Heritage Conservation Praxis 2011-2013
Western Clay Mfg. Co. ▪ Helena, Montana

Preservation
and **Collaboration**
at the
Archie Bray Foundation's
Historic Brickyard

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...and to Joseph Elliott and the students of the HSPV 750
for photo submissions throughout.

This report is dedicated to the staff and resident artists of the Archie Bray Foundation—
a group of enthusiastic, ingenuitive, and genuinely nice people.

On the cover: The beehive kilns of the Western Clay Mfg. Co. framed by Robert Harrison's *Tilex* (1985).
Right: Western Clay, rendered in tile by Richard Notkin.
Photos: B. Sturm

Contents

Introduction

The Penn Crew: *The students and faculty of HSPV 750—the University of Pennsylvania's conservation praxis summer course—posed before Kiln No. 7 in August 2013. Photo: J. Elliott*

On July 21, 2013, a diverse group of aspiring conservators—graduate students hailing from Montana, Pennsylvania, Louisiana, Italy, and China—arrived in Helena, ready to embark on a new kind of summer residency at the Archie Bray Foundation. Swapping ribs and glaze for trowels and mortar, the students and faculty of HSPV 750, "Heritage Conservation Praxis," left the Bray four weeks later, trailing brick dust in their wake. Together, they had brought Kiln No. 7, one of five surviving downdraft kilns once fired by the Western Clay Manufacturing Company, to a state of near-complete stabilization.

The work was hard. Inch by inch, the students freed the kiln's iron bands from expansive corrosion, hauling bucketloads of debris dutifully away. They poulticed and desalinated the kiln's walls, grouting voids among the brick and repointing the open joints between them. They sullied their work clothes, swatted mosquitoes, and braved a mountain hailstorm. And in the end, their Blackfoot beer was well-deserved. Not only had the students honed their own conservation skills—they'd repaired for the Bray a piece of its history once thought irreparable. Charmed by the place themselves, they secured, no doubt, an element of that charm for years to come.

This report is, in part, an effort to chronicle the progress made in conserving features of the Western Clay site during the 2013 field season. Arriving as it does at the conclusion of the third year of work, however, this report affords an extra opportunity for reflection on what has been a remarkably pleasant and productive collaboration between the Archie Bray Foundation (ABF), the Montana Preservation Alliance (MPA), and the Architectural Conservation Laboratory (ACL) of the University of Pennsylvania.

Since January 2011, when Chere Jiusto and Patty Dean first contacted Frank Matero for an opinion on the Bray's beleaguered beehives, the MPA and ACL have orchestrated, with the support

of the J. M. Kaplan Fund and the blessings of the ABF, a flurry of documentation, conditions analysis, and treatment implementation at Helena's historic brickyard.

Each of the three successive summers has seen a larger group of Penn conservators travel to the Bray—a growth in popularity stemming not only from the singular nature of the site, but certainly, too, from the rapport among the project's chief collaborators. Patience, openness, and mutual respect are terms which might begin to describe the working relationship enjoyed by the MPA, ABF, and ACL. Indeed, the Western Clay project has united people interested in art, architecture, creativity, and industry, alerting them to a site which encapsulates each concept in an extraordinary, beautiful way.

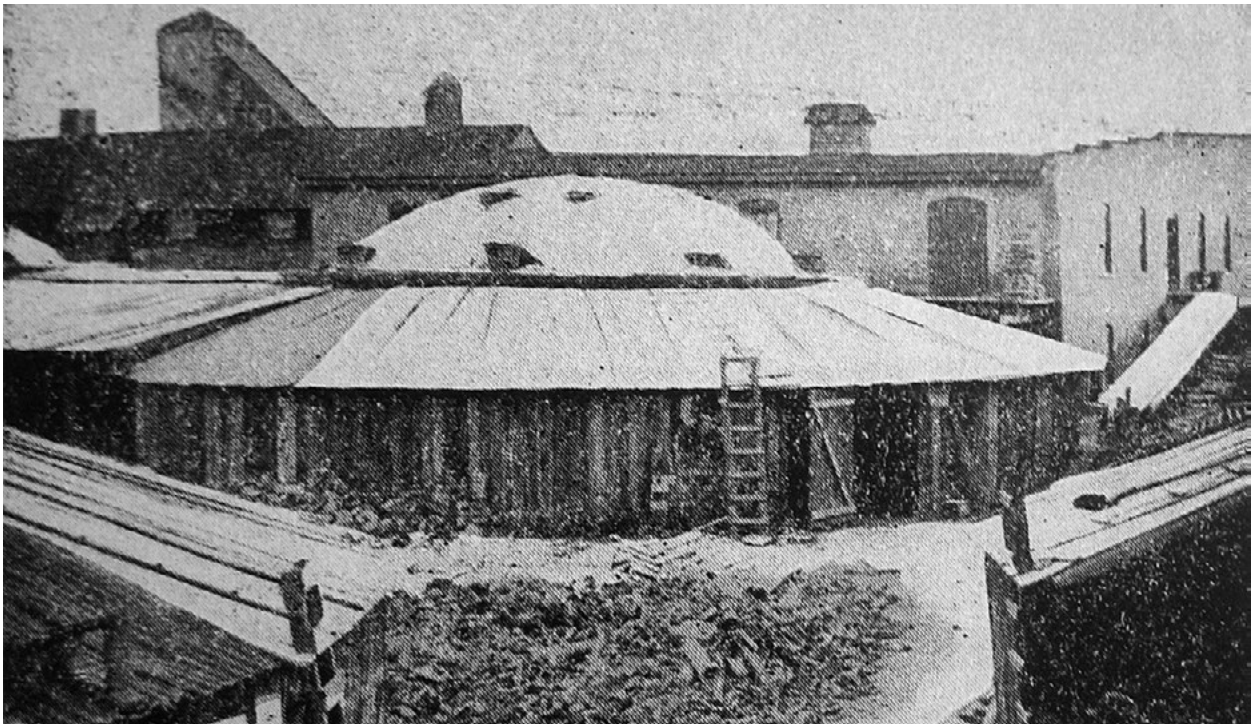
Over three years of partnership, a tremendous amount of knowledge has been generated and exchanged—a porfolio including documentary photographs and architectural drawings of the Western Clay campus, an archival history of the business, a study of kiln technology, and recommendations on how the Bray's exceedingly rare, historic kilns might be repaired and repurposed. In packaging findings from 2011-2013 alongside general notes on Western Clay's history, significance, and future potential, the following document aims only to further this tradition of exchange. And if successful, it will resonate far beyond the realm of architectural conservation.

