



Penn Design

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Project Summary

The Western Clay Manufacturing Company brickyard, located just outside of Helena, Montana, dates to 1905 and is a classic early 20th century manufacturing plant. Conceived by the Montana Preservation Alliance “as a model process to consider and repurpose challenging industrial structures that were never designed for human occupancy”, Western Clay Manufacturing (WCM) retains an array of features original to the complex, including tools and equipment, machinery and fired ware along with 32 buildings on the 26-acre site. Listed in the National Register of Historic Places in 1985, the entire complex -- pottery, tile works, drying sheds, warehouses, rail spurs and loading sheds - is significant for its industrial heritage and for its subsequent history as the internationally-acclaimed Archie Bray Foundation pottery studio born within the brickworks in 1951. The WCM is one of the last, and most complete historic brickyards in America, and an ideal place to engage a wide audience, from historians, academics, artists and practitioners, and students to a broad public audience through the re-imagining of purpose-built industrial structures.

The University of Pennsylvania (UPenn) Architectural Conservation Laboratory (ACL) in conjunction with the Montana Preservation Alliance (MPA) and the Archie Bray Foundation (ABF) have collaborated since 2011 to create and implement a plan to conserve the buildings and equipment. The ACL has produced measured drawings and 3D laser scans, and large format photographs with architectural photographer Bill Elliot. Historic Architect Jim McDonald of A&E Architects coordinated the structural review with Beaudette Consulting Engineers to determine the highest priority for stabilization of the kilnsheds. Historic Mason Bob Valach will train the Upenn conservation team in repair and stabilization of masonry walls and the kiln arches in July-August 2013. UPenn is coordinating with Paul Markidian to inventory and assess the endangered heavy machinery. As a result of the work already completed, people are mobilized and statewide media has shifted perceptions of this significant industrial site.

The immediate objectives are to complete the conservation treatment for kiln 7, stabilize the kiln sheds and conserve the heavy brick and tile making machinery located within the deteriorating buildings. This work will adhere to the highest standards for conservation and historic preservation while continuing to educate future conservation stewards with professionals in historic masonry, metal conservation, and documentation, both traditional and technological.

Through generous support MPA and UPenn have cultivated expert partners whom together can continue to generate interest in the quality, importance and potential applicability. The combination of scholarship, documentation, physical stabilization and creative dialog will serve as a strong model for similarly challenged industrial sites.

We thank you for the opportunity to be considered for support and partnership in the preservation of American industrial heritage.

1. Documentation of need for the Project: What is the proposed project's significance to industrial heritage?

Brick and tile manufacturing plants were once ubiquitous throughout much of the United States. Today, however, only a fraction of these industrial complexes survive, and even fewer are still devoted to the production of structural clay products. Of those standing, almost none preserves the large number of buildings and machinery, three generations of kiln technology, and overall industrial landscape as does the Western Clay Manufacturing Company site on the outskirts of Helena, Montana. Although closed in 1961, the mothballing of the site helped preserve its buildings and notably its machinery and associated artifacts.

In the 1880s, brick manufacturing commenced on the grounds of what became known as the Western Clay Manufacturing Company. Until its sudden closing and subsequent mothballing in 1961, this industrial facility received numerous technological updates and underwent periodic expansion. Members of the Bray family oversaw the production of brick and hollow clay tile products for most of the plant's seventy-five years of continual operation. In the early years, Charles Bray, who emigrated from the United Kingdom to the U.S., acted as Western Clay's general manager. Charles later became the sole proprietor of the manufactory, passing ownership along to his son, Archie Bray, Sr. whose tireless work ethic and advanced knowledge of ceramic engineering ensured the company's success. The industrial clay products manufactured at Western Clay - from brick pavers, to sewer pipes, to common brick, pressed brick, fire brick, and hollow tiles - literally built and expanded the City of Helena and furthered development in many areas within the State of Montana.

By 1908 Western Clay Manufacturing Company was known as the most complete clay manufactory in Montana. The plant was connected to both the Great Northern and the Northern Pacific railroads for convenient shipping statewide. Products were shipped throughout the state as well as to Wyoming, Idaho and eastern Washington. Western Clay was clearly the largest producer of brick in Montana by 1918, producing more than twice as much common brick as its nearest competitor, Great Falls.

