar look.

"There was one corner building we saw that was painted in a color similar to zinc," Marchetto said, adding that Stieve sketched out the ideas. "It rang a bell with us."

They chose zinc, a natural, sustainable, bendable material that they were acquainted with

because they had used it to add a round apse-like addition to the 19th-century brick church that houses their Hoboken headquarters.

"Zinc has the qualities of copper, but it doesn't tarnish," Marchetto says, adding that it's a popular façade choice in Europe, particularly Paris. "You can shape it and mold it so you can produce details like dentils, cornice lines, corbels, and entablatures. This also allowed us to give more attention to the detailing of the façade while staying within budget."

It's also durable—it can last about a century—and it is maintenance free—it doesn't require painting.

Once the material was chosen, everything else fell into place.

"Generally, when we do these types of projects, getting approval from the town planning board is the biggest challenge," Marchetto says. "But in this case, the town loved our design, and it went through immediately with strong support from Mayor Tim Dougherty."

The Metropolitan Lofts, which has 59 residential rental units and 3,500 square feet of ground-level retail space, was built on what had been a vacant lot that's next to a couple of 19th-century historic homes and served as one of two entrances to the town's 800-space municipal parking garage.

"Because the parking garage was already there, we didn't have to incorporate parking into our design," Marchetto says, adding that this freed the first floor for retail space, giving the project a bona-fide streetscape. "But we did have to keep the garage entrance in the same place and design the building to span over it."

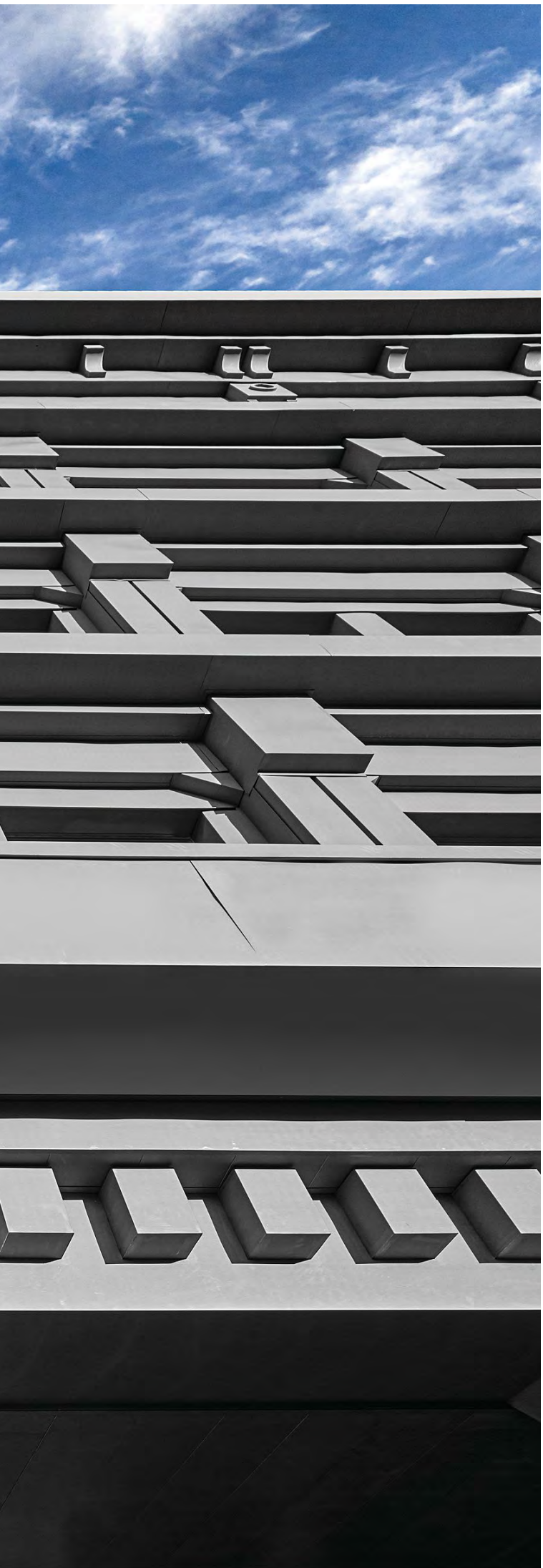
He adds that the garage, which puts all the parking for the block in a singular central location, is a prime example of "forward thinking and great urban design."





Zinc, a bendable, moldable material, allowed Marchetto Higgins Stieve to emulate the designs on 19th-century cast-iron buildings.





## KEY SUPPLIERS

ARCHITECT Marchetto Higgins Stieve

CO-DEVELOPER Marshall B. Tycher,  
Roseland Residential Trust

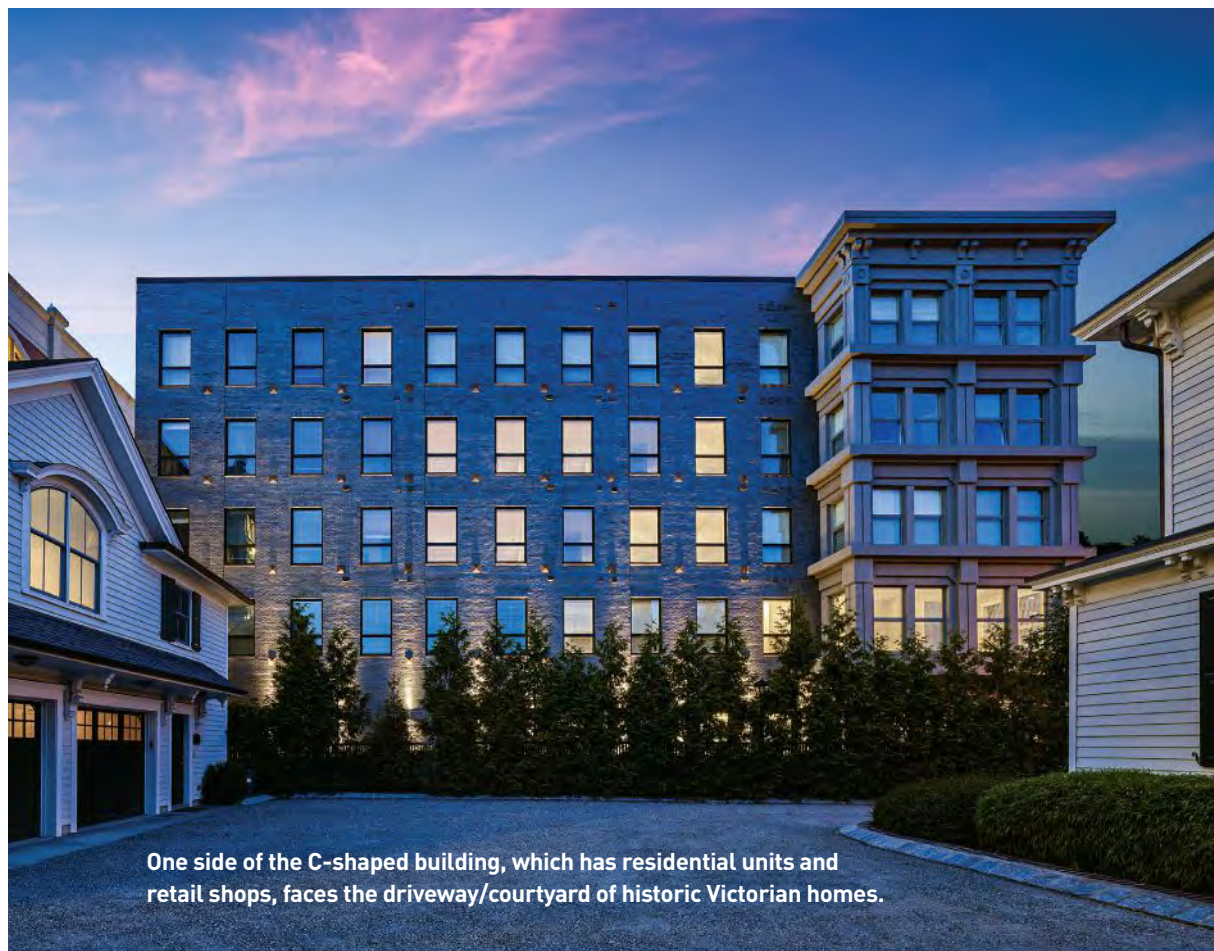
CO-DEVELOPER Howard Irwin, Woodmont  
Properties

PLANNING CONSULTANT Topology

ZINC SUPPLIER VM Zinc

ZINC FABRICATOR B&B Sheet Metal

BRICK SUPPLIER Endicott



One side of the C-shaped building, which has residential units and retail shops, faces the driveway/courtyard of historic Victorian homes.



