ANALYSIS OF ADAPTIVE REUSE OF INDUSTRIAL BRICK MILL BUILDINGS LOCATED AT MAJOR RIVERS ALONG THE SOUTHEAST ATLANTIC SEABOARD FALL LINE

by

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(Under the Direction of John Crowley)

ABSTRACT

Revitalization is one of the most commonly discussed topics in the world of planning today, and how one might reuse a building is also an important object of discussion. The planners ask how they might preserve or repurpose the decaying buildings so that they are not merely standing there and rotting. Some argue that many such buildings should be destroyed in order to pave way for newer and better buildings, others argue that whenever possible those buildings should be renovated and repurposed instead. The latter group makes a solid argument and one of the types of buildings often being repurposed is old industrial mill buildings. This paper seeks to identify how 19th century mill buildings that lie along the intersections of major rivers and the Atlantic Seaboard Fall Line are repurposed, to see if there is any trend in how they are reused, and how it may apply elsewhere.

INDEX WORDS: Repurposing, Adaptive Reuse, Fall Lines, Industrial Mill

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TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

Introduction

It is no great revelation that like many things in this world, buildings start to change after years or even decades of standing. Owners change, businesses can move out or move in, and in some cases the building can even be outright abandoned. But when a building no longer serves its original purpose, the question remains: What will happen to the building then? In their book *Old Buildings, New Designs: Architectural Transformations*, the authors Charles Bloszies and Hugh Hardy make the argument that an old building is not necessarily a building that should be renovated, and that some should simply be outright replaced, but nonetheless renovation and reuse should at least be attempted:

> "The call to demolish an old building may be justified, however, if the structure no longer serves its intended purpose. Well before the roof, floors, and walls wear out, demands placed on a building by its occupants change. Tenants rotate in and out of office buildings, successful institutions outgrow their spatial envelopes, and industries vacate fallow space. Once a structure ceases to serve its intended purpose, the owner must weigh a number of complex options. Replace or alter? is the first question, and the architectural merits of the building can frame the argument one way or the other. The structure's design should be honestly evaluated, free of the emotion that can surround these decisions. Stubborn and unreasonable positions taken by strident preservationists have done as much to

undermine legitimate historic preservation as have midnight demolitions of architecturally distinctive buildings." (Charles Bloszies 2011)[1].

Agreeing with this perspective is the journal article titled "Advancing indigent healthcare services through adaptive reuse: repurposing abandoned buildings as medical clinics for disadvantaged populations", written by James K. Elrod and John L. Fortenberry Jr. The authors summarize the discussion of their article thusly in the abstract: "Newly constructed buildings, whether owned or leased, are expensive, consuming a significant percentage of funds... But through adaptive reuse - the practice of repurposing existing, abandoned buildings, placing them back into service in pursuit of new missions - opportunities exist to economize on this front…" (James K. Elrod 2017)[2].

Adaptive reuse of buildings, such as a warehouse becoming an apartment building, can be described as a sort of middle ground between preserving the building as it currently would stand as a historic landmark, and outright destruction and demolition of what is an insight into the past of the city, of the country, and potentially even human history as a whole.

The aim of this thesis is to identify a certain type of building that is commonly being repurposed. After establishing criteria that will narrow down the type of building to something more specific, certain selected case studies will be looked at in detail. Then, if any patterns are found, they will be applied to another building of the same type. This building will be the City Mills in Columbus, Georgia. The aim of this part was to create an adaptive reuse plan to culminate everything that was learned during the research.

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[1] Charles Bloszies and Hugh Hardy, *Old Buildings, New Designs: Architectural Transformations* (N/A, Princeton Architectural Press, 2011), Page 23

[2] James K. Elrod and John L. Fortenberry Jr., *Advancing indigent healthcare services through adaptive reuse: repurposing abandoned buildings as medical clinics for disadvantaged populations* (2017), Page 5

Methodology

The first part of this thesis is to identify what types of buildings should be the focus. Discussion of reused buildings in general is far too broad of a topic, would take too much time to research, and would be subjected to so many different situations – such as a method of reuse working well for one type of building but poorly for another. Mill buildings were selected out of personal interest in what old, and some might say obsolete, industries might do with some of their factories and mills now that newer methods of production have replaced them.

The second part is to discuss where these mill buildings might be commonly located. For the same reasons, it was necessary to narrow the area down, as if the selected mill buildings that are examined are all in the same general area or region and thus are under circumstances similar to each other, then it stands to reason they may have been repurposed in similar ways. This would make a conclusion on whether there is a trend in the repurposing mill buildings not only easier to determine, but also make a better conclusion. Cities on major rivers along the southeastern portion of the Atlantic Seaboard Fall Line in the United States were decided as the location from which these mill sites were to be selected. Many of the cities along that intersection of river and fall line share similar histories as well as geographical environments, such as the head of historic navigation routes which were key locations for the settlements that included them.

The third task was to identify the “major rivers”, as well as identify the fall line and their intersection with it. This was done primarily through sources available on the Internet, such as the National Geographic website, and the Georgia Encyclopedia. Throughout this process, ArcMap was also used along with various information used in geographic information system

(GIS), to create maps which showcased the study area for this thesis. The following step was to utilize the maps with additional GIS data, as well as additional websites to determine which cities fit the criteria of being along the defined major rivers where they intersected the Atlantic Seaboard Fall Line. Criteria was established to narrow down the cities that would provide the best sources of information.

With the study area defined, the next step was to identify the mill buildings in the selected cities. As personal circumstances made physically travelling to the locations impractical, the analysis was done partially through looking at the cities using Google Maps as well as the use of Internet websites, many of which were the websites of the mill buildings. Applying this method, it became easy to determine which of the mill buildings were actually repurposed, which of them were still in use, and which of them were outright abandoned. Once all potential mill sites were identified, they were in such numbers that analyzing all of them would have also been incredibly impractical. Thus, the sites were used as a preliminary set of case studies of sorts to determine the presence of properties or characteristics suitable for more in-depth case studies of a fewer number of sites.

Next was to look at the selected repurposed mill buildings in detail. This was done primarily through Google Maps, which allowed the recording of their architecture, physical structure, what they were repurposed as, in addition to what surrounded the repurposed mill building and its context. All of this was done to ensure that as many of the circumstances that led to the adaptive reuse as possible are taken into account. The final step was to use the more detailed selected case studies to give guidance and example for the mill site to be redesigned as a thesis project.

CHAPTER 2

LITERATURE REVIEW

Introduction Literature

Charles Bloszies and Hugh Hardy (2011) provide an argument in the Introduction that discusses the significance of repurposing buildings. They say that while demolishing a building may be a justified action in some cases, steps towards restoration and adaptive reuse should be made whenever possible[3]. James K. Elrod and John L. Fortenberry Jr (2017) provide excerpts from their article that concur with Bloszies and Hardy, mentioning the financial incentives towards adaptive reuse.[4]

Establishing the Study Area Literature

The National Geographic Society (2012) examines the general definition of a Fall line. The articles articulate quite well what it means for the rivers, and how it relates to elevation.[5] The Geology Department for the University of Georgia (published date unknown) also helps to define in the general sense what the Atlantic Seaboard Fall Line is. According to the same article, it is typically the boundary between two areas of elevation, in this case between the Piedmont and Coastal Plain areas. It also describes it as being where the first falls one would

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[3] Charles Bloszies and Hugh Hardy, *Old Buildings, New Designs: Architectural Transformations* (N/A, Princeton Architectural Press, 2011), Page 23

[4] James K. Elrod and John L. Fortenberry Jr., *Advancing indigent healthcare services through adaptive reuse: repurposing abandoned buildings as medical clinics for disadvantaged populations* (2017), Page 5

[5] National Geographic Society. "Fall Line." National Geographic Society. October 09, 2012. Accessed February 15, 2019. https://www.nationalgeographic.org/encyclopedia/fall-line/.

encounter on their way inland along the navigable waterways are encountered. Later it defines the geology of the Piedmont and Coastal Plain regions. It describes the former as consisting of Paleozoic and Precambrian igneous and metamorphic rocks, while describing the latter as being made of Cenozoic and Cretaceous sedimentary rocks. The same website identifies some of the major rivers that intersect the Atlantic Seaboard Fall Line such as the Savannah and Potomac Rivers, while also identifying some cities that were deliberately built at the fall line such as Augusta, Washington D.C. and Baltimore.[6]

Duncan (2002), writing for the Georgia Encyclopedia, provided an in-depth definition of the fall line or at least the one in the state of Georgia. Duncan notes that the fall line is approximately twenty miles wide. He also defines the elevation change in the area, describing it as a region that rapidly loses elevation thereby creating a series of waterfalls along the rivers. Duncan also describes how the fall line is important to those river-based cities currently, citing their hydroelectric dams which are also used for recreational purposes such as fishing, as well as the ecological importance of the fall line region.[7]

GeorgiaInfo (Published date unknown) was used to determine the origin of the Coastal Plain region in regard to the Atlantic Seaboard. It describes that as much as sixty percent of the land in Georgia was at one point underwater. It further states that when the ocean receded, the flat land that was at one point the ocean floor became the Coastal Plain. GeorgiaInfo later describes the origin of the fall line, saying than in prehistoric times, it was the shoreline for the

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[6] "The Fall Line and Major Cities of the Eastern U.S." GEOL 1122. Accessed March 21, 2019. http://www.gly.uga.edu/railsback/1122EUSMISR.html.
[7] Duncan, Mack S. "Fall Line." New Georgia Encyclopedia. November 18, 2002. Accessed February 17, 2019. https://www.georgiaencyclopedia.org/articles/geography-environment/fall-line.

ocean.[8] Hanley (2006) for the New Georgia Encyclopedia described the origin and geology of the Piedmont. He describes the region as being a plateau consisting of low hills and narrow valleys. He also says that the eroded geology that makes up the Piedmont extends more than 150 miles from the fall line, buried under the sedimentary rocks of the Atlantic Coastal Plain.[9] Brown, Monnett, and Stoval (1958) describes how erosion might have played a role in the formation of the fall line. It says that in fact the falls that make up the fall line were developed by the rapid erosion of the softer rocks of the Atlantic Coastal plain.[10] Brown et al also provided a figure that was used to visually demonstrate the geology of a fall line.[11]

The CEUS-SSC, US Census, and ScienceBase all combined data and shapefiles to be used in the creation of GIS maps. Said maps produced a clear image showing the Atlantic Seaboard Fall Line, major rivers in the states the fall line passes through, and the locations of cities that are on the fall line.[12] [13] [14] Similarly, the South East Maps & Aerial Photographic Systems, a geology-based program at Clemson University, provided a map that displayed the

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[8] "Fall Line." GeorgiaInfo. Accessed March 23, 2019. https://georgiainfo.galileo.usg.edu/topics/geography/article/geographic-regions-of-georgia/fall-line.

[9] Hanley, Thomas. "Piedmont Geologic Province." New Georgia Encyclopedia. May 4, 2006. Accessed March 23, 2019. https://www.georgiaencyclopedia.org/articles/science-medicine/piedmont-geologic-province.

[10] Brown, Howard E., Victor W. Monnett, and J. Willis Stoval. *Introduction to Geology*. Ginn and Company, 1958, Page 77

[11] Brown, Howard E., Victor W. Monnett, and J. Willis Stoval. *Introduction to Geology*. Ginn and Company, 1958, Page 77

[12] Hibbard, J.P., van Staal, C.R., Rankin, D.W., and Williams, H., 2006, Lithotectonic Map of the Appalachian Orogen. *Approximation of the Fall Line after Hibbard (2006).* Canada-United States of America: Geological Society of Canada, map 2096A, 1:1,500,000 scale.

[13] U.S. Bureau of the Census. TIGER/Line: USA Rivers and Streams. United States of America: U.S. Bureau of the Census.

[14] ScienceBase. *North America Rivers and Lakes*. United States of America: U.S. Geological Survey, 1:10,000,000 scale

elevation of the Southeastern United States. This map was used to propose an alternative definition to the phrase "fall line."[15]

The National Climatic Data Center provides an overview of the geographic and geological descriptions of the states of North Carolina, South Carolina, and Georgia. It also describes the climates of those states, which are represented in the chapter using charts. This information is used to justify the inclusion of all three states in the study area as they have similar geographies, geologies and climates, and is used to suggest that the same industries may have been established along that area to take advantage of similar natural resources.[16] [17] [18]

The website Virginia Places provided information on the Roanoke River. Among this information was the revelation that a dam there was currently a double-edged sword. It provided hydroelectric power and flood control but has disrupted the natural flow of the river's fish as do many dams.[19] The website for the Tar River, tarriver.org, provided information on said river. This website emphasized the river's ecological significance, with over 400 miles of stream being designated a nationally significant habitat by the North Carolina National Heritage Program.[20]

The website American Rivers discussed the Neuse River, which focused on the important role it plays to the people living in the nearby area (around 2.5 million) as well as the role it

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[15] South East Maps & Aerial Photographic Systems. Digital Elevation Map of the Southeastern United States. Scale Unknown. Clemson, South Carolina: Clemson University, Date of Publication Unknown.
[16] "Climate of North Carolina." National Centers for Environmental Information. https://www.ncdc.noaa.gov/climatenormals/clim60/states/Clim_NC_01.pdf.
[17] "Climate of South Carolina." National Centers for Environmental Information. https://www.ncdc.noaa.gov/climatenormals/clim60/states/Clim_SC_01.pdf.
[18] "Climate of Georgia." National Centers for Environmental Information. https://www.ncdc.noaa.gov/climatenormals/clim60/states/Clim_GA_01.pdf.
[19] "Roanoke River." Virginia Places. http://www.virginiaplaces.org/watersheds/roanoke.html.
[20] "History." Tar River Land Conservancy. Accessed February 2019. http://www.tarriver.org/about-us/history/.

plays in providing a water supply to the capital, Raleigh. It also mentioned a historical link. Raleigh was reachable and navigable from North Carolina's original capital of New Bern through the Neuse River.[21] American Rivers also has information on the Pee Dee River south of the Neuse River. The ecological significance of the Pee Dee River is emphasized but mentioning that the ecological variance is threatened by a hydroelectric dam.[22] Later on, American Rivers also talks about the Congaree River in South Carolina. On this webpage, the fall line is briefly mentioned but the page also remarks on how it connects the largest city in the state to the largest wilderness in the state.[23]

Jay Mazzocchi (2006) of the North Carolina Encyclopedia discusses the importance of the Cape Fear River. The website puts emphasis on the river being historically significant, mentioning that it was dubbed the "Rio Jordan" by Spanish explorers. It was also important to trade, serving as a key transportation route for colonial pioneers.[24]

Robert Stevens (2016) of the South Carolina Encyclopedia discusses the Wateree River. This webpage focuses on the historical significance, saying that originally many First Peoples settlements including the Mississippian capital of Cofitachequi, were close to the river. It also mentions Camden being the first European settlement along the river.[25]

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[21] "Neuse River." American Rivers. Accessed February 2019. https://www.americanrivers.org/river/neuse-river/.
[22] "Pee Dee River [NC]." American Rivers. Accessed February 2019. https://www.americanrivers.org/endangered-rivers/2016-pee-dee/.
[23] "Congaree River." American Rivers. Accessed February 2019. https://www.americanrivers.org/river/congaree-river/.
[24] Mazzocchi, Jay. "Cape Fear River." NCpedia. 2006. Accessed February 2019. https://www.ncpedia.org/rivers/cape-fear
[25] Stevens, Robert. "Wateree River." South Carolina Encyclopedia. July 7, 2016. Accessed February 2019. http://www.scencyclopedia.org/sce/entries/wateree-river/.

The Georgia Encyclopedia covers multiple rivers. The first is the Savannah River which is described by the website in a variety of ways. It mentions how it provides water to cities like Augusta and Savannah, as well as sustaining a diverse ecosystem. The fact that it is the Port of Savannah's shipping channel is also stated, making it important to trade.[26] It later discusses the Ocmulgee River, describing it as an area where humans have settled for many millennia.[27] It also covers the Flint River, covering its importance in flow length, ecology, and history.[28] Later comes the Chattahoochee River, which not only serves as part of the border of Georgia and Alabama, but also was historically significant to both First People and as a center of industry.[29]

Last for this section of the paper is the tourist site for the city of Milledgeville, which describes the Oconee River. The site emphasizes the fact that it used to be an important water source. It then goes on to describe the history of some of the mills there, which supports this thesis.[30]

Mill Selection Literature

The first source examined was a website discussing the website for Rocky Mount Mills was also examined, which has been repurposed as a mixed-use property. The website briefly

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[26] Seabrook, Charles. "Savannah River." New Georgia Encyclopedia. October 13, 2006. Last updated May 31, 2016. Accessed February 2019. https://www.georgiaencyclopedia.org/articles/geography-environment/savannah-river.
[27] Hulett, Keith. "Ocmulgee River." New Georgia Encyclopedia. August 9, 2004. Last updated June 8, 2017. Accessed February 2019. https://www.georgiaencyclopedia.org/articles/geography-environment/ocmulgee-river.
[28] Morris, Susan D. "Flint River." New Georgia Encyclopedia. July 15, 2005. Last updated July 26, 2017. Accessed February 2019. https://www.georgiaencyclopedia.org/articles/geography-environment/flint-river.
[29] Willoughby, Lynn. "Chattahoochee River." New Georgia Encyclopedia. July 18, 2003. https://www.georgiaencyclopedia.org/articles/geography-environment/chattahoochee-river.
[30] "Oconee River Greenway." Milledgeville Georgia. Accessed March 2019. https://www.visitmilledgeville.org/nature/oconee-river-greenway/.

discusses the history of the mill stretching back to before the American Civil War. It accounts how the mill changed hands and ownership many times until it was closed in 1996.[31] NCpedia also is a source for the Rocky Mount Mills, discussing a newspaper article from 1869 that described the physical shape of the building.[32] It, along with the Rocky Mount Mills website, details the history of the building.[33]

The Caraleigh Mills website has a webpage that discusses its history. It discusses in detail how it was originally built to produce textile sheets and was closed and reopened several times until finally becoming condominiums. The same site goes into detail about the various amenities the condominium now has available for its tenants. Amenities include details such as ceiling height and window size and show how the mill repurposed not only the interior of the building itself, but also the entire parcel on which it is situated.[34]

The Cotton Mills website detailed the history of the namesake mill in somewhat vague manner. It mentions that it was built as a cotton mill as well as when it was closed and reopened. The building was then renovated into condominiums during the 1990s. The website also features a series of pictures showing articles from *The News and Observer* that cover the restoration. However due to the cropping of the photos, most of the dates on the newspaper articles were cut off. It also discusses many of the mill's physical features such as ceiling height and exposed timber.[35]

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[31] "Rocky Mount Mills." NCpedia. Accessed March 2019. https://www.ncpedia.org/rocky-mount-mills.
[32] "Rocky Mount Mills." NCpedia. Accessed March 2019. https://www.ncpedia.org/rocky-mount-mills.
[33] "Rocky Mount Mills." Rocky Mount Mills ICal. Accessed March 2019. https://www.rockymountmills.com/.
[34] "History." Historic Caraleigh Mills. http://www.caraleighmills.org/history.html.
[35] "Historic Condominiums in Raleigh, North Carolina." Mill Conversion | Historic Condominiums in Raleigh, North Carolina. https://cottonmillraleigh.com/page8/index.html.

The website for the North Carolina government features a webpage on the State of the North Carolina Division of Archives and History. However, it was quickly found that Gully Mill, the mill examined, is still in operation as a grist mill.[36]

The National Register for South Carolina has a webpage which discusses the Kendall Mill Historic District in Camden. Through this webpage, the history of the mill is given by a nomination form for the Historic District to be registered in the National Register of Historic Places. This document also gives a history of some of the people and companies that owned the mill, and also makes it clear that this is a multi-use area. The webpage itself then goes into some detail on the physical features of the mill.[37] This same website also was the source for the Columbia Mill Building, discussing the history of the building as it went from industrial building to housing the South Carolina State Museum.[38] The same website also has a webpage about the Olympia Mill in Columbus. This webpage, like the others, discusses the history of the mill from its construction to its repurposing as a series of upscale apartments. It then also discusses the architecture of the mill through a registration form for the National Register of Historic Places, and a continuation sheet for the same list.[39] A website known as the SC Picture Project also provided supplementary material on the Olympia Mill.[40]

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[36] *Individual Property Form for Gully Mill*. PDF. State of North Carolina Division of Archives and History.
[37] "Kendall Mill Historic District, Kershaw County (Camden)." National Register. Accessed March 2019. http://www.nationalregister.sc.gov/kershaw/S10817728010/.
[38] "Columbia Mills Building, Richland County (Gervais St. on the Congaree River, Columbia)." SCDAH. Accessed March 2019. http://www.nationalregister.sc.gov/richland/S10817740067/.
[39] "Olympia Mill, Richland County (500 Heyward St., Columbia)." SCDAH. http://www.nationalregister.sc.gov/richland/S10817740132/.
[40] "Olympia and Granby Mills - Columbia, South Carolina." South Carolina Picture Project. https://www.scpictureproject.org/richland-county/olympia-millhtml/.

