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RAM Construction Services: Iconic Book Buildings Get a New Cover

By Mary Kremposky McArdle Associate Editor

PHOTOS SUPPLIED BY RAM CONSTRUCTION SERVICES

RAM Construction Services, Inc. recently rescued 12 damsels in distress from the top of a 13-story building along downtown Detroit's Washington Boulevard. The "damsels" are actually terra-cotta sculptures of female figures called caryatids. The graceful arc of their terra-cotta arms had been architecturally supporting the cornice of the Book Building for just under a hundred years. Built in 1917, the Book Building and its goddess-like sculptures have witnessed the rise, bankruptcy and re-invention of this great American city. Like its host city, disinvestment and decades of vacancy led to the slow erosion of the building's original ornamentation. Some caryatids were missing portions of an arm, and others had wooden legs, the original terra-cotta having cracked and crumbled over the years.

While all the king's horses and all the king's men couldn't put Humpty Dumpty back together again, these terra-cotta maidens are far more fortunate. After acquiring the Book Building and Book Tower, Bedrock Real Estate Services, LLC, enlisted the services of RAM Construction Services, the oldest and most experienced waterproofing and restoration contractor in the United States. Founded in 1918, RAM Construction Services is marking its centennial with the exterior restoration of these two landmark buildings in the Washington Boulevard Historic District.

In 2016, RAM Construction Services removed each 13-foot-tall caryatid in pieces and reassembled two of the sculptures in their entirety, one for the maidens supporting the cornice with their right arms and another for those supporting the cornice with their left arms. Glassline, Inc., Plymouth, fabricated molds for the replication of all 12 caryatids in

glass fiber reinforced polymer (GFRP), or simply fiberglass. Today, these muses of the building arts once again grace this Italian Renaissance structure designed by famed Detroit architect Louis Kamper.

"These buildings had sat vacant and were deteriorating for so long," said RAM Construction Services President Robert T. Mazur. "It's an honor for our firm to be selected to work on the Book Building and the Book Tower. The amount of work is simply massive, and we are thankful that Dan Gilbert and Bedrock bought the buildings and continue to keep doing the right thing. The buildings are truly magnificent."

The JOS Cleans the D

These elegant caryatids are among the most visible features of the Book Building's revived east cornice. An even more visible sign of this three-year exterior restoration is the cleaning of the Book Building and of the soot-discolored grandeur of the 38-story Book Tower. Originally constructed in 1926, the Book Tower's baroque but sullied ornamentation, and the sheer extent of its darkened brick and limestone, gave the building an almost Gothic presence. In the able hands of RAM Construction Services, decades of darkness were erased in a few short months.

In 2017, downtown Detroit residents, workers and visitors were amazed to watch the Book Tower's east face dramatically lighten from the 38th floor down over the course of a mere month and a half. "It then took us just shy of two months to clean the north elevation top to bottom," said Mazur. "The Book Tower is now partially cleaned and looks

repaired beginning in mid-2018, the Book Building having already been cleaned and repaired in 2016 and 2017.

RAM Construction Services: A Century of Experience

Less visible is the teamwork and the planning necessary for executing an endeavor of this magnitude. Bedrock's purchase of these two Detroit gems in 2015 set this massive restoration in motion. Bedrock drew upon the expertise of RAM Construction Services and Ann Arbor-based Walker Restoration Consultants to conduct an initial façade inspection and survey. "RAM Construction Services has long been recognized and trusted to inspect historical facades due to the extensive experience of our superintendents, field staff and project estimating team," said Mazur.

Working on swing stages in the late fall and early winter of 2015, RAM Construction Services and Walker Restoration Consultants

examined the exterior facades of these once-abandoned, early 20th Century buildings. "We identified the problems, documented certain areas with photographs, and in some cases, removed stones to examine the building more closely," said Mazur.

The main survey results: On the Book Building, the entire east cornice assembly was in the worst state of disrepair. This building section includes the steel-filled corbels (ornate brackets) and caryatids seeming to support the steel-filled cornice and its five-foot-deep overhang. On the Book Tower, the four terracotta and copper water tables required the most work.

