

**An Architecture of Fire**  
Restoring the former Denny-Renton Clay and Coal Co. site in Renton

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Figure 1 Denny Renton Clay & Coal Co. vitrified plant at Renton, August 18, 1910 by Asahel Curtis

## Table of Contents

Acknowledgements.....	v
Chapter 1: Introduction.....	2
Chapter 2: Theoretical Framework .....	6
Reading the Postindustrial Landscapes .....	6
<i>Postindustrial ruins</i> .....	7
<i>Postindustrial landscapes</i> .....	8
Precedents.....	10
<i>Kielder Water and Forest Park; Northumberland, UK</i> .....	10
<i>Potemkin; Post Industrial Meditation Park, Japan</i> .....	12
<i>Earthworks: Art &amp; Landscape in the Green River Valley, Kent, Washington</i> .....	13
Chapter 3: Site Analysis .....	16
Historical importance.....	16
<i>Denny Renton Clay and Coal Company</i> .....	18
Geographical history of Washington.....	22
<i>Clays of Washington</i> .....	22
<i>Clay of Denny-Renton Clay and Coal Company</i> .....	26
<i>Former factory layout and production process</i> .....	28
Chapter 4: Design Development .....	32
Community Analysis .....	36
<i>Spatial qualities of the site</i> .....	36
<i>Analysis of current site condition</i> .....	38
Site Response.....	44
<i>Program</i> .....	44
Chapter 5: Conclusion .....	66
Bibliography .....	68
List of Figures.....	70

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Figure 2 Bricks at current site



## **Chapter 1: Introduction**

Since the early nineteenth century, the manufacturing of clay products in the United State has produced a wide variety of building materials. Products like face brick, clay veneers and sewer pipe have greatly contributed to the growth of American cities. But, with the declined of demand and the rise of the use of modern building materials like steel, concrete and glass, many of these factories have closed. Little traces of this once thriving industry have been left on the landscape. Today, for the communities that now occupy these sites, the history of clay products is largely forgotten.

The abandoned sites of the manufacturing of building materials are unique in the wasted landscapes they have left behind. The extractive industries they once housed have often left only the debris of built form that has been overtaken by natural growth. Brick making, in particular, relied on a process of extraction, reshaping and firing that literally re-shaped the land around it. This thesis proposes that these scarred landscapes have the potential to be re-activated in a way that recall their former use but looks forward to their future. It argues for the role of architecture as fire, a transformative process that consumes resources as it builds.

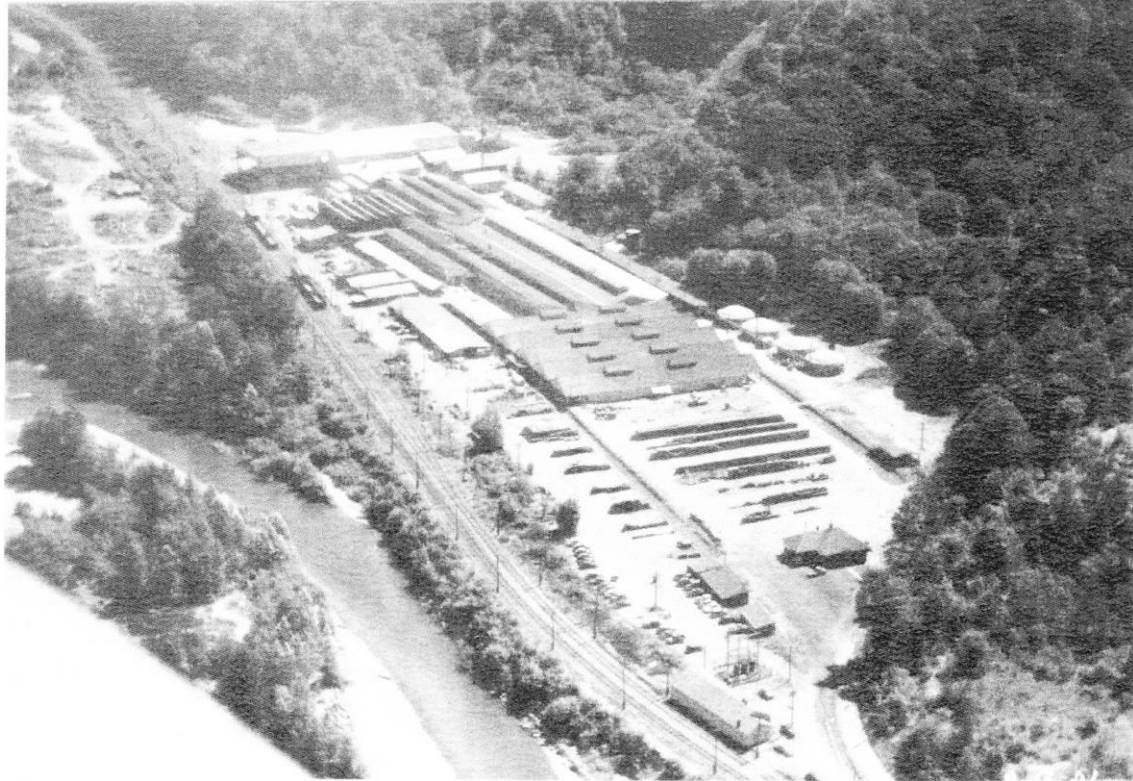


Figure 3 Factory Operation, Bird's Eye Photo



Figure 4 Denny Renton Clay & Coal Co. entrance, 1914

## Chapter 2: Theoretical Framework

### Reading the Postindustrial Landscapes

Whenever buildings are destroyed by the explosions of bombs or artillery shells, by lack of maintenance or repair, by fire or structural collapse, their form must be respected in its integrity, embodying a history that cannot be denied.<sup>1</sup>

The theoretical framework of this project will first examine the character of the post industrial landscape, in particular that of those that were used in the production of building materials. I will then analyze the sites of brick making that produced an architecture of fire.

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<sup>1</sup> Lebbeus Woods. *War and architecture = Rat i arhitektura*, 14.



Figure 5 Abandoned brick factory

### *Postindustrial ruins*

In his book, *War and Architecture*, Lebbeus Woods argues for the significance of sites that have been ravaged by acts of devastation, either by humans or nature. While he focuses on the emptied spaces caused by the “violent destruction” of war, his ideas about the integrity of these ruins can be applied to industrial landscapes. He argues that these damaged sites offer opportunities for new “conceptions of space” that exist outside the normal order of society.<sup>2</sup> (Figure 6)



Figure 6 Abandoned brick factory

In his book, *Industrial Ruins*, Tim Edensor similarly argues for the importance of the ruins of industry as places that have “limitless possibilities of ruined buildings which allow wide scope for imaginative interpretation.”<sup>3</sup> He observes that decaying objects in ruins take on a material quality that is really unique. “They impose their materiality upon the sensory experience of visitors, and they conjure up the forgotten ghosts of those who were consigned to the past upon the closure of the factory but continue to haunt the premises.”<sup>4</sup>

<sup>2</sup> Lebbeus Woods. *War and architecture = Rat i arhitektura*, 14.

<sup>3</sup> Tim Edensor. *Industrial ruins: spaces, aesthetics, and materiality*, 4.

<sup>4</sup> Tim Edensor. “Waste Matter - The debris of industrial ruins and the disordering of the material world.” 311.

Among these ghostly ruins, he argues, lie opportunities for memories that are otherwise lost in the normal life of the city.<sup>5</sup>

### *Postindustrial landscapes*

While Edensor and others have argued for the significance of built ruins of industry, less attention has been given to the abandoned landscapes of industry. (Figure 7, 8) In contrast to industrial complexes dominated by physical remains, these sites are often more strongly defined by negative spaces. In her book, *Post industrial landscape scars*, Anna Storm states that the marks left by industry on the land, can be both “physical and mental.”<sup>6</sup> She examines the scarred landscapes left by mining, iron and steel, and nuclear production industries in Europe. The author categorizes these sites into three different groups, such as the *reused* scars which can be closely linked to an understanding of heritage, the *ruined* scars which denote abandoned and decaying industrial



Figure 7 Postindustrial landscape

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<sup>5</sup> Tim Edensor. "Waste Matter - The debris of industrial ruins and the disordering of the material world." 314.

<sup>6</sup> Anna Storm. *Post-industrial landscape scars*, 1.

sites, and the *undefined* scars which are not acknowledged as important from a memory or heritage perspective.<sup>7</sup> She argues that these sites can be ambiguous, “signifying both positive and negative experiences,” making them rich in possibilities for reinterpretations of the narratives they tell.<sup>8</sup> The potential of these post industrial landscapes as sites of reinvention is also noted by Alice Mah. Her book, *Industrial Ruination, Community and Place*, focuses on the process these sites go through rather than their static forms.<sup>9</sup> She discusses that although these places appear to be barren and isolated, they are closely connected to the people and places around them. In order to realize their potential, she argues that we must understand the personal narratives of the people who are closely connected to these sites.<sup>10</sup>



Figure 8 Postindustrial landscape

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<sup>7</sup> Anna Storm. *Post-industrial landscape scars*, 6-7.

