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EXCAVATION AND STRATIGRAPHIC ANALYSIS OF A LATE NINETEENTH CENTURY BOILER HOUSE

A Thesis Submitted

in Partial Fulfillment

of the Requirements for the Designation

University Honors

Ariel Marie Williams

University of Northern Iowa

May 2014

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This project would not have been as swift or successful as it was without the assistance of several individuals. First, I would like to extend my gratitude to Konrad Sadkowski, associate professor at the University of Northern Iowa and landowner of the site, for letting us excavate on his property and for providing useful information on the history of the site. Many thanks are also in order for fellow university students Jacque Dinnes and Laura Brinkema, for their help with the excavation, and junior high student Henry Gaff for his assistance in the excavation of Unit Two. Lastly, I would like to thank Dr. Donald Gaff, my thesis advisor, for his excellent advice and presence through all phases of the project.

INTRODUCTION

Archaeology, in the broadest of terms, is the study of the material remains of past human life and activity. While it is considered a member of the broader field of anthropology, archaeology also comes with its own sub-disciplines, including, but not limited to, prehistoric, historic, and maritime archaeology. Historical archaeology, which is the focus of the following research, typically examines the material remains of societies for which there is some sort of written record to help contextualize the evidence; however, not every old building is considered archaeological. Section IV of the National Register bulletin "Guidelines for Evaluating and Registering Archaeological Properties", begins with a general list of criteria for properties to be considered for the National Register. Though there are particular nuances in evaluating potential entries, the essential criteria are as follows:

> The quality of significance in American history, architecture, archeology, engineering and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:
>
> A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
> B. that are associated with the lives of persons significant in our past; or
> C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> D. that have yielded, or may be likely to yield, information important in prehistory or history.
>
> (Little et al. 2000: 19)

Only one of the above criteria need be met, though certain properties may meet more, if not all. In Section I of the same bulletin, it is stated that for the purposes of the National Register, archaeological properties are at least 50 years old. Archaeological properties less than 50 years old can be considered for the National Register if the "exceptional importance" of the remains can be demonstrated (2000: 9). The property being excavated and analyzed for this project is not

currently in the process of being nominated for the national register; the goal is not to assess the site for significance so that it may be included on this list.

An archaeological excavation was carried out in November of 2013 on the block of 13th and Tremont Streets in the city of Cedar Falls, Blackhawk County, Iowa. The site examined was home to a late nineteenth century boiler house that powered several greenhouses on the property. Greenhouses occupy a distinctive industrial niche and have rarely been studied using an archaeological approach. The goals in excavating at the boiler house site were to determine what formation processes led to the creation of the stratigraphy as initially observed by the property owner, and what the layers and artifacts recovered from them tell us about the site's history of use. Schiffer (1987) distinguishes between two kinds of formation processes: cultural and non-cultural. In cultural transformation processes, human behavior causes modification of the archaeological record, while non-cultural transformation processes are "any and all events and processes of the natural environment that impinge upon artifacts and archaeological deposits (1987: 7)." It is hoped that through a detailed stratigraphic analysis of the boiler house site, an understanding can be gained of both of these formation processes at work. An excavation such as that described henceforth is thus important, not only in widening understanding of the industrial history of Cedar Falls, but in contributing unique discoveries to the burgeoning field and existing scientific literature of historical archaeology.

BACKGROUND

Before beginning any sort of excavation, it was imperative to learn as much as possible about the history of the site from written records, as well as the overall industrial history of Cedar Falls. Having such historical records will help contextualize the material evidence so that an accurate chronology of events can be constructed. According to John C. Hartman (1915),

Blackhawk County was first established in 1843, after the land had been forcefully removed from native Sauk and Fox peoples. The first permanent white settlement in the county was Cedar Falls, founded by William Sturgis and his brother-in-law Erasmus D. Adams in 1845. Water power from the Cedar River contributed greatly to early development of the city, for it made industry and manufacturing possible. The milling industry was the first in Cedar Falls, and the very first mill was built by original settler William Sturgis on the north bank of the Cedar River. His business and other start-up industries encouraged laborers to come to the city, fostering growth. By the early 1900's, the principle manufactures had come to include flour, cereals, house furnishings, agricultural implements, school supplies, garments, brooms, lumber and creamery products (Hartman 1915: 273 - 276).

