TEXTILE MILL BOOM TO THE BABY BOOM: PRESERVING NORTH CAROLINA’S HISTORIC TEXTILE MILL LANDSCAPES THROUGH ADAPTIVE REUSE AS CONTINUING CARE RETIREMENT COMMUNITIES

by

JAMES PATRICK LOCKE

(Under the Direction of James K. Reap)

ABSTRACT

Textile mill landscapes are an evident piece of North Carolina history. As such, they present a unique preservation challenge. A possible new use for these sites is an aging-in-place housing typology known as a continued care retirement community (CCRC). The current shift in American demographics towards older adults offers an opportunity to pair the ideas of preserving textile mills and providing aging-in-place housing. The intent of this research is to analyze the spatial layouts of both historic textile mill landscapes and CCRCs to determine if there might be a compatible fit. The research is accomplished by creating a three-level spatial analysis framework to compare the two typologies. This thesis creates a foundation for future work on textile mill landscapes as successful aging-in-place communities.

INDEX WORDS: Textile Mills, Continuing Care Retirement Communities, Mill Typologies, North Carolina Textile Culture, Adaptive Re-use, Rehabilitation, Preservation, Aging-in-Place
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JAMES PATRICK LOCKE

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JAMES PATRICK LOCKE

Major Professor: James K. Reap
Committee:
  Cari Goetcheus
  Heidi H. Ewen
  Myrick Howard

Electronic Version Approved:

Suzanne Barbour
Dean of the Graduate School
The University of Georgia
August 2019
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF TABLES</th>
<th>vii</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF FIGURES</td>
<td>ix</td>
</tr>
<tr>
<td>CHAPTER</td>
<td></td>
</tr>
<tr>
<td>1 INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Methodology</td>
<td>6</td>
</tr>
<tr>
<td>2 SIGNIFICANCE AND DESIGN OF THE NORTH CAROLINA TEXTILE MILL LANDSCAPE</td>
<td>9</td>
</tr>
<tr>
<td>History of the Textile Mill Industry as a Company Town</td>
<td>10</td>
</tr>
<tr>
<td>The North Carolina Textile Mill Landscape Context</td>
<td>17</td>
</tr>
<tr>
<td>Social Implications of the Textile Landscape</td>
<td>22</td>
</tr>
<tr>
<td>Loss of Textile Company Towns in North Carolina</td>
<td>26</td>
</tr>
<tr>
<td>Conclusion</td>
<td>28</td>
</tr>
<tr>
<td>3 DESIGN CHARACTERISTICS OF TEXTILE MILL LANDSCAPES</td>
<td>29</td>
</tr>
<tr>
<td>Design Analysis Frameworks</td>
<td>29</td>
</tr>
<tr>
<td>Regional and Geographical Location Features</td>
<td>32</td>
</tr>
<tr>
<td>Community Scale Features</td>
<td>35</td>
</tr>
<tr>
<td>Site Design Aspects</td>
<td>39</td>
</tr>
<tr>
<td>Case Study Site: Spray Mills, Eden NC</td>
<td>46</td>
</tr>
<tr>
<td>Conclusion</td>
<td>54</td>
</tr>
</tbody>
</table>
Regional and Geographical Features ..........................................................110
Community Scale Features ......................................................................114
Individual Site Features ........................................................................117
Conclusion ..............................................................................................123
Future Research Recommendations .....................................................125
REFERENCES ..........................................................................................128
APPENDIX 1: CCRC SPATIAL ANALYSIS RESULTS .................................139
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1</td>
<td>Three-tier spatial framework and description in table</td>
<td>30</td>
</tr>
<tr>
<td>Table 2</td>
<td>Regional and geographical scale features</td>
<td>35</td>
</tr>
<tr>
<td>Table 3</td>
<td>Community scale features</td>
<td>37</td>
</tr>
<tr>
<td>Table 4</td>
<td>Site features</td>
<td>46</td>
</tr>
<tr>
<td>Table 5</td>
<td>Mill geographical features: typical vs Spray Mill</td>
<td>49</td>
</tr>
<tr>
<td>Table 6</td>
<td>Mill community features: typical vs Spray Mill</td>
<td>52</td>
</tr>
<tr>
<td>Table 7</td>
<td>Mill site features: typical vs Spray Mill</td>
<td>53</td>
</tr>
<tr>
<td>Table 8</td>
<td>Common typologies of institutional aging-in-place communities</td>
<td>88</td>
</tr>
<tr>
<td>Table 9</td>
<td>Geographical locations of CCRCs in North Carolina</td>
<td>94</td>
</tr>
<tr>
<td>Table 10</td>
<td>Regional and geographical features of NC CCRCs</td>
<td>94</td>
</tr>
<tr>
<td>Table 11</td>
<td>Development settings of CCRCs</td>
<td>96</td>
</tr>
<tr>
<td>Table 12</td>
<td>Distance to a cluster of commercial development</td>
<td>96</td>
</tr>
<tr>
<td>Table 13</td>
<td>Community features of CCRCs</td>
<td>96</td>
</tr>
<tr>
<td>Table 14</td>
<td>CCRC typologies based on site features</td>
<td>98</td>
</tr>
<tr>
<td>Table 15</td>
<td>Site features of CCRCs</td>
<td>99</td>
</tr>
<tr>
<td>Table 16</td>
<td>CCRC comparison</td>
<td>108</td>
</tr>
<tr>
<td>Table 17</td>
<td>Considerations of regional and geographical features</td>
<td>111</td>
</tr>
<tr>
<td>Table 18</td>
<td>Community Scale Feature Considerations</td>
<td>115</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Framing the mill’s landscape vocabulary</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Lowell Mill Village</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>Slater model</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>Schenck-Warlick Mill</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>Railroad development</td>
<td>21</td>
</tr>
<tr>
<td>6</td>
<td>Railroad development and textile mills</td>
<td>21</td>
</tr>
<tr>
<td>7</td>
<td>The Loray Mill strikes</td>
<td>24</td>
</tr>
<tr>
<td>8</td>
<td>Draper’s plan</td>
<td>26</td>
</tr>
<tr>
<td>9</td>
<td>Rivers and textile mill concentration</td>
<td>33</td>
</tr>
<tr>
<td>10</td>
<td>Location of textile mills in the Piedmont South</td>
<td>34</td>
</tr>
<tr>
<td>11</td>
<td>Saxapahaw isolation</td>
<td>38</td>
</tr>
<tr>
<td>12</td>
<td>Charlotte mills</td>
<td>38</td>
</tr>
<tr>
<td>13</td>
<td>Charlotte surrounding development</td>
<td>39</td>
</tr>
<tr>
<td>14</td>
<td>Vernacular textile mill landscape</td>
<td>40</td>
</tr>
<tr>
<td>15</td>
<td>Rocky Mount Mill ancillary structures</td>
<td>41</td>
</tr>
<tr>
<td>16</td>
<td>Housing typologies</td>
<td>45</td>
</tr>
<tr>
<td>17</td>
<td>Leakesville Spray</td>
<td>48</td>
</tr>
<tr>
<td>18</td>
<td>Eden geographical area</td>
<td>49</td>
</tr>
<tr>
<td>19</td>
<td>Spray Mill community</td>
<td>51</td>
</tr>
</tbody>
</table>
Figure 20: Spray Mill building stock..................................................................................................................53
Figure 21: Loray Mill Village before and after ........................................................................................................68
Figure 22: Traditional vs sprawl neighborhoods .....................................................................................................81
Figure 23: Location of CCRCs in NC.........................................................................................................................94
Figure 24: Forest at Duke layout ...........................................................................................................................103
Figure 25: Aldersgate layout..................................................................................................................................107
CHAPTER 1
INTRODUCTION

The textile industry in North Carolina was the most economically influential industry in the state during the late 19th and early 20th century. Since the decline of the textile industry in the late 20th century, many industrial sites associated with textile production have required adaptive reuse to preserve their historic fabric. These sites shaped North Carolina’s political, economic, and social landscape and had lasting implications on its social structures; nonetheless, throughout the state, these sites have been left contaminated and neglected. A re-use project needs a successful new use, and a textile industry comeback is unlikely, so we must look to another industry to provide a new use for these sites. The baby boomer generation will create a new demand for practical, safe, affordable, and attractive living options as they age. North Carolina is witnessing a greying of its citizens and a number of retirees moving to the state, thereby driving demand in the state for new aging-appropriate housing. A popular housing typology known as the Continued Care Retirement Community (CCRC) offers a set of successful aging-in-place techniques such as creating community connections, preventing isolation, and offering multiple levels of care. Both the textile mill landscape and CCRCs are self-contained communities. This thesis explores the feasibility of adaptively reusing historic textile towns as CCRCs to preserve the North Carolina textile mill landscape in its entirety.

For the purposes of this research, the textile mill landscape is considered to reflect the cultural and social activities associated with the spatial relationships of the built environment and geographical elements of mill towns in the manufacturing of textiles in North Carolina (see
Figure 1). The mill town encompasses the entire area in which the living and work of the textile industry takes place, regardless of the ownership structure of the resources. The mill town includes the rivers and railroads intersecting the mill town, the textile company’s holdings, as well as the co-located outlying communities assisting in primary or secondary industrial activities. The company town represents the areas under direct ownership of the textile company: the mill village, mill site, and the community amenities owned by the company town owner. Community amenities in this context refers to the commercial and social resources to provide for the mill workers and owners outside of the industrial sphere of the mill town. Community amenities were under the ownership of the company developing the industries and would later include outside owners building adjacent to the site.

The major components associated with understanding the textile industry’s built environment are the mill village and the mill site. These sites are the most distinct and recognizable. The mill site is the area in which the industrial occupations take place in large mill buildings and auxiliary structures, while the mill village is the section in which the workers are housed and live their more private lives. These terms are often used interchangeably in the literature and with professionals addressing the textile mill town as the mill village. The textile landscape is a combination of all these built environment and geographical components, which over time developed the lasting social and cultural meaning of the place.

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1 Figure 1 is a representative illustration of the typology of North Carolina textile mill landscapes. The spacing is not to scale and varies among communities.
2 Outlying communities included the marginalized people of the larger community, including African Americans, single women, and non-textile workers. Sometimes these people would work in the mills but were most commonly connected with the support of industries not associated with the textile industry.
To examine the suitability of using CCRCs as a preservation tool for textile mill landscapes, this thesis asks the following questions: What are the spatial layouts of historic textile mill landscapes in North Carolina? What are the current spatial layouts of aging-in-place communities, with a focus on CCRCs? Are these spatial layouts compatible?

Due to the flexible nature of CCRCs in care and the effort to explore the possibility of preserving the entire textile mill landscape with CCRCs, the scope of this research will be limited to exploring the CCRC typology and will not address other forms of adult housing typologies as alternative methods of re-use. The choice to use CCRCs and no others as a new use
stems from the variety of elderly housing typologies, the ability for CCRCs to raise vast amounts of funds to develop sites, and their approach of creating complete communities. Housing typologies such as independent living or +55 communities are simply residential developments with a focus on universal design. Specific health outcomes of older adults in CCRCs will not be addressed in this research. The CCRC model is a service and housing elderly living typology popular in the aging in place marketplace, and therefore the spatial characteristics will be evaluated, not the health outcomes of these typologies. In addition, the premise of this research is to preserve the mill landscape in its entirety; as a result, it is out of the scope of this research to address new-use possibilities that do not address the whole landscape. The varying models of aging-in-place communities and senior citizen housing typologies could easily fit into subsections of the mill town and would be optimal for future research.

Currently, research has found no examples of a mill town being used as a CCRC, yet several sections of mill sites in previous northeastern textile areas have been converted to elderly housing. Historic resources have been used as elderly housing throughout the state of North Carolina, particularly old Works Progress Administration (WPA)-era schools for low-income elderly housing. Moreover, examples such as Marland Place (Andover, MA), River Court (Groton, MA), Standish Village at Lower Mills (Dorchester, MA) and Taber Mill Apartments (New Bedford, MA) demonstrate the potential for leveraging the capital of elderly housing.

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3 “Universal Design is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability. An environment (or any building, product, or service in that environment) should be designed to meet the needs of all people who wish to use it. This is not a special requirement, for the benefit of only a minority of the population. It is a fundamental condition of good design. If an environment is accessible, usable, convenient and a pleasure to use, everyone benefits. By considering the diverse needs and abilities of all throughout the design process, universal design creates products, services and environments that meet peoples’ needs. Simply put, universal design is good design.” “What is Universal Design,” Centre for Excellence in Universal Design, 2014, accessed June 21, 2019, http://universaldesign.ie/What-is-Universal-Design/.

4 The only caveat is the new use for the actual railroad tracks. This research identifies the train tracks but does not offer any tangible solutions to preexisting railroad tracks.
projects to reuse historic textile mills.\textsuperscript{5} These reuse projects focus on repurposing large mill structures as elderly apartments with flat-style apartments. The communities are touted as walkable with ease of access to community resources, but there is no evidence to suggest that the mill houses in the mill village are being used as additional housing for the elderly. The challenges facing each mill town vary from location to location and some concerns are addressed in this research, such as brownfield mitigation, property reunification, and models of large-scale mill town preservation. Due to the focus of this research on the comparisons of spatial layouts of CCRCs and mill towns, individual design solutions are not addressed. Topics such as requirements for medical facilities to fit into a mill setting and universal design treatments to mill houses were not explored. These are topics for further research and important to the larger conversation of linking historic property suitability for successful aging-in-place.

Leveraging elderly housing for preservation purposes has not been fully examined, although various entities are drawing clear connections between preservation and elderly housing potential. The Merrimack Valley Planning Commission’s Massachusetts Smart Growth and Smart Energy program has identified mill districts as Mill Revitalization Districts, viable reuse projects that recognize historic resources as assets to their mission. The extent of the contributions of historic mill areas to the community’s best practices requires further research. The research here seeks to build on the current conversations of leveraging elderly housing for the repurposing of historic mill properties.

Methodology

This thesis is an exploratory research exercise to examine the design compatibility traits of CCRCs for adaptive reuse as a preservation technique for historic textile mill towns in North Carolina. The research consists mainly of literature research with spatial comparison analysis used to analyze the spatial characteristics and to discuss the fit of CCRCs into North Carolina mill landscapes. First, a background of the New England textile mill landscapes and their influence on the North Carolina textile mill landscape is needed to frame its historical significance and defining attributes. This background includes information on the differing layouts, with a focus on the Rhode Island model of company towns, which became a very predictable format in the Piedmont South.\(^6\) The background information is fundamentally influenced by Margaret Crawford, author of *Building the Workingman’s Paradise: The Design of American Company Towns*, whose extensive research in the field of company towns will be the basis for the arguments and historical context presented. Similarly, the North Carolina textile mill legacy will be outlined using works by Brent D. Glass as a basis for understanding the significance of the textile industry on North Carolina.

To explore the spatial relationships of the textile landscape, Chapter 3 focuses on the characteristics of the textile mill landscape by creating a spatial framework analysis. Using the analytical framework, a form of qualitative coding of references supported by primary examples allows for the deduction of the significant characteristics in textile mill landscapes. The research used consists of research works from Brent D. Glass’s observations on the North Carolina textile

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\(^6\) The “Piedmont region” in this research refers to the geographical region between the inner coastal plains and the mountains of eastern states in the United States. The Piedmont region extends from New Jersey to Alabama and is characterized by rolling hills that create fast-moving rivers for generating hydropower. The “Piedmont South” refers to the states in the South with a Piedmont region. These include states from Virginia to Alabama. In North Carolina, the elevation drops of the rivers were leveraged to generate large numbers of mills and industrial areas.
industry and Margaret Crawford’s section on Southern mill landscape typologies. To accompany these research works, maps, satellite images, and landscape renderings are used. To address the appropriateness of the CCRC model as a preservation technique, Chapter 4 is an examination of long-term preservation tools to preserve entire textile mill landscapes and uses a literature review approach to suggest an effective long-term preservation strategy.

For CCRCs to be used as a preservation tool, a demand for future CCRCs and livable communities must be present. Chapter 5 presents a topical breakdown of the Baby Boomer generation population shift, their housing concerns, and aging-in-place issues. The research method is a literature review and presents a history of the Baby Boomers and aging concerns, with a major focus on spatial layout. The same spatial framework introduced in Chapter 2 is used to evaluate the issues surrounding the design of the built environment and spatial characteristics of aging-in-place design. The analysis and research is guided by Scott M. Ball’s book *Livable Communities for an Aging Population: Urban Design Solutions for Longevity*.

To directly compare the textile mill landscapes to the CCRC model for senior housing, Chapter 6 uses the spatial framework from Chapter 2 and applies it to the CCRCs in North Carolina. All registered CCRCs in North Carolina were spatially evaluated to deduce the major typologies of CCRC spatial layouts and analyze the implications of these trends. The CCRCs were evaluated using the register for CCRCs in North Carolina, then using Google Maps with the satellite imaging filter. After establishing the characteristics of CCRCs, the chapter features two CCRCs to explore the amenities, spatial layouts, and community and geographical characteristics to highlight the CCRCs that bear the most spatial similarity to a textile mill landscape.

To conclude this exploratory research, Chapter 7 offers a comparative analysis that compares the characteristics deduced from the textile mill landscape with those of market-proven
CCRCs in North Carolina. The chapter uses the spatial framework conclusions from Chapter 3 and Chapter 6 to analyze the potential compatibility of a mill town as a CCRC. In addition, Chapter 5’s evaluation of issues regarding aging-in-place design using the spatial framework in Chapter 2 influenced the understanding of a successful compatibility match.

The purpose of this research is to not to prove that CCRCs are compatible with textile mills but to start the conversation on aging-in-place–related potential new uses for textile mill landscapes. When I began my initial research on the topic, discussion surrounding the potential of leveraging the greying of the Baby Boomers for preservation purposes was scarce; therefore, I hope this research helps begin the conversation.
CHAPTER 2
SIGNIFICANCE AND DESIGN OF THE NORTH CAROLINA TEXTILE MILL LANDSCAPE

The complete mill landscape is one of the most important community design elements in North Carolina’s industrial cultural heritage due to the textile industry’s enormous impact on the state’s built environment, economics, social and cultural identity; thus, it should be protected in its entirety as a single landscape.\(^7\) The North Carolina textile mill landscape, for the purposes of this thesis, is defined as: predetermined designed built-environment elements associated with the textile industry arranged in a vernacular spatial manner\(^8\)

The textile mill landscape in North Carolina follows the larger regional pattern of textile mills in the South, which were modeled after the textile regions in New England.\(^9\) During the decline of the textile industry in North Carolina, starting in the late 20\(^{th}\) century, the historic mill landscapes began to be neglected and demolished due to the outsourcing of the textile industry to

\(^7\) Textile mills in North Carolina developed in several stages during the early part of the textile revolution in North Carolina, but as the industry developed, the standardization of the mills and the villages began to develop specific types of development traits.

\(^8\) “Historic Vernacular Landscape—a landscape that evolved through use by the people whose activities or occupancy shaped that landscape. Through social or cultural attitudes of an individual, family or a community, the landscape reflects the physical, biological, and cultural character of those everyday lives. Function plays a significant role in vernacular landscapes. They can be a single property such as a farm or a collection of properties such as a district of historic farms along a river valley. Examples include rural villages, industrial complexes, and agricultural landscapes.” Charles A. Birnbaum, “Preservation Brief 36: Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes,” National Parks Service, U.S. Department of the Interior, accessed June 29, 2019, https://www.nps.gov/tps/how-to-preserve/briefs/36-cultural-landscapes.htm. The historic textile mill town is a vernacular landscape to North Carolina; see Douglas Swaim, Carolina Dwelling: Towards Preservation of Place: In Celebration of The North Carolina Vernacular Landscape (Raleigh: North Carolina State University School of Design, 1978).

other countries. As a means to slow the decline and destruction of such sites, the state responded by introducing a “Mill Tax Credit” intended to rehabilitate these structures by providing financial incentives for their preservation and reuse. These mill tax credits were primarily used for the large textile mill and auxiliary structures associated with the industrial heritage of the site. The sole focus of this tax credit is structures “used as a manufacturing facility or for purposes ancillary to manufacturing, as a warehouse for selling agricultural products, or as a public or private utility;” the definition excludes the accompanying village landscape. The bias towards large buildings extends past the implementations of tax credits, as other significant defining features of the mill landscape are viewed as comparatively secondary preservation issues. This perspective raises the question of how to save the entire site, not merely the structures immediately associated with industry and textile occupations. By analyzing the spatial layout and characteristics of textile company towns and preservation needs, we can deduce design elements that can be leveraged to create aging-in-place–friendly communities in North Carolina. This chapter will explore the contextual history and typologies of spatial layouts of North Carolina textile mill towns as a unified cultural landscape.

