Masonry—Learn to Do It Right

April 20–21, 2015
Madison, Wisconsin

Masonry design, construction, and maintenance course focusing on:
- Systems and components
- Design and detailing
- Moisture control
- Construction practices
- Evaluation of failures
- Selection of maintenance and repair methods

Please share this brochure with colleagues who may benefit from attending this course.
Learn How To Solve Your Masonry Problems

This course will focus on:

- Masonry design details for quality performance
- Evaluation of masonry failures
- Selection of maintenance and repair methods to solve specific masonry problems

A Practical, “How-to” Course

This practical two-day course will provide you with the information you need to identify causes of failures, specify appropriate repairs, and ensure success in future masonry projects.

Who Should Attend

This course is designed for individuals who experience significant problems associated with masonry construction, including:

- Masonry and general contractors
- Architects and engineers
- Building owners and facility maintenance managers
- Masonry product manufacturers and distributors

Share Your Masonry Challenges

You will be encouraged to ask questions and share your masonry issues during the course sessions and roundtable discussion.

Learn From Expert Instructors

The course instructors are experts with many years of experience in masonry design and construction. They will share their knowledge of:

- Masonry components and systems
- Causes of masonry failures
- Masonry construction details
- Workmanship and quality control
- Masonry inspection techniques
- Codes, standards, and guidelines
- Repair and maintenance procedures

Pat Conway, AIA, CSI, is director Technical Services, International Masonry Institute (IMI)–North Central Region in Madison, Wisconsin. He is a registered architect and co-director of IMI’s national masonry technical team, IMI’s director of Architectural Education, member of ASTM Committee E06 on Performance of Buildings, and a permanent faculty member of IMI’s Contractor College, a nationally accredited educational program for union mason contractors. Conway is a frequent national presenter, university lecturer, and author on numerous masonry subjects, including: masonry design and installation best practices, masonry care and maintenance, masonry restoration, and masonry job site troubleshooting.

Kami Farahmandpour, PE, FRCI, REWC, RRC, CSI, CCS, CCCA, is principal and founder of Building Technology Consultants, PC, Arlington Heights, Illinois. He has been involved in the evaluation, testing, and repair of construction materials and building envelope performance on more than 450 projects. His experience includes investigation of building deterioration, water and air leakage issues, and assessments of building performance, code compliance, and repair alternatives. He is a fellow of RCI, Inc., past chair of the Education Committee and past chair of the Building Envelope Committee of RCI, Inc., past secretary and founding member of the Building Envelope Institute (BEI), and past president and charter member of the Chicago Area Chapter of RCI, Inc. (CAC-RCI). He is also past associate director of the Sealant, Waterproofing and Restoration Institute (SWR Institute).

Rochelle C. Jaffe, SE, RA, CCS, SMI, is principal of Rochelle C. Jaffe Consulting, PC, Novi, Michigan. She has worked as a consultant specializing in building facades, with a focus on investigation, evaluation, and rehabilitation design of existing, deteriorated, and damaged masonry for more than 30 years. Jaffe is a licensed architect and a licensed structural engineer. She is also a certified construction specifier and a certified special inspector of structural masonry. She is a Masonry Society fellow. Jaffe has actively participated in the TMS/ACI/ASCE Masonry Standards Joint Committee, the group that authors the Building Code Requirements for Masonry Structures (TMS 402/ACI 530/ASCE 5) and Specification for Masonry Structures (TMS 602/ACI 530.1/ASCE 6), for more than 20 years.

Owen Landsverk is a project manager with the Wisconsin Department of Administration Division of Facilities Development in Madison, Wisconsin. He has more than 40 years of experience on hundreds of municipal, commercial, industrial, and institutional projects with a focus on masonry construction. His experience includes work on project scope and budget development, dispute resolution, quality assurance, field coordination, and process improvement. He is also responsible for the department’s masonry standards and guidelines, and plan reviews.

