



# **Resource Guide**

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# 2023/2024 Seminar Series See Insert



*Welcome to the 2024 Masonry Resource Guide.* Inside you will find up-to-date contact listings for the great mason contractors and masonry suppliers who support the Masonry Institute of St. Louis, our 2023-2024 schedule of educational programs, and additional information geared toward helping you maximize the benefits of masonry on your next project!

# Designing and Building Using the Premier Wall System

What have we learned? Some things never change – structural, or loadbearing, masonry is one of those things. Masonry and its timeless design, safety, and constructability attributes of structural masonry are readily available and affordable.

We have always known the insulated masonry cavity wall or **"Premier Wall System"** (coined by Dan Zechmeister, P.E.) is the best wall system on the market. Why, you ask? The answer is easy. The multi-wythe cavity wall constructed of a block, rigid insulation, air space (cavity) and brick performs like no other because it is the structure.

It will always meet your energy needs, addresses moisture and dew points in your wall, has fantastic sound transmission qualities, easily meets the air barrier requirements (two coats of paint or one coat of blockfill or solid grout) and helps mechanical systems with its thermal mass all while looking awesome!

Oh, did I mention fire, mold or the structural redundancy inherent in masonry. Best part is that the initial cost of this wall is extremely competitive when compared to other similar wall systems. Many of the above masonry attributes, and more, are highlighted below and in subsequent articles in this year's resource guide. Enjoy!



# The Premier Wall System

# MAIN COMPONENTS

- A Adjustable Veneer Anchor
- B Anchored Veneer Wythe
- C Cavity
- D Air Space
- E Optional Mortar Deflection Device
- F Open Head Joint Weep 24 in. o/c
- G Cavity Insulation
- H Moisture/Air Barrier as Required
- I Reinforced CMU Wythe
- J Through-Wall Flashing System

The backbone of the **Premier Wall System** is the loadbearing capabilities of the system. Taking advantage of the inherent strength and durability of reinforced CMU helps reduce reliance on perimeter structural steel or other similar systems. To this structure core is added the anchored veneer component, with its hard surface, gives the design great flexibility in terms of exterior colors, textures and patterns.

As construction and design schedules become more and more compressed, it becomes increasingly difficult for project designers and developers to perform in-depth comparisons of wall systems.

*Great news!* Greg Bryant, Masonry Structural Coalition (MSC), can meet with project members early on to discuss masonry loadbearing options and provide real-time market pricing and masonry construction schedules. Using 3D modeling and design, MSC can provide architectural and structural engineering support to ensure that preliminary masonry designs used for budgeting meet current code requirements. All FREE of charge!

Contact Greg Bryant for FREE design assistance on your next project; 314-645-1966 or greg@masonrystlouis.com

# **Masonry Structural Coalition**

#### **Masonry Design Assistance**

- 3D Modeling & Design
- Loadbearing Masonry Modeling and Design
- Energy Code Compliance
- Envelope Wall Moisture Resistance
- Real-Time Market
   Preliminary Pricing
- System Cost Comparisons



Premier Wall



Elementary School Construction Underway Diecker Terry Masonry



MSC Full Masonry 3D Model - Elementary School Early Rendering

## **Masonry Structural Coalition Partners**

Mason Contractors Association of St. Louis Masonry Institute of St. Louis Masonry Institute of Missouri Masonry Institute of Southern Illinois Best Block Caliber Cast Stone Heitkamp Masonry Irwin Products Leonard Masonry Raineri Building Materials Spec Mix

Thank You!



All contractors are signatory to the Bricklayers' Union Local No. 1 of Missouri.

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# A & K Rentals, LLC

11325 Eiff Rd. Marissa IL 62257 618-295-7030 Walter Terry wallyterry@akrentalsllc.com



# ABC Masonry

PO Box 110 Cedar Hill MO 63016 314-458-2702 Richard Abeln, Jr. *abcmasonry@att.net* 



# A.L.L. Masonry Construction Co.

1360 S. 5th, Ste 349 St. Charles MO 63301 314-786-3200 Noel Buckner *noel@allmasonry.com* www.allmasonry.com

# Allied Waterproofing, Inc.

5840 Mango Dr. St. Louis MO 63129 314-776-6686 Dottie Koch *alliedwaterproofinginc@outlook.com* 



# Arnold Masonry, LLC

11510 State Rte. M Ste. Genevieve MO 63670 573-883-5815 Betsy Arnold *arnoldmasonry@att.net* 

# Atek/Humes Masonry

222 Lemay Ferry Rd. St. Louis MO 63125 314-599-1829 Terry Humes *terryhumes@humesmasonry.com* www.humesmasonry.com



# B & B Waterproofing, LLC

2060 S. New Florissant Rd. Florissant MO 63031 314-489-7851 Blessing Wifa bnbwaterproofingIlc@gmail.com www.bnbwaterproofingusa.com

# **B & G Tuckpointing**

4539 Ridgewood Ave. St. Louis MO 63116 314-363-0525 Richard Galati bgtuckpointing@gmail.com www.bgtuckpointing.com



# **B & K Tuckpointing Co.**

PO Box 300137 St. Louis MO 63130 314-721-0033 Scott Masterson scott@bandktuckpointing.com www.bandktuckpointing.com

# Joseph F. Becker, Inc.

PO Box 385 Breese IL 62230 618-526-7868 Jeff Becker *beckerbrick@sbcglobal.net* 

# Burt Masonry, Inc.

2017 JC Lane Fenton MO 63026 314-822-8880 Ron Burt *burtmasonry@charter.net* 



## Caswell Brickwork, Inc.

97 Wildlife Ln. Defiance MO 63341 636-398-5625 Michael Caswell *caswellbrickwork@yahoo.com* 

# Christy Industrial Services Co.

4641 McRee Ave. St. Louis MO 63110 314-773-7500 Charles Stepanek *cstepanek@christyco.com* www.christyindustrial.com

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# Jack H. Clark Brick Contractor, Inc.

1996 Springtree Dr. Maryland Heights MO 63043 314-878-9023 Bill Clark *djcbaadd@aol.com* 

# **Cornerstone Masonry**

PO Box 1163 St. Peters MO 63376 636-698-2068 Jon Fiore info@cornerstone-masonry.net www.cornerstone-masonry.net

# **Dempsey Masonry, LLC**

4454 Hencken Rd. Wildwood MO 63069 314-713-9543 Patrick Dempsey *patdempsey63@aol.com* 

# DG Skouse Company

PO Box 254 Peculiar MO 64078 816-779-7427 Brance Hall *brance@dgskouse.com* www.dgskouse.com



# Diecker-Terry Masonry, Inc.

11327 Eiff Rd. Marissa IL 62257 618-295-3348 Kyle Demsar *kyledemsar@dieckerterry.com* 



# Double D Masonry, LLC

2320 Lilac Rd. Marissa IL 62257 618-444-2485 Scott Dickey scott@doubledmasonry.com



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# Eddings Masonry, Inc.

9255 Primrose Ln. Bonne Terre MO 63628 573-358-2677 Matt Eddings eddingsmasonry@sbcglobal.net



# FD Masonry

830 Cormar Dr. St. Louis MO 63125 314-755-2976 Ferasian Dusengimana *fdmasonry@outlook.com* www.fdmasonry.com



# Kenneth E. Foeste Masonry, Inc.

347 County Rd. 649 Cape Girardeau MO 63701 573-334-0172 Judy Foeste *judy@foestemasonry.com* www.foestemasonry.com



# Frisch Masonry, Inc.

567 Leffingwell Ave. Kirkwood MO 63122 314-965-1424 Nick Frisch *frischmasonry@gmail.com* 



# **Gateway Specialty Contractors**

8424 Reilly Ave. St. Louis MO 63111 314-352-9500 Mark Mountford *mark@gatewaywaterproofing.com* www.gatewaywaterproofing.com

# Germann Brick Contractor, Inc.

401 Travertine Cir. Millstadt IL 62260 618-476-7835 Chris French germannbrick@gmail.com

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# Gillespie & Powers, Inc.

9550 True Dr. St. Louis MO 63132 314-423-9460 Jon Gillespie *jbg@gillespiepowers.com* www.gillespiepowers.com



# Gillick Brickwork, Inc.

1818 Avenue H St. Louis MO 63125 314-544-2222 Gregory Gillick *gillickbrickwork@hotmail.com* www.gillickbrickwork.com



# Grant Contracting Co., Inc.

777 Rudder Rd. Fenton MO 63026 636-343-0170 Brian Grant *brian@grantcontracting.com* www.grantcontracting.com



# C. J. Hamilton, LLC

13763 State Rd. TT Festus MO 63028 314-420-4519 C. J. Hamilton *cjhhamconst@gmail.com* 

# The Harlan Company

1515 Page Industrial Blvd. St. Louis MO 63132 314-890-2351 John M. Harlan *jharlan@harlanco.net* www.harlanco.net

# H.E.S.S. Caulking & Restoration, Inc.

1091 S. 7th St. Rochelle IL 61068 815-562-6060 Charlie Ramsey *hessco@rochelle.net* www.hessservices.com



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# Martin C. Heck Brick Contracting Co.

