



Certificate of Appropriateness

Milwaukee Historic Preservation Commission/841 N Broadway/Milwaukee, WI 53202/phone 414-286-5712

Property
Description of work

2603 N. Lake Drive North Point North HD

Work to proceed in a phased manner covering the following:

- 1) Roofing and drainage
- 2) Basement moisture infiltration and flooding
- 3) Chimney rebuilding and repair
- 4) Porch rebuilding
- 5) West entry door

Details are described in the attached application/scope documents.

Date issued

2/16/2024

Under the provisions of Section 320-21 (11) and (12) of the Milwaukee Code of Ordinances, the Milwaukee Historic Preservation Commission has granted a certificate of appropriateness for the work listed above. The work was found to be consistent with preservation guidelines. The following conditions apply to this certificate of appropriateness:

- 1. Abandoned downspout drains into the sewer must be capped and sealed.**
2. No dormers, chimneys, moldings parapets, or other permanent features will be altered or removed. No box vents, if used, will be visible from the street. If they are installed, they must be on a rear slope not visible from the street and they must be painted to blend with the color of the roofing material. A continuous ridge vent can be installed in place of box vents, but the vent must extend across the entire ridge and not stop short. Built-in rain gutters will be retained and patched where needed. Valleys must be metal W-shape with no interweaving of shingles. Valleys and flashing must be painted or factory-finished to match the roofing color, unless copper. When installing new flashing at a masonry feature, the flashing must be stepped or cut into the mortar joints. The bricks may not be cut to install flashing at an angle.
3. New mortar must match the original mortar in terms of color, texture, grain size, joint width, and joint finish/profile. The compressive strength of the repointing mortar shall be equal or less than the compressive strength of the original mortar and surrounding brick or stone. The replacement mortar shall contain approximately the same ingredient proportions of the original mortar. Mortar that is too hard is subject to premature failure and could damage the masonry. See the city's books *As Good As New* or *Good for Business*, Masonry Chapters, for more information. In most cases, this means a lime mortar with natural hydraulic cement rather than Portland cement. No joint of a width less than 3/8" may be cleaned of damaged/decomposed mortar with power disc grinders. No over-cutting of the joints is permitted. Remove decomposed mortar back into the wall 2.5 times the height of the joint before repointing. When installing new flashing at a masonry feature, the flashing must be stepped or cut into the mortar joints. The bricks may not be cut to install flashing at an angle.
- 4. New brick/stone/terra cotta must match as closely as possible the color texture, size, and finish of the original.**

5. **A sample panel of the masonry materials and their mortar must be reviewed and approved by HPC staff prior to general installation of the material.**
6. UNDER NO CIRCUMSTANCES SHALL UNPAINTED MASONRY BE PAINTED, BE GIVEN A WATERPROOFING TREATMENT, OR CLEANED BY ABRASIVE MEANS; THIS STATEMENT SUPERSEDES ANY OTHER WORDING IN THIS DOCUMENT INDICATING THE CONTRARY.
7. We strongly recommend that that the Wisconsin Historical Society's best practices for composition shingle and flat roofing be used to extend the life of your new roof. (Synthetic underlayment is an acceptable alternative to 30lb felt.)
 - a. Shingle <https://www.wisconsinhistory.org/Records/Article/CS4260>
 - b. Flat <https://www.wisconsinhistory.org/Records/Article/CS4266>

All work must be done in a craftsman-like manner. Staff must approve any changes or additions to this certificate before work begins. Work that is not completed in accordance with this certificate may be subject to correction orders or citations. If you require technical assistance, please contact Historic Preservation staff as follows: Phone: (414) 286-5712 E-mail: hpc@milwaukee.gov.

Permits and timeline

You are responsible for determining if permits are required and obtaining them prior to commencing work. Consult the Development Center on the web or by telephone for details www.milwaukee.gov/lms (414) 286-8210. If permits are not required, work must be completed within one year of the date this certificate was issued. If permits are required, permits must be obtained within one year of the date this certificate was issued. **Annual progress reports are required on phased projects.**



City of Milwaukee Historic Preservation

FREDERIC PALMER RUGEE HOUSE
2603 NORTH LAKE DRIVE, MILWAUKEE, WI



Certificate of Appropriateness Application

19 JANUARY 2024





IMAGE 1: Bell-shaped roof above the east elevation's main entry.