**BELOW** The Metropolitan Lofts blends in with its neighbors, which include historic Victorian homes.

**RIGHT** The black-brick façade was built over the entrance to the 800-space municipal parking garage.



The resulting C-shaped Metropolitan Lofts building, which won a New Jersey AIA design award in 2018, merges the centuries, creating what Marchetto calls an aesthetic that's "traditional and modern at the same time."

The classical main façade is made of highly detailed zinc supplied by the French company VM Zinc.

The other three sides, sleek and subtle, are clad in a deep grey, virtually black manganese ironspot brick fabricated by Nebraska-based Endicott and are defined by a regular rhythm of punched window openings similar to those in 19th-century factories.

"The brick has a sheen that reflects light so that it becomes less black," Marchetto says, adding that the mortar matches its color, and the façade's geometric details are made of rust-color cast stone.

The brick, which cost significantly

less than the zinc, was an economic as well as an astute design choice.

"The pairing of the two complementary facades makes the building look less massed," Marchetto says. "We accentuated this on the front façade by recessing the brick portion, which includes the entrance to the municipal parking garage, 12 feet so it looks like the zinc façade is a popped-out bay window."

The effect, he adds, is to break the building into two components that "fit into the scale of the block."

The window frames of the zinc façade are the same shade of gray so they fade into the background. Those of the brick sections are black, making them virtually invisible.

The actual garage entrance tunnels underground, leaving the new architecture unencumbered.

In addition to the use of zinc, which is a 100 percent recyclable product that

requires a low level of energy consumption for manufacturing, The Metropolitan Lofts has other green features.

The rear elevated courtyard, which is above the retail shops, has a green planted roof to manage and release stormwater, protect the membrane from UV rays, and provide added insulation.

The one- and two-bedroom residences feature ENERGY STAR-certified appliances, low-flow water-saving plumbing fixtures, quartz countertops, LED lighting, and hardwood wide-plank flooring.

The municipal garage also is green: It offers shared parking and is equipped with electric car-charging stations.

Marchetto says that The Metropolitan Lofts has been well-received. "It stands out because it's unique and for the fact that the town loves it," he says. "It creates a richness and excitement that I like. It's a nice thing to deliver to the town; we're pleased and proud of it."









# thoughtful RESTORATION

**McMillan Pazdan Smith revives one of the only remaining pre-cast buildings in the Chicago School of Style in the country.**

**BY MARY GRAUERHOLZ**

**PHOTOGRAPHY BY ATLANTIC ARCHIVES/RICHARD LEO JOHNSON**  
(UNLESS OTHERWISE NOTED)

**W**hen an architect's goal is to restore a building listed in the National Register of Historic Places, no detail is too small to sweat.

Work was underway on the Montgomery Building in Spartanburg, South Carolina, when a consultant with the South Carolina State Historic Preservation Office noticed a slight discrepancy between the original column capitals and a new capitol mold awaiting approval.

The mockup of the original—a unique pattern that includes a griffon vulture and tiny fish in the relief—was slightly off. The fish gills were a hair too shallow; a griffon's beak was chipped. Back to the drawing board, where artisans perfected the design. Several molds later, final approval was given and the capitals were fabricated.

"There were literally artists, back and forth, tweaking the design," says K.J. Jacobs, AIA, LEED AP, an architect and principal at McMillan Pazdan Smith.

For Jacobs, it was another day on the job site.

After all, the \$29 million renovation involved thousands of minute details that hinged on historical accuracy. It wasn't just that essential tax credits required it; McMillan Pazdan Smith owed a meticu-

lous replication to Spartanburg and its citizens. The architectural firm, with offices across the Southeastern U.S., predicted that the refurbished landmark would help boost downtown into a new, more prosperous era.

"When we were done with the exterior, it was in better condition, more pristine, than the original," Jacobs says. "The new concrete panels essentially replicated the exterior of the building."

The Montgomery Building originally housed textile and cotton manufacturing centers in the first half of the 20th century. When those industries took a hit, the building lost its tenants. Deterioration was rapid. "The Montgomery was such a blight on downtown," Jacobs says. "There were literally zip ties holding the building together. Scaffolding was scattered on the sidewalk. Not only did it look bad; it was physically unsafe."

Had the Montgomery been destroyed, a big piece of Spartanburg history—and classic architectural style—would have been lost.

Construction of the original 10-story Montgomery began in 1924. It may be one of the only remaining pre-cast buildings in the style of the Chicago School of architecture, which honored American ingenuity.



The Montgomery Building, in Spartanburg, South Carolina, was deteriorated and unsafe before the architectural firm of McMillan Pazdan Smith entered the picture and oversaw a \$29 million restoration.







PROJECT Chicago School of Style  
ARCHITECT McMillan Pazdan Smith



**RIGHT** The Main Arcade runs the length of the first floor, connecting the north and south entrances. McMillan Pazdan Smith carefully documented and painstakingly recreated the surviving interior details, including the gilded capitals and ceiling fixtures.

**BELOW** The entrance to the completed South Arcade has transom windows that provide natural light. Large, custom made storefront windows ring the building's first floor, which offers space for retail stores and restaurants.

**BOTTOM, MIDDLE** A before image of the Main Arcade. Years of neglect and vacancy left the building in very poor condition. Materials and details were restored where possible, but many of the original details had to be recreated.

**BOTTOM, RIGHT** The South Arcade entrance prior to the renovation. This is one of two main entrances to the building, located on Church Street.

**OPPOSITE** The building, in classic Chicago School style, has a steel frame with masonry cladding and plate-glass windows.







Chicago style buildings are distinguished by their steel frames with masonry cladding and large plate-glass windows that limit the exterior ornamentation, says Donald L. Love Jr. AIA, the preservation architect and architect of record for the project at McMillan Pazdan Smith. “The steel frame was not new in the 1920s,” Love says. “But it was the only way to achieve the height of the ‘modern’ skyscrapers.”

Another marker of Chicago style is how the structure reflects a classi-

cal column’s three parts: lower floors forming a base; middle stories acting as the column’s shaft; and top floors often capped with a cornice and usually with more ornamental detail, representing the column capital. The entire building becomes a Greek column, in a way.

Today, the Montgomery, measuring 127,000 square feet, has returned to an elegant interpretation of Chicago style, while adapting to the needs of a modern city.

Like a column, the Montgomery

Building has three parts: a retail arcade and restaurants on the ground floor, office space on the second and third floors, and apartments on the top seven.

On one side of the building is evidence of probably the most egregious blunder inflicted on the building: a long wooden tunnel built in the 1970s so that people could access the elevator lobby from parking in the rear.

“People would stop by the construction site and talk about seeing Elvis in the theater, or how their grandfather had

worked there,” Jacobs says. “The reaction to our work was overwhelmingly positive.” (The theater was carved off the building as a separate project, and will likely revert to a theater as a nonprofit entity.)

