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### ABOUT THE COVER

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, to conduct an extensive exterior restoration of these two landmarks buildings in the Washington Boulevard Historic District.  
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| <b>OSHA 3115</b> | Fall Protection  |
| <b>OSHA 3085</b> | Principles of Scaffolding  |

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|                  |  |
|------------------|--|
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| <b>OSHA 2055</b> | Cranes in Construction (1 Unit)                              |
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| <b>OSHA 2264</b> | Permit Required Confined Space Entry (1 Unit)                |
| <b>OSHA 5600</b> | Disaster Site Worker Trainer Course (1 Unit)                 |
| <b>OSHA 7600</b> | Disaster Site Worker (.5 Unit)                               |
| <b>OSHA 7205</b> | Health Hazard Awareness (.25 Unit)                           |
| <b>OSHA 7400</b> | Noise Hazards in Construction (.25 Unit)                     |
| <b>OSHA 7500</b> | Introduction to Safety & Health Management (.25 Unit)        |
| <b>OSHA 7505</b> | Introduction to Incident (Accident) Investigation (.25 Unit) |
| <b>OSHA 7845</b> | Recordkeeping Rule Seminar (.25 Unit)                        |

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## Rudolph Libbe Group Wins AGC's Construction Risk Partners Build America Award

Toledo's ProMedica Headquarters project was named as one of the most significant construction projects of 2017, the Associated General Contractors of America announced today. As a result, the project's contractor, Rudolph Libbe Group, received the association's Construction Risk Partners Build America Award for best building renovation project valued between \$10 and \$99 million.

Now serving as the new headquarters campus for ProMedica, it required extensive renovations of the 78,465-square-foot Toledo Edison Water Street Station and the 102,101-square-foot five-story former KeyBank building. The crew preserved the Station building shell while removing the roof, east wall, and two smokestacks, and added a three-story, 45,000-square-foot addition with an open ceiling design. The team completed a total interior renovation to create office space, as well as a YMCA and restaurant space.

Due to meticulous planning and sequencing, the construction team ensured the safety of the workers and the 19th century building's structural integrity, while delivering to the Toledo community a symbol of rebirth for the downtown area and a catalyst for future development.

"The Construction Risk Partners Build America Awards recipients represent the perfect integration of creative design, construction mastery and flawless execution which is inspiring to us all," said Rob Rapp of Construction Risk Partners. "CRP and JLT would like to congratulate all of the award winners and nominees for their amazing ingenuity, perseverance and accomplishment on their respective projects."



## Michigan's Top Engineering and Surveying Projects Recognized at Annual ACEC/M Excellence Awards Ceremony

The American Council of Engineering Companies of Michigan (ACEC/M) recently honored firms for engineering and surveying excellence during the association's annual Engineering and Surveying Excellence Awards ceremony. On March 10, design professionals and guests gathered at DeVos Place, Grand Rapids, to recognize outstanding Michigan engineering and surveying projects from the past year, as well as engineering professionals who have significantly contributed to the profession. The ACEC/M Awards Program recognizes outstanding efforts of professional design firms to solve clients' needs through exceptional projects, and offers the opportunity to showcase the year's best engineering and surveying achievements to an audience of peers, clients and decision makers at all levels.

"The knowledge and expertise that filled the room on Saturday was astounding! The projects engineered by private sector firms have a profound effect on the quality of life for all Michigan residents. Their efforts result in quality roads and bridges, safe drinking water, and a clean environment for people to live, work and play," said Ronald Brenke, PE, ACEC/M Executive Director.

This year's most prestigious award – the Engineering Eminent Conceptor Award – went to HNTB Michigan, Inc. (Okemos) for the US-23 Flex Route, M-14 to M-36 project in Ann Arbor. As part of Michigan's first active traffic management (ATM) project, US-23 Flex Route, HNTB Michigan, Inc. was the prime consultant

and lead design firm for the planning, design, and system management of the intelligent transportation system (ITS). ATM is the ability to dynamically manage recurrent and non-recurrent congestion using technology and operational strategies. This project was packaged with several large road and bridge projects to construct the shoulder, drainage, and widened bridges to facilitate part-time shoulder use. The ATM will provide additional capacity, improved incident response, speed harmonization, and advance notice to drivers of upcoming conditions.

### Six firms were honored with an Engineering Honorable Conceptor Award:

- HDR (Ann Arbor) for its work on the Holland Energy Park.
- Harley Ellis Devereaux (Southfield) for its work on the Children's Hospital of Michigan Troy.
- Wade Trim (Detroit) for its work on the Great Lakes Water Authority Biosolids Dryer Facility in Detroit.
- Fishbeck, Thompson, Carr & Huber, Inc. (Grand Rapids) for its work on the St. Louis Water Supply Replacement.
- OHM Advisors (Midland) for its work on Midland County Road Commission's GRS-IBS Program.
- Alfred Benesch & Company (East Lansing) for its work on the I-96 & Cascade Road Diverging Diamond Interchange in Grand Rapids.

### Engineering Merit Awards were presented to the following:

- Anderson, Eckstein and Westrick, Inc. (Shelby Township) for its work on the 15 Mile Road Interceptor Recovery Shaft in Fraser.



- Progressive AE (Grand Rapids) for its work on The Rapid CNG Fueling Station in Grand Rapids.
- Hubbell, Roth & Clark, Inc. (Bloomfield Hills) for its work on the Engineering Our Environment project for Clinton and Harrison Townships.
- Wade Trim (Flint) for its work with the Karegnondi Water Authority on their Water Supply Program Management in Genesee, Lapeer, St. Clair, and Sanilac Counties.
- Fishbeck, Thompson, Carr & Huber, Inc. (Grand Rapids) for its work on the Marquette Municipal Service Center.
- SmithGroupJJR (Detroit) for its work on the Michigan State University Grand Rapids Research Center.
- NTH Consultants, Ltd. (Northville) for its work on the NESPS Discharge Chamber and NI-EA Emergency Rehabilitation in Detroit.
- Tetra Tech (Ann Arbor) for its work on the Sewer Overflow Control Program in the Village of Dundee.
- AECOM (Grand Rapids) for its work on the St. Mary's River Little Rapids Habitat Restoration Design-Build project in Sault Ste. Marie.
- NTH Consultants, Ltd. (Northville) for its work on successfully re-purposing a former urban industrial site in Pontiac.

**This year's Surveying Eminent Conceptor Award** went to OHM Advisors (Livonia), for the Emergency UAS/GIS Assessment of the Midland Flood. After close to seven inches of rain fell in a 12-hour period in late June of 2017, OHM Advisors used unmanned aircraft system technology (UAS) and advanced GIS software to document the impact of subsequent flooding on Midland County's roads and bridges.

**A Surveying Honorable Conceptor Award** was presented to Fishbeck, Thompson, Carr & Huber, Inc. (Grand Rapids) for its work on the City of Wyoming Second Intake Survey.

**Surveying Merit Awards were presented to:**

- Abonmarche Consultants, Inc. (Benton Harbor) for its work on the Portage Local Streets Drone Survey project.
- Spalding DeDecker (Detroit) for its work on Little Caesars Arena in Detroit.
- ROWE Professional Services Company (Flint) for its work on the Murchie Science Building Expansion Survey in Flint.

The **Board Design Award** was given to Spicer Group, Inc. (Manistee) for the board designed to "tell the story" of the 6th Avenue Pump Station and Riverbank Sewer Project in Manistee.

This year's **ACEC/M Vernon B. Spalding Leadership Award** was presented to John Matonich, PS, of ROWE Professional Services Company to honor his outstanding leadership roles in ACEC and several community organizations. The **ACEC/M Felix A. Anderson Image Award** was presented to Thomas M. Doran, PE, FESD, of Hubbell, Roth & Clark, for his actions and contributions to enhance the image of the profession.

The Eminent and Honorable Conceptor award winners are eligible to compete at the National ACEC engineering competition in Washington, D.C. For more information on the projects and award winners, please contact ACEC/M at (517) 332-2066 or visit [www.acecmi.org](http://www.acecmi.org).

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## Fishbeck, Thompson, Carr & Huber, Inc. Named 2018 ACEC/M "Firm of the Year"

The American Council of Engineering Companies of Michigan (ACEC/M) recently presented the 2018 member "Firm of the Year" award to Fishbeck, Thompson, Carr & Huber, Inc. (FTCH), headquartered in Grand Rapids. The award was presented at the Engineering & Surveying Excellence Awards Gala held on March 10, 2018, at DeVos Place, Grand Rapids. This is the highest honor bestowed and the only award program instituted to recognize ACEC/M member firms for their leadership in professional practice and community service. Recognition is based on

actions taken by a member firm to progressively develop its management practices and for assuming leadership roles in community outreach activities and ACEC/M programs that strengthen the profession for all ACEC/M members.

FTCH stands out as a company that helps to advance the consulting design profession, is actively involved in the success and growth of ACEC/M, and constantly gives back to the community.

FTCH employees are heavily involved in the community through the American Cancer Society, Habitat for Humanity, YMCA, and Salvation Army, among others. Staff serve in multiple leadership roles for local organizations. FTCH promotes the engineering profession by committing mentors, volunteers, and speakers to several area high school STEM programs, vocational training, and specialty design/construction schools, along with creating job shadow opportunities, industry days, robotic competitions, and

project tours.

The firm also engages in a variety of activities to positively impact the engineering profession and ACEC/M. Stephen C. Nichols, PE, currently serves as President of the ACEC/M Board of Directors. Kamran Qadeer, PE, has served on both the ACEC/M Transportation Committee and MDOT/ACEC Procedures and Practices Committee. Other FTCH staff are also involved with ACEC/M committees and support the Engineering & Surveying Excellence and scholarship programs, along with meeting its annual state and federal PAC goals.

Sixty years after its founding, more than 400 staff members in 10 regional offices have made FTCH one of the premier professional consulting firms in the nation. Engineering, environmental sciences, architecture, and construction management are the cornerstones of FTCH's services and integrated project approach. With the technical capabilities and understanding to take even the largest projects from initial concept to completion, FTCH is a hands-on, design-oriented practice at heart.



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## G2 Consulting Group Wins Birmingham Streetscape Contract

G2 Consulting Group has been awarded a contract to provide geotechnical and construction materials testing and engineering services on the recently announced multi-million dollar streetscape project on Old Woodward Avenue through the heart of downtown Birmingham.