**History of the Textile Mill Industry as a Company Town**

America’s first introduction to the textile company town occurred in the northeast, after the American Revolution, when the industrial potential of America became a matter of national security. The creation of these textile mill areas during America’s infancy prompted large-scale debates on the matter of social vs. economic priorities associated with industrialization, as

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11 N.C. General Statute (GS) Article 3H 105-129.70-75, Mill Rehabilitation Tax Credits, North Carolina.
13 N.C. General Statute (GS) Article 3H 105-129.70-75, Mill Rehabilitation Tax Credits, North Carolina.
outlined between Thomas Jefferson and Alexander Hamilton’s ideals of industry, that is, “conflict between the market rationality of industrial development with profit as its ultimate consideration, and the social rationality [of] religious, ethical, or democratic principles.”14 The first company towns in New England epitomized these ideological struggles, and these conflicting social values manifested themselves in the built environments of these textile company towns and would later be embedded into the two early company town typologies, the Humphreysville model and the Rhode Island model. The first company textile town constructed in the 1790s, the Paterson Mill, was based on the influence of Hamiltonian ideals and policy, a large government-sponsored mill site resembling those of Manchester, England.15 The Paterson Mill quickly failed due to macrofinancial busts and organizational problems; however, the mill’s spatial plan was the first delineation of social order in a mill town in the United States.16 While not replicated, trends of influencing the social order were drawn from this example and would influence the two major typologies.

The first successfully repeated company textile town method was the Humphreysville method, which centered on townhome barracks-style living quarters as created by the Humphreysville Textile Company.17 This style of mill exemplified the Jeffersonian approach of keeping the labor supply focused on an agrarian class, while the traditional unemployed could also earn a wage, and employers of this model would often target and employ single women looking to earn a wage.18 Other popular mill sites, such as Lowell Mill in Lowell, Massachusetts,

15 Crawford, Workingman’s Paradise, 11.
16 Ibid., 18.
17 Ibid., 18.
18 Ibid., 19.
were influenced by this style of boarding house (see Figure 2). Shortly after this mill layout became popular, scholarly debate began to revolve around the societal aspects of the mill, with social freedom and the freedom of private social life being constantly evaluated. 19 This model intensified the power dynamic between the mill bosses and the female workers and raised questions about the potential for exploitation vs. the moral obligation to look after the integrity of single women. 20 While praised by some observers as a moral method of creating a work environment for single women, the female workers developed resentment for the mill owner, as these built-in controls restricted their social freedoms and demanded morally correct social behavior at all times. 21 This design of large boarding houses promoted direct employer oversight of the work and social life of the individual workers through proximity and power dynamics. Moreover, the mill and the boarding houses would often be adjacent to one another, thus never allowing the women to truly escape the “moral” direction of the mill owners. 22

20 Crawford, Workingman's Paradise, 25.
21 Ibid.
22 Ibid.
The “Rhode Island” company town typology had similar social implications as the Humphreysville typology, but instead of boarding-style lodging for workers, it focused on individual, rural-style homes with gardens to attract farmers into the labor force by incorporating the entire family into the dwelling unit, thus offering a more modest private sphere. The Rhode

23 Ibid., 33.
Island typology of company town was the method that eventually spread to the American South and became adopted as the standard for mill construction in North Carolina. This style was first adopted by the Slater Mill company town and was replicated in the Rhode Island area, eventually becoming known as the Rhode Island method. Slater’s approach was an adaptation of previous English methods of industrial development to the American natural landscape. To bring workers from an agrarian culture to the mill, a familiar lifestyle would have to be maintained. The housing mimicked rural farm housing, with uniform, company-built homes situated on an ample amount of land that mill workers and their families could farm for themselves as they had traditionally done in rural New England (see Figure 3). After proving successful in attracting and retaining a labor force from the agricultural sector, this methodology of mill construction began to spread throughout the country, as can be seen in North Carolina’s mill landscape and throughout the rest of the Piedmont South. By the time textile company towns appeared in the American Southeast, they were an amalgamation of industrial trial and error beginning during the Industrial Revolution in New England, reflecting particular social and physical design techniques. The American South industrialist would eventually embrace the Rhode Island model as a formulaic and predictable design due to its ease of implementation and ability to attract a labor force and control the social lives of its workers.

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24 Ibid., 20, 174-179.
25 Ibid., 20-22.
26 Ibid., 19.
27 Ibid., 19.
28 Ibid., 20, 174-179.
29 Crawford cites the now-defunct Encyclopedia of Social Sciences when defining a company town as “a community inhabited chiefly by the employees of a single company or group of companies which also owns a substantial part of the real estate and houses”, 1.
Both methods of design controlled the social lives of their workers, but in different ways. The Humphreysville model was highly personal and dictated its workers’ every waking moment due to the immediate proximity of the housemaster in a culture that dominated single females through paternalistic societal frameworks.\textsuperscript{31} While the Rhode Island method allowed more freedom after hours in the private theater of the home, societal control still existed due to the company ownership of the housing stock, the proximity of residences to the mill, and the mill owner’s economic power. The mill villages and the social life within were specifically designed to promote “healthy ideals” among the residents. Controlling the housing stock had several advantages for the mill owner. It projected to the outside world the image of doing the “godly” task of creating a working environment that would be viewed as a societal success. Moreover, it

\textsuperscript{31} Ibid., 24-26.
created economies of scale in housing stock production and enabled mill owners to recruit a larger labor force.

These early practices of company towns grew into a system of creating complete communities with varying social, economic, and design ideals. These communities were modeled across the nation, and a half-century later, the Rhode Island model became standard practice for large textile mill owners in the South, with the same intent of attracting a labor force to the mill and controlling their social perspectives through the hierarchy of mill worker housing based on skill.

North Carolina has seen company town developments that exist outside of the textile industry; however, the textile industry is North Carolina’s leading industrial cultural heritage and the most significant of its industrial landscapes. By the mid-20th century, North Carolina had become the largest textile region in the United States. As the state became more industrialized, it also dominated other industries, such as the furniture industry in High Point, and the tobacco industry in Durham and Winston Salem. This study focuses on textile mill landscapes as the main trendsetter of design layout for company towns in North Carolina due to the sheer number of textile mills—1,271 in 1975 in North Carolina at its peak—and the massive amounts of community development associated with the state’s highly influential textile industry. Due to the nature of industries using company towns as their site development strategy, the overlap of design traits between different industries is inevitable. The design of textile mill landscapes

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33 Ibid., 186.
ultimately laid the foundation for the most influential infrastructure of North Carolina’s industrial heritage and thus will be the industry analyzed in this study. 36

The North Carolina Textile Mill Landscape Context

The manufacturing of textiles is the single greatest economic and industrial cultural influence in North Carolina. As noted in Brent Glass’s book *The Textile Industry in North Carolina*, interviewees in the early 20th century described the cotton mill as “the dynamo to effect changes in all departments of life in a community” in North Carolina. 37 North Carolina was a prime location for the textile industry due to its cheap labor, cheap land prices, and large-scale hydropower potential. 38 As North Carolina grew from a rural agricultural society to the largest textile region in the world by the 1920s, the state’s infrastructure grew in direct relation to the economic development spurred by the textile industry. 39 North Carolina’s textile companies began to change drastically post-1920s due to the progressive movement and professional city planners addressing the societal inequality in textile mill towns. 40

The legacy of the North Carolina (NC) textile mill landscape begins with the first cotton mill, built in 1813 in Lincoln County, called the Schenck-Warlick Mill (see Figure 4). 41 The growth of the textile industry was slow in NC relative to other places during the early 19th century, so much so that the North Carolina General Assembly wrote a report claiming “a crisis” in the economy due to indebted farm workers and the state’s need to produce local staples in order to turn “producers into consumers.” The passing of the 1828 and 1832 tariffs in North

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39 Ibid., 5-7.
40 Ibid.
41 Ibid., 7.
Carolina created a positive economic environment for the creation of the textile industry by creating a more profitable climate in which to produce textiles. By 1840, the North Carolina textile industry had grown to 25 mills while producing “50,000 spindles and about 700 looms and only employed 1,200 people.” Brent Glass argues that by the 1840’s, North Carolina’s cotton industry was still in its rudimentary form compared to northeastern industrial areas. For example, by 1845 in Lowell, Massachusetts, alone, there were 31 mills with 6,304 looms producing 228,858 spindles. Investments in the textile industry continued gradually, however, and by 1860, North Carolina had 39 mills with 800 looms and 41,900 spindles.

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42 Ibid., 8.
43 Ibid., 11.
44 Ibid., 12.
Several mills were burnt by Sherman’s raids during the Civil War, causing the growth of the textile industry to stagnate.\textsuperscript{46} By 1870 there were “only 33 mills with 39,900 spindles and 600 looms” in the state,\textsuperscript{47} “hope began to return.”\textsuperscript{48} The slow levels of development would soon end, and the levels of mill infrastructure and favorable investment climate would rise. As Thompson explains, “The statistics for 1890 show plainly the progress of the industry. The number of establishments was 91, and the number of spindles, 337,800, was more than three and a half

\textsuperscript{46} Glass, \textit{Textile Industry}, 13.
\textsuperscript{47} Thompson, \textit{From the Cotton Field}, 61.
times the total of ten years before. The number of looms, 7300, was more than four times as great. The capital reported as invested was $10,775,100, and the consumption of cotton, 107,100 bales, was nearly a third of the state’s production.” As the amount of capital and industrial knowledge increased in North Carolina, so did the rate at which textile mills were built. When Thompson’s report came out in 1904, he claimed that there were approximately 263 textile mills in North Carolina, which accounted for approximately one-fourth of the establishments in the country.  

The creation of these textile company towns did not exist in a bubble. The communities surrounding these areas grew in proportion with industry. The introduction of the steam engine as a source of power to turn the spindles, which were previously water-powered, created a paradigm shift in the industry and had significant ramifications for the site selection of these textile mills, shifting the developmental pattern away from streams and rivers and towards the railroads (see Figure 5 and 6). The simultaneous development of railroads and the increase in shipping to and from NC’s textile mills accounted for the largest jump in NC’s textile industry, reaching 318 mills by 1915. Other industries such as tobacco and furniture further facilitated the development of the railroads and thus the industrial infrastructure of North Carolina, making North Carolina the most industrialized state in the South.

49 Thompson, From the Cotton Field, 66.
50 Ibid., 74.
51 Glass, Textile Industry, 10-11.
52 Ibid., 34.

Daniel A. Tompkins was an industrialist who researched and wrote manuals on the creation of successful mill strategy. Such strategies can be seen in his 1899 book *Cotton Mill, Commercial Features; A Text-Book for the Use of Textile Schools and Investors*, in which Tompkins, the father of mill strategic development planning in North Carolina, says his industrial experience in North Carolina had led him to profit from textile mill operations. This book was used by the manufacturing elite in the South to increase productivity by designing mills based on pre-determined specifications. Tompkins realized the production advantages of the successful Rhode Island method of organizing company towns and recommended that mill developers create community housing to persuade the agricultural population to move to the mills. This competitive workforce-recruitment strategy created a standardized industrial cultural landscape wherein mill workers were housed near the mill, in houses owned by the mill owners.

**Social Implications of the Textile Landscape**

Mill landscape design was focused on creating maximum return for investors, a significant part of which entailed social control of the workers employed at the mills. The North Carolina labor market before the textile boom was largely agrarian farmers centered on family farming. The mills attracting new investment had to create incentives for farmers to leave their land behind and relocate to the mills to live and work in an emerging industry. To bring the workers out of the “hills,” the mill developers designed mill housing to facilitate an easy transfer of lifestyle by creating housing in an agrarian environment. This environment

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56 Ibid., 16-17.
included homes in a bucolic setting, design features that imitated traditional farmstead housing, and rental terms that were conditional upon one’s participation and employment in the mill. These elements were used to attract mill workers from agricultural areas and to decrease the development costs of creating a mill through economies of scale by producing predesigned houses and predetermined lot sizes.  

However, as this practice became more prevalent, the dynamic of living in a highly controlled social and economic environment began to take its toll. The term “paternalism” was frequently used by progressive activists and social researchers to describe this method of controlling the labor supply through direct control of their livelihoods, housing, and social environment.

The social aspect of complete control was hotly debated. Industrialists claimed that the creation of the mill in conjunction with the mill villages was a method to mobilize the masses while bringing them education, industry, wealth, and social wellbeing; labor activists claimed that it was a form of indentured servitude, as the living conditions were poor and pay was low. Mill owners rationalized this accusation as a necessary evil in the name of progress. These labor tensions came to a head in several riots and labor protests. One of the most well-known in North Carolina was the Gastonia labor riots in 1929, also known as the Loray Mill Strike (see Figure 7). The conditions at the Loray Mill drove the community to all-out revolt, and violence

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59 Ibid., 40-45.
61 Crawford, Workingman’s Paradise, 178.
followed. Conditions of the mill workers were recorded and published with tales of exploitation for sex, child labor practices, lack of food and sleep, and depressed wages.\textsuperscript{63}


The fact that the mill owners owned workers’ housing and controlled employment opportunities left little incentive for them to improve living standards and exacerbated poor working conditions during the early years of mill development, when the mobility of the labor force was low.\textsuperscript{64} However, as time progressed, and the number of mills, railroads, and roads


\textsuperscript{64} Crawford, \textit{Workingman’s Paradise}, 176-179.
increased, so did the interconnectivity between developed areas and other mills. This
interconnection allowed for the free flow of labor and, consequently, forced mill owners to
increasingly invest in community resources to benefit laborers. By 1920, a survey indicated that
59% of all mill workers had moved at least 3 times in the last 10 years. The ability to move to
a more desirable living and working situation became more of a reality for the mill worker.

The increased community resources and working conditions came to a head with the
progressive movement, when urban planners began to create more favorable models of mill
living situations as directed by the mill owners. Mill owners saw the increased fluidity of labor
and high employee turnover rate as threats to high profits due to lack of efficiency and loss of
skilled workers. The most notable landscape designer working on mills in the south was Earl S.
Draper, who worked out of Charlotte, NC. Draper was tasked by the mill industrialists and
owners with creating a new understanding of community to keep people rooted in the
community. Draper created a method of textile village development that separated the
ownership from the workers and created a more distinct physical relationship between housing
and the workplace (see Figure 8).
Loss of Textile Company Towns in North Carolina

The North Carolina textile industry suffered from national mergers and acquisitions leading to concentrated market share, and later, international trade challenges associated with cheaper labor overseas. These changes created a climate of uncertainty for the historic textile mill landscape.\(^7\) North Carolina’s peak employment for the textile industry hit an “all time-high of 293,600 in 1975,” although acquisitions and mergers in the late 1970s and early 1980s meant that North Carolina’s textile employment had dropped to 211,300 employed in the textile industry by the year 1986, a decrease of 28% in the textile labor force in North Carolina.\(^71\) These

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\(^7\) Glass and Kress, “Textiles.”

\(^71\) Ibid.
effects were not felt only in North Carolina—800 textile mills were lost nationwide.\textsuperscript{72} Mergers and acquisitions lead to economies of scale in the production process, decreasing the demand for labor and working capital in the production of the textiles. A second assault on the textile industry came in the 1990s, when the call for international free trade caused US textile companies to move their operations overseas where labor was cheaper.\textsuperscript{73} From 1997 to 2002, approximately 100,000 additional jobs in the textile production industry were lost, and 70,000 lost in the apparel sector. By 2002, there had been 128 layoff events and 289 mill closings associated with the newly implemented trade deals.\textsuperscript{74} Additionally, “in 2003 one of the biggest job losses in North Carolina history occurred when Kannapolis-based Pillowtex closed five plants, eliminating 4,000 jobs.”\textsuperscript{75}

The decline of the textile industry in North Carolina left many of the state’s most significant industrial landscapes barren and unused, and it is unlikely that the textile industry will return to this scale and be able to support these areas again.\textsuperscript{76} Without the original use and no need for continued investment in these sites, the mills began to deteriorate and were sold off on the auction block or demolished due to insurance liability reasons. A study compiled in 2010 suggested that 80% of the remaining vacant mills were ripe for redevelopment by analyzing their redevelopment potential using the constraints of declining business, vacancy, and partial vacancy of these sites, all associated with the decline of the textile industry.\textsuperscript{77} In addition, a study in 2014

\textsuperscript{72} Ibid.
\textsuperscript{74} Glass and Kress, “Textiles.”
\textsuperscript{75} Ibid.
\textsuperscript{77} Briggs, “Locational Aspects,” 2.
on the impacts of the North Carolina historic mill tax credits stated that the “state’s leading preservationists now estimate that roughly 200 relevant structures remain standing,” among which “the rehabilitation of 51 related mill buildings or utility service facilities is an impressive percentage.”78 However, even if these sites have been redeveloped, they still may see the wrecking ball unless there are long-term methods of legal protection coupled with economically viable usage. In addition, these numbers do not display the effort to redevelop the site as a whole but refer specifically to the mill structures. It is even rarer to see an organization take on both the mill and the mill village in a coordinated preservation effort.

Conclusion

The history of the textile company town has its roots in the infancy of our country and has since shaped North Carolina’s identity as a state. The adoption of the Slater model to the topography of the Piedmont region made North Carolina an industrialized state, and the industry was further developed due to the implementation of the railroad system. The lineage of mill design created a specific style of mill landscape that spread to every corner of the state and was a major influence in the social and economic lives of its people. Not only did the textile industry use this style of mill town creation, it was also used in the tobacco and furniture mills in the state. While these sites did bring industrialization to North Carolina, mills also brought exploitation and social control by attempting to shape the values of the people working there. Due to the nature of the mill industrial practices, these mill landscapes had distinct characteristics associated with them and were replicated across the South. These characteristics will be discussed in the next chapter.

CHAPTER 3
DESIGN CHARACTERISTICS OF TEXTILE MILL LANDSCAPES

Mills in North Carolina can be examined by their distinct design typologies, which were based on the previous knowledge learned in New England and the later adaptations for the steam engine. These typologies can show us the distinct spatial layouts that facilitated control of the social and economic aspects of the community. The design features and developers’ intent displayed by North Carolina mills had two major purposes: to create the most efficient output in conjunction with site selection and to control the social atmosphere of the workers. The format of the Southern textile mill became so widely replicated that the Bureau of Labor Statistics summarized it as the “vernacular textile mill village.”\(^\text{79}\) The methodology of evaluation will follow three spatial frameworks: first, the geographical placement of the mills within the landscape; second, the complete community design concept; and third, site-scale design elements. A case study of the Spray Cotton Mill in Eden, North Carolina, will serve as an example of evaluating a mill site using these frameworks.

**Design Analysis Frameworks**

To analyze the differing design elements of the textile mill landscapes, a three-tiered analytical framework was created to organize their various features. Table 1 displays the relationships and definitions of the three tiers. Due to the nature of development over a long

\(^{79}\) See Figure 14, “Vernacular textile mill landscape.” The vernacular simplification is not to say that there were not other forms of spatial layouts or influence from other mill sites. For example, the legacy of the boarding house as seen in Lowell would be introduced to mill communities in North Carolina for single women, as seen with the Henry River community; however, this would not be the main form of housing. See Kelly Carroll, “Preserving North Carolina’s Last Textile Landscape: The Case for Henry River Mill Village” (Master’s thesis, Columbia University, 2012).
period of time, these characteristics influence one another and may have some overlap between the scales and features, with geographical features being the most notable. To accompany the chart, the table provides an overview of scale and the relationship components of the varying framework levels. The three-tiered framework will be used throughout this thesis as a basis for analysis to compare and contrast mill features. In addition to the mill landscape designs, the framework below will also be used for the analysis of the CCRC design. (see Table 1)

Table 1. Three-tier spatial framework and description in table
Source: Created By Author, James Locke
### Spatial Analysis Framework

**Regional and Geographical Scale:** These features will take a regional context and evaluate the relationship within the region and with other communities. The geographical features will be discussed in this section to add the context of the natural resources; however, the geographical features transcend scale and may be included in all levels.