National Park Service (NPS) standards required that all the Montgomery’s floors maintain or reconstruct the original layout of the public spaces. McMillan Pazdan Smith, fortunately, had original drawings from the 1924 design by the firm Lockwood Greene as reference.



**BELOW** The Montgomery has three parts: a retail arcade and restaurants on the ground floor, office space on the next two floors, and apartments on the top seven.

**RIGHT** The restoration, funded largely by tax credits, has been a boon to downtown Spartanburg's economy and social life. Wofford College, a few blocks away, is now connected to the rest of the downtown area.



The two and a-half-year restoration, which began in 2018, depended on many players. Approvals from the National Park Service and the South Carolina Historic Preservation Office were critical. Several city departments were brought in, as was the state Department of Transportation, since two state highways were closed during some construction.

Multi-million-dollar state and federal tax credits were essential. Because the Montgomery Building didn't have its own criteria on allowable historical renovation, the process was "a moving target," Jacobs says. That meant much ongoing negotiation among McMillan Pazdan Smith; the contractor, Harper General Contractors in Greenville, South Carolina; and agencies, both state and local.

Without the tax credits, the project "simply wouldn't have happened," Jacobs says. "It's an incredibly important asset. There is absolutely no doubt that without the credits, the building would have been torn down."

The biggest challenge, Jacobs says, was the compet-

ing interests of modern energy code, modern safety requirements, and the nature of historic renovations that receive tax credits.

One of the more niggling tasks—such as making sure the fish gills were at the proper depth—was eased when pieces of the building were found hidden away, including a few of the original plaster capitals that were removed in the 1960s. The capitals were refurbished and reinstalled in their original locations. Hundreds of single-pane windows were custom built by hand.

Located on North Church Street, the Montgomery Building has sparked improvements in Spartanburg's economy and social fabric. After 20 years, the area is robust again, with international businesses like Michelin and Lockheed Martin moving in. Wofford College, a few blocks away, is now connected to the rest of downtown.

There is a lot of personal satisfaction as well. As Jacobs says, "The building was in deplorable condition. Now, it's an incredibly beautiful building. It's why people like me become architects."



RIGHT: Andrew Cooke Photography









# SAVANNAH'S SOUTHSIDE

**A team comes together to envision what is possible for revitalizing a Savannah neighborhood.**

BY JEFF HARDER

To look at the Southside area of Savannah, Georgia, it seems a wholly different city than the one embodied in the graph-paper street grid and antebellum mansions of its 18th-century core. “When we think of Savannah, we tend to think of the historic district down near the river, the classic layout of squares and streets,” says Michael Swartz, principal at David M. Schwarz Architects. “We tend not to think of the neighborhoods outside where many of the people live.”

The Southside follows an approach common to postwar planning at the edges of American cities: long unbroken blocks, residential subdivisions, strip malls, and highway-esque arteries whose total number of lanes requires two hands

to count. And though the Southside’s residents are fond of their community—home to the expanding Armstrong campus of Georgia Southern University, Hunter Army Airfield, and St. Joseph’s Hospital—there’s a common belief that its built environment needs to adapt in order to attract new generations of Savannahians.

So in 2018, when the Congress for the New Urbanism arrived in Savannah for its annual conference, a group of building professionals led by Swartz spent four days analyzing the Southside’s built environment, gathering input from city leaders and residents, and sketching a vision of a possible future. The keys to the approach involve breaking up superblocks, scaling down big roads and offering alternative transportation

opportunities, incorporating a variety of housing, and creating welcoming public gathering spaces. And while there are no plans afoot to turn the plan into reality, the retrofit of the Southside showcases a viable path through nearly overwhelming complexity.

“This wasn’t a blank canvas: it was [more than] 1,200 acres with a huge road running through it, a defunct shopping mall—all kinds of serious constraints,” says Swartz, who previously completed master planning projects for downtown Fort Worth, Texas, Georgia’s City Center, and elsewhere for the Washington, D.C.-based David M. Schwarz Architects. “The first question you ask yourself is: where do I start? Then you find the kernels that you can hang on to and build off of.”

The Southside retrofit was one of the three projects planned for the 2018 Congress for the New Urbanism (CNU), an annual gathering devoted to advancing New Urbanist principles: walkable neighborhoods, equitable housing, sustainable mixed-use development, and so on. A staple of each Congress is the Legacy Project, in which architects, designers, and building professionals in attendance volunteer their team to tackle one particular design challenge in the host city. The experts meet with residents and local leaders, analyze the area, and, in the span of a four-day workshop, begin drafting a proposal for a project.

While most Legacy Projects are small, the Southside project was chosen specifically because of its massive scale, says Swartz; the project loomed so large

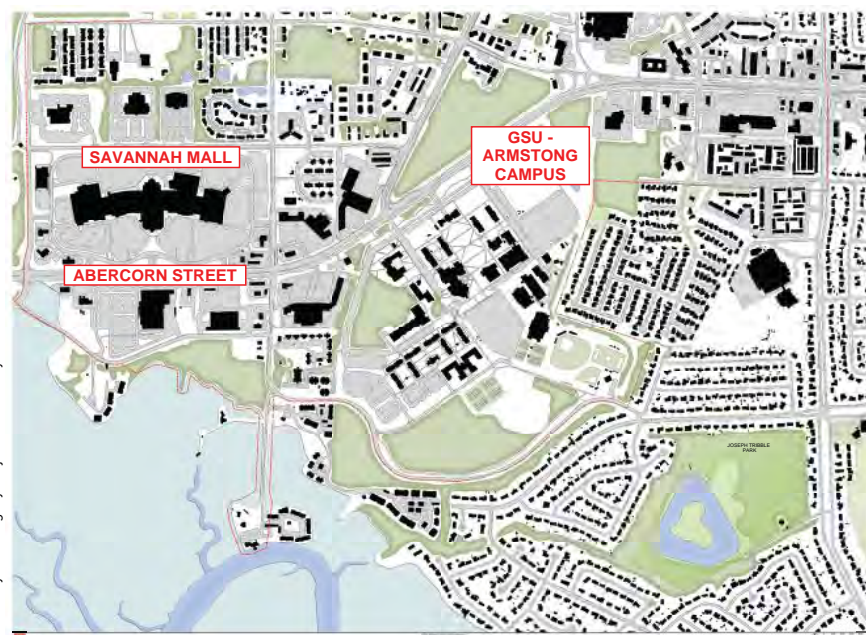
Courtesy CNU Legacy Project team led by David M. Schwarz Architects



**OPPOSITE** The Southside Legacy project's mission is to create a long-term vision to establish a vibrant, sustainable, mixed-use and walkable neighborhood center on the city's Southside with opportunities for education, housing, jobs, entertainment, and access to multiple modes of transportation.

**RIGHT** The team comes together to look at solutions to create a more walkable neighborhood.

**BELOW** The map on the left shows the current layout of the site area. The vision for the Southside is depicted on the right.



that he visited the Southside and met with residents a month before the Congress that March. A team that included a nationally-recognized transportation consultant worked day and night fashioning a plan that integrated residents' wide-ranging hopes and concerns for future development on the Southside: more and better housing of all types; a commercial presence that provided alternatives to the existing national chains and declining 77-acre shopping mall; and, rather than being compelled to drive to downtown to find a public sense of place, creating one for Southsiders that could be reached by foot or bike. The team also hoped its approach would influence Georgia Southern University, on the cusp of an expansion and a significant expected increase in student population.

The recommendations in the report largely focus on a few key projects, any of which could spur interest and momentum toward achieving the broader vision. One potential opening lies in a wooded 30-acre parcel opposite Georgia Southern's campus, strategically located between the mall and college at the intersection of Abercorn and Middleground Roads, the two main roads in the Southside. The retrofit calls for turning

the area into a public square that links into the university's campus, lined with mixed-use and municipal buildings and serving as a de facto park and event space for students, workers, and residents. "We felt it was really important that the university begin to look at how they could leapfrog across Abercorn Road and engage with the community, rather than just thinking of itself as a standalone institution," Swartz says. "[The 30-acre parcel] is small enough that with the right developer partnering with the city and the university, there's an ability to make a noticeable improvement."