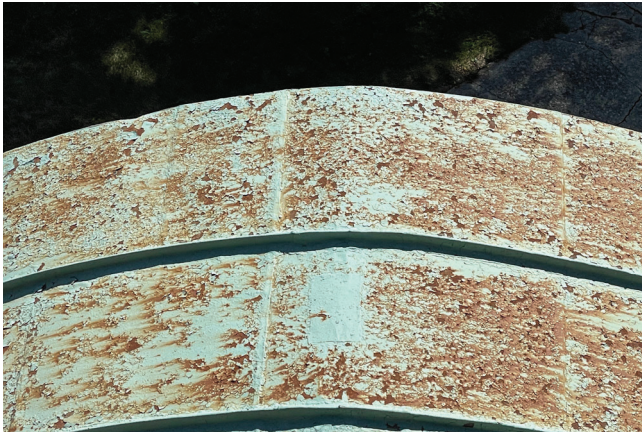


IMAGE 2: Metal corrosion on east bell-shaped roof.



IMAGE 3: Surface corrosion on east bay roof, along with debris build up in the gutters. Note the box forms that once supported a decorative railing.

Roofing and Drainage

East Bell-Shape Roof

The elegant bell-curved roof is above the main east elevation entry (**Image 1**). The protective paint finish on this roof is severely peeling resulting in metal corrosion (**Image 2**). Flakes of metal corrosion are abundant in the built-in gutters. Wall flashing is surface applied with no counterflashing nor reglet evident.

East Bay Roof (second floor)

The east bay roof is clad with painted-sheet metal. Paint is worn away resulting in surface corrosion (**Image 3**). This roof lacks proper drip edges. The seven box forms along the built-in gutter are mounting blocks for a decorative railing that was once located here. The built-in gutter is full of debris, which appears to be from the masonry above this roof.

Gutters and Downspouts

Gutters are built-in and sheet metal lined. Built-in gutters show signs of peeling paint, moderate to significant corrosion, and accumulated debris (**Images 3-4**). The west-flat roof built-in gutter was lined with copper in the modern era (copper is not original to the home).

All downspouts are now disconnected from the storm sewer lines (executed in 2021 to halt basement flooding). Downspout extensions outlet within less than 3' from the foundation. This results in run-off being directed at the foundation rather than away down the sloping yard.

At the north elevation, the main mid-wall downspout consists of two connecting runs that join into a V at the second-floor line, coming together into one downspout at the first-floor level (**Image 5**). The V connection has dislodged, allowing run-off to saturate the masonry wall. A temporary aluminum downspout fix was executed in 2021 to reconnect the drainage runs. Active moisture and algae growth are present on the masonry (**Images 5-7**). The short downspout extensions at grade allow significant run-off to further saturate the foundation. In addition, the recessed window well created by the hardscaping approach further encourages moisture and run-off toward the north wall rather than away (**Image 6**).

Temporary plastic-corrugated extensions were added to all downspouts in 2021.

Roofing and Drainage Work Scope

Proposed Main Roofing Approaches

- Complete roof tear off down to the decking;
- Spot repair all wood decking in kind only as necessary;
- Install ice and water shield membrane for at least the 6' perimeter of every roof and at chimneys and any other roof penetrations;



IMAGE 4: Debris and corrosion in built-in gutters.



IMAGE 5: Second-floor V connection of the downspout on north elevation. Note the algae growth present where moisture has collected at the disconnected junction of the downspouts.



IMAGE 6: Recessed window wells on the north elevation. Downspout-extension outlets too close to the foundation, exacerbating moisture accumulation and algae growth.

- Install adequate roof venting at all attics, ensure vents are not located on the street-facing east and south elevations;
- Install adequate flashing at all valleys, crickets, etc.;
- Install metal (prefinished aluminum or copper) flashing and counterflashing to a height above the snowline at all roofing terminations to parapets, walls, dormers, chimneys, etc.;
- Install counterflashing set into a reglet or received at horizontal masonry joints or a cut joint in stucco surfaces, all counterflashing should have a hem edge;
- Install a 40+ year architectural grade asphalt shingle at all steeply pitched roofs;
- Install a standing seam sheet metal (prefinished aluminum or copper) roof at the east shed dormer, bay (flat seam), bell-form porch roof, north dormer, and south garage shed roof;
- Install a fully adhered rubber membrane roof over smooth sheathing and tapered insulation at south and west flat roofs with positive slope to drainage;
- Repair and reline all deteriorated built-in gutters with galvalume.

