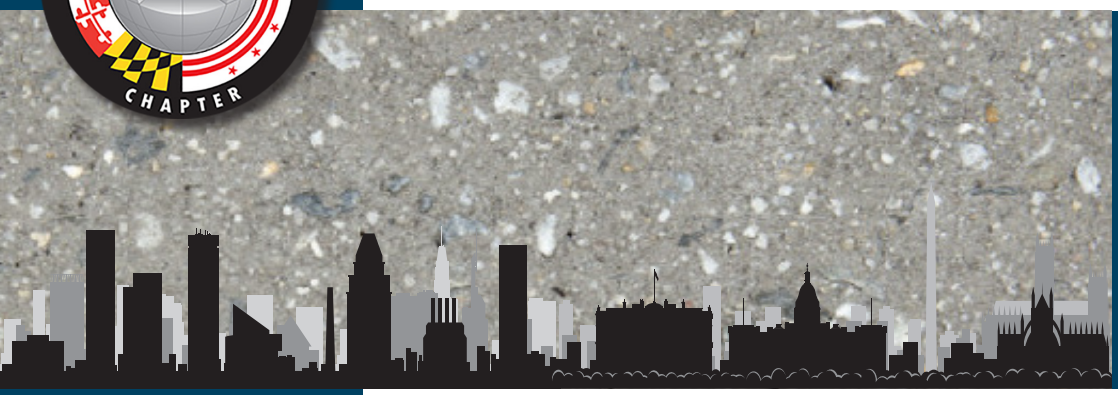
4th Quarter 2017

The Aggregate

The Newsletter of the Baltimore-Washington DC Chapter of ICRI



In This Issue:

Chapter Calendar

4th Quarter Annual Awards Banquet
November 2, 2017

Chapter Service Project Build Day at the Metro Maryland Habitat for Humanity
November 4, 2017

The ICRI National 2017 Fall Convention
Hyatt Regency New Orleans, New, Orleans, LA
November 15-17, 2017

Fall Technical Seminar
December 7, 2017

Message from our President

Shannon Bentz Desman


Shannon Bentz

The awards banquet is just around the corner followed shortly by the Fall Seminar. This means another year of ICRI has gone by and my presidency is coming to an end. We have had a lot of wonderful changes this year. We introduced the new BW chapter logo, re-vamped our website and hired a new management company. I am proud to see that we have gained several new individual members, company members and sponsors whom I am excited to see at our last few events of the season.

I am hopeful that our 2018 board of directors will continue to streamline, upgrade and modernize the chapter as we have continued to learn throughout the year where improvements may be needed.

In the future we plan to continue working with our current management company and add an email subscriber option to our website for those who are not individual members so that important messages are brought to their attention. We also have thoughts of streamlining our sponsorship members into calendar year terms to make it easier for them and us to handle their benefits. If there are other items that you as a member would like to see, please bring it to the attention of our board members so we can continue to make BW the BEST chapter that we are all proud to be members of.

I'd like to thank all of you for your support and patience during my presidency. We have had several board members with job changes and a hurricane that caused us some havoc and the current board stepped right into the positions outside of their usual roles to make sure that business continued as usual. The 2018 BW chapter will be in good hands and our new board members will have some big shoes to fill.

Shannon

SAVE THE DATE:
2017 Chapter Fall Technical Seminar

Thursday December 7th, 2017
Concrete Protection & Restoration, Inc.
2811 Lord Baltimore Drive
Windsor Mill, MD 21244

Recognizing the importance the precast concrete world plays in our daily lives, the ICRI Baltimore-Washington, DC Chapter's fall seminar will focus on a variety of topics relating to precast concrete. Some of the presentation topics will include the design and production of PC elements, the repair of PC elements in parking structures and building envelopes, the design and production of architectural PC and the role of hardened PC elements in our world today. More information will be forthcoming regarding the seminar program and the participating speakers.