RAM Construction Services was contracted to restore these iconic Detroit buildings once the inspection and survey steps were complete and evaluated by the project's design professionals. The project became a collaborative effort between Bedrock, Walker Restoration Consultants and Kraemer Design Group, Detroit, along with RAM Construction

spectacular. We are getting calls all the time. People are saying, 'Holy smokes! What did your company do to get such results?'"

Of course, it isn't smoke. RAM Construction Services is using the chemical-free JOS System originally invented in Germany to clean the Book Buildings. "Basically, the JOS System blasts the stone and brick with fine glass beads," said Mazur. "It doesn't damage the stone or other surface materials at all. We did a large portion of the Detroit Institute of Arts with it, as well as a large project in downtown Toledo called the Berdan."

The JOS System is apropos for the Motor City. The system actually recycles and uses pulverized automotive windshields. "It is a low-pressure 30 psi system used in conjunction with water to keep the dust down," said Mazur. "A person could place their hand in front of the spray and not even be impacted."

The JOS System seems to be the ideal method for giving both the Book Building and the Book Tower a much-needed facelift. Stay tuned Detroit: The Book Tower's west and south building elevations will be cleaned and

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RESTORATION

Services. “The primary goal of this collaborative effort was to establish the best approach to restoring the historical ornamental facades of these two buildings,” said Mazur.

The East Cornice Revived

For RAM, sheer logistics and wall access – the how of it all – took a month-and-a-half of preparation before actual launch of the restoration. RAM Construction Services had to plot site logistics for material delivery in downtown Detroit’s tight street grid. RAM Construction Services coordinated a constant stream of truck deliveries, and even rented a nearby lot to create much-needed space for materials and equipment.

Selecting the right equipment for the job was a must. Along the Book Building’s entire east cornice, the terra-cotta and support steel of the three “C’s” – cornice, corbels and caryatids – had to be completely removed and replaced. These architectural treasures were even in danger of falling off the face of the century-old building. “The magnitude of repairs dictated the need for mast climbing work platforms equipped with a crane,” said Mazur.

RAM Construction Services employed a FRACO mast climbing work platform to gain

access to the east or Washington Boulevard elevation of the Book Building and to access three of the Book Tower’s facades to a height of 450 feet. In preparation for work on the Book Building, below-grade shoring for the FRACO mast climbing work platform was installed in the Book Building’s basement vault located underneath the sidewalk. “We also built about an eight-inch concrete pad on the sidewalk to stabilize the unit at ground level,” said Mazur.

With the aid of the FRACO mast climbing work platform and a strong skill base, RAM Construction Service’s veteran field team was more than up to the task. “We had to surgically remove pieces of the cornice,” said Mazur. “It was like a game of Jenga.” RAM Construction Service’s seasoned team removed the cornice assembly piece-by-piece in a careful sequence calculated to ensure safe disassembly. “They are that good,” added Mazur.

Safety remained paramount throughout this delicate operation. “Careful planning was required as we removed the cornice and decorative terra-cotta to ensure the safety of all within the work area,” said Mazur. “Coordination of activities, along with diligent personnel stationed on the ground to direct the general public, was necessary during cornice

removal and throughout key points of the entire restoration. Inspections of each mast climber anchor point, along with examining the below-grade shoring, are required before commencement of work each day. Because of these practices, our team has kept an average of 24 skilled tradespeople working on the façade for the past two years, and we have maintained our goal of zero lost time injuries.”

The end result of RAM Construction Service’s careful planning is a safe work site and a beautiful new east cornice for the Book Building. Detroit-based Ross Structural Steel installed new support steel for the cornice, corbels and parapet wall. The cornice, corbels and caryatids were replicated in fiberglass, lightening the entire assembly, and reducing the weight of each “maiden” from 2,400 lbs. to 400 lbs. Fiberglass is used in lieu of terra-cotta, because of “the weight, the cost and the long production time for terra-cotta,” said Mazur. “If we had done this job in terra-cotta and had been doing it right now, the terra-cotta would have had to have been ordered two years ago.”