After all, if the goal of the conservator truly is to protect places like Western Clay—a place that has exerted tremendous influence on human lives across time—then the mortar work is only half the battle. The future of the Bray's brickyard depends not on those who will prescribe and execute its conservation, but rather on those who believe that such work matters.

Project Chronology

2011	**January:** MPA contacts the ACL regarding Western Clay's historic kilns. **July:** The ACL completes initial field recording of the Western Clay kiln complex.
2012	**March:** First field report submitted, with site and kiln drawings, to the Kaplan Fund. **June:** Sharon Reid completes master's thesis on the history of the site. **June - July:** Eight graduate students from UPenn attend HSPV 750 "Heritage Conservation Praxis," the first summer course of its kind. Conditions recording and pilot restoration completed on Kiln No. 7.
2013	**January:** A second field report is submitted to the Montana partners and Kaplan Fund. **May:** Brett Sturm completes master's thesis on the design, deterioration, and potential reuse of the Western Clay kiln complex. **July - August:** Fifteen graduate students attend the second summer praxis course at the Bray, bringing the stabilization of Kiln No. 7 masonry closer to completion. **October:** Project presented before a panel discussion on industrial heritage at annual conference of the National Trust for Historic Preservation.

History



The Glory Days: *Kiln No. 4 of the Western Clay Manufacturing Company, as pictured in the* University of Montana Bulletin *in 1908, likely just months after its construction. Photo: J. P. Rowe*

The staff and resident artists of today's Archie Bray Foundation belong to a long tradition of ceramics in west Helena—a lineage with roots much deeper than the arrival of Peter Voulkos and Rudy Autio on Country Club Avenue in the spring of 1951.

In fact, clayworking on the grounds of the Bray commenced in 1883, when New Hampshire native Charles Thurston founded a small brickmaking operation on the western bank of Ten Mile Creek. After just two years in business, Thurston left Helena for Marcus Daly's copper-smelting boomtown Anaconda, selling his holdings to Luxembourger Nicholas Kesser. Although brewing was his primary vocation, Kessler had burned brick since 1866 on the opposite side of the creek. He developed Thurston's yard and hired Englishman Charles Bray as its foreman.

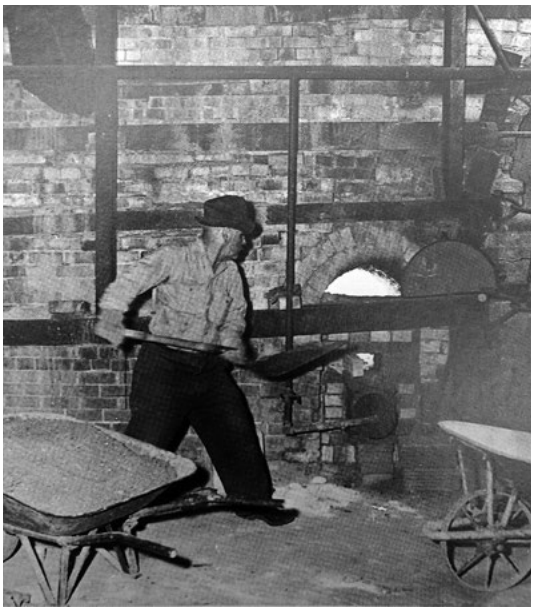
An orphan from the small West Devon town of Tavistock, Bray was an apprenticed brickmaker and a resourceful, ambitious man. He modernized Kessler's business, replacing the ox-drawn machinery and hand-molded brick of the Thurston era with steam-powered equipment and a wet-mud brick press. By 1897, the Kessler works employed thirty men, who fired common brick in traditional updraft (or scove) kilns, and sewer pipe, structural tile, flue lining, and flower pots in three state-of-the-art, downdraft (or beehive) kilns.

In 1905, Kessler merged with another local brickmaker, Alsatian Jacob Switzer, to form the Western Clay Manufacturing Company. Bray retained day-to-day control of the brickyard as general manager, and with Switzer's Blossburg clay pit as a new source of raw material, expanded once again. By 1908, Western Clay was the most complete heavy clay plant in Montana, featuring a Corliss steam engine, diverse machinery, five beehive kilns, and a workforce of fifty. In 1928, when Bray attained sole ownership of the company, Western Clay was the state's top producer of brick, boasting an output twice that of its competitors in Butte, Billings, and Great Falls.

Sleeping Giant: *The Western Clay kiln complex in July 2011. Kiln No. 4 is shrouded by vegetation in the center of the frame. Photo: J. Elliott*