These early industries were largely powered by water and steam from the river; in times of water scarcity, the mills and manufacturing plants would be powered by brick boiler and engine houses attached to the main building. A boiler house is usually a one-story brick structure that contains a furnace used for heating or power-generation, with a main fuel source consisting of wood, coal, or oil. On the same property of the site investigated, there currently stands such a boiler house (Figure 1), with attached smokestack, though it is much more recent than any of the s being excavated. The area excavated is thought to have contained an earlier and smaller, but similar, structure that was used to power various greenhouses on the block.

Figure 1. Boiler house and smokestack on 13th Street, Cedar Falls, IA.

In 1875, S.A. Bishop and Joseph Bancroft organized a nursery business and in 1880, built a small greenhouse on the corner of 12th and Tremont Street. The *Semi-Weekly Cedar Falls Gazette* reported in 1876 that Bishop had sold the greenhouse to Bancroft and was to devote his time solely to the nursery. The nursery was eventually closed in 1890 and after Joseph Bancroft passed in 1893, the greenhouse was extended and continued under the name Bancroft & Son (Figure 2). By this point in time, high quality cut flowers were being produced and advertised in catalogues for customers to order from. In 1895, the *Cedar Falls Gazette* reported that Bancroft & Son arranged to put in a frost proof vault for the preservation of these cut bulbs and flowers.

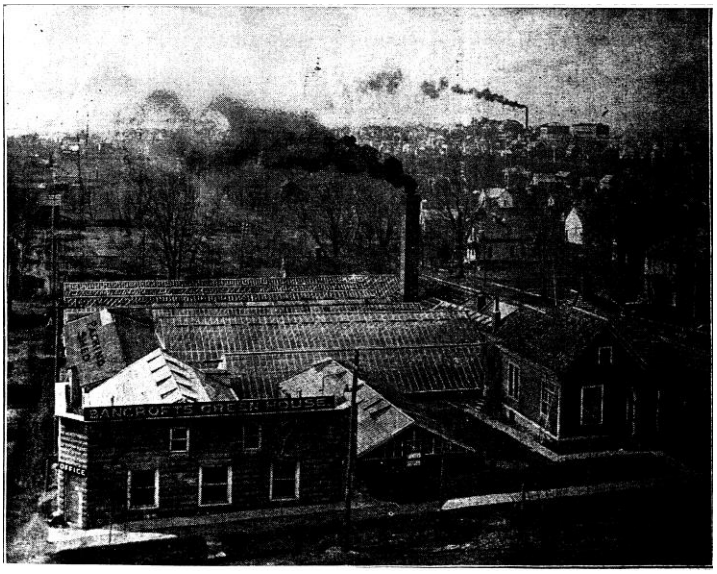


Figure 2. Photograph of Bancroft's Greenhouse, taken for an unknown local newspaper (1907). Image courtesy of Phillip Batalden (current owner of Bancroft's Flowers) and Konrad Sadkowski.

By 1898, Bancroft & Son apparently operated six greenhouses, one 23' by 80', one 20' by 80', one 30' by 40', and three with the same dimensions of 12' by 70'; all were filled with a variety of plant species. These greenhouses were powered by a Phelps hot water boiler that presumably was contained within a boiler room with attached smokestack. Later in 1898, the

Cedar Falls Gazette reported that during an afternoon rain shower, a bolt of lightning struck one of the smokestacks, cracking it all the way down and damaging the hot water boiler that had been in place. The bolt even passed through a doorway and tore off a chicken's feathers! In 1899, the company built a new greenhouse 90 feet long, with double tables for the housing of carnations. In 1904, *The American Florist*, a weekly trade journal, reported that Bancroft & Son were building two new greenhouses and rebuilding an old one. They also completed a new 40' by 40' stone boiler room, and the foundation for two new 45-horsepower boilers. It was in this year that the Phelps hot water boilers were converted to steam.