The mill site is linked by its larger regional context. These sites were situated with respect to transportation pathways and rivers. Mill sites would often have the same development parameters, resulting in a spatial distribution within the state.

### Mill Context

**Community Scale:** This level focuses on the relationships with design elements in the local community. If the regional scale places the community in context with other towns and cities in the region, then the community scale is the municipal and neighborhood level.

Due to the nature of economic production associated with these sites, community development surrounding these sites had the potential to be transformed over time. The mill and the outside community development influenced each other.

### Site-level Scale

**Site-level Scale:** The site framework focuses on the distinct characteristics of the site/complete community. In addition to site-level design, some zones spill over the boundary of the original site, and features of the adjacent area are included.

Mills have identifiable features on an individual scale. Since the site may not have developed in a vacuum, the site framework will also include adjacent commercial and social resources and describe their design features.
Regional and Geographical Location Features

The regional and geographical location features of North Carolina mills are closely associated with the early development decisions of the mill owners during initial site selection. Textile mills’ location near streams and rivers, their later development near major transportation thoroughfares, and their context within the larger regional area are important features. North Carolina textile mills evolved over time due to technological innovations that influenced the site selection, building stock, and community development surrounding the mills. In the early stages of mill development, mills were situated along rivers, later spreading to other geographical regions with the introduction of the steam engine and coal-powered mills. North Carolina’s rivers and streams were the primary areas of development during the early years, leveraging the hilly topography of the Southern Piedmont above the Fall Line of North Carolina. (see Figure 9 and 10) Faster rivers meant more horsepower, which meant larger production outputs for the mill developers; therefore, rivers were the major geospatial factor in the early development of the textile industry. The river’s topography influenced all aspects of mill design and construction. Mills were either situated on a flat surface or were tucked into the contours of the hilly terrain. As housing and other auxiliary structures were built, mill owners emphasized the rolling hills of the Piedmont as a tool to recruit workers and placed houses on hilltops or along topographical contours. By 1890, North Carolina had 91 mills in all sectors of the economy, and 70 were still using hydropower to power their production. It was not until the early

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80 Glass, Textile Industry, 5.
81 Ibid., 5-7.
82 Ibid., 13-18.
20th century that the North Carolina industrial economy reached the limit of its hydropower capacity. 83


By 1931, a distinct pattern of colocating mills near one another had emerged. There was a conglomerate west of the Piedmont region in Asheville, but the majority of the textile mills were located within the Piedmont region. The Piedmont region had several mill-dense areas, including Charlotte-Gastonia, Winston-Salem, Greensboro, Highpoint, Burlington, and Durham. These regional colocations created a positive feedback loop for the economic development of these
areas and, consequently, created distinct areas of regional association.\textsuperscript{84} As a result of colocating, the feature of rural vs. urban location plays a role in the development of the textile mills. The colocation of the mills would eventually create the dense central business districts associated with North Carolina’s economic development patterns.\textsuperscript{85} (see Table 2)

Table 2. Regional and geographical scale features

<table>
<thead>
<tr>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rivers</td>
</tr>
<tr>
<td>In the Piedmont region; hilly Landscapes</td>
</tr>
<tr>
<td>Regional transportation hubs</td>
</tr>
<tr>
<td>Colocation led to regional associations and development</td>
</tr>
<tr>
<td>Rural vs. urban regions</td>
</tr>
</tbody>
</table>

\textbf{Community Scale Features}

Regional and geographical development patterns play a direct role in the community development patterns surrounding the mill site. The degree of isolation, the development of the surrounding community, and layout of the site define the community design aspects.

Isolation played a large role in the early development of the textile industry in North Carolina and was a byproduct of the mills’ placement near rivers, or, in the case of steam-powered mills, attempts to avoid taxes.\textsuperscript{86} This tax avoidance possibly hindered concentrated community development in specific areas and, as a result, North Carolina was one of the most industrialized states yet one of the least urbanized.\textsuperscript{87} The isolated mill sites had the opportunity

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\textsuperscript{84} As mills began to locate and infrastructure followed to support the industrial process, others began to colocate to take advantage of industrial resources (see Glass, \textit{Textile Industry}).
\textsuperscript{85} Walbert, “Industrialization.”
\textsuperscript{86} Glass, \textit{Textile Industry}, 42.
\textsuperscript{87} Ibid., 42.
to establish local community developmental patterns that sustained their workforce and
promoted community growth outside of the mill’s realm of influence. The introduction of the
steam engine shifted site selection and changed the geospatial parameters for mill location and
development away from the hilly river topography to a transportation path focus. Railroad tracks
were laid in response to the abundance of cheap coal and increased production of goods in North
Carolina, and 1880 saw a large increase in textile mills around established railroad lines for the
delivery and import of raw materials. These steam mills could be developed anywhere with
access to railroads and began appearing on the outskirts of larger metropolitan areas, where
developers could evade city taxes and leverage existing transportation corridors. For example,
the town of Kannapolis, located on the Seaboard-Air Railroad Line, underwent large-scale textile
mill developments along the railroad transportation corridor.

The steam-powered mills had the ability to be located outside of “city limits” to avoid
local city taxes, but hydropowered mills were located based on water movement and may have
experienced long-term isolation. Isolation characteristics develop over time as a result of the
development of the region around the mill sites and have direct effects on the community
resources of the localized area. Due to initial isolation or hydropowered mills, some mill areas
never experienced much community development, while others were eventually incorporated
into the development of the larger urban sprawl. One example of a hydropower mill that
sustained a small amount of development around it was the mill at Saxapahaw (see Figure 11).

88 For example, Saxapahaw had a set of two-story buildings built by the Holt, White, and Williamson manufacturing
company, which acted as community resources. Alamance County Electronic Register of Deeds, book 89, page 482,
89 Glass, Textile Industry, 43.
90 Ibid., 43-45.
91 Walbert, “Industrialization.”
92 Glass, Textile Industry, 42-43.
93 Ibid., 42.
Saxapahaw is approximately 20 miles by road from Chapel Hill, where the closest business
district and hospital are located. In contrast, Highland Mill, in Charlotte’s now-trendy NoDa (for
North Davidson) area, was originally located outside of the city limits but has since been
incorporated into Charlotte and is now considered close to the heart of Charlotte (see Figure 12).
The North Davidson area is an example of continuous development surrounding a mill site. By
1988, the areas around the mill have been developed into residential housing, with small
commercial districts popping up along major thoroughfares (see Figure 13). When evaluating
design compatibility for new use, topography, large geographical features, and community
development around these mill sites should be considered and addressed. (see Table 3)

Table 3. Community scale features

- Isolation vs urban development around the site
- Adjacent to a river
- Transportation connectivity
- Rural vs. urban setting
Figure 11. Saxapahaw isolation. Source: Created By Author, James Locke. Adapted from Google Maps, 2019.


Site Design Aspects

There were three main built environment relationships within a textile mill landscape with corresponding considerations for design: the mill buildings where the work took place, the community amenities (for example, churches, stores, recreational areas), and, lastly, the housing for the workers and their families, where the family social sphere thrived. These segments together created a complete community. (see Figure 14)
The first distinct aspect of the mill town was the large industrial complex itself. Each operation varied in size; however, they were normally large-footprint buildings with tall ceilings to accommodate large production equipment. These structures were the predominant buildings onsite, as they were the focal point of the town’s design regarding site planning and placement. Major roads typically led to these mill structures, which needed adequate transportation routes to and from the location. Due to the structures’ importance, all other aspects of the mill town were designed around the production facilities and were subservient to the industrial structures. Accompanying these large industrial structures were secondary, or “ancillary,” structures that assisted with the manufacturing of textiles, for example, train depots, water houses, dams, and other buildings (see Figure 15). These ancillary structures differed from site to site depending on the needs of the industrial segment of the town. As production quantities and technology
changed, so did these structures’ forms. Often, additions or demolitions to parts of the structure were performed to meet the needs of production, and it is thus common to see large mill structures with varying architectural details corresponding to times of expansion and contraction of operations. These mill structures’ historical significance also lies in the fact that they can be read as a timeline of production for the site.


The second aspect of the mill town will be described as community development features, which contain social enhancements of the community provided by mill owners and the community development that built up independently around these towns as time progressed. In the beginning, mill owners would often build churches and stores within the mill town to entice
workers to join the company. Later, mill owners would add features to attract workers from other mill towns or to persuade existing workers to stay. The inter-mill competition for labor increased with the connectivity provided by railroad and road construction, and the increased ease of travel through transportation innovations. To appeal to workers, mill towns offered better amenities, such as baseball leagues, after school programs, and YMCAs. The locations of these resources varied based on the site location, topography and development potential over time. However, the company-built resources were usually located in the nucleus of the town, while continued community development from outside parties would be on the periphery of the town. As mentioned earlier, isolation played a large factor in the development of these resources—the company would not build certain resources if they were already established in the adjacent communities. The proximity of the textile mill to the mill village and other resources created a single, walkable, environment. There were three distinct theaters of social life: work, social spaces, and the home. These areas all were connected and contained within the influence of the large mill town area.

The last defining feature of a mill town is the mill village where the labor force was housed, which is identified by uniform housing. The subservient nature of the housing placement is a result of the industrial operation’s need for power. As the Bureau of Labor Statistics shows, workforce housing was typically adjacent to the large mill structures. The housing sections displayed a distinct hierarchy based upon rank within the social realm of the company. The mill

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94 Along with the creation of social life amenities, stores were created to supplement the lack of access to goods. Often, a mill would also create a general store where the currency was company scrip. Scrip was a form of company-created currency that could then only be used with the company-built, company-owned store. This system reinforced the paternalist society of the mill towns; however, with paternalism comes the need to create a complete community. The social atmosphere of a mill town was one of complete control by the mill owner.


96 Mill workers were typically white workers. Whenever there were black workers, they were segregated and lived further away, and they were hired for the lowest-skilled positions.
owners often lived next to the mill in the largest, most visible house. The foreman’s housing would be the second most prominent house and was situated to have a view of the main thoroughfares of the other houses. Then came the standard mill workers’ housing, which was uniformly placed with equal lot sizes so that they could farm their own crops and have a small buffer from the outside public sphere. The layout of the streets, mill houses, and the mill managers’ viewsheds were leveraged as a means of control and would be characterized as paternalism. The concept of paternalism can be traced throughout North Carolina mills’ development history to its roots in the Rhode Island model. Similar concepts of “panopticon” design can be seen with the traditional location of the floor manager’s house in relation to the other workers’ houses. This practice created a community paradigm with distinct hierarchies that can be read on the landscape.

The Southern textile mill, though standardized, had very specific design features on the personal scale. The geographical and community designs of these mills created distinct personal interactions with the built environment, leading to walkability, small property lots with varied but predictable types of houses, diverse building stocks for differing uses, proximity to geographical features, and even some with a railroad station, meaning a connection to the outside world.

The mill landscape followed the Rhode Island method of housing, where single-family homes dominated the landscape, as opposed to the Lowell method of housing, which relied on large boarding houses. The standard layout was one in which mills and mill villages were

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97 While the panopticon is normally associated with prisons, the concept is defined as creating a built environment to give the appearance of constant surveillance to promote a certain psychological response to create social order. Robert C. Chidester, “Class, Community, and Materiality in a Blue-Collar Baltimore Neighborhood: An Archaeology of Hampden-Woodberry” (PhD diss., The University of Michigan, 2009), 70.

98 Crawford, Workingman’s Paradise, 177.

99 Glass, Textile Industry, 18.
adjacent, thus cementing a cohesive cultural industrial landscape, but by the late 19th century the mill towns’ homes were highly standardized 2-, 3-, 4-, or 5-room houses, which were used by developers to promote higher living standards and to keep costs predictable. These increased options could house different family sizes and gave flexibility to the community’s family needs while following similar patterns that made it cheaper for the employer to create housing stock. Housing typologies are the root of mill house creation—indeed, so much so that when writing National Register of Historic Places nominations, historic preservation professionals find it helpful to inform the audience of housing typologies. While mill houses had several designs, the individual lots were highly regulated and typically were between ¼ to ½ acre in size, imitating an agrarian culture and offering the ability to farm. The house was usually raised 12-15 inches off the ground to prevent moisture problems. The houses consisted of similar architectural styles with varying floor plans. (see Figure 16) The mill houses were of comparable massing thus creating a sense of hierarchy. The setbacks and lot sizes can be clearly seen when evaluating a mill town. Several homes onsite would usually stand out from the others, such as the foreman’s house. The size of the foreman’s house would usually be large, thus cementing the hierarchy of power within the community.

100 These nominations typically refer first to the houses’ identical layouts and then elaborate on the later sets of typologies based on several preset designs. This type of development can be seen in the Loray Mill National Register nomination, where the author of the nominations clearly outlines the housing types first, and then categorizes each individual property.
The large textile mill structures and the ancillary structures do not exhibit the same uniformity as the housing stock of NC’s textile landscape. Mills had differing auxiliary structures depending on the size and scope of production; infrastructure requirements were a function of the mill’s natural surroundings, size and power usage. Similarly, the community amenities, such as
churches or schools, were built according to the needs of the community. The defining characteristic of these areas is the variations in footprints of the building stock in and around the mill town community. The uses of these buildings were as diverse as the size and scope of the structures, from the large industrial scale of the main mill buildings to the small intimate spaces of a community store. In keeping with the idea of a complete community, the day-to-day life of the workers revolved around the village and the worksite, which created a culture of walkability from one’s house to the work site and to other community amenities. (see Table 4)

Table 4. Site features

- Distinct districts
- Large mill buildings
- Diversity of structures
- ¼ to ½ acre housing lots
- Mixed-use communities
- Community viewsheds
- Walkability
- Transportation focus around mill
- Housing stock

Case Study Site: Spray Mill, Eden, NC

To illustrate the frameworks presented above, Spray Mill in Eden, North Carolina, will serve as a brief a case study for application of the three design frameworks. Spray Mill was selected due to its underutilization and intact features. The case study will consist of a brief historical context, followed by analyses of the current regional and geographical, community, and modern site conditions.

Context: The mill site in Eden, North Carolina, is an accumulation of various mill companies colocating around the Smith River and the 1810s water canal. At the height of its
significance, the Spray Mill area consisted of 8 large mill complexes, with the major portion built in 1890s. While the National Register District incorporates a large riverfront area, the focus of this case study will be around the Spray Cotton Mill, the Nantucket Mill, and the American Warehouse company, as seen in Figure 17 (Leakesville Spray). The section highlighted is the southern end of the mill area and is currently capped off by the Spray Traffic Circle commercial structures. 101

Figure 17. Leakesville Spray. Source: Created By Author, James Locke. Adapted from North Carolina Maps, “Leakesville-Spray, comprising the city of Leakesville [sic] and the town of Spray, Rockingham County, North Carolina, Dec. 1921,”
https://dc.lib.unc.edu/cdm/compoundobject/collection/ncmaps/id/7914/rec/6
Note. The section highlighted is the southern end of the mill district and is currently capped off by the Spray Traffic Circle commercial structures.
**Geographical Analysis:** Spray Mills is located in the Piedmont region of the state, where the speed of the Smith River was harnessed by a canal, created in 1813, which was an integral part of the site. Although it was situated near a branch of the Danville & Western Railway, Eden never became a large transportation hub and therefore did not develop transportation infrastructure such as major highways. However, it was situated near the metro areas of Winston-Salem, Greensboro, Burlington, and Danville, Virginia. Eden was once a large mill area but has now grown and developed a relatively diverse economy, in turn creating a diverse development strategy with varying community amenities. Eden is somewhat isolated, in the sense that it is some distance to another mid-sized town, but the mill sites are no longer completely isolated from other developments due to the extended community amenities surrounding it. Since the area was predominately a mill area, the community has witnessed increased population and regional development, such as the construction of a UNC hospital.\(^{102}\) (see Table 5)

Table 5. Mill geographical features: typical vs Spray Mill

<table>
<thead>
<tr>
<th>Typical Mill Geographical Features</th>
<th>Spray Mill Geographical Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Piedmont landscape: rivers and hills</td>
<td>- Near a river</td>
</tr>
<tr>
<td>- Regional transportation hubs</td>
<td>- Uses topographical features</td>
</tr>
<tr>
<td>- Colocation led to regional associations and development.</td>
<td>- On a railroad line (1883)(^{103})</td>
</tr>
<tr>
<td>- Rural vs urban regions</td>
<td>- No major highway system</td>
</tr>
<tr>
<td></td>
<td>- Isolated from other towns</td>
</tr>
<tr>
<td></td>
<td>- Development in the city limits</td>
</tr>
</tbody>
</table>


Community: Eden, North Carolina, comprises three separate “towns” (Leakesville, Spray and Draper). While these historic core areas have seen little investment in the last 30 years, Eden has experienced development in other areas of the city limits, most notably along the commercial district associated with the highway bypass. The Spray Mill site has witnessed limited development in the surrounding communities, as it is still mostly dominated by single-family developments, with some individual standing commercial structures dotted along a road leading to the site. The majority of the development has occurred on the southern side of the site along the traffic circle, with a clustering of commercial structures. The river created a natural barrier to the east that limits Eden’s association with those areas (see Figure 19). (see Table 6)

104 As shown in a remote survey conducted with Google Maps on 3/11/2019.
Figure 19. Spray Mill community. Source: Created By Author, James Locke. Adapted from Google Maps, 2019.
Table 6. Mill community features: typical vs Spray Mill

<table>
<thead>
<tr>
<th>Major Community Design</th>
<th>Spray Mill Area Community Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Isolation vs urban development around the site</td>
<td>- Economic activity within the city limits</td>
</tr>
<tr>
<td>- Adjacent to a river</td>
<td>- Commercial district adjacent to site</td>
</tr>
<tr>
<td>- Transportation connectivity</td>
<td>- Sits on the river</td>
</tr>
<tr>
<td>- Rural vs urban Setting</td>
<td>- Has access to the highway system</td>
</tr>
</tbody>
</table>

**Site-level Development:** The site’s eastern flank is adjacent to the Smith River, and a canal system traverses between clusters of buildings. Thus, the relationship of the river to this community is still present and an active part of the area’s local character. (see Image 20) The three districts are intact here on this site: the industrial section is at the center, surrounded by single-family mill houses to the north, east and west, and a small commercial district occupies the area to the south of the mill. The industrial sector still boasts two large mill complexes with several ancillary structures in between them, leading to a large diversity in the building stock as seen by the numbering of associated buildings in Image 20. The western and southern areas of the mill site host a cluster of commercial structures and are within walking distance of the main site; therefore, this community is highly walkable and provides a large building stock associated with the area. The mill houses are situated along the periphery of the community and expand into other single-family developments, and the viewsheds associated with the foreman are not as noticeable in this environment. In this case, there is no clear distinction between the historic textile mill landscape and the other surrounding developments. This lack of differentiation illustrates the interconnectedness between the community and the mill landscape. (see Table 7)
Table 7. Mill site features: typical vs Spray Mill

<table>
<thead>
<tr>
<th>Major Personal-Level Design Takeaways</th>
<th>Spray Mill Area Site-Level Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Distinct districts</td>
<td>- Distinct districts</td>
</tr>
<tr>
<td>- Large mill buildings</td>
<td>- Large mill buildings</td>
</tr>
<tr>
<td>- Diversity of structures</td>
<td>- Diverse housing stock</td>
</tr>
<tr>
<td>- ¼ to ½ acre lots</td>
<td>- Single-family lots</td>
</tr>
<tr>
<td>- Mixed-use communities</td>
<td>- Diversity of structures</td>
</tr>
<tr>
<td>- Community viewsheds</td>
<td>- Large building stock</td>
</tr>
<tr>
<td>- Walkability</td>
<td>- Geographical features remain intact</td>
</tr>
<tr>
<td>- Transportation focus around mill</td>
<td></td>
</tr>
<tr>
<td>Housing Stock</td>
<td></td>
</tr>
</tbody>
</table>

Figure 20. Spray Mill building stock. Source: Created By Author, James Locke. Adapted from Google Maps, 2019.
Conclusion

The aim of this chapter was to analyze the most fundamental design aspects of the textile mill landscapes in North Carolina, which was accomplished by creating a three-tiered framework. The framework provides a lens through which to view textile mill landscapes, allowing the deduction of the design features from the historic developmental patterns of these sites. As a result, we are left with three sets of basic design characteristics, which were compared to a case study in Eden, North Carolina. The comparative analysis reaffirmed several claims made by historic documents while shedding light on the complexities of an individual site analysis. This three-tiered framework is also used in Chapter 6, which introduces CCRC spatial layouts, as a way to compare and contrast the layouts of textile mill sites and CCRCs.