Silica Standard – Enforcement Update

By David Caple

There is a lot of news to report to the ICRI-BWC membership regarding the OSHA Silica Standard. The enforcement of the silica standard was originally supposed to start June 23, 1017 and as many of you are aware that was postpones until September 23, 2017. As this issue of the aggregate was being prepared for print two new revelations have come to light one regarding enforcement and the other pending litigation.

OSHA is offering to construction companies "making good-faith efforts to comply" during the first 30 days of enforcement and olive branch so to speak. In a recent memorandum by Thomas Galassi, OSHA's acting deputy assistant secretary the following statements were made:

"OSHA will render compliance assistance and outreach to assure that covered employers are fully and properly complying with its requirements." The memo went on to say, "If, upon inspection, it appears an employer is not making any efforts to comply, OSHA's inspection will not only include collection of exposure air monitoring performed in accordance with Agency procedures, but those employers may also be considered for citation." I think it is important to note that, "Any proposed citations related to inspections conducted in this time period will require National Office review." As a safety professional I am patiently awaiting the compliance directive that will essentially outline inspection and citation guidance to OSHA compliance officers. In 2016 a Regional Emphasis Program regarding Silica was implemented in Region IV (Atlanta, GA) and may serve as an indicator as what may be to come for those who are interested in a glimpse into how OSHA may direct future inspection and citation process. You are welcome to draw your own conclusions but just be aware that if OSHA shows up on your job because of silica that may not be their singular concern. My general advice on this topic should not be construed as a guarantee of compliance with the Silica Standard; however, I am suggesting contractors consider the following:

1. *Have a Written Plan* – If it is not written down it never happened.
2. *Control Visible Dust* – Consider using Partition walls to isolate silica producing operation from the rest of the job site. Use general and local ventilation to control and/or collect the dust. Follow Table 1 of the Silica Standard when feasible. Incorporate wetting methods and Vaccum Dust Collection Systems into your processes.
3. *Conduct Exposure Assessments* – When adherence to Table 1 is not feasible follow the "Alternative Exposure Control Methods" outline in the Standard. Essentially, conduct air monitoring and protect your employees with personal protective equipment sufficient to meet OSHA requirements.
4. *Training* – Conduct thorough train of your employees that may be exposed to silica. In an article written by Micheal R. Peelish, Esq., titled, Silica Rule in Effect, Enforceability Depends on "Good Faith" Efforts, Micheal suggests The quickest way for a Compliance Officer to determine "good faith" is to ask your employees questions, such as: What are the adverse health hazards associated with crystalline silica? How do you preform Housekeeping? Who is your Competent Person? If your employees don't know answers to simple questions you may have a problem. I think this is a good observation and should be considered.

The Silica Standard is still being disputed in court. Lydia Wheeler reporting for "The Hill" in a recent article titled, Trump EPA nominee to fight worker safety rule in court, points out that William Wehrum, a nominee to lead the EPA's air and radiation policy will be arguing on behalf of the National Stone, Sand and Gravel Association and the Brick Industry Association against OSHA's silica dust rule. The case is set to be heard in the D.C. Circuit Court of Appeals. The Trump administration is defending the silica rule against his case along with seven others. The administration claims it is undisputed that silica causes serious, even fatal, health effects in exposed works. My take on this is the Silica Standard is here to stay.

I believe that over the next few years through equipment manufacturer's research and development, along with, contractors and safety professionals conducting air monitoring, a higher resolution picture of what silica exposures are present in our industry will be achieved. This will lead to contractors accurately estimating the additional time and cost to perform structural repair activities, increased compliance, and a decrease in citations and penalties. As for now… Good Luck.

David Caple, COHC, CEAS

Construction Safety and Health Specialist, is the Principal Member of Pinnacle Safety Network, LLC. He has over 15 years experience in a combination of structural restoration and safety.

