

Copyright Warning & Restrictions

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted material.

Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specified conditions is that the photocopy or reproduction is not to be “used for any purpose other than private study, scholarship, or research.” If a user makes a request for, or later uses, a photocopy or reproduction for purposes in excess of “fair use” that user may be liable for copyright infringement,

This institution reserves the right to refuse to accept a copying order if, in its judgment, fulfillment of the order would involve violation of copyright law.

Please Note: The author retains the copyright while the New Jersey Institute of Technology reserves the right to distribute this thesis or dissertation

Printing note: If you do not wish to print this page, then select “Pages from: first page # to: last page #” on the print dialog screen

The Van Houten library has removed some of the personal information and all signatures from the approval page and biographical sketches of theses and dissertations in order to protect the identity of NJIT graduates and faculty.

ABSTRACT

Butler Center: A Case for the Adaptive Reuse of Industrial Buildings

**by
Lori J. Ryder**

This thesis is a study of the viability of adaptive reuse principles through a comparison between the rehabilitation of the industrial city of Lowell, Massachusetts and the former American Hard Rubber Company building in Butler, New Jersey. Historical, social, and architectural profiles of both sites were made to support my feasibility study and designs for the complex at Butler. The site at Lowell was analyzed as a successful model of an adaptive reuse project to measure the proposals for Butler.

Butler's site has been reused, but this study found it to be largely deficient in its adherence to accepted adaptive reuse principles. Moreover, my feasibility study called into question the long-range vitality of Butler's complex, citing that the composition of occupants is not diverse enough to sustain considerable shifts in the economy. In contrast to Lowell's model, in which the public and private sectors at large embraced the rehabilitation efforts, Butler adopted a one dimensional strategy toward reuse and failed to consider its own historical significance. My master plan was designed to afford Butler a better long-range economic composition, and thereby demonstrate the viability and social stability of adaptive reuse principles.

**BUTLER CENTER: A CASE FOR THE ADAPTIVE
REUSE OF INDUSTRIAL BUILDINGS**

by
Lori J. Ryder

**A Thesis
Submitted to the Faculty of
New Jersey Institute of Technology
in Partial Fulfillment of the Requirements
for the Degree of Master of Architecture**

School of Architecture

October 1995

Blank Page

APPROVAL PAGE

**Butler Center: A Case for the Adaptive
Reuse of Industrial Buildings**

Lori J. Ryder

Mark A. Hewitt, Thesis Advisor Date
Associate Professor of Architecture, NJIT

Peter Papademetriou, Committee Member Date
Director of Graduate Program of Architecture, NJIT
Professor of Architecture, NJIT

Troy West, Committee Member Date
Associate Professor of Architecture, NJIT

BIOGRAPHICAL SKETCH

Author: Lori J. Ryder
Degree: Master of Architecture
Date: October 1995

Undergraduate and Graduate Education

- Master of Architecture,
New Jersey Institute of Technology,
Newark, New Jersey, 1995
- Master of Science in Management,
New Jersey Institute of Technology,
Newark, New Jersey, 1995
- Bachelor of Architecture,
New Jersey Institute of Technology,
Newark, New Jersey, 1993

Major: Architecture

This thesis is dedicated to my Lord and Savior, Jesus Christ.

Thanks be to God, who gives us the victory through our Lord Jesus Christ.

-1 Corinthians 15:57

ACKNOWLEDGMENT

The author wishes to express her sincere thanks to her supervisor, Professor Mark Hewitt, for his guidance throughout this research.

Special thanks to Professors Peter Papademetriou and Troy West for serving as members of the committee.

The author is grateful to Clyde McBride and the Butler Center Associates for their help and encouragement. The accessibility of their resources helped to shape this paper.

TABLE OF CONTENTS

Chapter	Page
1 INTRODUCTION.....	1
2 THE HISTORY OF LOWELL, MASSACHUSETTS.....	6
3 LOWELL'S REBIRTH.....	12
4 THE HISTORY OF BUTLER, NEW JERSEY.....	17
5 SITE DESCRIPTION.....	30
6 DESCRIPTION OF BUILDINGS.....	35
7 THE ADAPTIVE REUSE OF THE COMPLEX.....	58
8 PROPOSED MASTER PLAN.....	63
The Library/Museum.....	74
The Municipal Building.....	76
The Police Department.....	79
Artists' Studios.....	80
Commercial Space.....	82
Office Space.....	84
Butler Center Day Care	85
The Welcome Center.....	85
Design Intervention.....	86
9 CONCLUSION.....	93
APPENDIX A: AMERICAN HARD RUBBER COMPANY PRODUCT LISTING...	98
APPENDIX B: LIST OF DRAWINGS.....	99
APPENDIX C: ADDITIONAL DRAWINGS.....	100
APPENDIX D: MODEL PHOTOS.....	102
ENDNOTES.....	104
REFERENCES.....	109

LIST OF TABLES

Table	Page
1 Description of Buildings.....	41
2 Building #2.....	42
3 Building #3.....	43
4 Building #6.....	44
5 Building #7.....	45
6 Building #8.....	46
7 Building #9.....	47
8 Building #11.....	48
9 Building #13.....	49
10 Building #14.....	50
11 Building #15.....	51
12 Building #16.....	52
13 Socio-Economic Data for Butler and Surrounding Municipalities.....	69
14 Ranking of Effective Buying Income for New Jersey Counties.....	71

LIST OF FIGURES

Figure	Page
1 author photo, Historic landmarker, Butler, NJ.....	xiv
2 Vicinity map of Lowell, MA..... Source: United States Department of the Interior, <u>Final General Management Plan</u> , (1981), p. vi.	6
3 Map of Patucket, East Chelmsford, MA in 1821, by John G. Hales..... Source: Shepley, Bulfinch, Richardson and Abbott, Architects, <u>Lowell National Historical Park and Preservation District Cultural Resources Inventory</u> , (1980)	9
4 Map of Merrimack Mills and housing..... Source: John Coolige, <u>Mill & Mansion</u> , (New York: Russell & Russell, 1967), p. 121.	10
5 Map of Lowell's ethnic neighborhoods..... Source: Thomas Dublin, <u>Lowell: The Story of an Industrial City</u> , (Washington D.C.: U.S. Government Printing Office, 1992), p. 7.	11
6 author photo, Market Mills, Lowell, MA.....	12
7 Vicinity map of Butler, NJ.....	17
8 Map of West Bloomingdale, Pequannock, NJ in 1822..... Source: Acroterion, <u>New Jersey Historic Sites Inventory</u> , (Morristown: Morris County Cultural Resources Survey, 1987), p. 1.	17
9 author photo, White's Paper Mill in Butler, NJ.....	18
10 illus., Rubber Comb and Jewelry Company and vicinity in 1881..... Source: Lawrence C. Wassner & Charles K. Payne, <u>Butler New Jersey</u> , (Butler, NJ: The Butler Argus, 1951), p. 65.	19
11 photo, Richard Butler..... Source: Wassner & Payne, p. 10.	20
12 illus., 1882 Painting by Edward Lamson Henry of the Butler factory..... Source: Wassner & Payne, p. 131.	21
13 photo, 1876 Rubber Comb and Jewelry Company..... Source: Wasnner & Payne, p. 65.	22
14 author photo, Typical worker's house in Butler (circa 1890).....	23

15 author photo, Upperclass house in Butler (circa 1890).....	24
16 illus., Map of Butler, NJ in 1887.....	24
Source: Robinson's Atlas of Morris County, New Jersey 1887 (New York: E. Robinson Publisher, 1887)	
17 photo, Main Street early 1900s.....	25
Source: Wassner & Payne, p. 91.	
18 photo, First National Bank in the early 1900s and 1950.....	26
Source: Wassner & Payne, p. 69.	
19 photo, Aerial photo of Butler complex in 1948.....	28
Source: Wassner & Payne, p. 66.	
20 Map of site in Butler, NJ.....	30
Source: Hagstrom, <u>Morris/Somerset Counties Atlas</u> , (The Langenscheidt Publishing Group, 1993), p. 21.	
21 Site map of existing complex.....	31
22 author photo, Commercial strip on Main Street.....	33
23 author photo, N. Y. S&W Railroad between complex and Main St.....	33
24 author photo, Vacant Borough Hall and municipal building.....	34
25 author photo, Steep embankment to the north of Butler Center.....	34
26 Sanborn Insurance Maps.....	36
27 Building Identification Maps.....	37
28 Axonometric 1907 site map, building construction chronology.....	38
Source: Map of complex revised and redrawn by E.H. Tenney	
29 Axonometric 1995 site map, building construction chronology.....	39
30 author photo, Building #2, south facade.....	42
31 author photo, Building #3, east facade.....	43
32 author photo, Building #6, west facade.....	44
33 author photo, Building #7, west facade.....	45

34 author photo, Building #8, south facade.....	46
35 author photo, Building #9, west facade.....	47
36 author photo, Building #11, south facade.....	48
37 author photo, Building #13, east facade.....	49
38 author photo, Building #14, south facade.....	50
39 author photo, Building #15, south facade.....	51
40 author photo, Building #16, south facade.....	52
41 author photo, East facade of building #8.....	53
42 author photo, Section of building #8.....	53
43 author photo, Retaining wall to the north of Butler Center.....	54
44 author photo, Exposed structure of building #8.....	54
45 author photo, Infilled windows, east facade building #3.....	55
46 author photo, Contrast of old and new windows.....	55
47 author photo, Star-motif tie rods and dressed sills and lintels.....	56
48 author photo, Wall washing caused by defective downspouts.....	56
49 author photo, Wood truss roof structure.....	57
50 author photo, Reinforced heavy timber post and beam structure.....	57
51 photo, Fabrication of concrete crossing pads.....	59
Source: Butler Center Associates	
52 photo, Aerial view of complex around 1977.....	60
Source: Butler Center Associates	
53 photo, Butler complex during demolition.....	61
Source: Butler Center Associates	
54 Master plan, Floor plans.....	64

55 author photo, Model view of courtyard.....	65
56 Master plan, Site/parking plan.....	66
57 author photo, Entrance to Butler Library.....	74
58 First floor plan and front elevation of proposed library.....	75
59 author photo, Butler Museum/Senior Citizen Center.....	76
60 photo, Butler Municipal Center 1950..... Source: Wasnner & Payne, p. 52.	77
61 First floor plan and front elevation of Municipal Bldg. & Police Department.....	77
62 Selective demolition of building #15.....	78
63 author photo, Vehicle bay, west elevation of building #15.....	79
64 author photo, Vehicle bay, east elevation of building #15.....	79
65 author photo, Butler Police building 1995.....	80
66 photo, Butler Police building 1950..... Source: Wassner & Payne, p. 18.	80
67 First floor plan and front elevation of proposed Artists' studios.....	81
68 author photo, Entrance Arcade, Merrimack Mills.....	82
69 First floor plan and front elevation of proposed commercial shops.....	83
70 First floor plan and front elevation of proposed offices.....	84
71 Plan of design intervention.....	87
72 Elevation and plan of proposed entrances.....	88
73 Existing vs. restored elevation.....	88
74 author photo, Drive-through of building #3.....	89
75 photo, Bus stop at the center of Butler..... Source: Wassner & Payne, p. 19.	90
76 Existing First Floor Plan of Complex.....	100

77 Proposed Partial Site Section Through Courtyard, View West.....	101
78 Proposed Site Section, View North.....	101
79 author photo, Model view looking north.....	102
80 author photo, Model view looking west.....	102
81 author photo, Model view looking northwest.....	103
82 author photo, Model view looking southeast.....	103



Fig.1. Historic landmarker, Butler, NJ

CHAPTER 1

INTRODUCTION

In pursuit of a career in architecture I have chosen to study the field of adaptive reuse. The National Trust defines adaptive reuse as "the process of converting a building to a use other than that for which it was designed, e.g., changing a factory into housing. Such conversions are accomplished with varying alterations to the buildings."¹ This field becomes increasingly important as buildings outlive their original purpose and become underutilized or vacant. As costs for new construction rise and older buildings become redundant we look to the built environment for solutions. In our recent past, historically significant buildings have been demolished in order to make room for new construction and in some cases parking lots. However, today there is a greater awareness of the importance of these structures. Instead of being seen as an eyesore, old buildings are being evaluated for their historical, architectural, as well as economic value. The following reasons state why adapting an old building for a new use is advantageous:

1.) They link us to our past.² Buildings truly serve as storybooks. They afford young and old, as well as educated and uneducated the opportunity to read them and develop a better understanding about the people of the past. For example, a community such as Paterson, New Jersey which has many old and resplendent churches points to a strong religious character of its former citizens.

2.) A mixture of old buildings gives a neighborhood character and texture.³ A noteworthy example is the pueblo style buildings of the southwestern communities such as SantaFe, New Mexico. The nearly ancient structures made with adobe plaster along with

roofs supported by logs with the log ends protruding through the walls have become a cherished style among the land's inhabitants. These buildings amidst newly constructed homes and offices serve to maintain the disposition of the southwestern community.

3.) Old buildings provide a source of civic identity.⁴ It is understood that the younger generation will assimilate the virtues of the older generation partly on the basis of age which historically has had wisdom attributed to it. Likewise, older civic buildings help suggest to the young and even new residents that those things which the building contains are worthy of being perpetuated.

4.) They offer a diversity of space at lower costs than new construction.⁵ The majority of old factories are made with valuable materials such as brick which is very popular for its aesthetic quality. Yet, building with brick on a large scale today is often precluded due to the astronomical expenditure of both materials and labor. Also, many factories have a broad assortment of rooms with varying shapes and sizes. In regards to room size, an owner of such property has the potential to attract a wider customer base since he or she is able to offer a variety of choices. Furthermore, old industrial and institutional buildings lend themselves well to being reused possibly as elder housing or perhaps apartments. These old structures had to have repetitive large windows in order to allow ample light in for the workers. This now becomes an ideal feature easily transferred into apartment style living.

5.) Older buildings often depreciate at a slower rate than new construction.⁶ This helps protect the investment of the owner. It decreases the liability or financial loss in the event the owner needs to resell the structure or its parts. In addition, if the reused property is rental in nature the low depreciation aspect could aid in stabilizing the rent.

The owner will not be compelled as strongly to cover the initial investment knowing that the building's value is still at least approximate to what it was at the outset. In fact, a reused building has a sort of windfall potential since cost savings are quite often inherent in the existing materials. These things foster a greater entrepreneurial climate.

6.) Old buildings can often be obtained at relatively lower costs than new buildings.⁷ With the mortgage investment paid off many years ago, older buildings can even sometimes be purchased below their property value. New buildings, on the contrary, require procuring that often results in huge mortgages which only increase the financial risk of the owner.

7.) Tax advantages can be gained.⁸ Because many of these old buildings are unoccupied and often abandoned by the owner they do not generate any tax revenue for the communities. Also, for many towns the prospect of demolishing these structures is too costly. Therefore, the buildings deteriorate further becoming even a worse eyesore and burden. To remedy this situation, many wise towns provide tax incentives to builders. A used building means growth potential while a dormant one simply is a burden.

8.) Renovation of existing buildings can take less time than new construction and can be accomplished in stages.⁹ Frequently, when most of the major parts of an edifice are unharmed the construction time is significantly reduced. An often positive attribute an old structure, such as a factory, holds is that critical parts are generally quite intact and readily available for use. Therefore, it becomes feasible for portions of the edifice to be occupied early while the remainder of the project is being completed. Again, this offers the possibility for quicker returns on the investment.

9.) Rehabilitation imposes fewer public and social costs than new construction.¹⁰

Since the old building has been part of the community people have grown accustomed to it. Whereas in a new construction effort, or even the prospect of demolishing an old structure and building, new public fears can be incited about its impact. People may fear the loss of community identity if a building is demolished. Likewise, the public may fear a new building will not be contextual with the rest of the community and become a point of derision. Such sound reasons truly warrant the advancement and promotion of adaptive reuse by town planners, builders and architects alike.

The American building landscape has undergone a literal metamorphosis which has only become readily apparent in the past few decades. America, as with its people, has a rich diversity of building types. From the simple domicile to the luxuriously ornate mansion, from the one room schoolhouse to the major university, from the country mill to the industrial city, and from the humble chapel to the spectacular cathedral America has an envious, as well as exhaustive portfolio of building types. Despite this, over time many building types have become redundant and are no longer supported by their original needs for existence. There is a plethora of churches, schools and industrial buildings which are simply no longer inhabited. Of the three types, the industrial buildings are the most flexible and viable to reuse. It was not until the early 1970s that the reuse of factories was even considered. Scholars began to look to factories as perhaps the most important building type of the past 200 years, one which illustrated the various technological advances over time.¹¹ Similarly, historic preservationists looked to industrial buildings for evidence of our social and cultural history. Even businessmen began to realize the potential of reusing industrial buildings as an alternative to new construction.¹² Since existing factories are generally well constructed and easily subdivided they have become a

prudent choice for the cost conscious.

When industries left to seek larger, cheaper space in the suburbs they left behind abandoned industrial buildings and unemployed people. Many historically significant buildings have been demolished due to the lack of funds and public and private awareness. In the past politicians have considered these abandoned and often dilapidated structures to be nothing but an economic drag on the community because they attract crime and discourage business.¹³ They believed that old factories symbolized an unattractive past and the former workers would not want them around. In fact, just the opposite is true. People can relate to these familiar structures and are impressed to see that they can be converted for other uses.¹⁴ Indeed the residents, overall, have an affinity for the buildings in which they worked, shopped or simply drove past on their routine trips. By renovating and reusing these buildings, a city can improve its image, strengthen ties with the past and at the same time collect taxes on the property, thereby benefiting from the advantages previously cited.

Adaptive reuse is gaining momentum and there are several success stories that illustrate how old factories which were once the heart of a community were brought back to life by new found uses. The following case studies of the industrial park at Lowell, Massachusetts and the mill complex in Butler, New Jersey will serve as prime examples of adaptive reuse projects. Although the site at Butler is not of the same magnitude as at Lowell, having only one mill complex as opposed to hundreds of industrial buildings, the industries in both cases were of paramount importance to their existence. Furthermore, both sites have the distinction of enjoying national historic importance.

CHAPTER 2

LOWELL HISTORY

The study of architecture should be much more than an inquiry into design and building processes because it is fundamentally rooted in our struggles for achievement even survival. The buildings of the past, although they often lay in dilapidation, beckon us to reflect on our ways of living, or moreover the reasons for the way things are today.