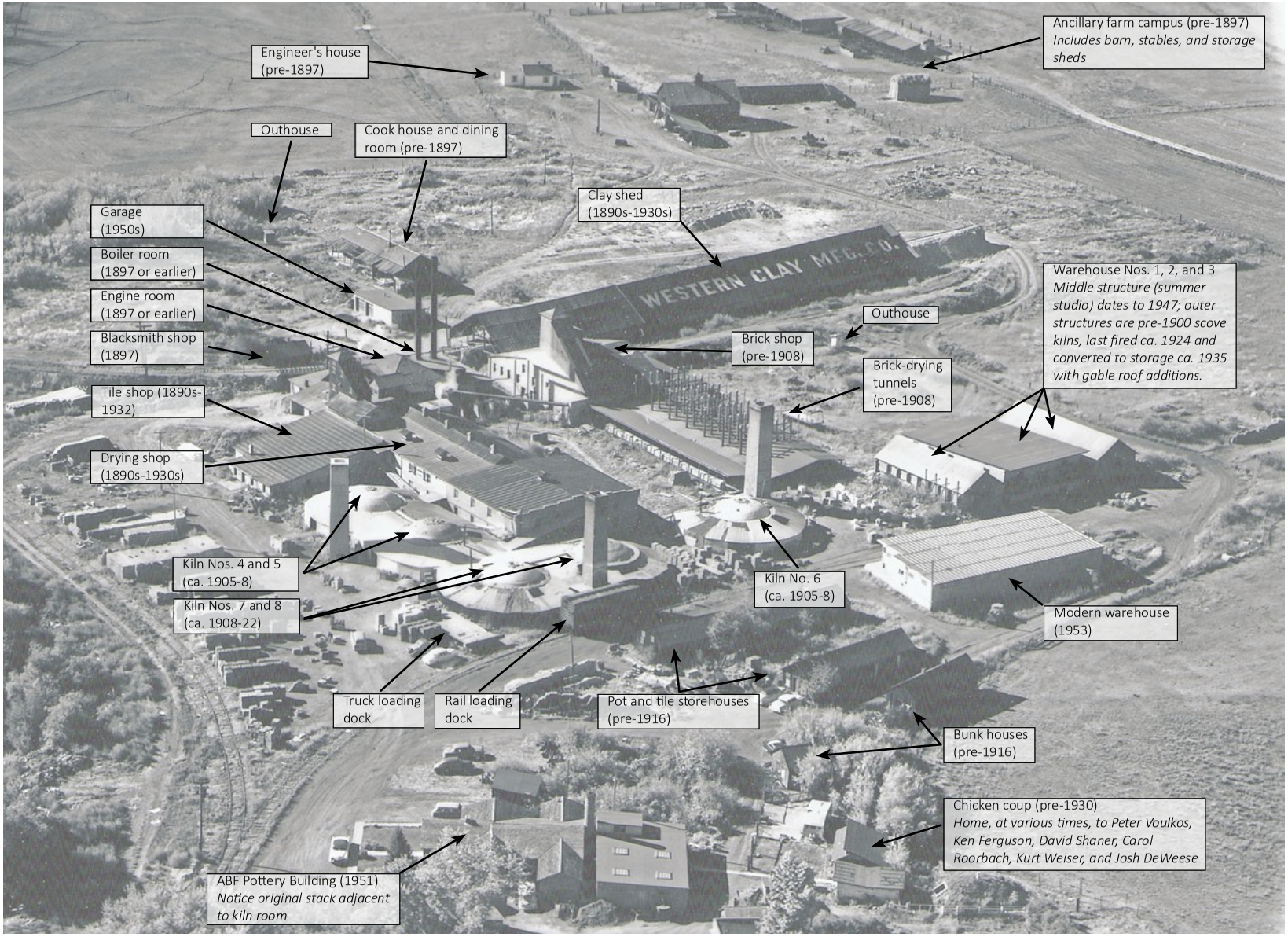
Charles Bray died in 1931, leaving his oldest son Archie as Western Clay's president and general manager. An alumnus of the Ohio State University's ceramics engineering program, Archie was, by all accounts, a technician of intuitive genius. He converted the plant from coal to natural gas, increased its drying capacity, and installed the first de-airing machine for brick production west of the Mississippi River.

With Archie in charge, Western Clay maintained a diverse line of heavy clay products into the post-war period. As demand for brick waned, however, Archie devoted more of his energies to the arts—music, dance, and, most famously, ceramics. In 1951, friends Branson Stevenson and Peter Meloy helped Archie establish a small potttery adjacent to the brickyard. What was supposed to be the first step in a larger arts complex, the pottery took off under Voulkos and Autio—then just two green graduate students from Bozeman and Butte, respectively.



Artist at Work: *Archie Bray, Sr., salts a roaring Kiln No. 7. Photo: Helena Independent Record*

Ironically, as the fledgling pottery grew, the fortunes of its industrial progenitor continued to decline. Archie's untimely death in 1953 left Archie Bray, Jr., at the helm of Western Clay. A pilot by trade, Archie, Jr., attempted to further modernize his father's plant with the installation of a tunnel kiln in 1957. Unfotunately, technical problems ensued and poor markets persisted. Unable to repay a loan from the Small Business Administration, Western Clay failed in 1960 and was purchased by the Medicine Hat Brick and Tile Company (later I-XL Industries) of Alberta, which subsequently mothballed the plant. Only in 1984, with the support of Kurt Weiser, Chip Clawson, and many others, did the ABF succeed in buying back the brickyard from which it was born.



Snapshot in Time: *This photograph, taken in 1956 by Archie Bray, Jr., captures Western Clay at a time of great transition. Despite years of change to the site's topography, building stock, inhabitants, and use, clayworking persists at the industrial campus to the present day. (Note: Dates in parenthesis denote year of construction) Source: Archie Bray Foundation Archives*

Significance

A Summit of Industry and Art: *Archie Bray, Sr., at ease in the company of Bernard Leach, Soetsu Yanagi, Branson Stevenson, Shoji Hamada, and Peter Meloy. Source: Archie Bray Foundation Archives*

In advocating for the protection of historic buildings and landscapes, preservation professionals often emphasize a site's ***historical value***—its association with a seminal event or seminal persona. They often invoke its ***rarity***, if few sites of similar type survive. Or, if the site has experienced minimal physical change over time, they extol its ***integrity***. All of these qualities combine to form ***significance***—a site's worth, beyond mere dollars and cents, to present and future generations of society.

Without question, Western Clay meets each of these conventional criteria of significance. The site is joined by six other brickyards on the National Register of Historic Places, and is easily the most complete of the group. In the structures and equipment that survive, the production path of a brick, from raw earth to fired unit, remains intact and legible. The successive eras of heavy clay technology on display—from the scove and beehive kilns to the retrofitted gas lines and building additions—only deepen this narrative of one of the country's oldest industries.

But perhaps the most meaningful argument for Western Clay's significance lies in its relationship to the Archie Bray Foundation—and, thus, to the trajectory of American ceramic arts, at large—over the past sixty years.

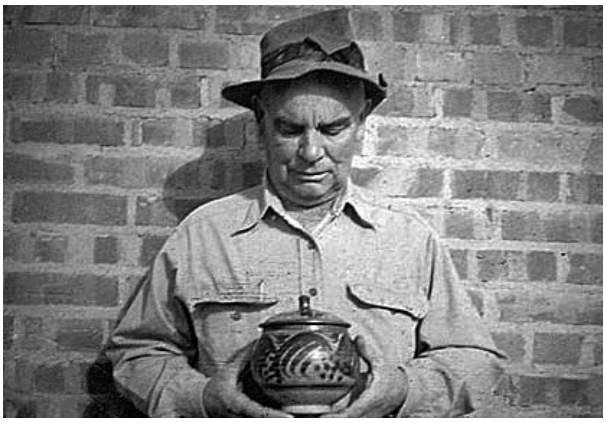
Despite its massive scale and past commercial use, the brickyard is the true birthplace of studio ceramics at the Bray. The apocryphal tale that Voulkos and Autio made their earliest work in the tile shop and fired it off in Archie's beehive kilns is, in fact, no aprocrypha at all. The two artists' use of the brickyard is well documented (*see pg. 11*) and corroborated by Archie, Jr., himself. And aside from providing the Bray's pioneers with their first informal working space, Western

Clay gave them electricity, gas, business contacts, and clay, lots of clay—a near-limitless access to material that, perhaps more than anything else, enabled early Bray potters to test and expand their own artistic vocabulary. For Archie, Sr., such practical assistance was central to his mission of establishing, for all those seriously interested in the ceramic arts, "a fine place to work."