The introduction of the history, significance, and design of historic textile mills not only reveals the reason to save these landscapes but also helps determine what parts and relationships are worth preserving. The relationship of these mill areas as a complete community is the fundamental significant feature and should thus be preserved in its entirety. The next chapter explains the decline of the textile industry, why sites related to this industry should be preserved, and what specific elements should be preserved. It then proposes ways to preserve these sites as a long-term solution.
CHAPTER 4

PRESERVATION OF COMPANY TOWNS

The decline of the textile industry led to the abandonment of the mills and left communities with industrial areas that were decaying and falling into disrepair, shifting the focus from these sites as economic drivers to community development projects. There is no singular way to preserve a structure or a landscape, yet there are fundamental goals that can be achieved using the correct preservation instruments. This section will explore rehabilitation as a preservation method from a technical standpoint and discuss the challenges that mill landscapes pose to preserving them as a whole. This discussion is followed by an evaluation of long-term strategic preservation possibilities, supported by examples of current landscape preservation in North Carolina.

Rehabilitation as Preservation Method

An ideal preservation method in this context should address two points: first, preserving as much integrity of the complete site (i.e., the mill, the village, associated development in and surrounding the site, and its relationship to railroad corridors and rivers) as possible, and second, financing the appropriate method. The Department of the Interior standards outline the four methods of preservation of historic sites: Preservation, Restoration, Reconstruction, and Rehabilitation. A preservation project, at its essence, keeps the site in its current form by preventing further loss of historic integrity. This method leaves the site with a plan for long-term preservation efforts yet assumes future protections on financial solvency and ability for the managing organization to carry out its duties. Similarly, restoration preserves the integrity of the
structure while also adding and removing material to correspond with a period of significance. This approach creates a site that would, in this particular situation, mimic a historical mill museum. Similar to preservation, restoration is only as valuable as the sponsoring organization’s ability to fund the project, and it also incurs a higher cost to the organization as compared to a preservation project. Restoration can be beneficial for teaching future generations; however, it is unlikely that developers will use funds to recreate landscapes of such size and infrastructural scale as a mill landscape. A reconstruction is a method to rebuild the historic fabric of a site from a specific point in time, filling in gaps and lost and missing resources. In such a scenario, missing homes, mill buildings, and other historically relevant structures may be reconstructed to suit the needs of the developer.

The most suitable method of preservation for a mill landscape is rehabilitation. Rehabilitation is defined as “the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values” (National Park Service). Rehabilitation, in its fundamental form, is a method that creates a new use for a historic resource while maintaining the site’s historic integrity and is often associated with the term “adaptive reuse.” Rehabilitations leverage a new use to provide a financially feasible project that should align with the community’s goals of economic development; they are often undertaken by the private sector with assistance from local and state municipalities and local community involvement. Rehabilitation allows for the financial backing needed to fund an expansive project such as mill landscape redevelopment. Rehabilitation does not, in effect, preserve the complete integrity of the site; nonetheless, this approach directs developers to engage in a mitigation

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process to make design decisions to either remove or retain historic fabric as guided by the Department of Interior’s Standards for Rehabilitation, codified as 36 CFR 67, which are regulatory criteria used to determine whether a rehabilitation project qualifies for the Historic Preservation Tax Incentives program (i.e., is a “certified rehabilitation”). As the introduction to the Standard states:

The intent of the Standards is to assist the long-term preservation of a property’s significance through the preservation of historic materials and features. The Standards pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and the interior of historic buildings. The Standards also encompass related landscape features and the building’s site and environment, as well as attached, adjacent, or related new construction. To be certified, a rehabilitation project must be determined by the Secretary to be consistent with the historic character of the structure(s) and, where applicable, the district in which it is located. The following Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.\(^\text{106}\)

Both state and federal historic tax credits programs use the Department of Interior Standards to assist developers in the rehabilitation process to ensure the retention of the site’s significance during a redevelopment. If the developer of these projects follows the Standards, the project will receive tax credits, thereby exposing the project’s developers to less risk.\(^\text{107}\) Historic tax credits are not available to nonprofit or governmental entities; the private sector is the one actor allowed to use these incentives. While there are financial incentives in the forms of loans and grants offered to nonprofits and governmental agencies, these funds are usually highly competitive and in short supply, whereas the tax credit incentives are open to anyone in the private sector, making them an attractive option to developers.


\(^\text{107}\) Tax credits add equity for a project through a tax syndication process. The added equity makes it less risky for all parties involved and allows developers to undertake projects that may otherwise seem too expensive.
Rehabilitations, however, do have their flaws when viewing the long-term situation of these sites. A master’s thesis by Mary Abbott from the University of North Carolina at Wilmington argues that preservationists are focused solely on the incorporation of big business to help find a new use for historic sites, sometimes to these sites’ detriment. Abbott uses the example of Carrboro’s Carr Mill to illustrate her point, calling it

[A]n example of an older project that benefited from location and access to preservation professionals, yet lacks in the preservation of anything more than the shell of an industrial building. No effort was made to save the surrounding landscape or use the building to teach about labor history. It is strictly an adaptive reuse project, representing preservationists’ tendencies toward market-driven preservation.108

Abbott argues for the need to use these large industrial landscapes to educate more effectively and calls attention to the habit of solely looking at large mill structures for profit purposes and to the interpretation problem that arises after site redevelopment. She also illuminates practices common in rehabilitations driven by market forces, such as real estate developers’ outlook based on cash flow analysis, in which developers do not undertake preserving the entire landscape.

Handling of historic structures can come in many forms, as defined by the Department of Interior Standards, and the size of these structures makes it difficult to preserve them as museums or restore them to their original use due to a decline in the textile industry. Therefore, the ideal preservation approach to this problem is rehabilitation or an appropriate adaptive re-use project. Rehabilitations of these sites answer the fundamental question of “who is going to pay for the preservation efforts?”

Challenges to Mill Landscape Redevelopment

The complex site history and original development choices by the textile mill industrialists have developed a unique challenge for preservationists undertaking the preservation or redevelopment process of these entire sites. Selecting an appropriate preservation method should answer one fundamental question: what is the most economically sustainable method for long-term preservation of these sites? While each method has its use, the selected preservation method will rely on the financial ability to pay for it. Local preservation organizations would do the most justice to sites from a historic preservation lens; however, they often lack the funds and capabilities to undertake such massive development projects. As discussed in Chapter 1, the mill design elements of large-footprint structures, varying building types, and challenging site locations dictate their redevelopment potential based on acceptable new uses. Additionally, the cost of brownfield mitigation and the new ownership structure of the complete textile landscape increase the difficulty of successfully preserving some mills due to the sunk costs associated with investment risk management.109

The size of the large mill buildings makes complete preservation efforts difficult for traditional nonprofit organizations, who are rarely able to fund such projects without outside capital.110 These mills, once taken out of use, leave large blighted areas in their wake and become not just a preservation project but an economic and community development challenge.


for local municipalities, thereby opening the door for local community involvement. The large areas associated with the industrial mill buildings are difficult to handle due to the enormous cost of purchasing and renovating the property, a lack of preservation and real estate development technical skills, or a lack of experience with sites this complex. Just as nonprofit organizations are not financially suited to preserve these sites, local municipalities are also not suited to act as the main developer and can only offer limited financial support for public involvement for these sites, thus leading to a difficult financing problem.

In addition, the auxiliary manufacturing structures and additional surrounding historic resources vary in both size and layout. Therefore, a unique redevelopment plan must be developed for each site, and traditional preservation groups and local municipalities may not be in the position to successfully rehabilitate these sites due to lack of knowledge and funding. While the housing is usually uniform, the sheer number of houses associated with the site required to be preserved is a substantial undertaking; sunk costs that nonprofits and local governments lack the capability to address, complicates the planning process.

Regional and community development trends affect site redevelopment since mill locations vary, from urban areas to the rural countryside of North Carolina. Site location can be a major obstacle to preservation efforts as there may be little to no local growth in the surrounding communities. In such cases, financial institutions are slow and hesitant to undertake large-scale

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113 Local municipalities are cash-cycle oriented, which can lead to difficulties in undertaking large-scale projects due to their risk-averse approach. It is difficult for local municipalities to balance risk when their experience with the site has been stagnant.
114 Several nonprofits do, in fact, take the approach of focusing on the mill village and will preserve the mill houses in piecemeal fashion. Examples include projects by Preservation North Carolina and Preserve Durham.
redevelopment due to an unfavorable cash flow outcome. As rural populations continue to move to more urban areas, the mills located in isolated areas will find it increasingly difficult to secure the financial resources for preservation or redevelopment efforts.\textsuperscript{115} In contrast, the more urban mills have an advantage as urban areas are seeing growth, and thus the large sums of money required to develop these properties are justified by current investment trends. Rehabilitation projects are costly, and a reasonable investment-backed expectation from real estate investors is needed if a nonprofit or local government is unable to assist.

Another deterrent to investors is the probability that a mill site is a brownfield, i.e., a contaminated site. Textile mill areas are often contaminated with chemicals such as asbestos, mercury, polychlorinated biphenyls (PCBs), lead and other metals, as well as volatile organic compounds (VOCs) from the production and manufacturing process of textiles. To recoup these buildings as potential lived-in-environments, the cleanup is costly and poses unique challenges for their redevelopment but can be accomplished. The Environmental Protection Agency (EPA) describes contamination of sites as “inadequately documented environmental histories” that “cause concern for resolving real or perceived environmental contamination problems.”\textsuperscript{116} The EPA has grant funds to mitigate some of these issues for redevelopment projects, but the investment needed upfront to document these sites can be a problem during the pre-development phase and can be viewed as a sunk cost for developers, making them a riskier investment from the onset.\textsuperscript{117} While brownfields are issues in the redevelopment of industrial sites in terms of financial investment, developers use the mitigation process to create a healthy environment for

\textsuperscript{115} Communities facing a decreasing population will find it hard to recruit resources to their community.


the users of the rehabilitated structures by eliminating dangers associated with chemical contamination.

The ownership scheme of these large areas is a major cause for concern when discussing a complete redevelopment of these sites due to the “holdout” problems, which can hinder the preservation of all the significant land parcels contributing to the historic significance of the site. During the early and mid-20th century, textile mill owners began selling off their ownership stakes in the mill workers’ housing to the mill workers themselves. This process has left the ownership of the textile landscape in the hands of many different property owners, which increases the difficulty of securing the entire site for a collective redevelopment strategy. Fragmented ownership makes re-assembling the historic parcels difficult and impedes development through possible holdouts by increasing the price of the sites as buyers learn of the plan to acquire all associated properties.

**Long-term Preservation Approaches**

Rehabilitation projects are susceptible to changing economic climates based on the long-term viability of the new use, just as restoration and preservation are dependent on a nonprofit’s ability to stay financially solvent. A project’s economic sustainability is based on its ability to collect rents, and rent income may not always be adequate to keep the building from being destroyed for other, more lucrative real estate projects in the future. Reuse answers the financial questions of an initial redevelopment project’s cost to retain the historic integrity in the immediate present; however, it does not address long-term protections, as developers may sell the property or feel they need to demolish the property if the new use no longer seems a viable

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118 There were two major sell offs of the mill villages in the South according to Harriet Herring. The first occurred in the 1920s-1940s, and then again post World War II. Harriet Herring, *The Passing of the Mill Village* (Chapel Hill: University of North Carolina Press, 1949), 9, quoted in Crawford, *Workingman’s Paradise*, 209.

financial option. A misconception regarding protections among preservationists comes in the form of financial incentives of the historic tax credits to rehabilitation projects. There are no federal protections on historic sites owned by the private sector, even for sites that have received federal and state historic tax credits. Federal and state historic tax credits may be awarded for projects that meet the Department of the Interior’s Standards for Rehabilitation during a 5-year reclaiming period and will be taken away from the project if there is an alteration within 5 years of the finished redevelopment.¹²⁰ In effect, this policy means that there is a financial incentive to retain the structure in its historic form for 5 years; however, after the 5-year reclaiming period, there are no federal ramifications for the demolition of the structure. Long-term protection of a structure is not guaranteed simply because it was rehabilitated using historic tax credits.

The only true governmental protections for tax credit-funded historic sites in the United States comes from the state’s ability to issue protective laws.¹²¹ In North Carolina, the powers of protection come from the state legislature’s power given to local municipalities to preserve these sites through three primary governmental mechanisms: Local preservation commissions, landmark status, and the no-bid surplus property sale.

First, a local municipality can create a historic district where the local quasi-judicial board can use statutes to keep the integrity of a site intact, usually through a certificate of appropriateness (COA) process that aligns with the community’s historic design guidelines.¹²² In North Carolina, the state has given the historic commission the power to approve or decline certain changes to historic structures, but North Carolina is a land-rights state and thus only allows commissions to stop the demolition of a structure for up to 1 year unless it is of state

¹²⁰ U.S. Department of the Treasury, Internal Revenue Code Section 50(a).
Therefore, the commission can protect the historic integrity of a site only if the property owner keeps the building standing, and there are no mechanisms in place to stop the owner from demolishing the structure after a one-year holding period. Mills are often seen by their owners of these sites as insurance liabilities, and many of these historic sites have therefore been demolished.

The second power local municipalities have is the ability to designate a site as a local historic landmark. Landmark status comes with the incentive of subtracting 50% of the local municipal property tax from the property in exchange for a perpetual protection of this historic site. However, even with this protection, the owner could still demolish the structure, with the only repercussion being repayment of the property taxes discounted from their annual taxes. As with historic district status, landmark status is not a legally enforceable means for long-term preservation, as the landowners would only need to repay the tax credits as repercussion for demolishing the structure. Moreover, these powers were awarded by the state legislature, which could at any time revoke these powers and protections. Even if the North Carolina legislature were to give municipalities a way to preserve these structures for the long term, it is difficult to view the validity of a long-term solution based on the accountability of a state legislature as viable due to the ever-changing political landscape in North Carolina. Therefore, relying on state legislation to give power to preservationists to protect these sites is not a permanently viable solution.

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125 NC General Statutes § 160A-400.6. Designation of landmarks; adoption of an ordinance; criteria for designation;
Lastly, there is a no-bid sale procedure for government surplus properties, known as the “Surplus Government Properties Program.” This program allows for a preservation-oriented nonprofit to purchase historically significant structures with a historic easement attached. This tactic is widely used by Preservation North Carolina; however, Preservation North Carolina has no interest in acting as the sole developer of a mill property and prefers to find developers to carry out rehabilitations. This method, with its introduction of the historic conservation easement, has the longest-lasting implications for preservation of mill sites.

Historic conservation easements are tools that allow for the long-term preservation of sites with constant monitoring by a third party. A historic conservation easement is a “voluntary legal agreement, typically in the form of a deed, which permanently protects a significant historic property.” These easements are perpetual in nature, creating a long-term strategy for historic structures. There is also a financial incentive to donate a historic conservation easement, which comes in the form of a tax write-off of the development rights one gives up when donating this easement to a qualified preservation charity. Alone, easements and a viable use only solve one aspect of a long term preservation strategy. Combining the legal framework of an easement with a new, viable economical use has the best potential for long-term preservation.

Models of Current Preservation of Historic Mill Landscapes in North Carolina

There are currently two popular approaches to preserving an entire textile mill community in North Carolina for the long-term goal mentioned above. One is the nonprofit/for-

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127 NC General Statutes § 160A-266. Methods of sale; limitation.
129 Ibid; Historic conservation easements, while long term in nature, can in theory be purchased back from developers and governmental entities. Easements have the ability to be purchased back or negated by the government, yet they rarely are. Although it comes at a great cost to the government, it is possible to overturn an easement.
profit partnership redevelopment approach, which is the direct involvement of a nonprofit preservation organization to obtain site control and dictate the redevelopment efforts in conjunction with a for-profit entity. The other is the for-profit redevelopment approach, in which the sole ownership, development, and preservation of a site comes from a for-profit entity. While the end result may look similar, there are subtle differences in their approach and influencing rationale for development. Evaluating these two approaches allows for the drawing of a potential road map for a successful longer-term rehabilitation.

The Nonprofit/For-profit Partnership: Loray Mill: Gastonia, NC: The nonprofit/for-profit partnership redevelopment approach in North Carolina has been successfully undertaken by Preservation North Carolina (PNC). The model includes a nonprofit dictating the preservation efforts of the entire mill landscape. PNC uses a revolving fund model to preserve mill resources across the state.\textsuperscript{130} In all of these cases, PNC has been the primary actor in the predevelopment phases, as they typically receive the entire site or the large mill structure as a donation from the landowners looking to rid themselves of the property and liability. For example, in Gastonia, North Carolina, PNC received the “million-dollar” Loray Mill as a donation from the property holders.\textsuperscript{131} The rehabilitation cost of the first phase of the large mill structure was 50 million dollars, while PNC’s assets in 2014 were 8.7 million dollars during the height of the phase one process.\textsuperscript{132} \textsuperscript{133} Even if PNC had sufficient funds to conduct the project solo, their mission is to “[acquire] endangered historic properties and then [find] purchasers willing and able to

\textsuperscript{130} Projects include East Durham, Edenton, and Glencoe Mill villages.


rehabilitate them.” Upon finding suitable development partners for properties, PNC places a historic conservation easement on the property with clear protections attached to the property. In essence, this approach allows for the continued long-term protection of the site. In Eatonton, PNC received a donation of not only the large mill structure but also the adjacent mill village. The Eatonton mill property owners had not sold off the houses as was common in the mid-20th century during the progressive era; thus, PNC was able to protect the entire mill area.

Since PNC’s mission includes the need to “find purchasers willing and able to rehabilitate” these properties, PNC must find appropriate for-profit partners to undertake the redevelopment of the large mill structure. With large scale projects, such as mill landscapes, the ability to rehabilitate these structures relies on the owners’ ability to use historic tax credits. Since a nonprofit organization can rarely use these credits, it would not be advantageous to perform an undertaking of this size alone. JBS Ventures, LLC, and Camden Management Partners, the purchasers of the Loray Mill from PNC, were able to successfully navigate the historic tax credit process to create a viable project. Upon selling the building to JBS and Camden Management Partners, PNC applied a conservation easement to the property. Currently, the mill has been partially redeveloped and is in its final phase.

Preservation NC has remained involved in the Loray Mill project by focusing on the mill village by purchasing blighted homes to preserve the history and the ownership model of the village. PNC’s Loray Mill Village Revitalization Project is set to buy and sell 20 houses in the next 5-7 years, with owner-occupied and historic easements attached to the properties. Their goal is to “transform Gastonia’s Loray Mill Village into an attractive, affordable, stable, racially and economically integrated downtown neighborhood for smaller households, making it a better

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place to live for existing and new residents.”\textsuperscript{135} The focus of a nonprofit such as PNC on the mill village allows for this community to be rehabilitated in keeping with the character of the neighborhood. By attaching owner-occupied covenants to the purchased properties, PNC is guaranteeing an affordable community despite the large investment in the adjacent Loray Mill. The benefits of this approach allow for a preservation organization to dictate the use and characteristic of the historic space, while allowing for-profit entities to take advantage of the tax benefits for rehabilitating a historic mill.


\textbf{The For-Profit Developer: Rocky Mount Mill, Rocky Mount, NC:} The second approach, a for-profit development entity buying and redeveloping the entire mill landscape, has rarely happened in North Carolina. The for-profit development model is rare because large development firms are often not interested in rehabilitations of mill villages due to the loss of economies of scale. The most successful mill rehabilitation to date in North Carolina is

underway by Capitol Broadcasting Cooperation (CBC) in Rocky Mount, NC, with the historic Rocky Mount Mill. CBC are the developers behind the American Tobacco Campus (ATC) in Durham, North Carolina, and are one of the premier large-scale historic rehabilitation development firms in the state. The for-profit approach is innovative as it is the only fully for-profit project conducted in the state of North Carolina focusing on preserving an entire mill landscape while creating a community. CBC’s approach is unique in the state as they accomplish the project by preserving the entire textile mill town, create a sense of community through mixed-use development, and incorporate the landscape into their strategic plan.