The one hundred year old, three story masonry and post and beam tile production building is still fitted out with historic belt driven equipment, drying room and large boilers connected by a conveyor system for moving materials and greenware through the plant. As the buildings deteriorate the contents within are increasingly threatened by the elements. The machinery, an integral component of the industrial heritage of the site, is currently situated in four buildings, the Tile Shop, the Boiler Room, the Drying Shop and the outdoor Brick Shop. All of the machinery requires intervention in conjunction with the ongoing preservation of the site.

What was once ubiquitous has become singular through abandonment, decay, pilferage and development. Stewarded by the Archie Bray Foundation for the Ceramic Arts – an organization located on the very grounds of the former manufacturing site - the complex promotes the history of the manufacture of industrial clay products and the ceramic arts. This project promises to create a vision for a most difficult property type to engage a wide audience, from historians, academics, artists and practitioners to a broad public audience in the development of

innovative solutions for renewed use.

2. What research methods will you employ?

Each artifact in the Tile Shop will be inventoried and a condition assessment record created by a professional consultant. Records will include field notes as well as photographic documentation. Whenever possible, the interior surfaces of the machinery will be examined with a wireless inspection camera. The work is estimated to require 5 man days for the professional and assistant to complete which will occur in July/August of 2013.

Each inventory record will include:

- Artifact identification number. A unique number will be assigned and attached to the artifact at the time of the inventory. Part numbers should be assigned, if needed
- Brief description of the artifact
- Material
- Location
- Quick photographic record of the artifact, with scale
- Approximate dimensions
- Recorder's name and date
- Notes, if needed.

Each condition assessment record will include:

- Graphic documentation: color photographs with scale. Photographs showing areas of detail and specific condition issues may be needed
- Photographs will include identification information and dates
- 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
- Location
- Situation: (outdoors, sheltered, indoors, indoors party sheltered etc)
- Material/s
- Condition: overall general condition - excellent (ranking 1), good (ranking 2), fair (ranking 3) and poor (ranking 4). (These condition rankings will be defined for the survey)
The condition of the artifact will be ranked using the above numerical system for all artifact components, with space to record notes:
 - surface condition metal
 - surface condition wood
 - surface condition other materials
 - surface condition of the interface
 - structural condition wood
 - structural condition metal

- structural condition other materials
- structural condition interface
- Presence of paint or other coating: Y/N – describe (color, condition, number of coatings, sample # for further analysis or other)
- Other surface finish: Y/N – describe
- Urgency: no treatment – desirable – necessary – urgent
- Threat to public: Y/N – describe
- Sample: describe

3. Who is responsible for your project?

University of Pennsylvania Personnel

Frank Matero – Project Director, Architectural Conservation Laboratory, blah years in conservation, blah , blah years oversight for all conservation projects and personnel

Joseph Torres – Field Supervisor, Architectural Conservation Laboratory, blah years site coordination and conservation for brick kilns and heavy machinery

Paul Mardikian – Metals restoration Consultant, blah years conservation professional to perform inventory and condition survey of heavy brick and tile making machinery.

Claudia Chemello – Assistant Metals Restoration Consultant, blah years conservation professional to assist inventory and condition survey of heavy brick and tile making machinery.

Montana Preservation Alliance Personnel

Patty Dean - MPA Project Manager & Curatorial Director, thirty years in museums, public history & vernacular architecture; two years oversight of ABF kiln project.

Chere Jiusto - MPA Project Administration, Executive Director, thirty years in historic preservation; six years development & oversight MPA's Industrial Heritage Initiative.

Archie Bray Foundation Personnel

Chip Clawson - ABF Technical Director, facilities & clay technician at ABF since 1979, expertise in kiln design, stewardship & restructuring; a key team member.

Steven Young Lee - ABF Executive Director, oversight of all programs for the Bray, guiding current efforts to improve educational facilities, preserve artistic traditions at the Bray and ensure longevity of its outstanding ceramics programs.

4. What tangible products do you expect to produce with this project? Please be specific about materials you plan to create in connection with the project. Publications, photographs, videos, drawings, archival material, reports, and digital format are examples of products. Explain how such materials will be circulated, stored, and distributed. Two copies of all materials must be submitted to the IHPG program. Digital products must be submitted in both hard copy and disk form. All reports must be submitted using a dry electro-static process (such as Xerox) on archival bond paper.

In conjunction with