As part of the assignment, G2 Consulting will provide geotechnical engineering and materials testing services, including exploratory borings, vibration consulting, backfill compaction testing associated with underground construction, and paving materials testing including laboratory testing services. G2 managed similar activities on the recent award-winning streetscape project in downtown Fenton.

"Streetscapes are tricky, expensive and extremely critical elements for any city, especially when they're in a major commercial district as this one is," says Jim Berry, P.E., project manager. "The Birmingham project is designed to create an even more inviting and safe commercial district. At the same time, the City will make important infrastructure upgrades."

The Birmingham project takes on extra importance because of the city's pride in being "a walkable community." Sidewalks, crosswalks, pedestrian islands and other functional elements need to blend seamlessly with the city's architecture. Additional aesthetic elements like open areas, trees, benches and gathering spaces will all help Birmingham better serve its businesses and residents while maintaining the delicate balance between form and function.

G2 Consulting will be working alongside of general contractor Angelo Iafate Construction Co. Work is scheduled to be completed in July. Phases two and three will follow in 2020 and 2022 respectively.

"G2 Consulting is a longtime partner with the City of Birmingham," says Paul O'Meara, City Engineer. "This is a priority job for the City and it needs to be completed with a minimal disruption to our commercial district businesses and customers."

"Complex projects are where we earn our stripes. This job requires solid planning and execution. That's how we always try to do business at G2 – Smart. Results. Fast," said Berry.

For more information on G2 Consulting Group, visit [www.G2consultinggroup.com](http://www.G2consultinggroup.com).

## Western Michigan University's Heritage Hall Earns ASHRAE Award

Senior mechanical engineer Jonathan Rumohr, of TowerPinkster, Grand Rapids, earned the highest award achievable by the international engineering society, ASHRAE, for his engineering design of Western Michigan University's Heritage Hall. The hall now operates at a 50 percent reduction over the LEED energy model estimate and more than an 80 percent reduction over the ASHRAE



energy standard. The project is the first LEED Platinum building in the Kalamazoo area and the fourth LEED Platinum higher education building in Michigan. Heritage Hall also received the 2016 Governor's Energy Award for Michigan in the public building category.

Each year ASHRAE presents awards in six categories: Commercial, Institutional, Health Care, Industrial or Processes, Public Assembly, and Residential. Building energy performance must be proven through one year's actual, verifiable operating data. ♡



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# SAFETY TOOL KIT

## LEADERS IN SAFETY:

### 2017 SAFETY ACHIEVEMENT AWARDS



#### By Jason Griffin

CAM DIRECTOR OF EDUCATION  
AND SAFETY SERVICES

In this month's Safety Tool Kit article, we are taking a brief break from the discussion on Safety and Health Management System (SHMS) elements to recognize those companies that led the charge for safety in the 2017 calendar year. On March 23, 2018, CAM held its annual Safety Achievement Awards ceremony at the Oakland Community College's Auburn Hills campus. Safety Achievement Awards are given to companies that achieve safety results that are below the State of Michigan's injury rates for construction in the previous calendar year. In 2017, the published 2016 non-fatal injury rates for Michigan included a Total Case Incident Rate (TCIR) of 2.5 injuries per 100 full-time workers and a Days Away/Restricted/Transfer Rate (DART) of 1.5 cases per 100 full-time workers. Companies that wish to apply must also have an Experience Modification Rate (EMR) that is less than 1.0.

Each year, companies submit their injury and illness data to CAM via their OSHA 300A summary logs and a letter

from their workers compensation carriers that validates their EMR as part of the application for the award. There were 33 applications received for the 2017 Safety Achievement Awards -- 28 of those companies received awards. The awards are given to employers spread over four categories of hours worked, and an award is given to the company that has the lowest overall EMR. The more hours worked by a company and the greater number of employees that they have greatly changes the risk and exposure experienced by each company. The safety measure and programming that must be developed varies in each category and often so does the experience, resources, and sophistication of the SHMS for each employer. The top three award winners in each category are listed in the table below. A complete list of award recipients can be found on our website at <https://buildwithcam.com/safety-achievement-award/>.

The Gold Award winners in each category gave a presentation on how they achieved safety excellence in 2017. These

presentations are a requirement for the Gold Award recipients as a means to provide an educational opportunity and insight into the differences in how small and large companies manage safety and health on construction projects and in their organizations. It was not uncommon for the smaller companies to look at the general contractors in the room and acknowledge the lessons that they learned from these larger companies. This supports the idea that safety culture doesn't just exist in an individual company's culture but can and often does grow as part of a community. By working together, through inclusion, and through mentorship, we improve the overall culture of safety in our region. It takes leadership and dedication to the principle that safety is and should be a core value that is equally as important as profitability and quality on a project. In fact, safety works hand-in-hand with these other very important items.

As with many of our association activities, this award ceremony would not



## 2017 Award Winners

|  | GOLD Award Winners                    | SILVER Award Winners         | BRONZE Award Winners         |
|--|---------------------------------------|------------------------------|------------------------------|
| <b>0 to 50,999<br/>Hours Worked</b>        | Shores Tile Company, Inc.             | Michielutti Brothers, Inc.   | The Dailey Company           |
| <b>51,000 to 199,999<br/>Hours Worked</b>  | O'Neil Construction, Inc.             | B&B Concrete Placement, Inc. | Oliver Hatcher Construction  |
| <b>200,000 to 499,999<br/>Hours Worked</b> | Blaze Contracting                     | Clark Construction Comp[any  | E&L Construction Group, Inc. |
| <b>500,000 +<br/>Hours Worked</b>          | Superior Electric Great Lakes Company | Ideal Contracting, LLC.      | Oscar W. Larson Company      |
| <b>Lowest EMR</b>                          | Baron Malow Company                   |                              |                              |

have been possible without the support of our generous sponsors. First, I would like to thank Oakland Community College for its continued support of our safety programming. The staff there helped with the both the venue, provided technical support, and served an excellent breakfast for the award ceremony attendees. The college also supported the CAM Safety Leadership Conference in 2017 and will be doing so again later this year on December 7, 2018. I would also like to thank our sponsors for their generous support in making this event possible:

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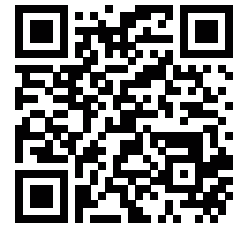
#### Bronze Sponsors:

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- Contractors Training Institute
- Inpro Insurance Group
- Ritz Safety

Congratulations to all of our award winners! We hope to see everyone next year for the event and hope to see even more applications next year.

In the June 2018 edition of *CAM Magazine*, we will resume our discussion on the seven elements of an effective SHMS. In the April issue, we looked at the element of Hazard Identification and Assessment; in June, we will examine the

element of Hazard Prevention and Control. For additional information on these topics or for questions relating to safety or health on the jobsite, contact Jason Griffin by email at [griffin@buildwithcam.com](mailto:griffin@buildwithcam.com) or by phone at (248) 973-1141. ☎



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# Get Ready: Zero Net Energy Buildings Are Here

## IBEW Local 58 in Detroit Wins C&I Project of the Year Award



By **Douglas Elbinger,**

Energy Systems Analyst, Newman Consulting Group LLC

ALL PHOTOS COURTESY OF IBEW LOCAL 58

**W**ho else but Local 58 of the International Brotherhood of Electrical Workers (IBEW) could showcase the talent of their members with anything less than an award-winning breakthrough in sustainable energy design. They demonstrated that by using existing technology, a 52-year-old building can be repurposed (some call this a gut rehab) into the first commercial Zero Net Energy (ZNE) building in Michigan.

The building housing the IBEW headquarters at 1358 Abbott Street in Detroit's Corktown neighborhood was originally completed in 1966. After more than 50 years of service, the IBEW decided it was time to renovate the building and began planning for extensive modifications with the goal of creating Michigan's first ZNE-compliant commercial building. Work on the 33,000-square-foot facility began in September 2016 and was completed in the spring of 2017.

The IBEW Local 58 Zero Net Energy (ZNE) Center was created as a working example of what is possible to achieve with deep renovations and showcasing the many options available today for reducing energy consumption and increasing energy savings. The design and construction team spent countless hours engineering and calculating the building's energy consumption. They deployed an array of energy-saving technologies to make the IBEW HQ a true 'zero net energy' facility. This example will make it easier for signatory contractors with the National Electrical Contractors Association (NECA) in the region to introduce the energy- and money-saving technologies into new construction and renovations that are proven and available for reducing energy consumption. The Center utilized leading NECA members in the region for the installation work. The facility has been rebuilt using the newest technologies, engineering, and construction to reduce the building's baseline energy load to the lowest possible level.



**The IBEW Local 58 Zero Net Energy (ZNE) Center was created as a working model of what is possible to achieve with deep renovations and to showcase the many options available for reducing energy consumption and increasing energy savings.**

### Awarding-Winning IBEW ZNE Center

In addition to the staff at IBEW, the talent pool for creating the first Zero Net Energy building in Michigan included a team of many Construction Association of Michigan (CAM) members, signatory contractors with NECA, as well as members of the Michigan Energy Efficiency Contractors Association (MEECA). MEECA members, Development Solutions Midwest, and The Nielsen Group collaborated as part of The Green Team Coalition on this award-winning project. Services provided included an ASHRAE Level II Energy Audit, Gap Analysis, including project development and management. On March 6, 2018, the IBEW Zero Net Energy Center was awarded Project of the Year by the MEECA. The USGBC Detroit Region and the Detroit 2030 District also recognized the Center for Outstanding Sustainable Design in November 2017.

"We got together and decided we needed to do something decisive and radical with this building, and we decided to go for zero net energy (ZNE). To get to zero net energy, the first thing we knew we had to do was ultra-insulate the building. So, we insulated the roof, the walls and replaced the windows with energy-efficient windows. We also decided





**Jim Wenson, Assistant Business Manager, IBEW Local 58**

to use geo-thermal heating and cooling. We put in 600 solar panels up on the roof. All of that had to be laid out on the roof and all the racks had to be built and set in place. We also put all LED lighting in throughout the building. At the end of all this, I think we've come up with an energy-efficient building, and on top of that, it's a beautiful building."