The Globe newspaper of Cedar Falls came out with an article in 1908, stating that Bancroft & Son were building yet another greenhouse to be used strictly for roses. This greenhouse was to be 33' by 132', with a framework of steel tubing. At the site, concrete footings were discovered with the broken ends of pipes sticking out of them (though they were not a part of the excavation) – these footings could potentially belonged to this particular greenhouse. According to *The Cedar Falls Record*, by December 3, 1914, Bancroft & Son operated two large plants on Tremont between 12th and 13th Streets, which contained approximately 55 thousand feet of glass, and two 45 and 55-HP high pressure boilers. The primary greenhouse owned by the company had the distinction of being the largest greenhouse in Iowa. Though in possession of only a few greenhouses today, there still exists a floral and greenhouse business called Bancroft's Flowers on 12th Street in Cedar Falls, along with Joseph Bancroft's original home.

METHODOLOGY

Upon visiting the site, the first task was to simply scout the area to obtain a sense of the sorts of artifacts one might expect to find once excavation began. The presence of piles of soil,

brick, and concrete, along with the foundational structures of the buildings themselves limited where excavation would be practical and possible. Along the northern wall of the surmised boiler house foundation existed what can be best described as a soil shelf, approximately one meter above the rest of the property, around which the surrounding earth had been dug away. It was along the southern edge of this "platform" that the bulk of the excavation was carried out, with the creation of a profile wall of the soils. A second, less deep profile wall was also excavated as a means of comparison; the locations of each can be seen in the map below (Figure 3). From this point onward, the unit along the edge of the soil platform will be referred to as Unit One, and the shallower excavation will be referred to as Unit Two.

Maps are a critical component of documenting archaeological sites. They are the records that remain if the site does not and can be significant to later researchers who wish to explore it further. Minimal research has been carried out on this historic location thus far, so coordinates were recorded to construct a simple map of the site. It should be noted that this map does not represent the entire property as owned by Bancroft and Son, only the area in which excavation was carried out.

Using an electronic transit (or total station), the user can determine the coordinates of an unknown point relative to known coordinates, provided there is a direct line of sight between the two points, and the transit is set up over the known point. The transit will then measure the distance and coordinates of the unknown point relative to the known point. An arbitrary site datum of N0 E0 was established at the southwest corner of the site, and all further coordinates were measured relative to that known point. The resulting coordinates were entered into the software program Surfer 9, and a map of the site was generated and enhanced in Adobe Illustrator. Included in the map is the location of both excavation units, part of what was

presumably the original boiler house foundation, part of a concrete wall along the western edge of the boiler house foundation, a portion of the site previously excavated by the property owner, and a concrete slab in the center. Based on an examination of maps of the area from the early 1900's, the concrete slab, which contains two identically shaped rectangular holes, may have been the location of two boilers, which were later removed (Figure 4).

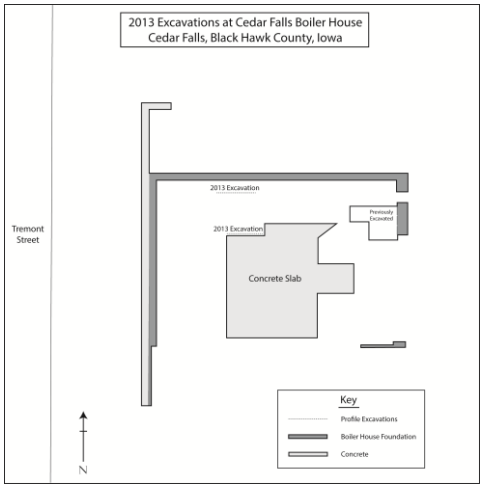
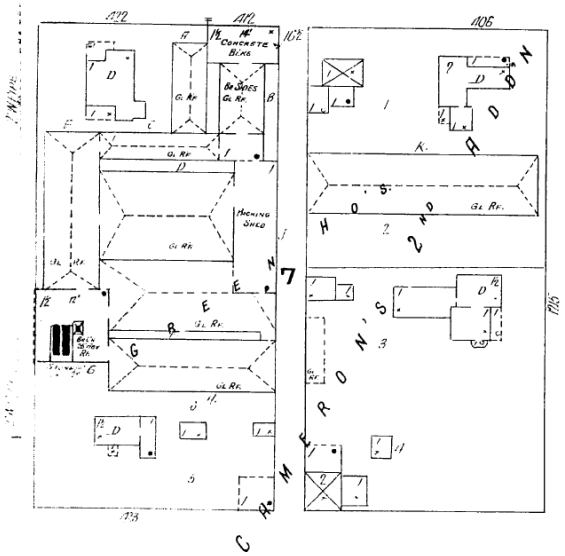