The website for the National Park Service provided information of the Enterprise Mill located in Augusta, Georgia. This webpage catalogues the history of the mill from when it was originally Coleman's Flour Mill to its closing in 1983 to its renovation into a mixed-use development in 1997.[41] The NPS website also has a webpage for the Sibley Mill and the Confederate Powderworks Chimney that it is on the same parcel. Here it discusses the history of the Confederate Powderworks, which was seized by the federal government during the American Civil War aside from the chimney, as well as the history of the Sibley Mill which replaced it and is currently a mixed-use residential and commercial development.[42]

The website for the Library of Congress provided supplementary sources about the Sibley Mill and Confederate Powderworks, where it discussed the symbology of the Powderworks Chimney as a memorial to those who died fighting for the Confederacy during the American Civil War.[43]

For the O'Quinn's Mill, the website for the mill itself is used. Here it becomes apparent that the mill has been repurposed as a wedding venue but as it is not directly on the Oconee River, it may not fit the criteria established in earlier chapters.[44]

The next source used was the website for the Convention Center in Columbus, Georgia, more specifically the About Us webpage. As this is a publicly owned building, the city government describes very briefly the history of the mill. The city, through this website, also

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[41] "Enterprise Mill--Augusta: A Discover Our Shared Heritage Travel Itinerary." National Parks Service. https://www.nps.gov/nr/travel/augusta/enterprisemill.html.
[42] "Sibley Mill and Confederate Powder Works Chimney--Augusta: A Discover Our Shared Heritage Travel Itinerary." National Parks Service. https://www.nps.gov/nr/travel/Augusta/sibleymill.html.
[43] Jorgensen, Robert C. *Historic American Engineering Record: Sibley Manufacturing Company*. PDF. Historic American Engineering Record, 1977. http://cdn.loc.gov/master/pnp/habshaer/ga/ga0300/ga0342/data/ga0342data.pdf
[44] "Our Story." O'Quinns Mill. http://www.oquinnsmill.com/our-story.html.

boasts about the structure of the mill itself.[45] The final source was the website for the Eagle and Phenix Mills in Columbus, Georgia. On this website, the history of the mills is discussed including the history of the prior mill which was destroyed during the American Civil War, and when the mills were rebuilt and repurposed.[46]

Throughout this section, Google Maps provides street-based views of the buildings. This allowed for the architecture and physical structure of the mill buildings to be looked at in greater detail. Google Maps also provided screenshots of the buildings, which were used as many of the Figures in this section.

In-Depth Mill Study Literature Review

The website for Caraleigh Mills was used to provide information about the renovations the mill has undergone. The For Sale page on this site provided the figure used to showcase a condominium in the Mill. [47] The Amenities page provided information about what exactly had been added to the mill over the course of its repurposing, as well as two figures which were used.[48]

[45] "About Us" Columbus Trade Center. Accessed April 14, 2019. http://columbustradecenter.com/about-us/
[46] "Mill History." Eagle and Phenix Mills. Accessed April 14, 2019. http://www.eagleandphenix.com/mill-history/.
[47] "For Sale." Caraleigh Mills. Accessed June 3, 2019. http://www.caraleighmills.org/for-sale.html.
[48] "Amenities." Caraleigh Mills. Accessed June 3, 2019. http://www.caraleighmills.org/amenities.html.

Similarly, the website for Olympia Mills on the Mills Living website described the features of the repurposed mill, including elements such as ceiling heights. It also provided a figure in the form of a floor plan of a room. [49]

The website for the Eagle and Phenix Mills in Columbus, Georgia provided information on the amenities it provides to its residents and users. This including information such as security, energy efficiency, and the various features such as exposed timbers. It also mentioned the surrounding areas such as the Riverwalk. [50]

For all three of the mill sites, Google Maps was used once again to determine the surrounding areas of each of the mills. This provided useful information on where the mills were located in terms of the surrounding land use (i.e. commercial, residential).

Project Literature Review

Google Maps provided figures used in this paper of the City Mills site. A document from the Historic American Engineering record, obtained from the Library of Congress website, provides the history of City Mills, as well as various photographs that were used as figures.[51]

In regard to the plan to renovate the City Mills site, a news article by the *Ledger-Enquirer* (2016) provided information about a $60 million project to renovate the entire area

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[49] "Olympia Mill." Mills Living. Accessed April 19, 2019. https://www.millsliving.com/olympia-mill

[50] "Amenities." Eagle and Phenix Mills. Accessed April 19, 2019. http://www.eagleandphenix.com/amenities/.

[51] Historic American Engineering Record, Creator, Eagle & Phenix Mills, Georgia Power Company, D W Champagne, J P Illges, Seaborn Jones, Horace King, et al. *City Mills Company, Eighteenth Street & First Avenue, Columbus, Muscogee County, GA*. Columbus Georgia Muscogee County, 1968. Documentation Compiled After. Photograph. https://www.loc.gov/item/ga0256/.

surrounding City Mills as well as the mills itself, turning it into a mixed-use district.[52] The 2038 Columbus Comprehensive Plan provided information about the renovation of the entire area surrounding City Mills, as well as a figure that was used.[53] Another article by the Ledger-Enquirer stated that currently the Mill is owned by a man named Jack Pezold who plans on renovating it into a hotel and restaurant.[54]

Two sources were used to determine the current state of the site of City Mills. Email correspondence between the author of this thesis and Justin Krieg, the Director of Planning and Programs of Historic Columbus in Columbus, Georgia, provided information on the progress of the adaptive reuse of City Mills.[55] Professional photographer Taylor Haff provided many of the photos used in this section, taken at the request of the author, to show the current state of the site.[56]

The public access website for Columbus Georgia has a map function which provided information about boundaries of the City Mill property as of January of 2019. It was used to help plan out what exactly will happen to City Mills during the proposed adaptive reuse.[57] John

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[52] "Owen, Mike. "$60M Transformation: City Village Master Plan to Bring Jobs, Housing, Retail." Ledger-Enquirer. February 14, 2016. Accessed June 15, 2019. https://www.ledger-enquirer.com/news/local/article60302791.html.

[53] "Community Assessment." Government of Columbus, Georgia. Accessed June 15, 2019. https://www.columbusga.gov/planning/pdfs/cp-CommunityAssessment.pdf

[54] Williams, Chuck. "Hotel Developer Has Big Plans for Historic Downtown Columbus Riverfront Site." Ledger-Enquirer. August 20, 2018. Accessed May 21, 2019. https://www.ledger-enquirer.com/latest-news/article216879220.html.

[55] Justin Krieg (Director of Planning and Programs of Historic Columbus in Columbus, Georgia), in discussion with the author, email, May 2019.

[56] Haff, Taylor. "City Mills." Pixieset. Accessed June 2, 2019. https://taylorhaffphotography27.pixieset.com/citymills/.

[57] "Map Search." CCG Public Access Site. Accessed June 2019. http://publicaccess.columbusga.org/iaswpub/maps/mapadv.aspx.

Crowley of the University of Georgia provided the final figure for this section, a sketch of a proposed site plan.[58]

[58] Crowley, John, "A more detailed plan for City Mills and the surrounding area," Drawing, June 2019, University of Georgia.

CHAPTER 3

ESTABLISHING THE STUDY AREA

Chapter Introduction

Before this thesis proceeds any further, there are two questions that must be answered: just what is a fall line and why is it so critical to the topic of this thesis? This chapter will be split into three sections: defining a fall line, providing a potential alternative to the earlier definition, and highlighting the importance of the fall line in a more descriptive context.

What Is a Fall Line?

The Encyclopedic Entry on the website for the National Geographic Society gives the general definition of a fall line, stating that "A fall line is the imaginary line between two parallel rivers, at the point where rivers plunge, or fall, at roughly the same elevation. Fall lines are often located where different elevation regions, such as coastal and piedmont, meet."[59] According to the old website for the Geology Department of University of Georgia, the Atlantic Seaboard Fall Line is a geological line that "…is the boundary between the hilly Piedmont and the flat Coastal Plain. It's called the Fall Line because the first falls or rapids in rivers that one encounters as one comes inland from the ocean are usally [sic] found at this boundary, as the streams drop off the Piedmont and onto the Coastal Plain."[60] The Georgia Encyclopedia defines the area a little

[59] National Geographic Society. "Fall Line." National Geographic Society. October 09, 2012. Accessed February 15, 2019. https://www.nationalgeographic.org/encyclopedia/fall-line/.
[60] "The Fall Line and Major Cities of the Eastern U.S." GEOL 1122. Accessed March 21, 2019. http://www.gly.uga.edu/railsback/1122EUSMISR.html.

further, including a width for the fall line area that runs through the state: "The fall line is a geological boundary, about twenty miles wide… a gently sloping region that rapidly loses elevation from the north to the south, thereby creating a series of waterfalls."[61]

The two areas that create the fall line, the definitions of the Piedmont and the Coastal Plain should also be established. GeorgiaInfo uses the following explanation of the origins of the Coastal Plain: "In prehistoric time, as much as sixty percent of the land that is now Georgia was covered by ocean. When the ocean receded, it left a mostly flat land that we now call the Coastal Plain."[62] As for the Piedmont region, the Georgia Encyclopedia explains its geology and origins: "The plateau of the Piedmont region has been formed largely on the edges of steeply upturned and altered rocks. Topographically, the Piedmont is made up of low hills and narrow valleys. The worn-down rocks of the Piedmont region pass below the sedimentary rocks of the Atlantic Coastal Plain for more than 150 miles from the fall line. The period of rise of the Appalachians was about 500 million years ago, at the end of the Cambrian Period."[63] It then describes the origin of the fall line itself, saying that it is "The area where the prehistoric ocean's shoreline lay - a region about twenty miles across… It separates… Coastal Plain from its Piedmont region. Piedmont land is higher in elevation than that of the Coastal Plain, causing rivers that begin in

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[61] Duncan, Mack S. "Fall Line." New Georgia Encyclopedia. November 18, 2002. Accessed February 17, 2019. https://www.georgiaencyclopedia.org/articles/geography-environment/fall-line.

[62] "Fall Line." GeorgiaInfo. Accessed March 23, 2019. https://georgiainfo.galileo.usg.edu/topics/geography/article/geographic-regions-of-georgia/fall-line.

[63] Hanley, Thomas. "Piedmont Geologic Province." New Georgia Encyclopedia. May 4, 2006. Accessed March 23, 2019. https://www.georgiaencyclopedia.org/articles/science-medicine/piedmont-geologic-province.

the Piedmont to to [sic] gather speed - or "fall" - as they pass through the Fall Line into the Coastal Plain."[64]

In terms of geology, The Piedmont is "…a hilly region of Precambrian and Paleozoic igneous and high-grade metamorphic rocks," while the Coastal Plain, reflecting its past as an ocean floor is a "… region of undeformed and thus nearly flat-lying Cretaceous and Cenozoic sedimentary rocks and sediments."[65] Erosion also plays an incredibly heavy part in the development of the fall line, as the book *Introduction into Geology* by Howard E. Brown, Victor E. Brown and J. Willis Stovall describes: "The soft, poorly consolidated materials that make up the Atlantic Coastal Plain… lie adjacent to the much older and harder rocks of the Piedmont plateau. Many falls and rapids have been developed by the comparatively rapid erosion of the softer rocks east of this division line."[66] Figure 1 shows a diagram displaying this process in action.

An Alternative Definition

While at first it might seem that the fall line is a band that stretches across the entire area where the Coastal Plain meets the Piedmont, there is some discrepancy with this definition. Based on elevation maps collected from the University of Clemson (Figure 2), it becomes apparent that the fall line may not be so much a "band" or a solid line. In fact, based on the map below, one can determine that it's more of the locations marked by where the heads of major

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[64] "Fall Line." GeorgiaInfo. Accessed March 23, 2019. https://georgiainfo.galileo.usg.edu/topics/geography/article/geographic-regions-of-georgia/fall-line.

[65] "The Fall Line and Major Cities of the Eastern U.S." GEOL 1122. Accessed March 21, 2019. http://www.gly.uga.edu/railsback/1122EUSMISR.html.

[66] Brown, Howard E., Victor W. Monnett, and J. Willis Stoval. *Introduction to Geology*. Ginn and Company, 1958, Page 77

rivers "reach" in-land. After all, one of the characteristics of the fall line is that it is an area where there is a sharp decline in elevation, and naturally waterfalls are areas of sharp, so when this sharp decline in elevation occurs further inland, it warrants consideration. Also complicating

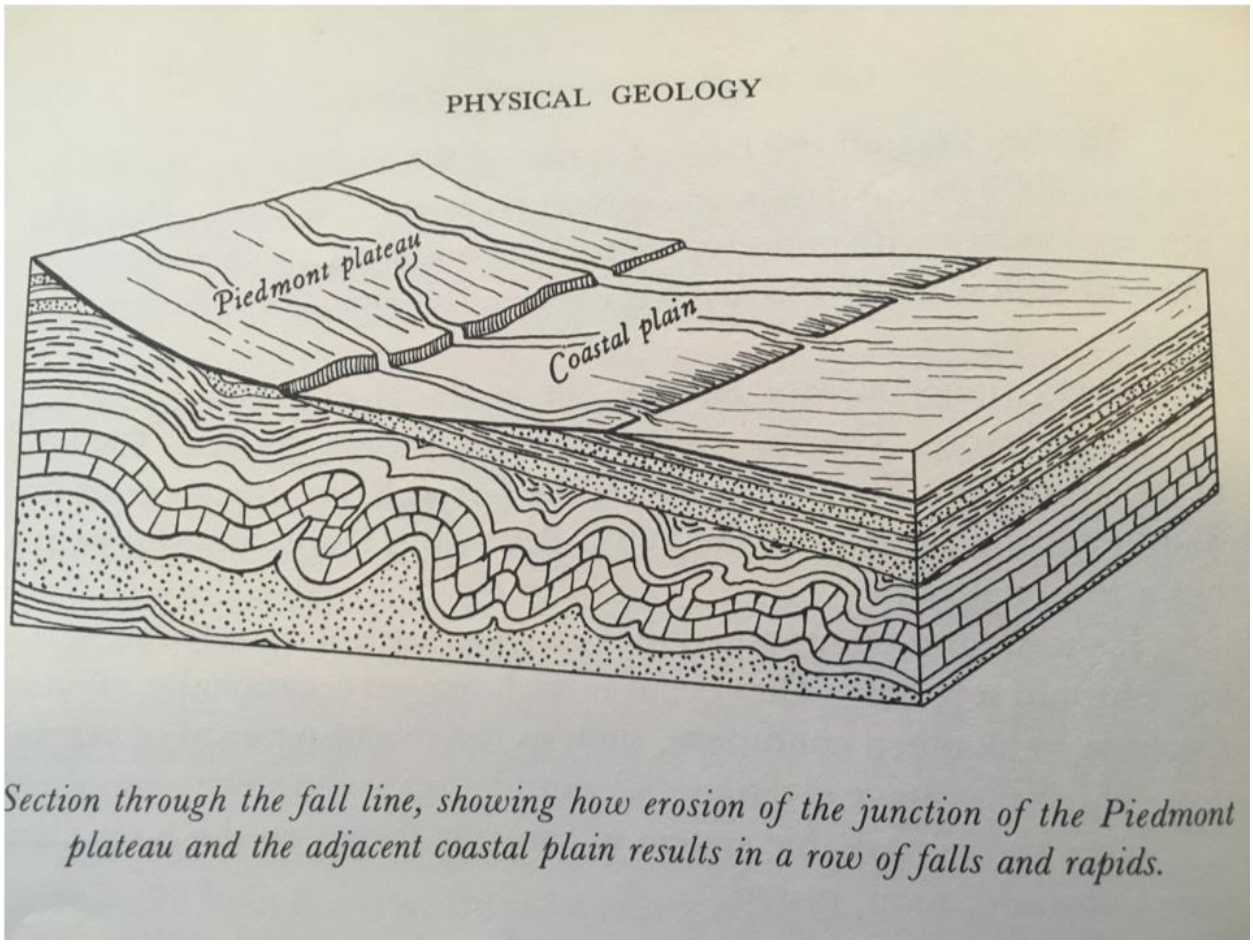

Figure 1. Fall Line Example. This picture displays a section image of a fall line, displaying elevations, and the effects of erosions. Photo Source: *Introduction to Geology*, et al. Howard E. Brown, Page 78

matters is the fact that the majority of the cities thought to be located on the fall line such as Augusta, Georgia and Raleigh, North Carolina, are located on the line of 300 foot elevation, which as stated in the previous section, is approximately the lowest elevation of the Piedmont. However, this discrepancy can be explained as those river heads being simply where the fall line is the most prominent, and that those "reaches" inland are merely the result of the rivers eroding those areas over the course of millions of years. Therefore, neither map is necessarily incorrect,

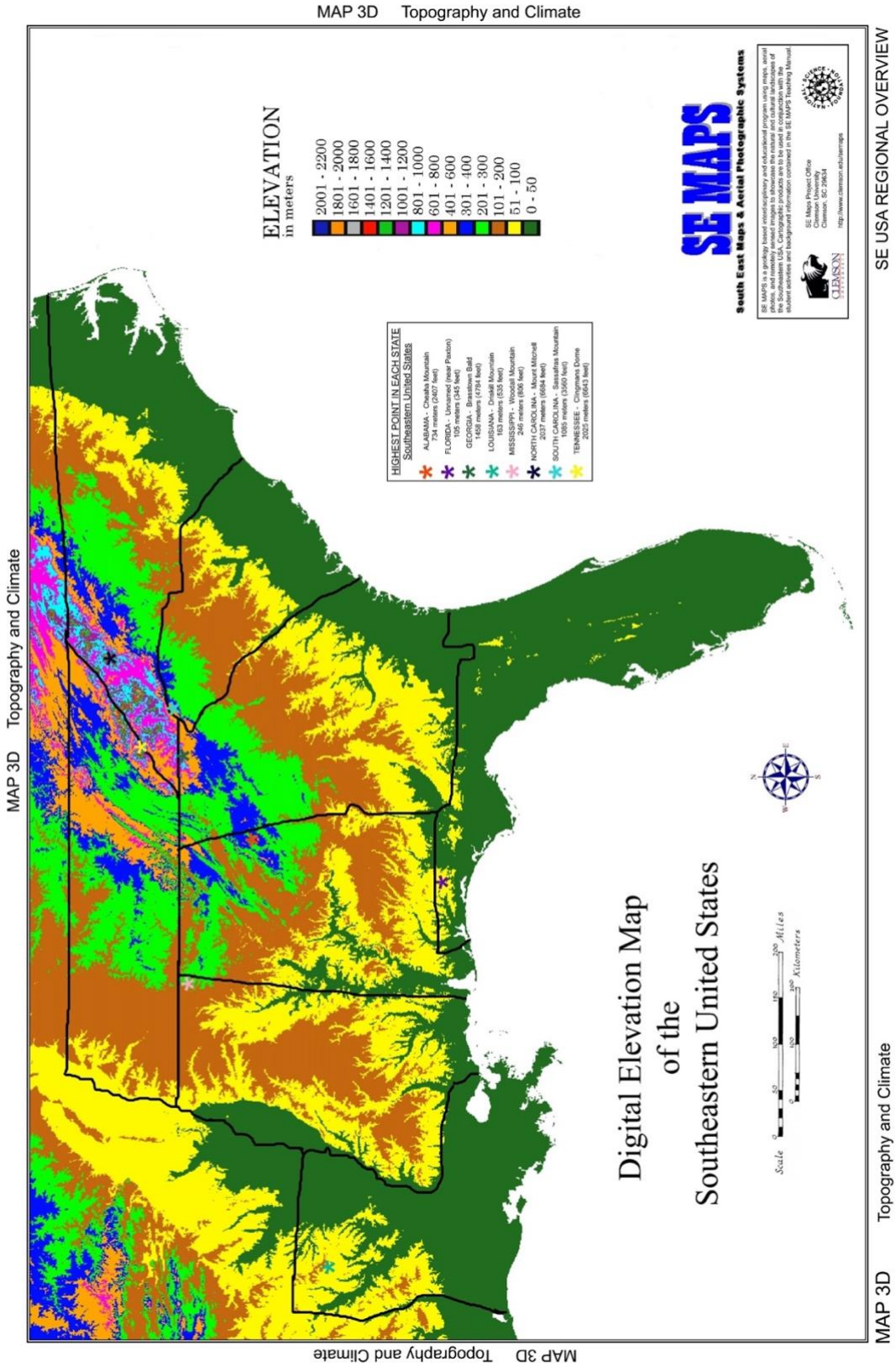

Figure 2. Elevation of the entire Southeastern region of the United States. The map is measured in meters. Source: Clemson University.

and instead the two of them should be combined to forge a greater understanding of what makes a fall line.

Importance of the Fall Line

There can be no question that the fall line has had a major impact on the eastern seaboard of the United States, primarily for three reasons: the impact it had on trade and subsequent city development, the use it has as a water resource, and the ecology.