**The IBEW Zero Net Energy Center Features Nine Distinct Energy-Producing and Energy-Saving Modifications:**

#### **Geothermal Grid**

*Contractor: Strategic Energy Solutions / Berkley, MI*

The vertical closed-loop ground heat exchanger consists of 39 boreholes, drilled to a depth of 340 feet each. The system utilizes a 20% propylene glycol solution. The original design called for the header pipes to run five feet below the ground so that they would sit beneath the frost line.

However, upon encountering an unmarked, abandoned gas line on the site, the header pipes were installed approximately four feet below ground and were covered with two-inch rigid insulation to serve as a thermal blanket. After installation was completed, the trenches were filled with sand and compacted to 95%.

#### **Heat Pumps: Heating & Cooling with Variable Refrigerant Volume System**

*Contractor: Conti Corporation / Sterling Heights, MI*

This environmentally friendly mechanical system replaced traditional steel or copper piping with a polypropylene pressure piping system that features Aquatherm Fusion pipe which is a non-corroding, non-leaching, non-toxic, and fully recyclable pipe free of heavy metals. This allowed for a chemically inert and emission-free installation. This piping product method was also used to deliver the geo-thermal condenser water from the geo-thermal field installed on-site to the new Daikin VRV (Variable Refrigerant Volume) condensing units. Daikin VRV is a modular, commercially applied air conditioning and heat pump system that distributes refrigerant from the outdoor unit to multiple indoor units, providing efficiency and comfort, combined with the geo-thermal field allowing both cooling and heating without the use of a gas-fired unit, hot water, or steam boilers typically found in a commercial building.

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The geothermal system provides 100% of the heating and cooling load. Geothermal grid trench installed to the manifold inside the building connects 39 boreholes, drilled to a depth of 340 feet each.

### **Rooftop Solar Array**

*Contractor: Michigan Solar Solution / Commerce Twp., MI*

The IBEW installed 600 Michigan-made Suniva 290w solar panels on the roof. This 174kW solar array covers the roof of the building. It's also the safest system available, and it exceeds code requirements through the 2017 version of NEC. This system will produce over 200,000kWh a year at peak power.

### **Virtual Energy Monitoring**

*Contractor: Motor City Electric / Detroit, MI*

A total of 97 ceiling/wall Watt Stopper occupancy sensors were installed throughout the building. These sensors detect occupancy to control lighting in a wide variety of applications that provide coverage and performance with great energy savings.

### **Solar DC to AC Power Inverters**

*Contractor: Motor City Electric / Detroit, MI*

36 strings of 17 solar panels (three strings per inverter) were connected to 12 inverters and then integrated the DC into the AC power for the building. AC power comes in to a distribution panel and joins in with the regular electric service. The building draws power from the solar panels first before taking power from DTE (the local electric provider).

### **LED Lighting**

*Contractor: Motor City Electric / Detroit, MI*

More than 500 LED lights were installed throughout the building. All light fixtures in the building are equipped with high-efficiency LED light engines, which deliver energy savings and low maintenance compared with traditional lighting sources. Long-life LEDs coupled with high-efficiency drivers supply superior quantity and quality of illumination for extended service life.

### **SIP Panels & VaproShield Wall Insulation**

*Contractor: Jasman Construction / Plymouth, MI*

A structural insulated panel system (SIP) was installed around the exterior of the building using R-24 wall insulation with metal exterior panels. The walls are so well-insulated that it disrupted cell phone connections in the building. VaproShield (a high-tech version of Tyvek) lets water out, but not in. The VaproShield fibers twist around the screws, making a tight fit without using any chemical products that might degrade over time. All the pieces were cut to the right size so that there was very little scrap/waste on this project.



Mechanical room with bank of power inverters that take the DC power from the solar system and convert it into AC power for use in the building.



### Roof System

*JD Candler Commercial Roofing Company/  
Livonia, MI*

A completely new EPDM membrane roofing system featuring R-50 tapered insulation, additional insulation and 30-year rated roofing materials. Over the new roof insulation system, the team adhered a ½" primed gypsum cover board system to create a very smooth and strong substrate for the new EPDM roof membrane. The new roof membrane consists of an adhered 90 mil non-reinforced EPDM roof membrane. This roof membrane is very durable and can certainly take the weight of the new roof-mounted solar panel system.

### Energy-Efficient Windows

*Contractor: Edwards Glass / Livonia, MI*

All the storefront and curtain wall system windows were replaced in the building. 32 Tubelite T1400 Series windows were used for the exterior windows, and Tubelite 400 series windows were used for the two curtain wall systems. The T14000 Series is 2" x 4 ½" deep flush glazed with 1" insulated glass, a poured and de-bridged thermal break provides condensation resistance and limits thermal conduction. All windows used SNX 62/27 Thompson IG for the glazing. The visible light percentage is 62, and the solar heat gain coefficient is 0.27. This is when the low E coating is on the number 2 surface. Class I Clear Anodized finish was used on all windows.

### The Results

We don't have a full year of data yet, but so far, the systems are performing as advertised, and the initial measurement of the energy performance at the ZNE Center reflects a 50% reduction in energy between 2016 and 2017, which reflects a 73% reduction since 2013. The balance of energy load is made up in the solar and geothermal systems.

The IBEW Local 58 represents more than 4,700 highly skilled journeyman electricians in southeast Michigan. The Zero Net Energy Center Project Contributors: Development Solutions Midwest, The Nielsen Group, Conti Mechanical, Edwards Glass, Green Team Coalition, Jasman Construction, JD Candler Roofing Co., Metro Controls (Automated Logic), Michigan Solar Solutions, Motor City Electric, Strategic Energy Solutions, SyDesign, and Thermalnetics (Daikin)

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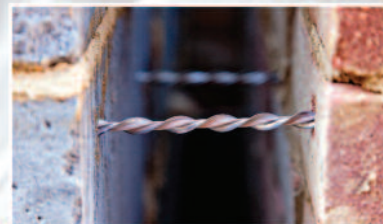
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## THE MYSTICISM OF RELIGIOUS ARCHITECTURE



By **Constantine George Pappas**, FAIA

### What Is Religious Architecture?

Religious Architecture can be best described as the creation of a space that allows a person to have a spiritual interaction with a higher being. History has brought us many examples of this building type. In fact, just about every culture has made its trademark in representing itself through its architecture. Starting from the Egyptian Pyramids, Temples of Greece, the Cathedrals of Europe, Hindu, Buddhist, and Islamic Temples throughout the world, religious architecture has touched the senses like no other building type. The creation of this religious space allows the environment to be dedicated to the glory of God and depicts a mysticism that cannot be found in a sports facility, office building, or industrial facility.

Looking back in history, religious architecture has also contributed to the use and ideas of today's materials. The use of these materials challenged historic architects to reach higher and higher into the heavens. The by-product of new building techniques has allowed more light to fill the vast space by introducing glass between the building's structure.

In Europe, or just about any other location, it is evident where the religious building is located. Normally, it is the highest topographical location. It's the most decorated of all the town's buildings. It is positioned to be in the central area of a city. Most likely, the Church is located adjacent to a plaza where people can interact with the religious building or interact with one another. With all these examples of history all over the globe, has mankind learned anything about religious architecture?

### What Creates the Mysticism?

While everyone can define in their minds what creates the mysticism in these buildings, the commonalities include the sculpture of space, dynamic or simple structural system, and the method of light infiltration. It is how the light filters through the space that creates mysticism. It can be as simple as one opening in a building, but, a completely transparent building may have the same mystical effect. All religious space transforms our thinking process in a spiritual way. In its most simple form, these three elements combine to transform a space into a spiritual experience. Religious architecture compresses the senses in a very special way that most buildings do not. The experience makes you think, ponder, dream, and, most importantly, pray.

After visiting a religious space, one has experienced a transformation that no other building type can initiate. The changing rhythm of light through the space allows for transcendence to a different spiritual level.

The most interesting aspect of this mysticism is that a space does not have to have grandness or volume. Today's modern religious spaces create the connection to the surrounding environment. Some spaces focus on religious imagery. Combine a natural environment and religious imagery and you can experience spirituality at its best.





### Is Mysticism Created by a Religious Experience or by a Religious Building?

I have pondered this question for years as a practicing Religious Architect. As my readings and experiences continue, it has become evident that today's modern architects have learned something from the past by integrating and touching the senses, but in a different way.

In today's design aesthetic, nature takes on a totally different meaning by focusing in on what God has created for us here on earth. The use and introduction of nature has yielded amazing examples of how to create mysticism in a most intimate way. The philosophical concept of connecting man to what God has blessed us with—nature—has yielded amazing examples in modern Religious Architecture.

It's the dichotomy between nature and built space that will be always in question. The sheer beauty of experiencing nature creates mysticism. One can say that it is a most powerful way of connecting to God. Using nature and a space together in a design concept, modern architects have connected the dots to provide amazing spiritual spaces.

### Current Trends in Religious Architecture

In the design of many religious spaces today, the connection with God through its traditional architecture and religious space is slowly vanishing. Today's modern religious facilities tend not to focus on the space or architecture, but rather on reaching the person through an "experience."

Where are we actually going in the trends of Religious Architecture? The people that have lived with traditional

religious buildings continue to attend services, but not in the numbers as in years past. New Christian Bible-based facilities are more concerned with the message and not about the buildings. Increasingly families and young people do not attend local services. Will technology be the answer? Many religious communities understand all these issues and are adapting to the times by offering a multitude of ways to reach their patrons. While the message can be sent

electronically, is the true spiritual connection made? Ironically the answer is between you and God!

### About the Author:

*Constantine George Pappas, FAIA, is a practicing architect located in Royal Oak, Michigan, specializing in the design of Religious Architecture. His firm has won numerous design awards and has been featured in local and national periodicals.*



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PHOTOGRAPHY BY FRIEDMAN REAL ESTATE GROUP

# Uncommonly Sophisticated

## *Friedman Transforms Galleria's Common Spaces*

By Mary Kremposky McArdle  
Associate Editor

**W**hat happens when a self-professed “tile junkie,” a supportive owner, and an architect who designs spaces for the well-being of building users join forces on a project? Step into the Galleria Officentre’s newly renovated atrium lobbies in Southfield and experience the answer.