Along with a general approach of shrinking the commercial spaces into smaller mixed-use squares, the CNU plan also suggests breaking down Abercorn Road—which swells to eight lanes at intersections—into a multi-way boulevard that's more hospitable to bicycles and pedestrians. "Effectively, you're breaking the road into two smaller digestible pieces, pulling away some of the local traffic that creates some of the congestion, and making it an easier road to cross," Swartz says. By diminishing the barrier effect of the state road, a broader area becomes more attractive for new development.

Another possibility involves trans-

forming the 77-acre mall and adjacent surface parking into a residential district with a variety of housing—student and workforce apartments, empty nester and senior homes—that offers an alternative to single-family dwellings. Other elements of the proposal involve redeveloping vacant and declining properties on Middleground Road, and creating a robust network of bike lanes to make transportation by pedal a practical option for students and residents to move around the area.

Again, the Southside retrofit is purely a concept for now. Actually implementing the retrofit would require coopera-

tion between state and local agencies, local residents, private developers, and multiple landowners as well as changes to various regulations and guidelines. "It's very rare that you'd have an opportunity to do the whole thing at once—it's just not going to happen," Swartz says. But executing smaller pieces of the whole project would have substantial impacts: modifying just an eighth of a mile of Abercorn Road near the university, for instance, would be a game changer.

"If you build a successful phase one, there's a good chance that you'll have a successful phase two, three, and so on. You just need the spark to get it going"



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<b>Historical Products Showcase</b>		
Architectural Grille .....	17	
800-387-6267 <a href="http://www.archgrille.com">www.archgrille.com</a>		
EverGreene Architectural Arts, Inc. ....	37	
212-244-2800 <a href="http://www.evergreene.com">www.evergreene.com</a>		
John Canning Conservation & Painting Studios .....	33	
203-272-9868 <a href="http://www.JohnCanningCo.com">www.JohnCanningCo.com</a>		
Preservation Products, Inc. ....	64	
800-553-0523 <a href="http://www.preservationproducts.com">www.preservationproducts.com</a>		
<b>Columns &amp; Capitals</b>		
Chadsworth Columns .....	5, 65	
910-763-7600 <a href="http://www.columns.com">www.columns.com</a>		
<b>Metal, Wood &amp; Composite Windows</b>		
Abatron, Inc. ....	19	
800-445-1754 <a href="http://www.abatron.com">www.abatron.com</a>		
Hope's Windows, Inc. ....	Inside Front Cover, 67	
716-665-5124 <a href="http://www.hopeswindows.com">www.hopeswindows.com</a>		
Jim Illingworth Millwork, LLC .....	67	
315-232-3433 <a href="http://www.jimillingworthmillwork.com">www.jimillingworthmillwork.com</a>		
Kolbe Windows & Doors .....	3, 67	
800-955-8177 <a href="http://www.kolbewindows.com">www.kolbewindows.com</a>		
Parrett Windows & Doors .....	9, 68	
800-541-9527 <a href="http://www.parrettwindows.com">www.parrettwindows.com</a>		
Pilkington NA .....	7, 68	
800-221-0444 <a href="http://www.pilkington.com">www.pilkington.com</a>		
St. Cloud Window, Inc. ....	6, 68	
800-383-9311 <a href="http://www.stcloudwindow.com">www.stcloudwindow.com</a>		
Weather Shield Windows & Doors .....	11, 68	
800-538-8836 <a href="http://www.weathershield.com">www.weathershield.com</a>		
<b>Doors &amp; Door Hardware</b>		
Brass Accents, Inc. ....	71	
877-332-7277 <a href="http://www.brassaccents.com">www.brassaccents.com</a>		
Brownstone Doors .....	71	
718-832-1058 <a href="http://www.brownstoneddoors.nyc">www.brownstoneddoors.nyc</a>		
Historic Doors .....	21	
610-756-6187 <a href="http://www.historicdoors.com">www.historicdoors.com</a>		
Vintage Millwork and Restoration .....	71, Back Cover	
717-687-0292 <a href="http://www.vintagemillworkrestoration.com">www.vintagemillworkrestoration.com</a>		
<b>Window Accessories &amp; Hardware</b>		
Gaby's Shoppe .....	19	
800-299-4229 <a href="http://www.gabys.com">www.gabys.com</a>		
Phelps Company .....	69	
603-336-6213 <a href="http://www.phelpscompany.com">www.phelpscompany.com</a>		
<b>Storms, Screens &amp; Soundproofing</b>		
Allied Window, Inc. ....	73, Inside Back Cover	
800-445-5411 <a href="http://www.alliedwindow.com">www.alliedwindow.com</a>		
Arch Angle Window & Door .....	73	
330-723-2551 <a href="http://www.archangleohio.com">www.archangleohio.com</a>		
Architectural Components, Inc. ....	72	
413-367-9441 <a href="http://www.architecturalcomponentsinc.com">www.architecturalcomponentsinc.com</a>		
Indow .....	17	
503-284-2260 <a href="http://www.indowwindows.com">www.indowwindows.com</a>		
Innerglass Window Systems .....	73	
800-743-6207 <a href="http://www.stormwindows.com">www.stormwindows.com</a>		
<b>Landscape &amp; Streetscape Specialties</b>		
Haddonstone (USA), Ltd. ....	37	
719-948-4554 <a href="http://www.haddonstone.com">www.haddonstone.com</a>		
Robinson Iron Corp. ....	25	
800-824-2157 <a href="http://www.robinsoniron.com">www.robinsoniron.com</a>		
<b>Lighting &amp; Electrical</b>		
Ball & Ball Lighting .....	17	
610-363-7330 <a href="http://www.ballandball.com">www.ballandball.com</a>		
Bevolo Gas & Electric Lights .....	13	
504-522-9485 <a href="http://www.bevolo.com">www.bevolo.com</a>		
Deep Landing Workshop .....	76	
877-778-4042 <a href="http://www.deeplandingworkshop.com">www.deeplandingworkshop.com</a>		
Grand Light .....	21	
800-922-1469 <a href="http://www.grandlight.com">www.grandlight.com</a>		
Heritage Metalworks .....	15	
610-518-3999 <a href="http://www.hmwpa.com">www.hmwpa.com</a>		
Herwig Lighting .....	77	
800-643-9523 <a href="http://www.herwig.com">www.herwig.com</a>		
House of Antique Hardware .....	33	
888-223-2545 <a href="http://www.houseofantiquehardware.com">www.houseofantiquehardware.com</a>		
Lantern Masters, Inc. ....	8, 76	
818-706-1990 <a href="http://www.lanternmasters.com">www.lanternmasters.com</a>		
Remains Lighting .....	21	
212-675-8051 <a href="http://www.remains.com">www.remains.com</a>		
St. Louis Antique Lighting Co. ....	1, 76	
314-863-1414 <a href="http://www.slalco.com">www.slalco.com</a>		
Steven Handelman Studios .....	77	
805-962-5119 <a href="http://www.stevenhandelmanstudios.com">www.stevenhandelmanstudios.com</a>		
Vintage Hardware & Lighting .....	29	
360-379-9030 <a href="http://www.vintagehardware.com">www.vintagehardware.com</a>		
<b>Stairs &amp; Railings</b>		
Historical Arts & Casting, Inc. ....	19	
800-225-1414 <a href="http://www.historicalarts.com">www.historicalarts.com</a>		
James DeMartis Metal Studio .....	15	
631-329-2966 <a href="http://www.jamesdemartis.com">www.jamesdemartis.com</a>		
Wiemann Metalcraft .....	75	
918-592-1700 <a href="http://www.wmcraft.com">www.wmcraft.com</a>		
Zepa Industries, Inc. ....	2, 75	
704-583-9220 <a href="http://www.zepa.com">www.zepa.com</a>		
<b>Architectural Sheetmetal</b>		
B&B Sheetmetal .....	15	
718-433-2501 <a href="http://www.bbsheetmetal.com">www.bbsheetmetal.com</a>		
NIKO Contracting Co., Inc. ....	33	
412-687-1517 <a href="http://www.nikocontracting.com">www.nikocontracting.com</a>		
W.F. Norman Corp. ....	35	
800-641-4038 <a href="http://www.wfnorman.com">www.wfnorman.com</a>		
<b>Specialty Brick &amp; Mortars</b>		
Belden Brick Co., The .....	4, 79	
330-456-0031 <a href="http://www.beldenbrick.com">www.beldenbrick.com</a>		
Trow & Holden .....	79	
800-451-4349 <a href="http://www.trowandholden.com">www.trowandholden.com</a>		
Weathercap, Inc. ....	79	
985-649-4000 <a href="http://www.weathercap.net">www.weathercap.net</a>		