CBC made a decision to preserve the entire mill area, and the character of the space laid the foundation for their future project. In 2007, the Rocky Mount project was purchased by CBC due to its location next to the Tar River and the historic integrity of the site. The site still had many of the mill homes in situ, and the properties were able to be rehabilitated as part of the larger mill landscape. The large mill complex had already been designated a local historic landmark in 2003; therefore, CBC had no choice but to perform an appropriate rehabilitation on it. CBC is currently rehabilitating the large mill complex while purchasing as many of the mill homes in the area as possible and renting them to tenants. In addition, they can add reconstructed

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136 Capitol Broadcasting’s ability to secure New Markets Tax Credits from Self-Help Credit Union, acquire historic tax credits on the state and federal levels, earn designation as a Local Landmark, and secure funds from the city of Durham to build a parking deck gave them working knowledge in using historic resources. Its connections with Eddie Belk, who was the architect of the American Tobacco Campus, gave Capitol Broadcasting connections to a larger historic preservationist network. Additionally, the ability to navigate the historic tax credit market gave Capitol Broadcasting invaluable experience that would play a significant role in the development financing of the Rocky Mount Mill. See Amanda Frazier Wong and Sarah Wolff, “New Markets Tax Credit Impacts: A Case Study in Durham, North Carolina,” Self-Help Credit Union, March 2010, accessed June 29, 2019, https://www.novoco.com/sites/default/files/atoms/files/selfhelp_casesudy_0310.pdf.


houses to the existing footprints of destroyed houses. These new infill homes can match the historically appropriate size and scale of the original houses, thus maintaining the character and association with the greater mill landscape. The project is still underway but offers solid evidence for this method as a viable option for preserving these large mill areas.

Creating a successful community from the start was Capitol Broadcasting’s motto with Rocky Mount Mill. As with other historic company towns, Capitol Broadcasting needed to create social, economic, and natural aspects for their renovated community. They wanted to use similar guidelines to create a live work-play-atmosphere and leveraged the regional trends of breweries, a clustering of restaurants, an office park, and greenspace to accomplish this goal. To tie in the historic past of the mill with the area’s brewery trend, for means of community recreation, Capitol Broadcasting labeled the space the Rocky Mount Brew Mill.

Capitol Broadcasting’s Rocky Mount development is ongoing and includes two green infrastructure projects, Panther Island Park and the Monk to Mills Trail. Capitol Broadcasting has engaged the City of Rocky Mount with plans to create Panther Island Park as an inclusive green space and an active-tourist destination by advertising their mill site as a destination for CBC also introduced small, appropriate cottages adjacent to the mill for Airbnb rentals to serve the mill. Best practices for the reconstruction of historic buildings on historic footprints should follow the Department of Interior Standards for Reconstructions.

The success of the Brew Mill has already seen one brewery move to a larger space, attract an outside brewery to relocate into the site, Koi Pond Brewery, and lease space to a craft beer store on site. To reinforce the beer culture in the community, Capitol Broadcasting includes a keg-a-erator in each millhouse rental property to promote the sales of their Brew Mill brewers and reinforce the character of the community. While this approach makes economic sense by reinforcing the local beer culture into the residents’ way of life, this move does have tone-deaf historic representations of the paternalistic nature of the mill’s historic past. In addition to the highly publicized beer culture, the project has also lured two restaurants to its site to continue its appeal as a foodie destination.

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outdoor recreation with this local landmark park project.\textsuperscript{143} The island is adjacent to the mill on the north side, surrounded by the Tar River, and will be an extension of the current Battle Park. By tying in existing green space with a newly created green space, highlighted by a geographical water feature, Rocky Mount Mill will have the potential to see numerous visitors to its site to enjoy the relationship between the built environment and nature, while having the added effect of increased amenities for their residents. If the project is completed as expected, Capitol Broadcasting will attain their goal of creating a curated economic and social destination for the for the greater Rocky Mount community.

Mill landscape redevelopment projects demand flexibility and creativity, and CBC has shown a potential path to creating a community. Situating this project within the context of a large-scale historic preservation technique, the inclusion of the mill village in this rehabilitation was a positive community reinforcement tool for CBC in the commercial and office portions of their project. Rocky Mount received substantial investment by a private firm with experience in historic rehabilitation projects. The for-profit approach depends on the firm’s commitment to preserving the entire site; for example, if there were no protections on the mill village, there would be nothing stopping CBC from demolishing it and building large apartment complexes as the area becomes more popular.

Conclusion

North Carolina’s textile mills are decaying and losing their historic integrity, and there is little that municipalities can do to preserve these areas, as the laws are limited in dictating the actions of private landowners. Private landowners can use the power of historic conservation

\[^{143}\]“Rocky Mount Active Lifestyle Options Could Increase with Upgrades to Battle Park,” Belmont Lake Preserve.com, August 14, 2016, accessed April 21, 2018, \url{https://belmontlakepreserve.com/rocky-mount-nc/rocky-mount-active-lifestyle/}.
easement to preserve these sites in perpetuity but will also need successful economic programming to secure a long-term preservation effort. Combining the two approaches outlined above offers a long-term solution, with the private sector taking a commanding position in the project. Historic preservation trusts, governments, and developers each play a role in these endeavors, yet if there is not a viable new use for the property, then there is no guarantee that a long-term preservation project will be successful.

To address the question of programming accompanying a successful preservation strategy, Chapters 5 and 6 explore the CCRC style of aging-in-place as one such programming option. Rehabilitating textile mill landscapes into large CCRC developments serves multiple purposes: first, creating a new use and an economic driver; second, creating political capital to keep the space viable; and a potential third, utilizing the most secure legal mechanisms available, easements as to take advantage of the tax write-offs.
CHAPTER 5
BABY BOOMERS AND POSTWAR DEVELOPMENT

The rapid demographic increase in the number of adults above the age of 65 is fundamentally changing our perception of housing for older adults. Aided by the aging-in-place (AIP) movement, a shift in the perception of housing and community needs within older generations has identified the need for communities to adapt their strategies for providing for these older adults. The baby boomers are the most influential generation in America due to their wealth accumulation and their ability to dictate markets to satisfy their needs; this influence is apparent in the shifting housing demand the boomers are generating as they age. Baby boomers face unique challenges in their living situations and are pressuring communities and real estate markets to develop around their changing needs. From a real estate development perspective, their wealth and their cash flow potential open the possibility for development groups to rehabilitate textile mills to suit the aging boomer population. This chapter will outline the challenges seniors face in the larger context of the built environment and create a framework for successful adaptive reuse strategies. The three-tiered framework introduced in Chapter 3 will be used; however, the regional and geographical elements will not be considered in this chapter.¹⁴⁴ Using the same framework builds upon the previous chapter while establishing a baseline understanding for the design issues facing current development trends and how they will be addressed in the next chapter.

¹⁴⁴ These elements are largely a question of rural vs. urban location, and most of this discussion will be readdressed in the next chapter. The urban vs. rural divide has similar overlaps with the community framework.
Background: Demographic Shift toward Older Adults

The baby boomers are coming – what does that mean for the population distribution? Baby boomers are the subsection of the population who were born between the end of World War II (1945) and 1964.145 Since birth, this group has been instrumental to our development as a nation, and through every aging milestone, have caused paradigm shifts in our understanding of social life.146 This trend of redefining society will continue as baby boomers grow older and begin to retire. Their demand for specific lifestyle trends will need to be addressed through the housing market as they age.

The boomer generation has two important characteristics that have created the large demographic “bubble” in their population’s numbers. First, post-war fertility rates were significantly higher than those of the previous generation and were sustained for a longer period than seen before. Second, modern medicine and the increased wealth of older adults have increased this population’s longevity.147 Before the baby-boomer era, fertility rates were lower than those of post-war rates; for example, before 1933, the birth rate was 18.4 per 1000 people per year and then began to increase post-war to a staggering 26.5 per 1000 in 1947.148 Fertility rates began to slowly decline after 1947; however, they remained relatively high in the following years until finally returning to prewar levels in 1965.149 In 2011, the baby boomer cohort began to turn 65 years old, and by 2029, the final baby boomers will be turning 65. With this large population group retiring, the demographics in America will look like nothing previously seen in respect to size and population percentages of

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147 US Census Bureau, Baby Boom Cohort, 2.
148 Ibid.
149 Ibid.
elderly citizens. Currently, the percentage of the population above 65 years old is set around 14.9%. The projected population above 65 in 2029 will be approximately 20% of the population, and this proportion will cause a great need for a reimagining of elderly living environments. In comparison, only around 9.8% of the population was older than 65 in 1970. On average, the number of baby boomers retiring everyday between 2012 and 2029 will be approximately 10,000. Even though the number of baby boomers will thin through mortality, the demographic shift toward older adults will last for the near future.

**Concerns of the Aging**

Mortality will thin the aging population slowly, but problems associated with the increased number of seniors is compounded by their increased average life span. Due to an increased life span, interactions with the built environment will be prolonged and will be a major concern when planning for successful strategies for the aging community. With longer lives comes a dilemma: increased longevity increases the potential for living with potential age-related health issues for a longer duration. Therefore, it is critical to begin to think about development that adopts universal design principles for elderly citizens as a civil right for aging citizens.

A leading health concern for aging adults is social isolation and its damaging effects on physical and mental health. Social isolation is defined as “diminished social connectedness in terms of the quality, type, frequency, and emotional satisfaction of social ties” and also “a state in which the individual lacks a sense of belonging socially, lacks engagement with others, has a minimal number of social contacts and they are deficient in fulfilling and quality

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151 Ibid., 2-6.
152 Ibid., 9.
relationships.”

Isolation is linked to severe health problems for the aging population, such as depression, dementia, suicide, and a higher risk of being hospitalized. In addition to social isolation, age segregation should be avoided, as meaningful intergenerational engagement is beneficial for older adults. Barriers to social engagement materialize in both physical and psychological ways, for example, architectural barriers inside and outside of the home, health complications, or the death of a spouse. To create true dialogue and analysis regarding the health risks associated with social isolation, urban planners must include individuals’ needs to live a healthy and meaningful life from each individual’s perspective. Results from the occupational therapy field have identified varying degrees of isolation based on one’s proximity to services and potential social circles; for example, one research study has found that metropolitan elderly do not experience as much disconnection from family members as a rural population might.

Previous built environment and planning techniques revolving around the traditional neighborhood have effects on the aging populations and are a product of the past 50 years of real estate development trends. Evaluating these past trends and their negative effects on aging populations will allow for the comparison of the historic textile mill landscape as a potential site for successful CCRCs.


155 Hand et al., “Understanding Social Isolation,” 188.


157 Ibid. Architectural barriers are built environment features preventing accessibility to individuals, and these are found in the home and in the community.

Postwar Development Design Problem for Seniors

The demand for elder-friendly housing has been reevaluated in recent years and is constantly being redefined by research for increased standards of living to incorporate a more holistic approach to living and integration within the greater community. Scott Ball is a researcher in the field of environmental design and the interaction of elderly people with their environment. His book, entitled *Livable Communities for Aging Populations: Urban Design for Longevity*, will be the main framework for the conversation in this thesis regarding the best practices for aging communities in the built environment. Ball argues that the developmental patterns of American life from 1900 to today have changed drastically. He also states that the introduction of interstate highways, car-centric design, and suburb culture have created a sprawling development pattern, which has led to a style of suburb development that was not feasible in past periods.\(^{159}\)

Health researchers advocate keeping individuals in their current environment if their environment is suitable for safely aging in place and if they can afford it; however, the built environment and developmental patterns over the last 50 years have caused many obstacles to living a long and meaningful life.\(^{160}\) The traditional family household has also changed: in the early 20\(^{th}\) century, it was common to have a multigenerational household or family within the immediate community, whereas today, we see family members dispersed over further distances due to trends of suburbanization.\(^{161}\) Suburban sprawl was advertised as “getting away” from the day-to-day of the cities and a healthy alternative to urban congestion and pollution. These sprawl

\(^{159}\) Ball, *Livable Communities*, 3.

\(^{160}\) Ibid., xiii.

\(^{161}\) Ibid., 3.
techniques have had direct effects on the built environment, most profoundly on the design characteristics associated with the road layouts, spatial density, and physical house design.\textsuperscript{162}

**Community Scale Patterns:** On a neighborhood scale, post-war planning caused several problems by expansive land development techniques, including sprawling developments, decline of the traditional neighborhood, and single-family zoning regulations which directly place Boomers at a disadvantage as they age.\textsuperscript{163} Ball argues that the “natural neighborhood” encompassed a quarter-mile radius, where these “neighborhood-sheds” provided residents with everything they needed on a day-to-day basis.\textsuperscript{164} However, the introduction of the car and the sprawling development pattern that followed it has created larger distances between resources; this car-dependent method of development has prevented age-group integration, walkability, and healthy community ties.

Expansive developments covering large tracts of land coupled with dendritic or cul-de-sac street patterns were created to respond to the nuclear-family model.\textsuperscript{165} In essence, the suburbs were created for isolation purposes, to separate the family from the “sins” of the city, protect family values, demand that the wife control the private frontier of the household, and provide perceived security to the household.\textsuperscript{166} As a result, these family-oriented developments have left considerable amounts of housing stock within a disadvantaged designed landscape not suitable for aging. For example, household types have led to a disconnected community that

\begin{itemize}
\item \textsuperscript{162} Ibid.
\item \textsuperscript{163} Ibid.
\item \textsuperscript{164} Ibid., 7-11.
\item \textsuperscript{165} “Nuclear family, also called elementary family, in sociology and anthropology, a group of people who are united by ties of partnership and parenthood and consisting of a pair of adults and their socially recognized children. Typically, but not always, the adults in a nuclear family are married. Although such couples are most often a man and a woman, the definition of the nuclear family has expanded with the advent of same-sex marriage. Children in a nuclear family may be the couple’s biological or adopted offspring.” *Encyclopedia Britannica*, s.v. “Nuclear family,” accessed June 18, 2019, https://www.britannica.com/topic/nuclear-family.
\item \textsuperscript{166} Ball, *Livable Communities*, 109.
\end{itemize}
features long distances from central business districts, low walkability scores, and decreases family visits, thus making these places car-centric.²⁵

As Ball argues, the “traditional neighborhood” was lost in the transformation of the sprawl of America, and various health issues faced by aging adults have been attributed to this transformation.¹⁶⁷ As a result, urban sprawl has caused mental health issues due to the lack of social engagement, increased social isolation, and inability to access healthcare easily. These problems compound when mobility deteriorates in our car-centric development as an adult ages.¹⁶⁸ Best practices in today’s aging community promote the idea of connected, easily navigable neighborhoods, with the ability to create meaningful social interactions.¹⁶⁹ The cul-de-sac is a common feature creating disconnection within a community—the road leads to nowhere. These isolation patterns can be corrected by creating interconnected streets and must be addressed and corrected at the local government and local development levels, such as through zoning codes. The theme of isolation can be also misconstrued as individuals desiring to feel secure; thus, the relationship between isolation and security is a highly debated topic among consumers and academics. Suburban development design choices influenced the aging generation’s optics of safety.¹⁷⁰ Academics believe that interconnectivity promotes social engagement and healthier lifestyles, whereas consumers are concerned about neighborhood

¹⁶⁷ Ball, Livable Communities, 8.
¹⁷⁰ For older adults who are familiar with these types of development, the suburban sprawl is perceived to be a safe place. Older adults feel safe in these areas; however, the design of these spaces does not promote successful aging-in-place principles as outlined by Ball. However, research shows that older adults’ perception of safety in their environments has direct effects on their function. Therefore, while suburban sprawl may be non-conducive to aging-in-place practices, there is potential for perceptions of safety to aid in the functionality of adults who perceive suburbs as safe. Vivien K. Sun et al., “How Safe is Your Neighborhood? Perceived Neighborhood Safety and Functional Decline in Older Adults,” Journal of General Internal Medicine 27, no. 5 (May 2012): 541–547.
security due to perceived vulnerability.\textsuperscript{171} As some seniors have questions around security, enclosed community settings have become a popular trend, nonetheless furthering areas’ isolation. The idea of a “gated” community has its security benefits; however, it limits the opportunities for social engagement with the rest of the population outside of the gates.\textsuperscript{172} 

In addition, with the development trend toward sprawling areas, the current ordinances and zoning laws of these landscapes reinforce the traditional concept of a nuclear family. The major community-scale solutions for making senior housing more accessible are relaxing or changing the definition of “single-family” housing. The solution to elderly isolation can be partially addressed through home design and can be strengthened with increased flexibility in planning regulations, practice and policies by changing standards, loosening regulations, and creating land use that accommodates multiple users. These definitions have prevented non-blood relatives from cohabitating within certain land-use zones, a regulation originally intended to maintain the sense of a community by promoting the nuclear family. This definition had more credence in past generations and living situations, as in the 1960s approximately 44\% of all family households were the “traditional” family arrangements.\textsuperscript{173} As of 1990, these traditional family compositions were reported in only 26.3\% of households.\textsuperscript{174} As the nuclear-family arrangement becomes less common, our understanding, as planners, of the single-family housing land use must also change. The United States gives states the right to conduct their own planning within their individual state legislature framework, thus leaving individual land-use regulations

\textsuperscript{172} Kevin E. McHugh and Elizabeth M. Larson-Keagy, “These White Walls: The Dialectic of Retirement Communities,” \textit{Journal of Aging Studies} 19: 241-256.
\textsuperscript{174} Ibid.
differing on the state level. Recently, the “single family” definition has come under legal scrutiny in several states, primarily states with privacy provisions in their state constitutions. Changing these definitions can assist in creating more accessible housing situations for the elderly population. Relaxing the definition of “family” allows for easier transition for families to incorporate elderly parents to live with the “nuclear” family.

**Design on the Individual Scale:** The sprawl created by suburbanization presents economic, health, and social challenges to aging citizens on a personal scale. As the post-war housing trends created suburbia, the housing stock catered to large, single-family homes on large lots. House sizes began to increase as a result of the ability to access and build on larger swaths of cheaper land, thanks to the automobile. While house size has been increasing over the last 100 years, the most notable increase occurred between 1970 and 2013, from an average of 1,660 sq/ft to 2,679 sq/ft—a 63.3% increase.\(^{176}\) With larger homes and yards, longer distances from community centers, and more reliance on the automobile, these new communities were not designed to foster healthy standards for aging such as walkability and proximity to basic needs. Lot and house size have direct impacts on the ability to keep up with one’s house and yard, as mobility and capability begin to deteriorate with age, and can directly affect the financial feasibility of maintaining a larger home (see Figure 22).


The existing housing stock of large homes have major design deficiencies that are not conducive to successful aging in place. The Joint Center for Housing Studies of Harvard University has identified several of the top design interventions that would improve the existing housing stock: “no-step entries and single floor living, which eliminate the need to navigate stairs; switches and outlets reachable at any height; extra-wide hallways and doors to accommodate those in wheelchairs; and lever-style door and faucet handles.” If one is financially capable, many of these design challenges can be addressed through interior home


modification for successful aging in place. The occupational science field is moving into home modifications and is seeing an increase in non-centralized care or “home care” from medical professionals, which can mitigate preexisting design flaws in the current housing stock. Nonetheless, we should be promoting more universal design and aging-friendly design into new construction policy.

The economic factors of aging and retiring can be burdensome to people on fixed incomes. The average Social Security check is estimated at $1,100 a month, which is problematic for adults who may need to move to a safer or more senior-friendly environment. The majorities of seniors own their homes and cannot fathom moving and incurring a monthly mortgage or rent payment for a new location. They will often stay in place until they absolutely need to move, which in many cases is too late. A fall after the age of 80 can result in a fatal injury, and the quality of life for survivors can be severely diminished. Therefore, emphasis should be placed on addressing fall prevention methods in housing units, such as single-level living, no-step entrances, and interior reconfigurations. Furthermore, seniors should focus on right-sizing their environment. Right-sizing at a more appropriate stage of life, such as before mobility causes major issues, can drastically improve one’s quality of life in the long run.