BEWARE OF UNPAID WAGE CLAIMS FROM YOUR SUBCONTRACTOR'S EMPLOYEES IN THE DISTRICT OF COLUMBIA

By Jennifer Mahar, Esquire

Are you performing work in the District of Columbia using subcontractor labor? If so, did you know that you have potential exposure to unpaid wage claims from your subcontractor's employees if your subcontractor fails to pay them for work performed on your project?

The District of Columbia amended its minimum wage law, the District of Columbia Minimum Wage Act Revision Act, in 2015 to create joint and several liability for general contractors and intermediate subcontractors to employees of lower-tiered subcontractors for unpaid minimum wages. D.C. Code § 32-1101(c) provides, in part: "A subcontractor, including any intermediate subcontractor, and the general contractor shall be jointly and severally liable to the subcontractor's employees for the subcontractor's violations of this subchapter."

Under the act, your potential exposure to a subcontractor's employee for an unpaid wage claim includes (a) the back wage amount, (b) liquidated damages of three times the back wage amount, and (c) the subcontractor's employee's incurred attorney fees. For example, if the subcontractor's employee proves unpaid wages of $5,000, your exposure could be $20,000 ($5,000 unpaid back wages and $15,000 in liquidated damages) plus attorney fees. The subcontractor's incurred attorney fees can far exceed the amount of unpaid back wages.

The fact that you paid your subcontractor the amounts due under your subcontract agreement is not a defense to a subsequent subcontractor's employee's unpaid wage claim against you. The act allows you to pursue your subcontractor for indemnification for the amounts you pay the subcontractor's employee, provided you made prompt payment to your subcontractor for amounts due under the terms of your subcontract agreement. See D.C. § 32-1101(c). This indemnification, however, is of little value if your subcontractor is no longer viable.

Given this risk exposure, it is important that you consider the financial health and performance history of the subcontractors you select for your projects in the District of Columbia.

For further questions, Jennifer can be reached at jmahar@smithpachter.com or 703-847-6300. Jennifer, a member of Smith Pachter McWhorter, PLC, focuses her law practice on advising construction industry clients in all phases of project development and construction, including contract formation, project management, and dispute resolution.

CONCRETE REPAIR CHALLENGES

By **Murat Seyidoglu, P.E., S.E.**
& Kaveh Afshinnia, Ph.D.
STRUCTURAL REHABILITATION GROUP, LLC

INTRODUCTION:

During the last 30 years, concrete repair industry has come a long way in repair and rehabilitation of the existing structures. Due to the advancements in concrete repair technology, existing reinforced concrete buildings can now be kept in service longer and the long-term performance of these structures are ensured. New innovative materials such as carbon fiber reinforcing polymers, doweling epoxies, reinforcing polymers, various admixtures to modify the concrete properties and newly developed waterproofing systems have allowed the engineers to better rehabilitate and modify existing structures; however, there is still a great deal of unknowns and nuances in concrete repairs, some which will be discussed in this article.

Exposed concrete elements experience considerable amount of corrosion related damage in parking garages, plazas, stadiums, podiums…etc. when deicing chemicals and moisture migrates into the concrete. Numerous research studies have been carried out to develop new methods and understand the performance of commonly used materials in traditional corrosion related concrete repairs. ACI and ICRI have collectively published a great deal of guidelines for repairing structural concrete, which has allowed the building owners and managers to successfully keep their buildings in service longer and avoided monetary losses due . Recently published ACI 562 is also a good guideline with valuable information regarding investigation, design, and execution of concrete repairs; however, various nuances in structural repair and rehabilitation are left up to the judgment of the registered design professionals specifying the repairs. The purpose of this article is to discuss some of these nuances in rehabilitation of reinforced concrete structures and provide the authors' opinions.

