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PABST MANSION

MILWAUKEE, WI

2020 MASONRY RESTORATION PROPOSAL

8 FEBRUARY 2021

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8 February 2021

2000 West Wisconsin Avenue
Milwaukee, WI 53233

RE: 2020 MASONRY RESTORATION PROPOSAL

Marion, Inc. appreciates the opportunity to assist you in the stabilization and restoration of your historic property. The repair treatments outlined in this proposal represent long-term solutions that will stand the test of time.

The exterior of the property was evaluated from the ground utilizing binoculars and cameras. Upon reviewing the high-resolution images, various conditions were identified. Cracked/open joints, sealant failures, voids between terracotta and mortar, and vertical cracks in mortar.

In conjunction with request made by the Pabst Mansion Foundation and the Structural Condition Assessment published by Graef, the following scope is to address stabilization repair areas:

1. Mobilization
    a. 50’ articulating man lift will be utilized to access all elevations and provided by Marion.
    b. Proper protections of the grounds will be installed to prevent damage to landscaping, windows, etc.
    c. The North elevation protection will be replaced with a new protection
2. Stabilization and Repointing
3. Option to perform stabilization work inside of the North elevation enclosure

All restoration executed by Marion, Inc. will be in accordance with the standards set out by the U.S. Department of the Interior, National Park Service. The execution of the masonry restoration work will follow the guidelines in the Preservation Brief #2, *Repointing Mortar Joints in Historic Masonry Buildings* (revised 1998). Cleaning of masonry will follow the guidelines in Preservation Brief #1, *Cleaning and Water-Repellent Treatments for Historic Masonry Buildings*. These documents provide the standard by which our customers can judge the performance of our work. For more information, please visit www.nps.gov to review the Secretary of the Interior’s Standards and to download the Preservation Briefs.

MORTAR REPOINTING STANDARDS:

1. Cut mortar back 2½ times the height of the joint or further back to sound material
2. Utilize the *Center Cut Approach* using specialized power routing tools with cutting blades that are one-half the width of the existing mortar joints, once the center-cut is executed, the mortar will be hand removed with chisels to the brick edge to avoid over cutting of the brick surface
3. Flush out joints with water to remove all loose mortar and sandy residue left post-removal
4. Monitor moisture levels – joints will be ready for repointing once an acceptable moisture reading is recorded (16% WME or below)
5. Finish mortar to match original tooling joint profile

ITEM NO. 1: MOBILIZATION, STAGING, PROTECTIONS AND ACCESS EQUIPMENT:

Protective equipment will be used to protect any window openings during work. (1) 50' articulating man lift will be utilized to access some of the work area. Other areas will be reached with light duty frame scaffolding. The North elevation protective enclosure is severely deteriorated. We will replace the damaged plastic, any wood framing needing replacement as well as add additional protections to cover any openings in the structure.

ITEM NO. 2: STABILIZATION AND REPOINTING

Mortar throughout the pavilion is significantly deteriorated. Mortar deteriorates over time and requires repointing as part of standard building maintenance. Excess water infiltration and open skyward-facing joints contribute to premature mortar deterioration. Some joints have been repointed with non-permeable mortar that is harder than the original. This mortar traps moisture within the wall. Excess moisture subject to freeze-thaw cycling puts stress on surrounding masonry units and may result in cracks and fractures. Trapped water exits the wall through masonry units, causing spalling and deterioration of the masonry.

Any broken terracotta, loose mortar or brick at risk of falling loose will be stabilized. Loose mortar will be removed. Severely opened joints and cracks in terracotta will be packed with Type-O mortar and backer rod if needed. This includes the area on the northeast interior.

Proposed Item No. 3 Scope-of-Work, Stabilization and Repointing:

1. Point open and cracked joints in areas specified in documentation provided by the Pabst Mansion Foundation.
    a. Install backer rod where needed.
2. Install BASF MasterSeal® NP-1™ elastomeric polyurethane sealant at open skyward-facing joints.
    a. Finish sealant with dry aggregate from the bedding mortar to more aesthetically match the mortar.
3. Remove spalled/loose terracotta sections at risk of falling. Remove loose brick units at risk of falling.

TOTAL COST OF ITEMS 1 AND 2: $34,150.00

OPTIONAL ITEM NO. 3: STABILIZATION INSIDE ENCLOSURE

As an option, during the replacement of the enclosure plastic, we will conduct stabilization repairs to the north elevation beneath the enclosure.

TOTAL COST OF ITEM 3: $9,900.00

TOTAL COST OF ITEMS INCLUDING OPTION: $44,050.00

Price is based on 4-5 weeks of work.

Inclusions:

1. Site Protection and Preparation: All work executed on site requires protection
    a. Site protection involves protecting any surfaces, persons, vegetation, and/or items that may be harmed by the restoration process

   b. Canopies, barricades, water soaking, scaffolding, chemical barriers, petroleum jelly, plastic sheeting, and tarps may be utilized
   c. Work above public sidewalks and parking lots may require canopy scaffold to capture debris and protect pedestrians
   d. Protect all exterior surfaces and landscaping prior to execution
2. Trucking, mileage, and travel time
3. Materials as described in Items above
   a. **Project Mortar:** Utilize matching mortar as determined from laboratory analysis by U.S. Heritage Group.
4. Waste disposal: Handled by hand, no dumpsters on site

Exclusions:

1. Additional items not expressly included above in writing
2. Building permit

MATERIALS APPROACH

FINDING AN APPROPRIATE MORTAR MATCH

In creating a repointing mortar that is compatible with masonry units, the objective is to achieve one that matches the historic mortar as closely as possible, so that the new material can coexist with the old in a sympathetic, supportive, and if necessary, sacrificial capacity. The exact physical and chemical properties of the historic mortar are important and should be matched according to the following four criteria:

- New mortar must match the historic mortar in color, texture, and tooling. (If a laboratory analysis is undertaken, it may be possible to match the binder components and their proportions with the historic mortar, if those materials are available.)
- New sand must match the sand in the historic mortar. (The color and texture of the new mortar will usually fall into place if the sand is matched successfully.)
- New mortar must have greater vapor permeability and be softer (measured in compressive strength) than the masonry units.
- New mortar must be as vapor permeable and as soft or softer (measured in compressive strength) than the historic mortar. (Softness or hardness is not necessarily an indication of permeability; old, hard lime mortars can still retain high permeability.)