Calmness falls like sunlight in the atrium joining the Galleria 100 and 200 Buildings. Two different digital wall murals anchor each end of the atrium: At one entry, the sun beams through a forest in full leaf; at the other, an image simply of water, gently rippling and softly illuminated, adds to this tranquil interior. Both custom murals are actually composed of perforated metal panels designed to conceal seven-by-four-foot mechanical grilles without blocking the unit’s air flow.

On the walls, the digital murals, along with framed expanses of faux green moss, create a place of perpetual summer. Davis & Davis, an interior design firm based in Farmington Hills, designed this relaxing atrium and its contemporary faux landscape of white birches, grasses and groundcover moss as a type of antidote to Michigan’s relentless winters and to southeastern Michigan’s nerve-racking levels of traffic.

The recent renovation transformed the soaring, light-washed atrium of the Galleria 300 Building as well. In both atriums, pendant light fixtures of sculptural glass, resembling inverted calla lilies, cascade down the full height of each atrium and come to rest at staggered levels. For the flooring, the subtle, natural variability of Ergon Italian porcelain tile – installed by Eldorado Tile & Marble Co., Sterling Heights – completes this organic interior. “My goal is to elevate the human experience in the built environment through artistry and innovation, and to enhance form and function for how people work, heal and live,” said Davis & Davis Director of Design Michelle Davis. “I like to design environments that make people feel their best.”



The Galleria 300 atrium has an inspired geometry. The sculptures, the white birches and the standing Lily light fixtures are paired and placed across the main pathway from each other. Geometric grids of large-format Italian porcelain tile, set in a frame of faux grass, and square podium/platforms ensembles add to the effect. The symmetry is not sterile but creates a sense of harmony, calm and order in a space sun-washed by day and intimately illuminated in late evening or early morning.

Friedman Integrated Real Estate Solutions LLC, Farmington Hills, likes to offer tenants environments designed by Davis & Davis. In fact, the Galleria is the 10th lobby Davis & Davis has designed for a Friedman property. The architectural firm has a 10-year working relationship with Friedman's own full-service construction and design services office. Completing this successful triad, Eldorado Tile & Marble has been tackling tile projects of increasing complexity as an integral part of this successful team for the last decade.

#### A Paradise of Italian Porcelain Tile

A decade of teamwork has created a host of beautiful lobbies across southeastern Michigan. At the newly renovated Galleria lobbies, the landscaping now has a tailored and manicured appearance, the lighting is sleek and contemporary, and the flooring has brightened from red brick to a varied but generally light color palette of Italian porcelain tile.

About 12 different types, sizes and textures of Italian porcelain tile have replaced the existing glazed brick floors in both atriums. For the flooring, a pattern of large-format, Lappato (semi-polished) tiles alternate with tile stripes in a matte finish. "I live tile," said Eldorado President Jack DiGiovanni. "The fact that the floor pattern has the matte against the Lappato finish is a subtle feature, but if you are a tile junkie like me, it looks great."

Different applications of porcelain tile blanket the entire atrium and its support spaces. A three-dimensional porcelain tile, called Parallelo, graces the elevator walls. Eldorado Tile & Marble's expert team even installed a recently introduced, ultra-thin porcelain tile slab for vertical applications. Only introduced about three years ago, the thin porcelain tile slabs come in nine-by-three-foot sections. "It's a new trend in the tile business, because normally the thickness of tile is three-eighths of an inch," said DiGiovanni. "This is the first time we have used it, and we even sent our tile mechanics to a Tennessee facility to learn installation techniques for this product. I think thin

porcelain tile slabs are not just a passing trend, but have real staying power."

At the Galleria, the ultra-thin porcelain tile clads the security desks in both atriums, lending a more contemporary sensibility to the spaces. "The new security desks with backlit panels, thin slab porcelain tile and a digital directory offer an innovative and exciting look," said Davis. Thin tile also covers the lower four feet of the 100/200 atrium's former brick walls. Almost the only renovated Galleria space without any type of Italian porcelain tile is the lower wall section of the 300 atrium. These brick walls are painted gray, because they are essentially obscured by the intriguing features of this remarkable space.

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### If You Renovate It, They Will Come

This renovation began shortly after Friedman Real Estate purchased the Galleria Officentre, a one-million-square-foot complex of four buildings originally constructed in 1983. Beginning in 2016, Friedman set about refreshing Galleria's 35-year-old common spaces to spark greater tenant interest. "We targeted the lobbies with the most foot traffic for renovation," said James Parrinello, Friedman's Vice President of Construction-FCDC, Construction and Design Services.

The renovation began as the others have over the course of the last 10 years. "David, Michelle and I met at the Galleria, and we

PHOTOGRAPHY BY JARED CHULSKI



This digital wall image of gently rippling water has a calming presence. On a purely functional level, the perforated metal panel mural is designed to conceal seven-by-four-foot mechanical grilles without blocking the unit's air flow.

said, 'Michelle, come up with some ideas,'" said Parrinello. "Michelle created a few renderings, and my construction team began pricing the job."

The delicate dance between the design and the budget begins at that point. "Michelle has a great deal of design freedom," said Parrinello. "Very rarely do we reel back the design." Parrinello works closely with Davis to religiously preserve the design intent, while still controlling the budget by discussing, identifying and then only eliminating what Davis deems dispensable. In the case of the Galleria 300 lobby, Friedman's construction services eliminated a proposed free-form suspended sculpture, but preserved the pendant Lily light fixtures.

Thanks to Friedman's own willingness to invest resources and to give sanctuary to quality design, the office lobby as part peaceful oasis and part art gallery comes into its own in the main atrium of Galleria 300. The space offers the unexpected and the beautiful, turning a simple stroll through an atrium into an engaging experience. In entering the newly renovated lobby, tenants and visitors first glimpse the signature Lily light fixtures cascading down the 50-foot-high atrium. "Building users immediately see the space as fresh and new," said Davis.

Rounding a slight bend, this sophisticated lobby and its faux landscape come into full view. Beneath white birch trees, rounded globes of moss are arranged in symmetrical rows and "planted" in a bed of black stones. Sculptures of abstract human figures stand in a bed of grass, and both rest on a thin porcelain tile-clad assembly of a pure white

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These unique fixtures are surrounded by the red flame-like petals of living bromeliads. The photo also shows a sample of the 12 different types of Italian porcelain tile used in the project.

podium and a black platform. Davis engaged a local artist to create the atrium's corded sculptures, and Davis herself conceived of the sculptures' ombre color scheme (paint transitioning from a lighter to a darker shade). "We wanted to design a space that would be a signature location and not a mere copy of something that has already been done before," said Davis. "We have transformed this property into a unique, stand-out location through the juxtaposition of color, form, texture and light."

Two other podium-platform assemblies host a cluster of custom light fixtures resembling standing versions of the Lily ceiling lights. "Planted" at staggered heights, the fixtures not only add an early morning or late evening glow to the lobby, but illuminate the atrium with their originality. These unique fixtures are surrounded by the red flame-like petals of living bromeliads planted in openings in the black platforms.

Tenants and visitors feel a sense of discovery in walking down the central pathway and encountering signature elements seldom seen in any other lobby venue. "The user experience is always very important to me," said Davis. "The goal is to ensure that building users walking through the space are engaged as they progress through the lobby and that there are unique elements that capture people's interest."

Moreover, the newly renovated atriums have captured the interest of existing and new tenants. "This building has gotten a lot of traction from the renovation," said Parrinello. "At a recent 7 a.m. meeting, we just had a tenant renew their 28,000-square-foot space. They said, 'We love the lobby. It's great.' A well-done lobby breathes new life into a building, and it is a springboard for new tenant activity. I have probably three or four large tenants now in the process of signing and moving into this building from other buildings."

The project's success rests on quality design and craftsmanship, a well-managed construction project, and most importantly, on an owner who trusts the team and invests in the work. "Friedman Real Estate is absolutely committed to making sure that the end user has that great experience," said Davis. "They are willing to invest in their interiors to make that happen."

#### The Transformation Begins

Each atrium lobby took about six months to renovate. The main challenge was balancing design and budget, but a close second on this

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project was managing the sheer array of custom components. If one piece of this beautiful “puzzle” didn’t arrive on time, finding a substitute wasn’t possible without harming the design intent. “If there are a dozen tiles coming from Italy and if you don’t get that specific tile, it is hard to find another tile that fits a row of three or four tiles without detracting from the overall feel that we are trying to achieve,” said Parrinello.

Eldorado Tile worked closely with Friedman’s construction team in securing this diverse palette of porcelain tiles. “We worked with Jim’s crew in ordering all of these Italian tiles,” said DiGiovanni. “We had to make sure we didn’t have too much or too little of any type.”

DiGiovanni studies the blueprints thoroughly before launch of each Friedman project. At Galleria, “I spent a great deal of time at the front-end of this challenging project to understand

all the different tile types, sizes and textures,” said DiGiovanni. “I have to then impart all the complexities of the job to our tile mechanics. The day before beginning the project we sometimes go through the project for a couple of hours to ease the process in the field.”

Once on the site, achieving the desired flat surface for new tile application was a must. “We had to grind the existing brick to remove the wax, and also remove some of the brick and perform some leveling,” said DiGiovanni. Some of the existing brick had to be removed to achieve a match between the level of the existing doors and the height of the new tile flooring. “Some of the existing brick was also left in place, because it is so deeply embedded in the concrete, it would have been astronomically expensive to remove it all,” added Parrinello.

As another challenge, working in an occupied building compounds the difficulty of any construction project, but when your prime business is keeping tenants happy, the pressure to avoid any disruption to building occupants is even greater. Friedman simply walled off the Galleria 300 lobby and directed people to feeder corridors. At Galleria 100/200, half of the main corridor was cordoned off - one half dedicated to building users and the other half to serve as Eldorado’s active work site.

At both atriums, the Eldorado Tile & Marble team installed the same large-format Ergon tile from the Cornerstone Collection on the floors. Serving as a way-finding aid, thick stripes of black porcelain tile in both atriums were installed to mark the intersection of each lobby and the adjacent corridors. In the 100/200 atrium, the black tiles align with both the corridors and the atrium’s overhead bridges, helping building users to more easily navigate the building corridors.