1090 Corisande Hills Rd. Fenton MO 63026 636-343-4636 Martin C. Heck martinheck@charter.net



## Heitkamp Masonry, Inc.

16129 Westwoods Business Pk. Ellisville MO 63021 636-230-5973 Dan Grass *dgrass@heitkampmasonry.com* www.heitkampmasonry.com



# Hellmann Masonry

287 Dickens Farm Ln. Ballwin MO 63021 314-393-1679 Joseph Hellmann *josephhellmann7@gmail.com* 

# Henry Masonry, Inc.

1707 Fairview Farms Cir. Wentzville MO 63385 314-581-5449 Kevin Henry *henrymasonry@yahoo.com* 

# Jarvis Masonry

10505 Sappington Ln. St. Louis MO 63128 314-842-8955 Pamela Jarvis *jarvismasonry@att.net* 



# JDS Masonry, Inc.

50 Karydan Ct. St. Charles MO 63301 636-949-0179 Jeffrey Schmidt *jeffs@jdsmasonry.com* www.jdsmasonry.com

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# JW Specialties, LLC

8119 Ellerton Ave. Overland MO 63114 314-922-6283 Jeff White brickjeff12@gmail.com

# Kerrco Weatherproofing

10 Prairie Crossing Dr. O'Fallon MO 63366 314-713-5434 Kerry White kerrco@centurytel.net

# L & L Tuckpointing & Waterproofing, LLC

3117 Harpers Ferry Dr. O'Fallon MO 63368 314-616-1020 Brad Lawrence *Iltuckpointing@yahoo.com* 



# Lampkin Masonry, Inc.

#7 Lampkin Ln. Hermann MO 65041 573-236-4655 Karen Lampkin *lampkinmasonryinc@gmail.com* www.lampkinmasonry.com

# Leftridge Masonry, LLC

14412 State Rd. E De Soto MO 63020 636-337-8797 Kevin Leftridge *leftridgemasonry@hughes.net* www.leftridgemasonry.com



# Leonard Masonry Acquisitions, LLC

5925 Fee Fee Rd. St. Louis MO 63042 314-731-5500 Tony Stahlschmidt *tstahlschmidt@leonardmasonry.com* www.leonardmasonry.com



# Mason Contractors Association Member



# M & M Masonry

3400 Dutch Bottom Rd. Arnold MO 63010 314-413-7251 Sarah Belken *mmmasonry@att.net* 

# M. D. Magary Construction Co.

5550 N. Broadway St. Louis MO 63147 314-771-1400 Bob Bennett *bennettb@mdmagary.com* www.mdmagary.com

# **Bob Marquart Masonry**

3594 Compton Pkwy. St. Charles MO 63301 636-443-1900 Bob Marquart marquartmasonry@sbcglobal.net

# MC Masonry & Restoration, LLC

24404 Carter Ln. Wright City MO 63390 314-503-1960 Chad Angle *rtangle@live.com* 



# George McDonnell & Sons

Tuckpointing Co., Inc. 2917 N. Lindbergh Blvd. St. Ann MO 63074 314-739-0468 Mike McDonnell *McDCaulk@aol.com* www.georgemcdonnellandsonsinc.com

# McDonnell Building Sealants, LLC

10 Saint Ann Ct. Old Monroe MO 63369 636-665-5454 Kelley McDonnell *kelleymcdonnell143@gmail.com* 

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# Miller & Miller Contracting, LLC

35 Hummingbird Ln. Arnold MO 63010 314-330-5416 Ron Miller, Jr. ron@millermiller.net



# Modern Masonry & Construction, Inc.

1051 Frisco Hollows Rd. Imperial MO 63052 314-581-7437 Hal Gillmann hal.gillmann@gmail.com

# Patke Restoration, LLC

321 Lafayette St. Washington MO 63090 636-432-1515 John Patke john@patkerestoration.com



# Patrico Masonry Co., Inc.

664 Timberidge Dr. St. Charles MO 63303 636-949-8810 Vince Patrico *vpatrico20@yahoo.com* www.patricomasonryinc.com



# Patriot Masonry, LLC

21 Fox Meadows St. Louis MO 63127 314-799-6761 Eric Watson *eric.watson@patriot-masonry.com* www.patriot-masonry.com

# Propst Masonry Co.

18923 Staabtown Rd. Ste. Genevieve MO 63670 573-883-3694 Dale Propst *dalet@brick.net* 



18390 Wings Corporate Dr. Chesterfield MO 63005 636-978-7770 Scott Rozier *srozier@roschcompany.com* www.roschcompany.com

Rufkahr Masonry, LLC

35 Shirley Dr. Troy MO 63379 Ben Rufkahr 636-578-3623



# Sangiolo & Baker Masonry, LLC

4673 Douglas Rd. Millstadt IL 62260 618-779-8111 Greg Sangiolo sangiolollc@gmail.com



# John J. Smith Masonry Co.

4138 Meramec Bottom Rd. St. Louis MO 63129 314-894-9500 John J. Smith Jr. *johnjr@smithmasonry.com* www.smithmasonry.com

# James G. Staat Tuckpointing

& Waterproofing 8177 Gravois Rd. St. Louis MO 63123 314-743-0669 James Staat sara@staatinc.com www.staatinc.com

# Staat Tuckpointing, Inc.

8177 Gravois Rd. St. Louis MO 63123 314-743-0669 Daniel Staat sara@staatinc.com www.staatinc.com

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## Superior Waterproofing & Restoration Co., Inc.

3001 Washington Áve., Ste. 100 St. Louis MO 63103 314-531-6100 Don Muren don@superiorwaterproofing.com www.superiorwaterproofing.com



# Swanson Masonry, Inc.

11700 Missouri Bottom Rd. Hazelwood MO 63042 636-946-1970 Megan Swanson *megan@swansonmasonry.com* www.swansonmasonry.com

# Sweenco

619 Sunny Pass Dr. Wentzville MO 63385 636-699-6882 Sarah Sweeney sarah@sweenco.com www.sweenco.com

# Thomas Masonry

16 Malorie Ann Ct. Wright City MO 63390 636-947-3020 Steve Thomas *thomasmasonrystl@gmail.com* www.thomasmasonrystl.com

# J. T. Thorpe & Son, Inc.

9200 W. 191st St. Mokena IL 60448 708-479-1990 Brent Mitcham *brent.mitcham@jtthorpe.com* www.jtthorpe.com



## Toenjes Brick Contracting, Inc.

714 DD Rd. Columbia IL 62236 618-281-9292 Dan Toenjes *dan@tbrick.com* www.tbrick.com



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# Trinity Masonry & Tuckpointing, LLC

727 Cedar Field Ct. Town & Country MO 63017 314-574-0087 Marvin Peebles Jr. *trinitymandt@yahoo.com* 



# True Masonry, LLC

585 Indian Acres Rd. Robertsville MO 63072 314-398-1528 David McKinney dakmckinney@yahoo.com



## **United Specialty Contractors**

1415 Becker Arnold MO 63010 314-565-5908 Cory Gallagher *duracory@hotmail.com* 

# Vehige Bricklaying, Inc.

270 Country Pointe Ct. Wentzville MO 63385 636-373-0956 Kevin Nichoalds vehige.bricklayinginc@gmail.com

## Western Specialty Contractors

7401 Alabama Ave. St. Louis MO 63111 314-773-8813 Darren Christian *mindyb@westernspecialtycontractors.com* www.westernspecialtycontractors.com

# Williams Refractory Services, Inc.

1211 SE Broadway Dr. Lees Summit MO 64081 816-554-3636 Gina Johnson *williamsrefractory@wmsref.com* www.wmsref.com

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# Wright Masonry, LLC

2977 Highway K, Box 311 O'Fallon MO 63368 636-578-0279 Jason Wright *jwright@wrightmasonryllc.com* www.wrightmasonryllc.com

# Zufall & Sons, Inc.

235 Chestnut St. St. Clair MO 63077 636-629-5108 Donald Zufall, II zufallnsonsinc@gmail.com

# HOW TO SELECT A MASON CONTRACTOR



# BE SURE YOU ARE DEALING WITH UNION CRAFTSMEN

Union craftsmen learn the techniques and materials of their trade through a rigorous regimen of apprenticeship and experience. As a result, they are professionals in their field, and make customer satisfaction a priority.

## **CHECK OUT THE COMPANY**

How long has the company been in business? Will the company representatives visit the job site to discuss the work?

