CONSERVATION ASSESSMENT:
WAASECA WAR MEMORIAL
WAASECA, MINNESOTA

Prepared for:

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Introduction

A request was made to perform an updated conservation assessment of the Waseca War Memorial assemblage, Waseca, MN, located on the corner of the front lawn of the Waseca County Courthouse. The memorial assemblage consists of a cast bronze plaque attached to a monolithic concrete base, an adjacent flagpole, and a cast iron GAR cannon with cannon balls.

This report presents the observational data obtained during the on-site assessment and does not constitute a bid or commitment for any actual conservation treatment work.

The invoice for the assessment and report is included on a separate page. The payment is due upon receipt of this report.

The following work was involved in the assessment:

1) Travel to the site (3 hour round trip, one hour on-site): Monday, May 26, 2014.
2) Visually inspected the memorial plaque, cannon, and flag pole. Observed for original patination on plaque, stability of concrete base, and any other relevant conditions.
3) Recorded observations in writing.
4) Took photographs illustrating current existing conditions. The color images are presented at the end of this written report.
5) This report includes recommendations for the conservation treatment of the plaque and concrete base in order to restore the readability of the plaque; conservation measures for the cannon and flagpole.

6) Basic cost estimates for the conservation treatment are included in the report, along with a list of possible vendors.

Observations

1) War Memorial Plaque and Concrete Support:
Dimensions:

Concrete Support: L: 122” H: 92” D: 32”
Plaque: L: 96” H: 54”

The metal plaque, installed in 1967 on the concrete base, consists of six sections that appear to be directly attached to the concrete support. There are no apparent fasteners in the corners of the plaque sections. It is apparent that concrete patching and stabilization was done between 2008 and 2014. This was confirmed by Brian Tomford, who stated that a Sakrete product (not specified) was used to patch the surfaces where they were crumbling and cracked. A water-based silicone caulk product was used to seal the gap between the plaques and the support, and the concrete was painted with a white water-based paint.

Although there was an overall improvement in the appearance and a stabilizing effect on some areas of the concrete support, there are new breakouts, cracks and separations of the stucco coating and concrete, particularly at the base of the plaques below the lower caulking. This is probably due to freeze-thaw processes and water intrusion. There is also a crack in the corner patch where a large section of surface stucco had been missing in 2008.

The overall condition of the metal plaque has essentially remained the same as in 2008. The surfaces are covered with a greenish, patchy corrosion product over the reddish color of the metal. The world relief map roundel is a more uniform dark brown color overlain with a faint whitish-green corrosion.
2) Cannon:
Dimensions:
Agrregate base: L: 109” W: 78” H:~2.5”
Grante Base: L: 72” W: 40” H: 14” above aggreg.
Cannon: L: 130” W: 35”

The cannon assemblage consists of a cast iron cannon on a carriage that is presented on a rough-textured pink granite base. The granite base is surrounded by an aggregate “ring” at ground level. There are ten cast iron cannon balls partially embedded in the aggregate surface; 2 on each end of the base, and 3 on each long side of the base.

The condition of the cannon and base assemblage has deteriorated slightly since the last assessment in 2008. The surfaces of the cannon and balls have corroded (rusted) more and there is more discoloration of the coating and losses due to flaking. The granite base stains have darkened.

The worst condition are the cracks and vertical displacement of the aggregate ring, probably due to soil frost-heave. Vegetation is currently growing out of the cracks. If allowed to continue, root and plant growth will further widen the cracks in the aggregate and cause more damage.

2) Flag Pole:

The metal flag pole is in good condition overall, and appears to have been repainted since 2008. Again, areas of paint loss near the base end due to abrasion from the loose rope have developed.

Conservation Recommendations

1) War Memorial Plaque and Concrete Support

- The concrete support is in very poor condition. Stripping the paint, filling the losses, and resurfacing the structure would be very labor intensive and costly, and not effective for very long.

- A decision should be made as to the historic value of the concrete base itself and if it needs to be retained and preserved, or if it could be replaced with a new, more stable base composed of a weather resistant concrete mix that reproduces the shape of the original. The base should be placed on a concrete or aggregate self base that will raise it above the ground level and protect it from water intrusion and freeze-thaw effects due to soil contact. The plaque would be removed, conserved and placed on the new support in a manner that would expedite removal for future conservation when required.

- Another option is to replace the current base with a granite support cut to the same shape as the concrete. Maintenance would be very low and that material is more suited to long-term placement in the MN climate.
- Remove the plaques from the concrete without damaging them if it is decided to replace the existing concrete support. The exact attachment method will not be known until a tests for the physical removal of the plaques can be undertaken.