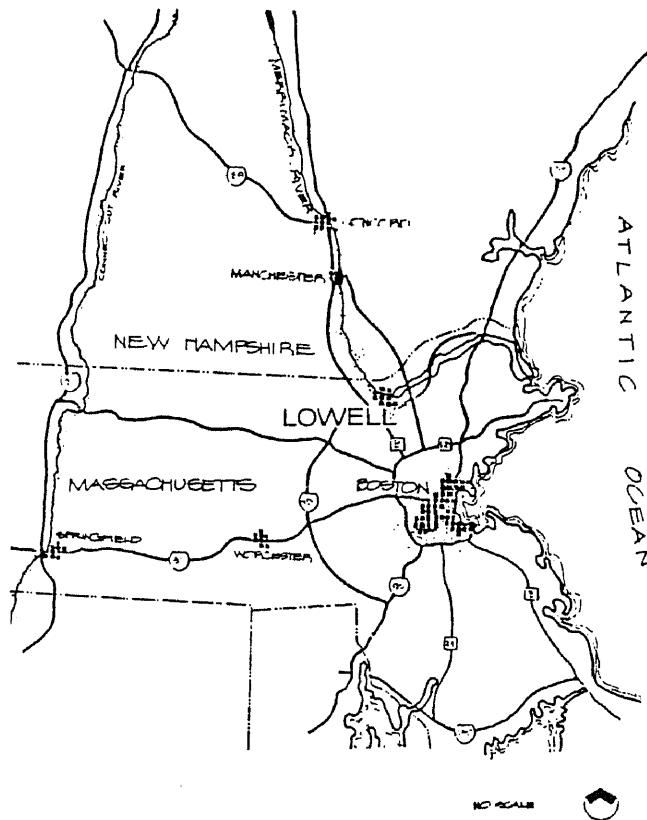


Fig.2. Vicinity map of Lowell, MA

Older buildings are in a sense passages to the past, and the role of an architect can also become one of a historian. People want to know their heritage and Americans are no different. Americans view themselves as an industrious people, not afraid of hard work and full of determination. In fact, Americans and even the world have a mental image of the USA as an economic giant with a mighty industrial muscle. In many respects that holds true, but it was not always that way. When was America not this way? How did this industrial giant emerge? Although there is no single place in America where one can say that this is where it all began, the city of Lowell, Massachusetts clearly stands as a turning point of America's transformation into industrialism (Fig.2).

The city of Lowell still stands and reminds one about both change as well as

beginnings.¹⁵ Just as Lowell today depicts the deindustrialization occurring in the North, so its historic structures represent one of the greatest transitions in American social history.¹⁶ This was the shift away from a rural society in which people had for ages adapted to natural cycles into a society in which people had to adapt to factory bells as well as working conditions which no longer ended at nightfall.¹⁷

Historians suggest that America's early trend toward industrialization began as far back as the mid-seventeenth century.¹⁸ In keeping with England's imperialistic nature it created laws controlling trade known as the Navigation Acts. These increased the dependence of the colonies upon England. Taking advantage of its position, England then raised the costs and taxes of its exports, such as cloth. This spurred the colonies to begin manufacturing for themselves, and the local governments to promote free spinning schools, which set in motion the beginning of cloth production.¹⁹ At first, and for the approximately next 150 years, this cloth production was confined to the home until advances in technology steadily moved it into the mill. Eventually, New England's landscape witnessed small majestic mills cropping up near gentle rivers. Yet, the economy overall was still largely agricultural.

Lowell was America's first large-scale planned industrial community which set an example for others to come. Most textile mills established prior to the founding of Lowell, such as the Slater Mill at Pawtucket, were small, picturesque, and built near villages for a steady supply of labor. However, these factories lacked the planning and management that accompanied future, larger mill towns.²⁰

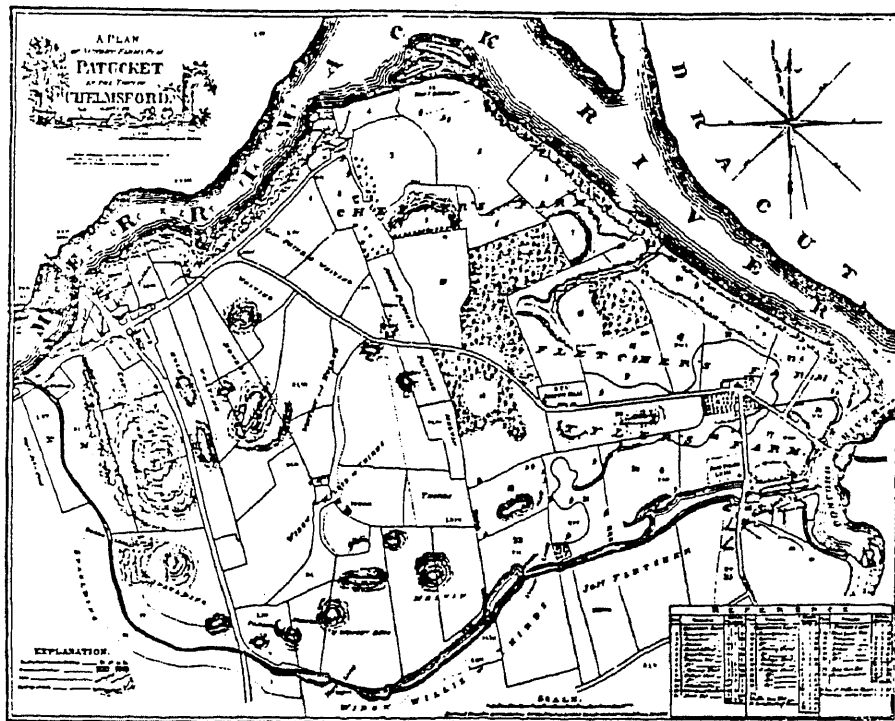
It was Francis Cabot Lowell's desire to build a larger, more efficient enterprise at Waltham, Massachusetts. This site, convenient to Boston, was chosen as a good testing

ground because it was already developed and showed promise for the future.²¹ The main objectives were to make sure the equipment ran properly, and to test whether there was indeed a market for American machine-woven cloth.²² This venture was a tremendous success as the operation dwarfed all competition. This gave Francis Lowell and his associates the confidence to expand, yet not in Waltham. The facility there could not be expanded because the three mills established were using all available water power from the sluggish Charles river.²³ This desire to grow led to the founding of Lowell Massachusetts.

When the War of 1812 broke out, and westward expansion gained momentum, the number of young men available to work the power looms was reduced, and this led Lowell to resort to an untapped source of labor - Yankee women.²⁴ New England farm girls, which became known as mill girls, were lured in to work the machinery by enticing advertisements. Such advertisements boasted paternalistic management, provided education and amusements.²⁵ Also, a major attraction was a good and regular wage to be earned. The mill girls were paid twice monthly in cash, whereas previous mills would only pay certain times a year, or in coupons redeemable at a company store.²⁶ After regular expenses the girls often had enough money left over for savings, and would often return home with a greater savings than their fathers.²⁷ Furthermore, Francis Lowell set up a series of boarding houses run by matrons and built a church to persuade parents to send their children away to work in ideal moral surroundings.²⁸ These benefits were considered great innovations in factory life and were done in large part because Francis Lowell feared American industry could create the same problems in this country as he had seen in England in which the workers became degenerate and poverty stricken.²⁹ These ideologies were first employed at Waltham and later they would be carried into the actual

city of Lowell.

Textile manufacturing was the first trade group to develop into a modern mass-production industry in America.³⁰ An increase in the number of employees meant a change in the character of the mill settlement. Francis Cabot Lowell was the first to envision an even larger textile plant which would incorporate the lessons learned from Waltham. Before his death in 1817 he was able to work out its physical arrangement. It was at this time, two of Lowell's collaborators, his friend, Nathan Appleton and his brother-in-law, Patrick Tracy Jackson associated themselves with Kirk Boott and became known as the Boston Associates.³¹ Boott, a former British officer and merchant, acted as planner, architect, and engineer, overseeing the building of the mills, canals, locks, machine shop and worker housing.³² In 1822, the Boston Manufacturing Company, now



run by the Boston Associates, purchased the Patucket Canal and 400 acres of surrounding farmland, 30 miles northwest of Boston for \$70,000 (Fig.3).

Fig.3. Map of Patucket, East Chelmsford, MA in 1821, by John G. Hales

This gave them sufficient land and water rights along the Merrimack River. It was at this time that the company began to realize Lowell's plans. Although the town was named in honor of the founder, Francis Cabot Lowell, Kirk Boot laid out the plan for the Merrimack Mills.³⁴ The factories, powered by water, were located on the Merrimack River to take advantage of the powerful 30 foot drop of the falls.³⁵ A 5.6 mile canal system was developed along with complex hydraulic machinery and other technical

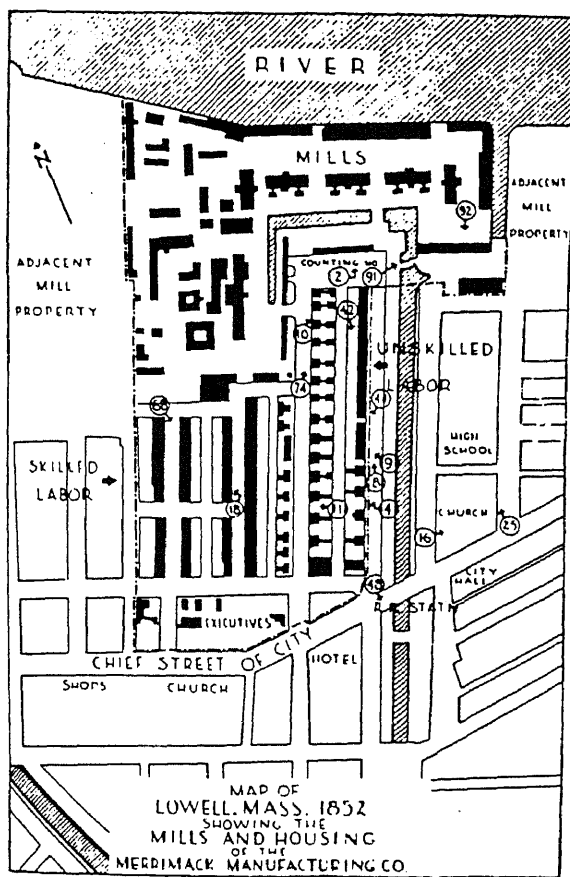


Fig.4. Map of Merrimack Mills and housing

innovations.³⁶ The factories were placed along this manmade canal. Behind them at right angles ran the streets, boarding houses for single employees and row houses and tenements for married couples (Fig.4).³⁷

Lowell, Massachusetts proved that it was good business to plan industrial towns and to provide attractive, substantial housing for workers. The outstanding achievements of Lowell are its housing and its city planning. They are the direct outcome of the unique social and economic situation at the time.³⁸

In 1820, the pre-Lowell population of farmers was 200 people.³⁹ By 1830, Lowell's population grew to more than 6,000.⁴⁰ When the canal system was completed in 1836, a complex of twenty-six, five and six-story mills were operating, producing 49,413,000 yards of cloth.⁴¹ By 1850, Lowell had a population of 33,000 which made it

the second largest city in Massachusetts, and the largest manufacturer of cotton textiles in the nation.⁴²

In 1853, strikes over increased work loads, pay cuts, and hazardous working conditions, reduced the work day from thirteen to eleven hours.⁴³ From 1850 to 1920 the management turned to cheap immigrant labor. The Irish, who built the first mills and dug the canals, moved up to mill jobs, soon to be followed by Portuguese, French Canadians,

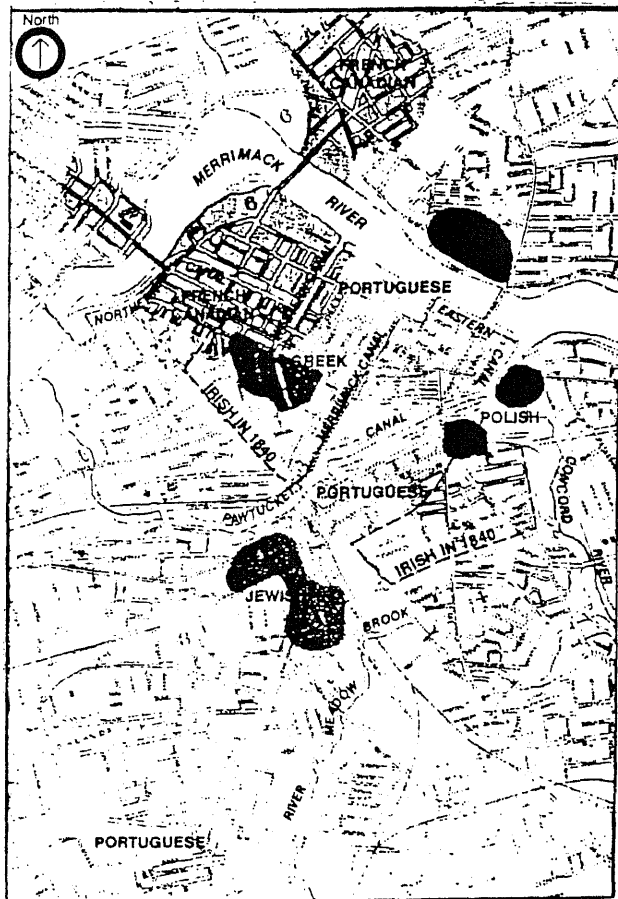


Fig.5. Map of Lowell's ethnic neighborhoods

African-Americans, Greeks, European Jews, Poles, and Armenians.⁴⁴ The concentration of industry in Lowell became so dense that tenement housing was constructed and strong ethnic neighborhoods evolved (Fig.5). Eventually the paternalistic management eroded away. Further investing of capital was directed down South as management's fear of strikes grew, and as Southern business leaders offered a better environment to conduct mill work.⁴⁵

CHAPTER 3

LOWELL'S REBIRTH



Fig.6. Market Mills, Lowell, MA

Lowell, which was synonymous with innovation prior to 1860, experienced a severe economic decline after 1920, and bottomed out in the 1960s.⁴⁶ The city's physical deterioration brought with it hardship and despair to its residents. As industry left unemployment increased leading to the destruction of over one hundred buildings, including the Merrimack mills and several vital ethnic neighborhoods, demolished to save on taxes.⁴⁷

Lowell has depended to a very great extent upon the public and private partnership in bringing about the various projects that have helped accomplish its redevelopment. Virtually every project of significant size has received loans or grants from multiple sources, including private sector organizations as well as various levels of government. Some projects involved as many as fourteen separate public and private organizations.⁴⁸

There has never been such a concentrated effort amongst government and financial institutions to accommodate the needs of the private developer through mutual cooperation.⁴⁹

In 1977, the Lowell Development & Financial Corporation (LDFC), a consortium of financial institutions in the Lowell area that promotes rehabilitation and industrial expansion, was founded.⁵⁰ It primarily served as a link between private and public sectors by "acting as a conduit" for almost all state and federal grants and loans.⁵¹ A similar consortium, the Lowell Plan, Inc., was composed of businesses as well as individuals and serves as a non-profit development and promotional agency for the ongoing revitalization of Lowell.⁵²

Lowell has always done things on a grand scale and the way its revitalization effort was carried out was no different. The concept of a "cultural park" was conceived by Pat Mogan, then Lowell Schools Superintendent, and advanced by government and residents.⁵³ The City Council, in 1972, adopted the concept of a "historical park" as the keystone for future development in Lowell.⁵⁴ However, Lowell's revival is said to have begun in 1974 with its designation by the Commonwealth as the site of the first of eight historical parks to be established throughout the state.⁵⁵ The commitment of the Commonwealth lent to the efforts of then-Congressman Paul Tsongas, a Lowell native, who was lobbying in Washington for the formation of a national park in Lowell.⁵⁶ The Lowell National Historical Park was established in 1978 and its visitors' center is one of the adaptive reuses planned for the old mill buildings in the downtown revival.⁵⁷ Other projects include: The Market Mills complex, which houses the visitors' center as well as retail stores, a food court, and artists' studios; the restoration of the Boott Mills; a trolley

system for downtown; the renovation of the Central St./Lower Canal Locks area where the Hilton and Wang Training Center are located; and a cultural center with the restored 19th century workers' boarding house.⁵⁸ The park is located downtown in the midst of a privately owned business district. The park's five themes are labor, capital, machinery, power and the industrial city itself.⁵⁹

Even in spite of the demolition of several mill complexes the city still had a large number of unused factories. A plan was designed to encourage substantial private development of vacant mill space. This enables the park to contribute to the economic rebirth of Lowell while insuring the preservation of its historical buildings. The historic parks at Lowell have become a major part of the city's cultural resources. They have attracted millions of dollars in historic rehabilitation money to Lowell. In addition they have brought about substantial gains from tourism and have created construction and park-related jobs in the area. These adaptive reuse efforts created an alluring setting for business. A major boost to Lowell's economy occurred when Wang, a distinguished leader in the information/computation industry, and Hilton came to town.⁶⁰ This also gave the city a valued stamp of approval.

Lowell has experienced two major economic peaks separated by a long period of decline. The first peak, the textile industry, created Lowell and the second, the computer industry, saved it.⁶¹ The city began to reap the rewards of adaptive reuse on a large scale. In 1985, Lowell boasted a 2.8 percent unemployment rate (fifth lowest in the nation at the time), property tax rates were at pre-1969 levels, and the number of construction permits issued in Lowell in 1984 was among the highest in the nation.⁶² The once perishing community was now vigorously on the road to recovery. The city's sense of identity and

pride has been rekindled, and that has made all the difference.⁶³ U.S. Representative Chet Atkins, a Democrat whose Fifth District of Massachusetts includes Lowell stated,

"Lowell delivers two messages. First, is that historic preservation is for everybody, not just the elite. There is an awful lot of blue-collar pride in historic preservation and an enormous interest in people preserving the heritage of working communities. And the second thing is that historic preservation is good for business. In Lowell it has built a community spirit that has helped attract business and investment."⁶⁴

Today Lowell not only enjoys the fruits of success but it also serves as the prototypical model for small and large scale adaptive reuse projects alike. A vital tenet for any successful revitalization effort is to grasp the understanding that since restoration occurs in the community one must truly involve the community. If it were not for the cooperative efforts between individuals and organizations Lowell's rebirth would never have happened. After studying Lowell's restoration one can find key guidelines for adaptive reuse projects.

The first guideline is to create a community revitalization organization. It can direct cooperative efforts between developers, government officials, business and financial institutions. A critical factor in a restoration project is the strength and determination of the local government and financial sector to accommodate the needs of developers.⁶⁵ Joint efforts may involve a dozen organizations on a single goal therefore the importance of cooperation must not be underestimated.

A second guideline is to get government representatives involved. They can lobby or use their influence for funds or to get the structure included as a historically significant structure. The first large scale infusion of government funds for Lowell came from the collaborative efforts of its citizens and strong lobbying by Massachusetts' governor

Michael Dukakis.⁶⁶ Local officials all the way up to state representatives should be approached.

A third guideline is the pursuit of loans and grants from multiple sources, including the private sector. State and federal money, such as the model cities program, has been available for the restoration of historical and even non-historical buildings.⁶⁷ State and federal sources are numerous. One might begin inquiry into available funds by contacting the office of the Secretary of the Interior, U. S. Department of the Interior, National Park Service, Preservation Assistance Division, Washington D.C. 20402. Furthermore, of significance, often greater, is the pursuit of the private sector. Since rehabilitation efforts can open up business opportunities to them they are quite interested to be involved. It is that entrepreneurial spirit that has helped American business to overcome economic adversity and to thrive.