### **OBTAIN BIDS FROM MORE THAN ONE COMPANY**

Prices for any given job can vary significantly. Just remember, a bid too low which seems too good to be true usually is not true.

### **OBTAIN LIEN WAIVERS FROM THE CONTRACTING COMPANY**

Protect yourself from claims that may be filed against the company by suppliers or subcontractors.

### MASON CONTRACTORS ASSOCIATION

314-645-1966



# **Residential Cost Savings through Masonry Home Construction**

Building a home is a significant investment, and homeowners often seek ways to maximize cost savings without compromising quality and long-term durability. The choice of materials is crucial in determining the longevity and overall quality of the structure. One popular option that has stood the test of time...**MASONRY!** 

Masonry construction involves the use of materials such as brick, concrete blocks, or stone to create the structural components of a building. Masonry is an excellent choice for building a home and offers several advantages over alternative construction methods, including increased energy efficiency, improved durability, and reduced maintenance requirements.

# Cost Savings Associated with Masonry Homes Energy Efficiency:

*Improved Insulation -* Masonry materials possess exceptional thermal mass, providing natural insulation. With the thermal mass of masonry surrounding your home, the impact of the coldest parts of the night and the hottest parts of the day are leveled out. In milder seasons, this can mean months of comfort without need to run your heat and air conditioning at all, which can lead to significant savings.





**Durability and Maintenance:** *Longevity* - Masonry materials are known for their durability and resistance to fire, mold, rot, pests, and weather conditions. This reduces the need for frequent repairs or replacements, translating into long-term cost savings. *Lower Maintenance Costs* - Masonry homes generally require less maintenance compared to alternative construction methods, reducing expenses related to painting or siding replacement.

**Resale Value:** *Increased Home Value -* Masonry homes are often perceived as higher quality and more desirable by potential buyers. As a result, these properties tend to appreciate in value more quickly, providing homeowners with potential financial gains upon resale.



# Masonry Home Construction...Considerations and Myths Busted

**Upfront Costs:** *Myth...The cost of using masonry is too expensive.* Actually, the initial construction cost of a masonry home may be marginally higher compared to other building methods, however, the long-term savings in energy bills, maintenance, and possibly insurance premiums can hugely offset this potential upfront **investment.** An all masonry-sided home is even better so not to worry about dents during hailstorms and flying debris from wind-storms. Time is of the essence when it comes to a fire. Masonry slows down the spread of the fire, which allows firefighters at least twice as much time to do their job safely and to save your family.

**Construction Time:** *Myth... Masonry construction takes longer.* This misinformation may be conveyed however, the reality is masonry **does not take longer** compared to alternative methods. Mason contractors and their union craftsmen, who are experienced and well-trained, get your home built swiftly, which helps prevent delayed occupancy.

**Design Flexibility:** *Myth...Using masonry limits design capabilities.* Masonry homes **have no limitations** in terms of architectural design and flexibility compared to some alternative construction techniques. No matter the architectural style, aesthetically pleasing masonry comes in so many colors, styles and shapes with unlimited ways to be configured and detailed, which allow homeowners a timeless and classic appeal.

When all is said and done, choosing masonry for your home translates into long-term cost savings by not spending money – **but saving money.** Dorothy from Wizard of Oz got it right..."There's no place like home." Using the timeless craft of **MASONRY** provides coziness, comfort and security that every family deserves.

Don't forget to enhance the warmth of your home by building a masonry fireplace, inside or out!



# **DESIGNING FOR SCHOOL SAFETY: What Masonry Teaches Us**

The safety and security of students within educational institutions are of paramount importance. Schools must be designed with meticulous attention to detail, incorporating elements that prioritize the well-being of students. One effective approach to enhance safety is through the use of **MASONRY** in school construction. Not only is masonry a very cost-effective wall choice for educational institutions, it offers several advantages that contribute to a secure and protected learning environment. Let's explore the benefits of incorporating masonry into school design and its positive impact on student safety.

Schools often face challenges related to vandalism and unauthorized entry. Masonry walls, particularly those made of CMU reinforced concrete masonry, solid brick or stone, act as a deterrent against vandalism and provide a robust barrier against intruders.

# There have been 783 shootings with deaths or injuries at elementary and secondary schools since 2000.

Number of school shootings with deaths or injuries at public and private elementary and secondary schools, 2000–01 to 2020–21



The inherent strength and thickness of masonry materials make it difficult to breach, discouraging potential vandals or trespassers. By incorporating masonry secured entrances, schools can enhance security measures and protect students from external threats.

Masonry is known for its durability and strength, making it an ideal choice for constructing school buildings.

With its robust nature, masonry can provide structural integrity that withstands various hazards, including natural disasters such as earthquakes, and severe weather conditions. By using reinforced masonry materials for walls, columns, and other load-bearing elements, schools can significantly reduce the risk of collapse during emergencies, ensuring the safety of students and staff.

The fire resistance of masonry is yet

another significant advantage when designing schools for safety. Masonry is non-combustible materials, offering superior fire resistance compared to other construction materials. In the event of a fire, masonry walls act as effective fire barriers, containing the spread of flames and minimizing damage. This added protection allows for increased evacuation time, reducing the potential for injuries and facilitating emergency response efforts. In addition, masonry construction offers excellent sound insulation properties, effectively reducing noise transmission within and between classrooms, which creates a conducive learning environment. Masonry's acoustic capabilities help enhance concentration levels, allows for a productive educational atmosphere and provides for an overall student's well-being.

Maintaining a safe and secure school environment requires regular upkeep and maintenance. Fortunately, masonry structures are known for their longevity and low maintenance requirements. The durability of masonry materials significantly reduces the need for frequent repairs or replacements, saving both time and resources. Schools can allocate these saved funds toward other essential areas, such as implementing additional security measures or improving educational resources for students. Masonry has high thermal mass, meaning it can absorb, store, and slowly release heat. This property helps regulate the temperature inside buildings by reducing temperature fluctuations and improving energy efficiency. It can contribute to a comfortable learning environment in schools and reduce the reliance on heating and cooling systems. Masonry materials are not prone to damage by pests, like termites, or decay due to moisture, and does not feed mold. Masonry is a reliable choice for long-term infrastructure, ensuring that the building remains structurally sound and safe.

Masonry offers a wide range of design possibilities allowing architects and builders to create visually appealing structures. It can be shaped, textured, and colored to achieve various architectural styles, enhancing the aesthetic appeals of schools and creating an inspiring and optimal learning environment.

Speaking of innovative school construction and design brings to mind a school in Fruitport, MI, who's designers curved its hallways and classrooms to shorten an active shooter's line of sight. The addition of frequent wing walls, made of reinforced concrete masonry, jut out in the hallways and inside classrooms to give students "shadow zones" where they can hide. While no approach is foolproof, the goal is to slow down a potential active shooter until emergency services can arrive.

Impact-resistant film covers the windows outside classrooms, while a centralized special lockdown system allows officials to isolate threats - with the push of a button, classroom and hallway doors that are propped open using a wall magnet, sends all doors swinging shut at once. Again, it's all about creating delay.

**School culture is very important** — making sure both students and employees are in a place with a positive, safe and supportive environment. By embracing the principles of masonry in school design, educational authorities can ensure that the physical environment





facilitates learning while prioritizing the well-being of students. Combining innovative security measures with durable and secure construction materials, such as **MASONRY**, paves the way for safer and more resilient schools, thereby fostering a nurturing environment where students can thrive and reach their full potential.



Be sure to check out the article on page 24: The Intersection of Ballistics and Masonry

# **MASONRY INSTITUTE OF ST. LOUIS**

In 1971, a trust fund was established to promote the use of masonry materials. Through this trust fund, the Masonry Institute of St. Louis was created to serve as the promotional and technical arm in the Missouri counties of the Greater St. Louis Area Masonry Industry.

Seminar participants earning continuing education credits will receive a certificate after each event. Annual certificates showing credits earned through the Masonry Institute of St. Louis are available upon request.





Masonry Institute of St. Louis seminars are profession-specific. However, everyone is welcome to attend all programs.



The Masonry Institute of St. Louis is a registered provider of AIA Continuing Education under Provider Number G137. All seminars listed on the schedule have been approved for AIA LUIHSW credits.



All attendees receive Professional Development Hours (PDH) for each of the seminars listed on the schedule.