<sup>8</sup> Storm. 7.

<sup>9</sup> Alice Mah. *Industrial Ruination, Community and Place: Landscapes and Legacies of Urban Decline*, 13.

<sup>10</sup> Alice Mah. "Living with industrial ruination." *DISCOVER SOCIETY*.

## Precedents

Approaches to the post industrial landscapes necessitate a deeper understanding of physical and social processes that have shaped these scarred sites. A design intervention requires a very careful analysis in order to trace the marks of the past and restore connections to the current community. The following case studies provide evidence of different approaches to these kinds of sites that will influence the treatment of the former brick making site in Renton, Washington.

### *Kielder Water and Forest Park; Northumberland, UK*

The Kielder Water and Forest Park is located within the largest man made forest and reservoir in the United Kingdom. In the 1970s, the area became the site for the largest man-made reservoir in Northern Europe that was designed to support the demands of an industrial economy.<sup>11</sup> Much of the



Figure 9 Wave Chamber

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<sup>11</sup> Bob Sheil. "55/02: A manufactured architecture in a manufactured landscape." *Architectural Research Quarterly*, 201.



Figure 10 *Shadow*

existing farmland, roads, viaducts and railways were destroyed in the construction of the reservoir and a dam.<sup>12</sup> In the 1990s, local officials opened the park to the public and in 1999 began commissioning art and architecture installations. The twenty built works located within the 250 square miles of forest function as shelters, seating and viewing platforms. Many of the installations seek to enhance the visitor's experience with nature but also respond to the industrial past of the park.<sup>13</sup>

For example, *Wave Chamber* by Chris Drury of 1996 is a camera obscura, which is made from 82 tons of local stone. The beehive structure with the lens and mirror projects an image of the water surface onto the floor of the stone chamber.<sup>14</sup> (Figure 9) In contrast, Julia Barton's *Shadow* also focuses on the landscape and is made from local stones and earth, creating a stone shadow on the land that seems almost like the remains of an industrial structure from the past.<sup>15</sup> (Figure 10)

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<sup>12</sup> Bob Sheil. "55/02: A manufactured architecture in a manufactured landscape." *Architectural Research Quarterly*, 202.

<sup>13</sup> Sheil. 204.

<sup>14</sup> Kielder Water & Forest Park. *Kielder Art & Architecture*.

<sup>15</sup> Kielder Water & Forest Park.

*Potemkin; Post Industrial Meditation Park, Japan*

Another project in an unclearly defined post industrial site is *the Potemkin Post Industrial Meditation Park* in Kuramata, Japan, designed by Casagrande and Rintala. (Figure 11) This small village is well known in the area for the high quality of its rice farming. The park is built over a former industrial dump and is built with the waste materials it once contained.

The site slopes gently between the rice fields and river, allowing visitors to descend slowly. Recycled steel iron walls are placed to frame existing views and create a series of outdoor and indoor spaces. The floor of white river gravel invites visitors to take off their shoes to fully experience the site, in respect to the people of the community. The spaces created function for multi-purposes uses like playing, gathering and relaxing. The park creates an experience of the landscape that allows visitors to connect to nature, but at the same time reminds them of the industrial past.

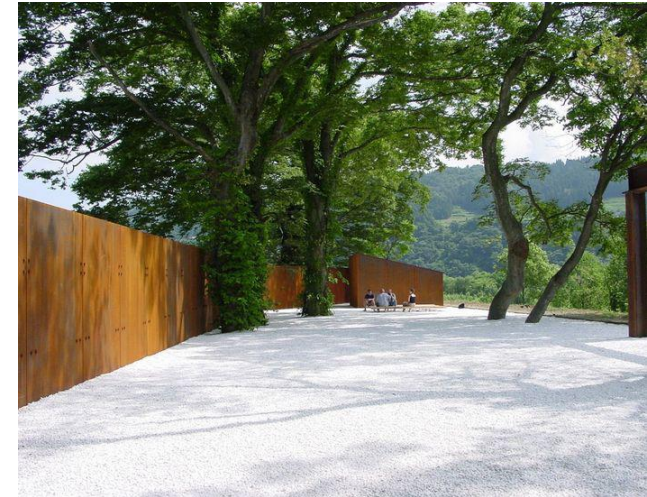


Figure 11 Potemkin

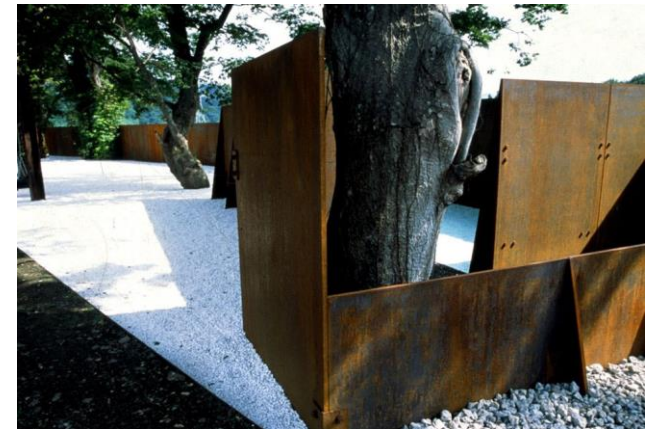


Figure 12 Space inside the park

*Earthworks: Art & Landscape in the Green River Valley, Kent, Washington*



Figure 13 Mill Creek Canyon Earthwork



Figure 14 Johnson Pit #30

The earthworks are located at the Green River Valley, southwest of Renton, which include *the Mill Creek Canyon Earthwork, Green River Natural Resources Area, the Robert Morris Earthwork* and Lorna Jordan's *Waterworks Gardens*. The works commissioned by the King County Arts Commission's function as "new tools to rehabilitate land abused by technology and to provide artistic solutions to complicated land-use issues."<sup>16</sup>

For instance, *the Mill Creek Canyon Earthwork* by Hebert Bayer of 1982 is a fusion of art and infrastructure such as a public park and a stormwater detention dam.<sup>17</sup> (Figure 13) Another earthwork, *Johnson Pit #30* by Robert Morris, was created in a 3.7 acre sand and gravel pit abandoned in the 1940s. To maintain a park like environment and sculptural quality, the sloped surface of the site is maintained to grow only rye grass with the help of natural method such as bringing a herd of goats to clear the invasive plants like Scotch broom and blackberries. (Figure 14)

<sup>16</sup> City of Kent. "Earthworks: Art & Landscape in the Green River Valley."

<sup>17</sup> City of Kent.



Figure 15 Denny Renton Clay & Coal Company, aerial image, 1936



Figure 16 Site aerial image, 2013

### Chapter 3: Site Analysis

#### Historical importance

The abandoned sites created by the obsolescence of the brick making industry are unique post industrial landscapes. Often only faint traces remain of the former industry in piles of brick debris and scars on the land. One such site is located in Renton, King county in Washington state, approximately 11 miles southeast of downtown Seattle and the southeast shore of Lake Washington. (Figure 17)

This area had been home for the Duwamish Native American tribe until the first European settlers arrived in the 1850s. Named for Captain William Renton, the town of Renton began as an industrial town, fueled by coal mining, clay



Figure 17 Locating Renton, King County



Figure 18 Renton Coal Mine, 1911



Figure 19 Boeing Airplane plant

production and timber exporting. (Figure 18) The city was not only close to coalmines in the hills to the east but also adjacent to Lake Washington and Cedar River.<sup>18</sup> Relying on water transportation and the Columbia & Puget Sound Railroad running alongside the river, this thriving coal mining hub was one of the first outlying communities to be connected by road to Seattle.

In addition to those early industries, Boeing Airplane Company established their plant in the area in 1916, eventually bringing thousands of workers to the area during World War II.<sup>19</sup> (Figure 19) Even after the war, many workers were employed by other industries in Renton and Seattle.<sup>20</sup> Remaining constant for many years, the population has actually grown in the last 100 years as Renton continues to thrive as a manufacturing town.

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<sup>18</sup> Alan J. Stein. *Renton -- Thumbnail History*.

<sup>19</sup> City History, History and Development of Renton n.d.

<sup>20</sup> City History.

### *Denny Renton Clay and Coal Company*

The economic growth of the city of Renton was fueled from its founding by the extractive industries, in the mining of coal and the production of clay products.

The clay products industry in Renton was begun in 1901 by James Doyle and J.R. Miller of California who came to look for business opportunities in Seattle. In 1902 the company held an open house for the public to exhibit its first finished clay products. In the early twentieth century, the Renton factory was producing about 25,000 units of brick per day.<sup>21</sup> As the demand for bricks from nearby Seattle increased, by 1905 the company had enlarged to three times its original capacity, producing 75,000 units of brick per day. (Figure 20) Occupying about 40 acres on the banks of the Cedar River, the newly named Denny-Renton Clay & Coal Company increased its employees up to 500.<sup>22</sup> (Figure 22) Between 1908 and 1912, the facilities were expanded again, increasing production to 185,000 units per day using 250 tons of coal and



Figure 20 Pioneer Square, Seattle, March 17, 1917

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<sup>21</sup> Morda C. Slauson. *Renton, from coal to jets*, 156.