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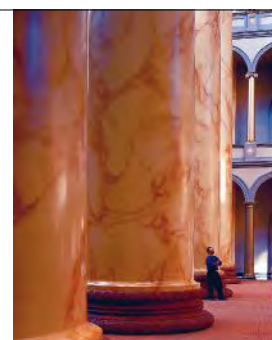


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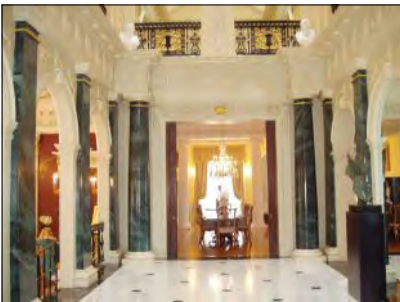
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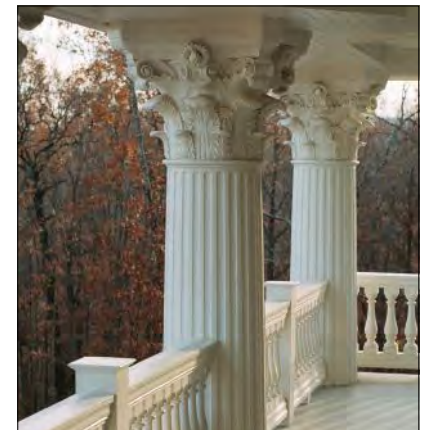
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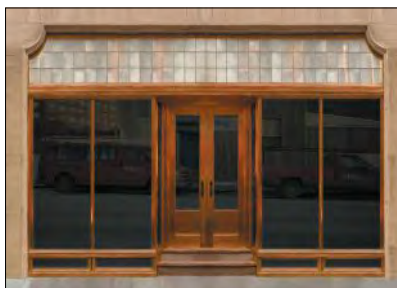
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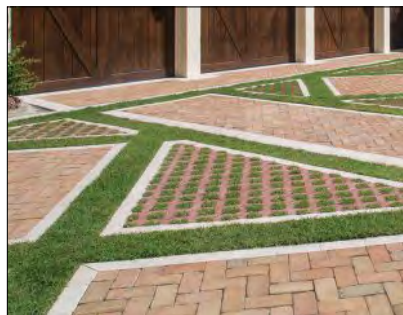
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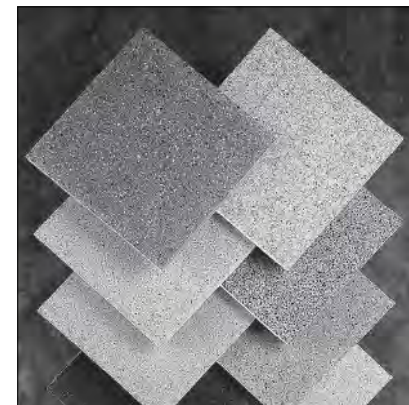
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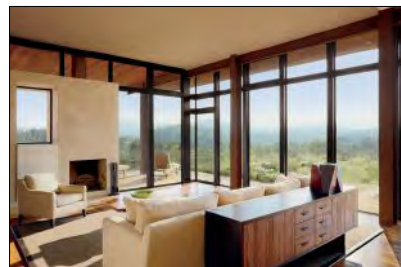
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Manufacturer of custom, quality wood & aluminum-clad windows & doors: vast array of options, numerous wood species & complete finishing capabilities; historical replications; screen doors, casings & moldings.

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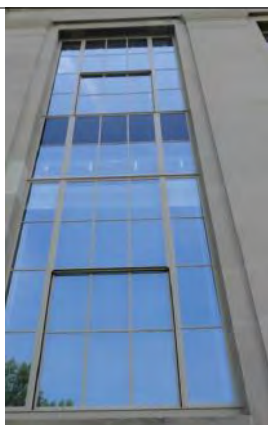
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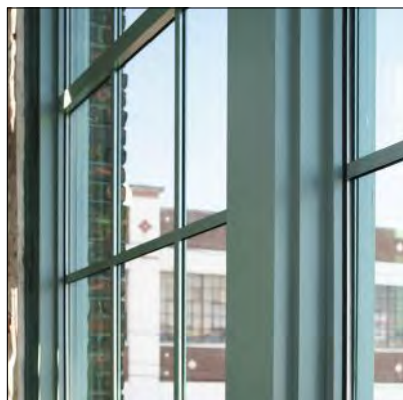




# METAL, WOOD & COMPOSITE WINDOWS



**PILKINGTON NA**  
800-221-0444; 419-247-3731;  
Fax: 419-247-4517  
[www.pilkington.com](http://www.pilkington.com)  
Toledo, OH 43697  
Manufacturer of low-e glass: hard coat; double-pane unit; emissivity of 0.15.  
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**ST. CLOUD WINDOW, INC.**  
800-383-9311; Fax: 320-255-1513  
[www.stcloudwindow.com](http://www.stcloudwindow.com)  
Sauk Rapids, MN 56379  
Manufacturer of aluminum windows for heavy commercial & architectural replacement: dual windows for acoustical abatement; screens, metal windows & doors.  
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**WEATHER SHIELD WINDOWS & DOORS**  
800-538-8836  
[www.weathershield.com](http://www.weathershield.com)  
Medford, WI 54451  
Weather Shield is a Midwest manufacturer of high quality, highly efficient windows and doors that have been handcrafted for over 60 years. Weather Shield has a wide range of products and styles to fit both contemporary and traditional homes, as well as light commercial buildings.  
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**WIEMANN METALCRAFT**  
918-592-1700; Fax: 918-592-2385  
[www.wmcraft.com](http://www.wmcraft.com)  
Tulsa, OK 74107  
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**st. cloud window**  
800.383.9311 [stcloudwindow.com](http://stcloudwindow.com)  
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U.S. made drapery hardware, many styles and options available, in stock items are able to ship next day. Eco-responsible methods are used in the manufacture; recycled materials are used in many of the components.



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[www.brasswindowhardware.com](http://www.brasswindowhardware.com)  
Northwood, NH 03261

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



**GABY'S SHOPPE**  
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Dallas, TX 75207

Manufacturer of handcrafted decorative iron drapery hardware: for curved & angled bay windows & arches; 30 standard finishes; more than 100 final options.

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**HOUSE OF ANTIQUE HARDWARE**  
888-223-2545; Fax: 503-233-1312  
[www.houseofantiquehardware.com](http://www.houseofantiquehardware.com)  
Portland, OR 97232

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

SEE OUR AD ON PAGE 33.



