PRESERVING THE
GLORY

Restoration of St. Louis’ Masonry Heritage

ROBERT A. YOUNG FEDERAL BUILDING, ST. LOUIS.
Preserving the Glory

RESTORATION IS THE KEY TO PROTECTING ST. LOUIS’S MASONRY HERITAGE

PHOTOS COURTESY OF SUPERIOR WATERPROOFING & RESTORATION CO.

St. Louis is a city of masonry treasures. Built brick by brick and stone by stone, most of these beautiful creations were constructed in the late 19th- and mid-20th centuries when the city’s Downtown was a vigorous center of commerce and industry.

These well-known historic structures are famous for their rich detailing and solid construction, which reflect the creative vision of the architect and the well-honed skills of the union craftsman. Working together, these professionals produced a remarkable variety of masonry landmarks that continue to set the standards for architectural beauty.

Over the years, however, these architectural gems have been exposed to harsh attacks by the environment. Smoke and soot, heat and cold, hail and driving rain have all taken their toll. Inevitably, some of these buildings need restorative care to regain their former beauty.

That’s where restoration specialists come into play. Through decades of past experience, they are able to erase the damaging effects of time and nature, returning buildings to their former strength and beauty so that succeeding generations can continue to enjoy the enduring glory that is St. Louis’ masonry heritage.

Generations of St. Louisans have grown up with the Robert A. Young Building, more commonly known as the Mart building. Tens of thousands of residents have taken advantage of the government services crammed into the 20-story Downtown landmark at the corner of Spruce and Tucker. The building is packed with the government’s famous alphabet offices. The FBI is here. So are the GSA, OSHA, DNR, and the IRS. The offices of Homeland Security and Immigration are readily available, as are Public Housing, the VA, and the four branches of the military. Considering the building’s long relationship with area residents, it’s an integral part of the area’s fabric. The building dates back to 1931, when St. Louis was the second largest rail center in the world. It originally was constructed as a trade center and warehouse for the Terminal Railroad Association of St. Louis. In 1941, the building was transferred to the U.S. Army, then changed ownership again when the GSA bought it in 1961. In 1968, President Ronald Reagan renamed the towering structure in honor of U.S. Congressman Robert (Bob) Young, originally a St. Louis union pipefitter (Local #562), and a well-known proponent of local public works projects.

This massive L-plan creation, designed by architect Preston Bradshaw, contains 25 acres of floor space. Its highly visible north and east elevations are Art Deco in style. The ascendant, full-height stepped pilasters between window bays at the building’s north and east elevations are an Art Deco feature. At the northeast corner of the building, these pilasters continue upward along the sides of its 20-story tower, with...
mussing setbacks that further emphasize its vertical orientation. Decorative white terra cotta blocks with abstracted acanthus foliage designs crown the tower and its setbacks.

By the 2007 economic downturn, the building was in need of restoration and high on the GSA’s shovel-ready to-do list. Before beginning the physical restoration process, the agency commissioned Superior Waterproofing & Restoration Co. to perform a thorough examination of the building’s masonry-related issues. To clarify the extent of the masonry work required, Superior cut out the window heads to view the steel lintels, examined the terra cotta attachments, and analyzed the condition of the brick.

“The government got a very good feel for what they were up against before they started so it was well worth the money spent,” said Tom Schmitt, Superior’s owner and president. In April 2010, Superior began work on the extensive restoration project itself, a task that included tuckpointing the brick, replacing and re-flashing the steel lintels, rebuilding the parapets and cornices, installing helical anchors and seismic pinning, and cleaning and sealing the facades.

**GREATEST CHALLENGE**

Although no one expected the job to be easy, its difficulty surprised even Schmitt. “In my 35 years in the business, I don’t know if I’ve experienced that many [challenges] on one job,” he said. Harsh weather conditions such as storms and strong straight-line winds were just a small part of the problems faced by the crews. The greatest hurdle turned out to be a surprise decision by the GSA.