<sup>22</sup> Slauson, 157.

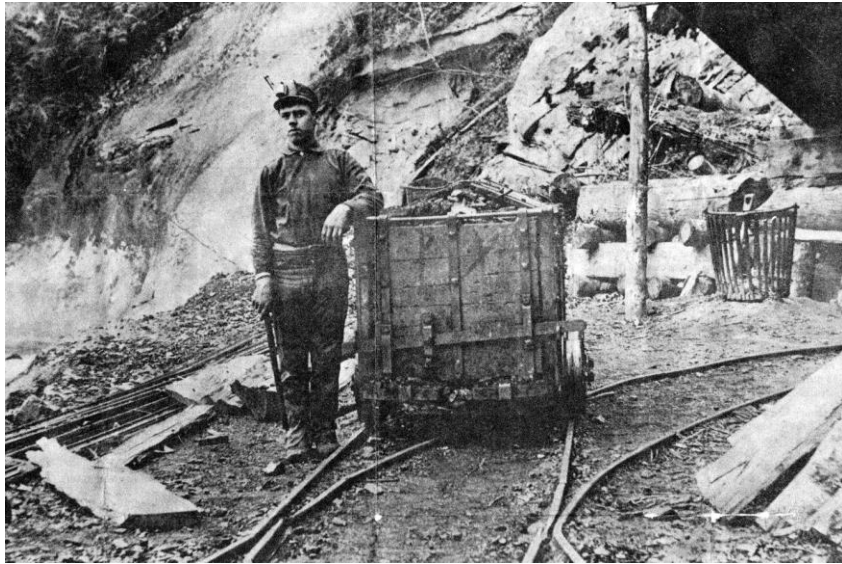


Figure 21 Factory worker at clay pit



Figure 22 Factory interior showing workers posing

750 tons of shale. (Figure 21) Shipment of bricks to surrounding cities were expanded again, increasing production to 240,000 units per day during this peak season.<sup>23</sup> By the turn of the century, the Denny-Renton Clay and Coal Company became one of the largest brick manufacturers in the world, exporting their products locally and overseas, as far as South Africa, Chile, Argentina, Japan and India.<sup>24</sup> (Figure 23)

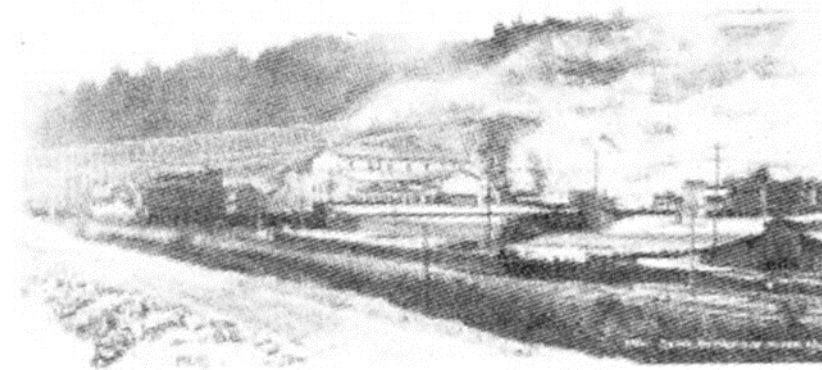
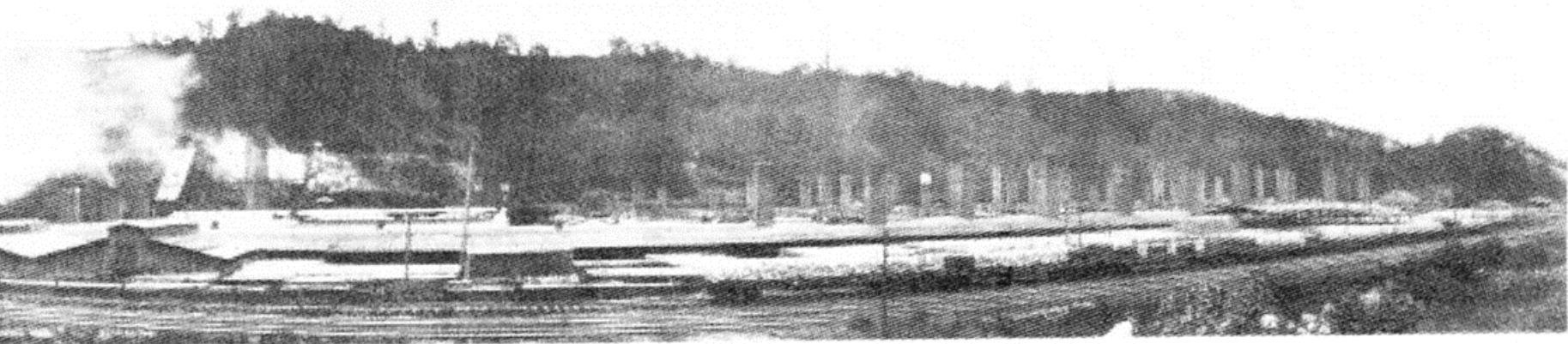


Figure 23. Denny Renton Clay and Coal Co, factory exterior

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<sup>23</sup> Morda C. Slauson. *Renton, from coal to jets*, 157.

<sup>24</sup> Slauson, 157.



## Geographical history of Washington

### *Clays of Washington*

The early success of the brick making industry in the town of Renton was in large part due to the location of rich natural deposits of clay in the area. Therefore the analysis of the geological history of the area is essential to understanding the characteristics of this post industrial landscape. In general, clays of Washington State can be classified into two categories: residual clays and transported clays. Transported clays have been removed from the place where they were originally formed and carried by rivers, glaciers, and wind. They are widely used for clay production industries around Puget Sound in western Washington.<sup>25</sup> (Figure 24, 25)

During the Eocene period, transported clays were accumulated with about 10,000 feet thick shallow water deposits around Puget Sound. They consisted mainly of sandstone, slates, and coal.<sup>26</sup> The formation around Renton was the part of this Puget formation, so that this strong

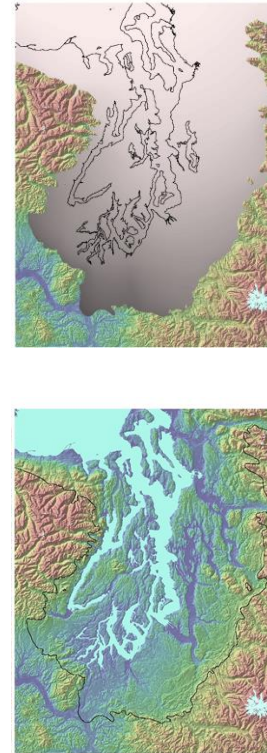


Figure 24 GIS map of the Puget Sound glaciation

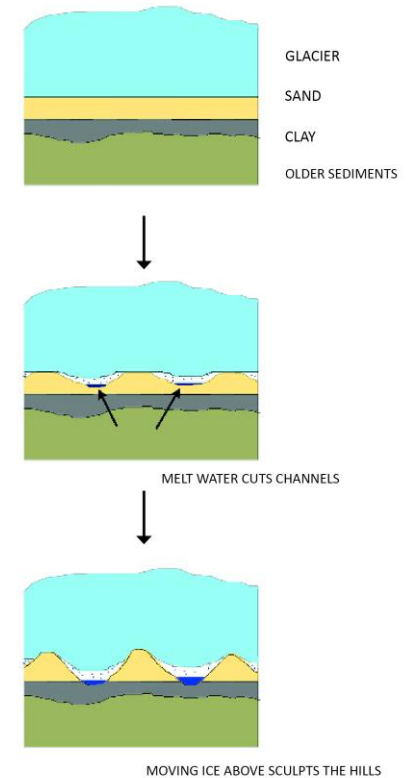


Figure 25 The Puget Sound glaciation

<sup>25</sup> Solon Shedd. *The clay of the state of Washington, their geology, mineralogy, and technology*, 150.

<sup>26</sup> Shedd, 158.