In terms of trade and city development, the fall line has had a major impact: "Where rivers cross the Fall Line, cities commonly develop because ships reach the inland limit of navigation and must surrender their loads to land-based carriers. Philadelphia, Baltimore, and Richmond developed this way without any planning. Washington was cited on the Potomac River deliberately at the Fall Line for the same navigational reasons. Farther south, Columbia SC is a Fall Line city. on the Congaree River. In Georgia, Augusta, Milledgeville, Macon, and Columbus are Fall Line cities on the Savannah, Oconee, Ocmulgee, and Chattahoochee Rivers. In Alabama, Tuscaloosa is a Fall Line city on the Black Warrior River. All these cities were the economically inevitable result of the intersection of rivers with a geologic boundary between the hilly Piedmont and low flat Coastal Plain."[67]

Also, to consider is the impact of having the rivers to use as a resource. The Georgia Encyclopedia website states that, "In addition to their importance as transportation hubs, fall line cities were successful because of the presence of water resources. Fall line waterfalls first powered mills and eventually powered hydroelectric dams. The availability of waterpower

[67] "The Fall Line and Major Cities of the Eastern U.S." GEOL 1122. Accessed March 21, 2019. http://www.gly.uga.edu/railsback/1122EUSMISR.html.

continued to sustain fall line cities even as railroads surpassed river transportation by the middle of the nineteenth century. Although hydroelectric power only supplies about 2 percent of the energy used by Georgia consumers today, the reservoirs created by hydroelectric dams are still used for recreational and fishing purposes."[68]

While ecology is not the topic of this thesis, the ecology of the fall line and the areas it borders cannot be ignored. Georgia Encyclopedia describes the wildlife in the area: "Mammal species vary widely among the regions as well. To the north of the fall line, the smoky shrew and deer mouse occur only in the Blue Ridge; numerous bat species inhabit the caves of the Valley and Ridge and Appalachian Plateau; and generalist species like chipmunks and gray foxes occupy the Piedmont. Coastal Plain mammals south of the fall line include the round-tailed muskrat in the swamps; marsh rabbits and mink in the tidal marshes; and the North Atlantic right whale, the state marine mammal, in offshore waters. Among amphibians and reptiles, giant salamanders inhabit the Coastal Plain, while numerous woodland salamanders in the Appalachian Mountains give this region the highest salamander diversity in the world. American alligators and sea turtles are found south of the fall line, as are the smallest frog species (little grass frog) and largest snake species (eastern indigo) in the United States."[69] Even today there are still ways that the ecology of the fall line should not be discarded: "The unique features of the

[68] Duncan, Mack S. "Fall Line." New Georgia Encyclopedia. November 18, 2002. Accessed February 17, 2019. https://www.georgiaencyclopedia.org/articles/geography-environment/fall-line.
[69] Duncan, Mack S. "Fall Line." New Georgia Encyclopedia. November 18, 2002. Accessed February 17, 2019. https://www.georgiaencyclopedia.org/articles/geography-environment/fall-line.

Fall Line are also an attraction to outdoor enthusiasts; state parks such as High Falls State Park have been established along the Fall Line."[70]

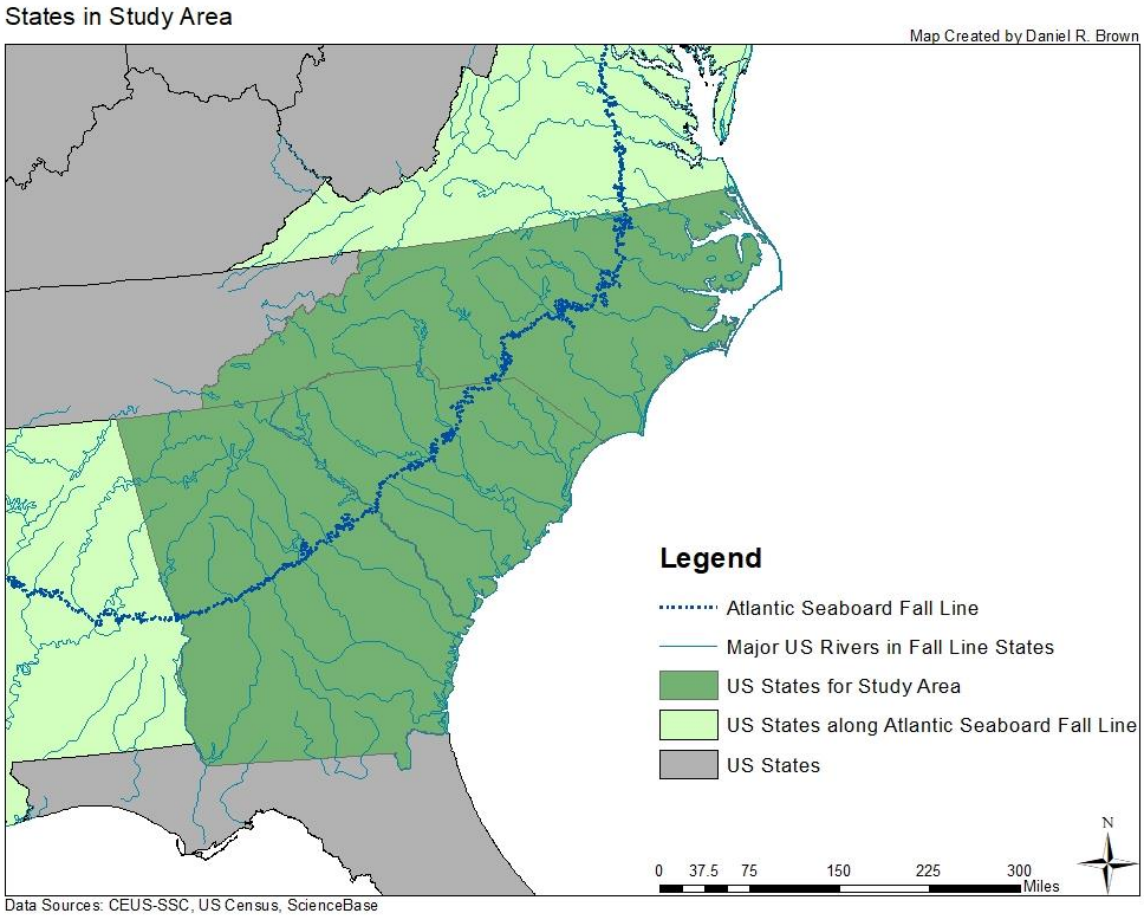

Figure 3. Map showing the entirety of the selected study area. Map created by author.

As noted earlier, with invention of new methods of transportation, the Fall Line became less critical over time as the both the head of navigation and the break in transportation. With the definition and importance of the fall line established, there is now a better understanding of the Atlantic Seaboard Fall Line itself. It will be defined, for the purposes of this paper, as the head of

[70] "Fall Line." GeorgiaInfo. Accessed March 23, 2019. https://georgiainfo.galileo.usg.edu/topics/geography/article/geographic-regions-of-georgia/fall-line.

navigation for major rivers. However, the majority of the eastern seaboard is still too broad of a study area and needs to be narrowed down. The next following section will outline the selected study area as well as explain why that area was selected.

Geology of States in Study Area

This section of the chapter will focus on explaining why this particular study area was chosen. The reasons were similar geography and geology, climates, rivers that intersect the Atlantic Seaboard Fall Line and history of colonial-era development.

The National Climatic Data Center has several brief descriptions for the three states that make up the study area for this thesis. The file for North Carolina describes the topography of the state: "The range of altitude is also the greatest of any state east of the Mississippi River, ranging from sea level along the Atlantic coast to 6,684 feet at the summit of Mount Mitchell, the highest peak in the eastern United States. Mount Mitchell is in the heart of the Blue Ridge; this mountain range, along with the Great Smokies which lie partly in North Carolina and partly in Tennessee, form the highest part of the Appalachian Mountains. The three principal physiographic divisions of the eastern United States are particularly well developed in North Carolina. From east to west, they are the: Coastal Plain, Piedmont and Mountains. The land and water areas of the Coastal Plain comprise nearly half the area of the State. It may be divided roughly into two sections: the tidewater area, which is in large part flat and swampy, and the interior portion, which is gently sloping and, for the most part, naturally well drained. Throughout both sections of the Coastal Plain, the soils consist of soft sediment, with little or no underlying hard rock near the surface. The average slope is from about 200 feet at the "fall line", or western boundary, to generally less than 50 feet over the tidewater subdivision. The fall line is

the dividing line between the Coastal Plain and the Piedmont. It may have at one time been the shoreline, since most of the soil to the east is sedimentary. Over the Piedmont, however, there is a great deal of hard rock near the surface. This area, comprising about one-third of the State, rises gently from about 200 feet at the fall line to near 1,500 feet at the base of the mountains. Although most of the Piedmont is gently rolling, there are several ranges of rather steep hills within its area, mainly in the Uwharrie Range around Randolph County and the Kings Mountain Range in Cleveland and Gaston counties."[71]

The NCDC also describes the topography of South Carolina, and many elements of said topography are similar to that of North Carolina: "The Blue Ridge Range of the Appalachian Mountains lies in the northwestern part of the State. Elevations vary from 1,000 to 2,000 feet with several peaks going over 3,000 feet. Sassafras Mountain, at 3,560 feet elevation, is the highest point in the State. The Mountain Region covers less than 10 percent of the State's area and to its southeast lies the Piedmont Plateau. The Plateau extends nearly to the center of the State with elevations decreasing northwest to southeast from 1,000 to 500 feet. There is a narrow hilly region where the Plateau descends to the Coastal Plain. In South Carolina this "fall line" region is known as the "Sand Hills"; elevations range from 500 to 200 feet. The width of the Sand Hills area is about 30 to 40 miles. Between the Sand Hills and the Atlantic Ocean lies the Coastal Plain. The Plain is broad and nearly level with elevations mostly between 200 and 50 feet. About 40 percent of the area of the State lies in the Coastal Plain."[72]

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[71] "Climate of North Carolina." National Centers for Environmental Information. https://www.ncdc.noaa.gov/climatenormals/clim60/states/Clim_NC_01.pdf.
[72] "Climate of South Carolina." National Centers for Environmental Information. https://www.ncdc.noaa.gov/climatenormals/clim60/states/Clim_SC_01.pdf.

Another document describes the topography of Georgia: “Georgia's land area is made up of four principal physiographic provinces: the Blue Ridge or Mountain Province, the Valley and Ridge Province, the Piedmont Province, and the Coastal Plain Province. The Blue Ridge or Mountain Province is located in the northeastern part of the State. The terrain in this area is characterized by forest-covered mountains and narrow valleys with rapidly flowing streams. The average elevation of the area is less than 2,000 feet, but the higher mountains reach altitudes between 4,000 and 4,784 feet above sea level… The Valley and Ridge Province, located in northwest Georgia, is composed of wide, flat, cultivated valleys separated by narrow, steep, wooded ridges that run more or less northeast to southwest. The elevation of the valleys ranges mostly between 500 and 800 feet above sea level, with the ridges rising to heights of 600 to 2,000 feet. The Piedmont Plateau Province is a wide area extending from the foothills of the Appalachian Mountains to the Coastal Plain and comprising nearly one-third of the area of the State. The terrain is mostly hilly in the north to rolling in the south, where it merges with the Coastal Plain. Elevations range from near 1,200 feet in the north to less than 500 feet in the south… The boundary between the Piedmont Province and the Coastal Plain is called the Fall Line, because of the steep fall of rivers as they cross this boundary. The Fall Line extends across the State from west-southwest to east-northeast, following a line from Columbus to Macon to Augusta. The Fall Line marks the head of navigation on the large rivers and is the site of waterpower dams at several places across the State. The Coastal Plain Province includes all of Georgia south of the Fall Line and comprises about three-fifths of the total area of the State. The terrain is slightly rolling to level and ranges in altitude from sea level along the coast to a

maximum of 600 feet. The low-lying coastal sections are rather marshy, and the large, slow-moving streams are bordered by swampy, densely-wooded areas."[73]

So as seen by these comparisons, the topography of the three states is fairly similar and they all share the regions of Coastal Plain and Piedmont, between which the fall line lays, as well as the Blue Ridge region. Based on this, we can conclude that the three states will have similar geological compositions.

Other Climate Factors

Climate-based factors have also been heavily considered, and since the three states are nearly adjacent to each other, they share similar climates. Figure 4 below displays the average annual temperatures and precipitation levels of each of the three states as reported by the National Oceanic and Atmospheric Administration.

Climate Information on States in Study Area			
	North Carolina	South Carolina	Georgia
Average Annual Temperatures	Exact number unknown, but varies around 20 degrees year-round based on region	58-67 degrees Fahrenheit up until the mountains are reached, at which point the elevation changes make temperatures change greatly	Summer: Ranges from 72-82 degrees Fahrenheit, depending on part of state Winter: Ranges from 39-55 degrees Fahrenheit, depending on part of state
Average Annual Precipitation	37-90 inches depending on the region. However, the area with 37 inches is a notable outlier as it	45-80 inches depending on region	45-75 inches depending on region

[73] "Climate of Georgia." National Centers for Environmental Information. https://www.ncdc.noaa.gov/climatenormals/clim60/states/Clim_GA_01.pdf.

	is in a valley surrounded by mountains on all sides.		

Table 1. Climate Information on States in Study Area. This chart shows the average annual precipitation and temperatures from each state in the study area. Chart created by Author. All information used in this chart is collected from the National Oceanic and Atmospheric Administration sites mentioned above.

While Table 1 does show some deviation, overall the climates of the three states selected for the study area are very similar. This means that many similar industries may have been active here in order to take advantage of similar natural resources, primarily water to power the mills.

Examining the Rivers

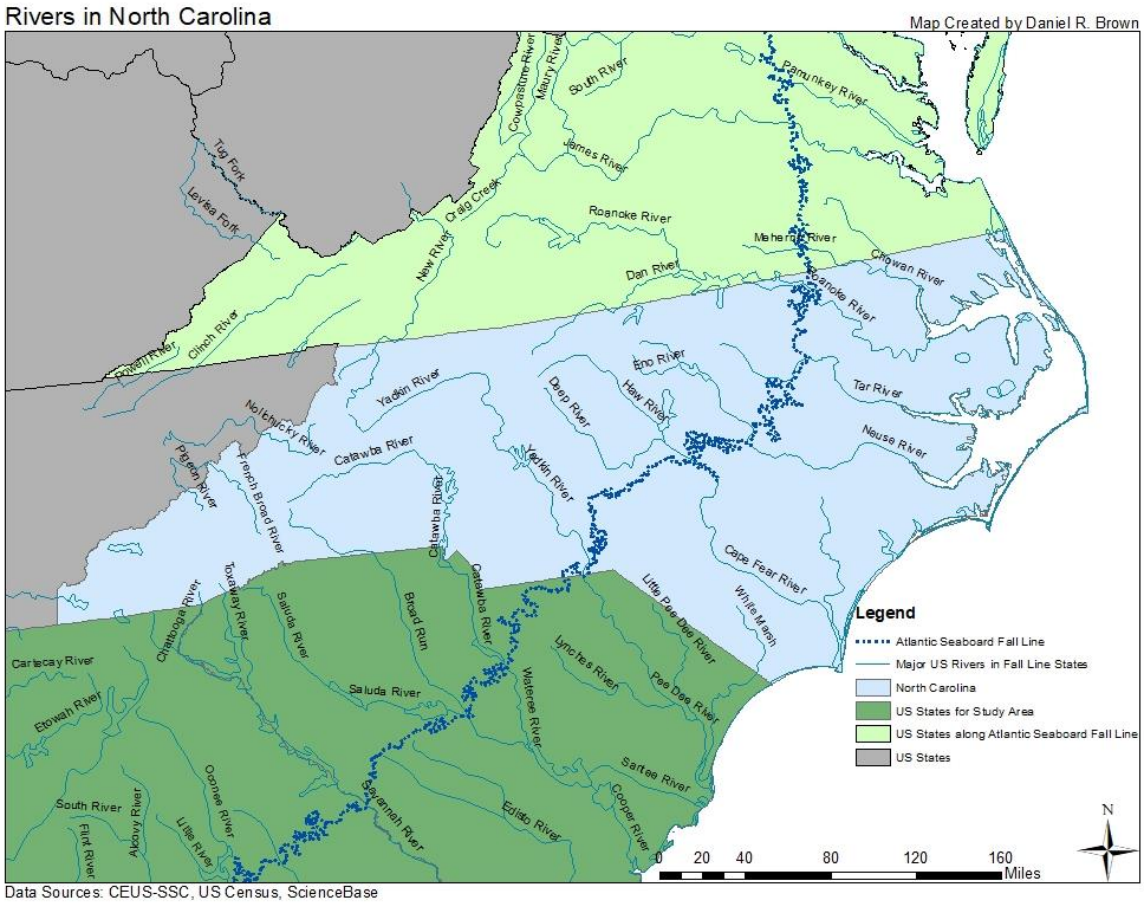

Figure 4. Map of North Carolina. This map shows the major rivers in the state as well as where the Atlantic Seaboard Fall Line intersects them.

Lastly, one of the criteria for selecting sites within the study area is that the mill buildings must be located where major rivers intersect the fall line. To accomplish that, this section is dedicated to examining the major rivers, and analyzing the significance of each of them to gain a better understanding of context, whether that be historical, ecological or economical.

Flowing from southern Virginia and through northeastern North Carolina, the Roanoke River is the first river that enters the study area. Virginia Places describes one of its most significant features as being a dam that provides a double-edged sword: "Until the Roanoke River was blocked by a dam in 1952, it was a highway for migrating anadromous fish. Kerr Dam was built after a hurricane in 1940 flooded farmland along the river. The reservoir has provided flood control and hydropower since then, as well as a reliable water supply and flat-water recreation for boaters and anglers - but the dam has interrupted the normal flow of fish."[74]

Flowing through eastern North Carolina, the next major river is the Tar River. The website for the Tar River emphasizes its ecological significance: "The streams of the Upper Tar River Basin contain an incredible wealth of biological diversity, including rare and endangered species, such that over 400 miles of streams are designated by the North Carolina Natural Heritage Program as 'nationally significant aquatic habitat.'"[75]

The Neuse River, south of the Tar River, is next to be listed. The American Rivers page for the Neuse River explains the importance of the river based on the population of the river basin: "The action gets underway at the headwaters, where the dynamic community of Raleigh-Durham remains one of the fastest growing regions in the nation. Roughly 2.5 million people live within the river basin… The Neuse feeds Raleigh's primary water supply, Falls Lake

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[74] "Roanoke River." Virginia Places. http://www.virginiaplaces.org/watersheds/roanoke.html.
[75] "History." Tar River Land Conservancy. Accessed February 2019. http://www.tarriver.org/about-us/history/.

Reservoir, which spans more than 12,000 acres and provides the only source of flood control in the basin." It also serves as a historical link according to the website, saying that it "North Carolina's original capital city of New Bern to its current capital of Raleigh…"[76]

Located entirely within the borders of North Carolina, the Cape Fear River is next. According to the website of NCpedia, "Its 202-mile length makes the Cape Fear the longest river to run entirely within the state's boundaries…The Cape Fear River has been one of North Carolina's most important natural resources since it was first dubbed ''Rio Jordan'' by Spanish explorers in 1526… The Cape Fear was the site of many initial European settlements and served as a key transportation route for colonial pioneers traveling into the North Carolina backcountry.[77]

Northernmost in South Carolina the Pee Dee River. According to its webpage on American Rivers, the Pee Dee River is significant for its ecological variance but is at risk due to a hydroelectric dam: "The Pee Dee River provides abundant habitat for fish, mussels, birds and other wildlife. Unfortunately, the health of the river is at risk thanks to irresponsible and harmful operations of the Duke Energy Tillery Hydroelectric Project on the Pee Dee River. If the Federal Energy Regulatory Commission does not take steps to improve dam operations through the project's license, the river's health will suffer for decades to come."[78]

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[76] "Neuse River." American Rivers. Accessed February 2019. https://www.americanrivers.org/river/neuse-river/.
[77] Mazzocchi, Jay. "Cape Fear River." NCpedia. 2006. Accessed February 2019. https://www.ncpedia.org/rivers/cape-fear.
[78] "Pee Dee River [NC]." American Rivers. Accessed February 2019. https://www.americanrivers.org/endangered-rivers/2016-pee-dee/.