# PLATINUM PLUS

Heitkamp Masonry Best Block Raineri Building Materials Irwin Products, Inc. Leonard Masonry Acquisitions, LLC Earthworks Stone

# 2023 INDUSTRY CONTRIBUTORS

#### PLATINUM SILVER Spec Mix Building Products C

 Building Products Corporation Caliber Cast Stone Richards Brick Company

# BRONZE

Illinois Products Corp. Lemay Concrete Block Solomon Colors Stockman Stoneworks

# FRIENDS OF MASONRY

Brentwood Building Supply • Masonmade Design + Supply • Outdoor Oasis • Trends in Tile



REGISTER FOR SEMINARS DIRECTLY FROM EMAIL INVITATION | CALL 314-645-5888 WWW.MASONRYSTL.ORG | SCAN THE QR CODE

# **2023 ARCHITECTURAL SEMINA**

All Architectural seminars are held at the St. Louis Masonry Center, 1429 South Big Bend Boulevard, from Noon–1PM unless otherwise noted. Lunch is provided. Vegetarian meals are available upon prior request.

## MASONRY MOVEMENT JOINTS

Wednesday, September 27, 2023 Speaker: Joseph Alberts

International Masonry Institute

One of the most common questions IMI receives is how to locate masonry movements joints in concrete block walls and masonry veneers. Join Joseph 'Joe' Alberts to learn where and how to locate vertical and horizontal control joints and expansion joints. Joe will also provide rules of thumb for block walls, masonry veneers comprised of different materials, and thick and thin masonry veneers over various substrates like CMU, steel, and wood frame buildings.

Caliber Cast Stone Sponsor: www.CaliberCastStone.com

# A DECADE OF ADVANCES: THE NEW MADRID SEISMIC ZONE

Wednesday, October 25, 2023 Speaker: Greg Hempen, PhD, PE, RG EcoBlast, LC

The 200th Anniversary of the Great New Madrid Earthquake Series was just over a decade ago. Within the decade there have been a variety of advances in the understanding of U.S. earthquakes, assessing the risk from varied seismic zones, and furnishing products for assessment of, design for, and mitigation of earthquakes. The New Madrid Seismic Zone (NMSZ) remains the most active U.S. seismic zone east of the Rocky Mountains, according to the Missouri Department of Natural Resources. New large structures and the rehab of certain structures are required to meet the adopted code for life safety of occupants during an earthquake. Join Dr. Greg Hempen, Geophysicist, as he discusses the NMSZ, and advances for the region and the St. Louis area in the last decade.

**Irwin Products** Sponsor: www.IrwinProducts.com

#### THE CREATIVITY OF BRICK MATCHING

## Wednesday, November 29, 2023

Speaker: Don Foster

Masonry Cosmetics, Inc.

Join Don Foster, an expert on the subject matter with over 30 years of hands-on experience in the brick industry, as he educates participants on how to make masonry match for any project repair or project addition. Don will discuss topics such as selecting the right brick, use of the physical brick-blending process, selecting a masonry coloring process, and specifying matching masonry in architectural plans. Don will review several projects in which brick matching was successfully achieved and what factors contributed to projects where the matching was inadequate.

**Richards Brick** Sponsor: www.RichardsBrick.com

#### **BLAST DESIGN REQUIREMENTS - OVERVIEW**

Wednesday, January 31, 2024 Speaker: Hani Hanna, PE, SE

US Army Corps of Engineers

Compared to the typical forces usually included in huilding design such as



Sponsor: Lemay Concrete Block www.LemayBlock.com

#### CMU LINTELS & ASSOCIATED VENEER LINTELS

Wednesday, February 28, 2024 Speaker: Pat Conway, AIA International Masonry Institute

Masonry lintels provide many advantages in CMU walls and are identified as one of the most effective methods to span a masonry wall opening. Join Pat Conway as he reviews the benefits as well as examines how masonry and veneer lintels support efficient and sensible constructability while positively impacting project cost and schedule. Pat will discuss lessons learned and how loose or attached veneer lintels address moisture control and air control, movement, insulation continuity, and aesthetic issues.

Earthworks Stone Sponsor: www.EarthworksStone.com

#### WHAT NON-ENGINEERS NEED TO KNOW ABOUT STRUCTURAL MASONRY Wednesday, March 27, 2024

Speaker: Beth Suminski, PE, SE FORSE Consulting

Structural masonry saves time and money while providing a durable and attractive solution for building design. Join Beth Suminski to observe how structural masonry's inherent design benefits support budget goals while enhancing functional and aesthetically pleasing architectural projects. Beth will discuss current structural masonry design methods, load bearing wall case studies, interior partitions, shear walls, foundation walls, and stair towers. Keys for achieving economical and sustainable projects by utilizing masonry that is not over-designed or under-utilized will be provided. **Best Block** Sponsor:

www.BestBlock.com

## MASONRY VENEER MODIFICATIONS IN TMS 402/602-22: A WHOLE NEW CHAPTER

Wednesday, April 24, 2024

Speaker: Christine 'Tina' Subasic, PE, LEED AP, FTMS C. Callista Subasic Consulting

The chapter on masonry veneer has been extensively revised and updated for the 2022 edition of TMS 402/602. Join Tina Subasic for discovery of the essential elements for designing masonry veneer with the new provisions and determine where your specifications need to be upgraded to meet the new requirements. Tina will summarize the changes for both anchored and adhered veneers, including updated installation and inspection requirements and allowable tolerances in construction. With the updated requirements, you will be able to simplify the design of your masonry veneer projects and ensure the most efficient design methods are being used.

**Building Products Corporation** Sponsor: www.BuildingProductsCorp.com

# HISTORICAL MASONRY: THE ART AND SCIENCE OF ARCHES

Wednesday, May 22, 2024 Speaker: David T. Biggs, PE, SE

**Biggs Consulting Engineering** 

Was the arch discovered or copied from nature? The earliest recorded use of man-made masonry arches dates to Mesopotamia and India between 1000 and 2000 BCE. The Greeks and Chinese were early adopters of the technology, and the Romans expanded their use throughout Europe. Eventually, all cultures reinvented the arch or learned from others. The arch also led to the development of vaults and domes. Join David Biggs as he presents historical examples of arches, vaults, and domes that have survived centuries. David will, in addition, describe various repair and strengthening techniques.

Sponsor: Leonard Masonry www.LeonardMasonry.com

# REGISTER FOR ALL SEMINARS AT (314) 645-5888 OR masonrystl.org

# 2023 2024 All Engineering seminars are held at the St. Louis Masonry Center, 1429 South Big Bend Boulevard, from Noon–1PM unless otherwise noted.

All Engineering seminars are held at the St. Louis Masonry Center, 1429 South Big Bend Boulevard, from Noon–1PM unless otherwise noted. Lunch is provided. Vegetarian meals are available upon prior request.

### DETAILING LOADBEARING CONCRETE MASONRY

Wednesday, September 20, 2023 Speaker: Jason Thompson, PE Coltivomae, LLC

Once loadbearing concrete masonry has been designed, proper load-path detailing must then take place. Join Jason Thompson as he identifies key detailing items including wall to foundation, floor, and roof connections; minimum seismic reinforcement of walls, bond beams, lintels, opening, and control joints; splicing of reinforcement; and structural effects of through-wall flashing.

Sponsor: Best Block www.BestBlock.com

#### MASONRY PARAPET WALLS

Wednesday, October 18, 2023 Speaker: Phillip Shinn, PE Jacobs

Originally designed to protect against enemy attack, the modern parapet design must provide certain components according to code. Join Phillip Shinn as he discusses these components as well as how to evaluate structural considerations for new and existing parapets. Phillip will describe how using masonry easily provides the requisite for safety and stability code requirements as he designs for dead load, out-of-plane wind, and out-of-plane seismic.

Sponsor: Frisch Masonry

www.linkedin.com/in/nick-frisch-28b8a75

#### NONDESTRUCTIVE AND DESTRUCTIVE TEST METHODS TO EVALUATE EXISTING MASONRY STRUCTURES Wednesday, November 15, 2023

Speaker: Steven Fults. PE

Special Inspections & Design

In some cases, it is necessary or desirable to evaluate the properties of existing masonry construction using the actual construction materials instead of representation samples. Join Steven Fults as he discusses practices for the physical evaluation and testing of existing masonry walls, grout, mortar, reinforcing, and cornice assemblies. Steven will define and illustrate nondestructive techniques and equipment to include GPR, ultrasonic tomography & pulse velocity, borescope, GPR, pachometer, IR testing and drone inspections. Destructive testing topics include in-situ shear testing, flat-jack compressive testing, wrench-bond mortar testing, bond testing of epoxied rebar, and load testing of fall protection anchors. Chronological footage of masonry construction special inspections will be shown.

Sponsor: John J. Smith Masonry www.SmithMasonry.com

### ARE YOU OVER-ENGINEERING MASONRY?

Wednesday, January 24, 2024 Speaker: Philippe Ledent, PE, SE Masonry Institute of Michigan

Join Philippe 'Phil' Ledent to explore the minimum building code requirements for masonry structures as presented in the *International Building Code* (IBC) and the *Building Code Requirements and Specifications for Masonry Structures* (TMS 402/602). Seismic design requirements may govern the mandatory spacing of reinforcement both vertically and horizontally; accordingly, Phil will review these shear wall systems for participating elements. Minimum and maximum reinforcement provisions for both walls and beams will be reviewed, along with recommendations for the most economical masonry assemblies.