**PHELPS COMPANY**  
603-336-6213; Fax: 603-336-6085  
[www.phelpscompany.com](http://www.phelpscompany.com)  
Hinsdale, NH 03451

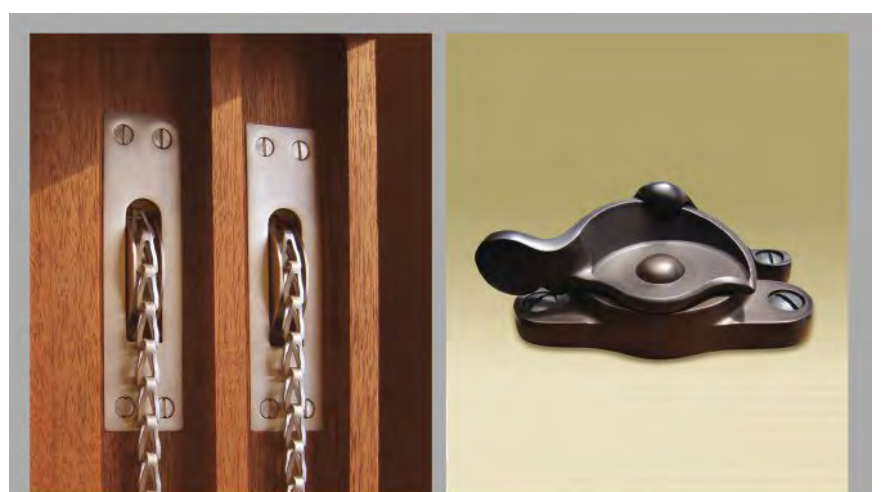
Manufacturer of traditional hot-forged solid-brass window hardware: sash pulleys, weights, chains, lifts & locks; stop-bead adjusters, spring bolts, window ventilation locks, push-out casement hardware, storm/screen-door latch sets & more.

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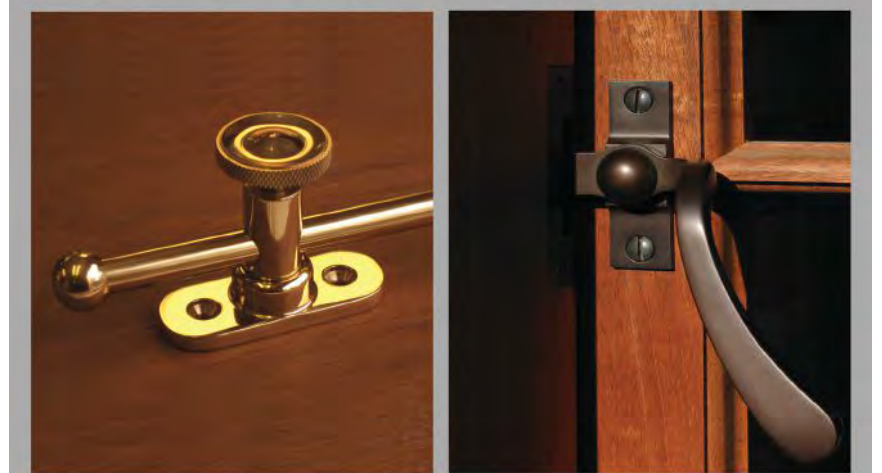


**SRS HARDWARE**  
401-954-9431  
[www.srshardware.com](http://www.srshardware.com)  
Dallas, TX 75219

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



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



**VINTAGE HARDWARE & LIGHTING**  
360-379-9030; Fax: 360-379-9029  
[www.vintagehardware.com](http://www.vintagehardware.com)  
Port Townsend, WA 98368

Supplier of door hardware, window hardware: window locks & sash lifts; drapery hardware; bathroom accessories; reproduction lighting; weathervanes.

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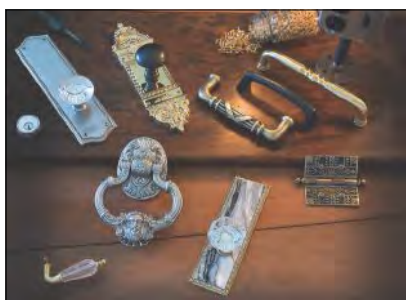
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Salem, OH 44460

Creators of hot-forged and cast-brass decorative brass hardware. Interior door hardware, doorknobs, pulls, knockers, hooks, cabinet hardware, electrical cover plates, and bath accessories.

SEE OUR AD ON PAGE 71.



## BROWNSTONE DOORS

718-832-1058

[www.brownstonedoors.nyc](http://www.brownstonedoors.nyc)  
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Specializing in expertly crafted reproduction of historic doors, entryways and storefronts. Our knowledge of New York City historic door details is unparalleled. We provide custom entry door solutions from conception to installation for historic and designer homes and commercial landmark properties.

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## HAMILTON SINKLER

866-900-3326; Fax: 212-760-3362

[www.hamiltonsinkler.com](http://www.hamiltonsinkler.com)  
New York, NY 10016

Manufacturer of decorative registers & vents, door & window hardware, cabinet hardware & other accessories: brass, bronze & nickel; custom work.



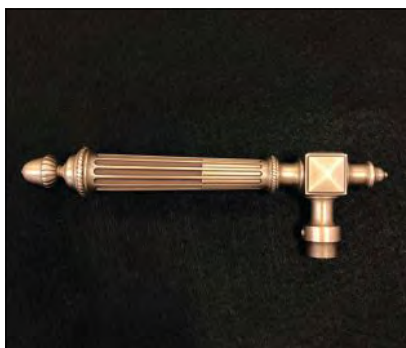
## HISTORIC DOORS

610-756-6187; Fax: 610-756-6171

[www.historicdoors.com](http://www.historicdoors.com)  
Kempton, PA 19529

Custom fabricator of wood windows & doors: casing; circular & crown moldings; complete entryways; wood storefronts; restoration & period-style construction.

SEE OUR AD ON PAGE 21.



## HISTORICAL ARTS & CASTING

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

[www.historicalarts.com](http://www.historicalarts.com)  
West Jordan, UT 84081

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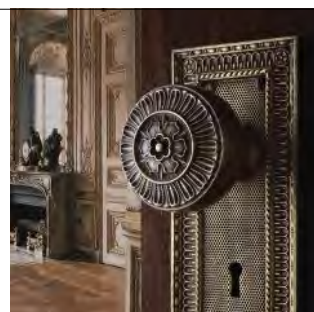


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Manufacturer & supplier of vintage reproduction door, window, shutter, cabinet & furniture hardware & accessories: Federal, Victorian, Colonial Revival, Craftsman & Deco styles; lighting fixtures, push-button switches & plates; bathroom accessories;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

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## JIM ILLINGWORTH MILLWORK

315-232-3433

[www.jimillingworthmillwork.com](http://www.jimillingworthmillwork.com)  
Adams, NY 13605

Manufacturer of custom wood windows, doors & moldings: for homes & historic buildings; matches any existing wood windows, doors, moldings; custom millwork.

SEE OUR AD ON PAGE 67.



## KOLBE WINDOWS & DOORS

800-955-8177; Fax: 715-845-8270

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

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## PARRETT WINDOWS & DOORS

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

[www.parrettwindows.com](http://www.parrettwindows.com)  
Dorchester, WI 54425

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

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## 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.

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## VINTAGE HARDWARE & LIGHTING

360-379-9030; Fax: 360-379-9029

[www.vintagehardware.com](http://www.vintagehardware.com)  
Port Townsend, WA 98368

Supplier of door hardware, window hardware: window locks & sash lifts; drapery hardware; bathroom accessories; reproduction lighting; weathervanes.

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**VINTAGE MILLWORK  
AND RESTORATION**  
717-687-0292; Fax: 717-687-3510  
[www.vintagemillworkrestoration.com](http://www.vintagemillworkrestoration.com)  
Paradise, PA 17562

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**WEATHER SHIELD  
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800-538-8836  
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Weather Shield is a Midwest manufacturer of high quality, highly efficient windows and doors that have been handcrafted for over 60 years. Weather Shield has a wide range of products and styles to fit both contemporary and traditional homes, as well as light commercial buildings.