CHAPTER 4 BUTLER HISTORY

Lowell has the celebrated distinction of being the archetypal adaptive reuse story. It has been a catalyst in spreading a spirit of revitalization across the country. A factory located

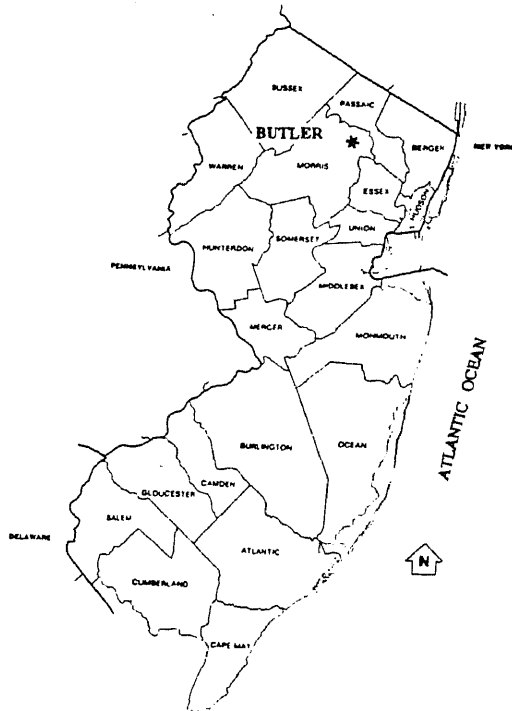


Fig.7. Vicinity map of Butler, NJ

in Butler, New Jersey (Fig.7), which originally served as the first manufacturer of hard rubber products in the world, has attempted a similar reuse, with less success. Butler, a planned industrial village developed around the rubber industry in the 1880's, was named after the executive of American Hard Rubber Company, Richard Butler. The town of Butler like Lowell was founded in a semi-wilderness setting. In the 18th century the Dutch were among the first settlers, and

today two homes of that era survive which display their influence.⁶⁸ An actual settlement did not take form until the middle of the 19th century when houses became more prevalent.⁶⁹ By 1868 there were a number of wood frame buildings along Boonton Avenue, but still fewer than a dozen in town.⁷⁰ It was not until 1881 that the settlement had grown considerably, and was no



Fig.8. Map of West Bloomingdale, Pequannock, NJ in 1822

no longer referred to as West Bloomingdale, but rather as the town of Butler (Fig 8).⁷¹

Transportation systems are commonly a major factor in an area's growth. The Paterson-Hamburg Turnpike, chartered in 1806, ran along the northerly edge of the village, but had little effect on the development of this settlement.⁷² Instead, like Lowell, it was water power which provided the key to growth. The potential power of the Kikeout Brook and the Pequannock River were harnessed to operate some grist mills and a tannery, but it was White's Paper Mill which was the first significant industrial enterprise in



Fig.9. White's Paper Mill in Butler, NJ

1853 (Fig 9).⁷³ Economic growth gained pace in the 1860's as several industries began to operate on a small scale.⁷⁴ Yet, it was not until 1882 that the town moved significantly closer to the attainment of its industrial potential when the Rubber Comb and Jewelry Company was reorganized into the Butler Hard Rubber Company.⁷⁵ The development of hard rubber for commercial use was a relatively new industry, dating back to the 1851 patents granted to Nelson Goodrich.⁷⁶ Durable and inexpensive, the substance replaced ivory, bone, horn, tortoise shell and whalebone as the material used in corset stays, combs,

pipe stems, buttons and surgical instruments.⁷⁷ (For a complete list of items manufactured see appendix A.)

The rubber industry seems to have had some difficulty in establishing itself in Butler. In 1869, the Day Rubber Company, formed by a Bond Street (New York City) dentist Dr. Newbrough and Horace Day located their business in this area and for a short time manufactured dental gum.⁷⁸ The location, originally chosen for water power from the Pequannock River, was later enhanced by the addition of the wood burning Midland Railroad of New Jersey in 1871 (now the New York, Susquehanna and Western Railroad).⁷⁹ When the factory closed it was bought by Newbrough Hard Rubber Company. This company expanded the factory by enlarging the raceway and installing two turbines, supplemented by a 200 H.P. steam engine.⁸⁰ They also bought up the farmland surrounding the factory and sold it to employees. However, they retained the water rights and a strip of land 50 feet wide on the Pequannock River for undisputed water power.⁸¹ After a short period it was absorbed by the Union Vulcanite Company, and in turn, this company was taken over by the Rubber Comb and Jewelry Company in 1876 (Fig.10).⁸²



Fig.10. Rubber Comb and Jewelry Company and vicinity in 1881

In 1876, S.S. Sonneborn, the first to envision a large scale factory at Butler, brought an able staff of assistants over from Europe to build the business. Among these were J.P. Lange, an able Mechanical Engineer; William Kiel, well versed in hard rubber compounding and general fundamentals of the rubber trade; and A. Schuerholz, a Die and Toolmaker.⁸³

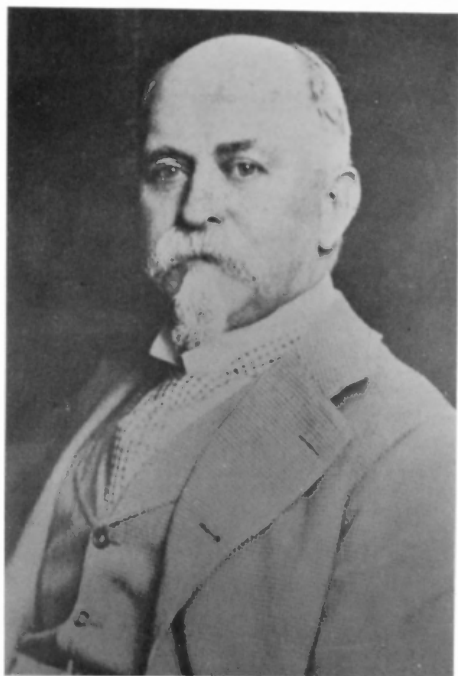


Fig.11. Richard Butler

In 1879, Richard Butler, a retired merchant and philanthropist, bought an interest in the company and then was elected president and general manager of the mercantile end (Fig.11).⁸⁴ His office was at 33 Mercer Street, New York, while Mr. Sonneborn, Treasurer, acted as the factory manager at Butler.⁸⁵ A man of wide interests, Butler was a founder and trustee of the Metropolitan Museum of Art, and a member of the committee to erect the Statue

of Liberty.⁸⁶ Under Butler's management the company's production and sales increased and the town's population grew as out-of-town workers sought jobs at the "Rubber Works".⁸⁷ It was in 1880 that the town received the name Butler and its own post office.⁸⁸

The first Superintendent under Sonneborn was William Anglehart with his son, Joseph Anglehart, as his assistant.⁸⁹ The staff at the time consisted of the following: John Getty, pay master; Mr. Oppenheimer and Isador Levi, office clerks; Robert C. Getty, time keeper and receiving clerk; and Isaac Q. Gurnee, office boy.⁹⁰ The operating staff was

William Kiel, foreman of the materials division; Louis Klipstein, clerk of production and accounting; George Pelling, foreman of the rod and tube department; John A. Farrel, foreman of the box department; and J. P. Lange, head of the mechanical division.⁹¹

In 1882, the Butler Hard Rubber Company displaced the Rubber Comb and Jewelry Company and Richard Butler stayed on as the president of the new company. In 1882, famed artist Edward Lamson Henry, commissioned by Butler, completed an oil painting of the factory (Fig.12).⁹² Butler lacked any kind of social development

Fig.12. 1882 Painting by Edward Lamson Henry of the Butler factory

or entertainment until 1884 when William Kiel, the new plant superintendent, conceived of a company band and drum corps. to take away the monotony.⁹³ Concerts on the band stand, picnics, fairs, minstrel shows, and parades were held to bring the community closer together.

Kiel introduced manufacturing methods which created new products and new jobs.⁹⁴ Early in his superintendency, The East Water Company's development for the city of Newark decreased the company's water supply and compelled the installation of more steam power.⁹⁵ A new 500 H.P. Watts Campbell engine was installed in 1885, and the 175 foot brick chimney was constructed.⁹⁶ At this time the original factory housed in

the 200 by 50 feet wood frame building (Fig.13) was gradually replaced by modern



Fig.13. 1876 Rubber Comb and Jewelry Company

brick buildings erected by architect Marinus Houman of Pompton; the electric installation was made by Coho & Company; and Emery Burlison was in charge of the electric station.⁹⁷ Also at this time a sprinkler system was installed, two artesian wells were driven for drinking water, and kerosene lighting was replaced by electric. The factory, now built over in brick and running steadily, instilled a confidence in the businessmen of the community. Main Street began to build up more substantially. Many of the new workers joined the community around the factory, and increased its number to about a thousand people.⁹⁸

The town grew with the prosperity of the industry and Richard Butler bought a 72 acre farm for residential development for his workers.⁹⁹ By planning the locations and type of worker housing, as well as the roadways Richard Butler followed a pattern of expanded industrial influence akin to that which Kirk Boott did in Lowell. The streets were laid out and named after his family, associates and friends including Bartholdi, Hasbrouck, and Belleview Avenues, Mabey Lane, Pearl Place and others.¹⁰⁰ Bartholdi Avenue was named after Butler's friend, Auguste Bartholdi, the sculptor of the Statue of

Liberty, for which Butler was instrumental in raising funds.¹⁰¹ Gifford Street, pictured in the upper left hand corner of Fig.10, exists today as a good example of uniform worker housing (Fig.14). Approximately 75 years after Lowell was founded under a spirit of



Fig.14. Typical worker's house in Butler (circa 1890)

paternalism Richard Butler carried on the same concern by selling or renting homes to employees for reasonable costs, and donated land for churches and a school.¹⁰² Employees were able to rent small houses with five rooms at \$6 per month or at \$12 per month six room corner houses which were offered for sale in 1887 on an installment basis at \$800 and \$1200 respectively.¹⁰³ Most houses were quite humble and uniform, however some houses of a more grandiose style were built, yet upper-class examples are rare (Fig 15).¹⁰⁴ In the early 20th century, Gifford Street south of Kiel Avenue, was opened with bungalow-type houses, which was a strong departure from the more mundane style of worker houses on the earlier section of Gifford.¹⁰⁵ Robert Guter writes, "Residential architecture in Butler includes a representative collection of working-class and middle-

class housing dating from 1880-1915 - none of it remarkable, all of it typical of its period



Fig.15. Upperclass house in Butler (circa 1890)



Fig.16. Map of Butler, NJ in 1887

and historical milieu."¹⁰⁶ Labor rates per ten hour day were as follows: boys and girls in light factory work at 50 cents; men at \$1.25 to \$1.60; and women at 75 cents to \$1.00. He also donated land for a Catholic and Methodist church and a school.¹⁰⁷ Furthermore, in 1879, Howell and Noble of Morristown, large landowners in Butler (Fig 16), erected a

number of dwellings such as a large store, a public hall, a hotel, as well as laid out streets in what today is Main Street (Fig. 17).¹⁰⁸



Fig.17. Main Street early 1900s

The early American industrialist, such as Lowell, took great pains in their implementation of manufacturing to avoid the social and moral degradation that had so often accompanied industry as evidenced by England's earlier industrial revolution.¹⁰⁹ However, in the generation to come an ever increasing number of industrialist sacrificed the cost of paternalism in order to thwart competition. Eventually American industry's image also became tarnished. Richard Butler died in 1902 about a generation after Francis Cabot Lowell in 1817. He was more typical of the benevolent industrialist typified by Lowell than those of his day. They were both paternalistic industrialists who cared for their employees' well-being and had a good sense of community.

In 1898, general business conditions made it advisable for three rubber companies to consolidate as the American Hard Rubber Company.¹¹⁰ These three companies were: the India Rubber Comb Company of College Point, New York; the Butler Hard Rubber Company of Butler, New Jersey; and the Goodrich Hard Rubber Branch of Akron, Ohio. The officers of the new company were Fritz Achelis, President; Richard Butler, Vice

President; Edwin Belcher, Secretary (formerly secretary at Butler Hard Rubber Company); and W. W. Weitling, Treasurer.¹¹¹ William Kiel was made general superintendent of all the factories, and was also elected the first Mayor in 1901 by unanimous acclaim.¹¹² Paul Witteck, the superintendent at Butler factory, eventually succeeded Mr. Kiel as Mayor and held office until 1914.¹¹³ Frank J. Fritz and Augustine S. Guenter came from the factory into the office. George Maxfield was placed in charge of comb production.¹¹⁴ Through these collaborations the rubber industry itself greatly prospered. Up until 1895, there were only three universally accepted grades of hard rubber; high grade, standard material, and cheap grade. However, as specifications from customers came about, modifications of compounds increased rapidly and new compounds developed, so that by 1900 about seventy-five compounds were in use.¹¹⁵

The Butler Bank, founded in 1904, purchased the land from The American Hard Rubber Company for \$300 and was erected near the main entrance to the factory (Fig.18).¹¹⁶ Payroll no longer had to be shipped from New York. The bank was doubled in size in the 1920s, however it would unfortunately be demolished in the 1970s



Fig.18. First National Bank in the early 1900s and 1950

to satisfy the need for parking. F. G. Achelis rose to become president in 1924, two years before his death.¹¹⁷ Mr. E. S. Boyer succeeded him in 1926 as president, along with F. D. Henderson as vice president, and Harry Weida as general work manager.¹¹⁸

In 1929, the general business depression forced the American Hard Rubber Company to consolidate once more into one factory and the Butler facility was selected to survive.¹¹⁹ As a final move, the New York office abandoned its storage lofts and the shipping department was transferred to the Butler facility to serve the customer, thus eliminating the daily transportation of freight from Butler to New York.¹²⁰ This called for an extensive building program to enlarge and bring the factory up-to-date. All the preliminary architectural work was carried out under the direction of Mr. H. A. Cozzens, Jr. and his engineering staff, he was appointed the assistant to Superintendent Witteck in 1930 to carry out the reconstruction.¹²¹ In 1932, Mr. Witteck retired due to failing health, and Mr. Cozzens was appointed Superintendent over the now completed plant.¹²² The last group of officers at The American Hard Rubber Company before they moved were: Frank D. Hendrickson, President; Leslie Weeden, Vice President; Roland Reppert, Vice President; Alle Ottman, Vice President; Budd E. Pollak, Secretary; Edward W. Kane, Treasurer; and F. Gordon Winslow as Plant Manager.¹²³

Amerace, as it became known, fell on hard times when plastics came of age.¹²⁴ In 1957, a fire claimed the recently acquired Pequannock Reclaim plant and brought a settlement of 15 million which was used to form the Amerace conglomerate.¹²⁵ Modern facilities were purchased in the south and all rubber operations were moved from Butler by 1974.¹²⁶ The American Hard Rubber Company which had provided steady employment for more than 100 years left behind 400 unemployed people and 10.86 acres of abandoned

factory.¹²⁷ The factory was sold to Central Business District Capital Associates who stripped the place of nearly everything of value, then left town and ran up a debt of \$181,000 in back taxes.¹²⁸ This pillaging type of behavior by the factory's unscrupulous new owners was a truly disturbing turnabout in the history of both the town and factory itself. However, all hope was not lost. The property was acquired by the town for back taxes and sold in 1977 to Vicon Corporation of Lincoln Park, a heavy constructing contractor primarily concerned with the building of water and solid waste treatment plants for municipalities.¹²⁹ Vicon purchased the \$330,000 mortgage on the property, owed by the CBD Capital Co. of Newark to the Amerace Corp.¹³⁰

Vicon and the town had a mutual hope to benefit from Vicon's new acquisition. The advantages of this mill complex over others for Vicon was the location and the capability to house all their subsidiaries in one place (Fig.19).¹³¹ These are Bristol

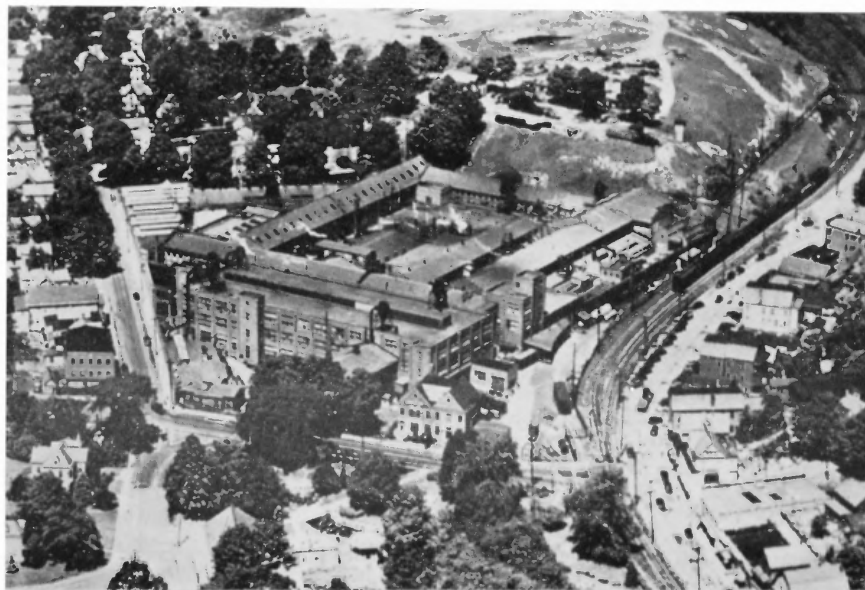


Fig.19. Aerial photo of Butler complex in 1948

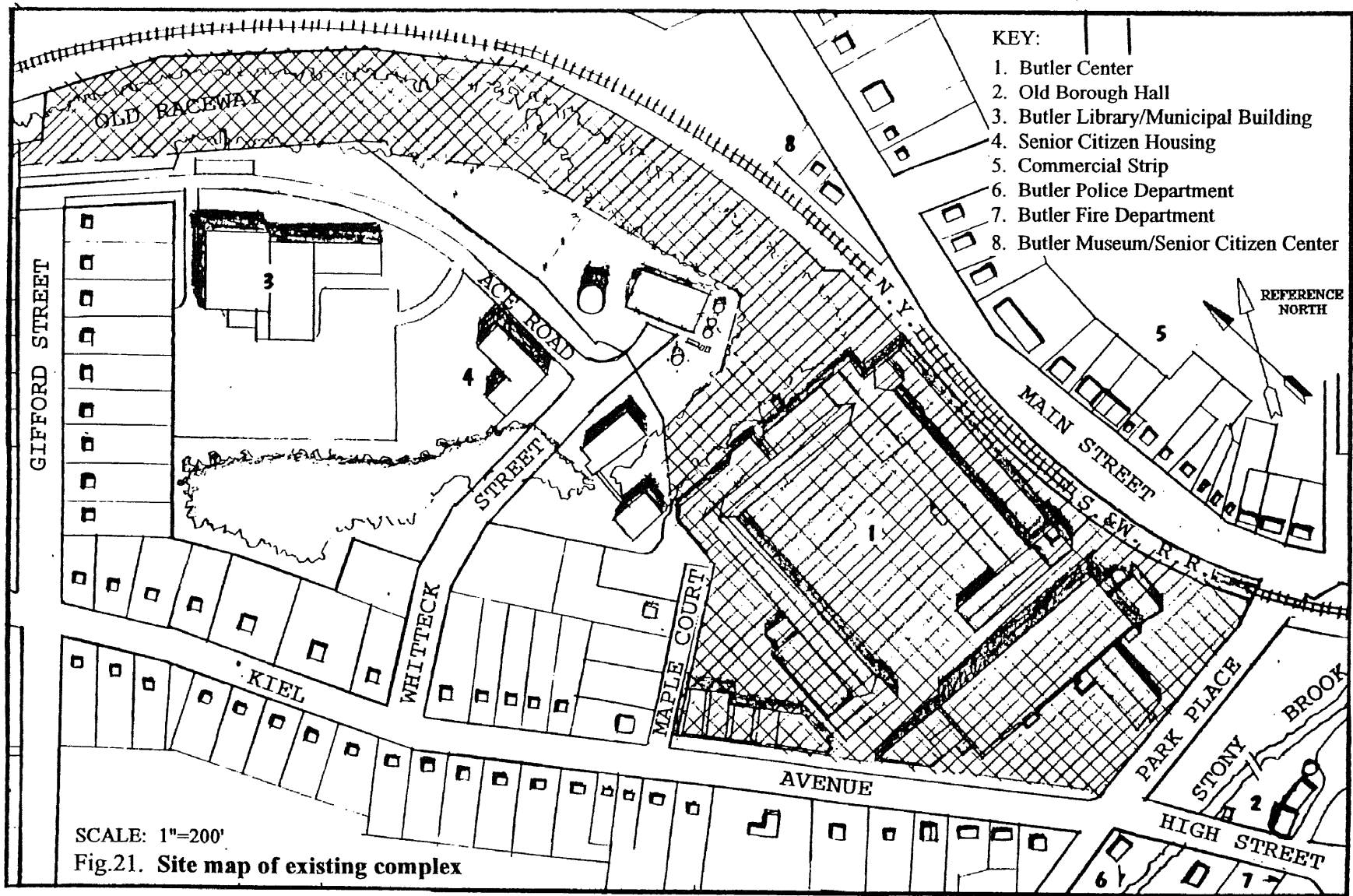
Industries, a structural steel fabricator and Lakewood Precast Concrete Company, specialists in the precasting of railroad crossings and other special structural shapes.¹³² Bristol Industries operated outdoors and had received complaints from area residents for some time about noise due to the lack of a buffer between the residential and industrial zone.¹³³ The problem with noise was resolved when the move was made indoors to Butler Center in 1980. Vicon's operations occupied 80 percent of the complex at this time.