Sponsor: John J. Smith Masonry www.SmithMasonry.com

### STRUCTURAL MASONRY AND FIBER-REINFORCED POLYMERS

Wednesday, February 21, 2024 Speaker: John J. Myers, PhD

Missouri University of Science & Technology

Last year, Darrell McMillian, Masonry Institute of St. Louis (Retired), touched on fiber-reinforced polymer (FRP) systems and how they can be used to reinforce/strengthen existing and new masonry components. Join Dr. John Myers for a more in-depth look at this system, its advantages and the extensive work completed in the field of FRP research and standardization. John will provide a brief update to ongoing FRP research efforts and other design resources. John will discuss the new *TMS 402-22 Appendix D* for using glass fiber-reinforced polymer (GFRP), which is the first standard in the U.S. for the use of GFRP reinforcement for masonry.

Sponsor: Raineri Building Materials www.Raineri-Materials.com

### STRUCTURAL MASONRY SPECIAL INSPECTIONS

Wednesday, March 20, 2024

Speaker: John Chrysler, PE, FTMS Masonry Institute of America

The International Building Code (IBC) now defers to the TMS 402, Building Code Requirements for Masonry Structures, for the type and frequency of masonry special inspections. Join John Chrysler, Chair of TMS 402/602-22 Main Committee and member of the International Code Council Exam Development Committee, for an overview of current masonry special inspection requirements and a discussion of the IBC and TMS 402/602 relationship regarding the special inspections process.

Sponsor: John J. Smith Masonry www.SmithMasonry.com

### MAJOR STRUCTURAL DESIGN CHANGES: TMS 402/602-22

Wednesday, April 17, 2024

Speaker: Richard M. Bennett, PhD, PE, FTMS University of Tennessee, Knoxville

One of the biggest changes in the TMS 402/602-22 *Building Code Requirements and Specifications for Masonry Structures* was the introduction of compression-controlled sections in Strength Design (Chapter 9). As a result of this, the maximum reinforcement provisions were deleted except for beams and intermediate and special shear walls under in-plane loads. Join Dr. Richard 'Dick' Bennett for details about this change and an overview of other changes, their impact on design, with some design aids presented.

Sponsor: Trends In Tile www.TrendsInTile.com

ECONOMICAL STORM SHELTER DESIGN: PROTOTYPES

Wednesday, May 15, 2024

Speaker: Darrell W. McMillian, PE, FTMS Masonry Institute of St. Louis (Retired)

Since IBC 2015 started mandating ICC-500 compliant storm shelters in schools and other public institutions, the demand has skyrocketed, putting significant strain on their already tight budgets. Join Darrell McMillian as he provides an update on designing storm shelters with reinforced concrete masonry. Utilizing concrete masonry is a very economical way to protect human life and is a reliable wall system for delivering a project on time and on budget. Darrell will identify three prototype storm shelters with cost and scheduling estimates.

Sponsor: Grant Contracting Co., Inc. www.GrantContracting.com

# REGISTER FOR ALL SEMINARS AT (314) 645-5888 OR masonrystl.org

# 2023 CODE OFFICIALS SEMINARS

**2024** Code Official seminars are Co-Sponsored by St. Louis Professional Chapter of ICC/AIA St. Louis Building Code Committee.

All Code Official seminars are held at the St. Louis Masonry Center, 1429 South Big Bend Boulevard, from Noon–1PM unless otherwise noted. Lunch is provided. Vegetarian meals are available upon prior request.

Sponsor:

#### **EXISTING MASONRY EVALUATION CASE STUDIES**

Wednesday, October 11, 2023 Speaker: David Birenbaum, PE

Engineered Inspection & Consulting Services, LLC

St. Louis is known as "Bricktown" for its large number of existing loadbearing brick structures. Many of these are still performing as intended after 100 plus years of service. However, some are in need of help due to deferred maintenance or past alterations. Join David Birenbaum as he presents case studies from his investigations of local brick structures which highlight issues encountered and potential solutions to those issues.

Sponsor: Lampkin Masonry www.LampkinMasonry.com

#### MASONRY RETAINING WALL OPTIONS

Wednesday, January 17, 2024 Speaker: Jack Sanders

St. Louis County Code Official (Retired)

A retaining wall is a structure designed and constructed to resist the lateral pressure of soil when there is a desired change in ground elevation. Join Jack Sanders as he explores using masonry materials for this purpose including retaining wall types, typical code related requirements, and masonry retaining wall options.

Sponsor: Lemay Concrete Block www.LemayBlock.com BASICS OF MASONRY

Wednesday, April 10, 2024

Speaker: Steve Gantner, RA, CDT, CCS, CCCA Conspectus, Inc.

Join Steve Gantner for an overview of current materials and processes for constructing new masonry exterior wall envelopes. Topics include codes and standards, masonry units, mortars, and grouts, flashing and weeps, anchors and ties, hot and cold weather precautions, field tolerances, and masonry cleaning. Current online masonry informational sources will also be discussed.



St. Louis Professional Chapter of ICC And AIA St. Louis Building Code Committee

**SpecMix** 

Code Official Seminars have been submitted for ICC Continuing Education credits by the St. Louis Professional Chapter of ICC. ICC Preferred Provider 1163 CEU Pending.

# Come Join Us for a Lunch and Learn! Our speakers are knowledgeable and fascinating. See you soon.



REGISTER FOR ALL SEMINARS AT (314) 645-5888 OR masonrystl.org



# Masonry Institute of St. Louis

# Building With Masonry Offers Numerous Advantages That Make It A Popular Choice For Construction Projects

Here are ten compelling reasons to consider using masonry in your building endeavors:

- 1. **Durability:** Masonry structures are known for their exceptional strength and longevity. Masonry materials, such as brick, block or stone, can withstand harsh weather conditions, fire, and pests like termites, making them highly durable.
- 2. Aesthetics: Masonry provides a timeless and elegant aesthetic appeal. The natural beauty of masonry materials adds character to any building or home, making it visually appealing and enhancing its overall value.
- 3. Energy Efficiency: Masonry materials have excellent thermal mass properties, meaning they can store and release heat slowly. This helps regulate indoor temperatures, reduces heating and cooling needs and increases energy savings.
- 4. **Sound Insulation:** Masonry has outstanding soundproofing qualities, reducing the transmission of noise from the outside environment. This makes it ideal to create your own ambiance.
- 5. Low Maintenance: Compared to other building materials, masonry requires minimal maintenance. It does not rot, warp, feed mold or deteriorate easily, saving you time and money on repairs and upkeep.
- 6. Fire Resistance: Masonry materials are non-combustible and highly resistant to fire. They act as a reliable barrier against spreading flames, enhancing safety and protection for occupants.
- 7. Sustainable Choice: Masonry is an eco-friendly building option. Brick, block and stone are made from natural and abundant resources, and their production has a low environmental impact when considering the long lifespans of masonry buildings, which reduces the need for frequent replacements.
- 8. Increased Property Value: Masonry buildings are often perceived as higher quality and have better resale value compared to other construction types. The durability, aesthetics, and other benefits of masonry contribute to the increased worth of the property.
- 9. Design Flexibility: Masonry offers great design versatility. It can be shaped and crafted to create various architectural styles, from traditional to contemporary, allowing for unique and customized building designs.
- 10. Cost, Cost, Cost: In addition to all these great attributes masonry construction naturally brings to the built community, masonry is also first-cost friendly. Masonry is very competitive when comparing similar wall systems. Most importantly, mason contractors and craftworkers can work simultaneously with other trades, meaning more work can get done faster!

# Why Masonry? Why Not!

Maximizing the benefits of masonry from design, to safety, to constructability – it is what our great mason contractors and union skilled craftsmen do best!



# **Repair & Restoration Directory**

All contractors are signatory to the Bricklayers' Union Local No. 1 of Missouri.