Using the fiberglass cornice as a substructure, CASS Sheet Metal, Detroit, replaced the cornice’s deteriorated copper section with newly fabricated copper. Another

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The entire east cornice of the Book Building was removed and replicated, including installing new support steel, replicating the original ornamentation in glass fiber reinforced polymer, and replacing the cornice's deteriorated copper sections with newly fabricated copper.

RAM trade contractor, LaBelle Electrical Contractors, Macomb Township, installed programmable LED lights to illuminate these elegant sculptures and the rest of this beautifully replicated cornice. "Everybody seems to truly admire the building," said Mazur. "A great deal of research and work by the engineers, architects and RAM Construction Services was done to ensure that the integrity of this prime component of the Book Building would be structurally sound, as well as to ensure the quality appearance of the final product."

Tackling the Tower

Working from a swing stage, RAM Construction Services removed and replaced 18,000 bricks in the Book Building's two light wells that open the building from the 13th to the third floors. Approximately 30,000 bricks were removed and replaced on the entire Book Building, including the west façade completed in early 2017. Altogether, RAM Construction Services expects to replace a total of 200,000 bricks on both buildings, according to Mazur.

RAM Construction Services meticulously tuck-pointed the facades of both buildings. "Almost every mortar joint of every brick and of every stone is or will soon be ground-out and refilled due to the significant deterioration of the mortar over time," said Mazur.

In spring 2017, RAM Construction Services placed mast climbers on the Book Tower to scale 440 feet of a building that rises roughly 475 to 500 feet above the streets of downtown Detroit. Like the Book Building, the mast climber is shored below-grade in the vaulted

basement of the Book Tower and rests on a concrete pad at grade. As a special modification, the mast climber required mast-to-building bracing of different lengths, because the Book Tower steps in at three different locations. "The difference from ground level to the bottom of the sloped roof is about five-and-a-half-feet," added Mazur.

For the damaged water tables, RAM Construction Services patched and re-glazed some of the existing terra-cotta sections, but removed and replaced more severely deteriorated sections with fiberglass. "There were some very large pieces of the water table that had to be removed and replaced, including many of the dentils on the water tables located on the 27th floor," said Mazur.

RAM Construction Services salvaged large stone pieces in nine different locations as well. "It was initially thought that some large sections of terra-cotta and limestone had to be removed," said Mazur. "We were able to save them by working with the engineers and through our means and methods, resulting in a savings to the owner. We worked on both the inside and the outside of the building to re-secure these large stone pieces, each measuring four to six feet in length and weighing a couple thousand pounds."

After completing the north and east elevations of the Book Tower by June 2018, RAM Construction plans to tackle the south and the west facades until this extensive and intricate restoration reaches completion at the end of 2018.



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Left/Middle: Removed in 2016, the damaged terra-cotta sculptures had been architecturally supporting the cornice of the Book Building, circa 1917, for just under a hundred years. Each of the 13-foot-tall female sculptures, called caryatids, is now replicated in fiberglass.

Right: RAM Construction Services is using the chemical-free JOS System to clean the Book Buildings.

Restoring Washington Boulevard

Several trade contractors have been working under contract with RAM Construction Services over the course of this amazing project: Sav's Welding Services, Detroit, fire escape restoration; Seaway Painting, LLC, Livonia, fire escape painting; Western Mechanical Contractors, Inc., Clinton Township, drain tie-in; and LaBelle Electric Services, Inc., Macomb Township, temporary power, temporary lighting, and heat trace tape installer for the water table drains. Blackberry Windows, Kalamazoo, is installing all new windows on the Book Tower under direct contract with Bedrock.

RAM Construction Services will soon be restoring the exterior facades of almost the entire corner of this quadrant of Washington Boulevard, including the Stevens and the Louis Kamper Buildings. The company will begin work on the administration building of the Packard Plant as well.