Figure 3. Map of the excavations at Cedar Falls boiler house, Tremont Street, Cedar Falls, IA.
Figure 4. Sanborn Insurance Company map of 13th and Tremont, Cedar Falls, IA (1909).



Because of the nature of the project, it was determined that the best course of action would be to cut into existing exposed profiles to clean them and collect artifacts; each profile

was measured to a length of exactly two meters, and the soil was removed. The soil was removed from both units by natural layers and sifted through a ¼" mesh screen. Troweling persisted until what was presumably sandy subsoil had been reached. Unit One reached subsoil at a depth of about 80 centimeters below the surface, while Unit Two reached subsoil as shallow as 20 centimeters down; however, Unit Two also began at a much lower initial elevation than Unit One. After this initial removal of sediment, the soil from each layer was assessed for texture and color, and a final clean-scrape further evened out the profiles for photographs. Scaled profile drawings were then made by hand and imported into Adobe Illustrator for refining. The final task was to clean, count, and catalog each artifact. Glass and pottery were rinsed as thoroughly as possible, while bits of metal, wood, brick, and other materials were brushed off. Every piece was counted and groups of the same material were weighed collectively for each layer.

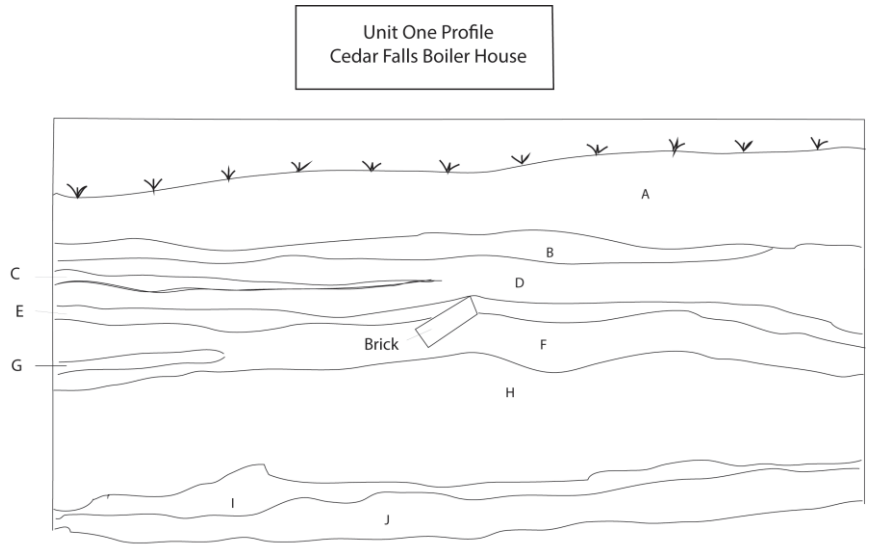
RESULTS

Stratigraphy

As stated previously, profiles were created for each of the two units (Figure 5). The colors were determined using a Munsell soil color chart and texture was determined with the thumb test, in which one attempts to create a ribbon by pinching a clump of soil between the thumb and index finger. Soil colors in Unit One ranged from 10 YR 4/4 (dark yellowish brown) to 10 YR 2/2 (very dark brown) and texturally, the soils were a combination of sand and sandy loams. Significantly, layer J of Unit One and layer D of Unit Two were much lighter than any of the soil layers above the debris. Presumably, these two layers represent naturally occurring

subsoil, which is typically sand, and both were found to be sterile (containing no artifacts). Layers A through G likely represent discrete filling episodes.