INSTALLATION OF POST INSTALLED ANCHORS IN REPAIRED CONCRETE:

First part of discussion will be regarding anchoring into repaired concrete members. This is a commonly encountered matter in structural repairs and modifications involving slab edges in buildings. Balcony repair and façade re-cladding projects are good examples where anchorage into repaired concrete maybe necessary. It is the authors' experience that a lot of specialty engineers, who are designing cladding and railing systems, either avoid placement of post-installed anchors into the repaired portions of the concrete slabs, specify anchors to be extended beyond the repaired portions of the slab edges or avoid the issue all together by asking the engineer of record to verify the field conditions. The concern with the performance of the slab edge repairs is understandable and there can be issues related to the quality of the concrete repairs; however, arbitrarily not depending on repaired concrete for installation of post-installed anchors greatly complicates the construction coordination and design process. It is the author's recommendation that the engineer of record should provide sufficient information to the specialty engineers designing the anchorages for such systems to avoid coordination issues before the generation of shop drawings. If the field conditions are not well known, it is imperative to perform a field survey to find out the condition of the repairs during the design phase. If there are concrete spalls at the building edges, the engineer of record should provide appropriate details for repairing them and provisions for installation of post-installed anchors (Figure 1). The owners and architects who are working on the project must be informed that the structural engineers need to perform field surveys to document the existing conditions prior to designing repairs or alterations to the existing buildings. Every project is different and one may choose not to depend on the capacity of the repaired concrete areas if there are very high concentrated forces transferred to the patches or there are high sustained tensile forces (as in the case of tension rods anchored to slab edges). However, inadequate fieldwork to observe the existing conditions prior to design phase and not communicating with the members of the design team (including the specialty engineers) will only complicate the construction process.

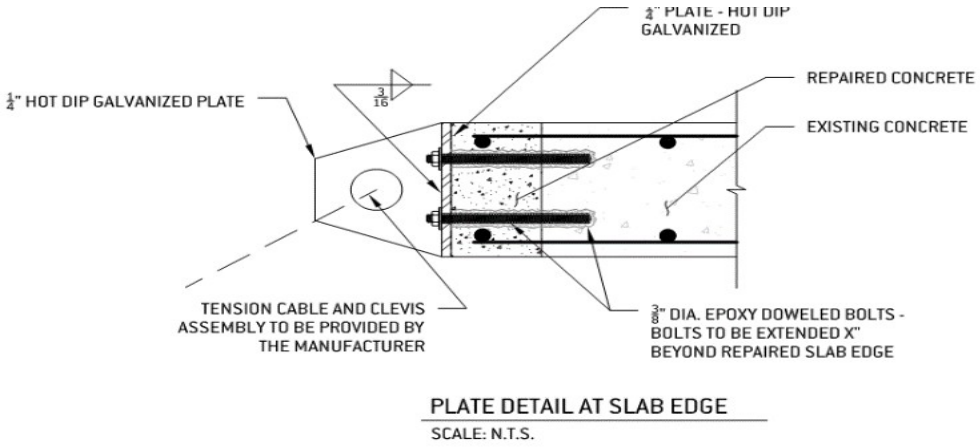


Figure 1

USE OF APPROPIATE CONCRETE REPAIR MATERIALS:

Another common issue in concrete repair projects is the specification of appropriate repair materials and quality control. Although there is a great deal of research in this field, there is hesitance in utilization of such materials in repair applications. If the properties of specified concrete mixes are well understood and proper curing methods are specified, use of such materials will greatly benefit the project. There are several types of concrete materials for repair applications available in the market, such as Self-Consolidating Concrete (SCC), Shrinkage Compensating Mortars (SCM), High Performance Concrete (HPC), Fiber-Reinforced Concrete (FRC), and Rapid Set Mortars, etc. Rather than specifying one type of concrete for all types of repairs, several types of materials, suitable for the project requirements, can be specified to meet the project demands. Some of the available types of concrete and their applications in structural concrete repair is as follows:

Self-Consolidating Concrete (SCC)

Self-consolidating mortar or concrete was first developed in Japan in the 1980's. Flowability, passing ability and resistance to segregation are the three main factors that influence the quality of the SCC. In most of the cases, where a repair is performed in components of infrastructure or high-rise buildings with dense steel reinforcement, incorporation of SCC can reduce the labor cost and construction time. SCC can easily flow inside the formwork without any compaction (vibration) and cover the congested rebar within the formwork. Typically, SCC has a slump value of 8 inches or more.