“Jack and his team did a wonderful job of installing all of these diverse tiles on the project,” said Davis. Eldorado Tile’s partnership with Friedman/Davis has been a sort of advanced apprenticeship in tile. “The Friedman/Davis projects are a “bit more difficult than the average job,” said DiGiovanni. “It was a big deal the first time the Eldorado team and myself tackled one of these jobs 10 years ago, but now it’s actually fun.”

## Positive Rapport and Beautiful Spaces

Teamwork and an enjoyable sense of rapport worked its magic in the end results achieved



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in this renovation. Both atriums now have more contemporary finishes, furnishings and fixtures. "At Galleria 100/200, new linear lighting and removal of the polished aluminum slat-ceilings on the atrium bridges create a sleek and updated appearance," said Davis.

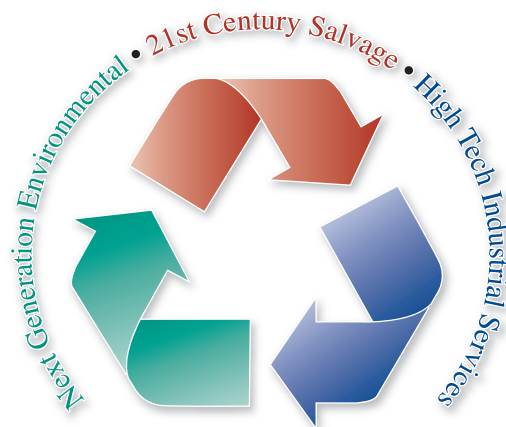
In 2017, this well-established team also renovated areas east of the main 100/200 atrium, including the restrooms, small elevator lobbies and feeder hallways. "The renovated restrooms are now blanketed in Italian porcelain tile and are equipped with energy-wise, touchless faucets and fixtures," said Parrinello.

The small lobbies now have new LED light fixtures, Italian porcelain tile floors and Paralelo tile on the elevator walls. Color as a way-finding aid was introduced into the adjacent tenant corridors of the main atriums and into these smaller lobbies as well. "We have a different color on the wall at each entry point to these smaller lobbies," said Davis. In the green lobby, for instance, the same color travels down the corridor as a carpet accent and wall tab, or "bump-out." In 2018, Friedman will be transforming similar spaces west of the Galleria 100/200's main atrium.

"The construction division under Jim does an amazing job of executing the project," said Davis, "and it is great working with Friedman Real Estate, because David Friedman follows through on his commitment to purchase and breathe new life into a property."

At the Galleria renovation, the intangible alchemy of team rapport had a powerful influence on the renovation's success. For the Eldorado Tile & Marble team, having a great working relationship with Friedman as a general contractor and having the ability to directly discuss issues with Davis & Davis as the architect means "you can get down to business and work faster – and do your best work," said DiGiovanni. On a Friedman project, all the trade contractors and superintendents "are on the same page and have the same goal in mind – the success of the project," DiGiovanni added.

The success of the Galleria lobby renovations boils down to trust and allowing professionals to do what they do best. "David Friedman realizes that the team he has assembled simply works," said Parrinello. "We have his trust, and he gets momentum, a 'buzz' about the project, and increased tenant activity in a wonderfully refreshed building." ♦



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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

**R**AM 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
- 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:

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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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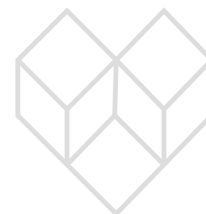






PHOTO FROM RAM CONSTRUCTION SERVICES

## REBUILDING THE BOOK: CASS SHEET METAL RESTORES THE COPPER ON A DETROIT CLASSIC

Before beginning work on the 38-story Book Tower, CASS Sheet Metal, Detroit, restored the copper on the tower's 13-story companion, the Book Building. Designed by Louis Kamper, these two Book buildings add to the growing "library" of historical buildings returned to active use, courtesy of CASS Sheet Metal.

CASS arrived on site in October 2016 to help rebuild this elegant building's roofline. "There is an overhanging ledge, or cornice, that juts out five feet," said CASS President Glenn Parvin. "It was constructed out of concrete and steel and clad in copper and terra-cotta. It was in poor condition and in danger of falling. RAM replaced it with new steel and a structural fiberglass substructure to emulate the original terra-cotta and to provide a substructure for CASS to install new copper work."

CASS Sheet Metal's mission was to fabricate and install a copper flat seam deck on top of the overhang, along with the copper drains leading into the building. CASS also fabricated and installed "24-inch-wide custom copper fascia to match the original historical copper work," he added. "We did the work while we were working through the budget phases and negotiating the contract for the balance of the restoration work and the included items at the Book Tower."

Today, the newly rebuilt cornice, copper deck and fascia have returned the Book Building's uppermost reaches to its original grace. Now softly lit, the cornice soffit and the restored caryatids, or female sculptures, now add to the growing collective glow of downtown Detroit, thanks to both CASS Sheet Metal and the exterior restoration firm RAM Construction Services. ♦



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# The **Vintage** and the **Digital** Meet at 24G's New Headquarters

By **Mary Kremposky McArdle** Associate Editor

**T**he year was 1959, and the Detroit area was called the Bowling Capital of the World. Thunderbird Lanes opened its doors and planted its neon red sign of an eagle-like thunderbird with outspread wings on the edge of Maple Road in Troy. Bowling leagues were booming, the television show "Beat the Champ" broadcast bowling competitions, and almost every kid in Oakland County wanted their birthday party at this well-known community hub. In 2015, Thunderbird Lanes closed its doors, and this much-beloved bowling alley faced another type of ball: the wrecking ball.

Fortunately, Thunderbird Lanes had an unlikely savior: Scott Wiemels, co-founder and CEO of 24G, a digital marketing agency whose mostly millennial staff might seem more at home in an environment celebrating Dragon Ball: Fighterz, Grand Theft Auto V and other best-selling video games. 24G purchased Thunderbird Lanes and retained 10 of the original 46 bowling lanes for staff usage, repurposed the wood of the bowling lanes, and even placed the iconic neon red Thunderbird sign not far from the reception desk as a type of company emblem.

"Thunderbird Lanes was the heart of Troy," said Wiemels. "This building was a community place, and I find it very rewarding that we kept so much of Thunderbird Lane's heritage alive rather than having it torn down for a parking lot or hotel. The building gives joy to our employees, and I think many people in Troy respect what we did to preserve the building's heritage."



PHOTOGRAPHY COURTESY OF OPTICAL AMUSEMENTS PHOTOGRAPHY

**The iconic neon red Thunderbird, originally a roadside sign along Maple Road, now welcomes visitors to 24G's new offices. Behind the sign is a glimpse of the central production area and its unique conference space in the form of a VW van.**

24G enlisted the services of Krieger Klatt Architects, Inc., Royal Oak, and The Monahan Company, an almost 100-year-old construction company adept at tackling older buildings and historical structures. The Monahan Company preserved the original elements of a vintage bowling alley and oversaw installation of extensive, new electrical systems and other building infrastructure necessary to meet code and to service the needs of this technologically sophisticated company. "Coordinating the artistic and technical aspects was the most challenging part of the project," said Kevin C. Monahan, one of the company's principals. "It had to look cool, but it had to work."

## "Let's Do Something ... Special"

Ironically, this mid-20th Century building now houses a company steeped in 21st Century digital technology. 24G combines the digital and the physical worlds, creating, for example, a digitally generated, life-size, interactive video game that can be physically played to engage people in a company's or a product's brand. 24G creates digital experiences at live events, online or in-store, and all of these events can be shared in real-time on social media to amplify the brand message. "We are one of the few companies in the United States that is filling this digital agency niche," said Wiemels.

Having broken the marketing mold, "It's hard to explain what we do," said Wiemels. A telling example may make it real. During the 2015 Women's World Cup, 24G created the Hyper Motion Hexagon as part of the Nike Underground Experience in Vancouver, British Columbia. 24G built a hexagon-shaped enclosure, developed computer software, and employed digital technologies and LED projections to create a digital soccer game that individuals played with an actual Nike soccer ball. The digital program projected Nike's #NoMaybes ad campaign on the walls and turned the playing floor a blue-teal color with the fluid look of water.

24G's digital experience also displayed directions for the soccer game on the walls, tallied each person's score, and displayed the scores of competitors on the wall. Each player was digitally photographed, and immediately after their play period, each person selected

options on a touch screen to choose the photo or video they would like to share with friends on social media. Using its technological expertise and creativity, 24G created a memorable, digital and shareable experience. 24G's physical-digital experiences are the next best thing to entering a yet-to-be-invented hologram similar to the ones in old Star Trek episodes.

The company is well-versed in what, to the average person, are the mysteries of augmented reality, virtual reality, physical-to-digital interactivity, and artificial intelligence. Wiemels describes how he created this innovative company. "I was a kid that took his dad's IBM XT apart back in the day," said Wiemels. "I went to NYU Film School, and from there I began producing for auto shows. My business partner and I both saw a new market niche. We said, 'Let's do something about it. It's our time to make something special.'" And now with the help of The Monahan Company and Krieger Klatt Architects, 24G has truly created "something special" in its own building for staff and clients.

## Launching the Search for a Corporate Home

The journey to this new corporate home began almost a decade ago. 24G has always gravitated toward buildings with character and history. The company's first commercial property was a historic feed store housed in a two-story brownstone on East 14 Mile Road. "It is the oldest building still standing in downtown Clawson," said Wiemels. "It had a bit of history and soul, and we bought it just before the 2009 recession."

The rapidly expanding company soon outgrew the modest buildings. 24G worked in three different locations, having acquired a 15,000-square-foot industrial warehouse in Troy for production and having leased a space next door to the historic brownstone. Given its high rate of growth, a new building sized to accommodate its entire operation was becoming a necessity. The search took time, "because we were looking for something with character," said Wiemels. "There is no shortage of industrial parks in the area, where you can set up and insert some cubicles. It's just not our personality."



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A search on LoopNet, the popular online and mobile marketplace for commercial real estate, led Wiemels to a building that did fit the company's personality: the shuttered Thunderbird Lanes. The building was intriguing, and it was the right price and in a prime location along the Maple Road corridor currently targeted for redevelopment in the City of Troy's master plan.