Physical and emotional barriers prevent older citizens’ access to meaningful social interactions and can be mitigated through implementing better-designed homes and remodeling existing homes to remove these barriers. The field of universal design has been instrumental in

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180 Ball, Livable Communities, 2012.
181 AARP, HomeFit Guide.
creating more inclusive public spaces; however, in-home barriers must also be addressed to achieve ideal social engagement.\textsuperscript{183} Since the home is where most seniors spend their occupational lives, a focus on the individual’s home environment can lead to a larger proportion of adults interacting socially, since they can easily move within and between their homes and neighborhoods.\textsuperscript{184} Building codes and planning policies directly impact the accessibility of the home, and as a result, subsidized housing is more accessible to seniors than renting at market rates.\textsuperscript{185} Owner-occupied housing units are less accessible than rental units, yet are more suitable for home modifications.\textsuperscript{186} There is a strong negative correlation between the age of a house and its ability to be modified, with homes built post-2000 being more suitable for modification and the removal of barriers to social interaction.\textsuperscript{187} If a home cannot feasibly be modified, the occupant may have to move to find suitable living arrangements.

**Moving as an Option**

When seniors realize that their living situation is no longer appropriate for their needs, a transition in setting is needed. The decision to move is made according to various factors, such as socioeconomic status, cost and benefits of the individual’s current situation, and personal lifestyle.\textsuperscript{188} There are three identified types of elderly migration. First are the healthy retirees who are still active and are seeking a similar living situation where aging in place is an option. The second type of migration occurs when people move closer to family or friends, seeking some type of assistance from their social network. The last type of migration occurs when elderly

\textsuperscript{185} Ibid.
\textsuperscript{186} Ibid.
\textsuperscript{187} Ibid.
citizens move into institutional care to seek professional help. Preferences play a large role in where a senior decides to live; for example, elderly citizens who decide to live in a multifamily setting do so for increased social interactions, proximity to amenities, and lower cost of living.

By evaluating the consumer trends of older adults’ living preferences, planners, health professionals, and real estate developers can create buildings and spaces that align with the Baby Boomers’ trends in housing needs and desires.

**Conclusion**

To combat the harmful design elements implemented over the last 50 years and fulfill the increased demand for appropriate elderly housing, new housing options are needed as the Baby Boomer generation ages. This chapter outlined a few of the major obstacles facing seniors in their living environments and how postwar design elements have created social and mental barriers for individuals. Evaluating the aging issues on both a community and an individual scale creates a basis for understanding the issues and how future movements may address these designs to create a more suitable community for the aging population. Since many seniors live in settings that are not conducive to successful aging, moving may be the only option.

The market has created several typologies of living environments for older adults in an attempt to respond to the design problems described above. The next chapter briefly summarizes the varying typologies in the housing market for older adults, evaluating what defines them and how they play a role in the creation of successful aging. One such typology discussed is the CCRC, and it is this typology that will be analyzed against the textile mill for design-suitability as a re-use project.

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CHAPTER 6
AGING-IN-PLACE COMMUNITY TYPOLOGIES

As a person’s health declines, remaining in his or her current environment may not be the best or healthiest option. The choice to move can be a difficult decision, but it is at this stage where decision-making is crucial for ensuring that a person can live a long and healthy life. An individual’s resources and anticipated level of care are critical for determining the type of care facility one may want to pursue. To address this decision, the housing market for elderly citizens over the last several decades has created several prototypical communities as industry standards for healthy living. A continuing care retirement community (CCRC) is one such environment. The CCRC is a flexible prototype that can accommodate a wide range of lifestyle and healthcare needs. Therefore, this type of elder care can serve as new programming for a historic textile mill landscape, providing the use required to make preservation financially feasible.

This chapter outlines the current aging-in-place community trends while more deeply examining the benefits and complications of a CCRC typology as a complete community. To investigate the feasibility of a CCRC as a new use for a textile mill, this chapter presents an examination of the campus layouts of CCRCs. The three-tiered framework introduced in Chapter 3 is applied, after which trends and typologies of these sites are presented. Once the characteristics of the CCRC are deduced through the application of the three-tiered framework, two case studies are presented to show how textile mill landscapes have compatible features with a CCRC design.
Current Aging-in-place Community Trends

The levels of care for older adults range from the very physically and mentally independent adults who can be classified as “independent living” to those who need memory care, hospice care, or end-of-life care. Often, as people age, they will come to need assistance for daily tasks and may seek professional care living centers to address these issues. The majority of older adults wish to stay in their current environment, meaning their homes and familiar communities, as they have developed social connections and a sense of identity associated with their habitat.\(^{191}\) Independence and identity play a large role in older adults’ preference to age in their homes, as they view a move to a professional care establishment as a loss of identity and independence.\(^{192}\) For older adults, aging in their current homes is associated with better mental health due to familiar interactions with established social circles; however, it also leads to potentially hazardous living situations, such as mobility obstacles.\(^{193}\) The ability to stay in one’s environment is becoming more of a reality in today’s healthcare climate due to the cost associated with moving to a needs-based facility.\(^{194}\) The cost associated with moving into a place specializing in older adult care can be a massive burden on the older adult and his or her family. In response, people are hesitant to move their aging family members into a healthcare facility; therefore, healthcare providers and community development professionals are beginning to transition their resources to address these in-home care patients. While these services have

\[^{191}\text{Janine L. Wiles et al., “The Meaning of ‘Aging in Place’ to Older People,” The Gerontologist 52, no. 3 (June 2012): 357-366.}\]
\[^{193}\text{Richard D. Wiggins, Paul F. D. Higgs, Martin Hyde, and David B. Blane, “Quality of Life in the Third Age: Key Predictors of the CASP-19 measure,” Ageing & Society 24, no. 5 (2004): 693-708.}\]
developed in the past decade, the need for large-scale community buy-in to create friendly communities remains an issue.

While staying in one’s home may be the top strategy for successful aging in place, the health-care industry has formulated an entire sector for the aging community in the form of inpatient care facilities. Current trends for elderly housing have responded to the new demands of the aging generation and have culminated in several housing typologies that address the full spectrum of individual healthcare needs. The market has responded to aging adults’ needs by creating aging-in-place (AIP) community typologies with healthcare that can be applied to both new and existing communities. The most common typologies of senior living are listed below. Each typology has its advantages and disadvantages based on market analysis of the most common strategies for AIP communities. (see Table 8)

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195 Ibid.
Table 8. Common typologies of institutional aging-in-place communities.\textsuperscript{196}

<table>
<thead>
<tr>
<th>Typology</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Adult Communities and Senior Apartments</td>
<td>These communities for adults aged 55 and over (55+) normally consist of condos, co-ops, or single-family homes with few to no services offered. They do, however, offer an assortment of amenities such as clubhouses and lounges that appeal to active adult homeowners.</td>
</tr>
<tr>
<td>Independent Living Facilities (ILFs)</td>
<td>Also known as congregate care facilities, ILFs offer a multi-family design to seniors who are less active and may have difficulty with daily housekeeping. They are similar to senior apartments but offer additional services such as meals, housekeeping, organized activities and transportation.</td>
</tr>
<tr>
<td>Assisted Living Facilities (ALFs)</td>
<td>ALFs combine multi-family properties with personalized support services for seniors. Normally, ALFs cater to those who need daily activity assistance but do not require nursing home care. To retain the characteristics of residential apartments, units and common areas are designed to accommodate a higher level of support.</td>
</tr>
<tr>
<td>Skilled Nursing Facilities (SNFs)</td>
<td>Hospital-like in nature, SNFs typically provide the highest level of care and assistance, making them the most expensive of all senior housing options. Since many SNFs offer acute and medical care, they are highly regulated and usually require state licenses.</td>
</tr>
<tr>
<td>Continuing Care Retirement Communities (CCRC)</td>
<td>A CCRC combines attractive residential living with high levels of service, including comfort, health, wellness, security, and additional needs for aging seniors.\textsuperscript{197} Otherwise known as a one-stop shop of comprehensive and tiered care, CCRCs are the smallest segment within the senior housing market due to the heavy costs and complex regulatory approval processes involved in building them.\textsuperscript{198} CCRCs cater to the upper-middle class and affluent, and it is estimated that over 745,000 older adults reside in 1900+ CCRCs.\textsuperscript{199}</td>
</tr>
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Each typology offers different levels of care, with some incorporating several levels of care in their model, and each has a different structure of affordability. Levels of care,


\textsuperscript{198} Ibid.

community, and affordability are major factors that must be considered when an individual wishes to move to one of these models. Individual preferences and resource limitations will dictate the range of individuals’ choices regarding their living situation. Among the models presented above, the CCRC model offers the unique ability to care for someone as they age and their needs change. A CCRC, by NC Statute definition, provides

the furnishing to an individual other than an individual related by blood, marriage, or adoption to the person furnishing the care, of lodging together with nursing services, medical services, or other health related services, under a contract approved by the Department in accordance with this Article effective for the life of the individual or for a period longer than one year. “Continuing care” may also include home care services provided or arranged by a provider of lodging at a facility to an individual who has entered into a continuing care contract with the provider but is not yet receiving lodging.\footnote{North Carolina General Statute § 58-64-1.}

CCRCs, by definition, offer the broadest spectrum of care due the loose definition of their programming.\footnote{Ball, Livable Communities, 251.} CCRCs offer various levels of care and are not homogenous in terms of healthcare resources.

In a CCRC, the individual or couple has the potential to remain in their community while the aging process continues, as opposed to being referred to a different facility with a more intensive level of care each time needs change. For example, CCRCs may have a large housing stock that is inhabited by highly functional adults but may also provide assisted living situations that provide more care for the individual as he or she ages. In addition, CCRCs have varying amenities that create a more complete living experience for both the residences associated with the CCRCs and the surrounding community and often offer inpatient clinics that double as community resources and can be accessed by the surrounding community.\footnote{CCRCs have a relationship with areas where medical universities and colleges are present to take advantage of both the learning resources and a capable workforce. Often, universities will be directly involved with the programming of the CCRC; this type of arrangement is known as a university-based retirement community.}

Borrowing from
and developing upon the home-care model, CCRCs often offer “in-home” care to individuals living independently within the CCRC community. As the individual ages and requires a higher level of care, higher care can be accessed within the CCRC at an assisted living facility (ALF) or skilled nursing facility (SNF). The CCRC model allows programming to be flexible for both the healthcare professional and entity based on the local market’s care needs. CCRCs have been credited for improving social engagement for adults moving into these settings, as individuals are able to maintain their social core for a longer period, thus leading to better mental outcomes. However, there is evidence that transitioning from one level of care to another level is associated with the feelings of dependency and loss of identity. It may be advantageous for individuals to move into a CCRC when they are more independent and mobile to lessen the effects of dependency and identity loss, as they can stay in the community longer, thereby lessening the impacts of transitioning between levels of care within an CCRC. Additionally, CCRCs have been criticized lately due to their astronomically high costs associated with entrance fees and monthly costs associated with levels of care. The CCRC model has seen ability to live near an engaging community with active and intellectual members is considered an attractive amenity. Only 100 of these UBRCs are active, yet this model offers insight into the kind of communities that individuals may be looking for with CCRCs. Joann M. Montepare and Kimberly S. Farah, “Talk of Ages: Using Intergenerational Classroom Modules to Engage Older and Younger Students Across the Curriculum,” Gerontology and Geriatrics Education 39, no. 3 (2018): 385-94. 203 This model of care is sometimes referred to as “CCRCs without walls.” CCRC companies are shifting toward adding home-care services as part of the organizational offerings, with the added effect of increasing the potential client base for revenue purposes. From a consumer standpoint, this approach expands the potential coverage of home-care options while being associated with a community and professionals within the aging field. This specific type of “CCRC without walls” will not be discussed further in this research, as it is a variant of home health care and not a physical CCRC campus. The “CCRC without walls” model could be highly beneficial for current adults aging in mill towns and adults outside of mill towns rehabilitated into a CCRC, or could offer a flexible framework for a CCRC organization in a nontraditional setting such as a mill village. Unique approaches to CCRCs and their potential for preserving historic areas should be explored in further research. 204 Elayne Heisler, Gary W. Evans, and Phyllis Moen, “Health and Social Outcomes of Moving to a Continuing Care Retirement Community,” Journal of Housing for the Elderly 18, no. 1 (2003): 5-23. 205 Tetyana Pylypiv Shippee, “‘But I Am Not Moving’: Residents’ Perspectives on Transitions Within a Continuing Care Retirement Community,” The Gerontologist 49, no. 3 (June 2009): 418–427. 206 CCRCs traditionally involve a large upfront cost, including a substantial one-time entrance fee, which senior citizens often pay by selling their current homes. In addition to an entrance fee, a monthly payment is also required.
recent critiques of its ability to acquire residents from the younger age brackets, which has
diminished CCRCs’ reputation as active communities as the age imbalance reaffirms consumers’
suspicions of these facilities are for “older” adults. Projections indicate this trend as particularly
prevalent in outdated and older CCRC developments. Healthcare professionals suggest the
addition of new amenities and a revamped image to attract healthier, younger adults in keeping
with the original intention of CCRCs. For CCRCs to be viable in the future, they will need to
address the new lifestyles and demands of Baby Boomers.

Due to the nature of CCRCs’ flexibility in levels of care, they have no industry-defined
built-environment standards on the community and geographical levels. To deduce the market
and market variations for North Carolina CCRCs, an analysis was conducted of the design and
layouts of 58 CCRCs in North Carolina. An examination of the 58 identified CCRCs in the
North Carolina housing market revealed recurring characteristics that represent the major
features of CCRCs in North Carolina. The two major characteristics identified are the contextual
setting and location of the CCRC with respect to the outside community, and the makeup of the
built environment resources on the campus of the CCRC site.

Methodologies of CCRC Design Analysis

The selection of CCRCs was taken in 2017 from the North Carolina Department of
Insurance’s *Continuing Care Retirement Communities 2017 Reference Guide*. Because North
Carolina Statutes require CCRCs to be registered with the State and regulated, the information is
publicly available. 207 A selection was taken from the 2017 list, with only one omitted from this
analysis due to its location and organizational connection with other homes and medical
infrastructure adjacent to the site. First, a geographical analysis was performed using Google

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207 North Carolina Department of Insurance, *Continuing Care Retirement Communities 2017 Reference Guide*, 2017,
Maps and the address location to determine the regional location and concentration of these sites. Secondly, proximity to shopping and outside community resources was determined to describe the adjacent community assets. Google Maps was used to determine the closest commercial districts, bypasses, or high-density shopping areas. Lastly, site analysis was performed to determine the physical characteristics of the CCRCs. To determine the physical layout of the sites, aerial photos obtained through Google Maps were rendered into Adobe Photoshop and color-coordinated to determine the spatial characteristics of the site. Google Maps is not always current and may misrepresent the actual building structures; therefore, there is the possibility of error in the results. The errors will appear as out-of-date photos, and some of the large structures may be different than the actual layout of the site. In addition, the renderings are not all to the same scale; however, there is an accompanying scale on each diagram (see Appendix 1). Five CCRCs were left out of the appendix due to being in combination with other medical facilities and not represented here; Friends’ Homes West, Pennybyrn at Mayfeild, Pisgah Valley Retirement Community, The Cardinal at North Hills, and White Oak Village Apartments.

**Regional and Geographical Scale Results**

Location and local development contexts can offer specific advantages and disadvantages to residents, allowing for catering to the differing tastes and preferences to optimize residents’ choices in a CCRC. The two distinct regional contexts for CCRCs in North Carolina are major markets and secondary markets (see Figure 23).²⁰⁸ CCRCs are scattered throughout the state, with the major distributions around Charlotte (8), Asheville (8), Winston-Salem (8), Greensboro-Burlington (7), and Raleigh-Durham-Chapel Hill (11). These major market settings

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²⁰⁸ Major markets are Charlotte, Asheville, Greensboro, Winston-Salem, Raleigh-Durham-Chapel Hill, and Wilmington. Secondary markets in this case are small-sized cities and towns, for example, Southern Pines, Highpoint, Burlington, Lumberton, Greenville, etc.
offer large community resources in relatively close proximity, while the CCRCs developed around secondary metropolitan areas are within a 60-mile radius of these major metro hubs. The distribution of CCRCs skewed toward metropolitan areas suggests that CCRC developers tend to leverage major local community resources and geographical factors to attract residents. CCRCs in secondary markets are commonly anchored near medical facilities and opportunities for activities, even though there may be fewer regional community opportunities. As a result, this development pattern has left the most rural parts of North Carolina without these types of facilities, most notably the northeastern coastal plain and the most western mountainous region of the state.

Table 9. Geographical locations of CCRCs in North Carolina

<table>
<thead>
<tr>
<th>Major Markets</th>
<th>Secondary Markets</th>
<th>Outside Markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>65%</td>
<td>14%</td>
<td>21%</td>
</tr>
</tbody>
</table>

Table 10. Regional and geographical features of NC CCRCs

- Most in mid-sized to large markets
- CCRCs in secondary markets are near medical facilities
- Majority within the Piedmont region
- Most within 60 miles of major metro areas
- Around I-40 Corridor
- Around I-85 Corridor
Community Scale Results

When reviewing the local setting within the greater regional context, there are three distinct types of settings: suburban, urban, and rural. First is the suburban model, in which the CCRC is located near an urbanized area. This model includes communities situated along a business bypass on the outskirts of town and campuses located in areas of existing urban sprawl. Typically, CCRCs housed within a major metro area are located on the outskirts of a commercial district. In contrast, when the CCRC is not located near a major metropolitan area, the suburban models tend to be near a commercial district of a minor town with adjacent neighborhood developments. The second type is the urban facility located near a central business district or surrounded by high-density structures with major development surrounding the campus; one example of such a development is Asheville’s Brooks-Howell Home. Brooks-Howell Home is surrounded by a diverse group of land uses and has a limited footprint, possibly due to the price of real estate associated with a central business district. The final classification comprises CCRCs in a rural setting. These communities are located away from central business districts with little to no surrounding development. The rural model is very limited, with only a handful of facilities; this limitation may be attributed to the lack of ability to leverage local resources to benefit from outside community exchange and few previously built community resources. (see Table 11, 12, and 13)
Table 11. Development settings of CCRCs

<table>
<thead>
<tr>
<th>Setting</th>
<th>Suburban</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>45</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Percent</td>
<td>82%</td>
<td>Less than 1%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Table 12. Distance to a cluster of commercial development

<table>
<thead>
<tr>
<th>Distance</th>
<th>.5 Miles or Less</th>
<th>.5 miles–2 miles</th>
<th>More than 2 miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>20</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Percent</td>
<td>36%</td>
<td>45%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Table 13. Community features of CCRCs

- Suburban settings outside the major markets are closer to commercial districts
- Suburban settings inside the major markets are not close to commercial districts
- Rural examples are rare
- Most are in a suburban setting, room needed for expansion
- Urban forms have less flexibility

Site Layout Designs

Because land prices and the real estate market act as major constraints for development and expansion, CCRCs must make design choices appropriate for the levels of desired care and their ability to expand. The layouts of CCRCs in North Carolina fall into four typologies: Central Plan, Central Plan with Apartments, Central Plan with Apartments and Single-family Homes, and Central Plan with Single-family Homes (see Table 14). The Central Plan type is the basis for all other typologies, as it consists of all the necessary facilities and living quarters in the same building. The central building potentially has wings acting as physical dividers for differing services, while the central buildings create a focus for the campus. The Central Plan with

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209 “Single-family home” in this context does not always refer only to a single freestanding family home but can also include duplexes with a shared wall and separate driveways. In addition, any residential housing that is less than a quad-plex (4 units or less) is considered single-family homes.
Apartments allows living quarters to be in close proximity, progressing to the more dispersed plans. The Central Plan with Apartments and Single-Family Homes also actively uses its space to spread over the property, with single-family housing as a major feature, creating the semblance of a traditional neighborhood. The Central Plan with Single-Family Homes typology lacks dense multifamily housing but follows the same guidelines as the Central Plan with Apartments and Single-Family Homes. (see Table 15)
Table 14. CCRC typologies based on site features. Source: Created By Author, James Locke. Adapted From Google Maps

Central Plan: Carolina Bay, Wilmington, NC

Central Plan with Apartments: Quail Haven Village, Pinehurst, NC

Central Plan with Apartments and Single-Family Homes: Given Estates, Asheville, NC

Central Plan with Single-Family Homes: Deerfield Episcopal Community, Asheville, NC
Table 15. Site features of CCRCs

- Accessibility with roads
- Contained campus
- Open space, greenspace, water features
- Clustering by housing type
- Central focus
- Traditional neighborhood patterns

Case Studies of CCRCs

For purposes of comparison to a historic mill landscape, only CCRCs following the Central Plan with Apartments and Single-Family Homes have been selected for study, as they best represent a complete mill landscape. This choice of approach does not suggest that a vacant mill landscape could not utilize any of these plans; for example, some mills may have only a mill village with no commercial development, in which case the Central Plan with Single-Family Homes may be a more suitable comparison. Services and designs can differ due to the flexible formats of both mills and CCRCs, but large CCRCs share common spatial characteristics when attempting a complete community approach. Design layouts differ slightly, depending on the levels of care provided, the CCRC’s stance on providing healthcare to the surrounding community, and the best industry practices at the time of creation. To illustrate the flexibility in design associated with CCRCs, a case study of two CCRCs is presented to compare design layouts and their potential relationship to the traditional textile mill town in North Carolina. The sites include the Forest at Duke in Durham and Aldersgate in Charlotte.

