How To Incorporate Preservation Training into Your Construction Project

June 14, 2022
Practical Tools for Local and Statewide Organizations
Priority Issues

Affordable Housing & Density

Diversity, Inclusion, & Racial Justice

Preservation Trades & Workforce Development

Sustainability & Climate Action
2-year partnership

4 working groups

50+ volunteer advocates
Coordinate efforts
Align communication
Develop resources
Multiply impact

Strengthen the movement
Phase 1 (2020-21)

Research and outreach

preservationpriorities.org

6 innovation grants from Moe Family Fund for Statewide and Local Partners
Phase 1: Issue Briefs

- Affordable Housing and Density
- Diversity, Inclusion, and Racial Justice
- Preservation Trades and Workforce Development
- Sustainability and Climate Action
Phase 2 (2022)

• Case studies
• Webinars
• Tip sheets
• Basic messaging
• Survey(s)
• Plan for future resources
• More Moe Fund grants
Roy Ingraffia
International Masonry Institute
Jessica Baumert
The Woodlands
Claire Donato
Mark B. Thompson Associates
Manuel Seara
Lorton Stone, LLC
How To Incorporate Preservation Training into Your Construction Project

Roy Ingraffia
Director of Industry Development & Technical Services
TRAINING:
THE UNION DIFFERENCE

- Over 60 training centers nationwide
- Standardized curriculum and certified instructors
- Apprentices receive 6500 hours on-the-job and classroom training
- Specialized upgrade and certificate training
Apprenticeship & Journey Level Training

- Brick & Block
- Terrazzo
- Stone
- Tile Setting & Finishing
- Cement Finishing
- Refractory
- Marble Setting
- Plaster
- Rainscreen Installation
- Safety Training
- Restoration
Apprenticeship & Journey Level Training

Brick & Block
Terrazzo
Stone
Tile Setting & Finishing
Cement Finishing
Refractory
Marble Setting
Plaster
Rainscreen Installation
Safety Training
Restoration
Apprenticeship & Journey Level Training

Brick & Block
Terrazzo
Stone
Tile Setting & Finishing
Cement Finishing
Refractory
Marble Setting
Plaster
Rainscreen Installation
Safety Training
Restoration
Apprenticeship & Journey Level Training

- Brick & Block
- Terrazzo
- Stone
- Tile Setting & Finishing
- Cement Finishing
- Refractory
- Marble Setting
- Plaster
- Rainscreen Installation
- Safety Training
- Restoration
Apprenticeship & Journey Level Training

Brick & Block
Terrazzo
Stone
Tile Setting & Finishing
Cement Finishing
Refractory
Marble Setting
Plaster
Rainscreen Installation
Safety Training
Restoration
Apprenticeship & Journey Level Training

- Brick & Block
- Terrazzo
- Stone
- Tile Setting & Finishing
- Cement Finishing
- Refractory
- Marble Setting
- Plaster
- Rainscreen Installation
- Safety Training
- Restoration
Apprenticeship & Journey Level Training

Brick & Block
Terrazzo
Stone
Tile Setting & Finishing
Cement Finishing
Refractory
Marble Setting
Plaster
Rainscreen Installation
Safety Training
Restoration
Industry Development & Technical Services

Technical Assistance
Drawing & Specification Review
Structural Masonry Support
Research & Development
Masonry Detailing Series
Codes & Standards
Software & Design Tools
Pre-Job Meeting & Contractor Support
Jobsite Troubleshooting
Industry Development & Technical Services

Technical Assistance
Drawing & Specification Review
Structural Masonry Support
Research & Development
Masonry Detailing Series
Codes & Standards
Software & Design Tools
Pre-Job Meeting & Contractor Support
Jobsite Troubleshooting
Industry Development & Technical Services

Technical Assistance
Drawing & Specification Review
Structural Masonry Support
Research & Development
Masonry Detailing Series
Codes & Standards
Software & Design Tools
Pre-Job Meeting & Contractor Support
Jobsite Troubleshooting
Industry Development & Technical Services

Technical Assistance
Drawing & Specification Review
Structural Masonry Support
Research & Development
Masonry Detailing Series
Codes & Standards
Software & Design Tools
Pre-Job Meeting & Contractor Support
Jobsite Troubleshooting
LEADING NEW TECHNOLOGY AND RESEARCH