Proposed Approach for East Elevation, South Bay Roof

- Once the existing materials are removed, the exposed structure will be inspected; rotted and/or missing materials will be replaced in kind as necessary;
- Install ice and water shield membrane to the exposed decking and structure;
- Install new custom-fabricated galvalume standing seam roofing;
- Repair and reline all deteriorated built-in gutters with galvalume;
- Install new custom-fabricated galvalume sawtooth reglet-cut counter flashings;
- Install new pre-finished aluminum 4" x 3" downspouts.

Proposed approach for Bell-Shaped Porch Roof

- Once the existing materials are removed, the exposed structure will be inspected. Only as needed, rotted and/or missing materials will be replaced in kind as necessary;
- Install ice and water shield membrane to the exposed decking and structure;
- Install new custom-fabricated galvalume drip edge;
- Install new custom-fabricated galvalume standing seam roof;
- Repair and reline all deteriorated built-in gutters with galvalume;
- Install new custom-fabricated galvalume sawtooth reglet-cut counter flashings;
- Install new pre-finished aluminum 4" x 3" downspouts.



IMAGE 7: Algae growth at the base of the north elevation near downspout.



IMAGE 8: High moisture-meter readings along the perimeter walls in the basement.



IMAGE 9: North and south chimneys with tie rod anchoring the south chimney.

Basement Moisture Infiltration and Flooding

Existing Condition

Significant moisture is present within the basement at each rain event. This is due to several conditions:

- Lack of appropriate chimney hoods and flashing/counterflashing resulting in significant water running down into the north chimney and flooding the basement each time it rains.
- Lack of a breathable masonry foundation. Cementitious parging and multiple layers of non-permeable paint were added to the interior basement perimeter walls over its lifespan. The result is moisture trapped within the masonry walls with spalling stone and decomposed mortar. Moisture-meter readings range from 25% to 95% WME (wood-moisture equivalent)(**Image 8**).
- Broken exterior drain tiles. Spot excavation as executed at the northeast corner. A terra cotta drain tile was located in an approximately 5' length. The drain tile was fractured in several locations.

Basement Moisture Infiltration and Flooding Work Scope

The following immediate steps will allow moisture vapor to begin to dry from the walls:

- Remove all paint and parging from stone perimeter foundation walls;
- Remove decomposed mortar back to sound material, allow walls to dry to 18% WME;
- Increase dehumidification measures by installing additional portable units;
- Install new mortar matching the historical composition once walls have reached a stable 18% WME maximum;
- Leave stone foundation walls exposed and uncoated .
- Refer to Roofing and Drainage above for chimney-related work.

Chimney rebuilding and repair

Existing Condition

South Chimney: The south chimney tilts significantly north and has one existing tie rod back to the roof structure (**Image 9**). Loose brick, decomposed mortar, and deep voids are visible for the upper nineteen-brick courses (**Image 10**).

North Chimney: Loose brick and decomposed mortar are typical with deep voids visible from the ground the full height of this chimney on all four sides (**Image 11**).

Neither chimney has a cap, rendering both tops open to the elements.



IMAGE 10: The south chimney has a noticeable northward tilt. Deterioration of the brick and mortar joints is visible from the ground.



IMAGE 11: Deterioration of the brick and mortar joints on the north chimney is visible from the ground.



IMAGE 12: Previous repair and replacement attempts are visible on cheek walls. Spalling, cracking, and algae growth is also apparent.

Chimney Flashing and Saddle

Flashing and counter flashing are lacking at both the north and south chimneys, exacerbating deterioration and allowing for more moisture infiltration. No saddles are present on either chimney.

Chimney Rebuilding and Repair Work Scope

- Rebuild the top nineteen brick courses of the south chimney;
- Rebuild the smaller north chimney down to the roof;
- Install new cast-in-place chimney caps with a 2" overhang and drip edges over chimney felt;
- Install new sheet metal caps with sidewall mesh to keep out weather and wildlife;
- Install proper flashing and counterflashing set into reglets at both north and south chimneys, including the installation of chimney saddles.