RAM Construction Services recently earned a 2018 Pyramid Award from the Washtenaw Contractors Association for its façade work on the Guardian Building in Detroit. The company's portfolio includes some of the most prominent buildings in Detroit, including the Book Cadillac, the David Whitney, First

National, the Buhl Building and the Foundation Hotel near Cobo Center. The list continues with the State Savings Bank, the Federal Reserve Building, the Detroit Life Building, and 1529 Woodward as well as ongoing work at Riverplace.

Completing more than 2,000 projects per year, RAM Construction Services, with corporate headquarters in Livonia and offices in Detroit, Grand Rapids, Cincinnati, Cleveland and Blaine, Minnesota, has grown into the largest Midwestern contractor specializing in restoration of aging structures, along with skilled waterproofing of new structures, expansion joints, and traffic coatings.

RAM Construction Services clearly has the resources, experience and expertise for this gargantuan project. Thanks to Bedrock Real Estate Services, Walker Restoration Consultants, Kraemer Design Group, and to RAM Construction Services' sheer depth of experience – and its ability to work at great heights – the lights will be turned on again in these two once-vacant and abandoned Detroit landmarks. Unlike some of the buildings in a well-known blog, these forgotten ruins of Detroit have been remembered and are now being restored for a second century of life.

RAM Construction Services has a host of

both active and completed projects in Detroit, including 1515-1529 Woodward, 600 Randolph, 6568 Woodward, Masonic Temple, the Renaissance Center, the Packard Plant, and Capitol Park Lofts at 1145 Griswold, along with the Book, Buhl, Farwell, Madison, Detroit Life, State Savings, and Guardian Buildings. RAM Construction Services has worked on structures on Belle Isle and on buildings for a number of organizations, including Blue Cross Blue Shield of Michigan, Church of Scientology, Detroit Institute of Arts, Wayne State University, Greektown Casino/Hotel, and Peggy's Place.

Key Subcontractors and Suppliers on the project for RAM's work

- CASS Sheet Metal – Copper Roof and Panels
- CEI Roofing – Temporary Roof Patching of the Book Tower
- Custom Stone Works – Limestone and Granite
- FRACO – Mast Climber System
- Fiberglass – Glassline, Inc., Plymouth
- LaBelle Electrical – Temporary General Electrical and New LED Programmable Lighting of the Book Tower Cornice
- Metro Stone Works – Marble Columns

- Naw-Kaw – Brick Staining
- Ross Structural Steel – Steel replacement of the Book Building Cornice.
- Safway – Scaffolding Systems for the Book Tower Dormer as well as other areas.
- SAV's Steel & Seaway Painting – Restoration repairs to the Book Tower Fire Escape
- Skyline Fall Protection – Davit System
- Western Mechanical – Drain line repairs and replacement

The Construction “CliffsNotes” for the Book Buildings’ Restoration

Exterior restoration contractor RAM Construction Services highlighted each “chapter” in the marathon three-year restoration of the Book Building and Book Tower. RAM launched work in 2016 and plans to conclude its work in 2018.

The restoration’s first “chapter” in 2016 included the following scope of work at the Book Building, a 13-story structure directly adjacent to the Book Tower:

- Cleaned east elevation limestone façade and the glazed brick in both of the building’s light wells
- Removed and replaced the cornice, caryatids and corbels, as well as all supporting structural steel
- Patched and repaired the limestone façade, including conducting Dutchman and limestone sill replacement
- Rebuilt the parapet wall and replaced the limestone with new limestone.
- Tuck-pointed all brick and limestone
- Replaced 175 window headers and steel lintels in the light wells with new steel lintels and new glass fiber reinforced polymer (GFRP) headers
- Replaced nearly 20,000 bricks on the façade plus nearly 100,000 backup bricks

2017 marked the launch of work on the Book Building’s west and south elevations, and the beginning of work on the 38-story Book Tower.