Approximately two weeks into the job, GSA officials in charge of the project told Schmitt that his company’s constant noise was upsetting for many in the building and that the crew’s work schedules would have to be switched to nights. This was a move Schmitt considered “a real game changer.” Problems with logistics and equipment became much more difficult to solve. “If equipment breaks down at 3am, who do you call? The shop’s closed!” Schmitt said. As a result of the switch to nights, keeping the workers motivated and maintaining production levels quickly jumped to the fore as Superior’s biggest challenge.

**PLATFORMS**

While frame scaffolding was used from the 12th floor up, mast climbers were used for the lower stories. Over- and under-platforms were used on the same mast, with each platform self-sufficient. Approximately 40 craftpersons were working at any given time.

To ensure a dust free environment, platforms were enclosed and special vacuuming systems installed to control dust and debris from the grinders and chipping hammers. Portable restrooms were added to keep the small army of workers, members of Bricklayers’ Local #1 of Missouri and Mason Tenders from the Eastern Missouri District Council, from using the restrooms inside the building. “They didn’t have any reason to come down within the work period,” said Schmitt.

**LOGISTICS**

Given its Downtown location, working on the project was very much like working on a skyscraper in Chicago or New York, where parking around a building is nonexistent. Absent a loading zone on the ground, Superior used the roof of the 11th floor for storage and setting up power sources. “Site management was key with daily truck deliveries, getting [equipment and materials] up to what little storage area was available,” said Schmitt.

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Every morning as the rising sun celebrates the beginning of another new day, it illuminates the gigantic mural on the 27-story Council Tower East building in the city’s Midtown area. In recent years, however, the sun’s glow has revealed an increasingly depressing sight. Bricks have been falling off the artwork since 2007, and the historic mural on the building’s east elevation has been steadily shrinking.

Restoring the work to its original splendor was the challenge tasked to a team of construction professionals led by architectural firm Klitzing Welsch & Assoc. and general contractor E. M. Harris Construction Co. The restoration was part of a $40 million renovation of the building by the Bruce Development Co., owner of the historic structure.

The mural, a 250-ft. bas-relief curving designed and created in brick on the building’s east elevation, was built over the course of 15 months in 1969-1970 by sculptors Saunders Schultz and William Severson. The artists drew their sculpture’s design on the facade more than four decades ago from a small platform suspended from the roof in an era when few worker safeguards existed.

The work, entitled “Finite-Infinite,” represents man’s continual striving toward God, with graphic allusions to the Gateway Arch two miles to the east and Michelangelo’s Sistine Chapel painting of The Creation of Adam in which God and Adam almost touch. In recent years, the mural’s appearance has been disheartening, having lost about 30 percent of its bricks and all of its color. Most the damage was from water that had been seeping in behind the mural, causing support materials to loosen and bricks to fall off.

The existing mural provided few clues as to its original appearance, and a search for historical photos and images also proved fruitless. The artists’ drawings had been destroyed in a flood and all that was available was an old newspaper article from the late Sixties. “There were no historical photos and (the mural) itself was close to black,” said Brad Pope, Klitzing’s project architect. (Joe Klitzing, principal in charge of design and production, was
the project designer.)

The dearth of older images magnified the challenge since the mural had to perfectly match the 1970 artwork to qualify for state and federal historic tax credits.

One of the first decisions was to decide between taking down the remaining brick and starting over, or working with what brick was left on the building. Realizing the existing materials were too unstable and dangerous, the team decided to take everything down to the concrete beneath and start over from square one.

The architect assembled over one hundred photos of the brickwork to document all the details of the remaining mural. The photos were then converted to the same scale to create a color-coded illustration of all 43,500 bricks and relief details that would make up the reconstruction. This in turn was given to the Missouri Dept. of Natural Resources for review and approval so construction could proceed.

The challenge of taking down the existing brick and physically reconstructing the mural was tasked to the union masons (Bricklayers’ Local #1 of Missouri and Mason Tenders from the Eastern Missouri District Council) from John J. Smith Masonry Co. The masons drilled holes in the individual bricks as they took them down, creating a connect-the-dot pattern on the wall to guide the rebricking.