The Economic Development Authority issued a \$2,000,000 bond which was purchased by The Royal Bank and Trust Company (the bond is tax-free to the lender), and Vicon committed \$2,000,000 of their own money.¹³⁴ Vicon's owners formed the Butler Center Associates to manage the newly purchased factory complex. The budget was exceeded, as is often the case with renovation projects, by about \$1,000,000.¹³⁵ The break-even point came in 1981 when the income met the expenses, however, loans are still being paid.¹³⁶

CHAPTER 5
SITE DESCRIPTION



Fig.20. Map of site in Butler, NJ



Today the site, which the American Hard Rubber Company established in the records of history, is known as Butler Center. This huge factory complex, consisting of ten existing brick buildings, occupies approximately 11 acres zoned for industrial use in downtown Butler. The site conditions are extremely restrictive. The buildings occupy a majority of the site, leaving little room for parking and vehicular circulation. Existing parking areas can accommodate approximately 250 cars. The site is bounded on three sides by streets; Kiel Avenue, Park Place, and Main Street. The earliest building faces the commercial strip of Main Street (Fig.22) to the east, separated by the New York Susquehanna & Western Railroad which is used infrequently for freight deliveries (Fig.23). To the south, Park Place runs between the complex and the community park which was conceived by William Kiel and rented to the town for \$1 a month. The old Borough Hall, the municipal building and the bandstand stand vacant in the park (Fig.24). The western edge of the complex is bounded by Kiel Avenue which runs into Route 23, a state highway, about a mile up the road. There is a steep embankment directly behind the complex to the north (Fig.25). The old raceway which was powered by the Pequannock River north of the complex, has been filled in, however, its path is still visible in the basement of the building aligning Main Street. Vehicular access to the site is by four entrances; two off of Kiel Avenue and two off of Park Place.



Fig.22. Commercial strip on Main Street



Fig.23. N.Y. S&W Railroad between complex and Main St.

PHOTOGRAPH BY JAMES H. HARRIS



Fig.24. Vacant Borough Hall and municipal building



Fig.25. Steep embankment to the north of Butler Center

CHAPTER 6

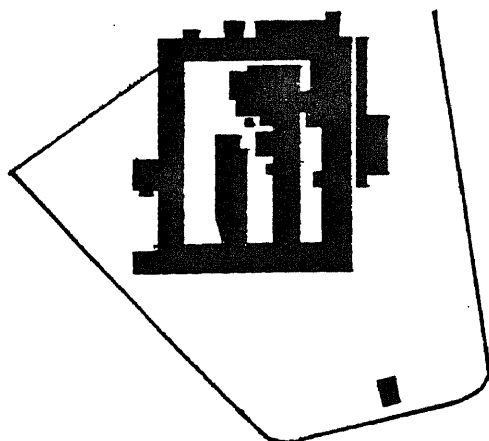
DESCRIPTION OF BUILDINGS

Although a century of housing the rubber industry has inevitably worn on the complex, it remains in fair to good condition. Steady growth can be seen in the construction chronology depicted in the Sanborn Insurance Atlases (Fig.26). The complex was at its construction peak between 1928 and 1949. The next phase was not one of construction, but rather one of demolition. In 1977, now under new ownership, Vicon removed three buildings from the center courtyard (building #1,4&5), one from the west wing (building #12) and partially demolished others (building #8&10) (Fig.27). Figure 28 depicts the facility in 1907 and is contrasted by Figure 29, the complex as it appears today. The architectural style of the remaining ten buildings is industrial vernacular with neoclassical and Romanesque motifs.¹³⁷

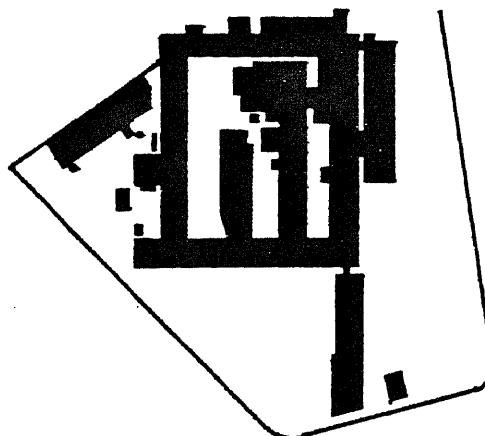
The east wing is the main factory block. It faces Main Street and consists of the following four brick buildings, the first three with flat roofs: a three-story square building including a four-story stair tower with a freight elevator; a two-story building 8 bays long with an arcaded facade; a one-story building (#13) with 30 shallow round arches and brick pilasters; and behind and adjacent to these buildings facing the courtyard is a two-story gabled building (#6). Building #6 is in the greatest disrepair due to the demolition of the adjoining structures. The mill race, now inactive, was channeled through the basement of building #13 (Fig.27).

The south wing consists of two gabled brick buildings which were partially demolished to gain vehicular accessibility to the center courtyard for parking. The building (#9) adjacent to the east wing is 9 bays long and has an arched entrance to the

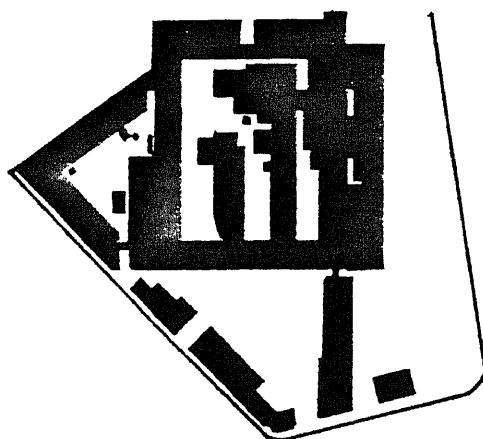
Fig.26. Sanborn Insurance Maps



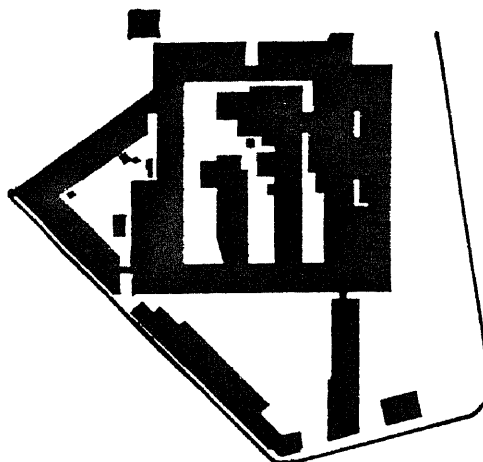
BUTLER CENTER 1905



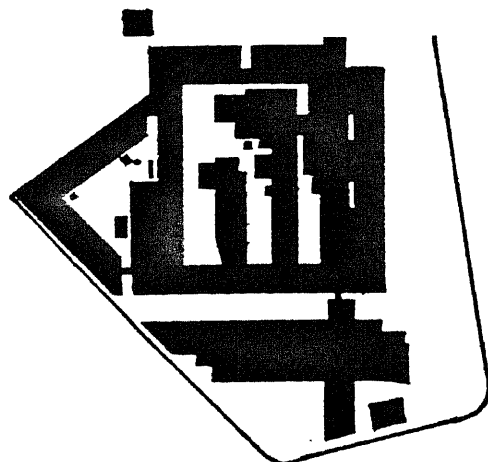
BUTLER CENTER 1911



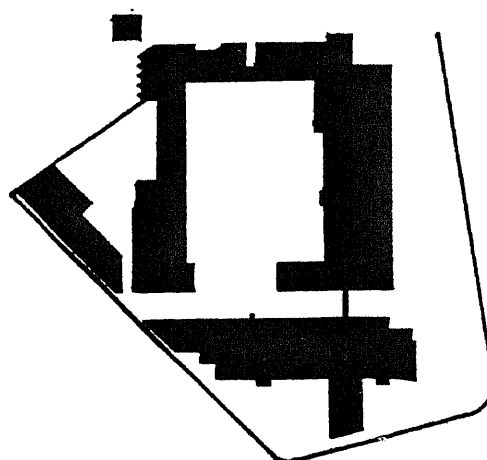
BUTLER CENTER 1920



BUTLER CENTER 1928

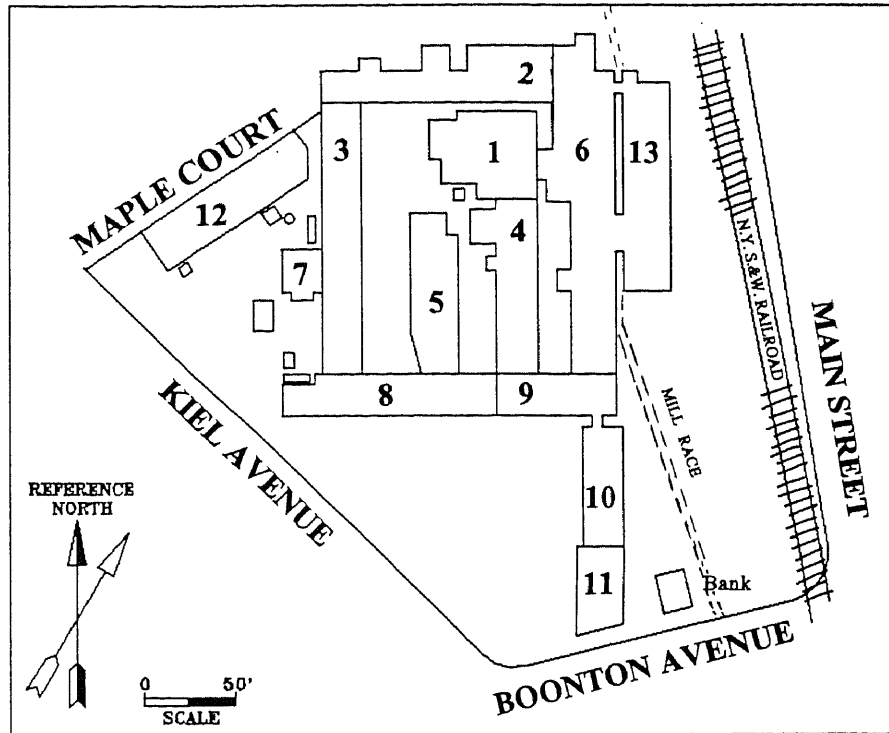


BUTLER CENTER 1928-1949

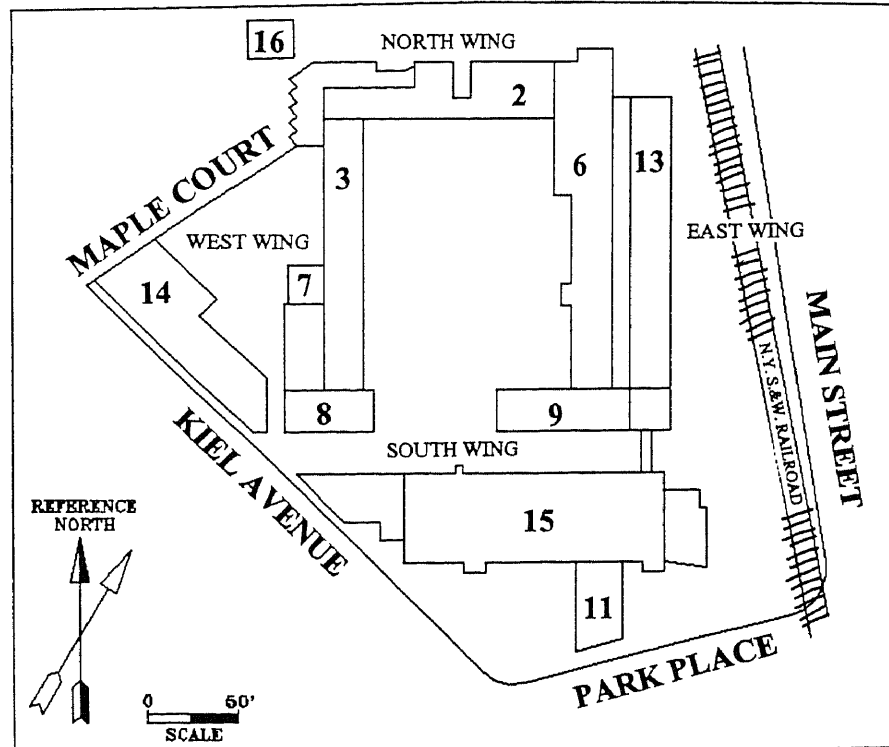


BUTLER CENTER 1976-PRESENT

Fig.27. Building Identification Maps



Building Identification Map 1907



Building Identification Map 1995

Missing Page

Missing Page

south. The other building (#8) adjacent to the west wing is 6 bays long and has an arched entrance on the west facade. A later three-story reinforced concrete structure clad in brick stands between the south wing and Park Place. This building (#15), 5 bays wide by 15 bays long, has a flat roof punctuated by a skylight the full length of it. Attached to the east is a tall one-story building with three large vehicle bays. Another tall one-story building is attached to the west side. It contains one vehicle bay and stretches to meet Kiel Avenue with a triangular piece of building. Building #15 is easily accessible having three stair towers, two passenger elevators, a freight elevator and a bridge connecting the third floor to the adjacent square building. Projecting from the front of building #15 toward Park Place is a two-story brick building (#11) 6 bays long.

The west wing comprises two buildings and additions. The two-story gabled, brick building (#3) which runs the length of this wing is 20 bays long with a drive through at the 11th bay. A small two-story brick building (#7) is perpendicular to this wing and a flat roofed structure is infilled between this and the south wing (building #8). Aligning Kiel Avenue is a one-story, brick, saw tooth building (#14) with boarded up, large skylights and blocked in windows.

The north wing (building #2) consists of a two-story gabled, brick building 14 bays long, a small two-story brick building with a gable roof perpendicular to the previous, and a one-story flat roofed structure. The loading dock wraps the corner of the north and west wings is accessed on the second floor off Maple Court due to the steep incline to the north. Directly behind the loading docks is a two-story brick building nestled into the steep hill.

Table 1. Description of Buildings

Building #1	
HISTORIC USE:	The Boiler House and Power House
Constructed	1885-1905
Dimensions	Boiler House 105'x62', Power House 88'x20'
First floor	Engine & Dynamo, Boilers and Pump; New Process & Tin Melting Rm
Floor	Boards on joists
Walls	Brick
Roof	Gable, boards on joists-wood trussed, slate
COMMENTS:	Demolished
Building #4	
HISTORIC USE:	The Sawing & Cutting Building and Ash House
Constructed	1902
Dimensions	177'x39', Ash House 29'x24'
First floor	Washing, Buffing and Cutting Room
Second floor	Sawing, Grinding and Drying Room
Floor	Plank on timber
Walls	Brick
Roof	Gable, plank on wood trusses, gravel
COMMENTS:	Demolished
Building #5	
HISTORIC USE:	The Setting Room
Dimensions	144'x55'
First floor	Setting Room, Smelting Room
Second floor	Blowing Room, Pistol Handle Room
Floor	Boards on joists
Walls	Brick
Roof	Gable, plank on wood trusses, gravel
COMMENTS:	Demolished
Building #10	
HISTORIC USE:	
Constructed	1905
Dimensions	118'x41'
First floor	Miscellaneous, Pasteboard, Lumber & Car Tracks Storage
Second floor	Paper Box Shop
Floor	Plank on timber
Walls	Brick
Roof	Gable, boards on joists-wood trussed, slate
COMMENTS:	Demolished
Building #12	
HISTORIC USE:	The New Process Building
Constructed	1905
Dimensions	160'-142'x51'
First floor	Dust Press Room, Dress Bone Storage, Soapstone Room
Floor	Plank on timber
Walls	Brick
Roof	Gable, boards on joists-wood trussed, slate
COMMENTS:	Demolished



Fig.30. Building #2, south facade

Dimensions: 196'x30'
 32'x33'
 102'x32'

Floor areas: First floor- 10,200 sf
 Second floor- 6,936 sf
 17,136 sf

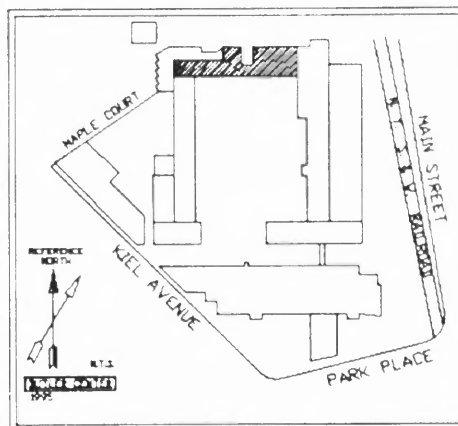


Table 2. Building #2

HISTORIC USE:	The Blowing & Vulcanizing Department
Constructed	1887
First floor	Vulcanizing Room, Pistol Handle Room, Moulding Room
Second floor	Blowing Room, Pistol Handle Room
Floor	Boards on joists
Walls	Brick
Windows	Multi-paned industrial sash
Foundation	Stone
Roof	Gable, boards on joists-wood trussed, slate
PRESENT USE:	
First floor	Light industrial/Office
Second floor	
Floor	4" covering of lightweight concrete
Windows	Infilled with smaller modern sash and/or block and brick
Roof	Asphalt shingles
PROPOSED USE:	
First floor	Commercial
Second floor	Office/Professional
Windows	Restored/duplicated to original multi-paned industrial sash
COMMENTS:	



Fig.31. Building #3, east facade

Dimensions: 302'x39'