To achieve a high level of flowability and resistance to segregation, higher paste-to-aggregate ratios are used in SCC mixtures; hence, more Portland cement is used to produce SCC mixtures than the conventional concrete mixtures. Higher dosage of Portland cement in SCC mixtures may cause higher risk of shrinkage and thermal cracking in repair materials.

Shrinkage-Compensating Concrete

Shrinkage Compensating Concrete is an expansive concrete, which expands equal or greater than sustained drying shrinkage. During the expansion phase, at early stages of the curing process, compressive stress is induced in the concrete matrix. While the concrete is shrinking, the induced compressive strength will be reduced due to the shrinkage of concrete matrix; however, in most cases, a residual compressive stress will remain within the concrete matrix which prevents shrinkage cracking. The occurrence of expansion at early ages of the curing process is due to the formation of ettringite within the concrete mixture while the concrete mixture is still in the plastic phase. When the ettringite is formed within the concrete matrix, it occupies more space and consequently increases the volume of the concrete. Since the concrete is still in the plastic phase, the expansion of the concrete does not cause any distress or delamination to the concrete.

The presence of ettringite within the concrete mixture at early stages can influence the flowability of the mixture since ettringite absorbs more water and consequently affects the workability of the mixture. Thus, higher water-to-cement ratios are used when shrinkage-compensating concrete is as a repair material.

***Picture 1: SCC in a Column Repair** Application*

High Performance Concrete (HPC)

High performance concrete mixes have higher levels of strength and durability when compared to conventional concrete. Typically, this type of concrete mixes have lower permeability and denser matrices compared to conventional concrete mixes. HPC contains one or more types of admixtures, such as silica fume, fly ash or granulated blast furnace slag. HPC usually has higher percentage of cementitious materials and lower percentage of water (therefore a lower water-to-cement ratio) compared to the conventional concrete. Higher dosage of Portland cement in HPC may cause shrinkage and thermal cracking if precautions are not taken.

Fiber-Reinforced Concrete (FRC)

Fiber-reinforced concrete mixes contain discrete fibers. This type of repair materials have higher toughness, impact and cracking resistance as compared to conventional concrete. Fibers can be produced from glass, plastic, polypropylene or steel. The amount and size of the fibers within the mix, in addition to the properties of the cementitious materials, influence the workability, mechanical properties and durability of the fiber-reinforced repair materials. This type of materials are suitable for pavement or slab repair applications where shrinkage and/or thermal cracking needs to be controlled.

Picture 2: Fiber Reinforced Concrete

PERFORMANCE OF REPAIRED CONCRTE BUILDINGS UNDER WIND AND SEISMIC LOADS:

Lastly, there has not been much research in performance of repaired (repairs performed to remediate corrosion damage rather than damage due to wind or earthquake events) concrete structures under seismic and wind loads. Though many concrete framed buildings have undergone various degrees of repairs in the coastal regions of the U.S., there hasn't been much monitoring or published data on these structures to understand their performance after wind and seismic events. Understanding the performance of different repaired lateral force resisting systems (shear walls vs moment frames) would be a very beneficial to the practicing engineers working in the concrete repair industry. Though a great deal of data is being collected after the recent earthquake events (such as Chile and Mexico,) it is unknown how corrosion related damage was a contributing factor in damage sustained in recent earthquake events. Furthermore, it is unknown if special precautions should be taken when repairing corrosion related damage in components of lateral load resisting systems (especially moment framed buildings located in hurricane and seismic zones).