"I closed my eyes and thought about what we could do with the space," recalled Wiemels. The former bowling alley offered room for event space, more than enough square footage to consolidate company operations in one location, and a clear span structure offering a flexible production area. The open floor plan of the production area could house what 24G calls "production hives" of designers and programmers along the perimeter. The central area had more than enough room to build production sets for 24G's combination physical-and-digital experiences and for the company's sizeable, 360-degree rotating wheel equipped with 50 cameras.

What Wiemels didn't see is the ideal design vision for the space. He brought in another "set of eyes" from the offices of Krieger Klatt Architects. "I had more of a rustic restoration, or industrial chic, idea in mind," said Wiemels. "I am so glad Jeff Klatt didn't listen to me at all. He took the building in the right direction."

Wiemels credits Krieger Klatt Architects for the interior's playful blend of contemporary and mid-20th Century elements, including the newly inserted structural steel clear spans now housing a series of production hives and meeting spaces. According to Jeff Klatt, AIA, "One of Krieger Klatt's main design goals was to highlight the sheer volume of the space – the floor-to-ceiling height being 28 feet for much of the building – along with the impressive glulam structural elements framing the structure's soaring arched roof line. We floated the new work areas, including the production hives and offices, below the existing high structure to achieve this goal. All other enclosed or defined spaces, such as conference rooms or restrooms, were tucked below the lower-height, flat roof lines."

Krieger Klatt designed a central spine, dubbed "Main Street" by the 24G team, to further accentuate the structure and to provide organization to the space. "This 265-foot-long street, situated below the highpoint of the arched ceiling, offers expansive views of the



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The Monahan Company salvaged the maple of the original bowling lanes and repurposed the wood as the front piece of the coffee bar and on other surfaces throughout the 24G facility.

building's unique volume, while connecting the interior spaces," said Klatt. "Although the ceiling height is dramatic, we were able to reduce the scale by adding large pendant light fixtures and exposed spiral ductwork. Playful neon signage, reminiscent of the old lanes, accentuates the print station, coffee bar and other key spaces along Main Street."

Respecting the history of the space through re-use of key materials was another design goal. "We were able to maintain the spirit of Thunderbird Lanes by repurposing the wooden lanes in the new millwork and counter surfaces," said Klatt. "Incorporating the existing exterior signage within the space made a playful but bold visual statement. These large signs fit well within the tall roof volumes." The design also preserves the structure and configuration of the original food grill and bar, the first now serving as a coffee bar with 1950s vintage chairs and the second as a bar lounge located directly across the aisle from the 10-lane bowling area.

#### Sage Advice

The Monahan Company brought its own expertise to coordinating the entire project. 24G is well-versed in augmented reality and virtual reality, but The Monahan Company is firmly grounded in construction reality. "Kevin provided sage advice," said Wiemels. "He knew exactly what was needed, and what we needed to do."

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The Monahan Company preserved a 10-lane portion of the original 46-lane bowling alley, cleaned the Thunderbird signage, and built a new wall dividing the bowling and production areas. 24G hired a bowling contractor to refurbish the 1970s automatic pin setters and bowling machinery and then developed their own proprietary software and technology to operate the bowling lanes.



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The Monahan Company tightened the budget and delivered the project on a well-structured, eight-month schedule. Budget-wise, the company worked with a mechanical and electrical team to redesign and value-engineer the project's mechanical and electrical systems and equipment. The team included mechanical and electrical consulting engineers Clark Trombley Randers, Lansing; electrical contractor, M.E.C. Electric, Westland; and J&K Plumbing & Mechanical, LLC, St. Clair.

Once the budget was in balance, The Monahan Company began building 24G's unconventional corporate home. "The 56-year-old building had fallen into serious disrepair," said Monahan. On the exterior, the building was painted, several new windows were cut into the west building elevation, and a combination of flat EPDM roofing membrane and asphalt shingles were installed as the building's new roof. "On the interior, the building was completely gutted except for 10 bowling lanes," added Monahan.

Draping a large, protective plastic barrier between the bowling lanes and what would become 24G's production space protected the bowling area during interior demolition. Ultimately, The Monahan Company oversaw construction of a 28-foot-high wall and a series of wood-framed windows to divide the bowling and production areas.

Working over the bowling area required extensive scaffolding, because the lane floors could not handle the weight and movement of lift equipment. "The wood of the actual bowling lanes are elevated two feet and have a type of crawl space underneath," said Monahan. "We placed plywood on the wood and then installed scaffolding over that entire space, right up to the deck. Once that scaffold was put in place, no one else could work in that area, so this





created the need to coordinate and tightly schedule the work even though the interior is a gigantic space. Our superintendent, Gary Wilson, did a great job."

The Monahan Company preserved the original feel of the space, including salvaging the original maple lanes, cleaning years of bird debris from the exterior's iconic teal-blue Thunderbird sign, and polishing the existing concrete floors throughout the interior. "We left all the cracks in the concrete, because it adds to the building's character – and it was cost-effective," said Monahan.

24G hired a bowling contractor to refurbish the 1970s automatic pin setters and bowling machinery. 24G developed their own proprietary software and camera systems to marry digital technology to 20th Century bowling equipment. "They took the analog technology and machines and digitized it all," said Monahan. "It is quite impressive."

Bowlers begin the game via a touch screen; the monitor flashes a photo of the player's face on the screen to signal the start of play. The monitors may look the same as they did in the 1970s, but 24G gutted the interior of the vintage monitors and installed computer technology within the casings. "We wrote all the software, and it's all our technology that is operating the bowling lanes now," said Wiemels. "It's running on Raspberry Pi and our cloud-based TRACK360 software to track every player's averages."

24G staff bowls a few frames during lunch or late afternoon. They are both playing and researching. "We are not looking to monetize the bowling software system, but it is a fun research and development project that the entire staff worked on together," said Wiemels.

"Some of the technology that is coming out of these projects ends up in some of the products we create for our customers." This same type of creative play takes place at the golf simulator station in the main production area as well.



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## The Production Zone

Step down five feet from the bowling lanes and enter 24G's new production zone. Desai/Nasr Consulting Engineers, West Bloomfield Township, designed and Kehrig Steel, Ira Township, installed the large, clear span structural steel inserts shaping the production hives around the perimeter of the wide open production area. "Structural steel and heavy-gauge metal framing is utilized to maximize spans and minimize columns," said Monahan. "The hives house teams of designers and technical staff, and offer direct access to the studio floor."

Only 24G's Finance/HR Director Wendy Barnes has an actual closed-door office. For privacy, individuals and small teams can choose from a menu of unique spaces: a vintage VW bus "parked" in the open production space can be used for meetings both inside the bus and outside on a series of folding chairs arranged like an informal campground setting. The VW bus ranks as one of the most unconventional conference spaces in any office building. Individuals and small groups can also meet at tables in the lounge, and the building does house an official conference room as well.

Installing new utilities and MEP systems were extensive parts of the project. "New water mains for domestic and fire protection were installed as required by the building code," said Monahan. "A new 600-amp electrical system was installed as well. I would say that electrical was probably 30 percent of the job costs."

The Monahan Company oversaw the cutting of trenches for electrical power and data in the concrete floors of the production space. Pointing to a cut trench, "There is almost a mile of conduit under this floor," said Monahan.

As an indirect lighting source, LED light fixtures are concealed on the backside of the large glulam beams arching across the building's towering ceilings. "With ceiling heights reaching 28 feet above the floor, the interior has a complex lighting system controlled by software specifically designed for the project," said Monahan.

24G created the lighting control software and The Monahan Company oversaw installation of the modules. "There isn't a light switch in the building," said Monahan. "It's all digital, and 24G controls the lights from an iPad."

The Monahan Company also constructed a 3,500-square-foot warehouse entrance addition and a 60-foot-long concrete ramp built for



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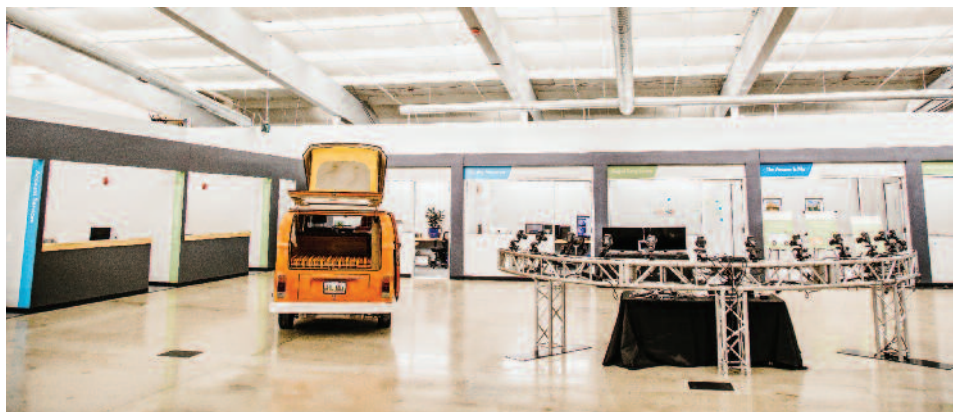


vehicle access to the studio floor. Altogether, the building beautifully accommodates the vision of 24G, both now and in the future. The facility offers room for expansion of 24G's staff from its current 70 employees – they moved in with 55 staff members in June 2017 – all the way up to a building limit of 222 people. The four-acre site has parking for 400, and even a lawn area for backyard barbecues and volleyball games.

No stranger to visionary thinking, the team at 24G, expert at creating hybrid digital and physical experiences, has shaped a different kind of corporate experience. The Monahan Company and Krieger Klatt have turned 24G's vision into a wonderful field of dreams for the company's digital creations.

**The following is a list of trade contractors who contributed their expertise to the project:**

- Carpentry – King Development, Shelby Township
- Structural Steel – Kehrig Steel, Ira Township
- Millwork – Division 6, Warren
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The entire line of pavers are available through the global Amman dealer network. For more information, visit <http://www.ammann-group.com>.



## General Equipment Company Unveils New Self-Propelled Floor-Covering Remover

General Equipment Company introduces the new FCS18 RIP-R-STRIPPER – the first self-propelled unit in its line of floor-covering removal machines. The FCS18's self-propelled capabilities take much of the work out of removing VCT tiles, rubber-backed carpeting and other sheet-type coverings from concrete surfaces. Utilizing direct-drive, random-orbit action, the machine boasts a removal rate up to 720 square-feet of material per hour, making it ideal for flooring removal projects ranging from 8,000 to 30,000 square feet.