Porch: East Main Porch

Existing Conditions

Significant portions of the east main porch were previously rebuilt. Cast stone units have been reset in new bedding mortar or replaced with non-matching modern cast stone units (**Images 13-14**). A few units at the stair-cheek wall have been replaced with sandstone. There are many areas of cracking, parging, shifting cast stone units, and spalling (**Images 12-15**). Several cast stone units are loose and out of plane with the wall. The cheek walls at concrete steps are also deteriorated with cracks and spalls (**Image 12**). The concrete porch floor levels slope away from floor drains, exacerbating masonry conditions (**Image 16**). Several through-slab cracks are present (**Image 17**).

The underlying cause of the movement is the porch structure. Five east-west running cast iron I-beams carry the concrete deck load. Coatings protecting the cast iron are worn away. When the stone porch deck was replaced in the modern era with concrete, no waterproofing measures were added. As a result, the cast iron I-beams are severely corroded (**Images 18-19**). Structural evaluation indicates they can no longer support the deck load. Beam pockets are also severely decomposed and require rebuilding. Shifting cast stone units are visible in the basement.

East Main Porch Work Scope

- Install temporary shoring to porch floor, roof, and columns;
- Prepare basement portion or porch for fill;
- Remove south and north windows and infill with face brick matching historical cast stone color (oversize units) set brick infill at the exterior wood jamb plane;
- Infill interior west doorway with CMU and waterproof on porch side;



IMAGE 13: Algae has begun to grow on some porch surfaces. Note the evidence of shifting cast stone units and cracking in floor slab. Previous repairs are also evident.



IMAGE 14: Some cast-stone units and open mortar joints have been replaced and attempts at repairs have been made. Shifting and algae growth are visible.



IMAGE 15: Cast-stone units have shifted significantly over time. Note the evidence of previous repairs.



IMAGE 16: Concrete-porch floor slopes away from drain.



IMAGE 17: Cracking in the concrete-porch slab.

- Remove the porch concrete slab and disassemble the cast stone units retaining any units suitable for repair and reuse;
- Apply foundation membrane (coating) to existing walls;
- Reinforce any deteriorated foundation;
- Geofill foundation area;
- Take apart porch walls down to foundation;
- Pour new foundation ledge for rebuild;
- Replace deteriorated cast stone with matching sandstone;
- Allowance of 50% of units to be replaced;
- Rebuild porch walls;
- Pour new concrete slab over gravel base ;
- Repoint joints in NHL 3.5 mortar color to match existing historical mortar.

Doors

Existing Description

West Entry Door

This modern era slab 2" wood door is in poor condition (**Image 20**). The leaf is delaminating at the bottom, has no sweep, is missing part of its bronze weather stripping, and allows noticeable daylight and wind through the gaps between the door and frame. The existing screen door has splitting wood veneer, peeling paint and is not configured for a glass insert for added winter thermal performance (**Image 21**).

West Entry Door Work Scope

West Entry Door

Replace the west rear entry door with a solid exterior grade door in keeping with the style of other exterior doors on the home. Install proper weather stripping and sweeps. Door Specification: Simpson, 7114 Thermal Sash, fir with clear glass; painted finish; featuring two lower recessed panels and an upper light (**Image 22**).

Replace the existing storm door with a powder-coated aluminum Larson Premier Classic Elegance EasyVent® (in color 'Sandstone') with Retractable Screen Away®, 2/3 glass doors with retractable Screen Away® design converts the storm door to a screen door with an unobstructed view (**Image 23**).



IMAGE 18: Cast-iron beams in the basement are severely corroded.



IMAGE 19: Close up image showing severe corrosion of an iron beam. Note the deterioration and cracking evident on the cast-in-place concrete ceiling.



IMAGE 20: West entry door is in poor condition.



IMAGE 21: Screen door at west entry.