Figure 26 Locating major brick factories around Duwamish River



Figure 27 Builders Brick Co., Seattle

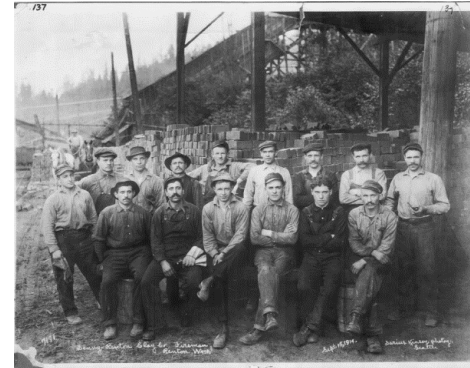


Figure 28 Denny Renton Clay and Coal Co., factory workers

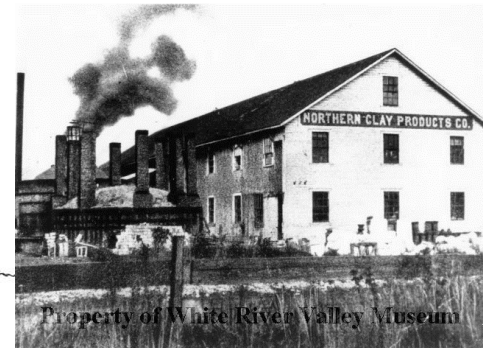


Figure 29 Northern Clay Products, Auburn

connection with the coal deposits enabled the area to flourish in coal mining and clay manufacturing. (Figure 26) Even if these natural resources seem to be no longer visible, a comparison of a topographic map and current view show how the scars of the former clay pit remain under the surface. (Figure 31, 32)



Figure 30 Denny Renton Clay & Coal Company, aerial image, 1936



Figure 31 Site aerial image, 2013



Figure 32 Topographic map of current site

*Clay of Denny-Renton Clay and Coal Company*

The clay mined from the project site belonged to this Puget formation, which was light gray colored shale. Writing in 1910 Solon Shedd observes that “the shale at the site showed distinct stratification and the formation lied very flat, almost horizontal, outcropped upon a hillside.” (Figure 33, 34)

According to Shedd, the site actually contained different layers of clay with slight different color and texture. While some were coarser grained than others, in the actual brick making practice they were all mixed together and used. Coal deposits were also found at the site, so that coal was mined simultaneously and used as fuel for firing the clay products. The clay from the site was fine grained and very plastic when mixed with water and able to be molded into almost any shapes. Requiring a composition of 23 % of water, the clay was molded and heated to the fusing point of 1,922 Fahrenheit.<sup>27</sup> Because of its natural plasticity of wet stage and



Figure 33 Factory workers at clay bed



Figure 34 Denny Renton Clay and Coal Co., Clay pit

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<sup>27</sup> Solon Shedd. *The clay of the state of Washington, their geology, mineralogy, and technology*, 250.

durability after fired, the clay made it particularly suitable for the production of paving brick.



Figure 35 Site plan

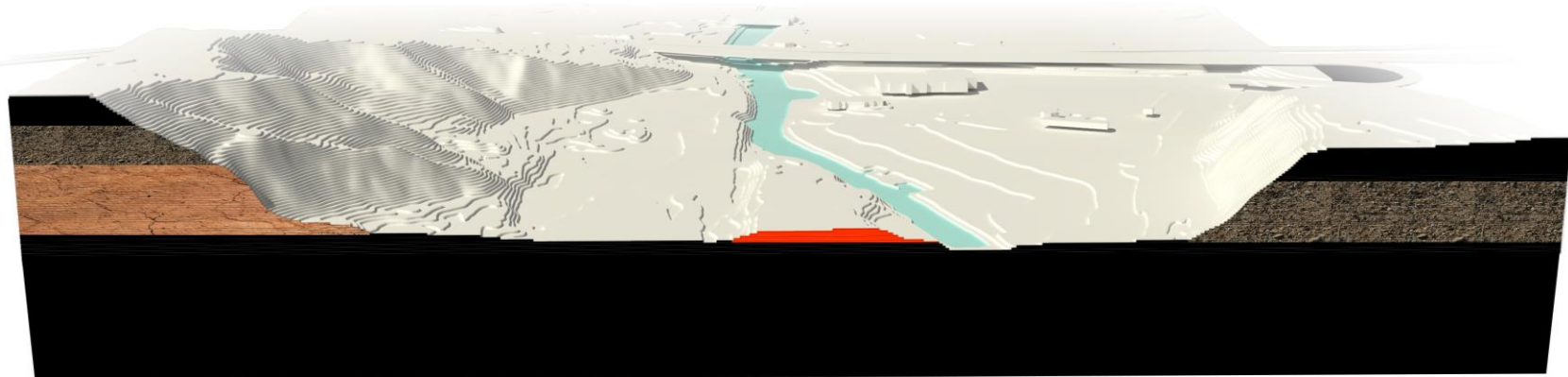


Figure 36 Section Northwest

*Former factory layout and production process*

In addition to the scars remained at the site, the former industrial processes can be recognized from the linear open space that remains along the Cedar River. In his book, *Brickmakers manual*, R.B. Morrison explains that the factory layout needs “to be considered the situation, suitable material, fuel, labor, water supply, market, and proximity to the city.”<sup>28</sup> There were certain design approaches that many brick making factories considered for their factory layout. As the site plan drawing illustrates, the typical factory layout simply reflected the most efficient and economical production line into the design. (Figure 37) Denny-Renton Clay and Coal Company also followed this Morrison’s brick factory design layout. Moreover, the contents of each facility are investigated based on the aerial photo taken in 1936, exterior view of each facility, and the descriptions of Denny-Renton plant from the book written by Solon Shed in 1910. (Figure 38)

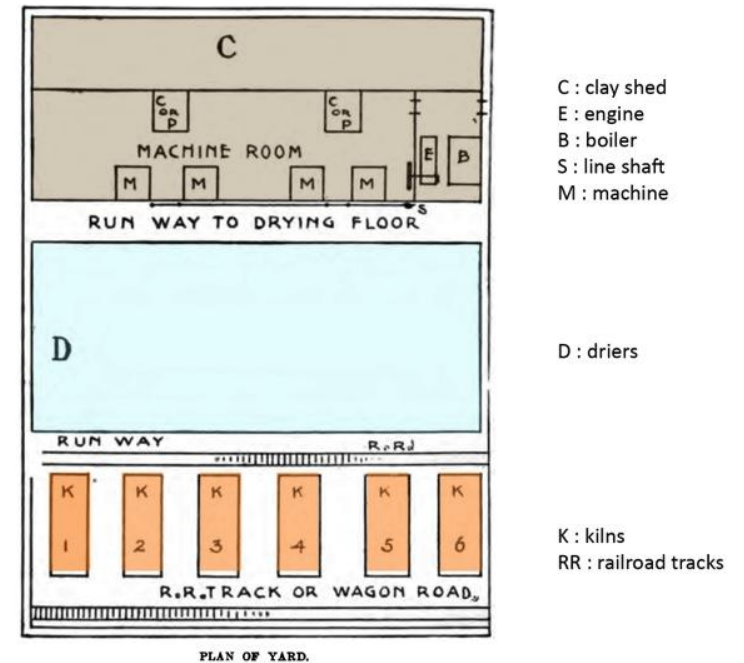


Figure 37 Brick factory layout

<sup>28</sup> R.B. Morrison. *Brickmakers' Manual*. 173.

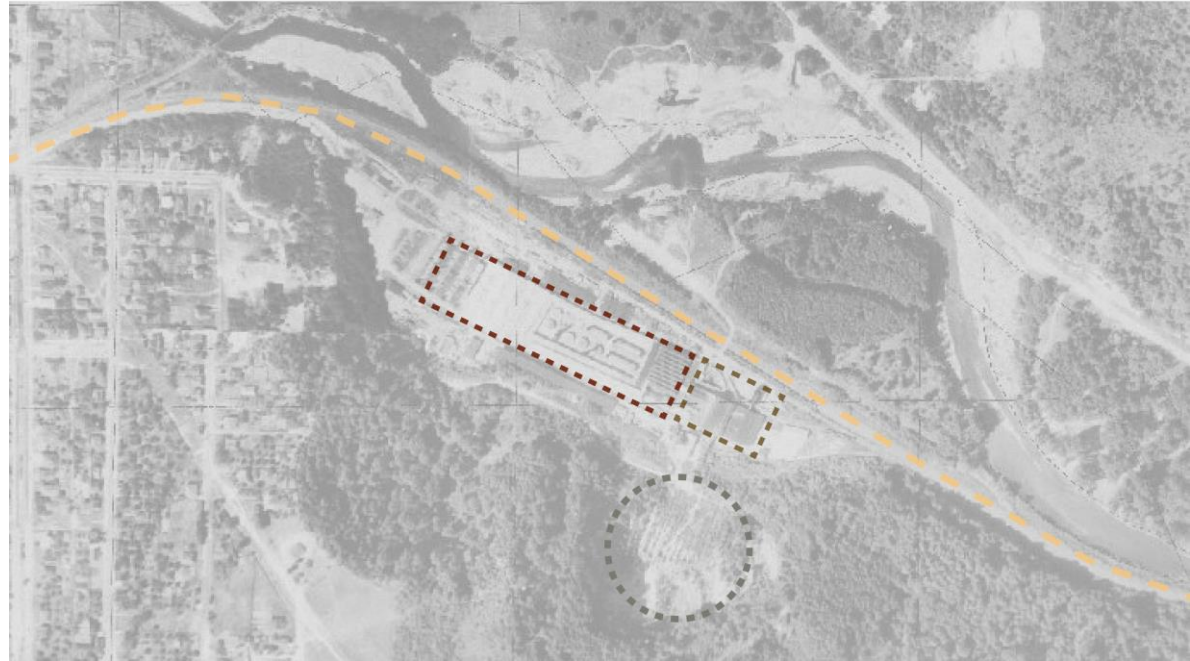
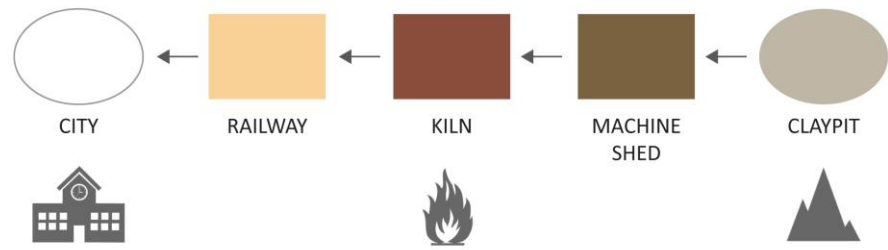