Finding suitable replacement brick was yet another challenge. Units with the same frog locations as the original brick no longer existed so a new unit had to be configured. The new, modern anchors put in place were bigger and stronger than the Retro-era originals, providing maximum protection against water seepage as well as major improvements in longevity and safety. Although the work was tedious and difficult, the masons successfully reproduced the 53-ft. wide by 226-ft. tall mural, setting 43,500 brick in 870 brick courses.

“The masons did a really good job,” said Pope. “We figured out how (the mural) was carved, and tried to match that.”

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In recent years Lindenwood University has experienced a surge of growth called “explosive” by the media. Student enrollment is up and seemingly endless new masonry construction is going up across the school’s main campus in St. Charles. Framed by graceful Linden trees, new buildings with signature red brick facades, gables, pitched roofs and cast stone detailing capture the scale, proportions and materials of the existing campus architecture. By design, the new creations successfully blend in with structures from the 1900s to the 21st Century to produce a strong visual identity: an image of strength, beauty and safety that strongly appeals to prospective students and their parents.

**STUDENT-ATHLETE CENTER**

The new Student-Athlete Center behind the end zone grandstand of the Harlen C. Hunter Stadium is a testament to the important role that athletics play at Lindenwood. Last fall, the University joined NCAA Division II and is moving 26 sports to the NCAA.

“We have some outstanding competition facilities at Lindenwood,” President Evans said in a local interview. “But in order to be a model athletics program in the NCAA, we needed to invest in an academic support center and quality locker rooms and athletic training facilities. Our student-athletes play at a high level and deserve the finest facilities we can provide.”

The $9-million 43,450-sf. Student-Athlete Center, designed by LePique & Orne Architects of St. Charles, is a three-story, fully equipped, athlete’s dream. Training facilities and the Lindenwood Lions’ football locker room and lounge area are on the ground floor. The second floor boasts a 3,000-sf. academic support center, along with locker rooms for men’s and women’s lacrosse, field hockey, and soccer. The third floor, with its scenic view overlooking the football stadium, includes coaches’ offices, meeting and conference rooms, and entertainment suites.

The building’s envelope speaks the campus vernacular with its red brick and cast stone detailing. “Not only did the brick match the existing stadium structure and the existing structures on campus, it provides us with a very durable and long-lasting exterior,” said Michael Baalman, architect and business director for the LePique firm.

Seamlessly connecting the new structure with the existing grandstand was a major challenge for Swanson Masonry and Blanton Construction, a task made easier by the standardized size and shape of the brick. “The modular aspect of the brick allowed us a lot of flexibility,” said Baalman. “When any challenge arose, Swanson’s masons were able to come up with good solutions.” (Swanson’s masons are members of Bricklayers’ Local #1 of Missouri and Mason Tenders from the Eastern Missouri District Council. Journeymen are graduates of the union’s rigorous 3½-yrs. apprentice program.)
As an athletic facility, many areas of the building are subject to the kind of abuse that would destroy lesser materials. Taking this into account, a standard lightweight block was used in areas of high abuse, guarding against damage from impact or mold formation. “The nice thing about using block interior partitions is that it serves as both structure and as a finished surface,” Baalman elaborated. “It’s very durable and easy to maintain. It’s also relatively inexpensive because you don’t have to add anything to it; you don’t need drywall to make it work, and it doesn’t provide a place where mold can get a foothold.” Baalman also noted that LePique’s project manager Ken Bakalar played a critical role in erecting the new state-of-the-art structure that has already been garnering kudos from the athletic staff.

Athletics Director John Creer says the center “will enhance our winning tradition and help us bring in Division II’s top recruits.” Patrick Ross, the Lion’s football coach concurs, saying “Our recruits were very impressed with the university’s strong support of athletics. This building is first class, just like all the new construction that has occurred on this campus in the past 10-12 years.”