Floor areas: First floor- 11,778 sf
 Second floor- 11,298 sf
 23,076 sf

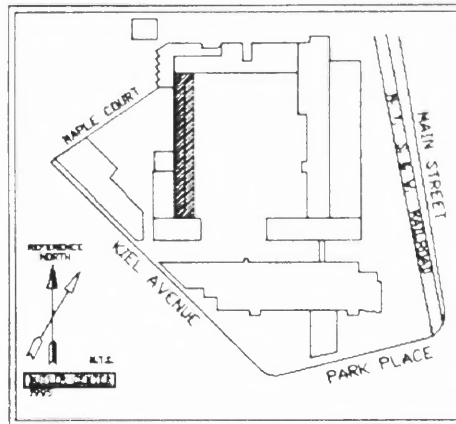


Table 3. Building #3

HISTORIC USE:	The Sundry Department
Constructed	1887
First floor	Vulcanizing Rm., Engine, Machine Shop, Smithy, Drive, Die Storage and Buffing and Scraping Room
Second floor	Turning Rooms and Polishing Room
Floor	Boards on joists
Walls	Brick
Windows	Multi-paned industrial sash
Foundation	Stone
Roof	Gable, boards on joists-wood trussed, slate w/23 skylights each side
PRESENT USE:	
First floor	Light industrial/Office
Second floor	
Floor	4" covering of lightweight concrete
Windows	Infilled with smaller modern sash and/or block and brick
Roof	Asphalt shingles
PROPOSED USE:	
First floor	Commercial
Second floor	Office/Professional
Windows	Restored/duplicated to original multi-paned industrial sash
COMMENTS:	



Fig.32. Building #6, west facade

Dimensions: 133'x57'
213'x40'
213'x19'

Floor areas: First floor- 20,148 sf
Second floor- 16,101 sf
36,249 sf

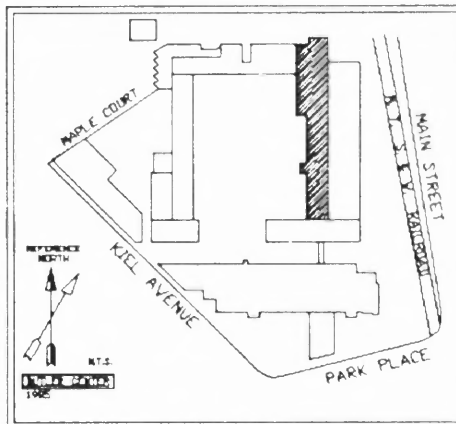


Table 4. Building #6

HISTORIC USE:	The Stock, Polishing & Packing Department
Constructed	1887
First floor	Stock Department, Mixing Room, Engine Room, Tin Rolls, Rubber Washing, Stock Department, Drying Platform and Shipping
Second floor	Polishing Room, Stamping Room, Packing Room and Stock Room
Floor	Boards on joists
Walls	Brick
Windows	Multi-paned industrial sash
Foundation	Stone
Roof	Gable, plank on wood truss, gravel
PRESENT USE:	
First floor	Light industrial
Second floor	light industrial/Storage/Vacancy
Floor	4" covering of lightweight concrete
Windows	Infilled w/smaller modern sash and/or block, brick and board
Roof	Asphalt shingles
PROPOSED USE:	
First floor	Commercial
Second floor	Office/Professional
Windows	Restored/duplicated to original multi-paned industrial sash
COMMENTS:	in the greatest state of disrepair, attached building was demolished



Fig.33. Building #7, west facade

Dimensions: 16'x31'

Floor areas: First floor- 496 sf
 Second floor- 496 sf
 992 sf

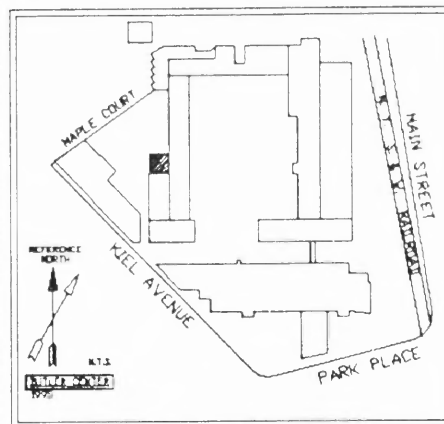


Table 5. Building #7

HISTORIC USE:	Iron Store House
Constructed	1904
First floor	Iron Storage
Second floor	Atomizer Room
Floor	Plank on Timber
Walls	Brick
Windows	Multi-paned industrial sash
Foundation	Stone
Roof	Gable, plank on wood truss, gravel
PRESENT USE:	
First floor	Light industrial/Office
Second floor	
Floor	4" covering of lightweight concrete
Windows	Infilled with smaller modern sash and/or block and brick
Roof	Asphalt shingles
PROPOSED USE:	
First floor	Commercial
Second floor	Office/Professional
Windows	Restored/duplicated to original multi-paned industrial sash
COMMENTS:	



Fig.34. Building #8, south facade

Dimensions: 90'x40'

Floor areas: First floor- 3,600 sf
 Second floor- 3,600 sf
 7,200 sf

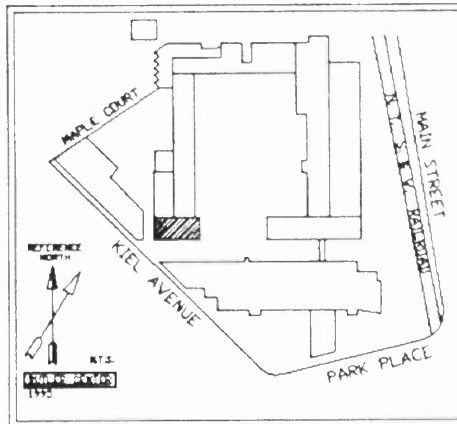


Table 6. Building #8

HISTORIC USE:	The Sundry, Packing & Shipping Department
Constructed	1803
First floor	Shipping, Tumbling, Storage and Drive
Second floor	Packing, Paper Box Storage and Box Making
Floor	Plank on timber
Walls	Brick
Windows	Multi-paned industrial sash
Foundation	Stone
Roof	Gable, plank on wood truss, gravel
PRESENT USE:	
First floor	Light industrial
Second floor	Light industrial/Office
Floor	4' covering of lightweight concrete
Windows	Infilled with smaller modern sash and/or block and brick
Roof	Asphalt shingles
PROPOSED USE:	
First floor	Butler Center Day Care
Second floor	Butler Center Day Care
Windows	Restored/duplicated to original multi-paned industrial sash
COMMENTS:	



Fig.35. Building #9, west facade

Dimensions: 135'x40'

Floor areas: First floor- 5,400 sf
 Second floor- 5,400 sf
 Third floor- 1,600 sf
 Fourth floor- 400 sf
 12,800 sf

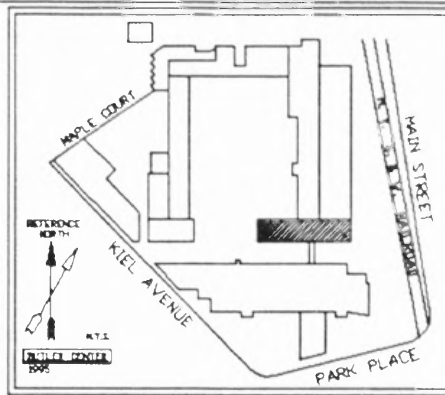


Table 7. Building #9

HISTORIC USE:	The Office Building
Constructed	1903
Basement	Hard Rubber Scrap Storage and Crude Rubber Storage
First floor	Office, Lunch Room and Storage of goods
Second floor	Packing, Box Making and Paper Box Storage
Floor	Plank on timber
Walls	Brick
Windows	Multi-paned industrial sash
Foundation	Stone
Roof	Gable, plank on wood truss, gravel
PRESENT USE:	
Basement	Storage
First floor	Light industrial/Office
Second floor	
Floor	4" covering of lightweight concrete
Windows	Infilled with smaller modern sash and/or block and brick
Roof	Asphalt shingles
PROPOSED USE:	
Basement	Storage
First floor	Commercial
Second floor	Office/Professional
Windows	Restored/duplicated to original multi-paned industrial sash
COMMENTS:	



Fig.36. Building #11, south facade

Dimensions: 93'-82'x51'

Floor areas: First floor- 4,463 sf
 Mezzanine- 4,463 sf
 Second floor- 4,463 sf
 13,389 sf

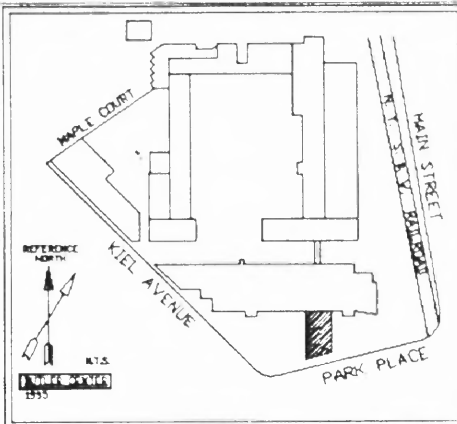


Table 8. Building #11

HISTORIC USE:	
Constructed	1905
First floor	Carpenter Shop and Pattern Room
Second floor	Paper Box Shop
Floor	Plank on timber
Walls	Brick
Windows	Multi-paned industrial sash
Foundation	Stone
Roof	Gable, plank on wood truss, gravel
PRESENT USE:	
First floor	Office
Mezzanine	Office
Second floor	Office
Floor	4" covering of lightweight concrete
Windows	Infilled with smaller modern sash and/or block and brick
Roof	Asphalt shingles
PROPOSED USE:	
First floor	Butler Library
Mezzanine	Butler Library
Second floor	Museum of Morris County Towns
Windows	Restored/duplicated to original multi-paned industrial sash
COMMENTS:	



Fig.37. Building #13, east facade

Dimensions: 210'x22'

Floor areas: First floor- 4,620 sf

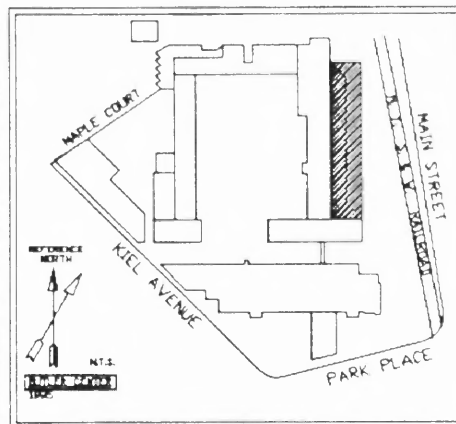


Table 9. Building #13

HISTORIC USE:	Dust Cleaning & Crude Rubber Store House
Constructed	1906-1907
Basement	Race and Storage
First floor	Dust Cleaning & Crude Rubber Storage
Floor	Non-combustible
Walls	Brick
Windows	Multi-paned industrial sash
Foundation	Stone
Roof	Flat, plank on timber, gravel
PRESENT USE:	
Basement	Storage
First floor	Light industrial/Office
Floor	4" covering of lightweight concrete
Windows	Infilled with smaller modern sash and/or block and brick
Roof	Asphalt shingles
PROPOSED USE:	
Basement	Storage
First floor	Commercial
Windows	Restored/duplicated to original multi-paned industrial sash
COMMENTS:	Bricked-in Arcade will be opened



Fig.38. Building #14, south facade

Dimensions: 65'x65'
140'-100'x50'

Floor areas: First floor 10,225 sf

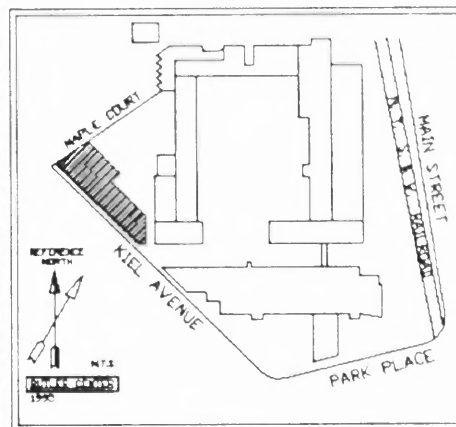


Table 10. Building #14

HISTORIC USE:	
Constructed	1928-49
First floor	Industrial
Floor	Concrete slab
Walls	Brick
Windows	Multi-paned industrial sash
Roof	Saw tooth, metal truss, large skylight
PRESENT USE:	
First floor	Light industrial
Floor	Concrete slab
Windows	Infilled with block
Roof	Asphalt shingles, skylights infilled w/board
PROPOSED USE:	
First floor	Artists' Studios/Artisans' Shops
Windows	Duplicate original sash found elsewhere in complex & restore skylights
COMMENTS:	



Fig.39. Building #15, south facade

Dimensions: 110'-60'x55'
 270'x90'
 60'x40'
 35'x20'

Floor areas: First floor- 32,075 sf
 Second floor- 24,300 sf
 Third floor- 24,300 sf
 80,675 sf

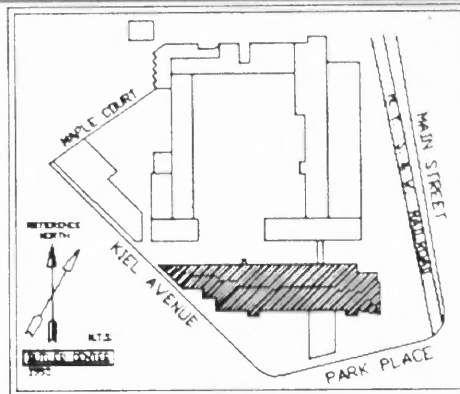


Table 11. Building #15

HISTORIC USE:	
Constructed	1928-49
First floor	Industrial and related uses
Second floor	Industrial and related uses
Third floor	Industrial and related uses
Floor	Precast concrete
Walls	Brick
Windows	Multi-paned industrial sash
Foundation	Concrete
Roof	Flat, tarred
PRESENT USE:	
First floor	Light industrial/Office
Second floor	Light industrial/Office
Third floor	Office
Floor	Precast concrete
Windows	Infilled with modern sash and/or block and brick
Roof	Flat, tarred, skylight full length of building
PROPOSED USE:	
First floor	Municipal Building and Police Department
Second floor	Health and Fitness Center
Third floor	Restaurant and Banquet Hall
Windows	Restored/duplicated to original multi-paned industrial sash
COMMENTS:	



Fig.40. Building #16, south facade

Dimensions: 44'x53'

Floor areas: First floor- 2,332sf
 Second floor- 2,332sf
 4,664sf

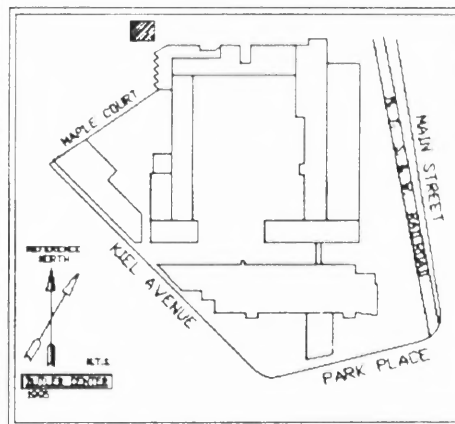


Table 12. Building #16

HISTORIC USE:	
Constructed	1920
First floor	Office & Laboratories
Second floor	Laboratories & Storage of office records
Walls	Brick
Roof	Flat, gravel
PRESENT USE:	
First floor	None
Second floor	None
Windows	Infilled with modern sash and/or board
Roof	Flat, tarred
PROPOSED USE:	
First floor	Open air Passage/Information desk
Second floor	Welcome Center
Windows	To match the restored/duplicated multi-paned industrial sash
COMMENTS:	

The majority of the buildings are typical bearing wall mill construction of brick three to four courses thick, timber posts and wood trusses. Building #8, truncated in the renovation process (Fig.41), partially exposes the building's section (Fig.42). The later



Fig.41. East facade of building #8

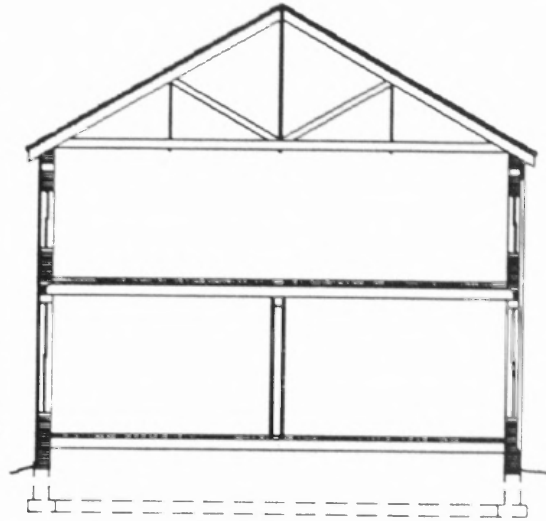


Fig.42. Section of building #8

1930s building is the exception; constructed in reinforced concrete and clad in brick. All buildings have been modernized with new gas fired and electric heat and air, plumbing and electric. The factory uses public water and sewer.

Stepped parapets, corbeled brick pediments and window heads are common treatments on the gable facades. Roofs are typically constructed of plank on wood trusses or plank on timber for flat roofs. A few older structures, since demolished, had board on joists, wood trussed. The slate, gable roof punctuated with a string of skylights of old has been covered up with asphalt shingles. The original gravel roofs had long been replaced by tar. The stone foundation, concealed in most places by paving, can be seen in the stone retaining wall to the north (Fig 43). Floors are typically 2"x6" plank, tongue-in-groove joinery on timber (Fig 44). The current owners covered the floors with 4" of lightweight concrete for durability and easier maintenance. There are several remaining windows



Fig.43. Retaining wall to the north of Butler Center



Fig.44. Exposed structure of building #8



Fig.45. Infilled windows, east facade building #3



Fig.46. Contrast of old and new windows

which are original, from the time of renovation, scattered throughout the complex. These are either double hung or awning windows with multipaned industrial sash. However, the majority of window openings have been filled in with either block, brick, modern sash, or in a few cases board (Fig.45). The windows were replaced only when needed. This is clearly evident by the sharp contrast between the adjacent old and new windows (Fig.46).



Fig.47. Star-motif tie rods and dressed sills and lintels



Fig.48. Wall washing caused by defective downspouts

Dressed stone sills and lintels have been replaced by concrete in some areas.

The brick, set in a common bond pattern with a 6th course header, is four courses thick and held together by star-motif tie rods (Fig.47). Several areas are suffering from spawling and efflorescence. A major cause of this deterioration is defective downspouts (Fig.48), which allow rain water to wash the wall and erode the mortar. Interior brick walls

were once painted white which is evident on the exterior where adjoining buildings have been removed (Fig 41). The main gabled wings are supported with wood and steel rod trusses (Fig.49). The heavy timber posts and beams have been reinforced where stress to the members was evident (Fig.50).



Fig.49. Wood truss roof structure



Fig.50. Reinforced heavy timber post and beam structure

CHAPTER 7

THE ADAPTIVE REUSE OF THE COMPLEX

Adaptive reuse will not work without rigorous feasibility studies. Vicon Construction Company's attempt at rehabilitating the complex has been said to have ranged from a failure to a success story. The townspeople uphold Vicon as a saviour, who came and gave a dead complex new life. However, some critics find the effort to lack the authenticity of a true adaptive reuse endeavor. Vicon was prepared to invest several million dollars to renovate this huge complex which included the replacement of windows, roof repair, installation of insulation, as well as the demolition of several buildings in an attempt to satisfy the need for parking.¹³⁸ Overall, the driving motive behind the acquisition of this complex was a need for industrial space.

According to Clyde McBride, President of Butler Associates, Vicon needed Butler as much as Butler needed Vicon.¹³⁹ The construction company was in dire need of moving its noisy outdoor operations from Lincoln Park, where many complaints were received, indoors to Butler. Unaware of the solutions available to them, as exemplified at Lowell, the town strictly looked to outside investors to fulfill their expectations. Although Vicon's vision did not match that of the town's, Butler believed it was the only solution available to them at that time. Once renovated in 1981, the space was leased to a variety of firms at \$4 to \$7 a square foot and generated \$45,000 a year in property taxes to the borough. This made Vicon the largest taxpayer at that time. Rents have escalated to \$10-\$16 a square foot and property taxes to \$186,000 in 1993.¹⁴⁰ Good tax revenues are far better than no tax revenues, therefore the town has been generally pleased with the change Vicon has brought about, yet they have never realized the center's full potential.