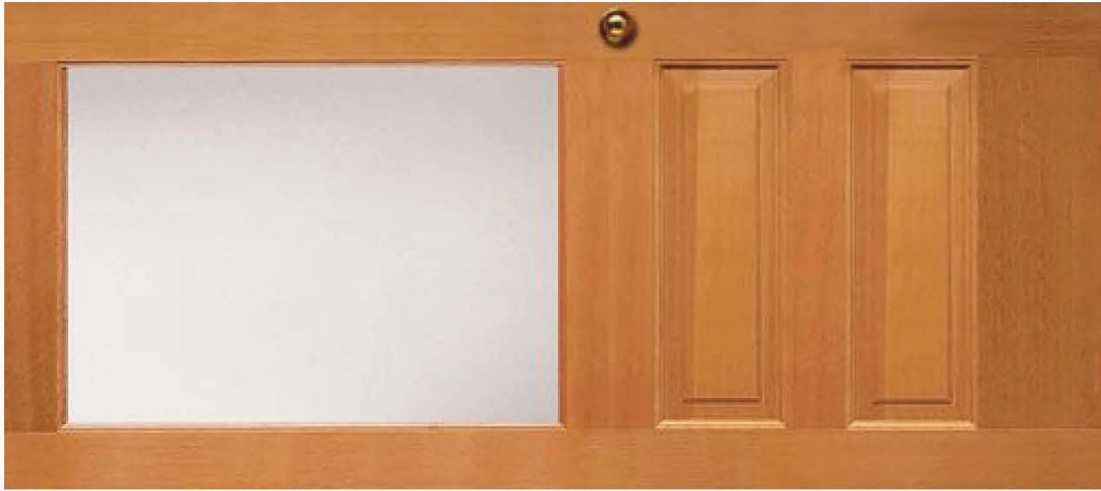


IMAGE 22: Replacement for west entry door.

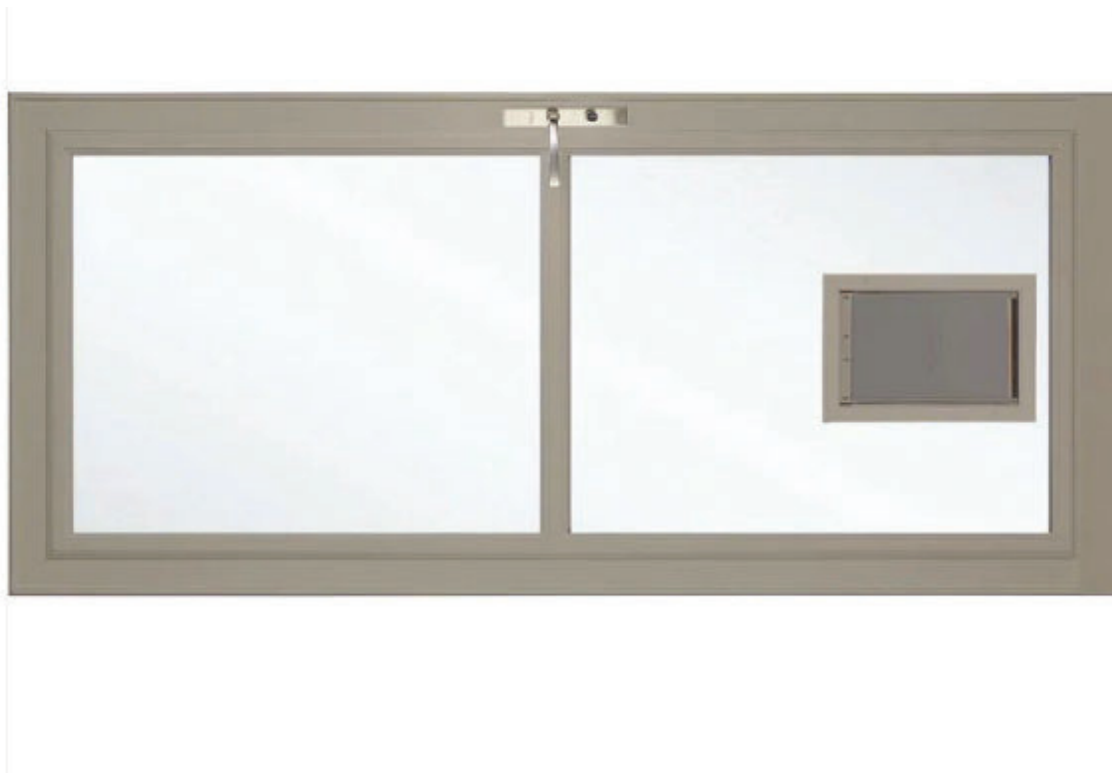


IMAGE 23: Replacement for west entry screen door.