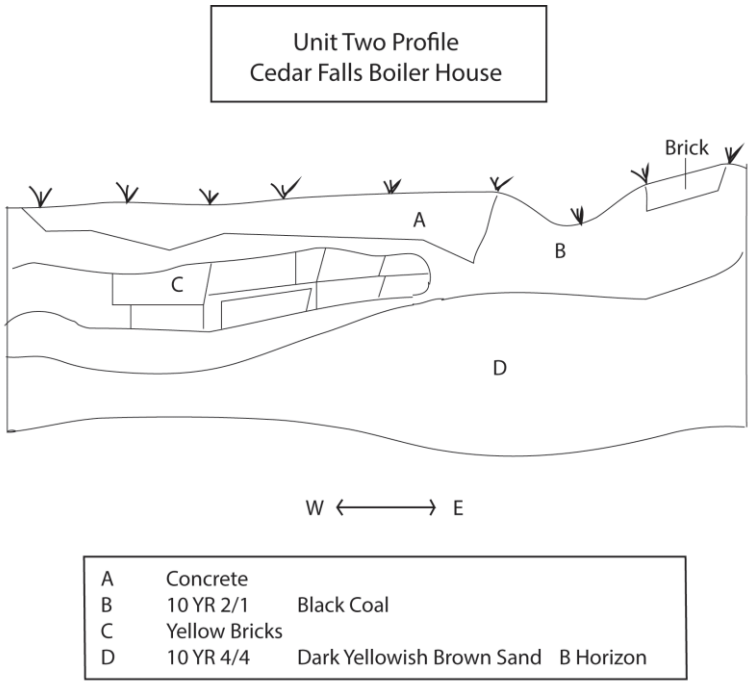
(A)



A	10 YR 3/1	Very Dark Gray Sandy Clay Loam	General Fill, Large Areas of Orangish Mottling
B	10 YR 3/3	Dark Brown Sand	Fill, Sandy, With Small Pebbles Throughout
C	10 YR 3/2	Very Dark Grayish Brown Sand	Very Thin Lens, Lighter Than Surrounding Layers
D	10 YR 2/2	Very Dark Brown Sand	Fill, Much Like Layer B, but Without Pebbles
E	10 YR 2/1	Black Coal	Unburned
F	10 YR 2/2	Very Dark Brown Sandy Loam	Fill
G	10 YR 3/3	Dark Brown Sand	Very Light Relative to Layer F
H	10 YR 5/2	Grayish Brown Sand	Rubble Layer Containing Bricks and Limestone, Layer of Glass Directly in Top
I	10 YR 2/1	Black Coal	Unburned
J	10 YR 4/4	Dark Yellowish Brown Sand	B Horizon, Subsoil

(B)

(C)



(D)

Figure 5. Profiles of boiler house excavation units. (A) Photograph of profile for Unit 1. (B) Scaled profile map of Unit 1. (C) Photograph of profile for Unit 2. (D) Scaled profile map of Unit 2. Photos courtesy of Donald Gaff.

Artifacts

The two excavation units, for the most part, yielded artifacts not unusual to historical archaeology, including glass, brick, and rusted metal (Table 1). In terms of abundance, more artifacts were recovered in the layers above coal layer E than those below it. Only one artifact was recovered from Unit Two, a portion of the upper neck of a glass bottle. In no way is it possible to recover every existing artifact at a site, and this project was no exception; the artifacts recovered are at best only a partial representation of human activity and the interpretations gained from this small sample could be substantially altered with further exploration.

Table 1. Artifact Inventory by Layer

Layer	Artifact Type	Count	Weight (g)
General Fill (A)			
	Rusted Metal	1	2.0
	Terracotta Pottery	3	9.0
	Glass	5	17.5
	Coal	1	35.5
	Tiny Glass Arm (<1cm)	1	0.3
	Broken milk bottle cap liner	1	6.5
	Roof tile (?)	2	1.1
Pebbly/Sandy Layer (B)			
	Rusted Metal	11	41.3
	Terracotta Pottery	11	17.0
	Glass	2	2.5
	Wood	9	0.9
	Unknown ivory colored material	1	0.9
Above Coal Layer 1 (D)			
	Rusted Metal	33	111.2
	Terracotta Pottery	10	18.3
	Glass	37	59.7
	Wood	49	6.4
	Coal	6	1.6
	Slag	3	28.8
	Aluminum foil	2	0.0
	Roof tile (?)	4	1.1
	Unknown ivory colored material	4	1.3
	Burnt material (?)	3	3.7