2017 Book Building:

- Cleaned the west elevation
- Replaced 60 window headers and steel lintels with new steel and new GFRP headers
- Replaced 30 limestone sills
- Replaced 5,500 bricks
- Tuck-pointed 80 percent of the façade

2017 Book Tower:

- Erected the mast climbers on the east and north elevations
- Removed several thousand feet of smeared-on waterproofing
- Cleaned the east and north elevations

- Repaired and replaced five of the six dormers
- Repaired and replaced the damaged and missing water table terra-cotta pieces with new GFRP pieces
- Removed, cleaned and rebuilt the spindles and balusters on the 37th floor
- Patched, repaired and replaced, where necessary, decorative copper inlays
- Replaced the missing copper tops on the upper level
- Installed a davit system at the top of the tower
- Completed the repair and replacement of the copper roof and ornamental copper panels

In 2018, RAM Construction Services and its trade contracting team will continue to work on these landmark buildings throughout the year, moving its access equipment to complete the detailed work of revitalizing these iconic buildings.

2018 Book Building:

- Replace the 20 decayed marble columns on the second level with new marble columns

2018 Book Tower:

- Mast climbers will be moved to the west elevation by June 2018 to clean the west face of the building. The mast climber will be re-positioned at the top of the limestone and brick portion of the structure to allow for completion of the same repairs, replacement and tuck-pointing as performed on the east and north elevations.
- Complete the north elevation work by mid-July and remove the mast climbers from the site.
- Hang swing stages on the south elevation and begin cleaning the south elevation followed by the same work as performed on the other building elevations.
- Begin restoration of the storefronts, including new granite, limestone and marble work. ♡

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CASS SHEET METAL:

A “BY THE BOOK” RESTORATION OF A DETROIT LANDMARK

BY **MARY KREMPOSKY MCARDLE**
ASSOCIATE EDITOR

For over a year, CASS Sheet Metal President Glenn Parvin has taken the freight elevator to the 36th floor of the Book Tower in downtown Detroit, walked a flight of stairs to the attic, and squeezed through a few tight spaces to stand in the open air at the upper reaches of one of Detroit's landmark buildings. "The vantage point is unbelievable," said Parvin. "I can see Little Caesars Arena, Comerica Park, the Detroit River and the Ambassador Bridge in this crow's-eye view."

But Parvin has another way of seeing. He views the building and the surrounding city-scape through the detailed eye of a craftsman intent on contributing his knowledge to the restoration of another once-abandoned part of Detroit. Parvin and his 28-year-old company are doing things "by the book" to bring the Book Tower back to life. Every soldered copper cap flashing and every barrel-vaulted copper roof are textbook examples of quality workmanship.

CASS Sheet Metal is even correcting some improper copper details of the original building, going above and beyond the call of duty as a trade contractor working under contract to RAM Construction Services. Once complete, the Book Tower's steeply sloped roof will be restored to its full copper glory, along with the building's water tables, gutters and its copper spandrel panels ornamented in three different patterns.

Bedrock Real Estate Services as owner and Walker Restoration Consultants as engineers respect CASS Sheet Metal's high level of expertise. Working closely with both Walker and with RAM Construction Services' project managers and superintendents, CASS has been granted a fairly significant decision-making role in determining whether to repair or replace the varied copper components of this 38-story building.

"The fact that they had the confidence in our firm to play a role in somewhat of a design-assist approach to much of the copper detail and restoration work on the Book Tower means a great deal," said Parvin. "We are playing a fairly significant role when it comes to details that not only meet the historical intent but also improve the details in question, or in other cases, simplify details while still respecting the building's Old World craftsmanship."

A High-Rise Construction Site

CASS Sheet Metal's "baptism" on the Book Tower began almost immediately after its arrival on site in June 2017. The Book Tower has several barrel-vaulted copper roofs at the 36th floor. These eyebrow-shaped curves are located just below the base of the sloped roof and just outside the pilaster (non-supporting, architectural columns) wall at the building's upper reaches.

At this 475-foot-high construction site, access for the purpose of determining an exact scope of work can be challenging. "Several of the vaulted copper roofs can only be safely accessed from the mast climber," said Parvin. At the time of scope formation, the mast climber was located elsewhere on the wall; once set in place, a mast climber is not easily re-positioned. After access was achieved and the hands-on assessment was complete, the scope of work on the barrel vaults had to be expanded. Welcome to the world of high-rise historical restoration and renovation.