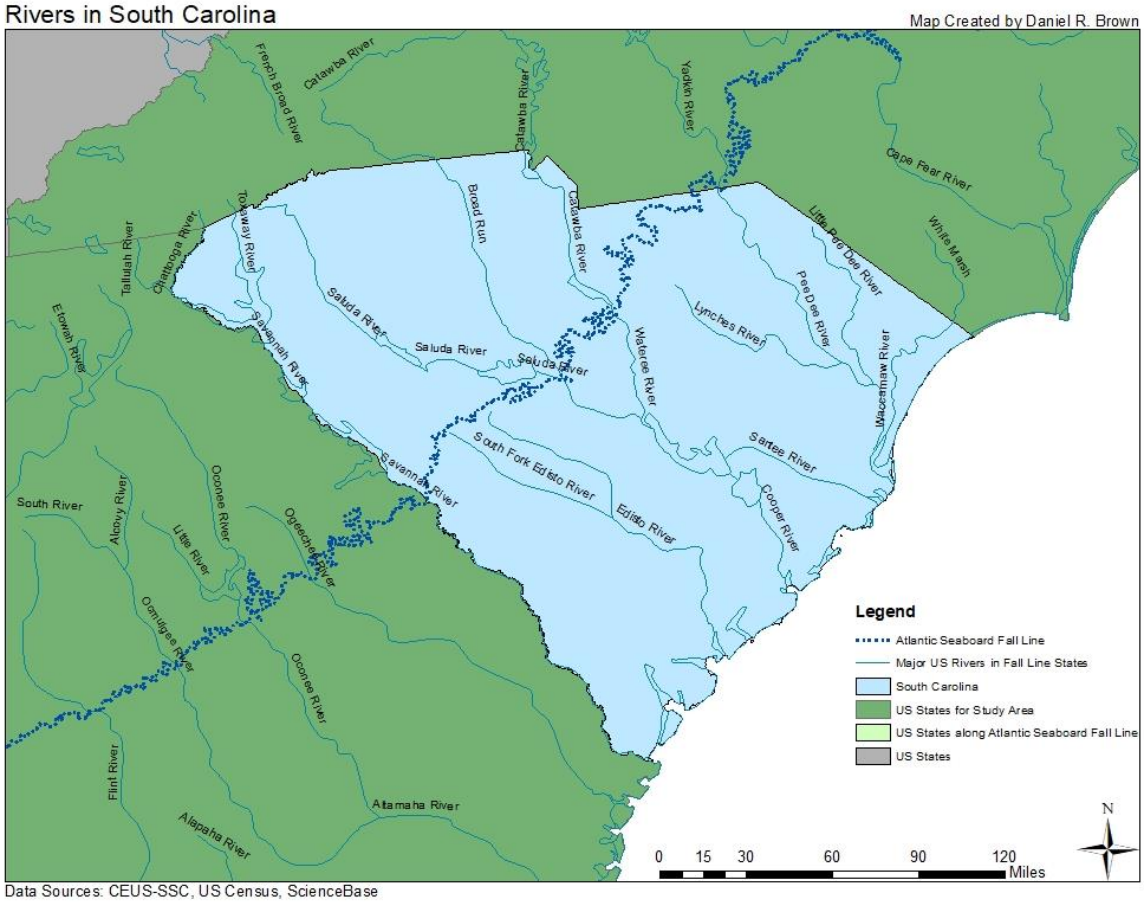

Figure 5. Map of South Carolina. This map shows the major rivers in the state as well as where the Atlantic Seaboard Fall Line intersects them.

Next is the Wateree River, flowing from the lake of the same name. According to the SCencyclopedia website, the Wateree River is significant due to its historical value: "Several Native American settlements, including the Mississippian capital of Cofitachequi, existed in close proximity to the Wateree River over seven hundred years ago. Later, various settlements of Siouan Indians… thrived along its banks. The first European settlement along the Wateree was Camden, which soon became an interior trading center…"[79]

[79] Stevens, Robert. "Wateree River." South Carolina Encyclopedia. July 7, 2016. Accessed February 2019. http://www.scencyclopedia.org/sce/entries/wateree-river/.

Last of the South Carolina major rivers (aside from the Savannah River which forms the border between South Carolina and Georgia), is the Congaree River. The American Rivers webpage for the river states that: “From its origin at the confluence of the Broad and Saluda rivers near the Piedmont fall line in downtown Columbia, South Carolina, to its remote, bottomland terminus at Congaree National Park, the Congaree offers a distinct diversity of rich history, varied wildlife and remarkable habitat linking South Carolina’s largest city to its largest wilderness.”[80]

Moving further southward, one comes to the Savannah River. The Georgia Encyclopedia describes the Savannah River as being significant in variety of ways. It provides water to Augusta and Savannah, forms the border between GA and SC, and sustains some of the world’s most varied and diverse ecosystems. It also “is the shipping channel for the Port of Savannah, the nation's tenth-busiest port for oceangoing container ships.”[81]

Flowing from central Georgia and into the Altamaha River is the Oconee River. The website promoting tourism in Milledgeville emphasizes the importance the Oconee River played in providing power to the city, saying that “From the earliest days, the river has been an important source of water power. In 1892 a grist mill was built on the shoal of the Oconee River and used in the early 1900s when it was converted to a hydro-electric plant, the first source of electricity for the City of Milledgeville. Part of the dam and mill structure are still visible in the river just north of the bridge.”[82]

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[80] "Congaree River." American Rivers. Accessed February 2019. https://www.americanrivers.org/river/congaree-river/.
[81] Seabrook, Charles. "Savannah River." New Georgia Encyclopedia. October 13, 2006. Late updated May 31, 2016. Accessed February 2019. https://www.georgiaencyclopedia.org/articles/geography-environment/savannah-river.
[82] "Oconee River Greenway." Milledgeville Georgia. Accessed March 2019. https://www.visitmilledgeville.org/nature/oconee-river-greenway/.

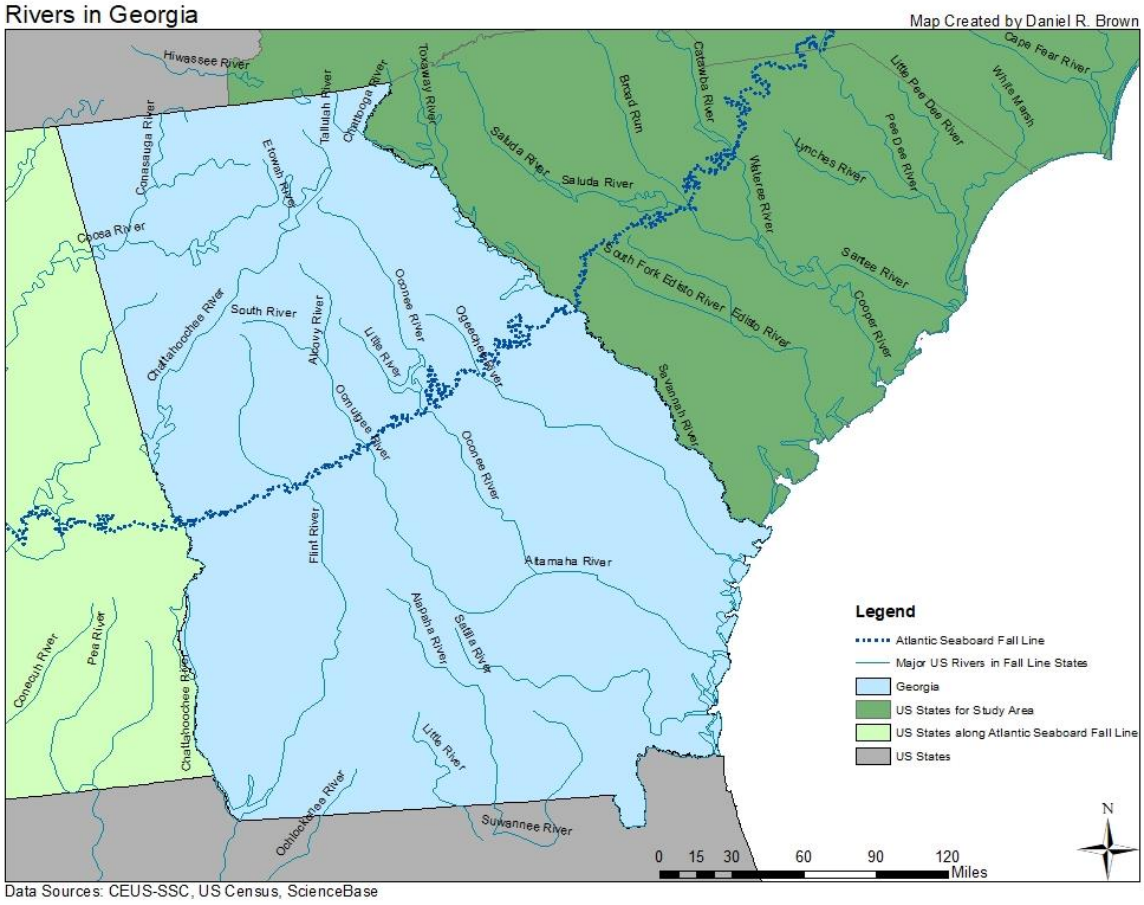

Figure 6: Map of Georgia. This map shows the major rivers in the state as well as where the Atlantic Seaboard Fall Line intersects them.

The Ocmulgee River flows south from Lake Jackson, eventually combining with the Oconee River to form the Altamaha River. The river is described by the Georgia Encyclopedia as being a long-standing area for human habitation: "Archaeologists have collected evidence of an unbroken chain of civilization in the Ocmulgee River basin dating from the Ice Age migration of humans across North America." The river later became a trade route for European settlers in the 16th century, as well as a point of river-based travel in the 19th century.[83]

[83] Hulett, Keith. "Ocmulgee River." New Georgia Encyclopedia. August 9, 2004. Late updated June 8, 2017. Accessed February 2019. https://www.georgiaencyclopedia.org/articles/geography-environment/ocmulgee-river.

The Georgia Encyclopedia also proceeds to describe how the Flint River is important in the context of both flow length, ecology, and history: “The Flint River… is one of only forty rivers in the nation's contiguous forty-eight states that flow unimpeded for more than 200 river miles… is thus home to an abundance of unusual animals and plants… settlers poured into western Georgia to farm the land between the Flint and Chattahoochee rivers in the early nineteenth century… In 1828 the Apalachicola-Chattahoochee-Flint river system began supporting steamboat travel…”[84]

Starting in Georgia, the southern portion of the Chattahoochee River forms part of the border of Georgia and Alabama, but the river is significant in other ways as well. According to the Georgia Encyclopedia, the river is historically significant, originally being the home of the Creek Tribe, as well as being the home to so many mills that “By the time the Civil War began in 1861, Columbus was known as "the Lowell of the South," after the home of industrial revolution, Lowell, Massachusetts.”[85]

As for why it is vital to establish that these rivers are critical, it is simply due to the fact that as major rivers and the sites of potentially important ecologies, geography, geologies, and histories, these are excellent places to look. The final requirement for defining the study area is simple: only looking at cities with populations of 10,000 or more. And the reason for this is also simple: because of the hypothesis that the higher the population, the higher the demand for buildings, and thus the higher the demand for preserved or repurposed buildings. This makes

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[84] Morris, Susan D. "Flint River." New Georgia Encyclopedia. July 15, 2005. Late updated July 26, 2017. Accessed February 2019. https://www.georgiaencyclopedia.org/articles/geography-environment/flint-river.

[85] Willoughby, Lynn. "Chattahoochee River." New Georgia Encyclopedia. July 18, 2003. https://www.georgiaencyclopedia.org/articles/geography-environment/chattahoochee-river.

larger cities ideal for the purpose of this thesis and narrows down the topic to something that is far more easily understandable.

Chapter Conclusion

With the establishment of the definition of the fall line, the importance of the fall line, and the reasoning for North Carolina, South Carolina, and Georgia being the study area, it now falls to establish a list of repurposed mill buildings that are located within the study area. This subject matter will be the topic of the next chapter: examining a list of selected repurposed mill buildings located in the study areas outlined above and comparing how they have been repurposed, as well as identifying any potential trends or common features that might be determined.

CHAPTER 4

MILL SELECTION

Chapter Introduction

With the study area narrowed down to the states of North Carolina, South Carolina, and Georgia, the cities to be examined can be clearly defined. While there are many cities along that section of the Atlantic Seaboard Fall Line to look at, this section of the paper will identify potential mill sites in those cities along the fall line.

Sites in North Carolina

Following the rivers from the northeast to southwest, the first place to look is Roanoke Rapids on the Roanoke River. Despite this however, there is no significant mill site that could be found during research, at least not from any reliable source material.

The first site to be examined is Rocky Mount Mills, which is named after the city of Rocky Mount located along the Tar River in the state of North Carolina. The Rocky Mount Mills site was originally built as a Cotton Mill and was supposedly the second cotton mill to exist in North Carolina. It was run by slave labor until 1852, at which point it began to be operated by hired workers who were predominantly women and girls. Like many mills in this section, it was burned down during the American Civil War, and then rebuilt, only to be devastated by fire once again in 1869. In 1883, it was handed over to a board of trustees following financial troubles, and had new buildings added to it in 1889 and 1994. The mill closed in the year 1996. According to current Rocky Mount Mills website, it was then bought: “In the early 21st century, Capitol

Broadcasting Company… bought Rocky Mount Mills and began reinventing it as a mixed-use destination."[86] [87]

Figure 7: The main building of the Rocky Mount Mills, on the banks of the Tar River. Photo is a screenshot from Google Maps taken by author.

The Rocky Mount Mills building is composed of a red brick exterior with a combination of both flat and arched windows. According to NCpedia, "*The Wilmington Journal* of 19 Feb. 1869 described the original mill as built "of rock-granite-with which the spot so abounds, and three stories high with a basement.'"[88] The building is short compared to several others on this list, only two stories high, three if one includes the tower-like structure in front. Notably across the street seems to be a collection of old brick and wooden buildings, which seem to be largely abandoned, with only the parking lot showing any obvious signs of use.

Chart for Sites in Rocky Mount

[86] "Rocky Mount Mills." NCpedia. Accessed March 2019. https://www.ncpedia.org/rocky-mount-mills.
[87] "Rocky Mount Mills." Rocky Mount Mills ICal. Accessed March 2019. https://www.rockymountmills.com/.
[88] "Rocky Mount Mills." NCpedia. Accessed March 2019. https://www.ncpedia.org/rocky-mount-mills.

Current Site Name	Rocky Mount Mills
Mill Type	Cotton Mill
Architectural Style	Assumed to be Italianate
Number of Stories	2-3
Year of Opening	1818 (Original) Post-Civil War (after being burned in 1863)
Year of Closing	1996
Year of Repurposing	Early 2000s
What was it reused as?	Mixed-use development
Other Notes	N/A

Table 2. Chart for sites in Rocky Mount. Created by author.

South of the Tar River is the Neuse River, upon which sits the state capital of Raleigh. The first of the analyzed mills in Raleigh is Caraleigh Mills. Originally opened as a mill to produce sheet-based goods in 1892, the building suffered its first closing in 1929 due to a combination of the textile industry declining and the impact of the Great Depression. It would not be reopened until 1938, only for it to be sold and repurposed to produce raw yarn in 1943. It then changed hands again in 1952, and the type of material it produced changed to synthetics. This iteration would last from 1956 until 1999 when the mill closed. The exact date for its last set of reuse is unknown, but there was a document outlining the final project dated in 2000. Currently, it houses loft-style condominiums.[89]

[89] "History." Historic Caraleigh Mills. http://www.caraleighmills.org/history.html.

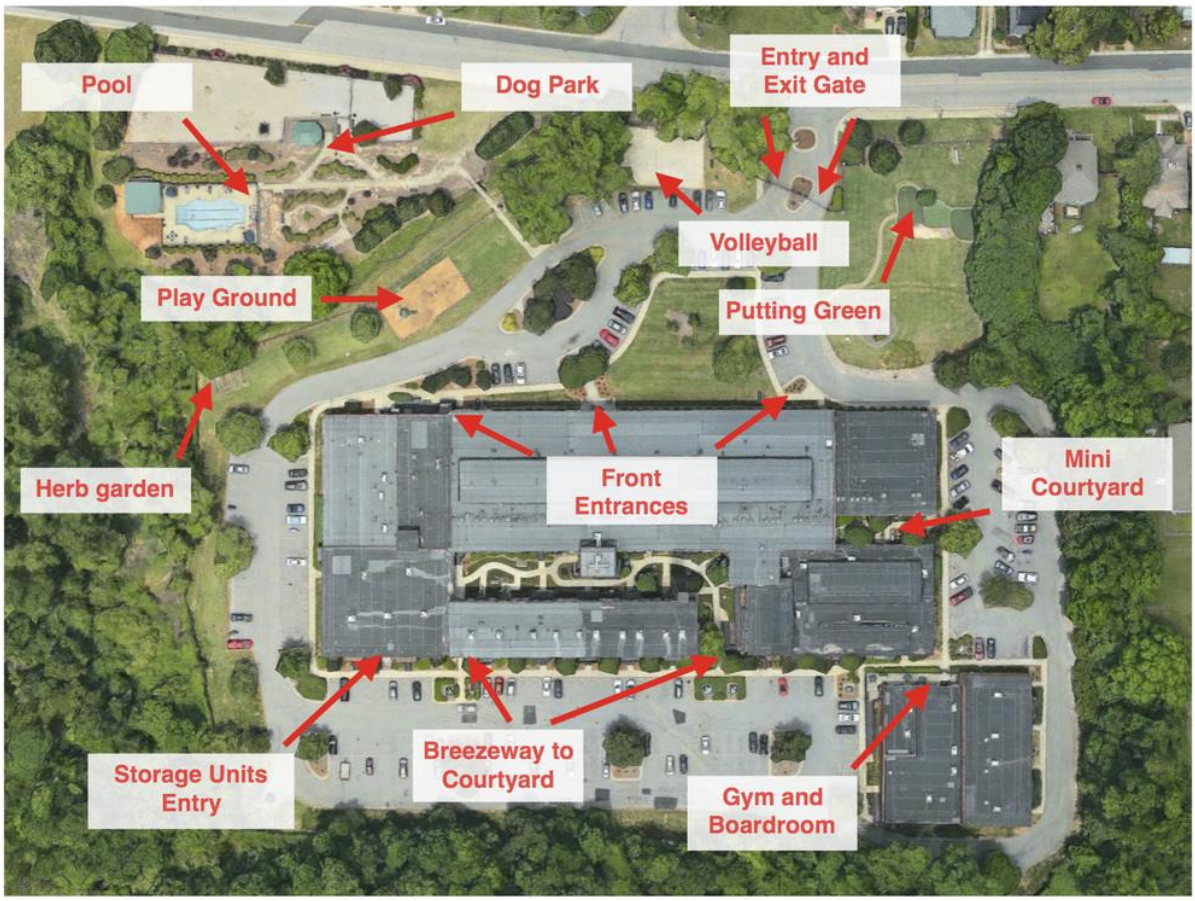

Figure 8: A map showing the various amenities for Caraleigh Mills. Taken from the building's website

Exterior analysis done by the author using Google Maps reveals that the actual building is a rectangular, two-story structure, seemingly Italianate, made primarily from brick, with arched windows on the second floor. The website for the building itself boasts of some of its features as: "… 1 and 2 story, 1, 2- and 3-bedroom homes ranging from under 1,000 to over 2,200 square feet. Homes feature 16-20 foot ceilings, original hardwoods, over-sized windows, exposed wood beams, brick walls, and granite counter tops." It then outlines some of the numerous amenities it has: "Pool, on property award winning dog park, sand volleyball, putting green, community vegetable/herb garden, two outdoor fire pits, numerous grills, game room with pool table, air hockey and ping pong, clubhouse, and large gym facility." (Ibid)

The second of the repurposed mills in Raleigh is what is now known as the Cotton Mills Condos. The historical details for this particular mill found in the process of research are somewhat scarce. What was seen however is that the mill was built as a cotton mill, as the name implies, in 1890. It was closed during the 1920s, after which it was made into a warehouse. It was renovated in a condominium in the 1990s and remains such to this day.[90]

Figure 9: Exterior of the Cotton Mills building in Raleigh, North Carolina. Photo is a screenshot from Google Maps taken by author.

From Google Maps, the building also seems to be Italianate, mostly rectangular, and stands at three stories high with a raised foundation in the front to accommodate for the fact that it is on a slope. Details on the exterior of the building are provided in an article in the Raleigh newspaper, *The News & Observer*, which covered the reuse of Cotton Mills: "It is considered a good example of late 19th-century industrial architecture, with its solid brick construction and rows of long, arched windows, hardwood floors 4 to 5 inches thick, and massive interior timber

[90] "Historic Condominiums in Raleigh, North Carolina." Mill Conversion | Historic Condominiums in Raleigh, North Carolina. https://cottonmillraleigh.com/page8/index.html.

Figure 10: A front-side view of the Cotton Mills Building in Raleigh, NC. Photo is a screenshot from Google Maps taken by author.

supports."[91] It is worth noting however that while the bottom row of buildings indeed have arched window frames, the second story seems to be flat. Some details on the interior of the building are described on the website of the building: "All condos feature high ceilings (14'-17'), and large windows providing an abundance of natural light and excellent views. Throughout the building are exposed timber beams that are well over a hundred years old."[92]

[91] "Historic Condominiums in Raleigh, North Carolina." Mill Conversion | Historic Condominiums in Raleigh, North Carolina. https://cottonmillraleigh.com/page8/index.html.
[92] "Historic Condominiums in Raleigh, North Carolina." Cotton Mill Home | Historic Condominiums in Raleigh, North Carolina. https://cottonmillraleigh.com/.

The Cape Fear River appears to not have any significant mills which fit the criteria within the city of Fayetteville. Gully Mill, which is listed as a historic property by the State of North Carolina Division of Archives and History, is actually a grist mill that is still in operation even.[93]

Chart for Sites in North Carolina

Current Site Name	Rocky Mount Mills	Calraleigh Mill	Cotton Mills Condos
Mill Type	Cotton Mill	Sheet Mill (1892-1929) Yarn Mill (1938-1952) Synthetic Mill (1956-1999)	Cotton Mill
Architectural Style	Assumed to be Italianate	Italianate	Italianate
Number of Stories	2-3	2	2-3
Year of Opening	1818 (Original) Post-Civil War (after being burned in 1863)	1892 (Original Opening) 1938 (First Re-Opening) 1956 (Second Re-Opening)	1890
Year of Closing	1996	1999	1920s
Year of Repurposing	Early 2000s	2000 (Estimated)	1920s (As warehouse) 1990s (As condominiums)
What was it reused as?	Mixed-use development	Condominiums	Condominiums

[93] *Individual Property Form for Gully Mill*. PDF. State of North Carolina Division of Archives and History.