Today's residents need no longer rely on the brickyard for utilities and clay. Indeed, decades of hard work and inspired leadership have forged a comfortable distance between the Foundation and its industrial neighbor, whose downfall brought with it years of financial hardship and uncertainty. Nevertheless, a quiet symbiosis continues, wrought in the resident pieces which bear likeness to the plant and its now-iconic beehive kilns.

Working in clay is a historic act. Each pot thrown, each kiln fired, plumbs techniques and traditions that are millions of hands in the making. Ceramic artists are therefore accustomed to looking back. In the case of Western Clay, however, it might be most productive to look forward—to imagine an Archie Bray Foundation without the brickyard as its backdrop. From an architectural standpoint, the spatial void—the vacuous footprint left in the plant's absense—would be staggering. But would the creative energy of the place suffer, as well?

David Shaner once said, "An artist's work is affected by everything around him... If an artist's life is not reflected in his work, either of the two is false." If not for its rarity, integrity, or historical merit, Western Clay is significant for what it has given in the past and continues to give in the present: energy, inspiration, and context.



Top: Archie Bray, Sr., pictured with a lidded jar by Bernard Leach; a historic downdraft kiln left out-of-context by an apartment complex outside Columbia, South Carolina. Sources: www.archiebray.org (left) and www.columbiaclosings.com (right)
Bottom: The kiln-inspired creations of past Bray residents Robert Harrison (left) and Karl McDade (right). Photos: B. Sturm

Western Clay Mfg. in the Eyes of the Artists...

Peter Voulkos on early making at the Bray

"We set up a temporary pottery and a work space in that old tile shed over there. You know, where they dried tiles... We started making a lot of pottery and salt glazed it in the brick kilns... We had hundreds of pots up on top of the brick... It wasn't too sophisticated, but we did get a hell of a lot of pottery made." [1978]

Peter Meloy on the availability of clay

"It was the first time in [Peter Voulkos'] life where he had tons of clay that he could use and didn't have to worry about dropping any on the floor. So you'd throw him into the situation where he could use all that clay, and he started making big things. He was like any other potter... he went through a period where [his pots] didn't come off. He had to understand and learn, and he learned quickly with this clay—we had all kinds of clay out here." [1977]

Rudy Autio on Archie

"Archie [Sr.] was interested in my sculptural potential, so he used to go out talking to the brickmakers, or the brick people who want to buy his brick, and says, 'I got a kid here that can make a plaque for you if you buy my brick.'

"Lots of Brick to Lay": *Peter Voulkos (left) and Branson Stevenson at work with Western Clay brick and tile in 1951. The pottery's original downdraft kiln, which the two men are constructing above, was based on a design by Archie Bray himself. Source: Archie Bray Foundation Archives*

Archie, himself, was a gold mine of information. He knew how to do all that old terra cotta stuff. I learned a lot from Archie. He knew about molds; he knew how to press stuff... By the time I got to the University [of Montana] five years later, I had a good command of materials, a lot of which came from the industry, brickmaking..." [1998]

Branson Stevenson on Voulkos, the "Fireman"

"You know, Pete used to climb up on those beehive kilns to watch the brick so he could turn it off in time for Archie [Sr.]... Pete used to do what I wouldn't do for love or money: he'd go up (you know, there's a hole there at the top of the beehive), he'd go and look down in there and see if everything was firing all right. If one of those bricks had given away, he'd a been... [Branson trails off] Guess it's pretty substantially held together, but I wouldn't want to do it." [1978]

Ken Ferguson on the brickyard and its potential

"[I] did a lot of work for Archie [Jr.] in the brickyard, did a lot of clay testing, and got along with him... I took an interest in the brickyard. I'd never been around one, and I learned a lot of interesting things about making bricks—all the problems with the clay.

It would be nice to make a museum or something out of one of those beehive kilns—have some old pots in there or something." [1979]

Excerpts taken from the Oral History of the Archie Bray Foundation
Interviewers: Martin Holt, Rick Newby, Chere Jiusto

Review - 2011

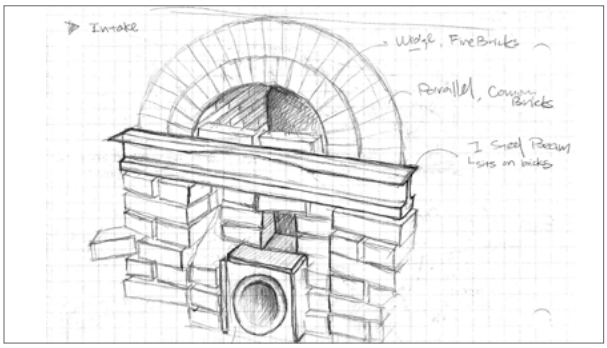


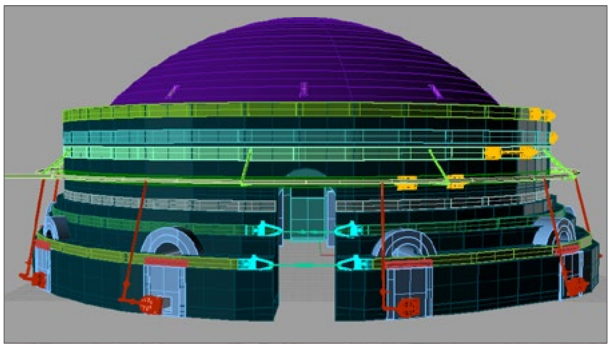
Left to right: Ting Ting Weng records iron remnants of Kiln No. 7's gas burners; a laser scanner positioned inside Kiln No. 7; and photographer Joseph Elliott at work, capturing the interior of Kiln No. 8 through its cooling vent. Source: ACL files

July 2011 marked the ACL's first excursion to the site of Western Clay. The team—which included Frank Matero, John Hinchman, and Joe Torres of the ACL; Penn preservation graduate students Sharon Reid and Ting Ting Weng; and professional photographer Joseph Elliott—was concerned mostly with the recording and documentation of the five surviving beehive kilns and sheds. Their efforts yielded:

- A full set of architectural drawings for Kiln No. 7, the immediate kiln complex, and the historic plant, culled from hand-written field notes and a three-dimensional model of Kiln No. 7. This model was extrapolated from a laser scan of the structure (*see below*).
- A photographic study of the Western Clay complex and modern Bray campus.
- The establishment of a web presence for the Western Clay via www.conlab.org.
- Extensive archival research, presented in the form of Sharon Reid's thesis on the history of the Western Clay Manufacturing Company. (*See pg. 14 for more details.*)

Aside from generating a record of the kiln complex for posterity, this body of work enabled the ACL to proceed with more detailed analysis of kiln condition and deterioration.