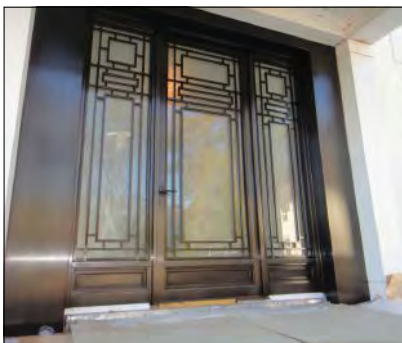
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Tulsa, OK 74107

Designer, fabricator, finisher & installer of fine quality custom ornamental metalwork: railings, fences, gates, custom, hot-rolled steel doors & windows, lighting, grilles, bronze & aluminum entry doors; all cast- & wrought-metal alloys, finishes & architectural styles; since 1940.

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**ZEPSA INDUSTRIES, INC.**  
704-583-9220; Fax: 704-583-9674  
[www.zepssa.com](http://www.zepssa.com)  
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Cincinnati, OH 45241

Manufacturer & installer of aluminum interior & exterior custom "invisible" storm windows® that disappear in the window opening. Custom colors, shapes, bent glass, various glazing materials for energy efficiency, sound reduction and protection from UV & vandalism. Historic, commercial, residential & industrial applications.

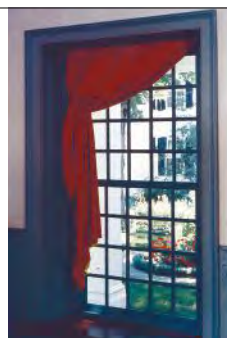
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**ARCH ANGLE WINDOW & DOOR**  
330-723-2551; Fax: 330-722-4389  
[www.archangleohio.com](http://www.archangleohio.com)  
Medina, OH 44256

Custom fabricator of special shape aluminum storm doors, windows, hardware & screens: round top, arch top, cathedral & Gothic designs; tempered & low-e glass.

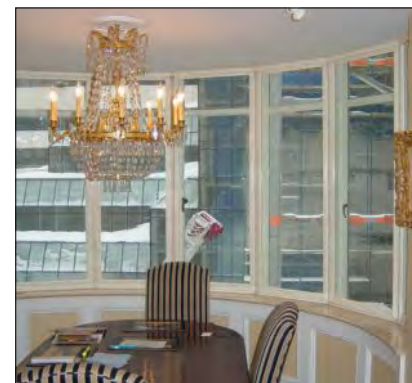
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**ARCHITECTURAL COMPONENTS, INC.**  
413-367-9441; Fax: 413-367-9461  
[www.architecturalcomponentsinc.com](http://www.architecturalcomponentsinc.com)  
Montague, MA 01351

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.

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**CITYPROOF WINDOWS**  
718-786-1600; Fax: 718-786-2713  
[www.cityproof.com](http://www.cityproof.com)  
Long Island City, NY 11101

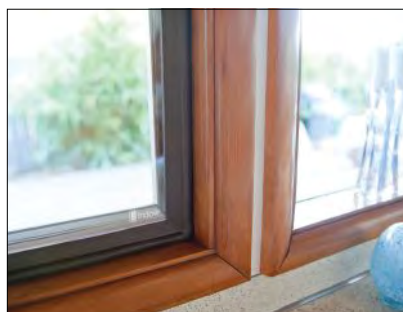
Manufacturer & installer of custom-made interior window systems: aluminum, storm/screen combo, arched & custom shapes; mechanical fastenings; acrylic, lexan, UV-resistant, standard, low-E, tempered, laminated & etched-glass glazing.



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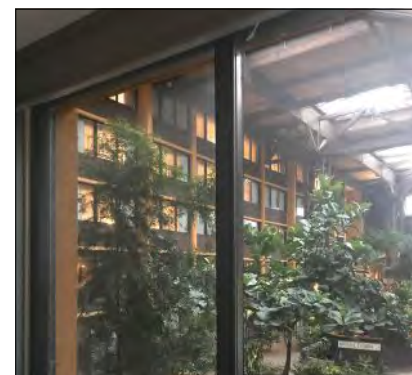
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**INNERGLASS WINDOW SYSTEMS**  
800-743-6207; Fax: 860-651-4789  
[www.stormwindows.com](http://www.stormwindows.com)  
Simsbury, CT 06070

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800-352-3360; 605-692-6115;  
Fax: 605-692-1834  
[www.larsondoors.com](http://www.larsondoors.com)  
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[www.monray.com](http://www.monray.com)  
Hopkins, MN 55343

Manufacturer of DeVAC aluminum windows & Mon-Ray secondary windows: high-performance replacements & storms for existing windows; operating & fixed; for historical residential & commercial projects.

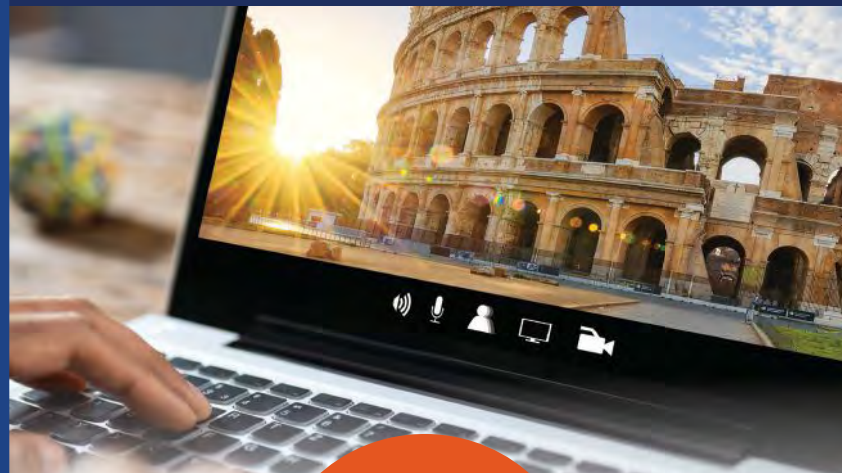


**VINTAGE DOORS**  
800-787-2001; Fax: 315-324-6531  
[www.vintagedoors.com](http://www.vintagedoors.com)  
Hammond, NY 13646

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



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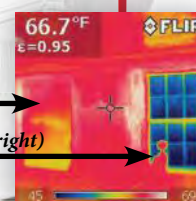
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Innerglass (left)

Existing window (right)



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Manufacturer of classical & contemporary cast limestone: columns, balustrades, benches, planters, pavers, fountains, gazebos, interior ornament, mantels, statuary & more; 500+ designs; custom designs.

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

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**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.

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**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.

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<http://forshawmantels.com>  
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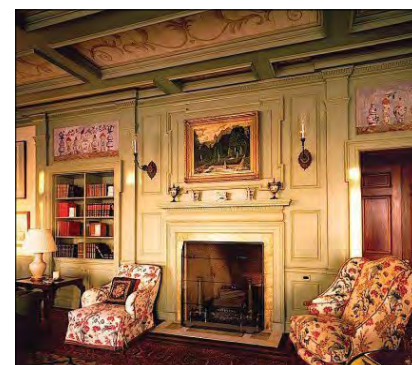
Manufacturer of handcrafted mantels & overmantels: pine, oak, poplar, cherry & other solid hardwoods; unfinished & ready for paint or stain; precast-stone mantels with 33-, 36-, 42- & 43-in. openings; custom & ground shipped.



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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.

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**ZEPSA INDUSTRIES, INC.**  
704-583-9220; Fax: 704-583-9674  
[www.zepssa.com](http://www.zepssa.com)  
Charlotte, NC 28273

Supplier of architectural woodwork: stairs, mantels, paneling, wine cellars, furniture, doors & more.