Coal Layer 1 (E)			
	Rusted Metal	3	8.9
	Terracotta Pottery	1	0.3
	Glass	12	82.2
	Coal	53	76.8
	Slag	1	16.4
Above Rubble (F)	Rusted Metal	12	61.1
	Terracotta Pottery	4	34.5
	Decorated Stoneware	2	13.0
	Glass	17	34.6
	Muscovite	1	0.1
	Coal	20	15.0
	Slag	1	22.6
	Limestone	1	4.5
	Unknown ivory colored material	5	6.2
	Non-human bone	1	2.5
	Wood	1	14.1
***Glass above rubble**			
	Glass	36	500.0
Rubble (H)			
	Brick	11	11,700
	Limestone	14	13,320
	Coarse grained, crumbling sedimentary rock	4	720.0
*** indicates a layer not drawn in the profile**			

Rusted Metal

It is not strange to come across so much metal when undertaking this sort of project. Nails, and other such unidentifiable building materials also made of metal were found littering the ground prior even to the excavation. However, deterioration of the metal and its lack of any diagnostic features preclude it from being very useful in the development of a site chronology.

Terracotta Pottery

Greenhouses frequently use clay pots to hold their plants. These can come in a variety of shades from orange to red to tan, all of which were uncovered. None of the pottery pieces had been decorated in any sort of way with the exception of two small grayish pot sherds found in layer F.

Glass

Glass is fundamental to greenhouse construction. A thin layer of it was found directly on top of the debris and rubble in Unit One, suggesting some sort of catastrophic event leading to its deposition.

Brick

Depending on the manufacturer, some bricks come with maker's marks that delineate what company made the bricks. In such a project as this one, where it is unclear exactly when the boiler house fits into the stratigraphic sequence, being able to identify the maker's mark can provide a clue as to who was involved in the construction of the building and when. Frequently occurring types of impressions include family names of plant owners, initials of company names, place names, nicknames, and logos, yet trying to track down the company of manufacture or place of origin can be quite the difficult task (Kelly and Kelly 1977).

Two different types of bricks were collected from the rubble in Unit One. Several were the classic red color, while others were larger and were of a pinkish yellow color. Two of these latter colored bricks possessed maker's marks, though incomplete. One had the letters MEXICO STAND pressed into it, and investigation of an advertisement in *The Brick and Clay Record* (1918) led to the discovery that the brick was manufactured by A.P. Green Fire Brick Company, which made fire bricks for kiln work. According to the State Historical Society of Missouri,

Allen Percival Green bought the Mexico Brick and Fire Clay Company, a fire brick plant in Mexico, Missouri, in 1910. The beginnings of World War I brought the company success as a major supplier of refractory products, and in World War II, the company supplied refractory products for lining boilers in war ships. The second brick may have been manufactured by a company known as the St. Louis Vitrified and Fire-Brick Co. (Saint Louis Public Library 2013). The letters impressed on the brick are OUIS, with a B underneath. This company has been more troublesome to find information on, but the production of bricks from clay was certainly predominant in the late 1800's to early 1900's (Kelly and Kelly 1977).

Coal

One of the primary fuel sources for furnaces is coal. If the boiler house for the greenhouses was indeed at the location excavated, it would make sense to have coal nearby. The aspect of the coal that raised questions was why so much of it appeared to be unburned. Slag, which is burnt coal, was present, but not found in any significant quantity relative to the amount of unburned coal.

Miscellaneous

It is the smaller, more unique artifacts that often capture the mind's eye. One such example is a tiny glass arm uncovered in the topmost fill layer of Unit One. Another is the glass milk bottle cap liner uncovered in the same layer – this liner was semi-transparent, with "GENUINE P" embossed onto it. Glass bottle cap liners were intended to prevent metal lids used with glass jars and bottles from coming into contact with the food inside and imparting a metallic taste, or bacteria (Whitten 2014). While advertised as "genuine porcelain" liners, most were in fact glass rather than true porcelain and had an opaque or semi-translucent white color. Much like the bricks, impressions on the milk liner may say something about the time period in which

the fill was deposited. Unfortunately, a great number of these glass liners were made, by a number of companies, presumably between 1869 (when they were first patented by Lewis R. Boyd) and the 1950's (Whitten 2014), and trying to pin down an exact date for any particular liner is nearly impossible.