Generation Gap: *Recording efforts at Western Clay have spanned the traditional (e.g., Ting Ting Weng's hand drawings, left) and the high-tech (e.g., Joe Torres' three-dimensional model of Kiln No. 7). Source: ACL files*

Review - 2012



Left to right: Frank Matero (left), Brett Sturm (bottom left), and Christopher Taleff (bottom center) review plans for a conditions survey of the kiln sheds; Jessica Focht maps repairs on the interior of Kiln No. 7; Ron Anthony tests the moisture content of a wooden post. Source: ACL files

The summer of 2012 was one of increased activity at the brickyard, as Western Clay played host to Penn's graduate program in historic preservation and its inaugural "Heritage Conservation Praxis" field course. Accompanying Matero, Torres, and Meredith Keller of the ACL were, this year, eight graduate students and a team of visiting professionals:

Kelly Dixon and ***Jeff MacDonald*** of the Univ. of Montana (applied anthropology and historical archaeology)

Robert Valach of John Valach & Son, Lewistown, MT (third-generation brick mason)

Ron Anthony of Anthony & Associates, Fort Collins, CO (wood science)

John Fidler of John Fidler Preservation Technology, Marina del Rey, CA (architectural ceramics conservation)

Jim McDonald of A&E Architects, Missoula, MT (preservation design)

After the four-week program of lectures, demonstrations, and coordinated fieldwork, the students had accomplished:

- The complete removal of debris on and around Kiln No. 7, including a catalog of recovered artifacts.
- A full conditions survey for both Kiln No. 7 (exterior) and the kiln sheds.
- The pilot stabilization of a portion of Kiln No. 7.
- An investigation of kiln design and prospects for reuse, presented in the form of Brett Sturm's thesis on Western Clay's five surviving beehives. (*See next page.*)

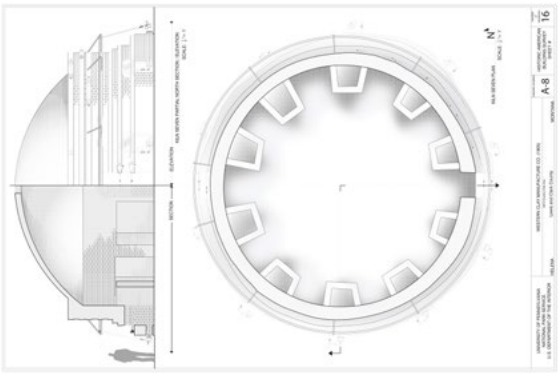

Summer Progress: *Images of the northeastern portion of Kiln No. 7, before (above) and after (below) its initial stabilization in early July 2012.*

Reports & Theses

2011-12

■ ***The Project Portfolio*** - An anthology of information collected on Western Clay in the first full year of ACL involvement. Includes notes on site history and project methodology, photographic documentation, and architectural drawings.

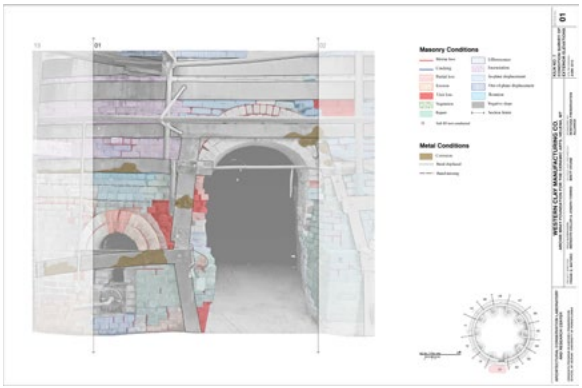
■ ***Sharon's Thesis*** - The most complete history, to date, of the Western Clay Manufacturing Company. Also features a building-by-building survey, which charts condition and integrity across the entire historical campus.



2012-13

■ ***Conservation Praxis Field Report*** - A summation of the conditions analysis and treatment work conducted during 2012's summer praxis course. Includes a revised drawing set and Christoper Taleff's design concept for the roof of Kiln No. 7.

■ ***Brett's Thesis*** - At once a history of brick-firing technology and a study of Kiln No. 7 in particular, this paper includes a fully digitized conditions survey of the kiln and suggests options for its treatment and interpretation.



2013-

■ ***Heritage Conservation Praxis 2011-13***

■ ***Indianapolis Panel Discussion*** - In late October 2013, the Western Clay project team (Patty of the MPA, and Frank and Brett of the ACL) will join Ken Lustbader of the J. M. Kaplan Fund to present before the annual conference of the National Trust for Historic Preservation. The talk will afford Western Clay, and industrial sites like it, a wonderful opportunity to attract additional attention before preservation professionals from around the country.

Current

The Bibs: *Student work clothes adorn the vestibule of the Mountain Meadow Inn, close to the Western Clay site in west Helena. Photo: J. Elliott*

With the bulk of the recording, documentation, and conditions analysis work complete, the second annual "Heritage Conservation Praxis" began at the Bray in mid-July 2013 with all hands fixed on Kiln No. 7. The goal of the course was to continue, to the furthest extent possible, the process begun in 2012's pilot restoration: the students would attempt to stabilize the kiln along the remainder of its exterior circumference.

Such a task entailed familiarity with several masonry conservation techniques, and to help bring the students up to speed, conservator John Fidler traveled once again to the Bray to lecture on the treatment of historic brick and terra cotta. Also present to assist with brickwork was PennDesign's Lindsay Falck, an architect, professor, and veteran builder from Kimberley, South Africa.

In its second year, the Western Clay praxis course grew dramatically, both in the number of students present—up from eight in 2012 to fifteen in 2013—and in its geographic scope. The Penn contingency was truly international, combining students from Italy, Spain, Argentina, India, and China, with instructors from four continents.