Figure 38 Denny Renton factory layout diagram

What makes the brick making factory different from other industrial plants is its close relationship with the landscapes where the source of materials are located. As seen in the geographic analysis, Denny Renton plant was designed efficiently to fit within the limited area located between the clay pit along the hillside and the Columbia & Puget Sound Railroads along the Cedar River. The machine shed installed with all the machines for clay preparation was located at the east end of the site.<sup>29</sup> The main building was about 145 by 175 ft. and four stories high. In the machine shed, there were two large pug mills for mixing clay and two auger stiff mud machines to produce 30,000 to 75,000 bricks every ten hours.<sup>30</sup> (Figure 39, 40)

The downdraft kilns that enabled to transform clay into brick were located in the center of the factory layout. The factory operated fourteen downdraft kilns with 30 ft. in diameter with a capacity of 200,000 brick each. (Figure 41) Twenty artificial tunnel drier kilns 110 ft. long could be

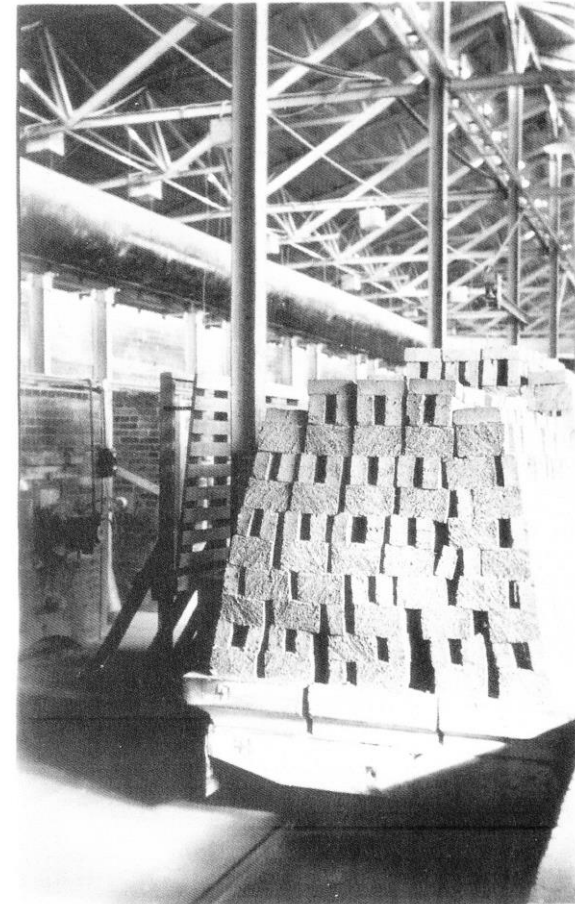


Figure 39 Denny Renton Factory interior

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<sup>29</sup> Charles Thomas David. *A Practical Treatise of the Manufacture of Brick, Tiles and Terra-cotta*. 210.

<sup>30</sup> Solon Shedd. *The clays of the state of Washington, their geology, mineralogy, and technology*.

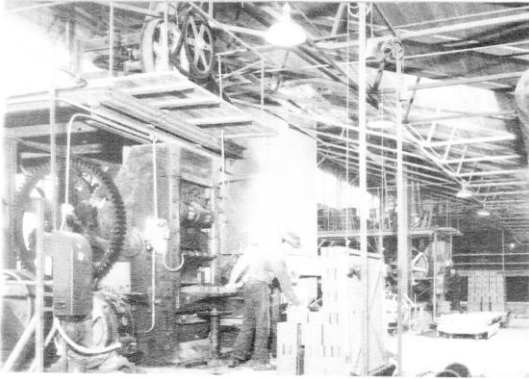


Figure 40 Factory interior



Figure 41 Beehive Kiln

identified between the downdraft kilns and the machine sheds. The exhausted heat from the downdraft kilns was reused for drying wet bricks. Also, the artificial driers functioned to protect the engine boilers and machines for clay preparation in the machine sheds from the exhausted smoke and dust of the downdraft kilns.<sup>31</sup> The artificial drier enabled the plant to work continuously year round, and also saved the loss from rain or floods. Moreover, evaporating the physically bonded water from bricks before firing in downdraft kilns saved time and fuel, and kept the kiln walls inside the downdraft kilns in good condition.<sup>32</sup>

After the firing, all the bricks were unloaded from the downdraft kilns and shipped directly by railway lines running along the kilns.

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<sup>31</sup> R.B. Morrison. *Brickmakers' Manual*. 19.

<sup>32</sup> Charles Thomas David. *A Practical Treatise of the Manufacture of Brick, Tiles and Terracotta*. 210.

## Chapter 4: Design Development





Figure 42 View of walking trail & a dog park at current site

As seen in photographs from the site, hidden beneath the dense vegetation are remains of built structures and brick products. As these manmade objects are taken over by nature, they become charged with alternative aesthetic properties. This thesis draws upon these powerful images as it seeks to connect the city of Renton with its former brick making plant.





Figure 43 Bricks at current site

## Community Analysis

### *Spatial qualities of the site*

The former Denny-Renton Clay and Coal Company site is located at south bank of the Cedar River. Today, it is part of the Cedar River Park and Trail, which is a major recreational area, with a community and aquatic center, a theater, a library, playgrounds, and sports fields. As seen in a community analysis diagram, the site is at the center of residential, commercial and community uses. (Figure 44) The walking trail along the Cedar River connects between Lake Washington and Maple Valley and provides easy access to the site.

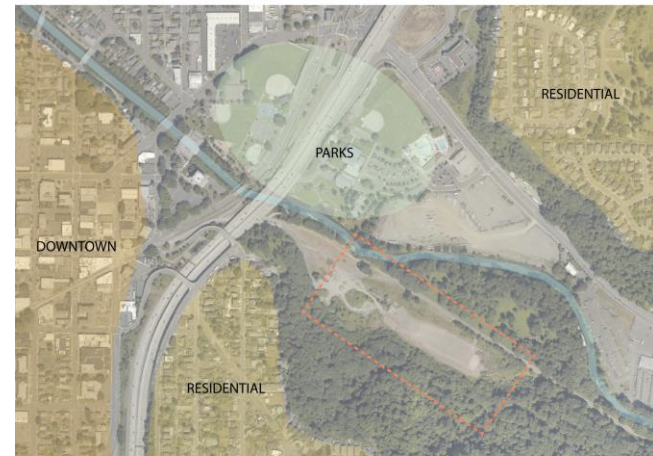


Figure 44 Community demographic diagram



Figure 45 Historical plaque at the park entrance

The built complex that housed the brick company has long been demolished and cleared from the site. The area where factory sheds and kilns were located has become an off-leash dog park for the public, and the clay pit along the hillside has been completely taken over by trees. The Columbia & Puget Sound Railroad once used for shipping coal and brick has been removed and now functions as a walking trail. With all this erasure of the former structures, the site along a forested hillside is no longer recognizable as an industrial site. Today the historical plaque at the park entrance provides the only means to remind visitors and residents of the memory of the brick making industry. (Figure 45) However, as seen in the geological analysis, a closer look at the site shows that deep scars of the former industrial processes remain below the surface.

*Analysis of current site condition*

Exploring how the former brick making factory site has the potential to reconnect and to integrate with the surrounding community and programs. In doing this, it divides the identified neighborhood into active and less active spaces and programs. (Figure 46)

Liberty Park and Cedar River Park which are actively used by the communities, are located on north bank of the Cedar River with accessibility from I-405. Compared with these public parks, the area on the southeast side of the Cedar River Park and south bank of the Cedar River are less actively used.