- Energy and sustainability
- Resiliency
  - Seismic design
  - Impact resistance
  - Storm shelter safety
  - Fire safety
- New and emerging products
Industry Development & Technical Services

Technical Assistance
Drawing & Specification Review
Structural Masonry Support
Research & Development
Masonry Detailing Series
Codes & Standards
Software & Design Tools
Pre-Job Meeting & Contractor Support
Jobsite Troubleshooting
Industry Development & Technical Services

Technical Assistance
Drawing & Specification Review
Structural Masonry Support
Research & Development
Masonry Detailing Series Codes & Standards
Software & Design Tools
Pre-Job Meeting & Contractor Support
Jomsite Troubleshooting
Industry Development & Technical Services

Technical Assistance
Drawing & Specification Review
Structural Masonry Support
Research & Development
Masonry Detailing Series
Codes & Standards
Software & Design Tools
Pre-Job Meeting & Contractor Support
Jobsite Troubleshooting
Core Modules

- Fundamentals of Historic Preservation & Conservation
- Introduction to Architecture/Building Technology
- Introduction to Materials/Deterioration
- Historic Structure, Condition, & Testing Reports
- Mortars in Preservation
Core Modules

- Fundamentals of Historic Preservation & Conservation
- Introduction to Architecture/Building Technology
- Introduction to Materials/Deterioration
- Historic Structure, Condition, & Testing Reports
- Mortars in Preservation
Core Modules

- Fundamentals of Historic Preservation & Conservation
- Introduction to Architecture/Building Technology
- Introduction to Materials/Deterioration
- Historic Structure, Condition, & Testing Reports
- Mortars in Preservation
Core Modules

- Fundamentals of Historic Preservation & Conservation
- Introduction to Architecture/Building Technology
- Introduction to Materials/Deterioration
- Historic Structure, Condition, & Testing Reports
- Mortars in Preservation
St. Agnes Cathedral

Physical and visual investigation
- Items identified
- Failing previous repairs from 1997
Core Modules

- Fundamentals of Historic Preservation & Conservation
- Introduction to Architecture/Building Technology
- Introduction to Materials/Deterioration
- Historic Structure, Condition, & Testing Reports
- Mortars in Preservation
Training Modules

- Historic Mortars and Tooling
- Brick Restoration
- Terra Cotta Restoration
- Stone Restoration/Dutchman Repair
- Masonry Cleaning
- Mold Making & Casting
- Consolidants & Coatings
- Pinning & Grouting
Training Modules

- Historic Mortars and Tooling
- Brick Restoration
- Terra Cotta Restoration
- Stone Restoration/Dutchman Repair
- Masonry Cleaning
- Mold Making & Casting
- Consolidants & Coatings
- Pinning & Grouting
Training Modules

- Historic Mortars and Tooling
- Brick Restoration
- Terra Cotta Restoration
- Stone Restoration/Dutchman Repair
- Masonry Cleaning
- Mold Making & Casting
- Consolidants & Coatings
- Pinning & Grouting
Training Modules

- Historic Mortars and Tooling
- Brick Restoration
- Terra Cotta Restoration
- Stone Restoration/Dutchman Repair
- Masonry Cleaning
- Mold Making & Casting
- Consolidants & Coatings
- Pinning & Grouting
The International Masonry Institute (IMI) is a strategic alliance between the International Union of Bricklayers and Allied Craftworkers and the contractors who employ those members. Through education, technical support, research and training the IMI works to provide a more efficient construction delivery system.
Case Study
2. Worker Qualification: Skilled workers who are familiar and experienced in brick masonry repair of types they will be performing.
   
a. All team members of the Historical Masonry Contracting Bidder will be required to have BRCA membership and an International Masonry Institute Historic Masonry Preservation Certificate (or equal) and to provide evidence of prior certification or a statement of the firm’s commitment to enroll in and initiate a training program relevant to the scope of the work prior to the start of the project.
Letter of Commitment

May 26, 2021

Dear Mr. Matthews,

This letter is to acknowledge that qualifying members of the International Masonry Institute, and Allied Craftworkers CME program by IMTEF, Inc. will be provided the necessary training courses as part of the IMTEF Historic Masonry Preservation Certificate Program to successfully meet the PA-51615 grant requirements. Due to COVID-19 restrictions, all participants will need to agree to the following training modules that will be held on-site at IMTEF's Lancaster facility.