PROPERTIES OF MORTAR

Mortars for repointing should be softer or more permeable than the masonry units and no harder or more impermeable than the historic mortar to prevent damage to the masonry units. It is a common error to assume that hardness or high strength is a measure of appropriateness, particularly for lime-based historic mortars. Stresses within a wall caused by expansion, contraction, moisture migration, or settlement must be accommodated in some manner; in a masonry wall, these stresses should be relieved by the mortar rather than by the masonry units.

A mortar that is stronger in compressive strength than the masonry units will not “give,” thus causing stress to be relieved through the masonry units. This results in permanent damage to the masonry, such as cracking and spalling that cannot be repaired easily. Stresses can also break the bond between the mortar and masonry units, permitting water to penetrate the resulting hairline cracks, however, this is easier to correct in the joint through repointing than if the break occurs in the masonry units.

Permeability, or rate of vapor transmission, is also critical. High lime mortars are more permeable than denser cement mortars. Historically, mortar acted as a bedding material—not unlike an expansion joint—rather than a “glue” for the masonry units, and moisture was able to migrate through the mortar joints rather than the masonry units.

When moisture evaporates from the masonry it deposits any soluble salts either on the surface as efflorescence or below the surface as sub-florescence. While salts deposited on the surface of masonry units are usually relatively harmless, salt crystallization within a masonry unit creates pressure that can cause parts of the outer surface to spall off or delaminate. If the mortar does not permit moisture or moisture vapor to migrate out of the wall and evaporate, it will result in damage to the masonry units.

Lime: Mortar formulations prior to the early-20th century used lime as the primary binding material.

QUALITY ASSURANCE

1. Performance of all restoration work will be executed by a craftsperson that is familiar with historic lime mortar formulations, curing conditions, and performance characteristics. Work will be performed by Marion, Inc., a company that has more than 40 years successful experience in comparable masonry restoration projects and employing personnel skilled in the restoration process and operations indicated.
2. Utilize only skilled journeymen masons who are familiar and experienced with the materials and methods specified and are familiar with the design requirements for this masonry restoration project.
3. Personal direction of the work by one skilled journeyman mason, trained and certified by the specified manufacturer, will be present at all times during masonry restoration.
4. Obtain materials for repointing from a single manufacturer's source to ensure match quality, color, texture, and detailing.

DELIVERY, STORAGE, AND HANDLING

1. Deliver materials to site in manufacturer's original unopened containers and packaging, bearing labels as to type and names of products and manufacturers.
2. Deliver brick and store restoration material in manufacturer's original, unopened containers with the grade, batch, and production data shown on the container or packaging.
3. Protect restoration materials during storage and construction from wetting by rain, snow, or ground water, and from staining or intermixture with earth or other types of materials.
4. Protect mortar and other materials from deterioration by moisture and temperature. Store in a dry location or in waterproof containers. Keep containers tightly closed and away from open flames. Protect liquid components from freezing. Comply with manufacturer's recommendations for minimum and maximum temperature requirements for storage.
5. Comply with the manufacturers written specifications and recommendations for mixing, application, and curing of repointing mortars and patching materials.

PROJECT/SITE CONDITIONS

1. Protect persons, motor vehicles, building site, and surrounding buildings from injury resulting from masonry restoration work.
2. Perform all masonry repointing only when air temperatures are between 40 degrees Fahrenheit (10 deg. C) and 95 degrees Fahrenheit (32deg. C) and will remain so for at least 48 hours after completion of work.

Marion, Inc. agrees to furnish all labor, supervision, materials, and scaffold equipment; to carry Workman's Compensation, Public Liability and Property Damage Insurance; and to use every reasonable precaution to protect the public and any adjacent property during the performance of the following work. In addition, Marion will:

- Remove all debris, excess material, and equipment from the site at job completion.
- Notify the Owner in advance of any extra work that may be required. Marion will submit a written change order for the cost of the extra work. Owner is to approve or decline any change order within 48 hours.

Owner agrees to supply Marion, Inc. with water, electricity, and clear access to the work areas.

TERMS

We typically require a 30% deposit and signed proposal prior to our scheduling or proceeding with any project.

Progress payments are due within seven days of receipt of invoice. Final payment is due upon completion of work. Marion, Inc. reserves the option to cease work if payments are not received within the time specified.

PERMIT

Marion, Inc. can expedite the permit for the scope-of-work established above. The charge for the permit fee expediting is by the hour and fluctuates based upon wait times.

I hope that this proposal meets with your approval. Please call me directly with any clarifications or questions regarding the proposed work and subsequent scheduling at (+1) 773 286 4100.
Sincerely,

Mario Machnicki
President

I accept the above proposed scope-of -work and terms:

Client: _____

Title: _____

Date: _____

THESE PRICES MAY BE SUBJECT TO CHANGE AFTER THIRTY (30) DAYS.

cc: File
Mila Rosloniec (Controller)

LEAD-SAFE EPA CERTIFIED FIRM
NAT-127593-1

BBB ACCREDITED BUSINESS

U.S. Heritage Certified Contractor

HERITAGE GROUP Chicago