Originally Vicon's goal was to house all its subsidiaries, including Bristol Industries and Lakewood Precast Concrete Company, all in one place. Their operations occupied 80% of the complex and the unused space was rented to several small, light industrial companies. The owners repaired or replaced what was necessary in order to start up their operations. They were both eager and enthusiastic to make the move to Butler. However, even after the initial restoration effort many windows which were bricked, blocked or boarded up still remained this way due to a squeeze on funds. One of the products vital to the success of this endeavor, concrete railroad crossing pads (Fig.51), were not as popular as expected and the companies ceased operations in 1981.

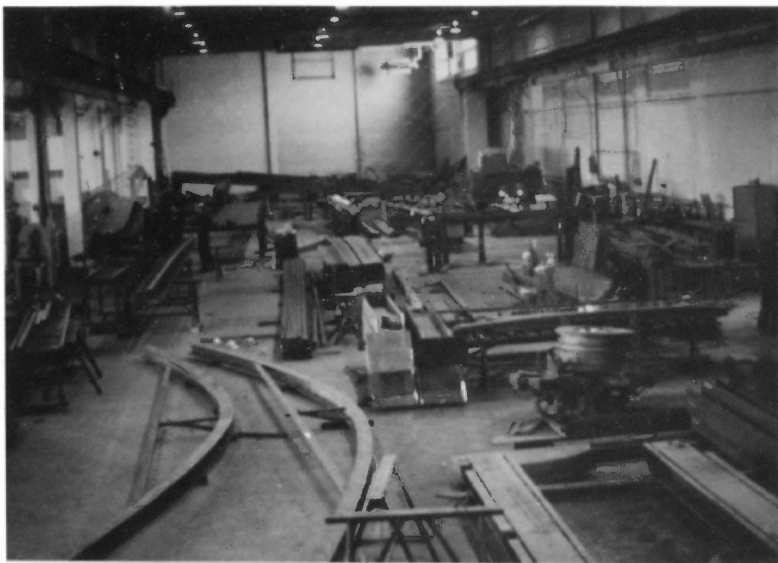


Fig.51. Fabrication of concrete crossing pads

Therefore, the complex became strictly a rental property, and Vicon created the Butler Center Associates to act as landlords. The present uses include light industry and office space including the office of the newly installed management.

Selective demolition was employed in reusing this historic resource. This is when

the owner decides the complex is too large to be rehabilitated and as part of the renovation plans, proposes some buildings be demolished.¹⁴¹ This method of rehabilitation is justified in some cases. Such as when a complex has grown over time and the later buildings do not contribute to the overall significance of the property. The removal of such buildings can enhance the historic resource. In addition, even buildings which are contributors can be removed if the character of the site is not altered. Vicon partially used this principle as several older buildings were razed in the center of the complex to provide room for parking. This aerial photo was taken around 1977 before any buildings were demolished (Fig.52). This decision added clarity to the architectural form. These

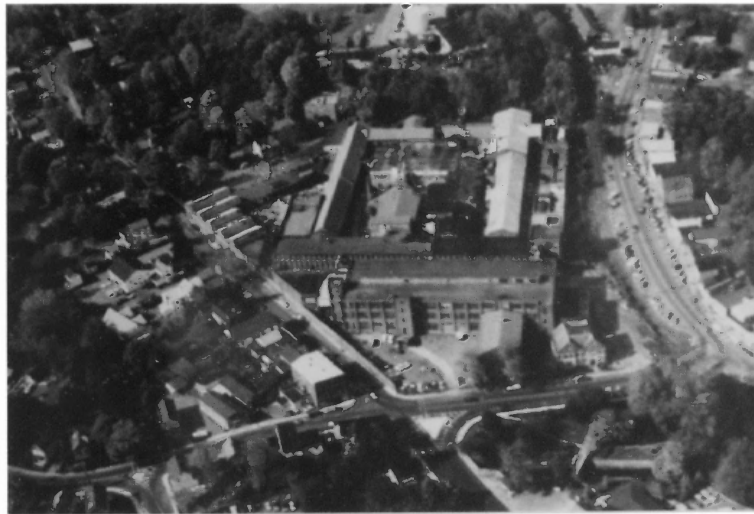


Fig.52. Aerial view of complex around 1977

buildings were not visible from the road and no loss was suffered to the overall character of the complex from their removal. This photo (Fig. 53) was taken during the demolition of several buildings including those seen in the center courtyard.



Fig. 53. Butler complex during demolition

In 1981, it was time for Vicon to open up for business. Canopies over the doors and signage appeared sporadically throughout the complex as new businesses arrived. Space was subdivided according to need. Little forethought could be given to the overall organization of the complex since it was rapidly transforming. Although Vicon's work was not a model adaptive reuse project its efforts were hardly in vain. Today the complex is the largest and best preserved factory in Morris County dating from the end of the 19th century and the beginning of the 20th, and was added to the historic sites inventory in 1986, recorded by Robert Guter.¹⁴² However, at the time of the renovation it was not yet recorded, and no guidelines were followed for restoration. Guter writes, "Some inappropriate alterations have been made although integrity is still good. The present adaptive uses appear to be keeping this huge complex in productive use, although shifts in

the overall economic picture might endanger its continued viability. A long range master plan is desirable." It is clear that the town and Vicon became aware of the factory's historical value as an afterthought.

CHAPTER 8

PROPOSED MASTER PLAN

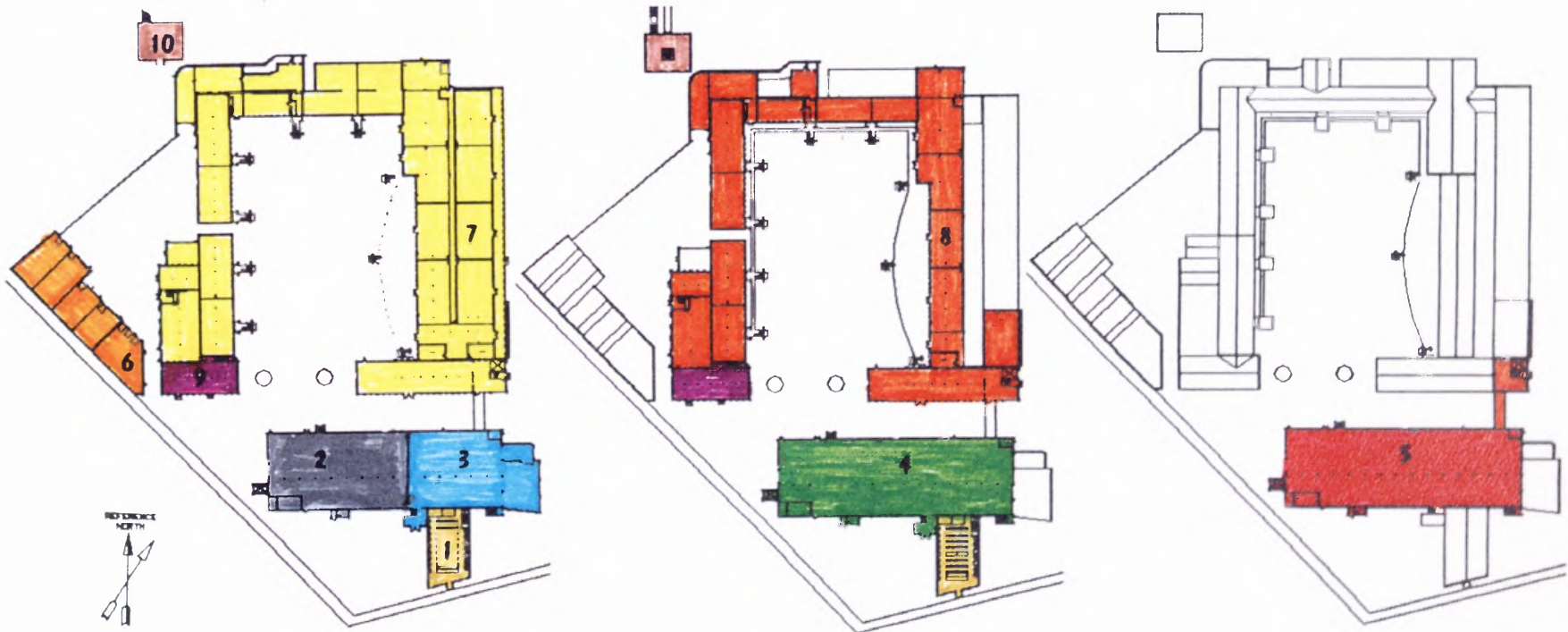
Several ideas for the renovation of the downtown area had been proposed in the five years that the mill complex was vacant. "Some planners envisioned a senior citizen housing complex including small shops and a public library. Another proposal had the complex incorporating additional borough offices, a fire department garage, and a new police headquarters."¹⁴³ Another suggestion from local businessmen was to see an arcade of small specialty shops which would face others like it on Main Street. The second and third floors of the complex could be devoted to offices or apartments or both.¹⁴⁴ However, surveyors could not justify the needs with the expense. Although Vicon's plans did not exactly match the town's hopes, it was the only practical solution available to them.¹⁴⁵

Butler Center has tremendous potential to become a prime example of adaptive reuse principles. Currently the facility is occupied by either light industrial or office type tenants. This composition, although renting about 80 % of the space, is too narrow to support considerable changes in the economy. The main intent of my proposed master plan is to diversify the range of uses of the complex thereby increasing its viability, and to architecturally unify the appearance of the complex. The need to vary the range of uses for the complex is justified in that it will create a broader foundation of financial support for the complete restoration of this historical building.

Derived from site analysis and feasibility study, the master plan includes the following program suggestions to create a diversity of purpose for Butler Center. The program is as follows (Fig.54): 1. The Butler Library/ The Museum of Morris County Towns; 2. The

Fig.54. Master Plan, Floor plans

SCALE: 1"=200'













FIRST FLOOR

SECOND FLOOR

THIRD FLOOR

KEY:

- | | |
|---|---|
|  1. The Butler Library/The Museum of Morris County Towns |  6. Artists' Studios/Artisan Shoppes |
|  2. The Municipal Building |  7. Commercial Spaces |
|  3. The Butler Police Department |  8. Business/Professional Offices |
|  4. Health and Fitness Center |  9. Butler Center Day Care |
|  5. Restaurant/Banquet Hall |  10. Welcome Center |

Municipal Building; 3. The Butler Police Department; 4. Health and Fitness Center; 5. Restaurant/ Banquet Hall; 6. Artists' Studios/ Artisan Shoppes; 7. Commercial spaces (first floor); 8. Business or Professional Offices (second floor); 9. Butler Day Care Center and 10. the Welcome Center. Furthermore, the program calls for a large, stone-paved courtyard in the center of the complex adjacent to a smaller court that will include landscaping, fountains and benches to enable a more thorough enjoyment of Butler Center (Fig.55). The courtyard is the dynamic element in this scheme, however

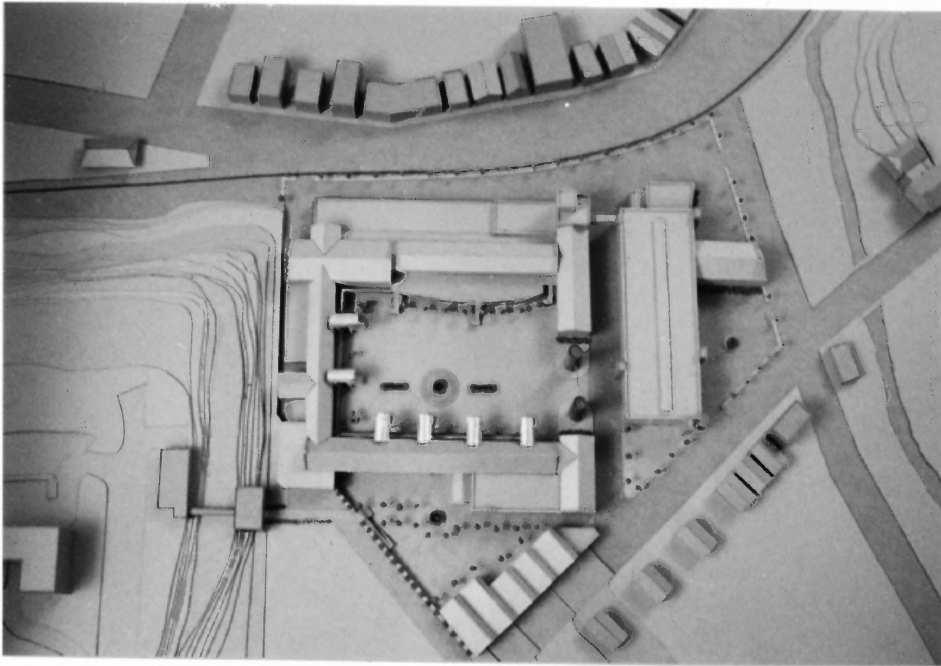
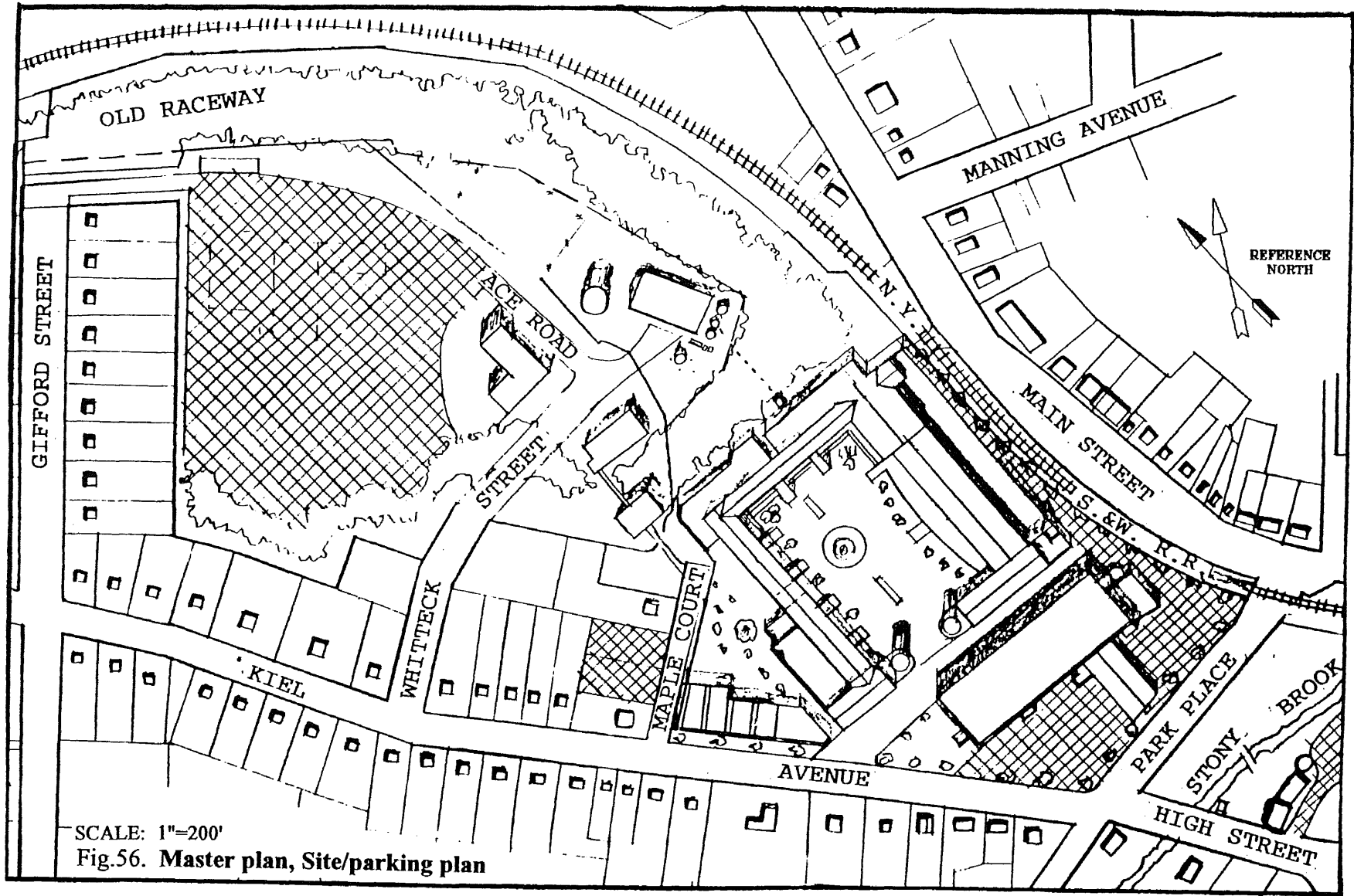


Fig.55. Model view of courtyard

approximately 100 parking spaces were eliminated from the center in order to achieve this end. Approximately 650 parking spaces in the vicinity can be utilized provided an agreement can be reached with the town. The main parking lot will be located directly north and adjacent to the facility on top of a knoll (Fig.56). Patrons will be encouraged to take public transportation. Park and ride services are available and New Jersey Transit presently has scheduled stops at the corner of High Street and Park Place. The success of



SCALE: 1"=200'

Fig.56. Master plan, Site/parking plan

the center could inspire passenger service to be reinstated on the N.Y. S.&W. Railroad line, thereby making the center even more accessible and reducing the need for parking.

The chief goal of my master plan is to transform this historic factory from an industrial center into a commercial and civic center. The location of the complex at Butler's center, and its historic presence makes it an ideal setting for public buildings such as the police department, municipal building, library, and museum. The other spaces will be rented for commercial sales such as outlet stores and business or professional offices. The combining of both commercial outlet and civic uses will help stabilize the financial security of Butler Center. While the program does create a variety of uses for the space most of it is reserved for commercial/ retail sales.

A careful feasibility study was conducted to evaluate the program of the master plan. It takes into consideration critical components of a successful real estate venture. First, the site at Lowell, Massachusetts was examined in order to understand how Butler Center might benefit by its successful adaptive reuse campaign. Lowell is largely a success because of the diversity of uses for its many historic buildings. The hallmark of Lowell's rebirth is the cooperation between a wide range of people in the public and private sectors.

As a result, its rebirth reflected the needs and interests of a diverse group of people. Lowell can be cited as a success for various reasons. The efforts there have restored many historic buildings back to their original character. However, for the majority of building projects to be viable successes they must go do something more than produce a useable building whether it is historic or not. That something is the generation of cash flow. A common problem of real estate development which inevitably leads to failure is the lack of cash flow.¹⁴⁶ Lowell's adaptive re use program has been successful at generating cash

flow and creating a healthy economic environment. The city began to reap this reward in 1985 when it boasted a 2.8 percent unemployment rate (fifth lowest in the nation at that time), and property taxes were at pre-1969 levels.¹⁴⁷

The city's historic buildings contain a diverse program of uses in which the city as a whole is unified visually and functionally by the careful adaptive reuse performed there. This broad range of uses keeps many people coming to it, and that translates into cash flow. This key factor is what will greatly benefit the site at Butler. This requires that the building program for Butler Center be a thoughtfully constructed scaled down version of Lowell. The city of Lowell proves diversity is key to cash flow and therefore success.