Indeed, joining Matero (a Brooklynite), Fidler (a Briton), and Falck on the faculty end were Paul Mardikian of France and Claudia Chemello of Australia—two conservators specializing in metals. Mardikian and Chemello, each with years of experience conserving sculpture, archaeological artifacts, and large industrial objects, led the students in the examination and initial treatment of the steel bands which jacket Kiln No. 7. For the first time in the project's history, the material state of these functional metal elements was assessed in depth.

Masonry Stabilization

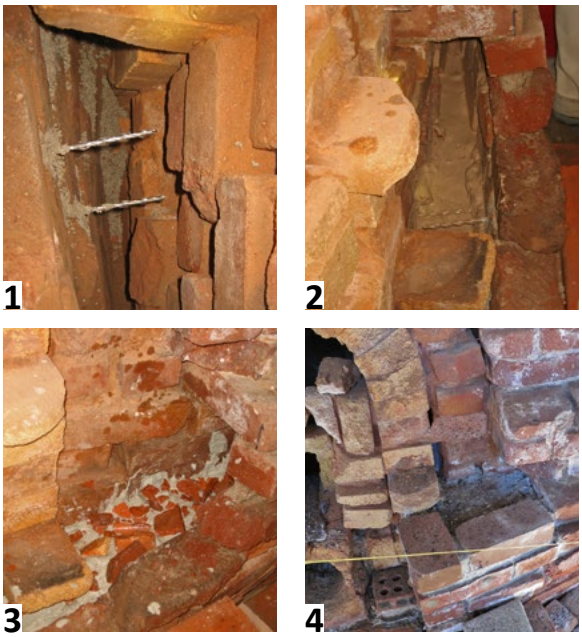
Masonry treatments at Kiln No. 7 proceeded in the following stages:

- ***Desalination*** - Students applied a paper poultice to the kiln's exterior, utilizing capillary action to draw destructive chloride salts—the byproduct of decades of salt glazing—out of the brickwork.

- ***Repointing*** - Using a relatively weak mortar (one part St. Astier NHL 3.5 [moderately hydraulic lime] to three parts local sand) students repaired open joints across the kiln exterior, filling the gaps through which the kiln's clay binder had previously escaped.

- ***Grouting*** - Students reestablished lateral stability within the kiln walls, filling voids with brick fragments and a lime-based grout mixture (*see below*). Where applicable, wall sections were relaid using brick of matching type and bond.

In the Zone: *Student Matt Morgan focuses on repointing mortar joints along the southwestern face of Kiln No. 7. Photo: N. Iyer*



Matero leads the students (left) in a grouting demonstration seen step-by-step above. The void in the masonry is cleaned and prepared with stainless steel helical screws for added post-set strength (1). The grout is introduced—a composition of equal parts NHL 3.5 and sand mixed in a one-to-five part ratio (by volume) of SikaLatex acrylic fortifier and water (2). Brick fragments help fill the void (3), leaving a solid mass within a day's time (4).

Metals Conservation

Heavy Metal: *Layers of packing corrosion had built up between the kiln's steel bands and chloride-ridden brick walls, exerting a massive tensile force on whatever sound metal remained. Photo: K. Wohlgemuth*

Treatments on the kiln's steel bands proceeded in the following stages:

- ***Corrosion Removal*** - Using hammer and chisel, students removed layers of mineralized iron which had accumulated beneath many of the bands. This expansive "packing corrosion" was evident wherever the metal made direct contact with the kiln's saline masonry surface.

- ***Surface Cleaning*** - Students wire-brushed the bands and then washed them using an aqueous solution of FlashCorr VpCl, a proprietary desalinating agent and corrosion inhibitor.

- ***Initial Surface Treatment*** - Working with Claudia Chemello, students prepared mock-up treatments on heavily corroded scrap bands found around Kiln Nos. 7 and 8. These bands were treated with a passivating solution of tannic acid and Owatrol marine oil, and will be left to weather in the kiln complex for a full year before further assessment.

Paul Mardikian assisted with the arduous clean-up of corroded steel (bottom left and right). Chemello, meanwhile, prepared test treatments on bands retrieved from the other kilns (above).

Rethinking the Roof

Another major conservation concern in 2013 was the infiltration of the kiln's masonry core by water and vegetation via its exposed roof. A system was therefore devised by architect Jim McDonald—working in consultation with local contractor George Baker, Chip Clawson, and the Penn team—to waterproof a section of the parapet using a water-impervious membrane and swale to contain moisture.


1


4


2


5

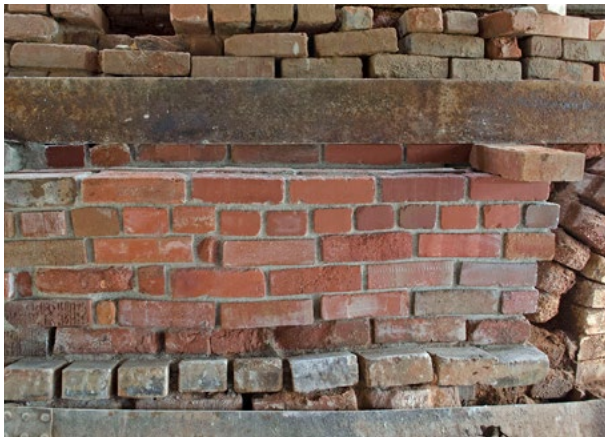

3


6

To prepare the kiln roof for such a detail, a substantial layer of plant growth and topsoil was removed (1 and 2), revealing an irregular and partially deteriorated top course of brickwork (3). The parapet was then disassembled three courses deep (4), until most of the roots and disintegrated brick (5) had been removed. Finally, the parapet was rebuilt with sound brick—the outer wythe relaid in a Type N mortar consisting of one part Portland cement, one part hydrated lime, and six parts local sand (6). The remainder of the brick was dry laid. This roof section is now poised to receive a layer of EPDM rubber membrane, sand, dry-laid brick, and lead flashing before the onset of winter in late 2013. Photos: B. Sturm

Before

After



The partially collapsed, second tier of masonry on Kiln No. 7's southeastern face was rebuilt by Sarah Cole and Johanna Sztokman, who took care to maintain the brickwork's original bonding pattern.

A large void on the northwestern face of Kiln No. 7 was grouted, pinned, and partially rebuilt by Kevin Wohlgemuth and Lindsay Bates.