To sum, concrete repair technology is still evolving and we are seeing exciting developments in the methods and materials used concrete repairs; however, a great deal of research is still needed to address some of the commonly encountered issues. Also, newly developed materials should be better explained to industry professionals to promote their use. With collaboration of the industry and academia, a lot of the unknowns in the concrete repair industry were addressed and a number of great publications are available to the engineers, but there is still room for research.

Murat Seyidoglu, P.E., S.E.
& Kaveh Afshinnia, Ph.D.

ICRI Baltimore Washington Chapter 4th Quarter Dinner Meeting

Thursday, November 2, 2017

Maggiano's Little Italy At Tysons Galleria
2001 International Dr.
Mclean, Virginia 22102

SCHEDULE:

4:00 pm Board Meeting
5:30 pm Social Hour
6:30 pm Dinner & Presentation

REGISTRATION:

Member Rate: $50
Non-Member Rate: $60
All after 10/27/17: $60

REGISTRATION DEADLINE IS OCTOBER 27, 2017

Company: _____

Name: _____

E-mail: _____ Phone: _____

Number of Attendees: _____ Attendee Names: _____

_____

2017 Awards Dinner and Board Elections

Join us for our last dinner meeting of the year where we will present our annual awards for outstanding projects. Competing projects are judged on a number of criteria including, but not limited to: overall presentation of the project, innovative or difficult approach to making repairs, specialized materials or equipment required, difficulties during construction related to site issues or owner issues, tight construction deadlines or compressed schedules and that the project's success can be attributed to utilization of ICRI techniques and guidelines in the repairs.

Elections for our 2018 Board of Directors will also be held at this meeting.

Scan and email or fax this completed form to Chapter Secretary, Kevin Kline by October 27, 2017. Checks may be mailed with your form or you can bring them with you to the meeting.

Kevin Kline, EIT
Concrete Protection & Restoration, Inc.
2811 Lord Baltimore Drive
Baltimore, MD 21244
Fax: 410-298-4086
Email: kkline@concretecpr.com

Checks Payable to:
ICRI BWC
Save the paper!
Register and pay online at
ICRIBWChapter.org

2017 ICRI Golf Tournament
October 5, 2017

by Dave Bickel

The 26th Annual ICRI-BW Chapter Golf Tournament was held on Thursday, October 5th at The Timbers of Troy in Elkridge, MD. The turnout and support from our membership was outstanding! A total of 104 golfers participated in the tournament this year. There were also a total of 42 companies that supported the event through sponsorships. The Chapter is thankful for everyone's support.

The weather for the day was beautiful 65 degrees at Tee-off. The morning started off with a continental breakfast for all; liquid refreshments, cigars and snacks were served on the course; a buffet lunch and the awards presentation ended the day.

The golf outing is a major fundraiser with the proceeds funding the scholarship program. And of course we couldn't have made this the success that it was without the dedicated and hardworking volunteers: Kevin Kline, Patrick O'Malley, Larry Burkhardt, Nina Breece, Nancy Smith, and David Bickel.

The big winners for this year's tournament include:

Competition Winners:

Longest Drive – Women	**Kelly Smulovitz**
Closest to the Pin – Women	**Melissa Mitchell**
Longest Drive – Men	**Aaron Winters**
Closest to the Pin – Men	**Bill Arthur**

Team Scores:

1st Place – C.A. Lindman: Alan Rutherford, Ken Kosteva & Matt Salzer

2nd Place – PPSI: Brian Baker, Bryan Monahan, Lance Conley & Kevin Leasure

3rd Place – BASF: Patrick McGinty, Garth Vair, Rick Hart & Shannon Smith

The Chapter also wants to recognize the following tournament sponsors for their support:

Luncheon	Concrete Protection & Restoration, Inc. (CP&R)
Beverage Cart	Eastern Concrete Restoration, LLC
Hole in One	Preservation & Protection Systems, Inc. (PPSI)
Breakfast	Manganaro Mid-Atlantic