MASON CONTRAC

Certified Mason Contractors Association Member



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# SERVICE AREAS

B = Brick, Block & Stone

ABC Masonry (B, P, G)

- P = Paving, Sidewalks, Patios
- T = Tuckpointing, Caulking, Cleaning & Waterproofing G = Glass Block



314-458-2702; Cedar Hill 63016 abcmasonry@att.net **Work Type:** Commercial & Residential **Specialties:** Chimneys, Outdoor Fireplaces, Outdoor Firepits



A.L.L. Masonry Construction Co. (B, T, P, G) 314-786-3200; St. Charles 63301 noel@allmasonry.com

Work Type: Commercial

Allied Waterproofing, Inc. (T) 314-776-6686, St. Louis 63129 alliedwaterproofinginc@outlook.com Work Type: Commercial



**B & K Tuckpointing Co. (B, T, P, G)** 314-721-0033; St. Louis 63130 *scott@bandktuckpointing.com* **Work Type:** Commercial & Residential **Specialties:** Complete Masonry Restoration

Jack H. Clark Brick Contractors, Inc. (B, T, P, G) 314-878-9023; Maryland Heights 63043 djcbaadd@aol.com Work Type: Residential

Cornerstone Masonry (B, P, G) 636-698-2068; St. Peters 63376 info@cornerstone-masonry.net Work Type: Commercial & Residential Specialties: Chimneys, Outdoor Fireplaces, Outdoor Firepits, Outdoor Kitchens Kenneth E. Foeste Masonry, Inc. (B, T, G) 573-334-0172; Cape Girardeau 63701 judy@foestemasonry.com Work Type: Commercial



Frisch Masonry, Inc. (B, T, P, G) 314-965-1424; Kirkwood 63122 frischmasonry@gmail.com Work Type: Residential



Gillick Brickwork, Inc. (B, P, G) 314-544-2222; St. Louis 63125 gillickbrickwork@hotmail.com Work Type:: Commercial & Residential Specialties: Chimneys and Deteriorated Brickwork



Grant Contracting Co., Inc. (B, T, P, G) 636-343-0170; Fenton 63026 brian@grantcontracting.com Work Type: Commercial

Martin C. Heck Brick Contracting Co. (B, T, P, G) 636-343-4636; Fenton 63026 martinheck@charter.net Work Type: Commercial



JDS Masonry, Inc. (B, G) 636-949-0179; St. Charles 63301 jeffs@jdsmasonry.com Work Type: Commercial & Residential

# **Repair & Restoration Directory**



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Certified Mason Contractors Association Member



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# SERVICE AREAS

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Leonard Masonry Acquisitions (B, T, P, G) 314-731-5500; St. Louis 63042 tstahlschmidt@leonardmasonry.com Work Type: Commercial & Residential Specialties: Chimneys, Outdoor Fireplaces

# Bob Marquart Masonry (B, G)

636-443-1900; St. Charles 63301 marquartmasonry@sbcglobal.net Work Type: Commercial Specialties: Door and Window Openings

# MC Masonry & Restoration, LLC (B, T, P, G)

314-503-1960; Wright City 63390 rtangle@live.com Work Type: Commercial & Residential

# McDonnell Building Sealants, LLC (B, T, P, G)

636-665-5454; Old Monroe 63369 kelleymcdonnell143@gmail.com Work Type: Commercial & Residential Specialties: Chimneys, EmSeal Expansion Joints

# Patke Restoration, LLC (B, T, P, G)

636-432-1515; Washington 63090 john@patkerestoration.com Work Type: Commercial & Residential Specialties: Facility Management

- G = Glass Block

John J. Smith Masonry Co. (B, P, G) 314-894-9500; St. Louis 63129 johnjr@smithmasonry.com Work Type: Commercial & Residential

- Superior Waterproofing & Restoration Co., Inc. (B, T, P, G) 314-531-6100; St. Louis 63103 don@superiorwaterproofing.com Work Type: Commercial & Residential Specialties: Chimneys, Stone Terra Cotta, Panels

Swanson Masonry, Inc. (B, T, G) 636-946-1970; Hazelwood 63042 megan@swansonmasonry.com Work Type: Commercial & Residential



United Specialty Contractors (B, T, P, G) 314-565-5908; Arnold 63010 duracory@hotmail.com Work Type: Commercial & Residential

# Zufall & Sons, Inc. (B) 636-629-5108; St. Clair 63077 zufallnsonsinc@gmail.com Work Type: Residential **Specialties:** Fireplaces

# ENSURING SAFETY IN THE FACE OF NATURE'S FURY: Tornado and High Wind Sheltering with Masonry

When the wrath of Mother Nature strikes in the form of tornadoes and high winds, it becomes crucial to have reliable and sturdy shelter options to protect lives. Masonry structures have emerged as a popular choice for tornado and high wind sheltering due to their inherent strength and durability. Let's explore just a couple benefits of using structural concrete masonry as a sheltering material and highlight its effectiveness in safeguarding against these destructive forces of nature.

The Power of Tornadoes and High Winds: Tornadoes and high winds are among the most violent and devastating meteorological events. With wind speeds that can exceed 250 miles per hour in extreme cases, tornadoes can obliterate buildings and cause widespread destruction.

The Strength of Masonry: Masonry has long been recognized for its strength and resilience. Structural concrete masonry has a proven track record and can be designed to withstand extreme weather.





**Wind Load Resistance:** Masonry walls excel at handling wind loads due to their mass and stability. The mass of reinforced structural concrete masonry helps to counteract the lateral forces exerted by high winds, reducing the risk of wall collapse. Additionally, the rigidity of masonry construction allows it to better distribute wind loads, minimizing localized stress points.

**Impact Resistance:** One of the greatest threats during tornadoes and high winds is flying debris. Masonry walls offer significant protection against projectiles by virtue of their ability to withstand impact. The importance of robust sheltering cannot be overstated. Tornado shelter walls should be built with durable, strong, impact resistant materials that do not require a large up charge in first cost compared to constructing non-shelter walls with the same materials. **Structural concrete masonry walls certainly fits this description.** 

# Storm Shelter Summit: Update

The Masonry Institute of St. Louis (MISL) is seeking to establish best practice recommendations when using structural concrete masonry for tornado shelter walls. In June 2021, a two-day storm shelter summit was held with summit participants including masonry engineers, mason contractors and their field personnel and masonry suppliers. Several topics of discussion and questions were answered with continued discovery during several post-summit meetings. These best practice recommendations are moving forward with peer reviews from additional masonry designers and industry members soon to be held. A white paper, and other informational pieces, will then be shared with the masonry industry and design community. The white paper will include three concrete masonry storm shelter prototype buildings to further highlight the research results.



StayAttend the MISL upcoming program on Economical Storm Shelter Design:<br/>Prototypes on Wednesday, May 15, 2024, with speaker Darrell W. McMillian, PE, FTMS.<br/>See the seminar schedule for more details.

# Gagne Promoted to Program Director at the Masonry Institute of St. Louis



The Masonry Institute of St. Louis (MISL) announced the promotion of Margie Gagne to Program Director in November 2022. Gagne has had a long tenure of service at the Institute, originally hired in 2007 by John J. Smith, Jr., Smith Masonry, then Chairman of the MISL Board, and Darrell McMillian as MISL Executive Director. Margie has experienced all facades at the MISL and now in her 17th year, she's eager to assist in educating local architects, engineers, code officials and mason contractors to obtain the most up-to-date masonry technical information.

Margie's exceptional relationship-building skills and commitment to MISL will continue as she assists in leading the masonry industry and further development of education for our current and future St. Louis masonry

designers. "Our design community and our union mason contractors are quite ambitious, hard-working and dedicated to the vision, growth and success of building St. Louis strong and it's an honor to work for them."

Prior to joining the Masonry Institute, Margie possessed 18 years of service with Jefferson County Government. She is married to Dan Gagne, resides in Lake St. Louis, and enjoys her dachshund Duke, grandson Zeppelin and spending time with family.



The Masonry Institute of St. Louis (MISL) is primarily funded by contractors through the labor agreement between the Mason Contractors Association of St. Louis and the Bricklayers' Union Local No. 1 of Missouri. In addition, the MISL receives additional voluntary contractor contributions and voluntary

contributions from the greater St. Louis area suppliers who wish to further promote the local masonry industry.

This directory provides a listing of the current MISL contributors with important contact information and a description of the general services provided by each industry contributor.

The MISL greatly appreciates the support it receives each year from the masonry industry, in and out of St. Louis. This support allows the Institute to continue the promotion of great union masonry construction and masonry materials to builders, designers, owners and the general public.

We hope you find this directory helpful, especially when making decisions regarding future masonry material purchases.

# 2023 MASONRY INDUSTRY CONTRIBUTORS

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Mike Dolan, District Sales Manager 314-495-6453 *Mike.Dolan@midwestblock.com* 

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**Products:** Stone, Hardscape, Building Materials, Tools, Landscape Products, Used Brick, and Indiana Limestone.