- Powered by a 3/4-horsepower electric blade motor (115 VAC/60

Hertz) and 1/3-horsepower electric drive motor (230 VAC/50 Hertz), the FCS18 offers quiet operation and a top cutting width of 18 inches.

- An exciter plate is directly mounted to the motor driveshaft, which transfers maximum power to the material being removed through orbital action. The exciter plate and blade oscillates 3,450 times per minute, increasing productivity over machines with lower overall oscillation rates.
- Compared with manually propelled machines, the self-propelled RIP-R-STRIPPER eliminates back and forth movement while helping to provide a more consistent force to the work surface. The operator is able to focus on simply steering the machine, rather than relying on brute force to achieve higher productivity.
- Two, 50-pound external weight side plates are attached to the FCS18 in order to increase downforce on the blade, which increases effectiveness when dealing with tough residues. These side plates can be removed, as well as the operator handle, for compact transport.
- Integrated lift handles are included on both side plates and the front surface of the machine for easier loading and unloading.

For more information, call (800) 533-0524 or visit <http://www.generalequip.com>.



## CONFAST Introduces the Hex Head Concrete Screw

CONFAST Hex Head Concrete Screws, often called "blue screws" due to their



## PRODUCT SHOWCASE

blue coating that helps to resist rust, are designed to be used when the screw head can protrude above the surface of the item being fastened. This application allows for the option to remove the screw.

- The CONFAST hex concrete screws are considered a light duty fastener in both in the 3/16" diameter and 1/4" diameter.
- Holding values increase based on the depth of embedment, providing that minimum and maximum embedment requirements are met.
- The holding values differ based on the base material into which the CONFAST hex concrete screw has been installed.
- The 1/4" diameter holds slightly more weight than the 3/16" 1 CONFAST hex concrete screw.
- The minimum length of screw required for any job is determined by adding the thickness of the material to the minimum embedment depth of 1".
- The maximum length CONFAST hex

concrete screw is equal to the thickness of the material being fastened plus the maximum embedment depth of 1-1/4".

- Features a hex slotted washer head: 3/16" diameter needs a 5/32" hole and 1/4" diameter needs a 3/16" hole
- Special threads for efficient dust removal

"The CONFAST Hex Head Concrete Screw can be purchased online, direct from the manufacturer, for a savings of up to 70% over retail pricing," stated the President of Concrete Fastening Systems, Inc., Bob Carlisle. "This easy-to-install screw works wells in concrete, brick or block, and is designed for indoor, dry applications." For more information, call (216) 357-7433 or visit <http://www.concretefasteners.com>.



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## PRODUCT SHOWCASE



### New Extech Laser Distance Meters Measure Up to Jobsite Challenges

Extech Instruments, a leader in test and measurement tools, announced in April the launch of the DT-M series of pro-grade laser distance meters. Three new Extech

meters make it easy to measure distances, compute area and volume, measure angles, and stake out distances between objects. Users can quickly take measurements with one-button, point-and-shoot convenience, saving time and dollars resulting from estimating errors.

The DT-M series includes three meters with distance capabilities for a range of jobs: DT40M: 131ft, 40m, DT60M: 196ft, 60m and DT100M: 330ft, 100m. The DT-M meters' bright laser and large, backlit, 4-line display make it easy to measure targets with 0.08" (2mm) accuracy. With their compact, rugged double-molded design and wrist strap, users can take these distance meters anywhere. The pocket-sized meters are ideal for one-hand operation and measurements can be taken from the front or rear edge. A built-in bubble level ensures the accuracy of horizontal measurements.

Useful functions include Min/Max readings; indirect height measurements using Pythagorean calculations (standard height, height in two segments, and partial height) from two or three other measurements; 20 successive reading memory; easy addition and subtraction of multiple readings; and auto power off to conserve battery life. With the stake-out function, users can mark recurring distance intervals, such as the distance between studs for wall framing, between fence posts, lampposts on a path, etc. The meter's beeping cues and numerical



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readings indicate if a distance is greater or less than the desired interval.

The laser distance meters are designed for construction workers, contractors, realtors, home appraisers, renovation and remodeling professionals, electrical and HVAC estimators and others who routinely need quick measurements at a job site.

Learn more about Extech's laser distance meters at <http://www.extech.com>.



## Larson Electronics Releases 15kVA Explosion-Proof Portable Power Distribution System

Larson Electronics has released a temporary explosion-proof power distribution system that converts 480V single phase to 120V AC electrical current, providing operators the ability to tap into common 480V power and use it safely in hazardous environments. This 15kVA rated portable power distributor can operate up to 15,000 watts of lighting and electrical equipment with a 30-amp primary receptacle.

The Larson Electronics EPL-TX-480.1P-15KVA-120X10 explosion-proof temporary power distribution system is designed to allow users to power 120V electrical equipment on converted 480V single phase current, with the means to operate off 480V outside the hazardous environment. This unit can power up to 15,000 watts of equipment safely within Class I Division 1 environments and features a 30 amp primary pin/sleeve plug and a 15kVA rating.

The product includes ten explosion-proof twist lock receptacles rated at 20 amps each. A rugged cart style frame built with non-sparking aluminum with a durable powder coating provides portability and convenience. The cart includes rotating front casters and run flat rear tires, making this power distribution system easy to move

between job sites within the explosive locations.

"The EPL-TX-480.1P-15KVA-120X10 fills a void for compact, mobile power distribution centers in explosive environments," said Rob Bresnahan, CEO of Larson Electronics LLC. "With 10 explosion proof outlets this transformer allows operators to safely power multiple electrics up to 15,000 watts."

Visit Larson on the web at [www.larsonelectronics.com](http://www.larsonelectronics.com) or call (800) 369-6671 to learn more.



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## PRODUCT SHOWCASE



### SOPREMA® Launches COLPHENE® LM BARR, World's First Spray-Grade STPE Waterproofing Barrier

COLPHENE® LM BARR, the world's first spray-grade silyl terminated polyether (STPE) waterproofing membrane, is now available from SOPREMA®. Ideal for use in positive-side waterproofing, foundation waterproofing and a variety of above-grade, horizontal waterproofing applications, this one-component, liquid-applied, moisture-curing elastomeric product can be applied in both vertical and horizontal applications quickly and easily with very minimal prep work.

COLPHENE LM BARR's hybrid polyether composition combines the most desired features of multiple proven chemistries to deliver a broad range of desirable performance properties. It provides persistent adhesion to a wide range of materials—even "green" concrete—while demonstrating extremely high elongation properties. As a result, COLPHENE LM BARR forms tough, elastic seals capable of withstanding extreme temperatures, building movement and moisture without cracking or softening. This STPE product is also environmentally friendly with very low VOC content, cures quickly even at low temperatures.

"COLPHENE LM BARR is an exciting addition to our waterproofing barrier portfolio for a few key reasons," explained Tom Bauer, Product Manager at SOPREMA. "First of all, COLPHENE LM BARR is a strong monolithic product that can now be spray-applied for the first time, making an already time-saving waterproofing technology even more efficient to use. In fact, due to the ability to spray on green concrete, wait times can be significantly

reduced with this product. Also, it yields a lasting seal, even on complex geometries." COLPHENE LM BARR is available in both spray and brush grades. For more information on this product or any of SOPREMA's other waterproofing barrier products, visit [www.soprema.us](http://www.soprema.us).



### Protect Against Silica Dust with the New AF500 AIR-SCRUB-R® Portable HEPA Air Filter

The Model AF500 AIR-SCRUB-R®, offered by General Equipment, provides outstanding air filtration in a wide range of industrial and construction related, non-hazardous location job applications. The HEPA filtration solution delivers air scrubbing/negative pressure air movement through a variable speed motor with airflow rates up to 500 CFM. The two-stage air filtration system features a pre-filter and a high-efficiency HEPA filter. For filtering a wide range of volatile organic compounds (VOCs), smoke, plus other noxious odors and contaminants, an optional activated carbon filter can replace the standard pre-filter for the added filtering capability. A clean filter indicator light tells the operator when to change the filter to maintain optimum airflow and filtration.

Compact, portable and stackable with capability to daisy-chain multiple units together on a single circuit using the integral GFCI outlet and 12 ampere breaker. The AF500 offers a 16-inch diameter inlet for maximum airflow, lower-power consumption and easy attachment of standard ventilation ducts for negative/evacuation airflow applications. The AF500 can be used as a companion product to the VS220 DUST-COLLECT-R® System and General Equipment's full line of non-hazardous ventilation blowers in applications where air filtration is required.

For more information, call (800) 533-0524 or visit <http://www.generalequip.com>.

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The Rhonda Walker Foundation selected **Tricia Ruby**, President and CEO of **Ruby+Associates**, Bingham Farms, as a Powerful Woman of Purpose in STEM, and honored her during the group's Moving with Success Empowerment Brunch on March 18th at MotorCity Casino, Detroit. Tricia was nominated and selected, along with 17 other area women in STEM careers, for their professional accomplishments, commitment to mentor other women, and their community service efforts.



Ruby

The Rhonda Walker Foundation was founded in 2003 with a mission to empower inner city teen girls toward becoming strong, confident, successful and moral future leaders.

Ruby+Associates is a constructability-focused structural engineering firm dedicated to serving the construction industry. The firm's clients are top builders, constructors, fabricators, erectors and industrial contractors, as well as leading architectural and engineering firms.

**Sachse Construction**, Detroit, announced that **Louis Goldhaber** has been named the company's first ever Chief of Staff. "In just five short years, Louis has grown from our Special Projects



Goldhaber

Leader into his newly created position as Chief of Staff," said Sachse founder and CEO Todd Sachse. "His commitment to stepping up to raise the bar for our company and clients is second to none, and we are looking forward to leveraging his creativity, project management and leadership skills to drive the company forward in 2018 and beyond."

In his new role, Goldhaber serves Sachse Construction, as well as Sachse's sister company Broder & Sachse Real Estate, as an in-house advisor to help ideate, develop, create, and execute key initiatives and projects.

Goldhaber's experience spans the construction, technology, sales and marketing industries, with prior experience in project management, event activation, strategic planning, and consulting. During his time with Sachse Construction and Broder & Sachse, he led the construction and owner's representation of various high-profile projects, including The Scott at Brush Park and The Albert – Capitol Park.