Competition Sponsors

Hole in One	Preservation & Protection Systems, Inc. (PPSI)
Putting Contest	Scaffold Resource, LLC
Longest Drive - Men	BASF
Longest Drive – Women	Tools & Accessories
Closest to Pin - Men	Tremco, Inc.
Closest to Pin - Women	Hoar Construction

1st Place Winners
from C.A. Lindman

2nd Place Winners
from PPSI

Chapter President
Shannon Bentz & her
golfing buddies

Aaron Winters (left):
Long Drive Winner

Kelly Smulovitz (center):
Long Drive Winner

Melissa Mitchell (center):
Closest-to-pin Winner

Hole Sponsors:

Valcourt Building Services
Kenseal Construction Products
C.A. Lindman, Inc.
Pecora Corporation
SK&A MD Structural Engineers
BASF
PPSI
Concrete Protection & Restoration, Inc.
SIKA
Vexcon Chemicals, Inc.
ABC Equipment Rental
Neogard Construction Coatings (Hempel)
Lymtal International, Inc.
Mapei
Velosit
Evonik
Advanced Polymer Technology Corp.
Manganaro Mid-Atlantic
Engineering and Technical Consultants, Inc.
Conproco
Engineered Building Solutions, Inc.
CTS Cement/Rapid Set
KGS Construction Services, Inc.
Erie Metal Specialties, Inc.
Vector Corrosion Technologies
Henry
Emseal
The New Barbet II Corporation
Olin POLY- CARB
Euclid Chemical
Contracting Specialists, Inc.
Metro Sealant & Waterproofing Supply
USCP

Once again, a big thanks goes out to all of the participants and sponsors. We really couldn't have pulled this off without your support!

We look forward to seeing everyone on the golf course next year!

Industry Outreach Update: Habitat for Humanity

Habitat for Humanity of Montgomery County, Maryland (HFH-MC)

This year ICRI BW Chapter plans to assist the Habitat for Humanity right where we work and live. Members from the Chapter will be participating in a group build-day which is scheduled for Saturday November 4, 2017.

We are scheduled to work at a location in Largo, Maryland. The work day is from 8:30 am to 3:30 pm and all volunteers will receive lunch and a t-shirt. Details of the work involved and specific location will be coordinated approximately 1 week before the event. This will be another great opportunity for ICRI members to work together for a worthy cause.

Spaces are limited to approximately 10 volunteers.

Send an email to Nicholas Henn at nhenn@etc-web.com to let him know you are helping out.

Habitat for Humanity is a nonprofit organization that seeks to eliminate poverty and homelessness. This is accomplished through the efforts of volunteers, working alongside of the prospective Habitat homeowners, to build the Habitat house. HFH-MC has helped 64 families move out of substandard conditions and into affordable homes since its establishment in 1982. Only one home has gone into default, and all of the original owners still own their homes. In addition to volunteer labor, donations of money are also accepted to help build the Habitat homes.

Thanks for helping out with this valuable community project.

2017 Chapter Officers

PRESIDENT
Shannon Bentz, P.E.
DESMAN
sbentz@desman.com

VICE PRESIDENT
Robert A. Radcliff, P.E.
Engineering & Technical Consultants, Inc.
bradcliff@etc-web.com

SECRETARY
Kevin Kline, EIT
Concrete Protection & Restoration, Inc.
kkline@c-p-rinc.com

TREASURER
Brian Baker
PPSI
brian@ppsimd.com

IMMEDIATE PAST PRESIDENT
Adam Hibshman
Valcourt Exterior Building Services
ahibshman@valcourt.net

PLATINUM PLUS

Sika®

structural

PLATINUM

CP&R
saving the life of concrete®

GOLD

BASF
We create chemistry

preservation + protection systems, inc.

CSI
CONTRACTING SPECIALISTS
INCORPORATED

SK&A
Repair + Restoration

ETI
Eastern Testing & Inspection Corp.

SILVER

MAPEI®

BRONZE

EUCLID CHEMICAL

CHAPTER SPONSORS

Visit our website to sign up for sponsorship