Figure 46 Site Map: Active area



Figure 47 Cedar River Park entrance



Figure 48 Renton Public Library over the Cedar River



Figure 49 Henry Moses Aquatic Center

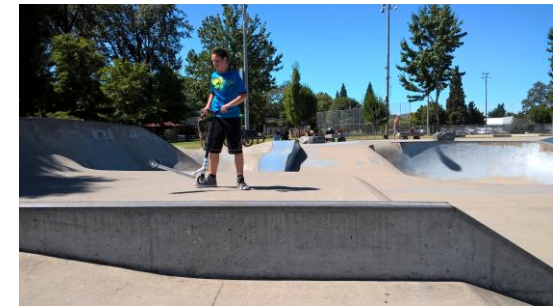


Figure 50 Skate park at Liberty Park

The first identified less active space is the large gravel parking area west of the Cedar River Park. The property is owned by Stoneway Concrete; however, all the facilities have already relocated to the east of the Landing shopping mall, south of Lake Washington. (Figure 52)

The second identified less active space is the small hill which is south of the Stoneway Concrete site, which stretches between the Cedar River and the walking trail. The elevation of the south side of the hill is approximately 20-25 feet high and the north side is approximately 40 feet high from the river surface. The flat hill top area is about 1,300 feet long and 350 feet wide. Piles of abandoned bricks are revealed along the west end of the slope. (Figure 53, 54)



Figure 51 Site Map: Less active area



Figure 52 Stoneway Concrete Property

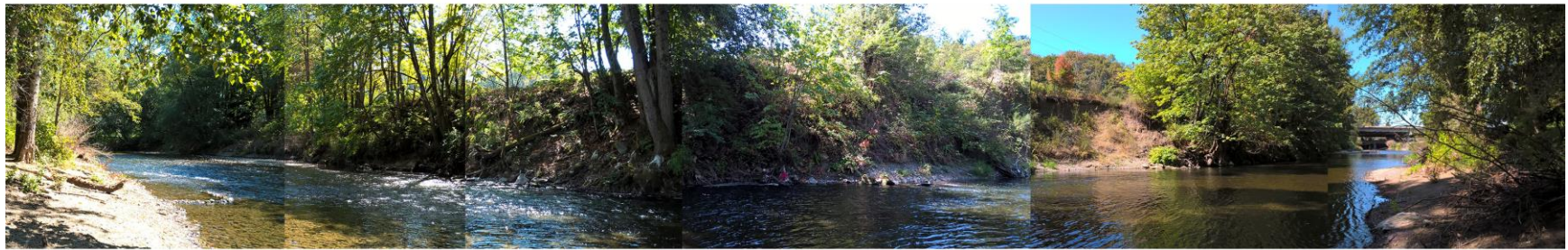


Figure 53 View from north bank of Cedar River



Figure 54 Small hill at site

The third identified less active space is the area where the brick making kilns and machine shed were located. The space is currently used as the off-leash dog park which is accessible only by walking trail. There is a gravel car parking area for the park visitors under the I-405 Bridge. (Figure 56)

The last identified less active space is the former clay pit area. The area is completely rehabilitated from the clay mining. Some debris of factory concrete foundation and swamps are identified around the area. (Figure 57, 58, 58)



Figure 55 Site Map: Less active area



Figure 56 Off-leash dog park and former clay pit



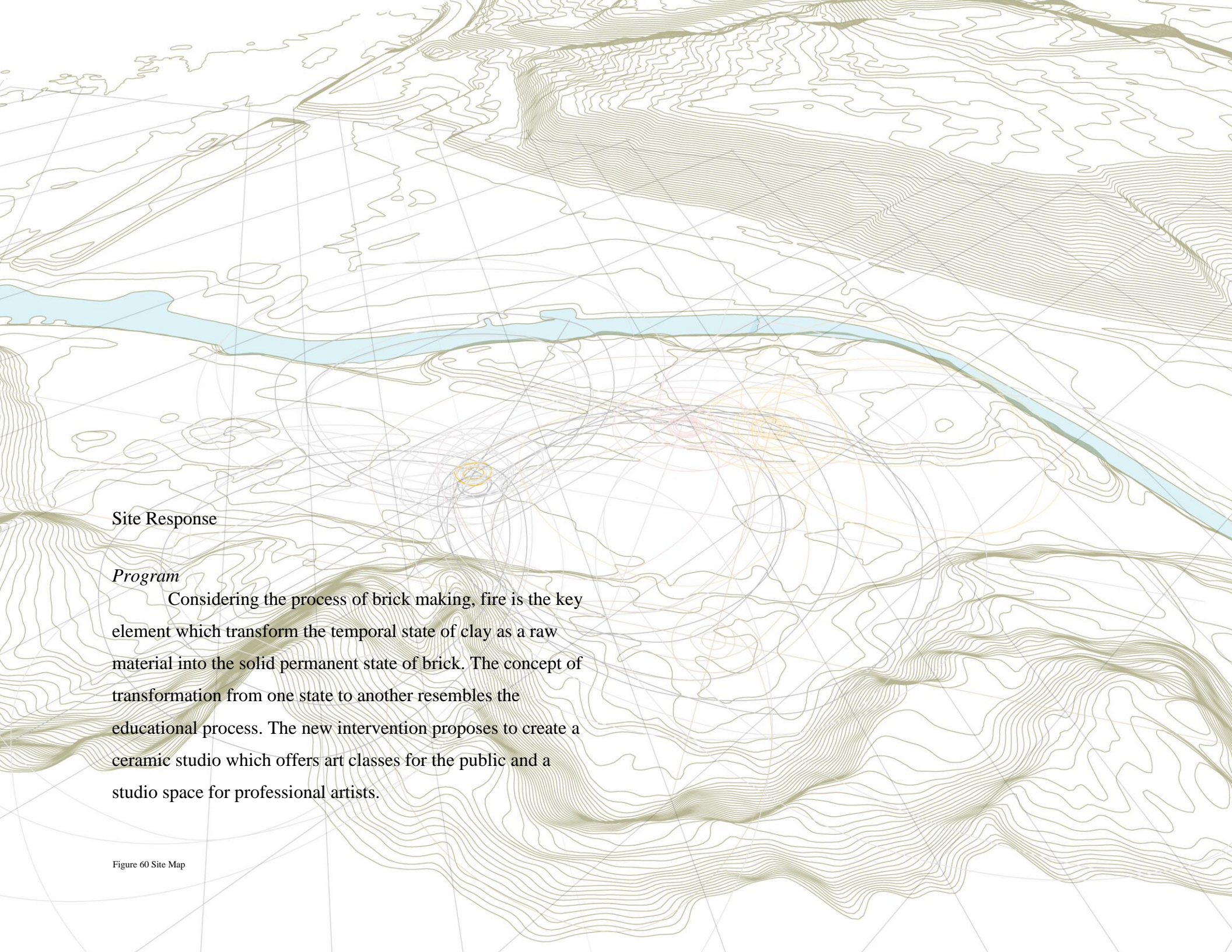
Figure 57 Graffiti art on concrete foundation



Figure 58 Former clay pit



Figure 59 Swamp at former clay pit



## Site Response

### *Program*

Considering the process of brick making, fire is the key element which transform the temporal state of clay as a raw material into the solid permanent state of brick. The concept of transformation from one state to another resembles the educational process. The new intervention proposes to create a ceramic studio which offers art classes for the public and a studio space for professional artists.