The southwestern face of Kiln No. 7 was proudly repointed by Naima Sweeting (pictured left) and Nityaa Iyer (right).

Case Studies

Medicine Hat Clay Industries National Historic District
Alberta, Canada

Helena and its northern neighbor of Medicine Hat are, in matters of clay, kindred spirits. Western Clay was shuttered in 1960 by Medicine Hat Brick and Tile (later I-XL Industries), which closed, itself, in just 2010. It was a visit to the Bray's defunct brickyard, however, that inspired Jim Marshall and Jack Forbes to found in 1974 the Friends of Medalta Society, a non-profit group which has since led the stunning transformation of the Medalta Potteries into an interactive pottery museum and arts center.

Although Medalta has benefitted from substancial federal funding as part of the larger Medicine Hat Clay Industries National Historic Site, the decisions made there—at least in terms of private fundraising and the repurposing of existing structures to fit new programs—could be explored through the long-standing personal and artistic connections between Medalta and the Bray.

Role Model: *At Medalta, historic downdraft kilns now double as galleries, while former production spaces house exhibits on the history of Canada's pottery industry. Photos: www.medalta.org*

Ziegeleipark ("Brickyard Park") Mildenberg Brandenburg, Germany

"Ziegel für alle": *Preservation at the Ziegeleipark has transformed a defunct industrial landscape into a place for learning and outdoor recreation. Photos: www.ziegeleipark.de*

Rougly thirty miles north of Berlin, in the federal state of Brandenburg, the "Brickyard Park" of Mildenberg, Germany, is conservation on a spectacular, landscape scale. The park has preserved and interpreted not just one or two isolated elements of an industrial campus, but rather the traces of every aspect of brick manufacture—from kilns and production buildings down to the narrow-gauge rail and waterways once used to transport raw and finished materials.

Like Medalta, the Ziegeleipark was also a beneficiary of public subsidy—in this case, enormous revitalization funds following German reunification in 1990. Nonetheless, the creative, edifying ways with which conservators and historians at the Ziegeleipark present heavy clay manufacturing—animating the brickmaking process for adults and children, alike—is certainly worth emulation.

Next Steps

If the Bray's brickyard is to join the ranks of Medalta and Mildenberg, two paragons in the world of clay-related site preservation, much work obviously remains to be done. Although great strides have been made in the pilot stabilization of Kiln No. 7 and the study of the overall kiln complex, it is important that a long-term strategy now be formulated that will guide the Bray beyond the kilns and toward the integrated preservation and reuse of the entire industrial campus.

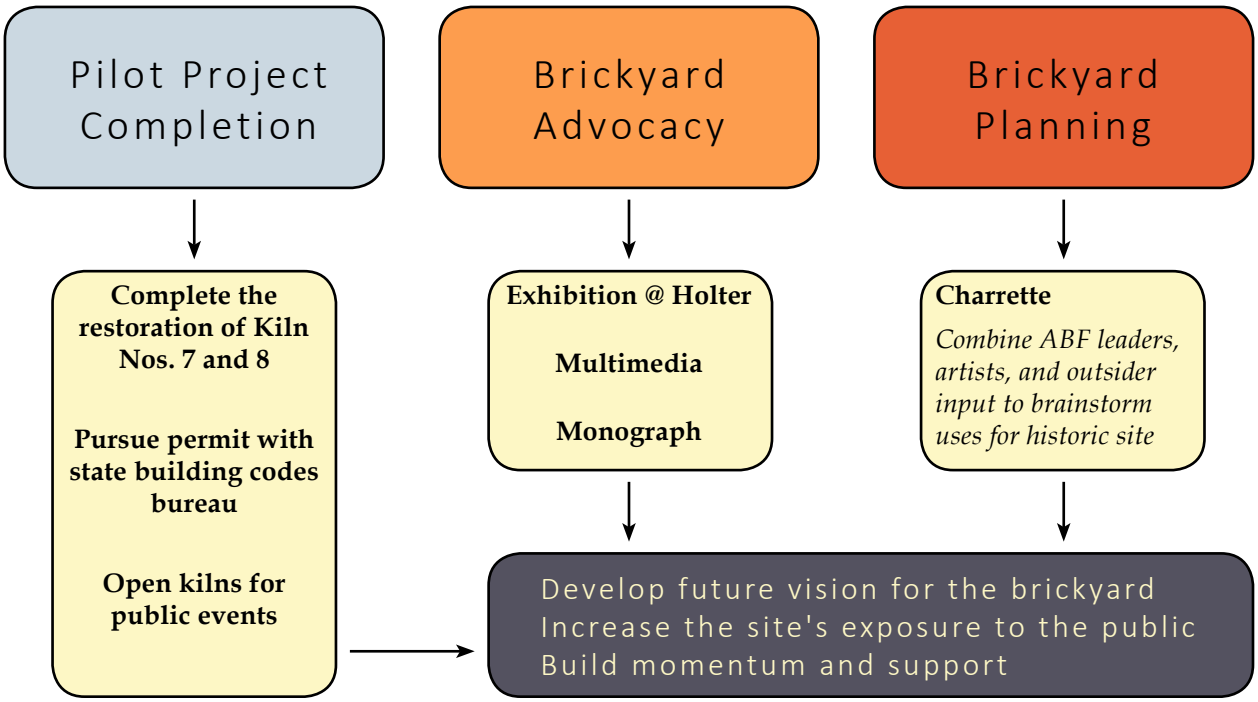
To that end, the following recommendations will prove useful to the Bray in envisioning—and hopefully executing—the conservation, interpretation, and reuse of its irreplaceable historic resources.

Taken as a whole, the Western Clay site overwhelms. Indeed, the scale of the buildings, their ongoing deterioration, and the time and funds required to render them suitable for new programs are, together, enough to elicit shrugs and evasive glances. Perhaps it's best, then, to approach a solution to this "albratross" in three steps: ***action***, ***advocacy***, and ***planning***.

In this case, action applies to the work in progress—namely, the conservation of masonry, metal, and roof/shed assemblies at Kiln Nos. 7 and 8. Action must be taken to ensure that this project, already three years in the making, is completed without delay. A small, focused team of Penn interns and local volunteers could conceivably finalize work on Kiln No. 7 in one more summer campaign. This would entail repointing the upper reaches of exterior masonry, grouting and filling remaining voids in the brickwork, implementing treatments on the metal bands, and waterproofing the exposed roof parapet. Ideally, the Bray could then pursue permits with the state building codes bureau and open the space for public events.