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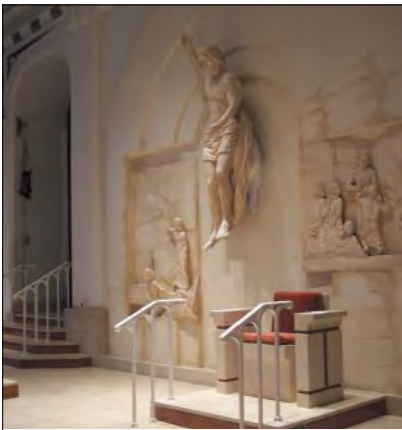
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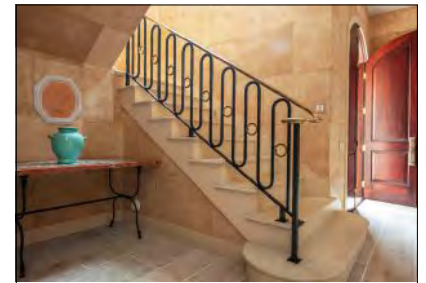
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**HISTORICAL ARTS & CASTING**  
800-225-1414; Fax: 801-280-2493  
[www.historicalarts.com](http://www.historicalarts.com)  
West Jordan, UT 84081

Designer & custom fabricator of ornamental metalwork: doors, windows, hardware, stairs, balustrades, registers, fences, lighting, gutters, columns, weather-vanes, snow guards, cupolas, planters, fireplace tools & more; iron, bronze, aluminum & steel; restoration services.

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METAL STUDIO**  
631-329-2966  
[www.jamesdemartis.com](http://www.jamesdemartis.com)  
East Hampton, NY 11937

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[www.wmcraft.com](http://www.wmcraft.com)  
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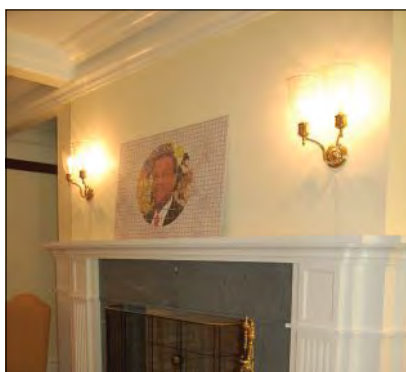
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**GRAND LIGHT**  
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**HERITAGE METALWORKS**  
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## Lantern Masters

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## LANTERN MASTERS, INC.

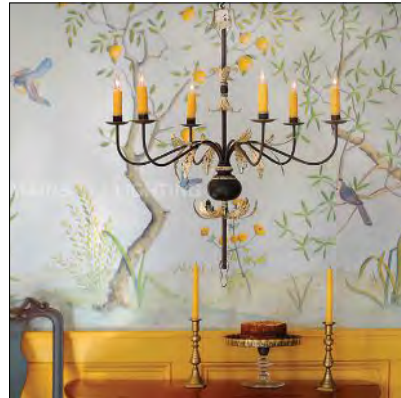
818-706-1990; Fax: 818-706-1988

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

Westlake Village, CA 91362

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

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212-675-8051; No fax

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

New York, NY 10001

Custom lighting manufacturer: commercial, residential & institutional; exterior & interior lighting; historical & traditional lighting & mirrors; lighting restoration; design services; UL certified, LEED-Gold factory.

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## SCOFIELD LIGHTING

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

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

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

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

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

Long Island City, NY 11101

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## W.F. NORMAN CORP.

800-641-4038; Fax: 417-667-2708

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

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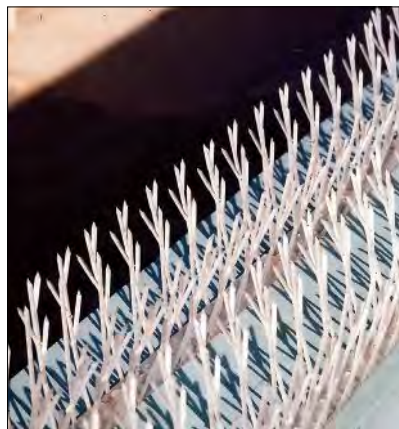
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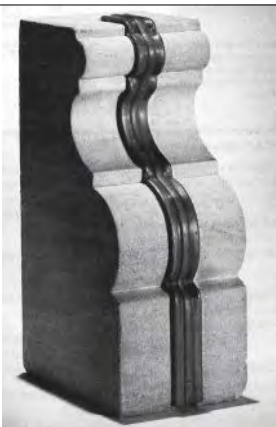
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[www.haddonstone.com](http://www.haddonstone.com)  
Pueblo, CO 81001

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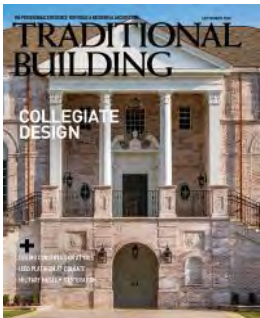


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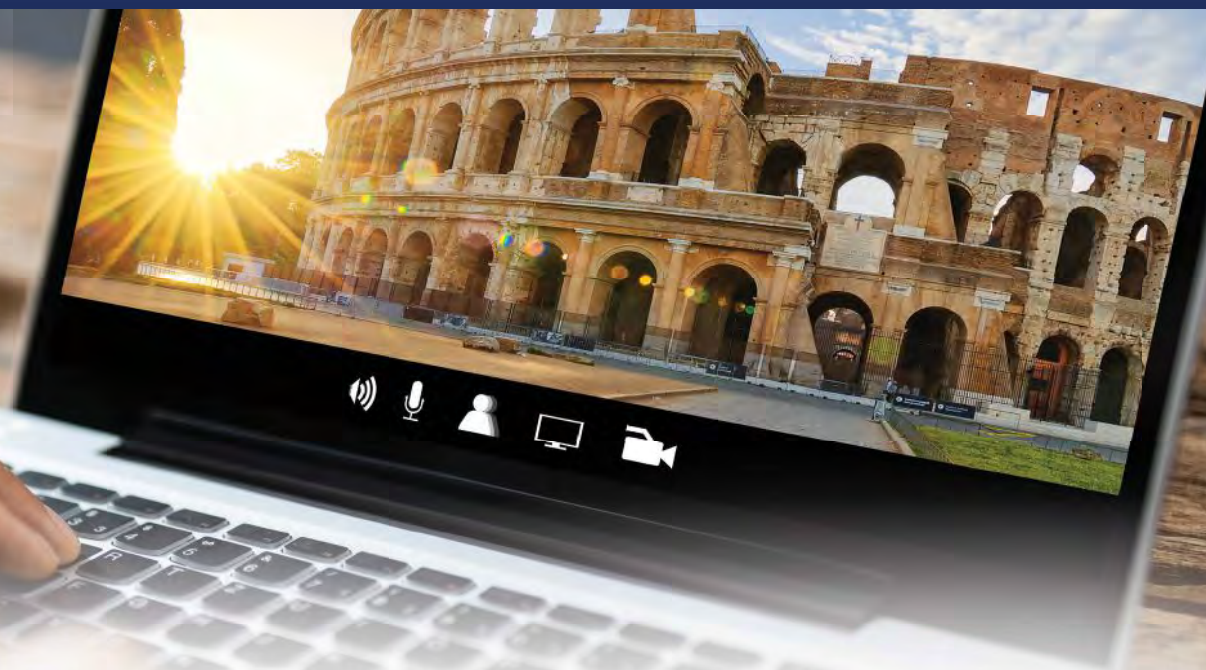


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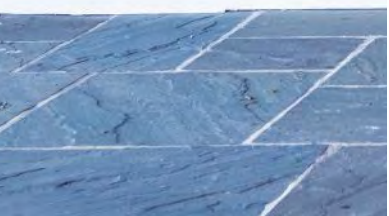
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