**Masonry Suppliers**
- **Brick:** Midwest Products Group
- **Block:** Midwest Products Group
- **Drygoods:** Midwest Products Group
- **Cast Stone:** United Cast Stone, Midwest Cast Stone

**Ties, Flashing, Anchors:** Irwin Products
- **Caulking:** George McDonnell & Sons
- **Grout:** Breckenridge Ready Mix
- **Steel:** American Steel Fabrication

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**AT A GLANCE: STUDENT-ATHLETE CENTER**

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**LEFT: THE EVANS COMMONS.**
**PHOTO CREDIT: LINDENWOOD UNIVERSITY**

**ABOVE: LINDENWOOD GAZEBO. THIS IMAGE: MASONRY DORMITORIES.**

**BELOW: SPELLMANN CAMPUS CENTER.**
**PHOTO CREDIT: LINDENWOOD UNIVERSITY**

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BRICK
While finding redbrick for the rear of the building was easy, finding replacement brick for the iron spot units that make up the tower and front of the building proved to be almost impossible. Superior checked with suppliers from Kansas City to Minnesota to Wisconsin before locating a reasonably close match on a brick building being torn down in Iowa. Superior ended up creating a blend that worked well by staining the used brick when necessary. “The average person driving by—including myself—would be hard pressed to find where the brick have been replaced,” said Schmitt.

BELOW: THE EXISTING IRON SPOT BRICK PROVED DIFFICULT TO MATCH. THE BRICK IN THE PHOTO HAVE BEEN TUCKPOINTED TO DEPTH OF 1/4 INCH.

ABOVE: LOOSE BRICK FROM THE MARQUEE ELEVATIONS WERE CLEANED AND REUSED.

AN INEXPENSIVE RED BRICK UNIT DOMINATES THE BUILDING’S REAR ELEVATIONS WHERE RAILROAD TRACKS ONCE Ran. THE WOOD-COVERED AREA THAT EXTENDS INTO THE PARKING LOT CONTAINS THE PLAYGROUND AREA OF THE BUILDING’S DAYCARE CENTER.

TERRA COTTA
The original plan was to remove each piece of terra cotta and order replacements only for the units that were broken. However, the existing units were mortared into place rather than attached by mechanical anchorage, rendering it virtually impossible to safely remove them for examination. Since GSA was constantly emphasizing the necessity for speed, simply replacing all the existing terra cotta made the most sense.

LEFT: THE ORIGINAL TERRA COTTA UNITS WERE MORTARED INTO PLACE RATHER THAN ATTACHED TO MECHANICAL ANCHORS. CONSEQUENTLY, THE EXISTING UNITS COULDN’T BE REMOVED FOR EXAMINATION WITHOUT DESTROYING THEM. BELOW: NEW TERRA COTTA UNITS WERE LABELED TO FACILITATE RE-ASSEMBLY.

SUMMARY
Despite facing exceptional challenges, Superior successfully wrapped up work in mid-November 2011, the building’s masonry rejuvenated and ready for another half century or more of service. “It all worked out and we got it done,” Schmitt said. “GSA is very happy and their building’s in good shape for many, many years to come.”

Using government alphabet-speak, that’s what we would term A-OK!
Recreating a Masterpiece

CONTINUED FROM PAGE 5

TOP LEFT, BEFORE: DETERIORATED STATE OF THE MURAL PRIOR TO RESTORATION. BELOW LEFT, AFTER: THE CONSTRUCTION TEAM TOOK FIVE MONTHS TO RECONSTRUCT THE ARTWORK TO EXACTING GOVERNMENTAL STANDARDS.

A colored mortar was created to match the original mural and the existing brick on the north and south elevations were also used as guides for the rigorous job of color matching and paint selection.

Throughout the five months of restoration work, the Department of Natural Resources remained steadfast about the appearance of the mural, making several trips to the site to track the progress of the project. Following the masonry work, which wrapped up in September 2012, architectural lighting designers David Ziolkowski and Kevin Sexton of HOK created a lighting design that projects a soft wash of light making the mural the focal point of the east elevation at night.

“Replicating what was artistically created 42 years earlier was really a big masonry challenge,” Pope concluded. “It’s good to know that there are craftsmen that can handle a tough job like this.”

Now, when the morning sun reaches out to the new artwork, the client is happy, DNR is happy, and we suspect even Michaelangelo would be proud of it.