As part of the work itself, CASS replaced the barrel vaults, installing new copper flashing and even correcting some of the original details not in line with modern construction practices. Future access was also a factor in deciding to replace these difficult-to-reach, barrel-vaulted roofs. "It is better to replace the barrel vaults now, because returning to these areas will be very difficult," said Parvin. "Future access also drove other decisions on the project as well."



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ROOFING



CASS Sheet Metal President Glenn Parvin enjoys a bird's-eye view of Detroit from the top of the Book Tower. Parvin and the entire CASS Sheet Metal team brought the detailed eyes and skilled hands of their collective craftsmanship to the restoration of this remarkable building.

Restoring the Rooftop

The CASS Sheet Metal team had to leave the comfort of the mast climber to access the sloped roof. The route through the Book Tower's attic ultimately leads to the building's gutter area, but CASS had to devise safe access solutions to reach the sloped roof and its series of dormers. These solutions included a series of planks, roped-off ladders, plank-like aluminum picks, and protective scaffolding. Being 100 percent tied off is mandatory, and certainly no one would object when working off a scaffold or climbing a 40-foot ladder on a sloped roof almost 500 feet above street level.

The access challenges inherent in working on a towering skyscraper add to the cost of material delivery and safety, and also increase the amount of time needed to arrive at a jobsite perched at such a height. Salvaging as much as possible of the existing copper roof and other copper elements embraces the true spirit of restoration, and also helps to contain a budget already increased by access logistics.

CASS has been meticulously evaluating, and either repairing or replacing, the heavily ornamented building's copper roof over the course of the last year. "The mindset was not necessarily to completely reroof the building," said Parvin. "The mindset was to keep what is salvageable and beyond that to replace only what was absolutely necessary."

The spirit is willing, but the copper might potentially be weak. "We brought in a consultant to test some of the copper to see that it still had significant life," said Parvin. Details of the batten system, the roof hips and the decorative elements at the very top of the roof were analyzed as well.

Parvin highlights his company's work on the Book Tower roof from bottom to top:

- **Replacing a Gutter with a Five-Foot Girth:** This comprehensive restoration of one of Detroit's iconic rooftops began with the replacement of a large gutter located on the 36th level and at the very base of the sloped copper roof. "The original gutter is one of the elements that had failed throughout the years and caused a great deal of leakage in the building," said Parvin. CASS first replaced the concrete plank deck supporting the gutter. "It was rotted away at the base where the gutter was, so we infilled that area with new metal decking, plywood and gypsum to give us a strong base to construct the built-in gutter," said Parvin. CASS then replaced and installed this "large, built-in copper flat seam gutter that has a girth of about five feet from point to point," added Parvin.
- **From Asphalt Mastic to Copper:** Over the years, a maze of antennas, satellite equipment and other devices had penetrated the roof's batten standing seam copper panels and the six dormers on this windy and sometimes cold pinnacle. For decades, asphalt mastic was used to seal the equipment penetrations and to repair different areas of the copper roof. This solution sends chills down the spine of a true copper craftsman like Parvin. "The method of



CASS Sheet Metal replaced, but mainly repaired, the ornate, copper spandrel panels located on three different floors of the Book Tower. Shown above, one of the newly replicated spandrel panels is aglow in new copper. Ultimately, CASS sprayed a patina accelerator on the newly fabricated copper to blend it with the seasoned, greenish-blue color of the existing spandrels.

resealing these equipment areas and repairing various details with asphalt mastic does not work with copper roofing,” said Parvin. “Repairs all around the existing building were done improperly

by those who used mastic and who didn’t understand how to flash copper. Today, every piece of asphalt mastic on that job is getting redone with copper.”

- **A Panel-by-Panel Evaluation:** Tasked with retaining as much of the original copper roof as possible, CASS helped to evaluate the salvageable versus the replaceable sections of copper roof panels. As a general rule of thumb, if the number of patches and equipment penetrations exceeded a certain number in a given area, or if the original repair resulted in severely split metal, the copper panels were replaced in that section.