Program Content may be modified to meet the needs of the project.

Classroom & Training Modules:
- Masonry/Structural Integrity
- Traditional and Contemporary Masonry Techniques
- Mortar and Grout Assessment
- Point Identification
- Terra Cotta Restoration
- Stone Restoration

Hands-On Schedule:

Location: Bradford, PA to travel to IMTEF International Training Center, Harrisburg, PA

- Sunday June 20 - Travel
- Monday, June 21 - Monday June 28
- Monday June 28 - Free Time
- Tuesday June 29 - Travel

In order to enroll, candidates must meet the following qualifications:
- Be classified as a journey-level Apprentice who requires special permission to attend
- Be a member in good standing of the International Union of Bricklayers and Allied Craftworkers
- Must submit completed COVID-19 questionnaire results before traveling to the IMTEF International Training Center. If any student testing positive for COVID-19, the task can be completed until the week before. If the training site is closed, we will need the negative test result to begin the training.

Anthony Delano
National Director of Apprenticeship & Training
International Masonry Training and Education Foundation
17511 Science Drive, Bowie, MD 20715
Off. 301-891-2191 | Cell 202-443-3965
adelano@imtef.org
www.imtef.org
Training
The superintendent and foremen assigned to this project shall each have a minimum of ten (10) years’ experience with this type of repair work, an International Masonry Institute Historic Masonry Preservation Certificate (or equal) and to provide evidence of certification.
Bridge to Crafts Careers

Program Overview:

- 10-Week Paid Training Program
- 6 IMI/IMTEF Instructors
- Site & Preservation Instructors
- Social Services Support
- WFM Alumni Support
- BAC Apprenticeship
Green-Wood Cemetery
Roy Ingraffia
Director of Industry Development & Technical Services
202-215-8390
ringraffia@imiweb.org
The Woodlands
Cryptoporticus and North Terrace
National Preservation Partners Network
National Trust For Historic Preservation

How to Incorporate Preservation Training Into Your Construction Project
June 24, 2022

Panelists
Jessica Baumert, Executive Director
The Woodlands Trust for Historic Preservation

Claire Donato, Senior Associate, AIA, R.A., LEED BD + C
Mark B. Thompson Associates PC
Phillip Price’s Proposed Design ca. 1852

1846 T.H. Haller’s Section F

Progress of Sections as of 1858

Further Growth as of 1890

Development as of 1936

Development as of 1965

PRESERVATION PRIORITIES TASK FORCE
International Masonry Institute Historic Masonry Preservation Certificate

HOW WE INCORPORATED PRESERVATION TRAINING INTO THE HAMILTON MANSION CRYPTOPORTICUS AND NORTH TERRACE CONSTRUCTION PROJECT

- Project documentation was complete
- Included requirement in the RFQ for the superintendent for each invited bidder to complete the training program
- Created a forum for owner to communicate goals for the project, as well as expectations for performance and enforcement of treatment specifications
- Fortunate that our invited bidders were very much on board with training their mason supervisors and mechanics
- In addition to hands-on training, a seminar was presented that provided the masons with an understanding of their important role in the overall project and the design issues and decisions that precede their work

Examples of the level of detail and context that we presented for the training seminar are included in the slides that follow
May 6, 2014

PRE-QUALIFICATION INFORMATION
WOODLANDS MANSION
CRYPTOPORTICUS AND NORTH TERRACE REHABILITATION

NOTICE
Pre-qualification submissions must be received by May 20, 2014 to be considered.

The Woodlands Trust for Historic Preservation and The Woodlands Cemetery Company (The Woodlands) is requesting submissions of qualifications from general contractors with a specialization in masonry restoration for a project to restore a significant element of the Woodlands Mansion.

The Woodlands is a National Historic Landmark District and non-profit organization located at 4000 Woodland Avenue in West Philadelphia. Actively used today, the cemetery, mansion, landscape, and programs are an educational resource for local school children, community residents, university students, as well as for a small, highly motivated cadre of scholars seeking further understanding of American architectural and botanical history, urban development, and the origin and growth of West Philadelphia.

Pre-qualification submissions will be reviewed for the rehabilitation of the Mansion’s north terrace and its underlying brick arch structure, which forms the covered passageway of the cryptoporous. Original construction of the center section of the north terrace and cryptoporous dates to c. 1786-1789, and construction of the two flanking sections dates to c. 1790-1813. Sections of the brick arch have been shored since the 1980s, and a primary objective of the project is to provide for the long-term structural stabilization and preservation of the brick masonry structure, and removal of the temporary shoring. This will include new remedial structural steel and concrete construction to assist with support of the existing and partially reconstructed brick vault.