#### **BUILDING PRODUCTS CORPORATION**

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950 Freeburg Ave. Belleville, IL 62220 P: 618-233-4427 www.buildingproductscorp.com

#### **CALIBER CAST STONE**

#2 Cool Springs Ct. O'Fallon, MO 63366 P: 636-978-4000 www.calibercaststone.com

#### EARTHWORKS STONE

4287 N. Hwy 51 Perryville, MO 63775 P: 573-547-9097

801 N. State St. Freeburg, IL 62243 P: 800-887-4555

16900 A Baxter Rd. Chesterfield, MO 63005 P: 636-532-0713; 800-532-9510 www.earthworksstone.com

#### HEITKAMP MASONRY, INC.

16129 Westwoods Business Pk. Ellisville, MO 63021 P: 636-230-5973 www.heitkampmasonry.com



#### ILLINOIS PRODUCTS CORPORATION

423 Joseph Dr. South Elgin, IL 60177 P: 800-383-8183 www.illinoisproducts.com Paul Mueth, President pmueth@buildingproductscorp.com

Aron Rauls, Sales Manager arauls@buildingproductscorp.com

**Products:** Manufacturer of Masonry CMU, including Architectural Split-Face and Burnished Units. Manufacturer of Cast Stone and Concrete Landscape Products. Retailer of Clay Brick and Masonry Supplies.

Les Staggemeier, Partner Istaggemeier@calibercaststone.com Andy Bosworth, Partner abosworth@calibercaststone.com **Products:** Cast Stone Manufacturing.

Kevin Thieret, Owner 573-768-1305 *kevin.thieret@earthworksstone.net* Jeff Green, VP Sales & Marketing 314-306-3698 *jeff.green@earthworksstone.net* 

Products: Stone, Block, Brick, Landscaping, Masonry Products.

Dan Grass, President dgrass@heitkampmasonry.com

#### **Certified Mason Contractors Association Member:**

Heitkamp Masonry concentrates on Commercial, Retail, Industrial, Institutional, Residential and Restoration. Heitkamp Masonry is highly skilled, competent, safe, careful, accurate, detailed, efficient and energetic.

**Services:** Project Planning, Estimating, Design/Build, Material Selections, Fabrication, Consulting, Installation, and Restoration.

**Products:** Brick, Stone, Block, Pavers, Specialty Materials, Segmental and Retaining Walls.

Joe Svejda, President 847-289-2800 joe@illinoisproducts.com

**Products:** Flexible Stainless-Steel Flashing, Stainless-Steel Stone Anchors, IPCO Flashing System & Accessories, IPCO Anchor Bolts & Anchor Straps, Control Joints, Joint Fillers, Accessories.

IRWIN PRODUCTS, INC. 8209 Lackland St. Louis, MO 63114 P: 314-427-8803 www.irwinproducts.com	<ul> <li>Vince Irwin, Sr., Outside Sales vincei@irwinproducts.com</li> <li>Vincent M. Irwin, Desk Sales vmi@irwinproducts.com</li> <li>Drew Johnson, Desk Sales drewjohnson@irwinproducts.com</li> <li>Products: Abrasive Blades, Accelerators, Block Mesh, Cavity Drainage Control, Cleaning &amp; Sealing, Diamond Blades, Flashing, Hydro Mobile Scaffolding, Tools, Masonry Ties, Waterproofing, Equipment, etc.</li> </ul>
LEMAY CONCRETE BLOCK 326 E. Courtois St. Louis, MO 63111 P: 314-638-9940 www.lemayblock.com	Marc Detmer, President Mike Buckley, Sales 314-280-5066 <i>mbuckleylemayblock@charter.net</i> <b>Products:</b> Concrete, CMU Block, Light Weight and Heavy Weight Block, Architectural Masonry Blocks, Rockwood and Verti Block Retaining Walls, Precast Parking Curbs/Air Condition Slabs, Outdoor Living Bars and Fireplaces/Fire Pits, Ready Mix Concrete.
LEONARD MASONRY ACQUISITIONS, LLC 5925 Fee Fee Rd. St. Louis, MO 63042 P: 314-731-5500 www.leonardmasonry.com	<ul> <li>Tony Stahlschmidt, General Manager 314-749-8704 <i>tstahlschmidt@leonardmasonry.com</i></li> <li>Mason Contractors Association Member: Leonard Masonry is a specialist in Commercial, Industrial, Institutional, Residential, Restoration and Installation. Leonard Masonry is your one-stop resource for quality masonry work with the skills and expertise to handle new and existing masonry construction projects.</li> <li>Services: Masonry Construction, Estimation, Masonry Repair and Restoration and Stone Installation.</li> <li>Products: Block, Brick, Stone, Cast Stone, Terra Cotta, Marble, Granite</li> </ul>
MASONMADE DESIGN + SUPPLY 2600 Creve Coeur Dr. Rock Hill, MO 63144 P: 314-833-3636 www.masonmadestone.com	Lisa Crissman, Principal & CEO <i>lisa@masonmadestone.com</i> Steele Crissman, Principal & COO 314-575-0182 <i>steele@masonmadestone.com</i> <b>Products:</b> Natural Stone & Brick, Limestone, Bluestone, Granite, Slate, Sandstone, Quartzite, Travertine, and Marble.
OUTDOOR OASIS 2510 Adie Rd. Maryland Heights, MO 63043 P: 314-739-0550 officestl@stockmanstoneworks.com www.stockmanstoneworks.com	Adam Wildhaber, Sales Manager 573-418-9299 <i>adam@stockmanstoneworks.com</i> John Whalen, Sales & Estimating 636-387-2783 <i>john@stockmanstoneworks.com</i> <b>Products:</b> Hardscape Blocks & Pavers, Brick & Veneer, Mortar & Accessories, Tools & Erosion Control, Patio Furniture.

<ul> <li>RAINERI BUILDING MATERIALS, INC.</li> <li>6351 Knox Industrial Dr.</li> <li>St. Louis, MO 63139</li> <li>P: 314-781-1573</li> <li>6 Truitt Dr.</li> <li>Eureka, MO 63025</li> <li>P: 314-781-1573</li> <li>www.raineri-materials.com</li> </ul>	Nick Raineri, President 314-574-9953 <i>nickr@raineri-materials.com</i> Ryan Raineri, Operations Director 314-574-9954 <i>ryanr@raineri-materials.com</i> <b>Products:</b> Building Materials, Spec Mix Mortar, Block and Stone, Construction Hardware, Essex Mortar Mixers, and Mayco Pumps.
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# THE INTERSECTION OF BALLISTICS AND MASONRY: Understanding the Science Behind Structural Resilence

Ballistics and masonry may seem like two entirely unrelated fields, but they converge in the realm of structural resilience. The study of ballistics involves understanding the behavior of projectiles, while masonry deals with the construction and durability of structures. Let's explore how the principles of ballistics influence the design and construction of **MASONRY** buildings, and how masonry techniques enhance their resistance to ballistic threats. By delving into this fascinating intersection, we can gain insights into creating safer and more secure structures.

**Understanding Ballistics:** Ballistics is the science of projectiles in motion. It encompasses the study of the flight characteristics, behavior upon impact, and the forces acting on projectiles. By analyzing the principles of ballistics, engineers and architects can develop strategies to enhance structural resilience of buildings. This involves understanding the different types of threats, such as bullets, and their potential effects on buildings.

**The Role of Masonry:** Masonry has been used for centuries to create strong and durable structures, offering numerous benefits when it comes to ballistics. The inherent strength of masonry materials, combined with their ability to absorb and distribute forces, make them well-suited for creating resilient structures.

**1. Structural Integrity:** Masonry structures are known for their robustness and load-bearing capabilities. The weight and density of masonry materials provide a significant advantage in resisting ballistic threats. When subjected to impact, masonry walls can absorb and distribute the forces more effectively than lightweight materials, reducing the risk of penetration.

2. Energy Dissipation: One of the critical aspects of ballistics is managing the energy released upon impact. Masonry walls excel in energy dissipation due to their high mass and inherent damping properties. When a projectile strikes a masonry surface, the material absorbs and dissipates the energy, reducing the chances of structural failure or fragmentation.

*3. Penetration Resistance:* Masonry construction is renowned for the ability to resist penetration. The combination of dense materials and the use of effective bonding techniques, such as mortar and grout, makes it difficult for projectiles to pass through.



Damage to clay brick caused by double shot .308 Winchester



Damage to concrete brick caused by single shot .308 Winchester





Damage to red concrete masonry units caused by .308 Winchester

Damage to the 140 mm (6-inch unit) concrete block wall caused by .308 Winchester

In 2001, a comprehensive study was conducted in Canada by the **Canadian Masonry Research Institute** and the **Royal Canadian Mounted Police** as reported in *Resistance of Exterior Walls to High Velocity Projectiles.* This is where the photos in this article are derived, which show damage to the material, but not complete penetration. The complete study may be found at: https://ccmpa.ca/2001/01/cmri-ballistics-report-resistance-of-exterior-walls-to-high-velocity-projectiles/

When creating structurally resilient buildings that can withstand ballistic threats, designers must consider ballistics during the design phase. Some strategies to incorporate these considerations include:

*Material Selection* - Choosing appropriate masonry materials with high density and strength, such as reinforced concrete masonry, solid brick, or stone provides better protection against ballistic threats.