**Peter Basso Associates (PBA)**, Troy, is pleased to announce the recent hiring of mechanical engineer, **Jamon Ford**, Human Resources Assistant, **Michele Demski** and mechanical engineer co-op, **Youssef Danaoui**.

Jamon Ford joined PBA's healthcare group in January of 2018 and has been actively involved in projects for Beaumont Hospital in Canton, Troy, and Royal Oak. He has also played a significant role in the mechanical engineering design for the Henry Ford Health System Fairlane Same Day Clinic renovation in Dearborn, MI.

**Michele Demski** joins PBA's human resources team as an experienced human resources assistant with a degree in Organizational Leadership and HR Management from Rochester College in Rochester, MI. Demski is a member of the Detroit Chapter of the Society for Human Resources Management.

**Youssef Danaoui** joins PBA's higher education group as a mechanical co-op from the University of Michigan-Dearborn, Dearborn, MI. Danaoui is currently pursuing a degree in mechanical engineering and since joining PBA, he has played an active role in the mechanical engineering design of several projects for Michigan State University in East Lansing, MI, including an addition to



Ford



Demski



Danaoui

the Music Building and MSU's Healthy Campus Initiative.

**Triangle Associates, Inc.**, Grand Rapids, recently named **Milan Milivojevic**, CPA, as Chief Financial Officer of the company and **Ty Beckering** as Business Development Manager.



Milivojevic

As CFO, Milivojevic's responsibilities include the management of the company's finances, risk management, and the oversight of the accounting and information technology



Beckering

groups. As an active member of the company's executive leadership team, he will also influence all aspects of the company to enhance long-term financial returns while operating within the stated mission and values of the company.

Prior to joining Triangle, Milivojevic was Chief Financial Officer of Plasan Carbon Composites in Grand Rapids and Chief Financial Officer/Principal at Indy Equity LLC in Indianapolis.

In his new role with Triangle, Beckering's responsibilities include identifying new client prospects and managing those prospects until they become new business for the company. Prior to joining the company, he was in business development for Brigade Fire Protection, a Vice President for Specialty Metal Fabricators, and General Manager/Consultant for Centennial Country Club. He also held various positions with Pioneer Construction.

**Rudolph Libbe Group**, Walbridge, Ohio, recently announced that **Sam Farmer** has joined the company as an account manager in its Special Accounts Department.



Farmer

Farmer has more than 10 years of experience in the construction industry. He graduated from Ohio State University with a bachelor's degree in construction



systems management.

The Board of Directors of **TMP Architecture, Inc.**, Bloomfield Hills, recently appointed **Gail Allevato**, CPSM, to President at TMP Architecture, Inc.

Allevato, who joined TMP in 1986, is the Chief Marketing Officer of the firm and a member of TMP's Board of Directors. Allevato took on her new role as President starting in January 2018 and is the sixth president of the firm since its inception in 1959.

Over the years, Allevato has lead the firm's marketing, public relations and business development functions, and has served many educational and municipal clients in the development and implementation of successful bond campaigns and fundraising initiatives. She is a member of the Society of Marketing Professional Services and is one of the past presidents of the organization.

TMP has offices in Bloomfield Hills and Portage, producing a variety of projects for K-12 educational, college/university and municipal clients.



Allevato

**HKS** rewards outstanding performance, drive and ambition with the promotion of the following individuals in its Detroit office. **Kendall Ruhberg**, AIA, LEED AP, a project manager with experience managing large, complex design teams, was promoted to associate principal. **Steve Stroman**, IIDA, LEED AP, a senior interior designer with more than 24 years of experience with healthcare and hospitality projects, was promoted to vice president. **Jacqueline Colaianne**, WELL AP, an architect with experience in healthcare and commercial projects, was promoted to associate.



Ruhberg



Stroman



Colaianne

safety before profits and for this we are very proud."

The ABC National Safety Excellence Awards recognize companies who exhibit a continued commitment to jobsite safety and whose safety performance and programs are judged to be exemplary by the ABC National Environment, Health & Safety (EH&S) Committee.

Elzinga & Volkers Construction Professionals is a leading provider of construction management services serving clients nationwide since 1945. It has been named Michigan Contractor of the Year and recognized nationally as a Best and Brightest Company to Work For. Visit [www.elzinga-volkers.com](http://www.elzinga-volkers.com) for more information.

**Cutting Edge Countertops**, a Midwest leader in the sales and manufacturing of countertops for the residential and commercial markets, announces the consolidation of its hard surface products into its newly expanded 95,000 square foot manufacturing facility in Perrysburg, Ohio. Set to open in the Spring of 2018, the facility will continue to serve as the company's headquarters where warehousing, manufacturing and logistics operations will be centralized to service the states of Ohio, Michigan and Indiana.

"Our company believes the safety, quality and experience we provide our employees and our customers are the number one priorities for our business," said Jeff Erickson, Chief Operating Officer for Cutting Edge Countertops. "Due to the growth of our operations and business, we are expanding into a completely new state-of-the-art facility in Perrysburg that will allow us to uphold our service promise, centralize efforts and create efficiencies that will help put our employees and our customers first," he added.

Cutting Edge Countertops first began its manufacturing operations in the Perrysburg, Ohio, area in 2006. Since then, the company has established showrooms in Macomb and Wixom, Michigan, and Indianapolis and Noblesville, Indiana, where they serve both residential and commercial markets. ☞

## Corporate News

**Elzinga & Volkers**, Holland, a leading West Michigan construction company, announced that the organization has been honored with the **Associated Builders and Contractors, Inc. National Safety Excellence Award**. Elzinga & Volkers received the award at the 28th annual Excellence in Construction Gala on March 21 in Long Beach, California.

"To be recognized by our trade association, ABC, as a top-performing company regarding safety among its 21,000+ company memberships is the ultimate compliment and acknowledgment by our peers," said Mike Novakoski, president and CEO of Elzinga & Volkers. "This award expresses the exceptional commitment by each and every member of our company to perform our work in the safest of manners. Additionally, it reflects our promise to train and protect all people on our projects, regardless of where they get their paychecks from. Elzinga & Volkers feels morally obligated to always put

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## CONSTRUCTION CALENDAR

Please submit all calendar items no less than six weeks prior to the event to: Diane Sawinski, Editor: [sawinski@buildwithcam.com](mailto:sawinski@buildwithcam.com)



### CAM Golf Outings 2018

**June 19** – Bay Pointe Golf Club, West Bloomfield

**July 17** – Links of Novi, Novi

**August 21** – Fieldstone Golf Club, Auburn Hills

**September 24** – Forest Lake Country Club, Bloomfield Hills

#### May 15, 2018 - CAM Sporting Clays Event

Detroit Gun Club, Walled Lake, MI

For more information or to register, visit <https://buildwithcam.com/event/spring-sporting-clays>.

#### May 23, 2018 - Tile Day 2018

St. Mary's Cultural Center, Livonia, MI

Brought to you by the Great Lakes Ceramic Tile Council, International Masonry Institute, and the Detroit Ceramic Tile Contractors Association. The event is free, but advance registration is required. For more information and to register, visit <https://www.eventbrite.com/e/tile-day-2018-tickets-43884078460>.

#### May 31 – June 1, 2018 - AIASF 2018 NEXT Conference – New Urban Agenda

San Francisco, CA

The American Institute of Architects, San Francisco Chapter (AIASF), holds its 2018 NEXT Conference in San Francisco. The conference will be dedicated to the United Nations' New Urban Agenda.

For more information, call (415) 874-2620.

#### June 11-14, 2018 - American Architectural Manufacturers Association (AAMA) National Summer Conference

Olympic Valley, CA (Lake Tahoe)

For more information, visit <https://aamanet.org>.

#### June 14-15, 2018 - American Architectural Manufacturers Association (AAMA) Western Regional Summit

Olympic Valley, CA (Lake Tahoe)

For more information, visit <https://aamanet.org/>.

#### June 20, 2018 - The Mid-Year Economic Forecast & State of the Industry

Suburban Collection Showplace, Novi, MI

Brought to you by CAM, the Home Builders Association, and the American Institute of Architects. For more information and to register, call Mary at (248) 972-1108 or email [carabott@buildwithcam.com](mailto:carabott@buildwithcam.com).

#### July 19-22, 2018 - American Society of Concrete Contractors – Concrete Executive Leadership Forum (CELFF)

Montage Deer Valley, Park City, UT

Forum featuring seminars, roundtable discussions, networking activities, and fun.

For more information, visit [www.ascconline.org](http://www.ascconline.org) or call (866) 788-2722.

#### October 15-18, 2018 - American Architectural Manufacturers Association (AAMA) National Fall Conference

Tucson, AZ

For more information, visit <https://aamanet.org>.



#### CAMTEC Classes

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**MAY 7** Advanced Printreading

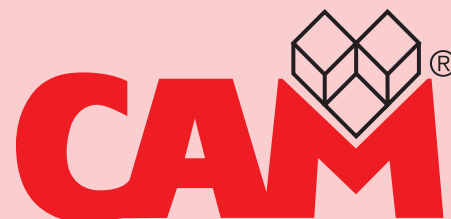
**MAY 11** OSHA 7105: Evacuation & Emergency Planning

**MAY 14** EPA RRP Certified Lead Renovator Training

**MAY 14-17** OSHA 30-Hour for General Industry

**MAY 16** First Aid, CPR & AED Combined

**MAY 21-24** OSHA 521: Guide to Industrial Hygiene



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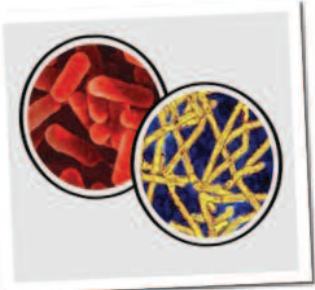
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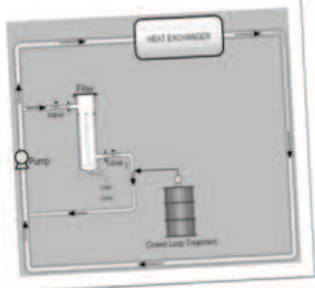
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Call Jan Prince (586) 790-7810



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