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Course Outline

Day 1

Welcome and Introduction

Masonry Wall Systems Basics
- History of masonry construction
- Advantages and disadvantages of masonry

Masonry Materials
- Masonry units
- Mortar and grout
- Reinforcing, ties, and anchors

Moisture Movement Through Masonry Walls
- How moisture moves through exterior walls
- Functions of vapor retarders (VR), air barriers (AB), and weather-resistive barriers (WRB)
- Where to place VR, WRB, and AB in a wall system

Masonry Wall Systems and Details to Control Moisture
- Masonry wall types and how they resist loads
- Masonry wall types and how they resist water penetration
- Flashing design and detailing
- Movement joints

Quality Assurance and Construction Considerations
- Special inspection requirements of the code
- Material storage
- Mortar joints
- Placement of ties and anchors
- Reinforcement, lap splices, and grouting
- Preparation, construction, and protection during cold and hot weather

Day 2

Common Causes of Masonry Failures and How to Guard Against Them
- Cracking
  - Poor structural support
  - Un-accommodated movement
  - Rust jacking
- Face spalling
- Cracked headers/failed ties
- Excessive absorption
- Joint deterioration
- Water leakage
- Flashing
- Bowing
- Joint workmanship
- Corrosion of metals
- Efflorescence
- Hazing
- Freeze-thaw
- Seismic damage
- Parapet bowing/displacement

Course Schedule

Registration and course will be held at
The Pyle Center
702 Langdon Street
Madison, WI

Day 1
7:30 a.m. to 8:00 a.m.  Registration
8:00 a.m. to 5:00 p.m.  Class

Day 2
8:00 a.m. to 3:30 p.m.  Class
Midmorning and midafternoon refreshment breaks and noon lunch will be provided both days.

Masonry Assessment and Repair
- Overview of The Masonry Society’s “Guide for Condition Assessment of Masonry Facades”
- Overview of common masonry repairs

Project Case Studies
- Several projects will be discussed to illustrate:
  - Evaluation of condition
  - Investigation of moisture issues
  - Repair and rehabilitation strategies

Masonry Construction and Repair – An Owner’s Perspective
- Specifying masonry work
- Key design details for successful masonry
- Assuring quality construction in the field

Masonry Construction – Translating Design Details into Effective Performance in the Field
Session focuses on issues encountered in implementation of design details by the mason in the field. Topics discussed will be directed by the problems, concerns, and questions raised during course sessions. You will have an opportunity to ask questions, participate in discussion, and get answers to your specific concerns on your new projects or existing facilities. Topics may include:
- Raking mortar for sealant
- “Repointing” historic masonry
- CMU veneers
- Adhered veneers
- Masonry wall ties
- Flashing
- Drip edges
- Top-of-wall details
- Joints
- Venting
- Roof/wall interface
- Base of wall insulation

Discussion leaders: Pat Conway, Owen Landsverk, and masonry contractor representative

Final Adjournment

Earn Continuing Education Credit
This course qualifies toward professional engineer continuing education requirements in all states. By participating in this course you will earn:

University of Wisconsin:
1.2 Continuing Education Units (CEU)

American Institute of Architects (AIA):
12 Learning Units (LU); qualifies for Health, Safety, Welfare (HSW)

Engineering Professionals:
12 Professional Development Hours (PDH)
Course Information

- Please enroll me in Masonry: Learn to Do It Right
- **Course #R212** April 20–21, 2015 in Madison, Wisconsin  Fee: $995
- Team Discount: $895 each if two or more enroll from the same organization
- I cannot attend at this time. Please send me information on future courses.

Personal Information  (Please print clearly.)

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- **Title** _____________________________________________________
- **Company** __________________________________________________
- **Address** ___________________________________________________
- **City/State/Zip** _____________________________________________
- **Phone ( )** ___________________ **Fax ( )** ___________________
- **E-mail** ___________________________________________________

Additional Enrollees

- **Name** ____________________________________________________
- **Title** _____________________________________________________
- **E-mail** ___________________________________________________
- **Name** ____________________________________________________
- **Title** _____________________________________________________
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Billing Information

- **Bill my company**  **P.O. or check enclosed** (Payable in U.S. funds to UW – Madison)

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- Please check the box if you are a person with a disability and desire special accommodations. A customer service representative will contact you. Requests will be kept confidential.

General Information

**Fee Covers** Notebook, course materials, break refreshments, lunches, and certificate.

**Cancellation** If you cannot attend please notify us at least seven days prior to the first day of the course, and we will refund your fee. Cancellations received after that date and no-shows are subject to a $150 administrative fee. You may enroll a substitute at any time before the course starts.

**Location** This course will be held at The Pyle Center, 702 Langdon Street, Madison, WI. Phone messages: 608-262-1122.

**Accommodations** We have reserved a block of guest rooms (rates starting at $94, including continental breakfast) at Lowell Center, 610 Langdon Street, Madison, WI. Reserve a room online at [epd.engr.wisc.edu/lodgingR212](http://epd.engr.wisc.edu/lodgingR212) or call 866-301-1753 or 608-256-2621 and indicate that you will be attending this course under group code R212EPD. Room requests after March 20 will be subject to availability. Other fees and restrictions may apply.