Realizing the Dream

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HARMON HALL EXPANSION

The $9.8 million project was originally planned to house both the Fine Arts Department, which was already located in Harmon Hall, and the School of Business and Entrepreneurship. But when Fine Arts relocated to a new home prior to expansion, the building was renovated to meet the needs of the business school, a second significant entry was created, and finishes were upgraded to match the addition. The new construction added to Harmon Hall’s western end replicates the brick color and design details of the buildings on the surrounding campus. Completed in late 2010, the project expands Harmon Hall to roughly twice its former size.

Dr. Evans’s dream just keeps getting better.


Architect: Hastings & Chivetta Architects
General Contractor: Blanton Construction
Mason Contractor: Swanson Masonry
Engineer: ABS Consulting

Masonry Suppliers
Brick: Midwest Products Group
Block: Midwest Products Group
Drygoods: Midwest Products Group
Cast Stone: Heritage Cast Stone

Ties, Flashing, Anchors: Irwin Products
Caulking: George McDonnell & Sons
Grout: Breckenridge Ready Mix
Steel: American Steel Fabrication

AT A GLANCE: HARMON HALL EXPANSION
Don Grant Inducted into Masonry Hall of Fame

Donald C. Grant, past Chairman of the Board of Trustees of the Masonry Institute of St. Louis, has been inducted into the Mason Contractors Association of America’s (MCAA) Masonry Hall of Fame. The induction ceremony took place during the MCAA Convention last February.

Don’s career highlights reflect his tireless dedication to the industry over the last half century as well as his service to the MCA, MISL and the St. Louis masonry community. At present, Don is a member of the St. Louis MCA’s Construction Laborers’ Pension Trust Committee.

Don founded Grant Masonry Contracting in 1971. Today, three of his sons are members of the company: Brian, president; Brad, vice president, and; Bill, vice president of construction operations. Brian Grant, who has a growing list of industry achievements in his own right including Chairman of the MISL Board of Trustees, recently paid tribute to his father on his Hall of Fame enshrinement.

“This award is the culmination of my father’s life. He has committed his life to his family and the masonry industry. Not only has he lived and breathed masonry for 55 years, he strived to give back to the industry through his time and talents. It’s amazing to me that he was able to run a successful masonry contracting business while so much of his time was devoted to local and national committees and chairs of industry associations. I am very blessed to have been able to work along side him for the last 25 years. The knowledge I have gained from him during this time is invaluable.”

LEFT. BOXWOOD GARDEN AT THE MISSOURI BOTANICAL GARDEN.

Right. the Lodge For the City of Des Peres

CHRISTIAN BROTHERS COLLEGE HIGH SCHOOL.

SAM FENTRESS

SAMPLES OF WORK BY GRANT MASONRY THROUGH THE YEARS...

Founder of Grant Masonry Contracting, 1971
MCA of St. Louis Board of Trustees, 1972-1982
MCA of St. Louis Governing Board, 1974-1982
MISL Board of Trustees, 1974-1990
MISL Chairman, 1978-1990
MCA of St. Louis President, 1980-1982

MCAA Safety Chairman, 1988-1992
Midwest Masonry Research Foundation President, since 1988
MCAA Region E Vice President, 1984-1990
MCAA Board, 1990-1998
MCA President, 1996-1998
Masonry Industry Leadman Award, 1999
Darrell’s Corner

In this issue’s cover story we take a look at two completely different kinds of restoration projects. The first is the Robert A. Young Building (see story, page 2), a towering 1930s vintage downtown landmark that underwent masonry restoration — repointing, replacing lintels and terra cotta, etc. The second project involves the reconstruction of a brick mural on the historic Council Tower East (see story, page 4) in midtown. Despite the radically different challenges involved in these two projects, their successful outcomes are a testament to the supreme skill of our local masonry industry.

We also spotlighted a pair of new masonry structures that have gone up on Lindenwood University’s St. Charles campus (see story, page 6). The school has been adding new masonry buildings at an amazing rate, and their new Student-Athlete Center and Harmon Hall Expansion are just two examples of this solid investment in the school’s long-term future.