The Forest at Duke, Durham

The Forest at Duke, located in Durham, North Carolina, is an accredited CCRC located near Duke University and its medical facilities with over 20 years of experience and is 92.2% occupied. The facility houses 391 residents, with a total of 347 units: 255 independent living
units, 34 assisted living units, and 58 nursing beds. A self-reported marketing publication describes four distinct areas of amenities associated with The Forest’s community: exterior community resources, internal associated amenities, greenspace infrastructure, and social programming. The Forest touts its community benefits as “a quick drive [to] other nationally recognized educational and medical centers, major shopping venues, Research Triangle Park and the RDU International airport. Maintenance free independent living is available in 11 styles of apartments and cottages on the 47-acre campus.” Community development surrounding the site can add value and create a more complete community for aging in place.

The onsite amenities are those specifically offered by the CCRC, focused on wellbeing through social engagement and providing for the needs of the residents. The Forest’s onsite amenities include “[a] 40,000 sq. ft. Community Center features multiple dining venues, a well-stocked library, a billiards room, an auditorium, bank, beauty shop, arts studio, and other village amenities. Residents enjoy an indoor aquatics and fitness center with full-time staff.” In addition to community amenities, outdoor green spaces are used as amenities for their residents and include “outdoor walking trails, greenhouse, gardening plots, and a fish stocked pond…Three distinctly different garden areas offer health center residents attractive and secure outdoor opportunities.”

The Forest’s social programming focuses on two distinct dimensions, education and social engagement with the outside community: “The Forest serves as a host site for the Osher Lifelong Learning Institute (OLLI) at Duke.” OLLI is a national initiative to promote

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211 Ibid.
212 Ibid.
213 Ibid.
214 Ibid.
unconventional student programs. The Forest residents may attend certain Duke University
classes for $90, which allows for more opportunities for social enjoyment outside of their own
community. 215 The social engagement programing has onsite and offsite resources and
partnerships, such as “the Durham Center for Senior Life, Senior PharmAssist, Urban Ministries
and Rogers-Herr Middle School.” 216 In addition, “annually, 72,000 resident and staff volunteer
hours benefit many other local nonprofit organizations, Duke Hospital, Duke Gardens, and the
Nasher Museum.” 217

Healthcare services can be a defining feature for CCRCs and can dictate their layouts and
built environment design. The Forest at Duke has an established health and wellness center with
healthcare provided by Duke healthcare services. These services include “primary medical care,
physical, occupational and speech therapies, respite care, apartment style assisted living, private
room skilled nursing, memory support and dementia care residences.” As is traditional with
CCRCs, there are differing levels of elder care, including services aligned with other typologies
such as ALFs, SNFs, and ILFs.

The design layout of the Forest at Duke campus has three main features: independent
housing units, main structures with varying wings, and the interconnection of greenspace and
pathways. The layout of the 47-acre campus is that of a suburban development with similar
housing styles and curvilinear streets, and forms a gated community separated by tree lines and
no through roads. Its primary pathways lead to the main buildings, with housing units around the
periphery accessed by curvilinear streets, with the independent housing approximately 2,000 feet
from the main structures. The housing units are duplexes, with each unit equipped with a garage

215 “Continued Studies,” Duke University Osher Lifelong Learning Institute, accessed June 19, 2019,
https://learnmore.duke.edu/olli.
216 North Carolina Department of Insurance, Continuing Care Retirement Communities 2017 Reference Guide.
217 Ibid.
and covered walkway into the unit. The floor plans are single story and range from 1207 square feet to 2558 square feet.\textsuperscript{218} The individual housing units are in two distinct “neighborhoods.” (see Figure 24)

The main structure of the campus offers three main sections: the health and wellness center, apartment-style living, and the community center. The health and wellness center offers skilled nursing facilities, memory units, and health and services clinics for community-wide need. The health and wellness center is isolated by a sky walk and monitored to protect the residents. This facility is also connected to the community center. The community center is the central building and serves as the hub for social activities, hosting the cafés, eating establishments and other social activities. The main road leads to the community center’s front door, making this the most prominent building and entrance into the community. The final section is a pair of “wings,” sections of flat-style apartment housing which acts as both independent living and assisted living facilities, with in-home care. These wings are four stories and include a pool for the greater community. The massive structure offers connected walkways throughout the entire complex, allowing residents to move freely.

The green infrastructure and programming are intertwined throughout the entire community. The suburban setting offers a default green backdrop, allowing for the houses to include a rear view of wooded areas and a front yard with landscaping. The campus is surrounded by trees and offers substantial tree canopy. Along with green features, the built environment includes several green programming spaces, include pocket parks along the main structures, green houses, raised garden beds, community gardens, a stocked pond for fishing activities and several walking paths in wooded areas. The social programming interlocks with

these spaces, as they promote social activities and a healthy lifestyle. This integrated green approach is based on abundance of green space and the CCRC’s ability to successfully create space and promote programming.

Figure 24. Forest at Duke layout. Source: Created By Author, James Locke. Adapted from map obtained from https://forestduke.org/. Accessed December 06, 2016

Aldersgate, Charlotte

Aldersgate is a nonprofit CCRC in Charlotte, North Carolina, and is a 234-acre campus founded in 1943 by the Western North Carolina Conference of the United Methodist Church.\(^\text{219}\) It has since gone through multiple iterations with additions and redevelopments.\(^\text{220}\) Its entry in the CCRC reference guide states that “Aldersgate continues to develop its campus to bring new,


\(^{220}\) Ibid.
state-of-the art accommodations and centers of service excellence.”  

In 2015, Aldersgate expanded its memory units, added new housing units, and redeveloped their health center to offer a 120-bed skilled nursing facility. It is advertised as being in the heart of Charlotte and within the historic east side of town; however, its promotional material does not immediately mention any community development associated with the area adjacent to the campus. Aldersgate promotes 8 dimensions of wellness—Physical, Social, Emotional, Environment, Spiritual, Financial, Intellectual, and Vocational—to promote a holistic approach to caring for their residents.

The onsite amenities offered by Aldersgate allow for the residents to live on campus and have social contacts with neighbors as they age and to engage in meaningful activities onsite when residents may not be able to travel as freely to outside communities. These onsite amenities include an internal dining venue, worship areas, gathering spaces, classrooms, cafés and a pub, fitness center, and craft rooms. Accompanying the onsite amenities is greenspace, which allows residents to interact with others and to socialize in a variety of ways. Aldersgate is the largest private green space in Mecklenburg County, yet so close to lively urban destinations, walking trails, a private stocked lake, an azalea garden and a three-hole, par-three golf course. Aldersgate is also currently planning to expand its independent living residences and other amenities to include 62 new apartments and villas in three three-story buildings, as well as a new town commons with additional dining, media and other entertainment options “for socialization and recreation.”

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222 Ibid.
The social programming is aimed at promoting spiritual and community engagement and outreach. Aldersgate is home to 6 nonprofits actively working on the campus and integrated with staff and through the wider community. Social programming is important in a closed setting such as Aldersgate, as it allows for interaction with the community outside of the campus. For example, the nonprofit organization OurBridge is housed on campus and serves first-generation underprivileged children with recreation and education programming. The OurBridge program may use the spaces within the campus to provide for their target communities while offering a diverse group of interactions with residents of Aldersgate, resulting in more natural engagement with the community. The ability for nonprofit housing on a campus such as Aldersgate not only allows for CCRCs to become a place for community engagement and social interactions but can also offer resources for the outside community in a meaningful and economic way.

Aldersgate offers the full continuum of care, from providing independent living housing situations in a neighborhood setting to the Alzheimer’s care unit and skilled nursing facility. The residents throughout their time at Aldersgate have access to “Aldersgate at home,” an in-home structure of nursing care which also offers services to homes in the surrounding community, offering a level of care to the east side of Charlotte that may not be accessible by other means. The continuum of care includes an occupational, physical, and speech rehabilitation center for residents and off-site patients, offering a short-term rehabilitation setting and providing East Charlotte residents a site at which to receive a high level of care while increasing the presence of interaction with outside community members. The assisted living units are aligned with

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traditional skilled nursing facilities, as they offer assistance and occupational support for the residents, as well as offering 24/7 nursing care, 3 provided meals, and in-house physician care. The long-term unit services offer a dialysis clinic, end-of-life support, and respite care, aligning with the services provided by a skilled nursing facility.  

The design of the campus is similar to that of the Forest at Duke, as it is an enclosed campus with natural wooded barriers and a main entrance promenade that promotes a decrease in pedestrian flow from the outside community. The campus has auxiliary entrances to other facilities on the main adjacent street for community access and programming along the periphery of the campus. The campus has five distinct characteristics: the main health services district, the housing adjacent to the health services building, the scattered community programming sites along the main boundary street, the curvilinear neighborhood separated by natural features, and the natural features scattered throughout the site. The health services district contains most of the health services and social programming spaces. This area is the main hub of the campus, creating most of the social interactions between Aldersgate residents and the outside community as well as inter-community interactions. Adjacent to the health services center are the Azalea View Cottages, a neighborhood of single-family, single-story independent living cottages with landscaped yards and tree coverage. The north side of the property contains several structures programmed with the outreach nonprofits and the outpatient care facilities offering services to the outside community. While they offer unique experiences for the residents to interact with the outside community, most of these resources are relegated to the edges of the campus, thus possibly stifling the much-needed social engagement with the outside community. The second neighborhood, the Lake Ridge Cottages and Wesley Glen Cottages, is separated from the Azalea

View Cottages by a natural pond feature and is set in a curvilinear cul-de-sac setting with natural integrated tree coverage. As with the Azalea View cottages, this neighborhood contains single-family, single-story homes. The cottages range from 900 sq ft to 2900 sq ft, with either a two- or three-bedroom option. The final distinctive factor of Aldersgate is its integration with natural features, which include a pond, integrated greenspace, walking trails, and curvilinear streets that complement the slight topography changes within the campus. (see Figure25)

Figure 25. Aldersgate layout. Source: Created By Author, James Locke. Adapted from map obtained from https://aldersgateccrc.com. Accessed December 06, 2016
Table 16. CCRC comparison

<table>
<thead>
<tr>
<th>Typical CCRC</th>
<th>The Forest at Duke</th>
<th>Aldersgate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional and Geographical Features</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Most in mid-sized to large markets</td>
<td>- In a major market</td>
<td>- In a major market</td>
</tr>
<tr>
<td>- CCRCs in secondary markets are near medical facilities</td>
<td>- Near medical facilities</td>
<td>- Near medical facilities</td>
</tr>
<tr>
<td>- Most in the Piedmont region</td>
<td>- In the Piedmont region and along major transportation corridors (I-85)</td>
<td></td>
</tr>
<tr>
<td>- Most within 60 miles of major metro areas</td>
<td>- Around I-40 corridor</td>
<td>- Around I-85 corridor</td>
</tr>
<tr>
<td><strong>Community Features</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Suburban settings outside the major markets are closer to commercial districts</td>
<td>- Near commercial districts</td>
<td>- Near commercial districts</td>
</tr>
<tr>
<td>- Suburban settings inside the major markets are not close to commercial districts</td>
<td>- Away from Durham’s central business district</td>
<td>- Away from Durham’s central business district</td>
</tr>
<tr>
<td>- Rural examples are rare</td>
<td>- In a “bypass”</td>
<td>- On a “bypass”</td>
</tr>
<tr>
<td>- Most are in a suburban setting, room needed for expansion</td>
<td>- In between two major roads</td>
<td>- In between two major roads</td>
</tr>
<tr>
<td>- Urban forms have less flexibility</td>
<td>- In a suburban setting</td>
<td>- In a suburban setting</td>
</tr>
<tr>
<td><strong>Site Features</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Accessibility with roads</td>
<td>- Two connections to the road</td>
<td>- Two connections to the road</td>
</tr>
<tr>
<td>- Contained campus</td>
<td>- Contained campus</td>
<td>- Contained campus</td>
</tr>
<tr>
<td>- Open space, greenspace, water features</td>
<td>- Water features, small greenway, wooded tree cover</td>
<td>- Water features, small greenway, wooded tree cover</td>
</tr>
<tr>
<td>- Clustering by housing type</td>
<td>- Main building as the major node</td>
<td>- Main building as the major node</td>
</tr>
<tr>
<td>- Central focus</td>
<td>- Housing clusters</td>
<td>- Housing clusters</td>
</tr>
<tr>
<td>- Mimicked neighborhoods</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Conclusion

The CCRCs built in North Carolina have several design characteristics worth investigating. Regional and geographical influences have resulted in the clustering of CCRCs in and around urbanized areas to take advantage of existing medical facilities. The community aspect of these locales promotes the idea of inclusion through programming with the outside community yet exclusion in terms of design, while the individual site features promote a walkable, accessible, mixed-use community. The characteristics defined above create a picture of the overall market for CCRCs in North Carolina, and the typologies offer some insight into the various characteristics within the CCRC model of successful aging-in-place communities. The design layout typologies allow for commentary on the diverse living arrangements as well as the distinct features created by the CCRC development teams. The Forest at Duke and Aldersgate represent only very large CCRCs with large campuses and amenities for their residents; however, there are other CCRCs with smaller campuses and fewer amenities to which these lessons can be applied. The case studies are similar to the Central Plan with Apartments and Single-Family Homes typology and offer the closest similarities to the historic textile landscape with its districts and large, diverse building stock. A continuation of the three-tiered framework is presented in the next chapter and lays out the characteristics of CCRCs in comparison to typical NC textile mills.
CHAPTER 7
FINDINGS AND CONCLUSIONS

An appropriate preservation of textile mill landscapes will depend on the suitability of the new proposed use. Both mill towns and CCRCs are created and managed by a single entity as a complete designed community. In Chapter 2, a framework consisting of regional-, community-, and individual-scale features was proposed to analyze the textile mill landscape and was used again in Chapter 6 to analyze CCRCs. CCRCs and the mill landscapes have both compatible and non-compatible characteristics worth comparing to determine the potential for such rehabilitation projects. As in the previous chapters, the spatial framework will be used to organize the conversation. Each scale presented will have an accompanying chart outlining the major features of both the mill landscape and the CCRC side by side, followed by a synthesis of the ideas presented.

Regional and Geographical Features

Regional and geographical features determine the regional market for potential demand from consumers and offer beneficial resources for a successful aging-in-place community.\(^{226}\) The table below presents an analysis of the regional features of textile mills and how they compare to a CCRC’s features. These factors have four main focal points: hilly landscapes in the Piedmont, locations near regional transportation systems, colocation leading to regional associations and development, and rural vs. urban regions. Since the history of North Carolina was so dependent on the textile industry, the characteristics of the CCRCs on the regional

\(^{226}\) Ball, 2012
analysis scale are also highly influenced by the economic development in the state. (see Table 17)

Table 17. Considerations of regional and geographical features

<table>
<thead>
<tr>
<th>Mill Feature</th>
<th>CCRC Feature</th>
<th>Compatibility Analysis</th>
</tr>
</thead>
</table>
| In the Piedmont region; hilly landscapes | Most of North Carolina’s CCRCs are in the Piedmont | • Piedmont CCRCs seem to be established in developed areas  
• CCRCs tend to center around these major markets.  
• Overlap of abandoned mill supply with CCRC demand |
| Near regional transportation systems | CCRCs follow the I-40 and I-85 corridors | • CCRCs have developed along these arteries as well.  
• CCRCs leverage major highways to access outside resources |
| Co-location leads to regional associations and development | 65% of CCRCs are located in major markets | • CCRCs, like mills, are co-located in areas with social and environmental amenities  
• Co-location suggests large building stocks for redevelopment  
• Potential for regional familiar ties and service for the current aging population |
| Rural vs. urban regions | Majority in mid-sized to large markets and within a 60-mile radius of major metro areas | • Textile mills in rural areas might find it difficult to attract a CCRC willing to rehabilitate the site due to the lack of consumer demand  
• Not many CCRCs further than 60 miles from a major market |

**Hilly Landscapes in the Piedmont:** The textile industry played a significant role in the development of North Carolina’s economy, and the presence of mill development in the Piedmont region spurred further development of these areas. Since the Piedmont region in North Carolina is
the most developed area in the state, the CCRCs tend to gravitate to these major markets. This trend may lead to an overlap of abandoned mill supply with CCRC demand. If mills are located in the same areas as demand for CCRCs, then there is a higher potential that the matching consumer base (of elderly people wanting a CCRC and a community wanting an underutilized mill to be redeveloped) would overlap for a property.

Water-powered mills are associated with development risks such as large gradient changes in the physical environment, flood risks, and potential lack of outside development due to the lack of buildable surface area. In contrast, the positive elements of a water-powered typology are the proximity to a major geographical feature. In addition, being close to a major body of water such as a river offers the potential for outdoor activities and green area buildup surrounding the community. CCRCs leverage the natural characteristics of the site, as seen with The Forest at Duke and Aldersgate; therefore, a feature like a river could be used as added value for the residents.

**Near Regional Transportation Systems:** Steam-powered mill landscape typologies are generally situated along major rail and road systems and are typically close to major economic hubs. Eventually, highways took the place of railways, and commercial development spread along these arteries. CCRCs have developed along these arteries as well. The ability for CCRCs to leverage major highways to attract residents may be based on their relationship to these major economic drivers. As most CCRCs are within a 60-mile radius of the major state markets, the proximity and transit-oriented development of the steam-powered mill could be used when developing an easily accessible CCRC. The easier it is for residents to access cultural, health, and community amenities, the more attractive the CCRC will be to a consumer.
Colocation Leads to Regional Associations and Development: The colocation of textile mills created major economic centers with the possibilities of large building stocks left in the wake of mill development. CCRCs have also co-located, clustering near major markets to take advantage of the urban resources. CCRCs’ colocation can indicate two phenomena: market over-saturation or a locational advantage. A successful market analysis could shed light on the health of the CCRC industry in the major markets. When CCRCs collocate, residents benefit through an increased working knowledge of CCRC best practices, community participation efficiency, and a working relationship between the levels of medical care.

The overlap of current regional developments and the prior textile developments offers the potential to stay close to meaningful relationships and also areas in which older adults want to live. The majority of North Carolinians live in or near the Piedmont region, offering the possibility for older adults to stay near family or their community. The ability to have meaningful interaction or feel that one is not moving to a completely isolated area may have beneficial results in the aging process. As the adults in the area age into retirement, the presence of a CCRC in these areas could address their housing needs. Moreover, because the Baby Boomers were born during the time of the mill closings, there is a potential for family ties in these mill areas.

Rural vs. Urban Regions: When positioned in a major market, the density of available resources becomes a de facto amenity for the residents and can improve their wellbeing through increased engagement, cultural activities, and interconnectedness. The downside of being in a developed region is the high redevelopment cost due to high land prices, which could be passed on to the CCRC residents in the form of a higher cost of living. A less developed setting also comes with a cost. The downsides of a rural CCRC include the lack of community resources to
provide for the residents, such that the CCRC’s developers must increase programming and offer more amenities onsite to offer a complete community. Isolation for seniors plays a key role in the shortcomings of traditional planning practices for maintaining the health of aging populations, and due to mills’ often isolated nature, some of these mill areas may not be suitable for redevelopment or will need to make an enormous investment in social engagement and community activities to avoid creating age segregation.

