

DRAFT 17 DECEMBER 2012

WESTERN CLAY MANUFACTURING COMPANY HELENA, MONTANA

**TIME AND COST ESTIMATES FOR
INVENTORY AND CONSERVATION RECOMMENDATIONS OF**

- **HEAVY MACHINERY**
- **ARTIFACTS ASSOCIATED WITH THE BLACKSMITH'S SHOP
AND
TREATMENT RECOMMENDATIONS FOR KILN 7 METALWORK**

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1. SCOPE OF WORK

This report is prepared based on photo-documentation, survey reports and associated documents provided by the Architectural Conservation Laboratory at the University of Pennsylvania Historic Preservation Program. Time estimates and treatment recommendations are approximate, since, at the time of writing, the number of artifacts is unknown, and the authors have not assessed the artifacts in person. Basic conservation recommendations for the heavy machinery and artifacts are identified.

Professional Conduct

All conservation work undertaken on cultural property at Western Clay Manufacturing Company by the authors, whether survey-related, preventive in nature or active treatment, will be guided by an informed respect for the existing physical fabric, and its unique character and significance. Mardikian and Chemello will adhere to the Code of Ethics and Guidelines for Practice of the American Institute for Conservation of Historic and Artistic Works (AIC) of which they are Professional Associate members.

Heavy Machinery

Photographs of the heavy machinery at Western Clay appear to include machinery in situ in several locations at the site. These include the Tile Shop (building 22), the Boiler Room (building 21) and the Drying Shop (building 23). In addition, there are several large pieces of machinery located outdoors, described as the Brick Shop (building 24).

To Be Started in the Summer of 2013.

Tile Shop: Approximately 6-10 pieces of heavy machinery are visible in the photographs of the Tile Shop, as well as associated objects. This building appears to be a brick structure with a wooden roof. The roof is collapsing and some of the machinery appears open to the elements.

Materials: The machinery appears to be made of cast iron with some painted surfaces. Whenever possible, the interior surfaces of the machinery will be examined with a wireless inspection camera.

To Be Continued based on availability of funding and resources.

Boiler Room: The Boiler Room contains 2 large boilers, as well as associated infrastructure, pipes, tanks, etc. The building appears to be brick structure with a wooden roof that is collapsing in areas.

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Materials: The boilers appear to be made of cast iron. Almost all of the associated infrastructure, pipes etc are also iron, but there are a few copper alloy screw valves visible, attached to iron pipes. Whenever possible, particular attention will be given to hidden surfaces such as the interior of the boilers and other closed structures by use of a wireless inspection camera.

Inventory and Condition Survey: Estimated time to complete an inventory and condition survey of heavy machinery in the Boiler Room is approximately 2 days.

Drying Shop: The Drying Shop contains approximately 6-8 pieces of heavy machinery and numerous smaller objects. The building appears to be constructed of brick with a wooden roof. It is unclear from the photographs whether the roof is complete or if there are any areas of collapse.

Materials: The machinery is made of cast iron, possibly with some painted surfaces. Structural elements made of wood are visible in association with the metal in many of the photographs. Whenever possible, the interior surfaces of the machinery will be examined with a wireless inspection camera.

Inventory and Condition Survey: Estimated time to complete an inventory and condition survey of heavy machinery in the Drying Shop is approximately 3 days.

Cost estimate: \$6,240 for two conservators with student assistance.

Brick Shop: The Brick Shop appears to contain approximately 4-6 large pieces of machinery, visible in photographs. The machinery is all located outdoors with no cover and is overgrown with weeds and grass. Remains of the original brick building structure are visible.

Materials: The machinery appears to be made of cast iron, with some painted surfaces visible. There are also other materials present, including woven textile (possibly cotton or synthetic) and rubber conveyor belts. Wooden structural elements are visible in association with the metal in many of the photographs. Whenever possible, the interior surfaces of the machinery will be examined with a wireless inspection camera.

Inventory and Condition Survey: Estimated time to complete an inventory and condition survey of heavy machinery in the Brick Shop is approximately 3 days.

Blacksmith's Shop

Photographs of Building 27 at Western Clay, the Blacksmith's Shop, show a wooden building with wooden roof housing hundreds of tools and pieces of equipment related to the trade of blacksmithing. These include numerous hand tools for different smithing processes, an anvil, a shovel, saw blades and crucibles for casting metal.

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Materials: Artifacts in the Blacksmith's shop are predominately made from iron, with many composite objects. Other materials include wood and stone, with some modern glass and possibly other modern materials visible in photographs.

Inventory and Condition Survey: Estimated time to complete an inventory and condition survey of all artifacts in the Blacksmith's Shop is approximately 3 days. This is based on an estimate of approximately 400 artifacts in the Shop, and an approximate survey time per object of three (3) minutes.

Basic Conservation Recommendations

Based upon the information obtained from the condition survey, artifact-specific protocols for the conservation treatment and maintenance of the machinery and artifacts from the Blacksmith's Shop will be developed. General treatment recommendations are outlined below.

Condition assessment

If artifacts require treatment, a condition assessment will be made prior to treatment. The assessment will include detailed examination, scientific analysis if necessary, and a written condition report. The assessment will include:

- Graphic documentation: Photographs taken during the condition survey may be adequate. If additional photographs are required (for example, of details), they will include identification information and dates.
- Written documentation: a physical description of the artifact, including but not limited to the material composition, markings, dimensions and present condition. This information may be lifted from the condition survey with additional notes as required.
- If scientific analysis is required to identify materials or establish the condition of the artifacts, it shall adhere to the following:
 - Non-invasive analytical methods shall be used where possible.
 - Where samples are required, prior consent of the owner shall be obtained before any material is removed from an artifact for analysis. Only the minimum amount required will be removed, and a record of removal will be made.

Conservation treatment protocols may include the following steps:

Metal components

- Analytical work carried out to determine fabric, level of deterioration, coatings or other original finishes, if required. Example includes lead-based paint/primer.
- If artifacts test positive for the presence of lead and the material containing lead is to be removed as part of the treatment, for example, lead paint or primer, a lead abatement protocol will be determined adhering to all applicable state and federal regulations regarding lead paint abatement.

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- Surface cleaning (mechanical, chemical, electrochemical or other).
- Treatment of active corrosion/stabilization.
- Consolidation of the metal/surface if required.
- Corrosion inhibition.
- Evaluation of surface finishing and method of application, with particular attention to surface preparation.
- Refabrication/ replacement of missing components, if necessary for structural stability.
- Separation of specific components to facilitate treatment, if necessary and feasible.
- Isolate the heavy machinery from the ground for treatment and for long-term maintenance.
- Will the machinery be restored to working order?
- Prepare and implement a maintenance/housekeeping plan, as appropriate, depending on final placement.
- Address the security of the artifacts on site.
- Address health and safety for visitors.

Wood components

- Surface cleaning (mechanical).
- Treatment for biological growth or pests, if present.
- Consolidation of the body/surface if required.
- Retain all evidence of original coatings or other surface decoration as far as possible.
- Prepare and maintain a maintenance/housekeeping plan.

Other materials – Textile, rubber, glass, stone or ceramic etc

- Surface cleaning as required.
- Treatment for structural stability/support, as required.
- Treatment of biological growth, if required.
- Isolate from substrate if needed.
- Prepare and maintain a maintenance/housekeeping plan.