A second component to the feasibility study is location analysis. A good location is the cornerstone to a successful real estate project.¹⁴⁸ To determine whether a location will support a particular project certain factors such as an area's economic base, demographics, and physical setting need to be examined.¹⁴⁹

The site at Butler is located in the center of a town of approximately 7,414 people.¹⁵⁰ Furthermore, 98 % of its populace is white with a median age of 34 years.¹⁵¹ The poverty rate is a very low 2.3 % which is even below that of the affluent Morris County in which it resides.¹⁵² These demographics reflect some interesting economic developments that support a retail component for the site which my master plan proscribes.

America for so long has identified with youth, yet most people can not fully comprehend that today's median age is 33 and rising quickly to 40.¹⁵³ Table 13 shows the socio-economic standing of both Butler and its surrounding municipalities. Already the average median age of Butler's immediate landscape is 36 years. This is three years above the Nation's median age. This aging trend indicates an ever increasing rise in the

SOCIO-ECONOMIC DATA FOR BUTLER AND SURROUNDING MUNICIPALITIES

MUNICIPALITY	MEDIAN AGE	PERCENT 65 and OVER	PERCENT IN POVERTY	MEDIAN FAMILY INCOME	PER CAPITA INCOME
Butler	34	10	2.5	55,272	18,806
Bloomington	34	9	2.2	53,245	19,779
Kinnelon	38	8	2.8	79,738	34,881
Montville	37	9	.8	78,445	29,785
Pequannock	36	12	1.4	61,121	20,888
Pompton Lakes	36	14	2.1	54,145	19,283
Ringwood	34	6	1.7	62,410	22,273
Wayne	38	13	2.9	64,933	25,131
WestMilford	33	7	4.6	55,460	19,233
AVERAGE	36	10	2.3	62,752	23,340
Morris County	35	11	2.7	62,749	25,177

SOURCE: The New Jersey Municipal Data Book, 1994.

Table 13. Socio-economic data for Butler and surrounding municipalities

discretionary income in the Butler area.

Baby boomers were born between 1946 and 1964, so the earliest of them will turn 50 in 1996.¹⁵⁴ During the 1990s half the United States will be over 35 years, and three-fourths of that group will be between 35 and 64 years.¹⁵⁵ According to American Demographics Magazine the 60 million Americans 50 and over have one-half the discretionary income in the country.¹⁵⁶ This group purchases almost half the luxury cars, owns half the health club memberships, and does most of the leisure traveling.¹⁵⁷ Furthermore, in the 1990s the over 50 age group will grow by 18.5 % whereas the under 50 age group will only increase by 3.5 %.¹⁵⁸ A windfall situation exists for Butler Center. Directly behind the facility, within easy walking distance is the Butler Senior Citizens Home. Approximately 100 potential patrons live there. My master plan calls for the complex to be thoughtfully designed to make shopping attractive and enjoyable for the aging population by including things such as directories with large lettering and being conscientious about security. Since the Butler area is already ahead of the median national age and the flood of baby boomers entering their 50s is just starting, the retail component of my master plan puts Butler Center in a successful position to generate cash flow.

Further socio-economic considerations reveal strong evidence to support the commercial side of the facility. Table 14 shows the buying power potential of Butler and its surrounding area. This area has a robust \$62,752 median family income, as well as a healthy per capita income which rivals that of Morris County. In fact, the facility is situated in an area that is notable for its buying power. Table 14 clearly indicates that out of New Jersey's 21 counties Morris County ranks fifth in buying power. Moreover, Butler is economically well placed in the larger community. The Center is within only 15

RANKING OF EFFECTIVE BUYING INCOME FOR NEW JERSEY COUNTIES

COUNTY	EFFECTIVE BUYING INCOME 1993 (\$1,000)	COUNTY RANK
Atlantic	3,749,144	15
Bergen	20,777,578	1
Burlington	7,779,400	12
Camden	9,765,815	8
Cape May	1,772,579	20
Cumberland	2,095,646	18
Essex	15,830,155	3
Gloucester	4,439,436	14
Hudson	9,989,585	7
Hunterdon	3,319,668	16
Mercer	7,724,849	13
Middlesex	15,852,948	2
Monmouth	14,323,701	4
Morris	12,494,272	5
Ocean	8,375,049	10
Passaic	8,606,918	9
Salem	1,167,775	21
Somerset	8,356,466	11
Sussex	3,067,099	17
Union	11,735,223	6
Warren	1,780,607	19

SOURCE: Principal Business Center Data, 1993.

Table 14. Ranking of effective buying income for New Jersey counties

miles of affluent Bergen County (ranked first), and within only 20 miles of Essex County (ranked third).

The next factor in location analysis is the study of the site's position in regards to major roadways. Butler is conveniently located near two major highways. The first is Route 23 which runs north and south, and is only one mile away thereby enabling easy access to the facility. The second one is the recently completed portion of Route 287. This highway opens up a new market north and south of the facility. Also, Route 287 is only 3 miles from Butler Center. This means Route 23 creates short trips from economically prosperous areas such as Kinnelon to the north and Wayne to the south. Furthermore, Route 287 now enables the arrival of patrons from Montville, and even trips from Parsippany and Hanover Township become feasible. In addition to these two major highways, the Hamburg Turnpike will enable patrons from wealthy Bergen County to enjoy the Center.

Also, of importance, is the ease of access for those visitors using public transportation. New Jersey Transit provides daily bus service right in front of the center with a bus stop on Park Place and High Street. All these transportation systems cited ensure convenient access and therefore many potential customers.

Thus far, the feasibility study has examined the contribution of Lowell's adaptive reuse campaign, location analysis such as socio-economics, demographic trends, and transportation concerns. The next issue in the study is demand and supply. This type of analysis examines market trends. Already Butler and its surrounding area, along with demographic trends, supports a retail component, and market analysis makes it more clear how the Center will have an edge over competing real estate.

Certain market developments are coming to fruition in the 1990s. The real estate market will see an increase in retail business, however not business as usual. The rise of discretionary income holds bright prospects, but it does not mean the money has to be spent.¹⁵⁹ The consumer's willingness to frequent existing establishments will more than ever before hinge upon retail environments that cater to America's shifting shopping habits.¹⁶⁰ American Demographics Magazine indicates that as many as 20% of the regional shopping malls will close by the year 2000 because of failing to stay in touch with new shopping needs.¹⁶¹

This dramatic decline is happening because many shoppers think the large department stores and mall settings have become stale in their service and are no longer exciting.¹⁶² Market research states that in the pursuit to increase profits many large merchants have cut back on salespeople, store maintenance, and attractive merchandising displays that make for a positive shopping experience.¹⁶³ Furthermore, consumers' enjoyment of browsing has fallen considerably since the 1980s, and that results in less buying.¹⁶⁴ Today older customers, who hold most of the disposable income, are turning away from the malls and department stores for several reasons. These are the difficulty in finding restrooms, mall seating is often sparse to deter teen loitering, directories are printed too small, and salespeople are often underpaid, undertrained, and unfriendly.¹⁶⁵ The mall environment is not in touch with current shoppers or does not easily provide for their needs. In contrast to the mall becoming outdated my master plan for Butler creates an extremely progressive and dynamic retail, civic, and business environment. This will be evident in the program discussion that follows.

The Library / Museum

The Butler Library, founded in 1928, was located in Borough Hall. Unfortunately, in the years to come the library suffered from a lack of income and public interest. This, in turn, led to repeated closings and relocations. The current location, a renovated warehouse on Ace Road, is inadequate for the library's 35,114 volumes (Fig.57). This rather lackluster building's remote location, and meager 7,800 square feet of space is not very inviting to the public. My master plan prominently relocates the library in front of the complex. Building #11, built in 1905, is 13,839 sf which includes two main floors and a mezzanine level. The building is quite compatible with the library's need for light and space. Moreover, this distinguished looking historic resource is in an excellent location in both the town and facility, and gives the library the honor it deserves. This first floor



Fig.57. Entrance to Butler Library

plan and front elevation (Fig.58) is proposed for the reuse of building #11 as a library/museum. It is proposed that The Museum of Morris County Towns will occupy the second floor. There will be an emphasis on The American Hard Rubber Company

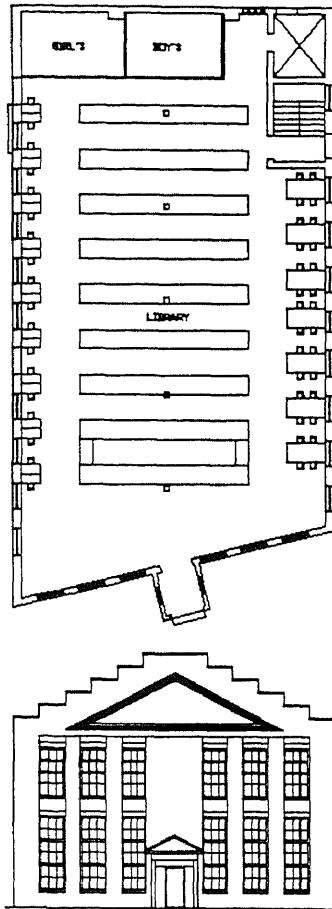
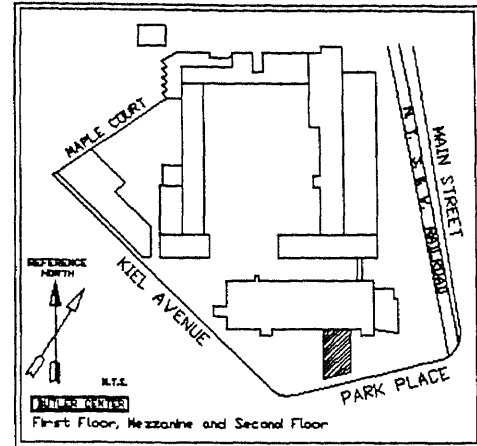


Fig.58. First floor plan and front elevation of proposed library



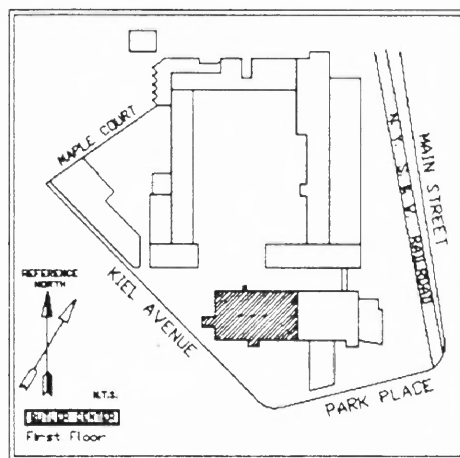
and others like it which have shaped Butler. The Butler Museum now shares limited space in the historic train station (Fig.59) with the Senior Citizen Center. This significant building is in the process of being renovated and serves its adaptive new use well. However, the museum is in dire need of space with only about 400 sf allocated for its many articles. Furthermore, its hours of operation are almost nonexistent as it is only open three hours per week on Saturday from 9 a.m. to 12 p.m. If the museum shares the building with the library, as my master plan suggests, the possibility of additional hours is likely and a broader range of people will gain access. Also, this will enable seniors to gain full advantage of their entire facility. The library and museum would then become permanent residents at the complex. Butler Center is already a natural gathering place for kids after school. The posted signs stating "no skateboarding allowed" will disappear, and instead of trying to keep children away the library and museum will be well situated to welcome them.



Fig.59. Butler Museum/Senior Citizen Center

The Municipal Building

Borough Hall, built in 1903, at a cost of \$4,186 was used in that capacity until



1983.¹⁶⁶ It then housed the Pequannock, Kiel and Kinney Fire Companies until they built new facilities recently over the last 12 years. As the town grew a need arose for an actual municipal building. Therefore, in 1927

municipal building was constructed adjacent to Borough Hall (Fig.60) and later remodeled in the 1960's. The space eventually became inadequate and the municipal offices were relocated to share the renovated warehouse, on Ace Road, with the library (Fig.56) and occupies 11,400 sf. The proposed relocation, building #15, prominently

places it at the front of the complex which will house the civic functions. This building,



Fig.60. Butler Municipal Center 1950

yielding 75,700 sf, will be highly visible from the roads. The proposed first floor plan is 27,400 sf, of which approximately 14,400 sf will be devoted to municipal offices (Fig.61).

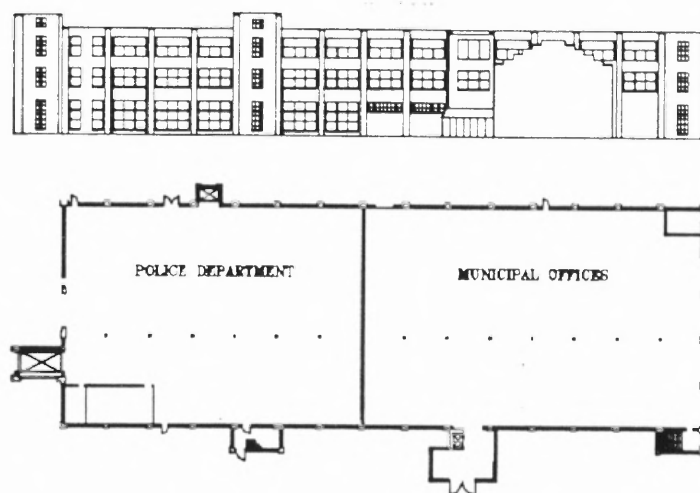


Fig.61. First floor plan and front elevation of Municipal Bldg. & Police Department

Since both the library and municipal building will be relocated it is proposed that the former makeshift building off of Ace Road be demolished in order to provide badly needed

parking for Butler Center. Selective demolition should truly be selective; and prudent judgement must be cultivated and applied before any part of a building, moreover a historic building, is removed. Genuine needs for selective demolition do arise. Fortunately, the current makeshift structure that houses the library and municipal building has no historic value; and its ideal location northward, adjacent behind Butler Center makes the prospect of gaining crucial parking entirely feasible. Its razing will significantly help in providing the substantial amount of parking (approximately 500 parking spaces) required by the town's zoning ordinances.

In addition to removing this structure the last need exists for use of selective demolition. This will be the minimal demolition to a portion of building #15 (Fig.62).

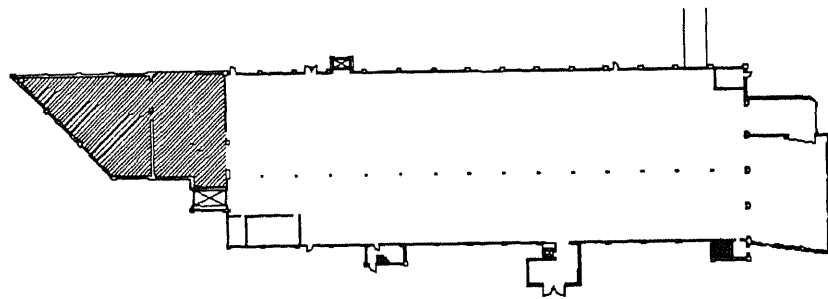


Fig.62. Selective demolition of building #15

This building would benefit from the demolition of its western appendage (Fig. 63). This masonry portion obstructs motorists' visibility coming out of the complex and therefore creates a safety risk. In addition, if this section is demolished it will add clarity to the architectural form, as well as afford a substantially better view of the proposed inner courtyard from the road thus stimulating more interest. The eastern vehicle bay is better situated. It does not inhibit any view to motorist, and its very nature offers useful storage possibilities (Fig.64).



Fig.63. Vehicle bay, west elevation of building #15



Fig.64. Vehicle bay, east elevation of building #15

The Police Department

The Butler Police Department (Fig 65) lies in obscurity on the dead end section of Belleview Avenue. The population of Butler, approximately 7,200 people, is patrolled by a relatively small police force. This one story brick building is in disrepair which does not foster civic pride or respect for the law. It is a profound truth in architecture that buildings have the potential to inspire the work which goes on within them. Therefore, the

relocation to the salient historic building #15 at Butler Center will make the presence of the police better known in the town (Fig. 54). The original police station is still important



Fig.65. Butler Police building 1995



Fig.66. Butler Police building 1950

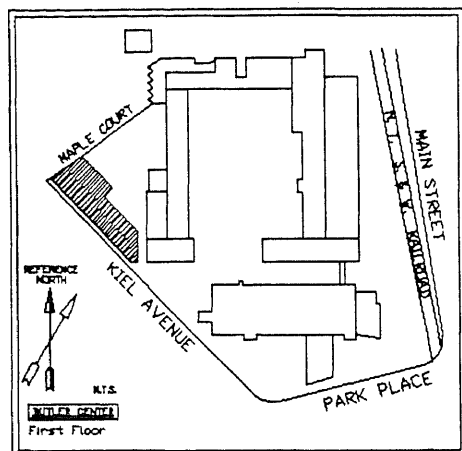
to the history of Butler and should be restored to its former stature (Fig.66). The proposed first floor plan and front elevation are for the reuse of building #15 as the Butler Police Department (Fig.61). The police station will occupy 9,900 sf of the first floor.

Furthermore, an important attribute that this building provides is a 3,100 sf vehicle bay which could garage police vehicles or trucks (Fig.64).

Artists' Studios

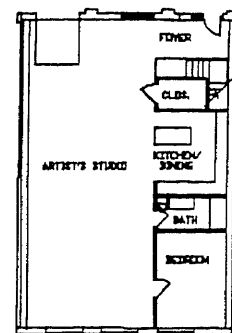
Since Richard Butler was an ardent patron of the arts it would be wholly fitting to have artists' studios at Butler Center. The idea is not foreign to the complex. Formerly it was proposed for the space above the old post office location on Park Place to become an art studio. Interested artists even attempted to start an arts center there. They received strong moral support, but could not come up with concrete funds and the space was taken

by a paying customer. My master plan finds the charming saw tooth building #14 is quite compatible with an arts component to the facility. The skylights, once renovated, will let light stream into the lofty spaces. Such a comfortable and snug setting should spur inspiration. Four studio loft units will be available with a common room open to all artists for exhibits and classes. The concept for these studios is to enable the public to get closer to the arts. People will be able to view the production of artwork first-hand and be able to



purchase it. The proposed, typical floor plan and unit elevation are for the reuse of building #14 as artists' studios (Fig.67).

Fig.67. First floor plan and front elevation of proposed Artists' studios



By bringing artist studios, the library/ museum, municipal building, and police station into Butler center an appreciable gain is had aside from affording these institutions the appropriate honor due them. This gain is the attraction of more people to the commercial/ professional side of the complex. In order for a more stable financial footing to be created cash flow must be obtained. The immediate presence of the police department adds a substantial amount of security for both patrons, as well as merchants. The aging baby boomers will surely notice that.

In addition, the artists' studios and museum will do well to draw these aging baby boomers. That age group, having gone through a generally better school system than that of today, is especially attracted to cultural things¹⁶⁷ My master plan delivers such an attraction with the studios, library, museum and even Butler Center itself. Furthermore,

the municipal building will draw people who need to conduct their matters with the town. This can easily lead to browsing at the nearby retail stores which in turn translates into cash flow. Therefore, it is proposed that Butler Center would allow the town free first floor use of building #15 (Fig. 54). The commercial spaces are key.

Commercial Space



Fig.68. Entrance Arcade, Merrimack Mills

Commercial space will be the most profitable real estate at the complex rented at \$16-\$20 per square foot. Across from the commercial strip on Main Street, the complex will have four stores, approximately 40' x 65' each. The existing arcaded wall of building #13 will be opened up to act as a true arcade lined with shops similar to a renovated mill in Lowell (Fig.68).