Other Notes	N/A	N/A	N/A

Table 3. Chart for Sites in North Carolina. Created by author.

Sites in South Carolina

No site completely fitting the requirements could be found along the Pee Dee River. But along the Wateree River is the town of Camden, where the site to be noted is the Kendall Mill Historic District. This district is centered around the Wateree Plant and consists of structures dating from 1899 to 1923. The oldest building is the DeKalb Cotton Mill built in 1899 by William Burroughs Smith Whatley, which began operation in 1901 only to close a year later. It then changed hands numerous times. Given that it is a historic district, there are numerous uses for the area today, including housing Covidien, a medical manufacturing company, and as of 1992, the nomination form registered in the National Register of Historic Places, states that it was being used for industrial purposes, as a park, and as private residences, with the entire area having multiple ownerships.[94]

The structure of the original Dekalb Mill building is similar to many of the items in this chapter. According to the South Carolina Department of Archives and History, "The Dekalb Mill building, designed by W.B. Smith Whaley in the Romanesque Revival style, was considered a model of textile architecture. The original plant building is a four-story rectangular brick building with a back stair tower and an imposing six-story front stair tower."[95] It also has many other Romanesque features such as arch window, transoms and lunettes.

[94] "Kendall Mill Historic District, Kershaw County (Camden)." National Register. Accessed March 2019. http://www.nationalregister.sc.gov/kershaw/S10817728010/.
[95] "Kendall Mill Historic District, Kershaw County (Camden)." National Register. Accessed March 2019. http://www.nationalregister.sc.gov/kershaw/S10817728010/.

Figure 11: The Kendall Mill Historic District in Camden, South Carolina. Photo is a screenshot from Google Maps taken by author.

In Columbia in South Carolina along the Congaree River, there exist two repurposed mill sites to be noted: the Columbia Mills Building, and Olympia Mill. The Columbia Mills Building has a fairly simple history. It was originally constructed in 1893, manufacturing cotton ducks. It continued to do this until it was closed in 1981. After that, it was donated to the state itself and was repurposed into the South Carolina State Museum. It remains the state museum to this day.[96]

The current architecture of the South Carolina State Museum is a mix of the original 19th century architecture and a more "contemporary" style. Google Maps shows that it maintains most of the façade of the original building, with its red brick exterior, arched windows, and

[96] "Columbia Mills Building, Richland County (Gervais St. on the Congaree River, Columbia)." SCDAH. Accessed March 2019. http://www.nationalregister.sc.gov/richland/S10817740067/.

Figure 12: The front entrance of the South Carolina State Museum. The building has a protruding modern center flanked by the original brickwork. Photo is a screenshot from Google Maps taken by author.

casement windows along the side of the structure.

The Olympia Mill was which was constructed in 1899, under the design and ownership of William Burroughs Smith Whaley. According to the National Register for South Carolina, it was at the time the biggest cotton mill in the world that was under one roof. It produced cotton relatively uninterrupted until it closed its doors in 1996. Afterwards, it sat empty and vacant until 2007, when it was repurposed into upscale apartments and now has a nearby housing village.[97] [98]

The registration form of the building as well as the continuation sheet for Olympia Mill by the National Register of Historic Places describes the exterior: “The main mill building

[97] "Olympia and Granby Mills - Columbia, South Carolina." South Carolina Picture Project. https://www.scpictureproject.org/richland-county/olympia-millhtml/.
[98] "Olympia Mill, Richland County (500 Heyward St., Columbia)." SCDAH. http://www.nationalregister.sc.gov/richland/S10817740132/.

Figure 13: A front-side view of Olympia Mill. Photo is a screenshot from Google Maps taken by author.

contains features representative of the Romanesque style of architecture with a red brick exterior embellished with terra cotta detailing, large segmental arched window openings, and twin pyramidal roofed towers that rise above the flat roofline. Aside from the infilling of the windows, the building has been little altered over the years and remains intact and in excellent condition. The secondary buildings continue the vocabulary of materials and similar architectural detailing and survive in largely original condition."[99]

Chart of Sites in Camden and Columbia, South Carolina

Current Site Name	Kendall Mill Historic District	Columbia Mills Building	Olympia Mill

[99] "Olympia Mill, Richland County (500 Heyward St., Columbia)." SCDAH. http://www.nationalregister.sc.gov/richland/S10817740132/

Mill Type	Cotton Mill	Cotton Mill	Cotton Mill
Architectural Style	Romanesque	Assumed to be Italianate	Romanesque
Number of Stories	Unknown	3 plus elevated basement with casement windows	4
Year of Opening	1899	1893	1899
Year of Closing	1902 (Originally) Final Mill closing date unknown	1981	1996
Year of Repurposing	Unknown	1982	2007
What was it reused as?	A historic district	South Carolina State Museum	Upscale apartment complex
Other Notes	N/A	Believed to be the first textile mill in the nation to be run on electric power	N/A

Table 4. Chart of Sites in Camden and Columbia, South Carolina. Created by author.

Sites in Georgia

The first city in Georgia to be examined is Augusta, Georgia. Located on the Savannah River fall line and forming the shared border between Georgia and South Carolina, Augusta was the location of two sites to be examined: Enterprise Mill, and Sibley Mill, the last of which includes the Confederate Powderworks.

First is the Enterprise Mill. Originally named "Coleman's Flour Mill" when it was first built back in 1848, it was a flour mill as the name implies. In 1877, the then-owner built an interesting addition to the mill site: a 3-story textile mill made of brick, and since he anticipated

future expansions, he provided the water power necessary for an expanded scenario. In 1884, the mill was shut down, bought, and then turned into a cotton mill. Graniteville then bought a controlling interest in 1923, and 13 years later, it combined its operations with that of Sibley. The textile mill closed in 1983 and was vacant until 1997 when it was bought and renovated. Now according to the National Park Service: "Enterprise Mill is now a thriving office, retail, and residential center, and the location of the Augusta Canal National Heritage Area Interpretive Center."[100]

Figure 14: The Enterprise Mill in Augusta, Georgia. Photo is a screenshot from Google Maps taken by author.

The final mill in Augusta Georgia is the Sibley Mill and the Confederate Powderworks Chimney. This site is somewhat unusual compared to the rest of the mills in this chapter, as it technically is two mills in one. Originally, the plant was simply the Confederate Powderworks, which created gunpowder for the Confederacy during the American Civil War. After the war, between 1868 and 1871, the federal government confiscated it and most of the powderworks was demolished in an attempt to widen the canal. The only surviving structure is the chimney, which

[100] "Enterprise Mill--Augusta: A Discover Our Shared Heritage Travel Itinerary." National Parks Service. https://www.nps.gov/nr/travel/augusta/enterprisemill.html.

was left as a memorial for those who fought for the Confederacy. In 1880, the former powderworks was purchased by the Sibley Manufacturing Company, which decided to keep the chimney as part of the new structure. In fact, materials from the demolition of the powderworks were used to create the new Sibley Mill. The Sibley Mill functioned as a textile mill until finally closing its doors in 2006. The National Park Service describes what happened to the mill shortly after it was closed: "Although no longer used for textile production, the mill's water-driven turbines still generate electricity which is sold to Georgia Power. Local businessman Clayton Boardman, who successfully rehabilitated the Enterprise Mill in the 1990s as living and office space, acquired the Sibley in 2007."[101]

Figure 15: The Sibley Mill in Augusta, Georgia, with the Confederate Powderworks chimney on the right. Photo is a screenshot from Google Maps taken by author.

The Sibley Mill, unlike many of the buildings on this thesis, possesses Gothic Revival architecture, and this is especially notable in its two front towers. The exterior seems to be made predominantly of red brick and has several spires and columns on the façade. The Historic

[101] "Sibley Mill and Confederate Powder Works Chimney--Augusta: A Discover Our Shared Heritage Travel Itinerary." National Parks Service. https://www.nps.gov/nr/travel/Augusta/sibleymill.html.

American Engineering Record describes the purpose of the Confederate Powderworks chimney: "The chimney is not connected with any of the Sibley mill's industrial processes; it is a city-owned memorial to the Confederate dead."[102]

Mill Sites in Augusta, GA

Mill Name	Enterprise Mill	Sibley Mill and Confederate Powderworks
Mill Type	Flour Mill (1848-1877) Textile Mill (1884-1983)	Gunpowder plant (1861-1868) Textile Mill (1880-2006)
Architectural Style	Unable to Determine	Gothic Revival
Number of Stories	3-4 stories	4 stories
Year of Opening	1848 (As Coleman's Flour Mill)	1861 (Confederate Powderworks) 1880 (Sibley Mill)
Year of Closing	1983	2006
Date of Repurposing	1997	2007
What was it repurposed as?	Office, Retail, and Residential Center	Hydroelectric Plant

[102] Jorgensen, Robert C. *Historic American Engineering Record: Sibley Manufacturing Company*. PDF. Historic American Engineering Record, 1977. http://cdn.loc.gov/master/pnp/habshaer/ga/ga0300/ga0342/data/ga0342data.pdf

Other Notes	Repurposed by the same man who bought Sibley Mill, Clayton Borderman	Bought by the same man who repurposed Enterprise Mill, Clayton Borderman

Table 5. Mill Sites in Augusta, GA. Created by author.

Milledgeville, Georgia located on the Oconee River, has only one site that may fit the criteria established earlier in the paper: the O'Quinn Mill. Uniquely for the mills on this list, the O'Quinn mill is family-owned. Initially a grist mill established in 1807, it had multiple owners over the years, before coming into the possession of the O'Quinn family in the 1900s. Although it is now private property, the mill site is available to be used as an event and wedding venue.[103]

However, whether or not O'Quinn's Mill fits the criteria is debatable. While it is certainly a repurposed mill in a fall line city, it is not directly on the Oconee river. Instead it is located on a creek called Town Creek, miles east of Milledgeville and thus miles east of the river.

Next is Macon, located on the Ocmulgee River, but no confirmed sites were found while searching. While there is potentially a site in a bar known as the Thirsty Turtle, it is several blocks away from the Ocmulgee River.

The final city in Georgia that will be looked at, as well as the final city this paper will examine is Columbus, Georgia on the Chattahoochee River. The first of the two buildings to be examined in this paper is what is now known as the Convention Center. Originally it was the Columbus Iron Works, established in 1853. Like many mills, it was burned down by the Union during the American Civil War and was rebuilt, only to be devastated again by another fire in 1902. In 1953, it was repurposed as industrial, manufacturing charbroil grills, and the company

[103] "Our Story." O'Quinns Mill. http://www.oquinnsmill.com/our-story.html.

moved to new facilities in the early 1970s, selling it to the city in 1977. The city then repurposed it as a convention center, opening it in 1979.[104]

Figure 16: The courtyard of the Convention Center in Columbus, Georgia. Photo was taken from the convention center website: http://columbustradecenter.com/about-us/

The website for the Convention Center boasts that "The massive structures of the Iron Works appear little changed from the last century. The old brick walls, huge timbers and exposed ceilings, representing the best of 19th century craftsmanship, create an ambience unknown to modern construction."[105] The mill also seems to be a mix of classical architecture from when it was an industrial site and modern architectural elements.

[104] "About Us" Columbus Trade Center. Accessed April 14, 2019. http://columbustradecenter.com/about-us/
[105] "About Us" Columbus Trade Center. Accessed April 14, 2019. http://columbustradecenter.com/about-us/

The second mill to be looked at is a series of mills called the Eagle and Phenix Mills. The Eagle Mill was built in 1851 and was expanded upon after the purchase of the nearby Howard Factory in 1860. During the Civil War, it made uniforms for Confederate soldiers, and was destroyed by Union troops. The first mill, Mill #1 was rebuilt in 1869, being renamed Eagle and Phenix Mills, and Mill #2 followed in 1872. The mills had numerous different owners and modifications made between 1896 and 2003. In 2003 it was repurposed as a mixed-use structure.[106]

Figure 17: The Eagle and Phenix Mills, Mill #3 in Columbus, Georgia. Photo is a screenshot from Google Maps taken by author.

The Eagle and Phenix mills are made primarily of red brick. Some of the buildings such as Mill #3 shown above, have elements such as arched windows and entryways. The chimneys still stand despite likely having no practical use in the new roles the mills have.

[106] "Mill History." Eagle and Phenix Mills. Accessed April 14, 2019. http://www.eagleandphenix.com/mill-history/.

Chart for Sites in Columbus, Georgia

Current Site Name	Convention Center	Eagle and Phenix Mills
Mill Type	Iron Works	Textile Mill
Architectural Style	Unsure	Unsure
Number of Stories	3	Varies depending on the building
Year of Opening	1853 (Original)	1851 (Original) 1869 (Mill #1 rebuilt) 1872 (Mill #2 rebuilt)
Year of Closing	1865 (Burned down by Union soldiers) 1902 (Destroyed in fire) Early 1970s (Company moved to newer mills)	No mention of it ever closing, just changing ownership
Year of Repurposing	1979	2003
What was it reused as?	Convention center, public building	Mixed-use commercial and residential area
Other Notes	N/A	N/A

Table 6. Chart for Sites in Columbus, Georgia. Created by author.

Chapter Conclusion

As can be determined from the sections above, one can clearly see a pattern. This pattern emerges not only with the architectural styles that could be determined, but also with the events

Figure 18: Timeline of selected mills. Chart made by author.

that happened with the mills. Figure 18 displays this trend of when riverside mills along the fall line opened, closes, reopened, and were repurposed. This pattern can be summarized as mills opening either before or during the Civil War or otherwise after the reconstruction period, and then closing as centers of manufacturing during the 1980s and 1990s. Around this time, and into the 2000s and the present day, these closed mills are then repurposed. The next chapter will investigate how three selected mills from this list have been repurposed in an in-depth analysis.

CHAPTER 5

IN DEPTH MILL ANALYSIS

Chapter Introduction

This next chapter will be dedicated to a more in-depth analysis of some of the mills mentioned in Chapter 4. Three mills were selected for this portion of the thesis: Caraleigh Mills in Raleigh, North Carolina; Olympia Mills in Columbia, South Carolina; and the Eagle and Phenix Mills in Columbus, Georgia.

Caraleigh Mills

Caraleigh Mills was successful in making itself attractive to potential residents. Complete interior renovations were done to adapt to its new purpose as a residential use. In addition to putting carpeting on its floors, there were interior walls put into place to divide the new rooms into their respective units, as well as further interior structures added such as staircases to take advantage of the higher ceilings. In addition, given the age of the mill, it can be assumed that electric power was installed at some point in the past and that the electric grid has been updated to keep up with technological improvements since.

Based on Figure 19, it can also be reasonably deduced that water pipes and air conditioning systems were installed at a later date in the history of the mill. Due to this, these systems can be seen in pictures as being exposed. Nonetheless, many of the wooden support beams remain standing and exposed, their sturdy thickness aiding in the support of the new walls

mentioned earlier. The condos themselves vary in size and amenities, currently available models going from 1 bed and 1 bath to 2 bed and 2.5 baths.[107]

In addition to the aforementioned amenities, the exterior also is designed to make Caraleigh Mills a visually appealing place to live. There are many amenities available to the

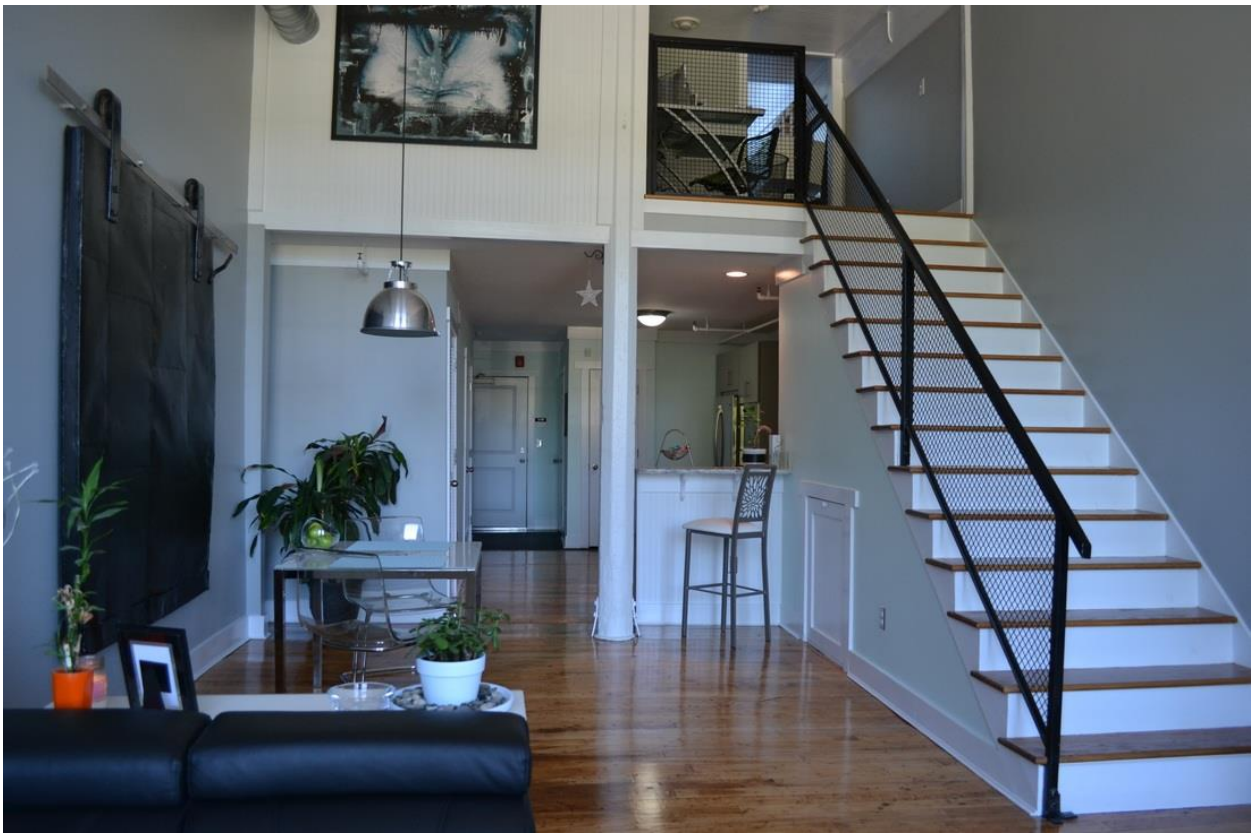

Figure 19: The interior of Unit 231 on 1535 Caraleigh Mills Court. This image showcases the newer modifications and updates to the structure such as staircases and counters, which make good use of the pillars in what would otherwise be in the middle of the room. Source: http://www.caraleighmills.org/for-sale.html

residents. Multiple greenspaces are available for recreational use such as a dog park, courtyard, a mini-courtyard, and a playground. There is also a putting green, ample parking space, and a pool available, as well as an herb garden.

[107] "For Sale." Caraleigh Mills. Accessed June 3, 2019. http://www.caraleighmills.org/for-sale.html.