Figure 60 Site Map



Figure 61 Program development diagrams

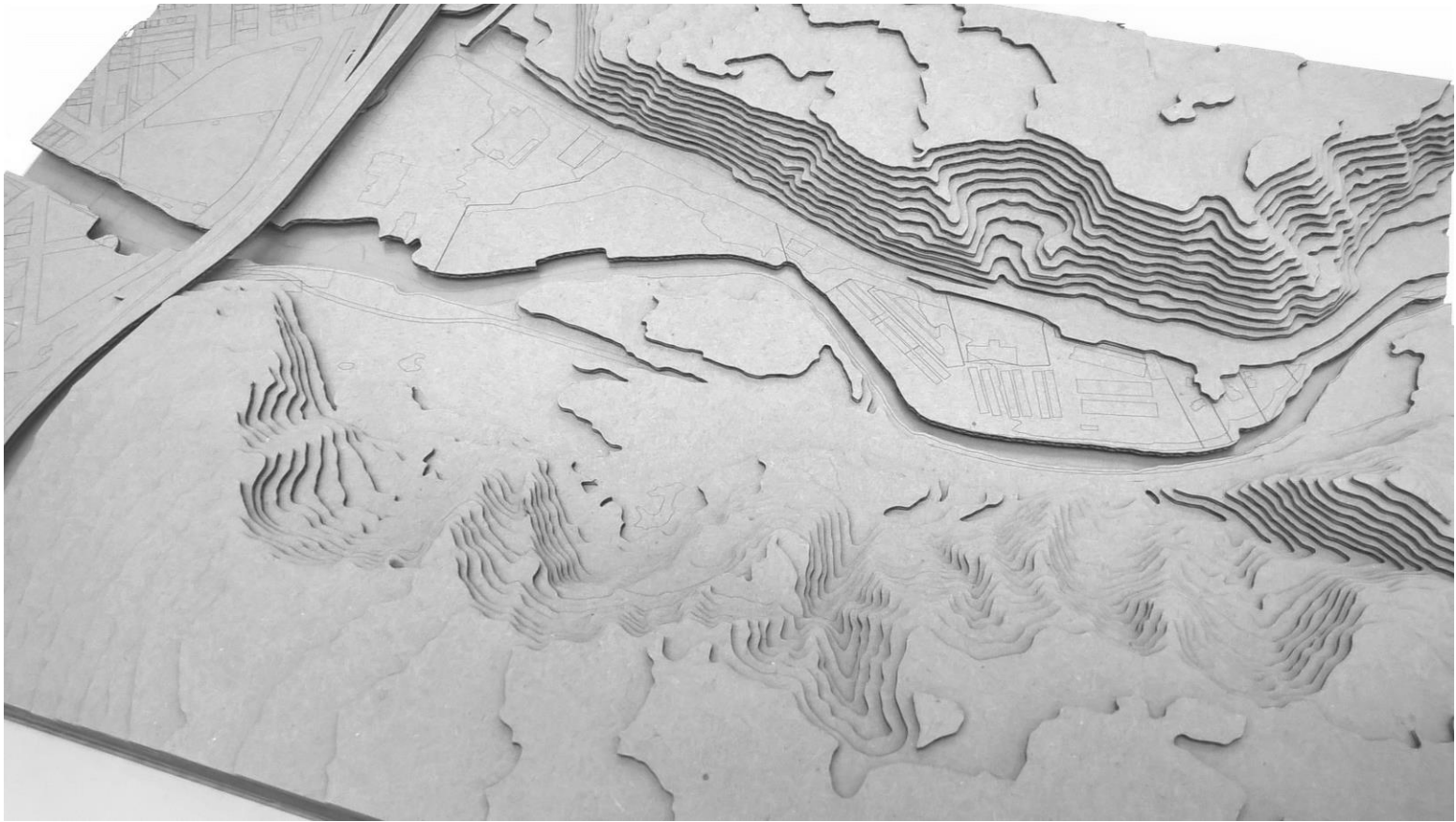


Figure 62 Site Model: South view



Figure 63 Site Plan: Final organization of the site



Figure 64 Stoneway Concrete property looking from south bank of Cedar River



Figure 65 Pedestrian bridge under I-405

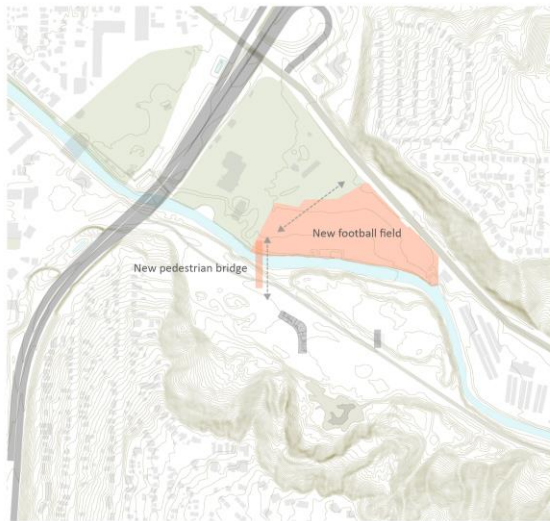


Figure 66 Site Map: Interventions

Activating the identified less active space with the new design interventions aims to reconnect the site history with the community.

The first design intervention is to activate the gravel parking area owned by Stoneway concrete on the north bank of the Cedar River. Based on the site analysis, three baseball fields already exist at Liberty Park and Cedar River Park. Taking advantage of the large scale of the present gravel parking area, the new intervention is to design other sports facilities such as football fields and amenities. (Figure 66)

The second step of new design intervention is to connect the north parks and south side with the new pedestrian bridge which will increase the accessibility and visibility from the surrounding condition. (Figure 66)



Figure 67 Interior perspective of public ceramic studio

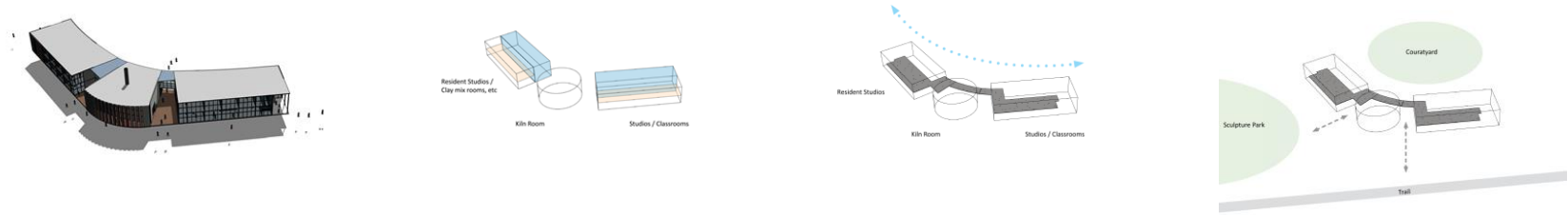


Figure 68 Ceramics Studio Diagram

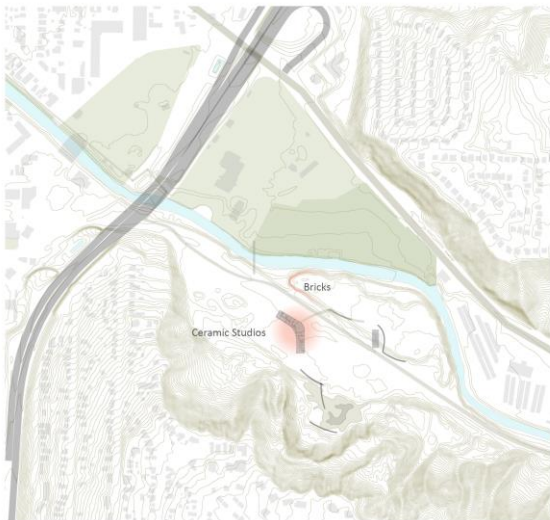


Figure 69 Site Map: Intervention

The third step is to design the ceramic studios at the entry point of the south bank of the Cedar River. The main design focus for the ceramic studios is to establish a smooth transition from the parking in the west entrance and from the new bridge. The program of a ceramic studio will provide various ceramic classes for the public with different levels of skills and ages by focusing on hands on experience. (Figure 67)

In addition to the public studios and classrooms, about half of the studio spaces are dedicated to a local and international ceramic artist’s residency program which will allow 24 hour access to the facilities as well as provide teaching opportunities during the residency period. (Figure 68)



Figure 70 Exterior perspective of ramp and a climbing kiln



Figure 71 Section northwest

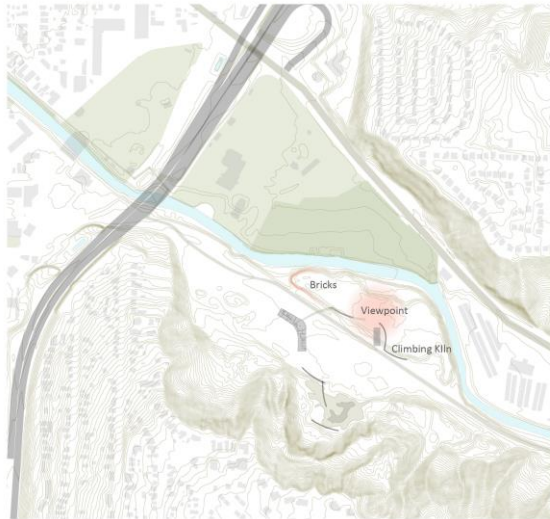


Figure 72 Site Map: Intervention

The fourth intervention is to activate the small hill area where all the brick piles are located. All the left over brick piles which have been overtaken by nature will be preserved and maintained as a historical monument. The path connecting the ceramic studios and the small hill is maintained to lead the visitors towards the viewpoint.(Figure 70) The viewpoint on top of the small hill provides a panoramic view toward the sculpture park on the south and the public park on the north. (Figure 73)

In addition, on the south slope, a ceramic climbing kiln is installed to enhance the ceramic program and provide a community involvement experience. The structure of the climbing kiln is incorporated with the slope condition. For instance, each separated kiln chamber on the ground surface is connected with fire box underground and allow the heated air move up to the higher elevation. (Figure 83, 84)



Figure 73 Exterior perspective of climbing kiln and view point

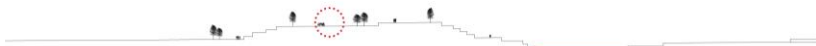


Figure 74 Section northwest



Figure 75 Site map: Intervention

The climbing kiln functions not only for firing ceramics, but also can be utilized as a stairs to allow access from the southeast. The ceramic studios and climbing kiln are connected with the new path, ramp, and rammed earth walls, which aimed to create continuity and lead the visitors. (Figure 85)

The last intervention, the former claypit area is activated to enhance the ceramic education programs. (Figure 86) Students and resident artists can access and collect the clay for their ceramic art works. Although the ceramic art making process is different from the industrial brick manufacturing, the principal of making and firing has not changed. The newly designed claypit area enables the students to learn the entire ceramic production process from beginning to end, by digging, preparing, shaping, and firing. In addition, the path and rammed earth walls connected with the studios and the climbing kiln are also designed to maintain continuity between the interventions and create the sculpture park contained within the interventions. (Figure 76)



Figure 76 Aerial Plan: Final organization of the site





Figure 77 Exterior perspective facing southeast



Figure 78 Site plan: Final organization of the site



Figure 79 Section northwest



Figure 80 Exterior perspective facing south

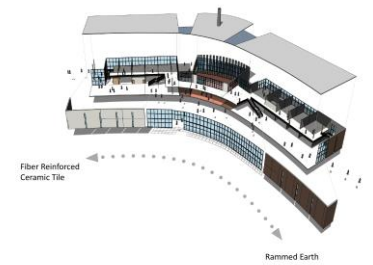
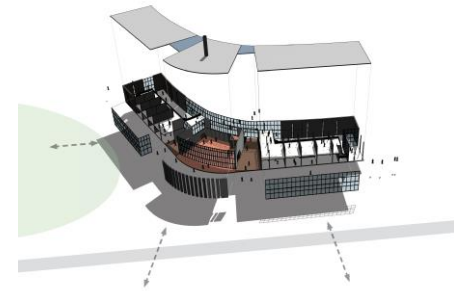
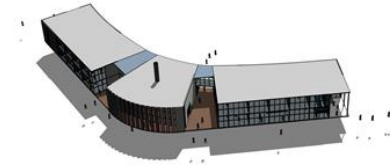