Staying on Task: *Shuyi Yin and Benjamin Doubledee wash metal components on Kiln No. 7 with a desalinating agent. The continuation of conservation work at Western Clay will depend on the development of a vision for the future utilization of the site. Photo: J. Elliott*

Three Steps to Preserving Western Clay



Well-publicized gatherings at Kiln Nos. 7 and 8 would attract positive attention, excitement, and, potentially, new sources of support to the Bray's historic campus. Such events would pair nicely with several other possibilities for advocating preservation at Western Clay.

In June 2014, for example, photographer Joseph Elliott will mount an exhibition at the Holter Museum of Art in downtown Helena that is, in essence, the illustrated biography of Bray brick. His images document the brickyard, the clay pits in Blossburg, and buildings from around the state of Montana made from Western Clay products. The Bray should seize the opportunity to promote and enhance Elliott's exhibition with contributions of its own, such as additional artifacts from the brickyard or an early pot fired in the beehive kilns. Multimedia options such as a documentary film and a published monograph, meanwhile, would persist beyond Elliott's exhibition, helping to promote the importance and continued relevance of preservation work at the Bray into the future.

Of course, all advocacy—and all the attention and support accompanying it—is meaningless without an underlying vision for what the brickyard could ultimately become. Planning, therefore, is the most crucial next step in continuing the preservation process at Western Clay.

The Bray should pursue a master plan for its historic site—a document delineating what is to be preserved, to what extent, and for what purpose. Planning might best begin with a design charrette, a process with which the Bray is no doubt familiar. In the case of Western Clay—a project which will need to rely on grants and private donations—building consensus and support is vitally important. The Bray needs, therefore, to establish a guiding vision for the preservation and reuse of its brickyard. This vision will require clear objectives, shared goals, and a practical method for implementation.

Conclusions

Future Horizons: *The need for preservation planning at Western Clay is real and immediate, but such planning must be initiated by the Bray, the organization ultimately responsible for stewardship of the historic brickyard. Photo: B. Sturm*

Three years of collaboration at Western Clay have yielded positive results. The drawings, the photographs, the pages of history written on Archie Bray's business and its buildings—these products have expanded what we know about brickmaking in the American West and about the genesis of the Archie Bray Foundation in the 1950s. Meanwhile, the debris cleared from the brickyard, the measures taken to strengthen the kiln sheds, and the repairs made to the kilns' masonry and metal straps are steps which will prolong the lifespan of the brickyard's physical fabric for years to come.

As equally exciting as these tangible signs of progress, however, are the intangible results—the partnerships forged and the ideas hatched—that have accompanied the preservation of Western Clay thus far. It is no exaggeration to state that members from each of the partners involved—the MPA, the ACL, and the ABF—seem more invigorated than ever by the notion that something could still be made of the brickyard. Analysis has proven much of the site to be salvagable, and repairs already made to Kiln No. 7 have performed well. Furthermore, all parties seem to agree that something *should* be made of the facility. Few dispute the significance of the Western Clay site, not only as a near-obsolete artifact of American industry, but as the proving ground for early Bray artists and, thus, a fulcrum point in the development of 20th-century ceramic art.

So, at the conclusion of three years together, the MPA, ACL, and ABF seem to have found answers to the "If" and "Why" questions surrounding the conservation and potential reuse of Western Clay. The principal questions remaining might now have more to do with "Who," "How," and "When." What actor will take charge of planning, promoting, and executing the continued preservation of the brickyard? What will preservation of the site actually entail? Will the brickyard be stabilized and enshrined as a ruin, or will it undergo more dramatic alteration

A Lasting Influence: *After sixty-plus years of activity, the brickyard, whose kilns fired the early work of Peter Voulkos (left), might still have something to contribute. The work of 2013 summer resident Mike Gesiakowski (right) obviously bears the marks of an industrial aesthetic. Photos: B. Sturm*

as part of an adaptive reuse scenario? When might the Bray be prepared to oversee or delegate such an effort? How much time can the brickyard afford to wait?

This report has put forth raw material for the discussion of these questions. It has summarized Western Clay's history, importance, and initial conservation, and has argued for focused decision-making regarding the site's future. This effort has been made in the hope that preservation will continue at the brickyard, beyond the duration and scope of the current partners' involvement.

The problems facing Western Clay, aside from those posed by time and weather, are complex. Funding is of perpetual concern, and any future work at the Bray will not enjoy the public support seen in Canadian and European examples. Nonetheless, the Archie Bray Foundation—staffed as it is by people who spend their lives solving problems in clay—has the creative capital to achieve something extraordinary at its brickyard. This report offers modest suggestions for how the future conservation of the Bray's historic resources could potentially proceed, but ultimately, the stewardship of those resources falls to the organization itself.

Indeed, be it through action or inaction, the Bray alone will determine the fate of its historic campus. Should it choose to act—to protect, interpret, and reuse the facility from which it evolved over sixty years ago—the Bray will go one step further in affirming its founder's mandate. After all, in ceramics—a pursuit centered around the inheritance, reworking, and reimagining of past traditions—a truly "fine place to work" is one that values the historic environment for what it is: a mark of identity, a source of inspiration, and a touchstone for future expression.

Suggestions for further reading:

Newby, Rick, and Chere Jiusto. "'A Beautiful Spirit': Origins of the Archie Bray Foundation for the Ceramic Arts." In A Ceramic Continuum: Fifty Years of the Archie Bray Influence, edited by Peter Held. Seattle: University of Washington Press, 2001, 17-40.

Quivik, Frederic L. The Western Clay Manufacturing Company: An Historical Analysis of the Plant and Its Development. Architectural and historical survey completed under contract to the Archie Bray Foundation, Helena, MT: 1985.

Reid, Sharon. (In)Forming and Pressing Matters: Laying the Foundations for the Preservation and Interpretation of the Western Clay Manufacturing Company. Master's Thesis in Historic Preservation, Univ. of Pennsylvania, 2012.

Rowe, J. P. "The Western Clay Manufacturing Co., Helena, Mont." Brick 26, no. 3 (1907): 173-5.

Sturm, Brett. A Program for the Conservation, Interpretation, and Reuse of Downdraft Kilns at the Western Clay Manufacturing Company of Helena, Montana. Master's Thesis in Historic Preservation, Univ. of Pennsylvania, 2013.

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Archie Bray, Sr., as imagined by Chuck Aydlett. Photo: B. Sturm