The area of Raleigh surrounding the Caraleigh Mills can also be assumed to have played a role in its reuse. Overall, the area Caraleigh Mills occupies is commercial with a small low-density residential section to the immediate north. Located less than a mile south from the Mills is Interstate Highway 40 and located two blocks east of the mill is State Highway 70. This particular section of State Highway 70 also has several bus stops along it, giving residents of Caraleigh Mills access to public transportation. The areas located to the west of the mill and

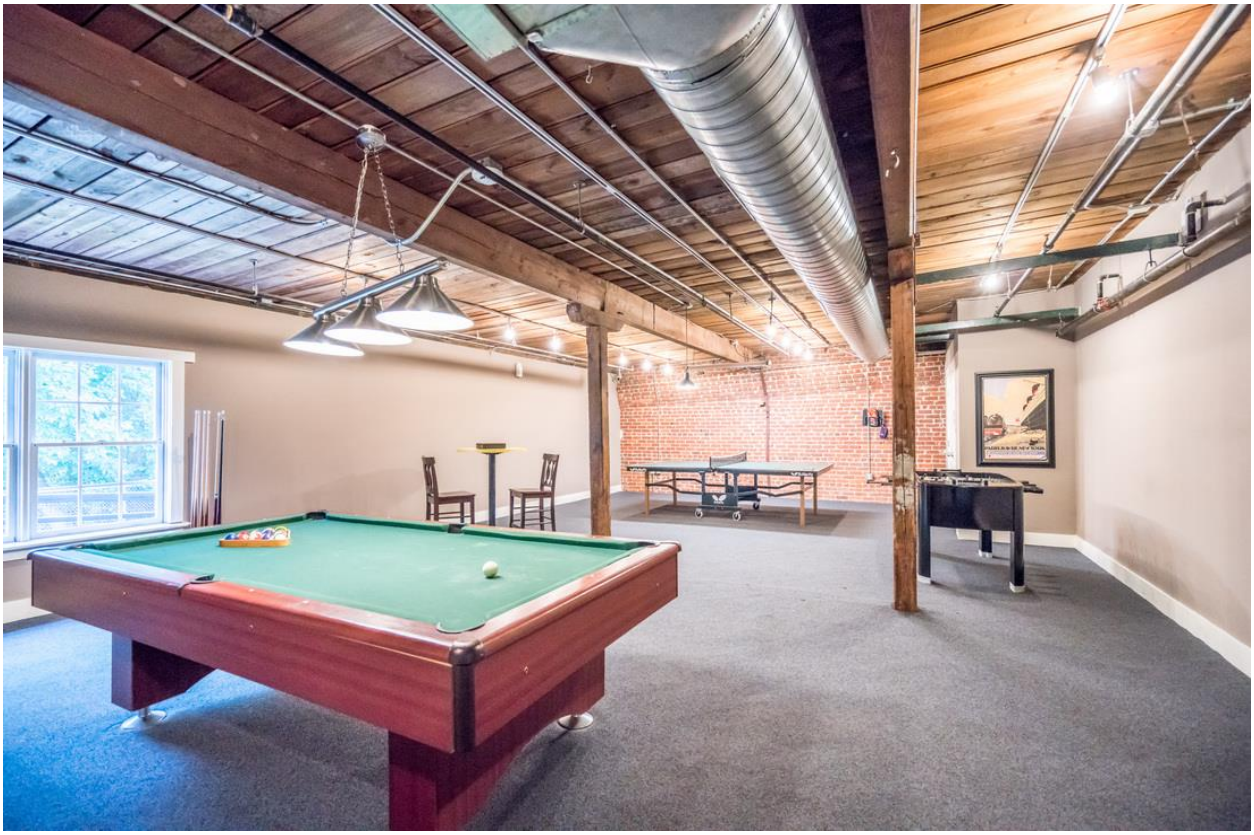

Figure 20: Game room in Caraleigh Mills, showing various recreational activities the residents can participate in. Note the exposed industrial wooden support beams and piping. Photo taken from Calraleigh Mills website (http://www.caraleighmills.org/amenities.html)

along the stretch of State Highway 70 that are close to the mill appear to be largely commercial. At present, many of the shops in the latter area are related to automobiles and motorcycles, such as repair shops, as well as restaurants. Near the intersection of I-40 and State Highway 70 is a branch for Flowserve, which makes technologies such as pumps and valves for pipe systems.

Relatively close by to the north is Dorothy Dix Park, a large greenspace that can be used as public recreation. Nearly adjacent to the park is a collection of buildings containing many social services such as the North Carolina Department of Health and Human Services Office of Emergency Medical Services. Also, to the west of Caraleigh Mills is a large farmers market to the west, providing a convenient place for the mill residents to obtain fresh produce and other

Figure 21: A walkway through two buildings in Caraleigh Mills. Photo taken from Calraleigh Mills website (http://www.caraleighmills.org/amenities.html)

foodstuff. Adding to recreation, there is even a golf course nearby if someone travels down I-40 for a few minutes.

All of these elements make Caraleigh Mills seem like an ideal place to live. It can be assumed that this has played a massive role in the building being repurposed and this provides a set of guidelines to look at when determining how to repurpose a mill.

Olympia Mills

The second mill to be looked at in detail is the Olympia Mill in Columbia. The website for this mill boasts the modifications made to turn the old mill into condominiums, citing the addition of granite countertops, and tile-floored washrooms and kitchens. It also discusses the height of the windows and ceilings, which are twelve feet and twenty feet high respectively. Also, the mill has posted several pictures of the types of lofts it has available such as the one shown in Figure 22.[108]

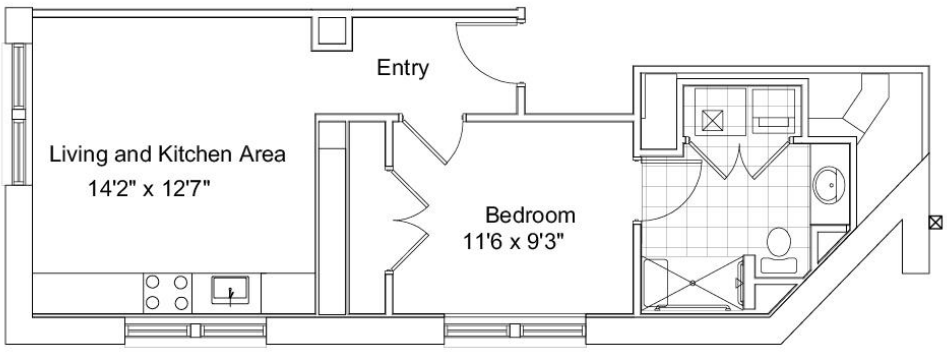

Figure 22: A floorplan of a 1 bed, 1 bath unit at Olympia Mill. According to the website, rent starts from $825. Source is the Olympia Mill website: https://www.millsliving.com/olympia-mill

[108] "Olympia Mill." Mills Living. Accessed April 19, 2019. https://www.millsliving.com/olympia-mill

As is apparent from looking at the location in Google Maps, Olympia Mill has many of the same features that Caraleigh Mill does. These include a pool, a volleyball court, and ample greenspace. However, in addition, it also has a basketball court, and tennis court. The area also offers ample amount of parking.

As for the location, the most obvious issue many people would have with the Olympia Mill would be that there is a quarry immediately to the south of the mill, and almost assuredly visible from the windows of residents who have their lofts on the south side, providing a potentially unpleasant view and depending on the noise level coming from the quarry, may even provide a nuisance to the residents. Otherwise, it seems to be in a medium-to-high density residential area. There are a few commercial areas a few blocks the east of the building, and to the west it is flanked by the Congaree River. Several other apartment buildings surround it and to the northeast is the campus for the University of South Carolina. Also nearby is the South Carolina State Fair to offer fun and games to the populace.

Eagle and Phenix Mills

The last mill to be examined up close is the Eagle and Phenix Mills in Columbus, Georgia. The mills here have adapted in the same way many of the other mills that are being discussed have. In fact, the website lists some of the amenities of the mills as “True loft style ceilings with exposed timbers” and “expansive industrial-sized windows”. It boasts of a “secured entry and attendant on-site 24/7”, meaning that the building is secured, as well as being energy efficient, making specific mention of its “Rio-Thermal HVAC system”. It also lists several conveniences for the residents including an on-site parking garage located directly south of the mills itself. Of specific note is how it relates its location in proximity to other areas of Columbus,

making mention of its access to the Columbus Riverwalk, a 14-mile long pedestrian walkway along the riverfront, as well as its location in Uptown Columbus. It also lists a multi-use series of structures, discussing their planned street-level restaurants and retail centers. A landscape park also is included, overlooking the riverfront.[109]

From this list however, one can tell a lot about how the mills were modified for their adaptive reuse. Newer technologies were indeed implemented in the process of renovations, and mostly likely even before that. It also, as fitting for a mixed-use building, allowed for a mix of commercial and residential areas, which may have brought a small boost to the number of people who visit it.

Figure 23: A view of the Eagle and Phenix Mills from the back. Photo taken from the website for the Eagle and Phenix Mills (http://www.eagleandphenix.com/photo-gallery/)

The surrounding area of the Eagle and Phenix mills, located in the heart of Columbus' uptown, is understandably very urban. In the more immediate area, there are numerous

[109] "Amenities." Eagle and Phenix Mills. Accessed April 19, 2019. http://www.eagleandphenix.com/amenities/.

restaurants as well as a few apartment buildings to the north, east and south. The west is bordered by the Chattahoochee River, which also contains the Eagle and Phenix Dam. Just down river is the Columbus Convention Center, along with the Coca-Cola Space Science Center. The Columbus Historic District is also well within walking distance, as is a police station, fire department station, the Columbus Consolidated Government building, a post office, a public library, and an office for the Georgia Department of Labor.

When taking Caraleigh, Olympia Mill, and Eagle and Phenix Mills into account, there are certain patterns that begin to emerge. The first is that these residential areas are catered to the public. They offer a variety of recreational activity or close access to it. They also keep many of the features they had when they were mills such as exposed lumber and large windows. Finally, in regard to the surrounding areas, these three are all in urban areas, which allowed them a higher pool of possible cliental or customers, as well as made the repurposed mills look more attractive due to being in an area with much to do.

Chapter Conclusion

With these three mills analyzed, there is a pattern that begins to emerge. All three mills were repurposed as condominiums and thus went through many of the same changes, such as the amenities they provide to their residents. However, many features from the mills are retained, such as the high ceilings and large windows. Many of the features mentioned in this chapter will be added into the product: a proposed plan for the adaptive reuse of City Mills in Columbus, Georgia.

CHAPTER 6

PRODUCT

Chapter Introduction

With the trends of the mills' adaptive reuse established, an example mill project will be done. This mill is a currently an unused structure that is located in a "Fall Line" City, Columbus in Georgia, and it is positioned along the Chattahoochee River. The mill selected is the "City Mill" located north of downtown Columbus, Georgia. Currently it is undergoing renovations, being turned by its current owners into a small hotel and restaurant. However, before the renovations of this mill can be discussed, the history of the mill will be examined.

History of City Mills

The boundaries of the City Mill complex, according to the nomination form for the National Register of Historic Places, "…begin at the intersection of the extension of l8th Street going west into the City Mills Company and the railroad spur running north-south through the property. From that junction the boundary extends northward along the railroad track to a point 100 feet north of the concrete grain elevator (l9l4). From that point the line runs due west until it reaches the Georgia-Alabama border and then follows that line southward until it intersects a line drawn due west from the starting point." [110]

[110] Historic American Engineering Record, Creator, Eagle & Phenix Mills, Georgia Power Company, D W Champagne, J P Illges, Seaborn Jones, Horace King, et al. *City Mills Company, Eighteenth Street & First Avenue, Columbus, Muscogee County, GA*. Columbus Georgia Muscogee County, 1968. Documentation Compiled After. Photograph. https://www.loc.gov/item/ga0256/.

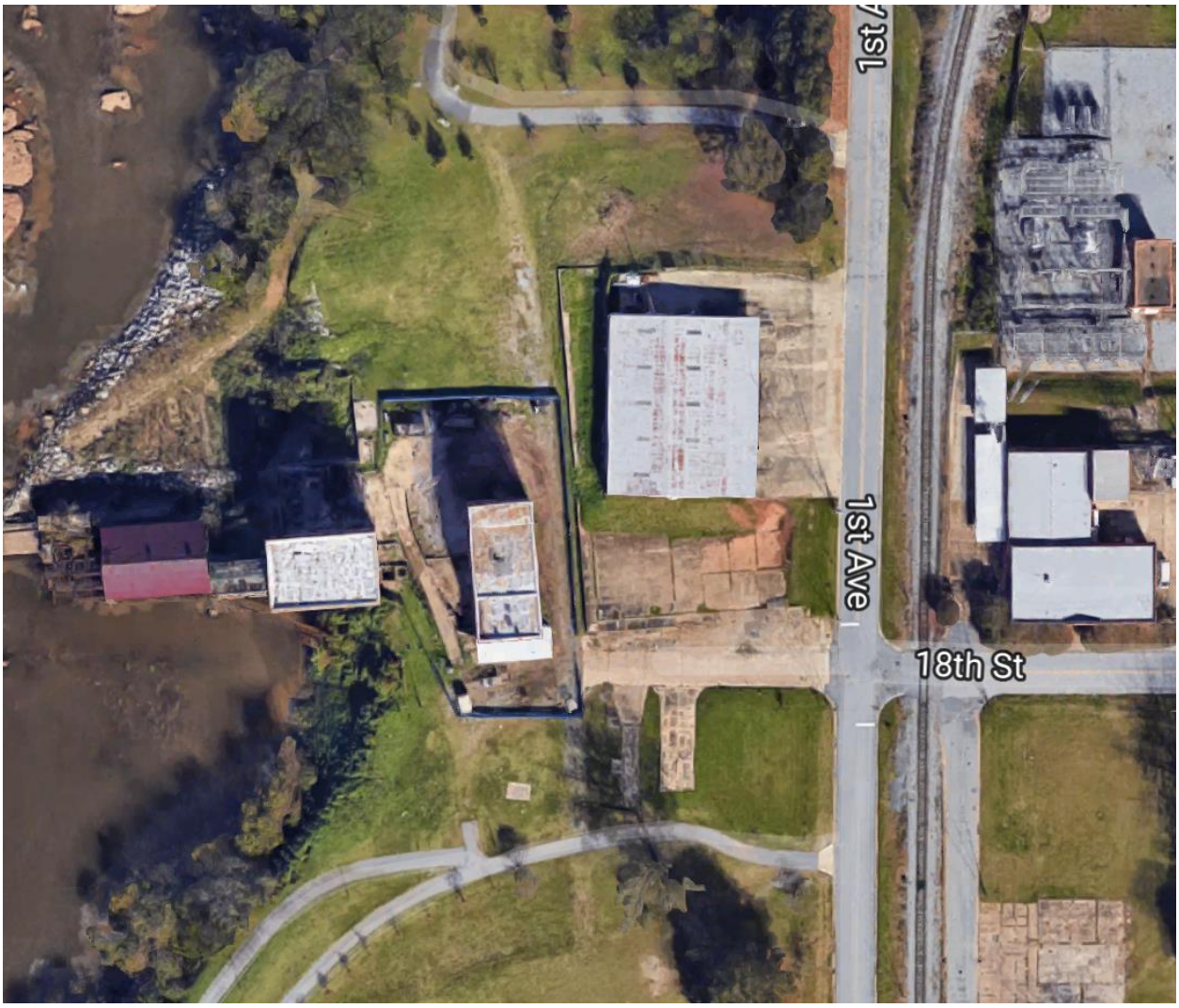

Figure 24: A bird's eye view of the site of City Mills as seen in Google Maps. The structure on the far left is the power station, the building next to it is the flour mill and the building next to that (center) is the corn mill. The building directly northeast of the flour mill is not part of City Mills. Image is a screenshot taken by the author.

The history of the City Mill starts off as follows: "While textiles made Columbus an important manufacturing center, other significant industries utilized the power of the Chattahoochee. In 1828, the year the town was established, the first dam "began powering City Mills. This grist mill was owned by Seaborn Jones, a prominent lawyer, entrepreneur [sic], and planter from middle Georgia, who probably never acted as a miller. During the antebellum period this mill remained a small operation grinding corn and wheat on four runs of stones. The increased demand during the war probably depreciated much of its equipment. General Wilson's

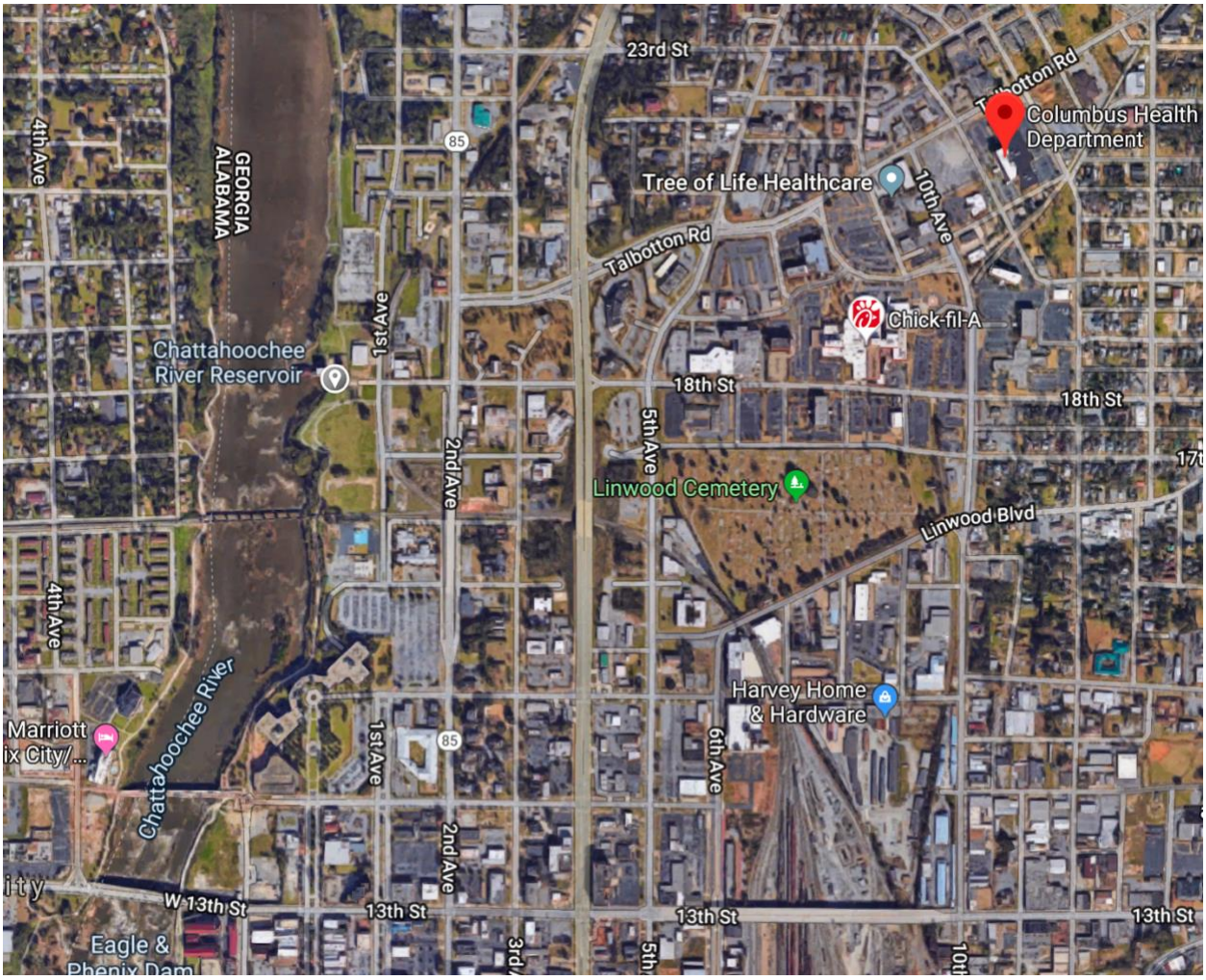

Figure 25: A bird's eye view of the area surrounding City Mills as seen in Google Maps. The reverse teardrop insignia inside of a circle shows the location of City Mills. South of the site is downtown Columbus. Image is a screenshot taken by the author.

raiders did not burn any grist mills, but by 1869 the original building was either destroyed or completely dilapidated. In that year Horace King built a new wooden "corn mill" which housed five runs of stones and the operation continued on a rather limited scale." [111]

[111] Historic American Engineering Record, Creator, Eagle & Phenix Mills, Georgia Power Company, D W Champagne, J P Illges, Seaborn Jones, Horace King, et al. *City Mills Company, Eighteenth Street & First Avenue, Columbus, Muscogee County, GA*. Columbus Georgia Muscogee County, 1968. Documentation Compiled After. Photograph. https://www.loc.gov/item/ga0256/.

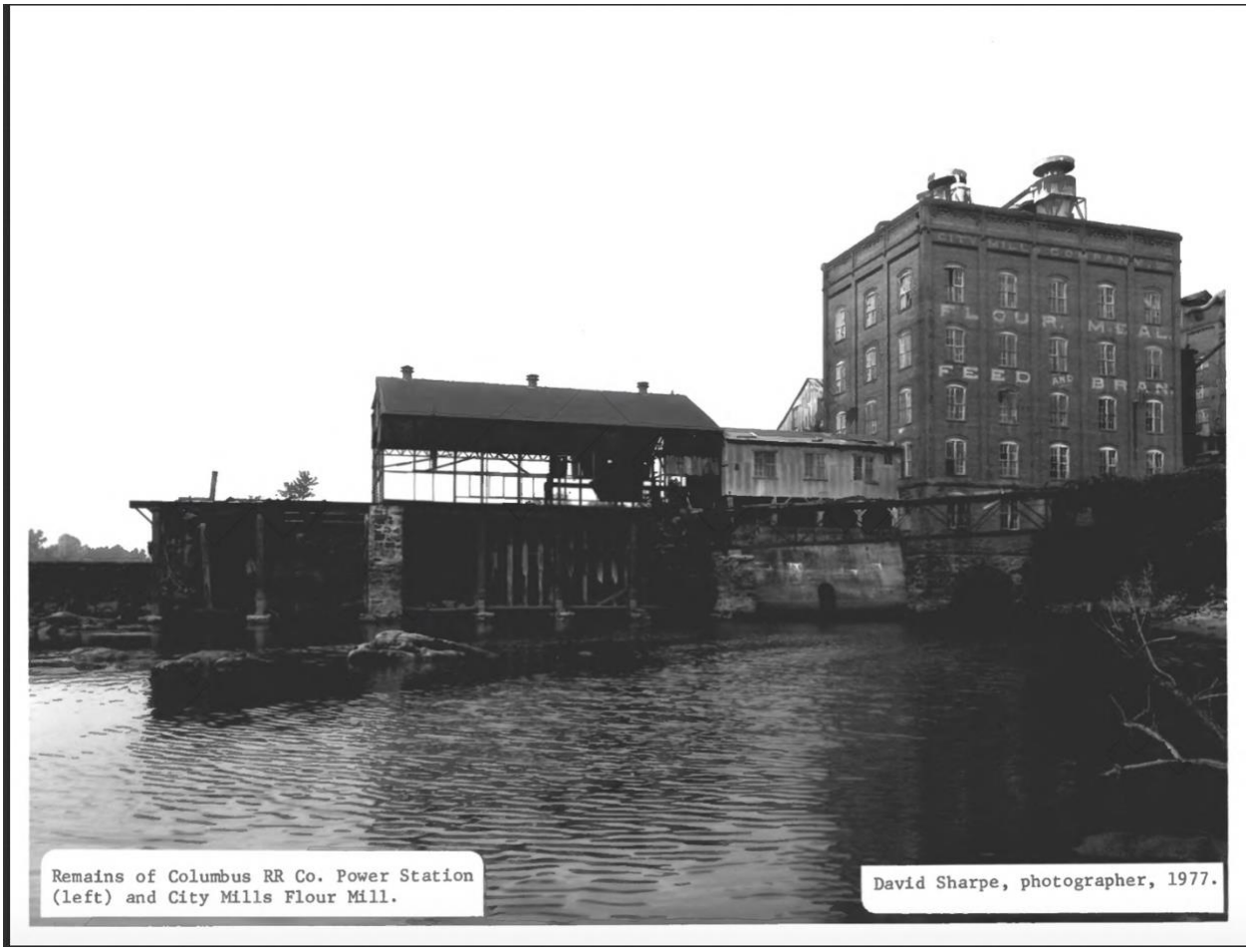

Figure 26: A picture of the Flour Mill (right) at City Mills in Columbus Georgia with the Columbus RR Co. Power Station. Photo taken by David Sharpe in 1977. Collected by author from the National Park Service.