- Clean the metal using a mild blast method such as medium pressure water spray (MPW, ~3000 psi) or walnut shells in order to remove the corrosion and coating layers down to a stable metal surface. Laser cleaning may be proposed by some prospective vendors, however, it is a very slow method and would not be cost effective on such a large surface. It is more effective as a stone cleaning method as it is minimally intrusive and stone is more readily damaged by chemical cleaning methods.

- Patinate the metal surfaces with a hot patination method. The color should be decided upon by the Owner based on a series of samples provided by the Conservator.

- Coat the metal surfaces with a minimum 1mm thick corrosion inhibited acrylic laquer such as Incalac (Rohm and Haas B-44 with 1% benzotriazole added as a VPI corrosion inhibitor), apply with a high volume low pressure (HVLP) sprayer. Apply a final coat of carnauba-blend paste wax (clear or tinted). This layer is "sacrificial" and will be maintained by the owner on an annual basis to protect the lacquer and patina layers. The lacquer can last 5 to 10 years before stripping and reapplication is required depending on the rate of weathering and the efficacy and consistency of the maintenance program.

- Reattach the plaque through holes to be drilled through the corners with screw-type fasteners attached to threaded anchors in the concrete or granite support, capped with 'flower' escutcheons patinated to match the plaque color.

- Apply a high quality polyurethane-based expansion joint compound around the perimeter of the plaques where they meet the support to prevent water intrusion.

2) Cannon

- Clean the cannon overall to remove dirt and dust. Spot-treat to mechanically reduce the corrosion on the trunnion and in other areas if found with mild steel brushes. Spot treat the corrosion with a rust stabilizer such as Rust-X (http://www.rust-x.com/). This type of ferric oxide corrosion stabilizer is based on an aqueous solution of tannic acid with an ethylene vinyl acetate resin. The tannic acid chemically binds the corrosion, then the resin emulsion cross-links on the surface as the water evaporates, leaving a blue-black surface coated with a plastic resin. The surface can then be painted or coated with a tinted hard paste wax, such as carnauba tinted with lamp black powdered pigment.

- Clean the granite base to remove the organic staining using chemical or laser cleaning methods based on testing, if proposed by prospective conservators. Rough textured granite is particularly resistant to chemical agents and there are a variety on the market. ProSoCo is one manufacturer with a line of
granite and siliceous stone cleaning products that would be applicable to this project.

- Replace the broken aggregate ring after removing the cannon balls. Prepare the foundation trench by leveling and placing a foam “bridge” in the ground. Pour a new aggregate ring and reattach the cannon balls. The trench preparation will prevent future damage due to frost heave.

3) Flag Pole
- Repaint the flag pole.
- The Owner should investigate new hardware for securing the rope so it is under more tension and cannot abrade the pole surface.

Cost Estimate:
A general estimate for the project as proposed would be $50,000-$55,000.

Potential Conservators:

Jensen Conservation Services, Inc.
Rob Jensen, President
Omaha, Nebraska
www.jensenconservation.com

Midwest Art Conservation Center
Megan Emery, Objects Conservator
Minneapolis, Minnesota
www.preserveart.org

Kristen Cheronis, Inc.
Kristen Cheronis, Principle
Minneapolis, MN
kcheronis@earthlink.net

More potential vendors can be found by accessing the Conservator Referral System of the American Institute for Conservation at the following link:

Bidders should be able to present a minimum of 10 years in the field of outdoor monument and sculpture conservation, and a minimum of 5 previous projects of comparable scope, methods, and cost.

Submitted by: Paul S. Storch, Objects Conservator
WASECA WAR MEMORIAL IMAGES

Front view of memorial (2008)

Front view of memorial (2014) Note darkening of bronze surfaces. Some cracks in the concrete have been covered, however, new ones have opened.

Rear view of concrete support (2008)

Rear view of concrete support (2014). The overall appearance has improved on the rear surface due to the paint.
Top view (2008) showing failed paint and poor condition of the stucco/concrete.

Top end view (2014). Paint is still stable overall, however cracks have opened in the concrete surface layer.


Front lower base (2014) showing new cracks in stucco/concrete opening in front of silicon caulking around perimeter of bronze plaques.
Detail of cracks and losses in lower PL front corner of support (2008)

Detail of upper center bronze plaque section. (2008)

Detail of current condition of lower PL front corner (2014)

Detail of upper center bronze plaque section. (2014)