ANALYSIS

Unit One – Layer J

As stated previously, this layer is almost certainly naturally occurring subsoil. The lightness of color with respect to the soil above the debris and rubble reflects the fact that there is almost no dark humus. Texturally, subsoil is typically a variable mixture of sand, silt and/or clay. However, it may not be definitive to say that these layers are in fact subsoil. According to results of the Blackhawk County Soil Survey, up to a depth of about 80 inches, the soil is largely of a loamy texture. For those who study soils, it may seem unusual that sand was encountered after reaching a depth of only about one meter, or about 40 inches; this raises the question of whether or not the sand was brought in from an outside source. Further soil probing may provide answers to such questions. Despite these contentions, I am relatively certain that layer J is subsoil for two reasons. First, close examination of the eastern wall of Unit Two shows a clay pipe running through the sand that correlates to layer J in Unit One. Immediately surrounding the pipe, the soil is mottled and mixed where builders would have dug a trench for the pipe to go through. Yet there is a distinct delineation between this trench fill and the rest of the soil, which is nearly pristine (Figure 6). Second, units one and two are much lower in elevation than the northernmost part of the block; erosion would have brought topsoil down the hill, and exposed the sand such that it would appear much closer to the surface than was observed.

Figure 6. East wall of Unit Two (the soil in this wall was not tested). The arrow in the center is pointing to the border between the trench and pristine subsoil. (Photo courtesy of Donald Gaff)

Unit One – Layer I

This layer was strictly black coal which had been largely unburned, and sat directly underneath the rubble and debris layer. Artifacts were not collected from the layer because it consisted of a thin lens that was difficult to separate. In the age of early industry, when coal was a major fuel source, it is unlikely that piles of it would be left sitting around, unused. What this suggests for the layers of coal in the excavation is that the greenhouse was demolished at approximately the time when coal-burning technologies in Iowa were beginning to wane. Coal mining in Iowa began in the 1870's and grew rapidly until 1920, when its production began to decline as a result of competition with states such as Illinois and Kentucky, and a search for alternative energy sources such as electricity, natural gas and oil (State Historical Society of Iowa 2003). Instead of scooping it up to be used in powering other buildings, the coal was

simply left behind to be buried; this observation reflects one of the potential cultural transformation processes to have impacted the site.

Unit One – Layer H

Layer H represents the rubble and debris layer of the boiler house, and in some ways, it is the most troublesome layer to interpret. From details gleaned in early newspapers, there existed a Phelps hot water boiler at least until 1895, and in 1904, Bancroft and Son converted their hot water plant to steam, having completed a new stone boiler room and the foundation for two new boilers. Given that the lightning storm described earlier occurred in August 1898, it is possible that the debris and rubble are the remains of this catastrophe. The foundation for the two newer boilers is likely the concrete slab at the top of Unit Two. Destruction of the original smokestack and boiler would reflect a natural transformation process, while the subsequent scattering of the rubble would reflect a cultural transformation process, as this was carried out by humans. Comparison of layer H in Unit One and layer C in Unit Two reveals an interesting difference: where the bricks in Unit One were rather chaotically distributed in the rubble, the bricks along the south wall of Unit Two are rather orderly (see Figure 5a, c). The eastern wall of Unit Two exhibits the same sort of jumbled rubble as Layer H in Unit One, which suggests that this portion of the boiler house was impacted by the lightning strike, or at least deliberately destroyed.

Important to note as well is that the bricks in layer H are not all the same. They came in two different colors and textures, and one brick even showed evidence or burning. This burning could be a result of the action of the boilers themselves, or a result of the lightning strike. Earlier, it was stated that some of the bricks in this layer may have been produced by the A.P. Green Fire Brick Company, which was so-named in 1910. This would have been after the catastrophe – however, prior to being bought by A.P. Green, the fire brick plant was called the Mexico Brick

and Fire Clay Company, and it may have been under this company name that the bricks for the boiler house were bought.