Another document from the same source describes the output of the mill and the expansion of its business in "Prior to 1890, City Mills was one of several small grist-milling establishments within Columbus grinding both wheat and corn. After the Civil War, production gradually increased. Between 1876 and 1880, meal production increased from 200 to 500-600 bushels a day… City's production increase coincided with the burning of the Palace Mills. The elimination of a competitor meant more business. Another local competitor, the Columbus

Factory complex at the Clapp's Factory site upriver, went bankrupt in the 1880's and left City Mills and Empire Mills alone to vie for the Columbus market." [112]

The oldest building in the mill was designed by Horace King in 1869. The document describes the past of King as follows: "King, a black contractor, learned his trade while the slave of John Godwin. He freed King before the war and they continued to work together until Godwin died in 1859. After the war, King built many covered bridges and some wooden buildings throughout Georgia and Alabama. This structure at City Mills represents the only known surviving building built by this noted craftsman." [113] The same document then goes into detail about some of the techniques or construction methods Horace King likely used in building the first mill building: "King probably used trees from the immediate area and his construction methods could not be considered modern for 1869. The heavy timber framing was hand-hewn and mortise-and-tenon jointing as the rule. Although the company has concreted the floor (1915), added a new roof, and sided it with corrugated [sic] tin (l940s), King's original building techniques are still obvious. Several of King's bridges are still in existence, but the "Corn mill" is the only identifiable building erected by this noted black craftsman. The building no longer functions as a mill. With World War II profits, the company removed the grinding stones and installed three 45 inch Leffel Samson turbines which drove a Westinghouse generator (312

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[112] Historic American Engineering Record, Creator, Eagle & Phenix Mills, Georgia Power Company, D W Champagne, J P Illges, Seaborn Jones, Horace King, et al. *City Mills Company, Eighteenth Street & First Avenue, Columbus, Muscogee County, GA*. Columbus Georgia Muscogee County, 1968. Documentation Compiled After. Photograph. https://www.loc.gov/item/ga0256/.

[113] Historic American Engineering Record, Creator, Eagle & Phenix Mills, Georgia Power Company, D W Champagne, J P Illges, Seaborn Jones, Horace King, et al. *City Mills Company, Eighteenth Street & First Avenue, Columbus, Muscogee County, GA*. Columbus Georgia Muscogee County, 1968. Documentation Compiled After. Photograph. https://www.loc.gov/item/ga0256/.

KVA). None of this equipment still functions, but it operated in the late 1960s. Just south of the corn mill is the flour mill, designed and erected by the Richmond City Mill Works, Richmond, Indiana. This 6 story brick structure and the 2 story brick warehouse just to the east (joined by an elevated bridge) exhibit a great deal of brick detailing; 'pilasters' divide its bays (five by three) corbelled false parapets adorn their tops. These features seem to reflect the owners' intention of creating a first class establishment. The original lettering on the building is still maintained: 'City Mills Company, Flour, Meal, Feed and Bran.'"[114]

It then describes another period full of construction, from 1890 to 1908: "In the period 1890 to 1908 George A. Pearce greatly expanded the company's capacity. In 1890 construction began on a 6 story brick flour mill, a 2 story brick warehouse, and 5 story wooden grain elevator. In 1908 the old wooden dam was replaced with a masonry one, and Pearce installed equipment to utilize the new power. By the end of the expansion the company had 13 runs of stones in the corn mill, 8 larger runs of stones in the flour mill, 21 double roller mills (9 inch diameter), and a 52,000 bushel storage capacity. For the lower South, this represented a large milling operation. It dwarfed its rural competitors. City Mills, however, remained a small business. Plagued by unfavorable freight rates arid by cheap competition from gigantic producers in the mid-West and small operations in the surrounding area, it never made large profits. As a result, the company never attempted to renovate or modernize. Thus, much of its original equipment remains exactly where it was installed." [115]

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[114] Historic American Engineering Record, Creator, Eagle & Phenix Mills, Georgia Power Company, D W Champagne, J P Illges, Seaborn Jones, Horace King, et al. *City Mills Company, Eighteenth Street & First Avenue, Columbus, Muscogee County, GA*. Columbus Georgia

[115] Historic American Engineering Record, Creator, Eagle & Phenix Mills, Georgia Power Company, D W Champagne, J P Illges, Seaborn Jones, Horace King, et al. *City Mills Company, Eighteenth Street & First Avenue, Columbus, Muscogee County, GA*. Columbus Georgia

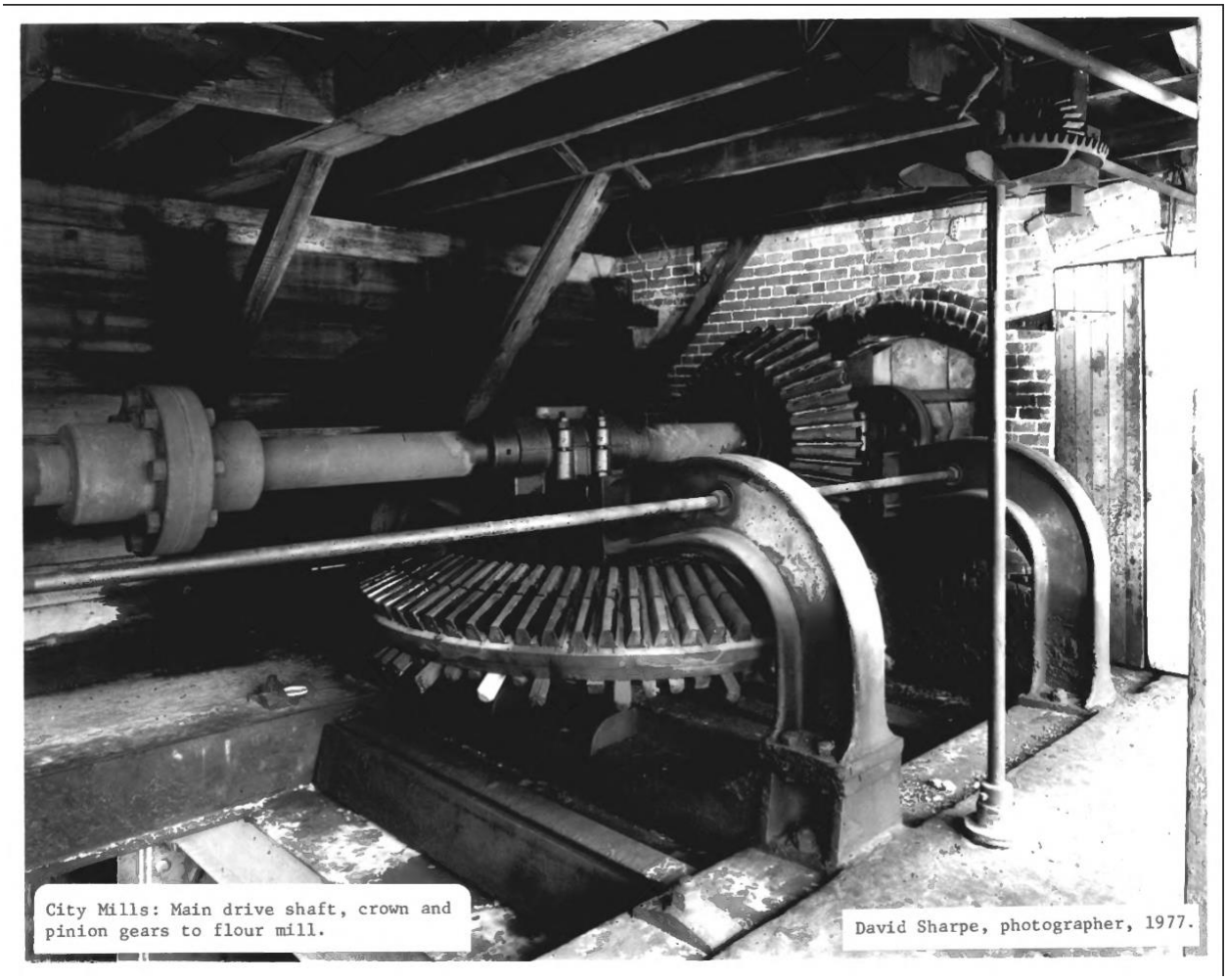

Figure 27: A picture of some of the machinery used at City Mills in Columbus Georgia. Photo taken by David Sharpe in 1977. Collected by author from the National Park Service.

The same document goes onto say that, "In 1908, a rubble masonry dam (still standing) replaced a wooden dam and powered a refurbished concrete wheelhouse containing three 62 inch Samson turbines (630 hp under 9 foot head), Inside the flour mill a new hurst frame held the main shaft running from the powerhouse and its four driving wheels. The latter leather belts turned and drove line shafting on the other five floors. The frame extended through the floor of the second story where it supported 8 runs of stones. To reduce possible damage to the building

Muscogee County, 1968. Documentation Compiled After. Photograph. https://www.loc.gov/item/ga0256/.

through vibrations, the frame was not bolted to the floor but rested on eleven wooden pads. In 1919 the western turbine was connected to a General Electric generator (175 kilowatt) in a room directly above the wheel. This power was consumed by City Mills. Though it no long functions, this generator, its direct current exciter motor, governor, and switchboard all remain in place in this room. The eastern most turbine still functions and turns the hurst frame which drives a mechanical elevator and an auger connecting the flour mill and the old warehouse. All of these represent extremely rare survivals of turn-of-the-century milling and power transmission equipment. On the remaining floors of the Flour Mill are roller mills, grinders, sifters, and batch mixers which remain where they were when they were phased out of production after the 1900s. Also built in 1890, the warehouse and wooden grain elevator were located 70 feet east of the flour mill to reduce the dangers of fire. Originally a rope drive system applied power from the turbines in the corn mill to the equipment in the grain elevator. In 1914 two additional stories were added to the warehouse and today the original warehouse and elevator are operated as a feed mill. Also in 1914, the company built a 100,000 bushel capacity concrete grain elevator. This relatively early concrete building stands empty today."[116]

The Ledger-Enquirer reports that in 2016, a plan was developed to turn the site of City Mills and many areas in the surrounding area into a mixed-use development area known as the City Village, saying specifically for City Mills that "The plan divides the corridor into four districts: City Mills, Riverfront Campus, Bradley Circle and Johnston Mills Districts. The City Mills District revolves around the old mills that are currently in the early stage of restoration.

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[116] Historic American Engineering Record, Creator, Eagle & Phenix Mills, Georgia Power Company, D W Champagne, J P Illges, Seaborn Jones, Horace King, et al. *City Mills Company, Eighteenth Street & First Avenue, Columbus, Muscogee County, GA*. Columbus Georgia Muscogee County, 1968. Documentation Compiled After. Photograph. https://www.loc.gov/item/ga0256/.

The intent of this district is to connect the village to downtown and to serve as a "gateway" into the village. Planners see it as a mixed-use area with retail and an entertainment venue located near the mills at 18th Street and First Avenue."[117] Based on a Future Land Use map for Columbus from the city's 2038 Comprehensive Plan, this plan is still in effect, with two maps, Figure 28 and Figure 29, showing the City Mills site and surrounding area as being "Mixed Use".[118]

Today however, there are on-going renovations to the complex. According to an article in the newspaper The Ledger-Enquirer, a businessman named Jack Pezold had acquired a controlling interest in the historic City Mills property, at which point it was decided the site would be converted into a hotel and restaurant. According to the article, "The boutique hotel in the City Mills buildings will be different than the other two downtown hotels Pezold owns… It will have fewer rooms and likely will be operated independently without a major hotel chain flag… It will have about 45 hotel rooms with the possibility of long-term rental units in the mix…"[119]

E-mail correspondence between the author of this thesis and Justin Krieg, the Director of Planning and Programs of Historic Columbus, on the 29th of May 2019 has revealed an update on the progress in the adapting of the mill. Krieg stated that "…the plans are still the same as they were in 2018. The developer group who bought into the project with Ken Henson and

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[117] "Owen, Mike. "$60M Transformation: City Village Master Plan to Bring Jobs, Housing, Retail." Ledger-Enquirer. February 14, 2016. Accessed June 15, 2019. https://www.ledger-enquirer.com/news/local/article60302791.html.

[118] "Community Assessment." Government of Columbus, Georgia. Accessed June 15, 2019. https://www.columbusga.gov/planning/pdfs/cp-CommunityAssessment.pdf

[119] Williams, Chuck. "Hotel Developer Has Big Plans for Historic Downtown Columbus Riverfront Site." Ledger-Enquirer. August 20, 2018. Accessed May 21, 2019. https://www.ledger-enquirer.com/latest-news/article216879220.html.

PLANNING AREAS MAP

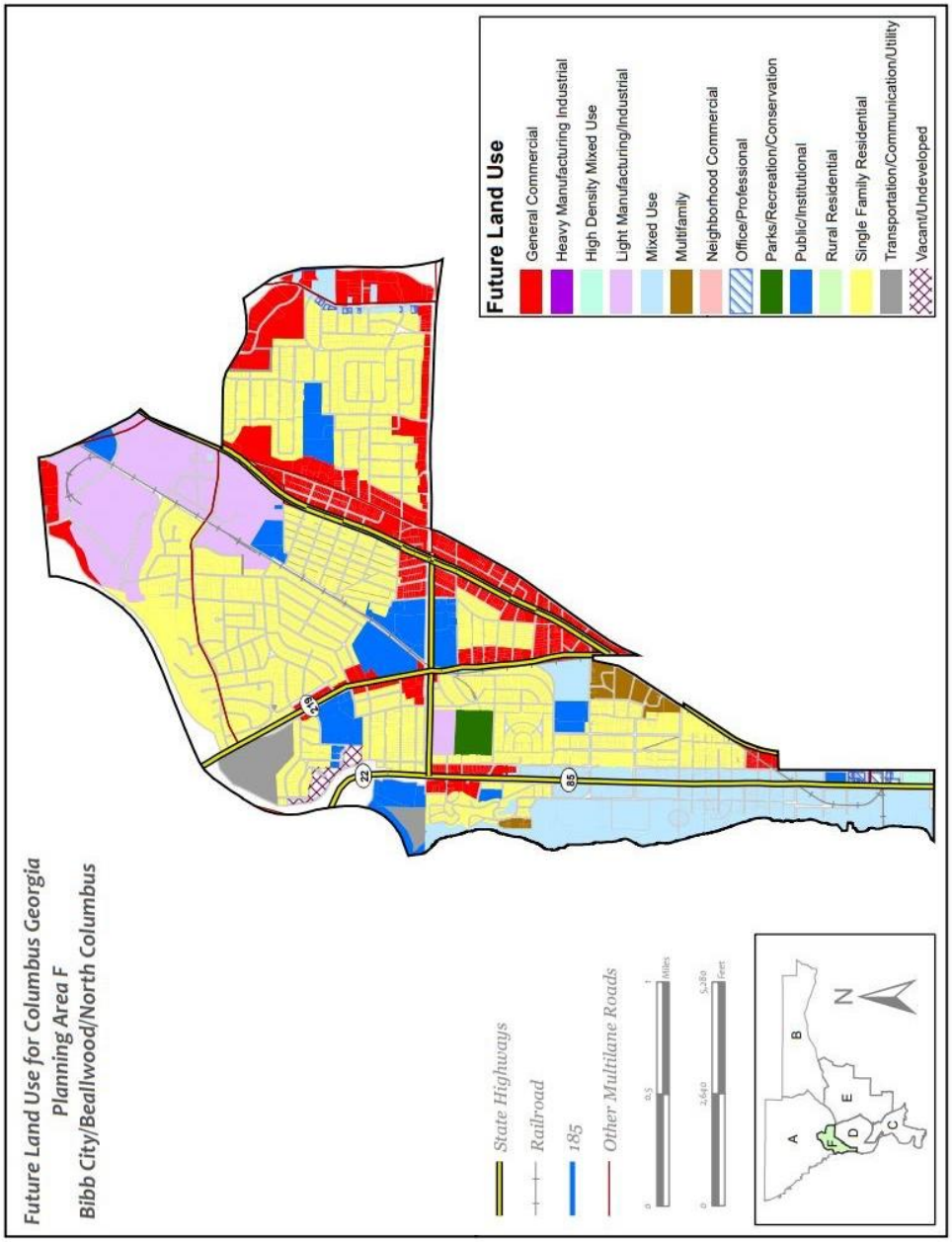

Figure 28: An image of the Future Land Use for Planning Area F of Columbus Georgia, with Planning Area F being where City Mills is located. Image is a page from the 2038 Columbus Comprehensive Plan.

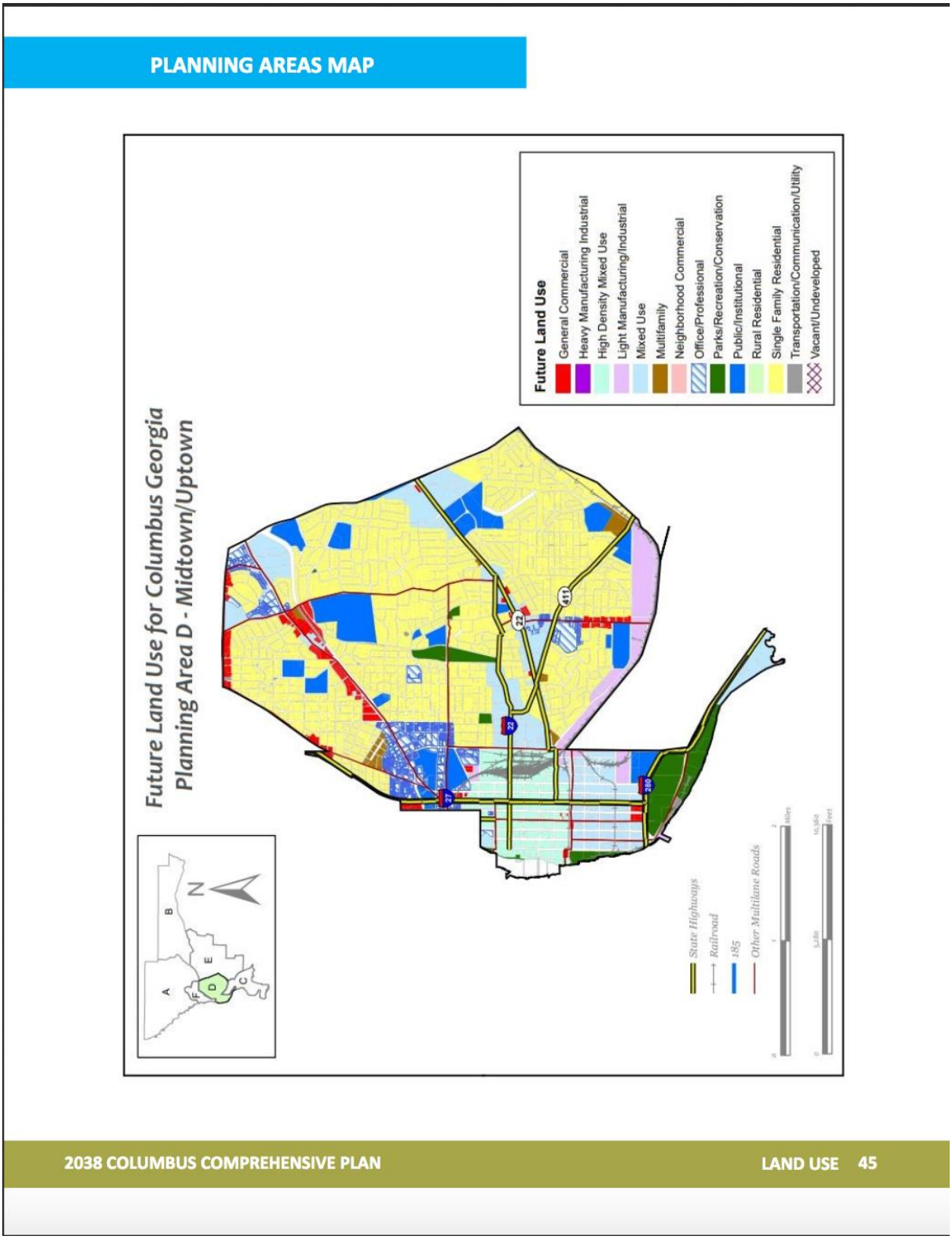

Figure 29: An image of the Future Land Use for Planning Area D of Columbus Georgia, with Planning Area D being adjacent to where City Mills is located. Image is a page from the 2038 Columbus Comprehensive Plan.