6) The foreman on the project will be required to have an International Masonry Institute Historic Masonry Preservation Certificate (or equal). As part of the qualifications submission, please provide evidence that the required training program has been completed, or provide a statement of the firm’s commitment to enroll in and initiate a training program prior to July, 2014 (BAC/IMI National Training Center Program Contact: Roy Ingraffia, Director of Industry Development & Technical Services; ringraffia@imiweb.org; 202-215-8390)
The Woodlands
Hamilton Mansion

Sequence of Construction

LEGEND

- c. 1770
- c. 1774
- c. 1779-85
- c. 1786-89
- c. 1807
- c. 1810
- c. 1845-48
- c. 1965

Isometric representation of general sequence of construction, view from northeast.
Condition of flat arch 2012

Visible deflection of arch; temporary support added
ABSORPTION TESTING

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Boiling Water Absorption</th>
<th>ASTM C 216 Maximum Rolling Water Absorption Requirement for SW Grade Brick</th>
</tr>
</thead>
<tbody>
<tr>
<td>WC.1</td>
<td>12.7%</td>
<td>21.2% Individual Brick - 20%</td>
</tr>
<tr>
<td>WC.2</td>
<td>13.7%</td>
<td></td>
</tr>
<tr>
<td>WC.3</td>
<td>12.6%</td>
<td></td>
</tr>
<tr>
<td>WC.5</td>
<td>15.5%</td>
<td></td>
</tr>
<tr>
<td>WC.6</td>
<td>19.2%</td>
<td></td>
</tr>
<tr>
<td>AVERAGE</td>
<td>16.5%</td>
<td>17.2%</td>
</tr>
</tbody>
</table>

Standard Deviation 3.6%

SATURATION COEFFICIENT TESTING

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Saturation Coefficient</th>
<th>ASTM C 216 Maximum Saturation Coefficient Requirement for SW Grade Brick</th>
</tr>
</thead>
<tbody>
<tr>
<td>WC.1</td>
<td>0.75</td>
<td>0.8</td>
</tr>
<tr>
<td>WC.2</td>
<td>0.64</td>
<td></td>
</tr>
<tr>
<td>WC.3</td>
<td>0.63</td>
<td></td>
</tr>
<tr>
<td>WC.5</td>
<td>0.73</td>
<td></td>
</tr>
<tr>
<td>WC.6</td>
<td>0.72</td>
<td></td>
</tr>
<tr>
<td>AVERAGE</td>
<td>0.69</td>
<td>0.78</td>
</tr>
</tbody>
</table>

Standard Deviation 0.06
International Masonry Institute Historic Masonry Preservation Certificate

BENEFITS TO THE OWNER AND ARCHITECT FOR INCORPORATING PRESERVATION TRAINING INTO THE HAMILTON MANSION CRYPTOPORTICUS AND NORTH TERRACE CONSTRUCTION PROJECT

• Ensures a high level of qualifications and a commitment to expectations set by the Owner
• Cultivates a collaborative approach and vested outcome as part of the team
• Elevates the role of the mason as critical to the execution of the owner and architect’s vision and goals for the project
• Improves communication between all parties during execution of work
• Engage earlier whenever possible
• Example for other trades and other projects

THANK YOU!
General Cleaning: Before and After
Repointing
Installation of pins
Reattaching a large detached spall
Crack repair
Patching anchor holes
Column base Dutchman
Column capital Dutchman
Carver replicating a carved element
Carver replicating a carved element
Carver replicating a carved element
Installation of modillion
Seismic retrofit & Setting coping stone on new balusters
Resetting salvaged pavers
Question and Answer

Please submit questions via the “Q&A” function in zoom
Learn More

preservationpriorities.org
Join Us!

Questions? Comments? Lessons to share? Want to join a working group?

Preservation Trades & Workforce Development Working Group
Milan Jordan mjordan@savingplaces.org
Nancy Finegood nancyfinegood@gmail.com

Preservation Priorities Task Force
Jim Lindberg, National Trust jlindberg@savingplaces.org
Rebecca Harris, Partners Network rharris@prespartners.org