A 10-by-10-foot-wide swath near the top of the roof’s triangular-shaped west elevation was replaced with new copper, the west typically being the direction of the most wicked weather. “We also replaced all the copper on the west elevation’s small dormer because it was in such bad shape,” added Parvin.

- **Pre-Patinated Copper Dormers:** A series of dormers adds character to the Book Tower’s roof. The array of antennas, wires and other equipment had actually inflicted a large number of holes in the dormers, leading CASS to install new copper on all the dormer wall panels and roofs because



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of the sheer amount of repair and patching work that would have been necessary. To seamlessly blend existing and new copper, CASS sprayed a patina accelerator and used pre-patinated copper sheets to turn that shiny copper glow into the seasoned greenish-blue color of mature, weathered copper. This strategy was used in all of the exposed copper elements, including the repair of the ornate spandrel panels on the tower's wall.

- **Working on the Head of a Pin:** Later in 2018, CASS will replace the roof section at the very top of the building. For those who would enjoy being an angel dancing on the head of a very high pin, the Book Tower is a godsend. The very apex of the roof is actually only a five-foot-wide slot of built-up roof that will soon be returning to a flat seam copper deck. Shiny or rappel 12 feet down, and the next stop is the roof of the Book Tower's mechanical room. The CASS team will be replacing and installing a new copper flat seam

deck for this area as well. Ultimately, the roof of the Book Tower will be completely restored as a 100 percent copper beacon.

Handcrafted Wall Panels

CASS's craftsmanship is bringing the exterior walls back to life as well, both in form and function. The CASS Sheet Metal crew replaced, but mainly repaired, the ornate, copper spandrel panels located on three different floors, each floor having a slightly different design.

CASS replaced 10 missing spandrel panels, some of which had been lost in the severe windstorm of March 2017. "The new panels are all hand-built and custom-fabricated in our shop," said Parvin. "We did it the way it was done in the 1920s. Everything on the job is from flat stock, and every new copper piece was custom-built in our shop to match historical requirements."

In the spirit of restoration, however, the majority of the spandrel panels were repaired. "Since the 1920s various screws and wires had been driven into the panels to keep it in place," said Parvin, "and these holes, like the ones in the roof panels, had been filled with asphalt patches. In some cases, the holes were leading to a split in the

metal. We used copper patches to repair the panels, making sure we fixed any splits and secured the panels to the building."

Another building maintenance habit of the past led to further repairs. Over the years, the Book Tower's window washers would dangle heavy ropes over the window sill to help support their work platform. CASS discovered that the bull-nose sill flashings, located under the window sills and above the spandrel panels, were damaged from decades of the ropes rubbing against the window sills. CASS replaced the damaged bull-noses and even created an overlay for the new flashings. "We worked closely with the window replacement contractor to replace the bull-noses when they were working on a floor," said Parvin.

CASS Sheet Metal is meticulously stitching the copper elements of the Book Tower back together again, including the copper elements of the water tables, located on four different floors. "The water tables received a new soldered copper deck, new copper drains and new copper drain piping," said Parvin. "CASS was responsible for getting the piping into the building, so that the plumber could attach to the copper piping."

For access to the spandrel panels and water tables, all located in the upper third of the building, CASS shared and coordinated its schedule with RAM for use of the mast climber. "We often worked overtime to make full use of the mast climber," said Parvin. "When it came time to work on the water tables at each of the different building levels, it was all hands-on deck, so we could shorten the duration of our use of the mast climber."

As of March 2018, CASS's portion of the work was approximately 50 percent complete. CASS has been working its way down a 40-line item proposal, along with some additional work. "All materials and labor are tracked and documented on a monthly billing cycle per the owner's request," added Parvin.

CASS Sheet Metal has had its "nose in the Book" for almost a year, closely examining, repairing and replacing this landmark building's copper components. Glenn Parvin and the entire CASS Sheet Metal team bring the spirit of true craftsmanship to the restoration of this challenging building. At the end of the day, the entire Detroit area is fortunate to have a local, homegrown Detroit-based company dedicated to bringing Detroit's historical buildings back to life.

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