Historic Columbus is known for being very methodical about their projects. In addition to that, when they came on board a design team change was made, so another architecture firm was brought into the job. That created around 2 months of down time to get them up to speed and operating on a good set of plans. On top of that, the City was working to complete the Riverwalk work between the two buildings, so we gave them room to finish that work. Simultaneously, the parking areas were curbed and the first lift of asphalt installed. That is where we stand today." He concludes by stating that "In the next couple of weeks we will likely have a new set of plans to send up to the SHPO and NPS for tax credit review and hopefully things will begin to pick up some speed."[120]

Figure 30: The City Mills site as it stands today. The corn mill is on the far left, the flour mill is in the middle, and the old power station is on the right. Photo taken by Taylor Haff at the request of author. Photographer is standing northwest of the site facing southwest. Source: https://taylorhaffphotography27.pixieset.com/citymills/

[120] Justin Krieg (Director of Planning and Programs of Historic Columbus in Columbus, Georgia), in discussion with the author, email, May 2019.

Ideas for Reuse

With the history of City Mills established, the final part of this chapter will be to suggest ideas for reuse. This will use the history described in the first section as well as ideas from the repurposed mills discussed in earlier chapters.

First and foremost, will be deciding what City Mills will become. Based on earlier chapters, the best answer seems to be to reuse it as a condominium. These condominium units will range from 1 bedroom and 1 bathroom, to 2 bedroom and 2 baths, with exposed piping and columns, hardwood flooring, additional interior walls, stainless steel appliances, and granite countertops, seen in earlier repurposed mills. Estimates of how many of said condominium units City Mills can hold however, are difficult to gauge due to the lack of a complete picture of the interior of both of the mill buildings.

Obviously new water lines will need to be put in to better accommodate every unit having its own bathroom. The electric wiring should also be updated so that it is fully up to code. In fact, energy efficient system should be put into place such as LED lights, HVAC systems that have proved to be sustainable, and water filtration systems that allow some of the water to be filtered and recycled. One might even install a hydroelectric generator of some sort since the Mills are directly along the Chattahoochee River.

One idea on how to renovate the interior is to use the columns to figure out the divisions of rooms and walls. Figure 19 in Chapter 5 is a sterling example of how columns can be used to accomplish this. The unit shown there uses the pillar to figure out the divisions of the room, marking the beginning of a counter with an open view into the living room instead of keeping it

as simply an awkward looking pillar in the middle of a room. Similarly, it might be used to hold up the staircase shown in the same picture.

Another idea is to include additional amenities inside the area that are common amongst the mills that have been studied in-depth in Chapter 5. Among these include a common recreation room complete with a lounge area and recreational activities such as a billiards or foosball table, and a fitness center for residents to improve their personal health.

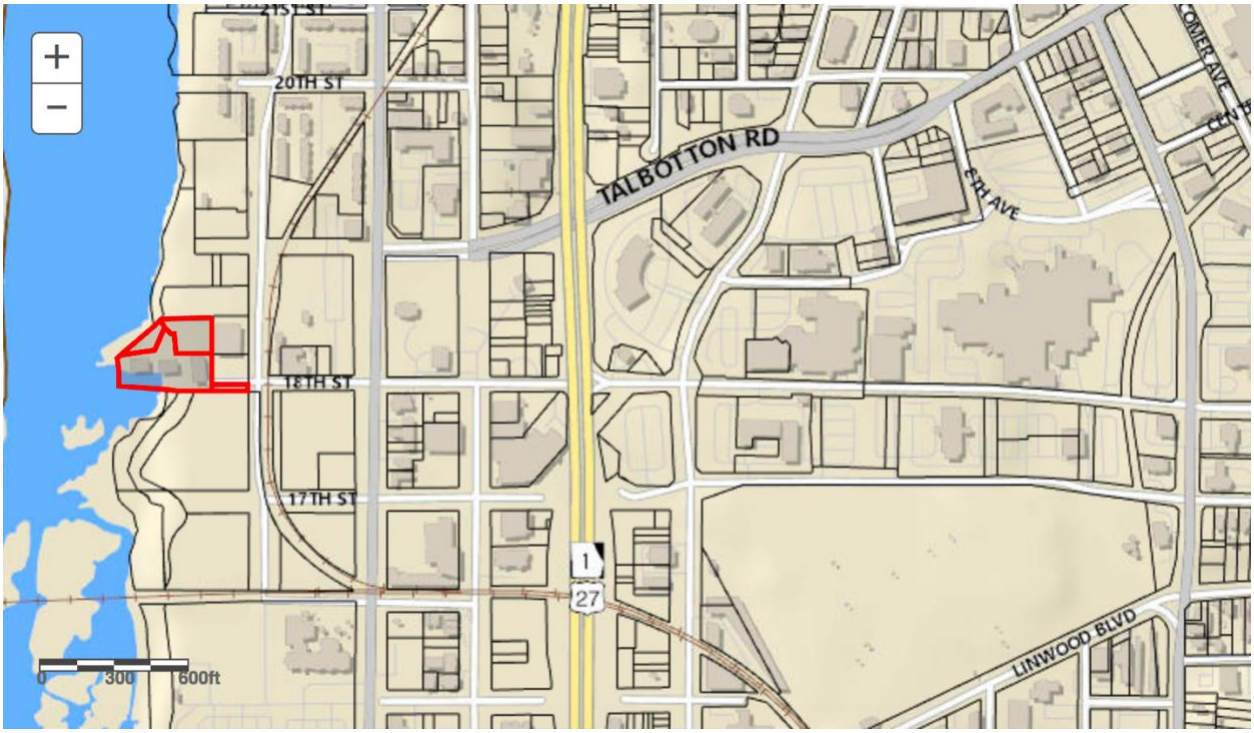

Figure 31: A parcel map of City Mills and the surrounding area. All boundaries marked in a translucent red with a thick red border are parcels recorded as being owned by City Mills as of January 1, 2019. This Figure is a screenshot taken from Columbus Consolidated Government Public Access Site, edited by Author using the on-site Property Records map. Source: http://publicaccess.columbusga.org/iaswpub/maps/mapadv.aspx

Another part of the renovation will be a public-private partnership between the owners of City Mills and the Columbus city government. Part of this partnership will involve swapping land owned by City Mills with public land. In this context, with the parcels shown in Figure 32, Parcel 2 will be given to the city to be used as land for a public park, in exchange for Parcel 1-A.

Parcel 1-A will be converted into a parking lot for private use by residents and staff members of City Mills.

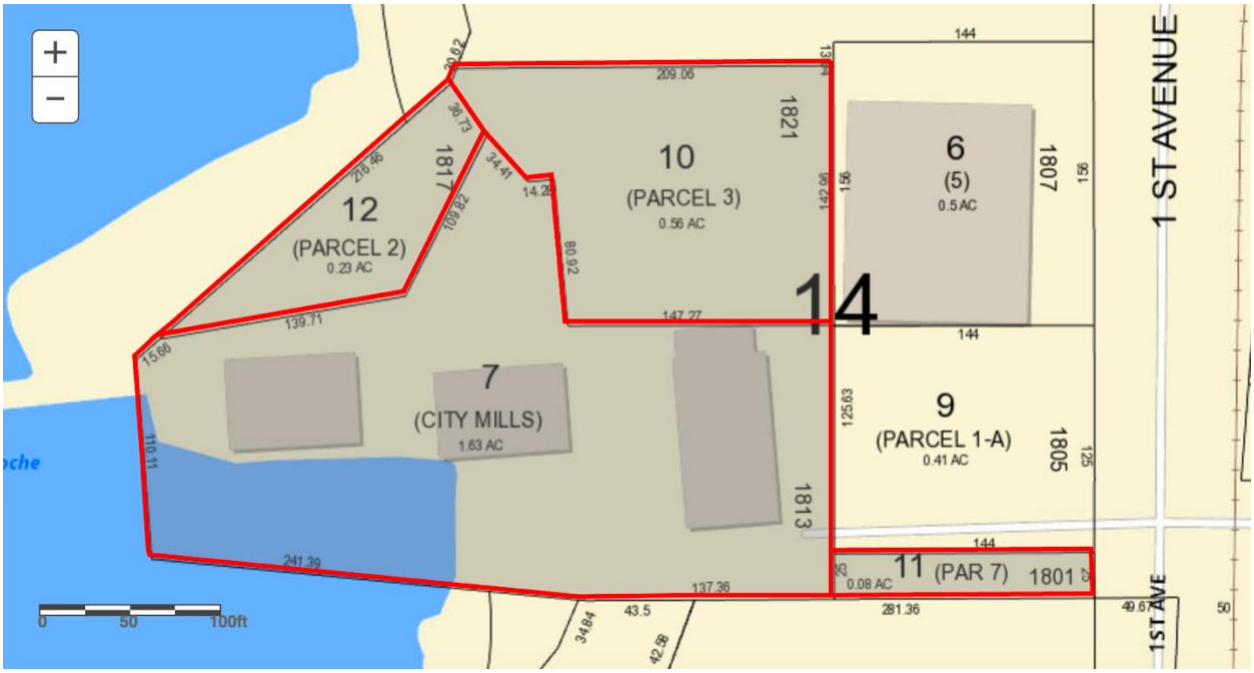

Figure 32: A parcel map of the City Mills site. All boundaries marked in a translucent red with a thick red border are parcels recorded as being owned by City Mills as of January 1, 2019. This Figure is a screenshot taken from Columbus Consolidated Government Public Access Site, edited by Author using the on-site Property Records map. Source: http://publicaccess.columbusga.org/iaswpub/maps/mapadv.aspx

This partnership will also extend, if possible, to the owners of Parcel 5. Currently Parcel 5 is a one-story metal and brick structure owned by the aptly named Elevator Service Company. An idea is to remove the building and replace it with a mixed-use structure. This structure will be approximately two or three stories high and have a brick exterior to match with the aesthetic of the nearby City Mills site. It will be a combination of a parking garage, commercial on the side facing 1st Avenue, and affordable townhouses on the side facing the river. The company that currently owns Parcel 5 will then relocate to one of the commercial areas, perhaps with one of the bays on the parking garage even being a dedicated truck dock for them. On the residential side, there will be an elevator leading to the levels of the parking deck.

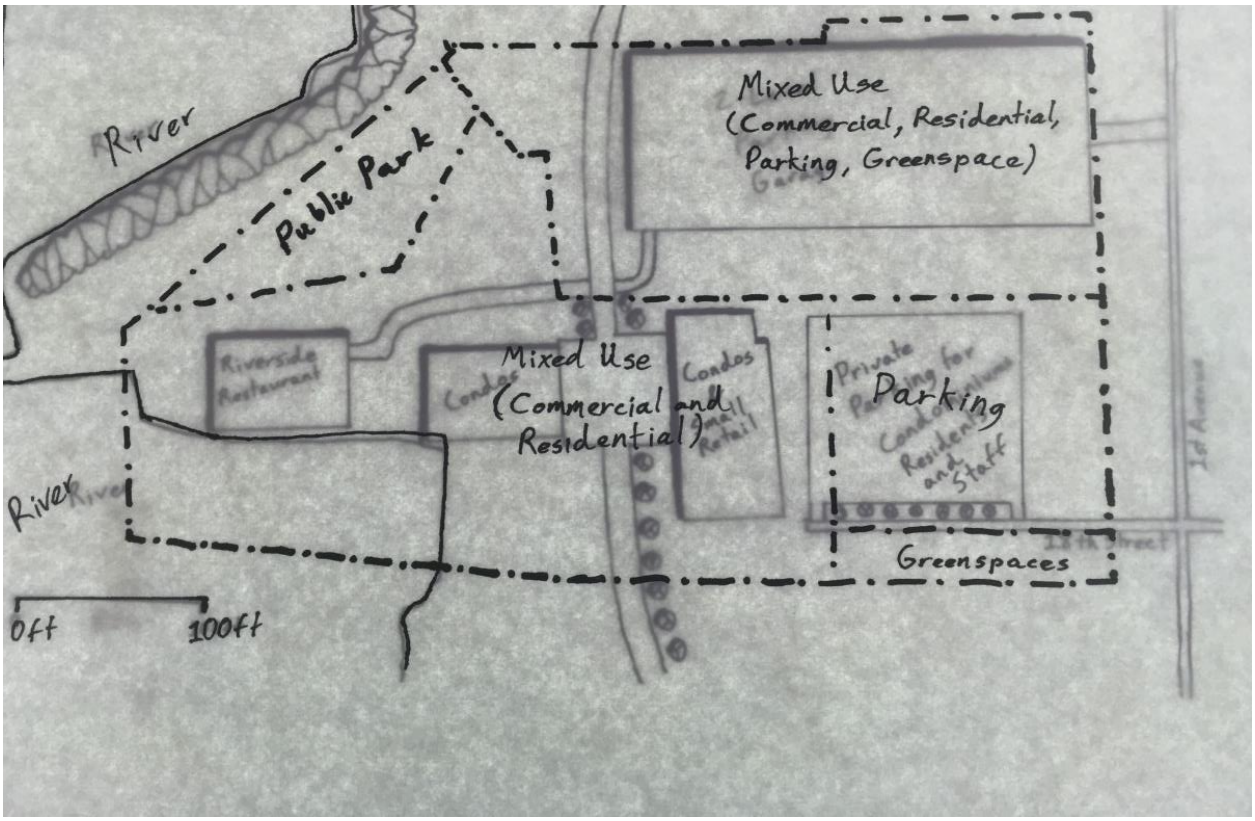

Figure 33: A rough land use plan for City Mills and the surrounding area. Land use map, and map underneath are made by author.

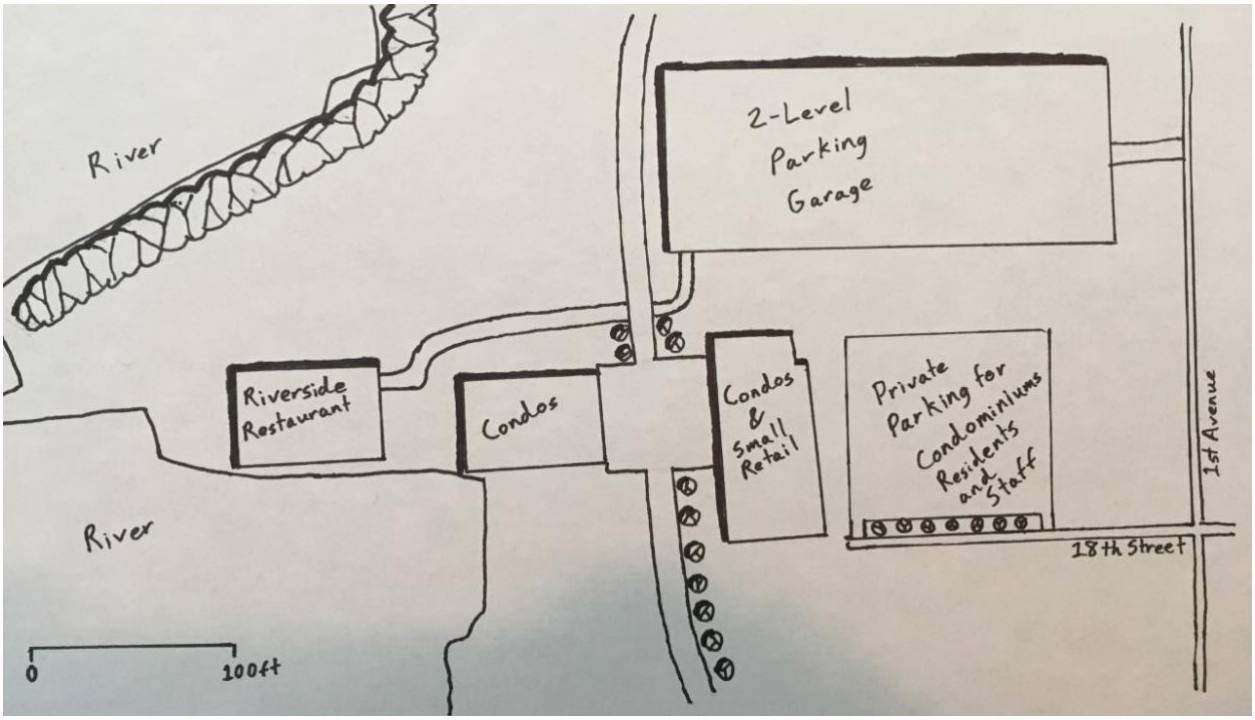

Figure 34: A rough plan for City Mills and the surrounding area. Image is a sketch drawn by the author.

Another area of note is the covered area close to the riverbed, shown in Figure 35. With its riverside view, and offer of enjoying the great outdoors, this is an ideal place for a riverside restaurant. This restaurant could be controlled by the condominiums of City Mills, or even be operated independently, making the new City Mills essentially into a multi-use structure. The restaurant could be open-air, letting customers experience an open eating environment or be in a closed-in building with an added deck for optional outdoor dining.

Figure 35: The covered area of City Mills. Photo taken by Taylor Haff at the request of author. Source: https://taylorhaffphotography27.pixieset.com/citymills/

The Riverwalk for Columbus should also be included. Figure 36 clearly shows how the Riverwalk has been updated to include a new stretch that goes right in between the two buildings, whereas before, the Riverwalk was interrupted, forcing pedestrians and cyclists to merge onto the street temporarily before it began again further on. There is no reason that this

new addition to the Riverwalk should not also be present in the proposed reuse, as it will be an improvement to the Riverwalk overall and pedestrians who use it will be able to get closer to the City Mills site which may very well increase interest in it. In fact, it is recommended even that, to better accommodate the residents, that bike racks be placed on the sides of both buildings, that are available either only to the residents or are even open to the general public. The pavement on the sides of the Riverwalk, should space allow, could even be dedicated into a small sitting area for residents or for those who use the Riverwalk. Thus, there will be a cross-easement agreement to allow the city of Columbus to expand the Riverwalk through the City Mills site.

Figure 36: The new extension of the Columbus Riverwalk which goes between the two buildings of City Mills. Photo taken by Taylor Haff at the request of author. Source: https://taylorhaffphotography27.pixieset.com/citymills/

Just as important to consider however, is the entirety of the surrounding area where City Mills currently resides. Surrounding City Mills within an immediate walking distance are

medium-density townhouses, a variety of shops such as Benning Auto Parts, fast-food places such as Church's Chicken, three churches, one of which is a historic site, a mosque, Piedmont Columbus Regional Midtown West Campus hospital, various doctors' offices, and a soup kitchen operated by the Salvation Army. Paramount, however, is the fact that City Mills is planned to be readapted into a mixed-use area known as City Village. Therefore, it makes sense for City Mills itself to also be of mixed use. While this is accomplished somewhat with the addition of an outdoor restaurant, the other two buildings themselves might be mixed use, such as one building hosting a small commercial business while the other could be a registration office for the condominiums. Also, the registration floor can dedicate a portion of its space to provide a small museum for City Mills, and potentially even the entire mill history of Columbus. Perhaps, the registration office, small convenience store and museum can even be present on the same floor. If the museum is not to be included, then the equipment used in operating the mill, which based on the information gathered may still be inside the buildings, will be donated to museums, perhaps put on display at the Columbus Technical College, which is relatively close to City Mills.

Chapter Conclusion

City Mills has had an interesting history, one that makes the site as worthy of preservation as the other mills discussed in this thesis. One of the ways to preserve it is to make it into a mixed-use structure. This process would include turning the main site into a mixture condominiums and retail, a restaurant, parking which can also be of mixed use to serve the entire area rather than only the site of City Mills, and public greenspaces.

Figure 37: A more detailed plan for City Mills and the surrounding area. Image is a sketch drawn by John Crowley of the University of Georgia.

CHAPTER 7

CONCLUSION

It is no great revelation that like many things in this world, buildings start to change after years or even decades of standing. Owners change, businesses can move out or move in, and in some cased the building can even be outright abandoned. Adaptive reuse of buildings, such as a warehouse becoming an apartment building can be described as a sort of middle ground between preserving the building as it currently would stand as a historic landmark and outright destruction and demolition of what is an insight into the past of the city, of the country, and potentially even human history as a whole.

The aim of this thesis was to identify a certain type of building that is commonly being repurposed. After establishing criteria that narrowed down the type of building to something more specific, certain selected case studies were looked at in detail. Then patterns found were applied to another building of the same type. The thesis narrowed down the type of building to industrial brick mill buildings that are located in riverside cities that are also along the Southeastern portion of the Atlantic Seaboard Fall Line. Then several mill sites were selected based on that established criteria and examined to find any common elements in their adaptive reuse, and three were then examined in more detail. A product was made with a mill building that had not yet been repurposed, and proposed methods of repurposing.

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