*Reinforcement Techniques* - Implementing reinforcement techniques, like steel rebar within fully grouted masonry walls, can enhance their structural integrity, making them more resistant to penetration.

*Layering and Thickness* - Increasing the thickness or incorporating layered masonry walls can enhance the overall resilience of the structure, providing multiple barriers against ballistic threats.

*Standoff Distance* - Designing buildings with adequate standoff distance from potential threat sources helps mitigate the impact of projectiles.

The intersection of ballistics and masonry demonstrates the importance of considering the behavior of projectiles when designing resilient structures. By leveraging the inherent strength, energy absorption and penetration resistant properties of **MASONRY** materials, architects and engineers can create buildings that are better equipped to withstand ballistic threats. As our understanding of ballistics evolves, it is crucial to continue exploring innovative masonry techniques to enhance structural resilience and ensure the safety of occupants in a world with evolving security challenges.

# Handy Masonry Information

IBC Quick Reference	2015	2018
Design Standards		
Min. Building Loads	ASCE 7-10	ASCE 7-16
Masonry Design	TMS 402-13	TMS 402-16
Masonry Specification	TMS 602-13	TMS 602-16
Masonry Fire Ratings	TMS 216-13	TMS 216-13
Masonry Sound Ratings	TMS 302-12	TMS 302-12
Storm Shelter Design	ICC 500-14	ICC 500-14
ASTM		
Clay Face Brick	C 216-13	C 216-15
Clay Hollow Brick	C 652-13	C 652-15
Loadbearing CMU	C 90-13	C 90-15
Masonry Mortar	C 270-12a	C 270-14a
Masonry Grout	C 476-10	C 476-10

## Specified Compressive Strength of Masonry, f'm

Minimum:	2,000 psi
Recommended:	2,500 psi

Verify field concrete masonry compressive strength per TMS 602-16 Unit Strength Method. (no testing required when using ASTM approved CMU and mortar)

CMU Compressive	As-Built Masonry Strength
Strength	(Type S Mortar)
2,000 psi*	2,000 psi
2,600 psi	2,250 psi
3,250 psi	2,500 psi

\* ASTM C 90 minimum compressive strength, verify higher strengths with CMU manufacturer

### Mortar and Grout Above Grade Wall Recommendations

Mortar recipe per C 270 Proportion Method ( <i>no field testing</i> )			
Type N	Anchored Veneer		
Туре S	Loadbearing CMU		

Grout strength to be greater than or equal to  $f'_m$ Use standard C476 recipe when  $f'_m \leq 2,000$  psi Use C476 Strength Method recipe when  $f'_m > 2,000$  psi (C 1019 grout testing required to establish field recipe)

## **Recommended Mortar Joint Type and Tooling**



Per TMS 602 3.2.B.2.b tool joints when mortar is "thumb print" hard

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		8 in. CMU Single Wythe	12 in. Pre-Insulated CMU Single Wythe	16 in. Insulated Cavity Wall
Thermal Resistance Fire Resistance				
Sound Transm	ission Ratings			
	Foamed Cells	0.182		
U-Factor	No Grout	0.455	0.091	0.085
	Grouted Cells	0.553	0.095	0.087
Fire Bating	No Grout	2 Hr.	2.5 Hr.	>4 Hr.
i no nating	Full Grout	>4 Hr.	>4 Hr.	>4 Hr.

# **Online Resources**

Brick Industry Assoc. (BIA) gobrick.com

BIM for Masonry masoncontractors.org/bim

Cast Stone Institute caststone.org

Indiana Limestone Institute iliai.org

International Masonry Inst. imiweb.org



Information shown is for educational purposes only. Please contact the Masonry Institute of St. Louis for

additional assistance with applying masonry design and construction properties to individual projects.

Notes:

Sound (STC)

• Widths shown are nominal, 115 pcf CMU density. CMU properties may vary per manufacturer and application

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- 2018 IECC maximum U-Factor for Zone 4 commercial mass walls. 0.104 (compliance can also be determined via COMcheck or by whole building analysis)
- See TMS 216 (fire resistance) and TMS 302 (sound resistance) for additional information

No Grout

Full Grout

# Handy Masonry Information

## TMS 402-16 12.2.2 Prescriptive Anchored Veneer

				Max. Cavity V	Vith Air Space	!
Backing Type	Max. Veneer Height	Min. Air Space	Corrugated Anchors	Adjustable Anchors	Wire Anchors	Joint Reinf.
Wood Framing	<ul> <li>30 feet, or 38 feet at gables, above foundation</li> </ul>	1 in.	1 in.	6-⁵⁄ <sub>8</sub> in.	4-⁵⁄ <sub>8</sub> in.	_
Cold-Form Steel Framing	<ul> <li>30 feet, or 38 feet at gables, above foundation</li> <li>Support each story above 30 feet above foundation on noncombustible construction</li> </ul>	1 in.	_	6- <sup>5</sup> /8 in.	_	_
Concrete Masonry	<ul> <li>No restriction, but designer must consider potential differential system movements</li> <li>BIA recommends 50 feet maximum between supports</li> </ul>	1 in.	_	6- <sup>5</sup> /8 in.	4-⁵⁄₀ in.	6-⁵⁄8 in.

## **Vertical Movement Joint Guidelines**

**Control Joints (C)** NCMA reinforced CMU, openings within CJ spacing (Tek 10-2D)

- 8 in. high CMU, W1.7 joint reinforcement 16 in. o/c
   1.5 x panel height, 25 ft. max.
- 4 in. high CMU, W1.7 joint reinforcement 8 in. o/c
   1.5 x panel height, 20 ft. max.

# Expansion Joints (EJ)

Brick Area Association (Technical Note 18A)

- Brickwork without openings, 25 ft. maximum spacing
- Brickwork with multiple openings, use symmetrically placed expansion joints spaced no more than 20 ft. apart

General recommendations: Consider additional movement joints at changes in wall height or thickness, changes in wall support conditions, adjacent to wall corners and intersections, one or both sides of large openings.

# Representative Single-Wythe CMU Out-of-Plane Wall Heights

2018 IBC / 2016 TMS 402 Strength Design

C90 CMU N C476 Coarse <b>Gravi</b>	W (135 pcf) e Grout <b>ty Loads</b>	f' <sub>m</sub> =2500 psi f <sub>'g</sub> =2500 psi min. <b>Lateral Loads</b>		C270 Grade Vertica	C270 PCL Type S Mortar Grade 60 bars cell centered Vertical load eccentricity =0 in.		
L <sub>r</sub> =S=20 ps	f D=15 ps	$\overline{F_p} = 0.2W$	w W=25	psf No ne	t uplift		
6" (	CMU	8″ C	8″ CMU		12″ CMU		
#4 Vert	ical Bars	#5 Verti	#5 Vertical Bars		#6 Vertical Bars		
Bar Spacing	Wall Height	Bar Spacing	Wall Height	Bar Spacing	Wall Height	→	
(in)	(ft-in)	(in)	(ft-in)	(in)	(ft-in)	→	
48		48	21-4	48	31-4	<u>L</u>	
32	17-4	32	24-8	32	36-8	<b>→</b>	
24	19-4	24	27-4	24	40-0	<b> →  </b>	
16	22-0	16	30-8	16	45-4	₿ <b>L</b>	
8	26-8	8	36-8	8	51-4	Γ	

Walls reinforced 8 in. o/c are fully grouted, otherwise walls are partially grouted Roof Spans: 6 in. CMU = 40 ft.; 8 in. CMU = 60 ft.; 12 in. CMU = 80 ft. No top of wall parapet. Results do not include the effects of openings.

## **Steel Reinforcing Bars**

Dia. <i>(in)</i>	Area (in²)
0.375	0.110
0.500	0.196
0.625	0.307
0.750	0.442
0.875	0.601
1.000	0.785
1.128	1.000
	<b>Dia.</b> <i>(in)</i> 0.375 0.500 0.625 0.750 0.875 1.000 1.128

## **Online Resources**

Mason Contractors Assoc. of America (MCAA) masoncontractors.org

National Concrete Masonry Association (NCMA) ncma.org

Natural Stone Institute naturalstoneinstitute.org

The Masonry Society (TMS) masonrysociety.org



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# **Don't Miss Hands-On Masonry!** "Hands-On" Masonry: Materials And Systems

(Limited Seating)



### Wednesday, May 8, 2024

Time: Noon to 2:00 p.m. Location: Joint Apprenticeship Training Center 4350 Green Ash Drive Earth City MO 63045

Pick up the trowel and get your hands dirty (maybe your clothes too!) trying out your own block, stone, tuckpointing and bricklaying skills. Learn first-hand how basic masonry materials come together to form durable and safe building components. Apprenticeship instructors and apprentices will be on hand to assist attendees with converting project document information into real-world masonry systems.

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