Figure 81 Studio façade material diagrams



Figure 82 Site map: Final organization of the site

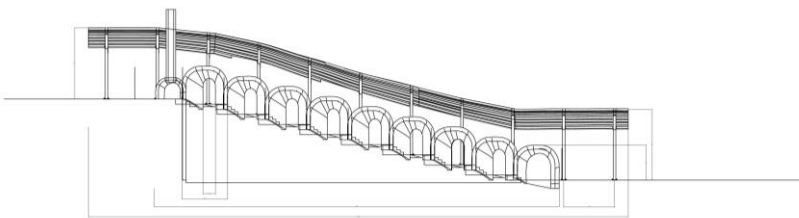


Figure 83 Climbing Kiln: Elevation West

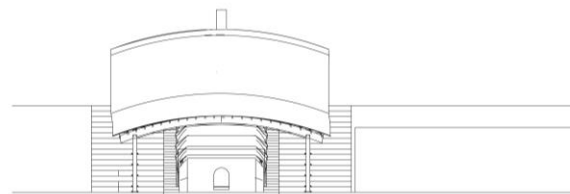


Figure 84 Climbing Kiln: Elevation South





Figure 85 Perspective view of climbing kiln facing northwest



Figure 86 Perspective view of clay pit facing northwest



Figure 87 Site plan: Final organization of the site

## **Chapter 5: Conclusion**

The purpose of the thesis is to create ceramic studios for educational purposes which can fully utilize the unique materiality of clay and the site condition.

Through the new intervention, the scarred landscapes created by the extraction of clay and the former brick making factory site will be re-activated by connecting their history with the communities and creating the new ceramic activities at the site. The role of architecture as fire, a transformative process, will continue to grow as the students continue their learning experience through the architecture of fire.



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## List of Figures

All images produced by Author unless otherwise noted

1. Denny Renton Clay & Coal Co. vitrified plant at Renton, August 18, 1910 by Asahel Curtis  
<http://digitalcollections.lib.washington.edu/cdm/singleitem/collection/curtis/id/1757/rec/1>
2. Bricks at current site
3. Factory Operation, Bird's Eye Photo  
Renton History Museum Archive
4. Denny Renton Clay & Coal Co. entrance, 1914  
[https://www.stqry.com/v/%22Narco-Brick Factory%22/i\\_1b1c8acf638f06ef8d0fb34d3a4da4fd](https://www.stqry.com/v/%22Narco-Brick%22/i_1b1c8acf638f06ef8d0fb34d3a4da4fd)
5. Abandoned brick factory  
<http://www.dgrin.com/showthread.php?t=42704>
6. Abandoned brick factory  
<http://thegreenpages.ca/on/2011/10/brick-by-brick-the-story-of-evergreen-brick-works/>
7. Postindustrial landscape  
<http://www.webbaviation.co.uk/gallery/v/environment/quarries/chinaclaypit-cb07238a.jpg.html>
8. Postindustrial landscape  
[http://www.nature.com/ngeo/journal/v5/n2/fig\\_tab/ngeo1386\\_F1.html](http://www.nature.com/ngeo/journal/v5/n2/fig_tab/ngeo1386_F1.html)
9. *Wave Chamber*  
<http://kielderartandarchitecture.com/art-architecture/wave-chamber.html>
10. *Shadow*  
<http://kielderartandarchitecture.com/art-architecture/shadow.html>
11. *Potemkin*  
<http://www.landezine.com/index.php/2010/12/potemkin-post-industrial-meditation-park-by-casagrande-rintala/>
12. Space inside the park  
<http://www.landezine.com/index.php/2010/12/potemkin-post-industrial-meditation-park-by-casagrande-rintala/>
13. *Mill Creek Canyon Earthwork*
14. *Johnson Pit #30*
15. Denny Renton Clay & Coal Company, aerial image, 1936  
<http://gismaps.kingcounty.gov/iMap/>
16. Site aerial image, 2013  
<http://gismaps.kingcounty.gov/iMap/>
17. Locating Renton, King County
18. Renton Coal Mine, 1911  
<http://digitalcollections.lib.washington.edu/cdm/singleitem/collection/wa-state/id/1073/rec/88>

19. Boeing Airplane plant  
<http://airwaysnews.com/blog/2013/06/09/inside-boeings-737-renton-factory-as-they-take-it-to-the-max-part-one/>
20. Pioneer Square, Seattle, March 17, 1917  
[https://en.wikipedia.org/wiki/Pioneer\\_Square,\\_Seattle](https://en.wikipedia.org/wiki/Pioneer_Square,_Seattle)
21. Factory Operation, Bird's Eye Photo  
Renton History Museum Archive
22. Factory interior showing workers posing  
<http://digitalcollections.lib.washington.edu/cdm/singleitem/collection/imlsrenton/id/393/rec/188>
23. Denny Renton Clay and Coal Co, factory exterior  
Renton History Museum Archive
24. GIS map of the Puget Sound glaciation  
[http://rocky.ess.washington.edu/areas/Puget\\_Lobe/two.jpg](http://rocky.ess.washington.edu/areas/Puget_Lobe/two.jpg)
25. The Puget Sound glaciation  
<http://facweb.northseattle.edu/tfurutan/geology111/Puget%20Sound.pdf>
26. Locating major brick factories around Duwamish River
27. Builders Brick Co., Seattle  
<http://www.mutualmaterials.com/history>
28. Denny Renton Clay and Coal Co., factory workers  
[https://www.stqry.com/v/Renton%27s-Early-Industries/i\\_df61f9b3ea8e0f33ec468d1cc6788bbf](https://www.stqry.com/v/Renton%27s-Early-Industries/i_df61f9b3ea8e0f33ec468d1cc6788bbf)
29. Northern Clay Products, Auburn  
<http://wrvmuseum.org/journal/images/>
30. Denny Renton Clay & Coal Company, aerial image, 1936  
<http://gismaps.kingcounty.gov/iMap/>
31. Site aerial image, 2013  
<http://gismaps.kingcounty.gov/iMap/>
32. Topographic map of current site
33. Factory workers at clay bed  
<http://digitalcollections.lib.washington.edu/cdm/singleitem/collection/imlsrenton/id/237/rec/187>
34. Denny Renton Clay and Coal Co., Clay pit  
Renton History Museum Archive
35. Site plan
36. Section Northwest
37. Brick factory layout  
Morrison, R.B. *Brickmakers' Manual*. Indianapolis: T.A. Randall & Co., 1890
38. Denny Renton factory layout diagram
39. Denny Renton Factory interior  
Renton History Museum Archive
40. Factory interior  
Renton History Museum Archive
41. Beehive Kiln  
Renton History Museum Archive
42. View of walking trail & a dog park at current site
43. Bricks at current site
44. Community demographic diagram
45. The historical plaque at the park entrance
46. Site Map: Active area
47. Cedar River Park entrance
48. Renton Public Library over the Cedar River
49. Henry Moses Aquatic Center
50. Skate park at Liberty Park
51. Site Map: Less active area
52. Stoneway Concrete Property
53. View from north bank of Cedar River
54. Small hill at site
55. Site Map: Less active area
56. Off-leash dog park and former clay pit
57. Graffiti art on concrete foundation
58. Former clay pit
59. Swamp at former clay pit
60. Site Map
61. Program development diagrams  
Rammed earth wall  
<http://www.archdaily.com/10629/nkmip-desert-cultural-centre-hbbh-architects>  
Ceramic façade  
[http://www.nbkterracotta.com/en/GB/projects/index.jsp?project\\_id=39399](http://www.nbkterracotta.com/en/GB/projects/index.jsp?project_id=39399)
62. Site Model: South view
63. Site Plan: Final organization of the site
64. Stoneway Concrete property looking from south bank of Cedar River
65. Pedestrian bridge under I-405
66. Site Map: Interventions
67. Interior perspective of public ceramic studio
68. Ceramics Studio Diagram
69. Site Map: Intervention

70. Exterior perspective of ramp and a climbing kiln
71. Section northwest
72. Site Map: Intervention
73. Exterior perspective of climbing kiln and view point
74. Section northwest
75. Site map: Intervention
76. Aerial Plan: Final organization of the site
77. Exterior perspective facing southeast
78. Site plan: Final organization of the site
79. Section northwest
80. Exterior perspective facing south
81. Studio façade material diagrams
82. Site map: Final organization of the site
83. Climbing Kiln: Elevation West
84. Climbing Kiln: Elevation South
85. Perspective view of climbing kiln facing northwest
86. Perspective view of clay pit facing northwest
87. Site plan: Final organization of the site