Don Grant, past Chairman of the Masonry Institute, has been inducted into the Mason Contractor Association of America’s (MCAA) Masonry Hall of Fame (see story, page 10). Grant, who has served in numerous positions with the Masonry Institute and Mason Contractors Assoc. of St. Louis, has also held a number of positions with MCAA, including national president. Don’s selection to the Hall reflects the esteem with which he is held, both on a national and local level. I’m sure Don’s many friends and colleagues join me in offering him sincere congratulations on this well-deserved honor.

The John J. Smith Masonry Co. and Spencer Brickwork have received prestigious MCAA TEAM Awards in the 2012 MCAA design and construction competition. Smith received first place in the Lightweight Block category for the Nike Factory Outlet Store in The Meadows at Lake St. Louis (pictured above). The Nike store, like all stores in the development, utilized lightweight block as the structural backup for the masonry veneer. The use of the lightweight product allowed the walls to go up fast at the most economical cost.

Spencer Brickwork took the award in the Single Family Residential category for the St. Albans Residence. (pictured below). The all-brick and carved stone trimmed house, previously featured in Masonry 18-1, contains 12,840-sf of living space with numerous walkways, arches, terraces and verandas, all paved in Turkish marble. Considering the judges’ comments, they obviously loved the project: “Incredible. Good details on the brick work.”

In issue 18-1 we featured the rebuild of the Range Line Road Walgreens in Joplin, Missouri, following the devastating tornado there. At the time we were unaware that architects and engineers from St. Louis’ Nova Group, Inc. were also involved in the project. Nova Group issued key structural details for connecting the new masonry walls to the existing foundation. In addition, they provided quick response following the storm in the form of critical communications with city officials, building ownership and contractors which enabled the Range Line store building permit to be issued and reconstruction to proceed immediately. It’s fair to say that the Nova Group shares the credit for getting the store back on line in what Walgreens corporate management has termed “record time.”
Darrell’s Corner  CONTINUED FROM PAGE 11

Over the past year I have had the privilege of chairing the Construction Activities Workgroup for the National Building Information Modeling for Masonry Initiative (BIM-M).
The project’s goal is to establish detailed requirements for the use of BIM, paving the way for future developments by software developers. Phase 1 was recently completed and the group is currently planning Phase 2, which will begin the implementation of the roadmap recommendations established during Phase 1.

On a sad note, a number of industry colleagues have passed away in recent months: Robert M. (Bob) Heitkamp, Sr., Heitkamp Masonry; Bob Richards, Richards Brick; Bill Dwyer, E.C. Landers Brickwork; Bob Allman, Robert Allman Masonry; Ken Clark, Ken Clark Masonry. They were valuable members of our industry family and our thoughts and prayers go out to their respective families.

I’m happy to announce that the newly redesigned masonrysociety.org website is live and ready for use again. While the new version is more user-friendly and pleasant to look at, it still boasts the extensive information base that made it the industry standard for architects, owners, mason contractors, masonry suppliers, and other interested parties.

The new design highlights the Wall Systems section, and the Benefits, Gallery, Knowledge, Communication, and Resources sections feature updated graphics, hyperlinks to other resources, and cross references to other sections on the site. Check out the site for yourself and see what it can do for you.

Our 15th annual New Products Forum took place in February. Like every year, attendees from across the masonry construction spectrum enjoyed taking a look at all the new product displays while enjoying our free luncheon buffet.

Finally, I want to thank all those who helped us plan and produce the programs for the 2012-2013 seminars. We couldn’t have succeeded without your efforts. And be sure to remember this year’s “Hands On” event at the Joint Apprentice Training Center in Earth City in June. Come on out and see how well you can butter a brick or block. Is it as easy as the union guys make it look? Until then, with apologies to Roy and Dale, happy travels to you!

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Darrell McMillian
Technical Director

Jeff Klayman
Managing Editor

Gobberndel Strategic Communications
Graphic Design/Production

Phone: 314-645-5828
Fax: 314-645-5998
www.masonrystl.org