Unit One – Layers G, F, and E

Layer G was a thin lens of dark brown sand and as such, no artifacts were collected from it. Layer F was a very sandy loam, containing mostly metal, pottery, and glass. This fill was potentially deposited after the first greenhouse to have stood in the vicinity was destroyed. Layer E was much like layer I, mostly unburned coal, and contained large pieces of glass. Up to this point in the stratigraphy of Unit One, broken pieces of anything were generally largely than broken pieces of material from layers more recent. An interpretation to be drawn from this knowledge is that the artifacts in layers E and below were more likely deposited *in situ*, rather than mixed with other materials and transported around.

Unit One – Layers D, C, and B

Each of layers B, C, and D are fill that was deposited after the boiler house and greenhouses in the area were no longer standing. Layer D contained mostly metal, as well as bits of pottery, glass and coal. Layer B contained more of the same, and layer C was a small intrusion between the two. Like some of the other layers previously described, C was no more than a very thin lens, so artifacts were not removed. Conversely to G, F, and E, this group of layers contained very small pieces of artifacts, suggesting that they had been more roughly mixed with soil as humans were covering up the remnants of old buildings.

Unit One – Layer A

Layer A represents the most recent fill episode. The heavy mottling (patchiness) of this top layer is evidence that it has been heavily mixed. In archaeological sites that have been excavated more than once, for example, the first few centimeters often exhibit similar patterns of

mottling. It is here that the tiny arm and glass bottle cap liner were found. Unfortunately, the date of the cap liner cannot be very accurately estimated, but knowing this information would allow for a much more precise dating of the layer. Above layer A existed dark top soil, to lend aesthetics to the current property owner's lawn and to cover remaining debris.

CONCLUSION

Summary

In November 2013, an excavation was carried out on the block of 13th and Tremont Street in Cedar Falls, Iowa. Two units were excavated to determine the sorts of impacts humans have had on the development of the site's stratigraphy. Analysis of the soil layers and artifacts within them provided more concrete evidence for major deposition events at the site. In brief, a tentative sequence can be laid out as follows: In the late 1800's, Bancroft & Son's greenhouse and floral business was established, with hot water boilers as a source of power. In 1898, a lightning strike damaged the boilers and smokestack. In 1904, the hot water boilers were converted to steam, and a new concrete foundation was erected for the new boilers. By approximately the mid-twentieth century, most of the greenhouses previously owned by Bancroft & Son were torn down, and the land was covered with fill and lawn turf.

This research endeavor stands out as significant for at least three distinct reasons. First, the archaeological approach to this study was to reconstruct a sequence of events. Greenhouses and boiler houses, while perhaps studied for changes in architectural style through time, have only rarely been studied archaeologically, let alone after they have already been destroyed. Second, the main greenhouse owned by Bancroft & Son was the largest in Iowa. This is a notable fact not only for the state's history, but because it represents the fact that seemingly small, unremarkable towns can in fact have much to contribute to a state's history. Third, the

remains of the buildings that were excavated were sitting literally in a person's backyard. This research was an exercise in understanding that history is right in front of humanity's eyes and that there is a wealth of information to be found if people are willing to look.

Limitations and Future Research

The greatest limitation posed by this project rested in the matter of time and resources. Only three individual volunteers were available to assist in the excavation, and meeting times were limited according their schedules. Also, since this project was carried out in early November, there was a push to finish excavating before the weather inhibited our ability to shovel and trowel into the ground. This time limit impacted the size of the excavation; ideally, several more units in separate areas of the site would have been excavated to provide a more complete and representative picture of what previously existed at the site and how it may have been used. For future research, an examination of a larger portion of the property may reveal interesting details about how and when Bancroft & Son began to downsize as a business, and the following sequence of greenhouse demolition.

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This Study by: Ariel M. Williams

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has been approved as meeting the thesis or project requirement for the Designation University Honors

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Date Dr. Donald Gaff, Honors Thesis Advisor, SAC

5/9/14 _____
Date Dr. Jessica Moon, Director, University Honors Program