**Community Scale Features**

Community features bridge the local-level characteristics with the wider economic regional characteristics of North Carolina. Community factors differ from site to site, yet by evaluating the building stock and community development of areas adjacent to the site, the community can be analyzed for its potential compatibility with CCRC best practices. The community features situate mills within their surroundings, allowing for an examination of the potential adjacent resources for a successful aging-in-place community. These features are degree of isolation, proximity to a river, proximity to a transportation hub, rural or urban setting, and community interconnectivity. The table below presents an analysis of the community-scale traits found in textile mills and how they compare to CCRCs’ features. These traits offer an outlook on the mills’ surroundings as a potential positive or negative attribute for CCRCs. (see Table 18)
Table 18. Community Scale Feature Considerations

<table>
<thead>
<tr>
<th>Mill Features</th>
<th>CCRC Feature</th>
<th>Analysis</th>
</tr>
</thead>
</table>
| Degree of Isolation        | Tends to be located near other residential developments, but approximately 45% are within two miles of a commercial area | • Attractive vs. affordable tradeoff  
• Cost to create meaningful connections  
• Most CCRCs are near other residential developments |
| Adjacent to a river        | Most CCRCs surveyed had water features                                       | • Textile mills and CCRCs share water features  
• CCRCs leverage water features for effective community engagement |
| Transportation connectivity| Connectivity to larger highway system creates a connection to the outside community | • Car-dependent  
• Access to border community  
• Intra-community ability |
| Rural vs. urban setting    | CCRCs are rarely in a highly urbanized area, and only 11% in a rural setting. Most are in suburban settings | • Suburban areas allow for growth  
• Central plan in hypo-urbanized areas  
• Expansive plans in places that require cars |

**Degree of Isolation:** The isolated mills may not be as effective in providing meaningful local community engagement due to their lack of surrounding community buildup; this isolation may cause age segregation issues. A highly interconnected community with easy engagement opportunities is recommended, yet this does not seem to be the major trend of CCRCs in North Carolina. Only 36% of CCRCs are less than half a mile from a commercial district, whereas 45% are reported as being within two miles of one. Most CCRCs seem to be located in spaces where they create more age segregation than integration, a fact that suggests a trend of age segregation.
for seniors in the CCRC setting because their access to activities outside the CCRC is limited. A vibrant community is a key factor, and developed areas are more likely to have this community already established, relieving the CCRC company from the strain of creating social programming.

Adjacent to a River: The river associated with mill locations can be used in various ways by a CCRC. Interconnectivity of outside resources and outside community engagement could be fostered by the transformation of riverbanks to greenspace and intercommunity greenways. A body of water, either man-made or naturally flowing, was typically present on or near the CCRC campuses examined in the previous chapter. These areas can be enjoyed by the residents or leveraged to create meaningful engagement between residents and outside community members.

Transportation Connectivity: The mills located near transportation systems have the added advantage of increased access to the larger community and regional amenities as well as major amenities. Road access and integration to a major transportation system is a positive element for CCRC communities, as older adults should avoid age segregation at all costs. However, this resource may lead to reliance on a car-centric model for interaction. A successful engagement plan should seek to interact with both residents in the surrounding areas as well as the community outside of walking distance. If a CCRC can create meaningful and effective transportation opportunities, a larger pool of community resources will open up for the CCRC and its residents.

Rural vs. Urban setting: Setting creates a sense of place for a CCRC. The CCRC analysis suggests that most of these sites are in urban or suburban settings. The surrounding community plays a large role in creating meaningful relationships, and therefore, the adjacent uses and built environment characteristics dictate the format of the CCRC. CCRCs can change their structure, as suburban and rural areas allow for the expansive typologies of the CCRC to emerge, while the

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227 This limited access could be in answer to the residents’ perceived security needs.
CCRCs adjacent to highly developed areas are compact and representative of the Central plan. Since mills have been found in every setting, a CCRC may not have to adapt its plans in these areas to meet the needs of preservation of the textile mill landscape.

**Individual Site Features**

The intent for the design of the mill complex was to create an all-encompassing community, and the same could be said for CCRCs. The site-scale features of the mill landscape will be a major determining factor for a successful adaptive reuse project, as it is here that the majority of design decisions will dictate the appropriateness of a CCRC as a new use in a textile mill framework. The list is not a comprehensive discussion of site-level CCRC design features, as new elements are expected to be introduced to make the area an appropriate place for older adults. The mill features listed are an overview of several character-defining features of the site-level mill landscape that should be preserved during an adaptive reuse. Therefore, the discussion below concerns the ability for a CCRC to use the mill town features in an appropriate manner. (see Image 19)
<table>
<thead>
<tr>
<th>Mill Features</th>
<th>CCRC Feature</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distinct districts</td>
<td>The typologies suggest there are distinct districts such as residential,</td>
<td>• CCRCs can use textile mills areas as zones</td>
</tr>
<tr>
<td></td>
<td>healthcare, fitness, recreation, etc.</td>
<td>• Build on existing districts and neighborhoods</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Older adults may already be familiar with these landscapes</td>
</tr>
<tr>
<td>Large mill buildings</td>
<td>Every CCRC analyzed had a large central building</td>
<td>• CCRCs could use large textile mills as central building</td>
</tr>
<tr>
<td>Diversity of structures</td>
<td>CCRCs typically have few residential variations, and typically programmed</td>
<td>• CCRCs do not exhibit much variation in building size</td>
</tr>
<tr>
<td></td>
<td>activities generally take place in the large winged structure</td>
<td>• 3-4 building residential types</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Textile mill landscape offers a variety of structures for a variety of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>uses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The differing uses associated with CCRCs’ complete community mentality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dictates the need for spaces for varying uses</td>
</tr>
<tr>
<td>Mixed-use communities</td>
<td>Promotes a complete community in which residents have everything that they</td>
<td>• The CCRC is a mixed-use community</td>
</tr>
<tr>
<td></td>
<td>need within walking distance</td>
<td>• Textile mills are mixed-use communities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Housing stock to be retrofitted</td>
</tr>
<tr>
<td>¼- to ½-acre lots</td>
<td>The housing stock normally has a ¼-½-acre lot associated with it.</td>
<td>• Potential to leverage the extant mill village footprint</td>
</tr>
<tr>
<td>Community viewsheds</td>
<td>The push and pull of “safety” and outside integration is always a challenge.</td>
<td>• Integrated communities can use public safety design</td>
</tr>
<tr>
<td></td>
<td>Safety is usually through exclusion, not viewshed management</td>
<td>• The panopticon creates eyes on the streets</td>
</tr>
<tr>
<td>Walkability</td>
<td>CCRCs promote walkability and interconnectivity of their campus, but</td>
<td>• The walkable nature of the textile mills is suitable for the walkability</td>
</tr>
<tr>
<td></td>
<td>traditionally have not promoted walkability to the outside community</td>
<td>of a CCRC</td>
</tr>
<tr>
<td>Transportation focus around mill</td>
<td>Central structure in CCRC’s are the main artery for traffic</td>
<td>• The main nodes and circulation patterns are developed around the central</td>
</tr>
<tr>
<td></td>
<td></td>
<td>building</td>
</tr>
</tbody>
</table>
**Distinct Districts:** The mill typology suggests distinct districts within the company town that the CCRC community could use as a framework when creating their community. The layout and character of the mill village follows the neighborhoods presented by the CCRC typology analysis. However, the mill village seems to be located on one primary flank of the mill, whereas the large CCRCs typically situate the main structure at the center, surrounded by various neighborhoods. The industrial area is defined by the large mill structures and is similar to the winged structures built as the central areas for the CCRCs. By using the extant framework of the mill landscape, CCRCs could use the bones of the mill town as parameters for their own districts.

The districts and site features offer an opportunity to provide a familiar typology for older adults. Due to the significant number of mill landscapes in North Carolina, a CCRC in a mill landscape could provide for a sense of comfort and familiarity for the older generation who have been exposed to these sites.

**Large Mill Buildings:** Large mill buildings were the central, visually commanding structures in a mill town. The mill structures are normally long and rectangular, with the possibility of interconnecting structures. Like the mill town, CCRCs’ central buildings are the largest and most commanding structures on campus. The central building in a CCRC is typically a large, multi-story structure with wings segmenting the different types of care provided in each wing. Ideally, a CCRC could use this space as its large central mixed-use hub. However, the reuse of the mill structure as the central cluster would not mesh well with large, single-story buildings. The design involving the use and rehabilitation of this space would be a major factor in the success of these spaces within a CCRC.
**Diversity of Structures:** Mills’ diverse structures, which are associated with the mixed-use nature of the complete community development, allow for use flexibility on the site. CCRCs do not traditionally have a diverse building stock. The nature of the neighborhood sector and the main central buildings of the CCRC do not really require a large, diverse group of buildings, as most uses and activities are designed to be hosted in the large central buildings to create as much interaction between residents as possible. The CCRC model could potentially use the mills’ large, diverse building stock for varying uses on the CCRC campus, but careful attention to community interaction would need to be highlighted in other places.

**Mixed-Use Communities:** The mixed-use nature of the textile mill landscape may not be complete by today’s standards, but the spirit of these places was grounded in residential, industrial, and retail/office uses. Mixed-use communities were standard practice up until the postwar planning practices, and CCRCs attempt to create mixed-use communities as aging-in-place theory recommends. The CCRC model is similar to the textile mill landscape in that it is primarily a residential endeavor with little retail and office space. CCRCs could use the mixed-use community principles and built environmental features to establish a complete mixed-use community.

The design principles for the entire rehabilitation should focus on universal design. In particular, the housing should follow the universal design for dwellings, and negotiations during the mitigation phase for tax credits should ensure the preservation of the historic integrity of major character-defining features.\(^\text{228}\)

**Quarter- to Half-Acre Lots:** The mill village’s spatial distribution was meant to induce farmers to move to the area. The lot sizes determined the spread of the mill village around the mill

\(^{228}\) A complete digest of the issues surrounding the individual home sites and universal design is a potential area for further research. The most apparent issues are with the doorway widths and the houses being raised off of the ground.
and help determine the character of the mill village. Similarly, the CCRC neighborhood models all have yard space, mimicking the style of a single-family home even if the homes are duplexes with a shared wall. CCRCs already use the Central Plan with Single-Family Homes to create their neighborhoods; therefore, it would simple for a CCRC to reuse the village as their neighborhood.

**Community Viewsheds:** Panopticon viewsheds within the mill landscapes created a sense of “eyes on the street” and of formality in open spaces. Safety is a major concern for seniors who are considering a change in residence. Since these historic mill areas were developed in ways that promoted social control, these same design features that were detrimental to past communities can serve as a potentially positive attribute for safety today.\(^{229}\) Panoptical views and other environmental design techniques can be combined to create a safer environment with the potential to combat the threat of “opening up” the campus to outside communities. The natural surveillance aspects of such sites provide an attractive option for CCRCs.

**Walkability:** The textile community did not require cars for daily life; everything was within walking distance. Walkability is embodied within the mill community and is a fundamental characteristic of the textile mill landscape. CCRCs worked to recreate these healthy walkability practices after the car-centric development boom, and the mixed-use nature of mill sites lends itself

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\(^{229}\) Crime prevention through environmental design (CPTED) couples with the inherent panoptical design of mill villages and can help the management company mitigate actual and perceived threats to the community. CPTED is a method that has become a leading theory of design to create safer communities. There are currently four pillars of the theory: natural surveillance, natural access control, territorial reinforcement, and maintenance and management. For purposes of this research, we will focus on the idea of natural surveillance. “The fundamental premise is that criminals do not wish to be observed. Surveillance or the placing of legitimate ‘eyes on the street’ increases the perceived risk to offenders. … So the primary aim of surveillance is not to keep intruders out (although it may have that effect) but rather, to keep intruders under observation. Natural surveillance can be achieved by a number of techniques. The flow of activities can be channeled to put more people (observers) near a potential crime area. Windows, lighting and the removal of obstructions can be placed to improve sight lines from within buildings.” *Crime Prevention Through Environmental Design Guidebook*, National Crime Prevention Council (Singapore, 2003), accessed June 28, 2019, [https://rems.ed.gov/docs/Mobile_docs/CPTED-Guidebook.pdf](https://rems.ed.gov/docs/Mobile_docs/CPTED-Guidebook.pdf).
to walkability. The green human scale of the textile mill landscape could be leveraged by CCRCs to create a safe and walkable atmosphere.

**Transportation Focus around Mill:** The central focus of the mill town is the mill; therefore, the prominent thoroughfares connect the mill to the other districts and the outside world. The CCRC typologies suggest the main thoroughfares are supposed to lead to the central structure, while the neighborhoods are situated on the secondary collector streets. Therefore, reuse could employ the existing approaches to accomplish the CCRC industry standard of central structure viewshed focus and increased accessibility.

**Housing Stock:** Housing stock within the mill communities is vital for preserving the entire context of the mill landscape. The mill houses are where the independently functional adults will reside in this preservation scheme. The typical mill houses built by the mill developers are highly standardized due to economies of scale. As shown in Chapter 2, they conform to several typologies within an individual mill area. The mill houses were built before the creation of the Americans with Disabilities Act and were not constructed to be supportive of an aging population. Therefore, a dilemma is created: do developers change the characteristics of the house to address mobility issues at the risk of stripping the building of historic integrity, or do they risk the potential hazards for older adults? Two prevalent characteristics within the mill houses in North Carolina that could cause major issues are house elevation and the width of the doorways. The raised mill house causes issues with mobility but could be remedied with an attached ramp or graded landscape. The width of the doorways will need to be large enough to accommodate ADA regulations. Fortunately, the D.A. Tompkins prints show that the doorways of these mill houses are only slightly smaller than the ADA minimum width. The guidelines for rehabilitation established by the Department of the Interior can help mitigate the changes made to these
characteristics, and historic tax credits can help with the financial burdens of retrofitting the houses.

**Degree of Isolation:** Isolated mills may not be as effective in providing meaningful local community engagement due to the lack of surrounding community buildup. A highly interconnected community with easy engagement opportunities seems to be recommended, yet this does not seem to be the major trend of CCRCs in North Carolina. Only 36% of CCRCs are less than half a mile from a commercial district, while 45% are reported as being half to two miles away from community resources. Most CCRCs seem to be located in spaces where they can create more separation than integration, which suggests a trend of age segregation for seniors in this setting. A vibrant community is a key factor, and one that developed areas are more likely to have already, which relieves the CCRC company from the strain of creating social programming.

**Conclusion**

This thesis set out to explore the match between historic textile mills and the need for elderly housing. The CCRC seemed to loosely fit the textile mill spatial landscape, and it was the intent of this thesis to judge the potential of a CCRC as a new use for an entire textile mill landscape. The research questions posed were: What are the spatial layouts of historic textile mill landscapes? What are the current trends in aging-in-place communities, with a focus on CCRCs? Are CCRCs a viable new use for preserving historic textile mill landscapes in North Carolina?

The first question was answered by an overview of textile mill development in North Carolina through the creation of a framework that analyzed historic textile mills at the regional, community, and individual scales. This framework identifies compatibilities between historic mill landscapes and CCRCs and can assist with mill site selection for potential redevelopment. In addition to examining the spatial layouts of the textile mill landscapes, the Rocky Mount Mill
redevelopment case study was presented as a method to protect the mill landscape with not only legal instruments but also a new commercial use. Rocky Mount’s redevelopment plan led to an outcome of long-term preservation from a mix of legal tools and economic viability. By combining these legal and commercial approaches, a mill landscape has a better chance of lasting for a longer duration while offering financial incentives for its historic preservation. Capitol Broadcasting Company’s (CBC) handling of the Rocky Mount Mill project illustrates a pathway for developers to develop historic textile mills into CCRCs. While the project in Rocky Mount is not a CCRC or an age-restricted community, the community was bought and preserved by a single entity, which provides developers with valuable insights into a complete community redevelopment approach.

The second question, “What are the current trends in aging-in-place communities, with a focus on CCRCs?” was addressed through the exploration of aging issues and current aging-in-place institutional typologies to investigate the CCRC as a replicable, successful aging-in-place model. To address the use for historic textile mills as proposed CCRCs, the North Carolina CCRC industry was evaluated using the same framework developed in this thesis for historic mill landscapes. The traits deduced from a spatial analysis created a typology of four distinct spatial layouts: Central Plan, Central Plan with Apartments, Central Plan with Apartments and Single-Family Homes, and Central Plan with Single-Family Homes.

This chapter answered the final question; “Can we use CCRCs as way to preserve historic textile mill landscapes in North Carolina?” Comparing both the mill landscape and CCRC design features showed that they shared enough similarities to suggest that textile mill landscapes could successfully be reused as CCRCs.
Future Research Recommendations

As this thesis only examined the design features of the mill landscape compared to the CCRC typologies, more research is needed to measure the potential for the proposed reuse of textile mills as CCRCs. The textile mill developments were designed with healthy, able-bodied individuals and their families in mind, and thus a larger body of research involving the idea, particularly regarding mobility needs, is necessary. The research conducted may offer insight and give developers background knowledge for undertaking this particular type of project. Research in to design solutions for this particular case could build on this idea of preserving mill landscapes as CCRCs.

Since these sites were developed with healthy individuals as the main tenants, future research is needed to investigate the health outcomes of older adults in these spaces. Healthy outcomes associated with North Carolina mill developments as retirement communities have the potential to be beneficial to this research. As stated in previous chapters, the textile industry played a large role in the development of the state and therefore opens the door to research the potential impacts of living in a place familiar to its residents. In addition, the potential for leveraging familiar connections in these historic communities may be impactful in the aging process.

To further the research into the appropriateness of a mill landscape as a CCRC, I recommend an investigation into the supply of abandoned or underutilized mills with intact mill villages. Although there have been some studies into the number of standing mills, there has not been a full study analyzing entire mill landscapes and their historic potential. In addition to knowing the supply of historic textile mills in North Carolina ripe for redevelopment, a study into the social effects that the community and the residents would face in the wake of a
developer purchasing the entire housing stock and drastically changing the characteristics of the community would be beneficial. Research from an economic development standpoint could shed light on involvement from local and state entities to provide funding or expertise in accomplishing such a project. There is little to no research on the greying movement and the resources that older adults could provide the historic preservation movement. The research presented here could lead to a larger conversation on pairing approaches to meeting two distinct needs in our society and lay the foundation for large-scale preservation projects.

Accompanying the health concerns of the AIP community, the affordability of appropriate housing prevents some seniors from living in an AIP-appropriate setting.\(^\text{230}\) Aging in place in one’s current setting means that seniors must be able either to modify their behaviors to fit the environment or to modify the environment to fit their abilities and this line of research is fitting to investigate this idea of Mill to CCRC idea. Such approaches may include the ability to afford home modifications or find an affordable living situation elsewhere in their community.\(^\text{231}\) Medicare covers part-time home health services, such as part-time or intermittent skilled nursing care, part-time or intermittent home health aide care, physical therapy, occupational therapy, and speech-language pathology services; however, Medicare does not offer 24-hour in-home care, meals delivered to the home, custodial or personal care (help bathing, dressing, and using the bathroom), or homemaker services.\(^\text{232}\) Therefore, the ability to pay for complete care may need to be completely financed by the individual seeking to age in place. In addition, access to such care may not be available in some situations around the state, due to the


\(^{231}\) Ibid.

\(^{232}\) “Your Medicare Coverage,” Medicare.Gov, accessed February 15, 2019, https://www.medicare.gov/coverage. Homemaker services include shopping, cleaning, and laundry when this is the only care needed and when these services are not related to the individual’s plan of care.
local and regional medical infrastructure. Further research is needed to flush out the idea of leveraging the CCRC model to pay for these types of mill development.
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APPENDIX 1

CCRC SPATIAL ANALYSIS RESULTS

Below are 53 of the 58 North Carolina CCRC Spatial layout diagrams; the other five CCRCs are in combination with other medical facilities and not represented here; Friends Homes West, Pennybyrn at Mayfeild, Pisgah Valley Retirement Community, The Cardinal at North Hills, and White Oak Village Apartments. The diagrams of sites are broken into distinct building types represented by colors. Black represents the large core structure of the CCRC and, often, the connected wings in close proximity to the main structure. Red represents apartment or multifamily-style structures where there is a distinct separation from the main core structure. Burnt-yellow structures correspond to the single-family and duplex dwellings. Blue represents distinct water features on or near the site. “Single-family home” in this context does not always refer only to a single freestanding family home but can also include duplexes with a shared wall and separate driveways. In addition, any residential housing that is less than a quad-plex (4 units or less) is considered single-family homes in this research.
Belle Meade and Pine Knoll at SJP

Deerfield Episcopal Retirement Community
Ardenwoods

Brookdale Carriage Club Providence
Gardens-Taylor Glen.

Givens Estates
The Cypress of Raleigh

The Forest at Duke