The architectural skin of the store fronts will be a steel and glass structure recessed approximately 12' behind the historic fabric. This will allow circulation space outside the stores without protruding from the building any further. The narrow space between the building and the railroad can accommodate parking with one way vehicular circulation if the railroad crossing at the end of this building is utilized. Service accessibility for these four stores facing Main Street, as well as the four behind them facing the inner court will start at a corner loading dock and then run through a 6' wide corridor passing in between

Center in step with today's shifting shopping trends. Today 70% of women between 17 and 50 work.¹⁶⁸ These women spend their money more readily thinking that it is their paycheck, and do a considerable amount of shopping during their lunch hour.¹⁶⁹ Thus having retail stores present actually makes renting office space or working in one at Butler Center more attractive. Today's tenants can afford to be choosy with the abundance of real estate available. They are seeking buildings that offer amenities. The same applies to the retail tenants. The presence of offices and therefore potential customers at the Center makes renting more attractive.

Access to these second floor office/ professional spaces will be made via several aesthetically pleasing exterior wrought-iron staircases at several points within the courtyard (Fig.68). Also, access can be made via two elevators at key points within the courtyard. In addition to the staircases a steel balcony will run the inner perimeter to afford greater convenience in moving around the upper level. The proposed second floor plan is for the reuse of the specified buildings as office/ professional space (Fig.70). The 45,430 sf of office space will require 180 parking spaces.

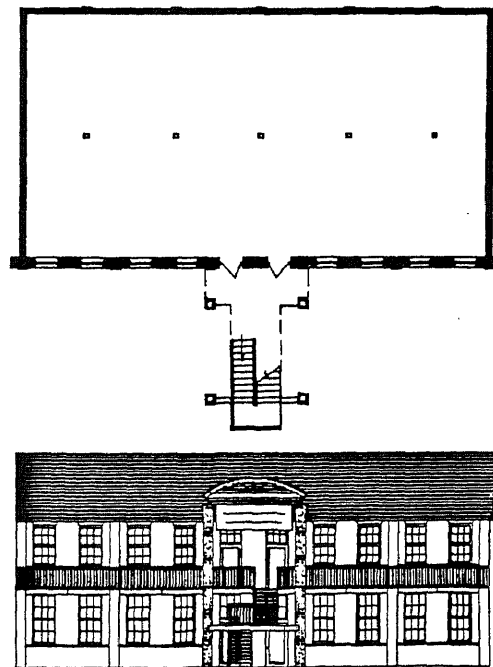
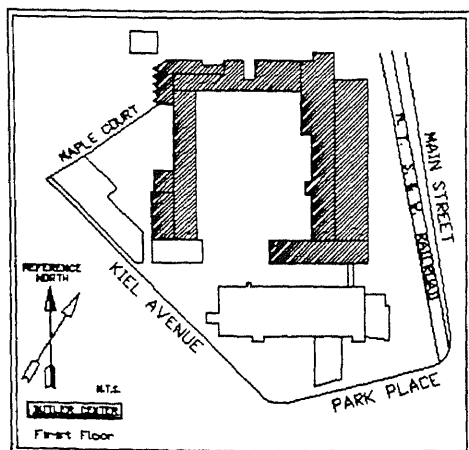


Fig.69. First floor plan and front elevation of proposed commercial shops

both groups of stores (Fig.71). The loading dock will contain a temporary storage area. The corridor adjoining the dock can either access the inner storage space, or the outdoor portion of the loading area. An additional loading dock is located westward, opposite the aforementioned dock and will serve the rest of the stores in the center courtyard (Fig.71). A typical floor plan and elevation for the reuse of buildings #13, #6, #2, #3, #7, #8 and #9 as commercial space is shown (Fig.69). The 56,240 sf devoted to commercial space will require 280 parking spaces.

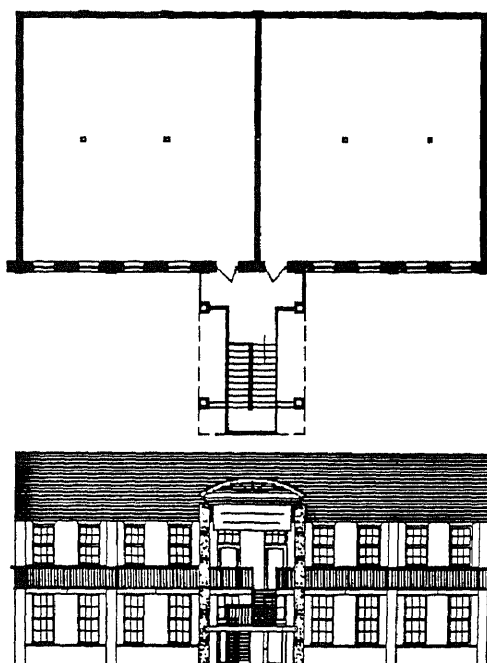
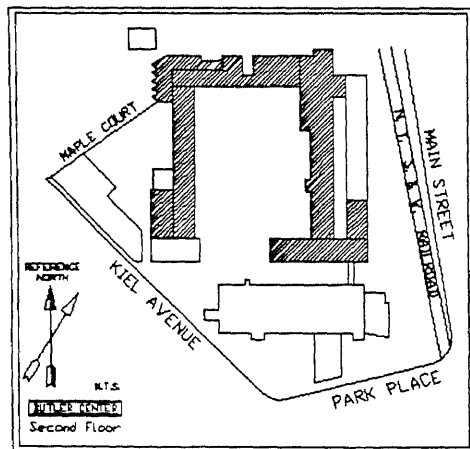


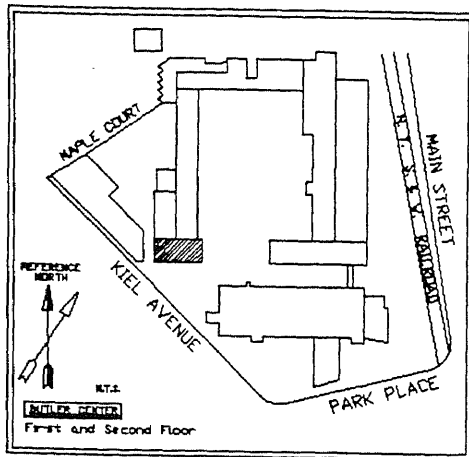
Fig.70. First floor plan and front elevation of proposed offices

Office Space

In pursuit of a diverse use of space to assure a more stable financial footing the entire second floor of buildings #2,3,6,7,8, and 9 will be designed as office/ professional spaces. The close proximity between retail and offices, increases the likelihood for a retail establishment to locate its administrative facet within Butler Center. This closeness should enhance the operational aspect of the business.

Furthermore, this combination of office and retail sales space actually keeps Butler

Butler Center Day Care



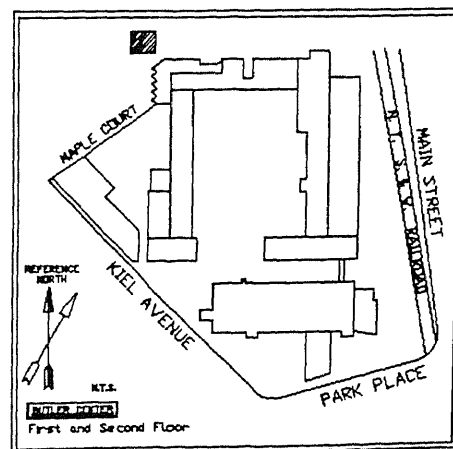
Building #8 will be the proposed location of the Butler Center Day Care. It will serve both the workers at the Center, as well as the general public. This two story building has 7,200 sf. Its position within the complex is flawless. Parents concerned with getting to work quickly can drive their car right in front of the building

and safely deliver their child to the day care facility. Also, parents who work at the Center will be comforted to have their children nearby.

Furthermore, the Butler Police Department is in the adjacent building adding a desirable measure of security for the children and provides for the easement of parent's tensions. The building is easily seen from the road which creates a terrific promotional feature for the whole complex. Since tenants are looking for amenities and there exist a multitude of families with two working parents such an amenity as day care makes Butler Center a notable piece of real estate. My master plan with its diverse and insightful building program successfully prepares Butler Center for today and tomorrow.

The Welcome Center

Building #16 acts as a gateway for those coming to the complex from the main parking lot. This two-story brick building was built in 1920 and the 4,664 sf of space is currently abandoned.



Nestled in the steep embankment to the north, it becomes an ideal bridge between the parking and complex. The visitor can walk across a bridge to the Welcome Center located on the second floor and then proceed to the stair or elevator to reach the first floor. The visitor can bypass the Welcome Center by taking stairs to the first floor which will act as a sheltered passage to Maple Court. This building is on axis with the fountain in the courtyard in front of the artists' studios. The view of this building from Kiel Avenue is framed by building #8 and #14.

Design Intervention

The industrial complex functioned as a complete entity from its inception up until 15 years ago when the Butler Center Associates began renting out space. This changed the nature of the function, but the form remained the same. The proposed circulation system (Fig.71) will eliminate the sporadic placement of canopies and signage. A well designed system of entrances (Fig.72) and windows restored to their original multipaned industrial sash will help to unify the various buildings in the complex. The replacement of windows to their full size will create a rhythm which is not present today and will have quite a positive impact on the factory's appearance and character (Fig.73). Signage must be consistent and clear. The proposed entry pieces were designed to be simple, yet celebrate industry by exposing structural elements and their connections. The materials include: poured concrete columns, steel I-joists, steel stairs with a metal grate platform and a corrugated metal roof. The north, east, and west wings will have these entries in the inner court for each retail space on the ground level and two offices will be accessed on the second floor. The facility is designed such that the civic component is separate and in the front of the site while the money making component is behind. This creates a buffer

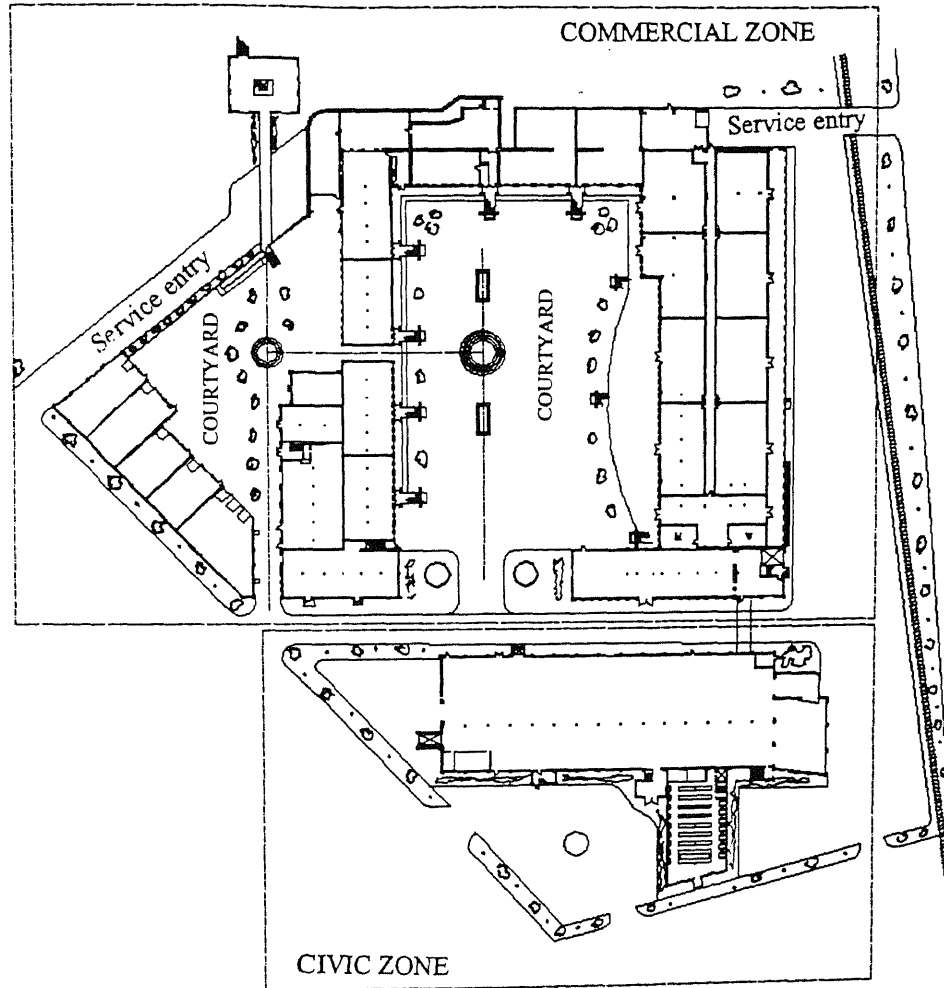


Fig.71. Plan of design intervention

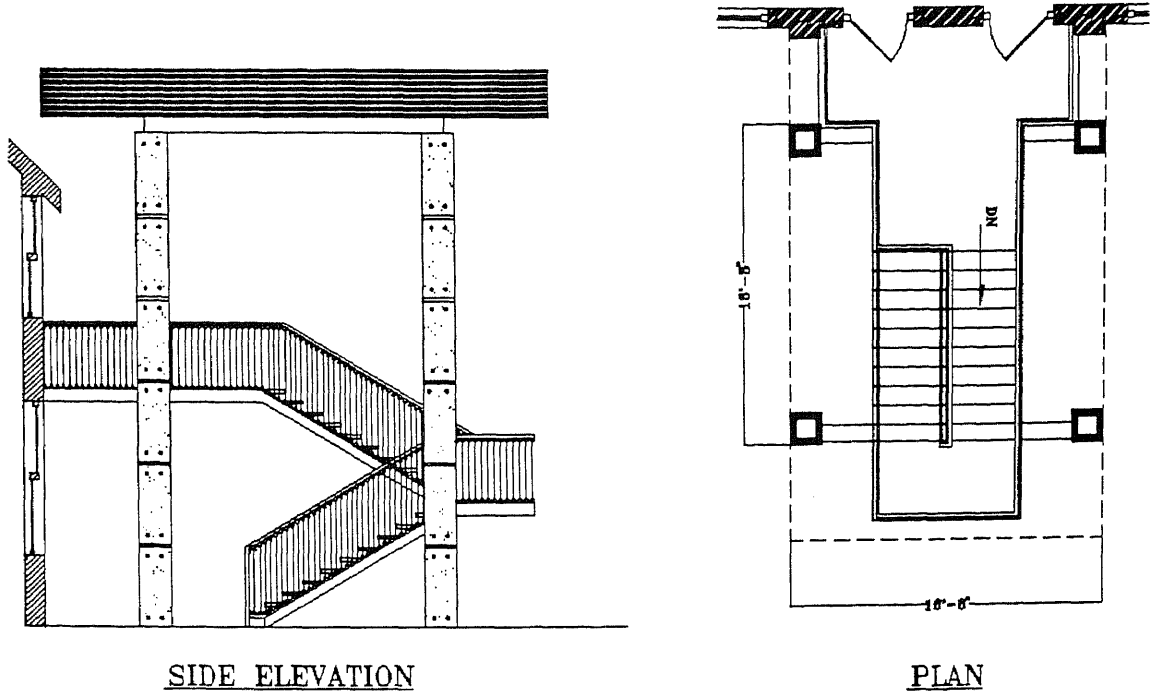


Fig.72. Elevation and plan of proposed entrances

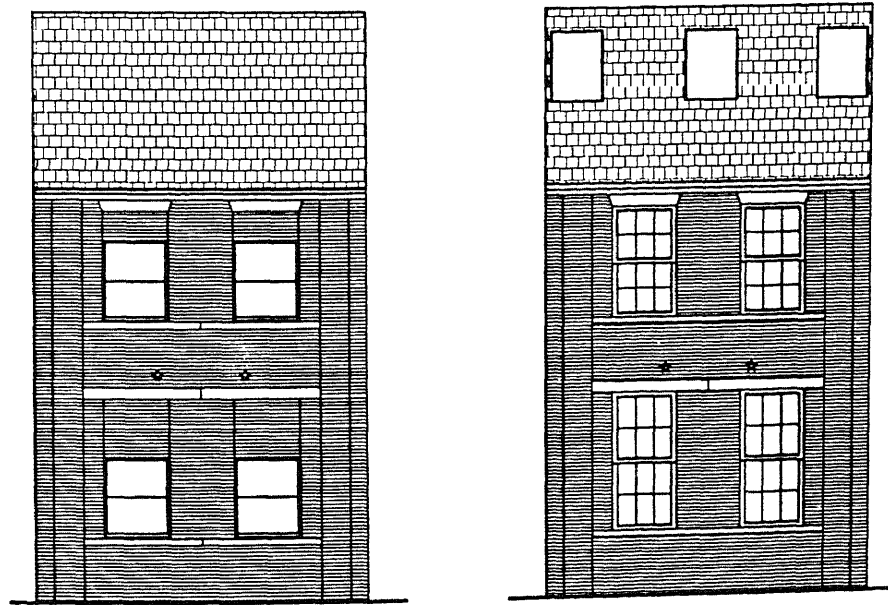


Fig.73. Existing vs. restored elevation



Fig.74. Drive-through of building #3

artists' studios are situated. Further access into the facility is enabled through a previously designed drive-through in the west wing (Fig.75). Although the program removes vehicular access to the inner courtyard the existing drive-through feature serves well the circulation purpose.

The flow of circulation continues eastward toward the stores on Main Street through a walkway located in building #13 and #6 (Fig.54). This passageway is 40' x 86' and contains public restrooms. Also, the passageway is large enough to allow vendor stands to be set up and further add to the attractions. If the patron upon reaching the inner court wishes to go to the municipal building which also houses the police department, health and fitness center, restaurant and banquet hall, he or she need only walk southward. For those

which affords the civic buildings a measure of distinction in the center of town. The circulation of patrons who choose to drive begins in the main parking lot. This is located immediately north of the factory complex (Fig.56). These patrons, once parked, would have a brief walk to Butler Center. They would initially be channeled into building #16, the proposed Welcome Center at the northwest side of the facility and then into the courtyard where the

patrons who choose public transportation to the center New Jersey Transit currently services the bus stop on Park Place and High St. which has been active for several decades (Fig75).



Fig.75. Bus stop at the center

From there it is a brief majestic walk to Butler Center. Circulation for these patrons would begin at the municipal building, and then follow any of the paths already mentioned.

Thus far my master plan has discussed the insight and promise that the feasibility study shows for the adaptive reuse of Butler Center. Furthermore, my master plan provided for the authentic restoration of this valuable complex, as well as delineated a thoughtful and progressive reuse program. This will enable the Center to develop a considerably better financial footing today and for upcoming economic trends. The last requirement for the master plan is to provide guidelines for the pursuit of the funds needed to accomplish this architectural endeavor.

For this portion insight into the adaptive reuse efforts of Lowell, Massachusetts helps quite well. A notable characteristic that Lowell's experience showed is that the private sector needs to be involved. Therefore, my master plan proposes that the town and Vicon create a community revitalization organization. Its chief goal will be directing and

fostering cooperative efforts between developers, government officials, businesses, and financial institutions. Although Vicon is the site's owner it would not be advisable for them to exclude the community from having some power to direct the restoration. The community can expand Vicon's power to pursue funds and even promote the Center more effectively at large. In fact, since the community has the power to make zoning and traffic ordinances they are a desirable partner for Vicon. This organization will create a cooperative spirit among the participants as they oversee the plan throughout development.

A second guideline is for the community revitalization organization to get government officials involved. Government representatives can use their influence to obtain funds and make promotion to the Center greater. For example, representatives might be able to direct more public transportation to the facility. Officials can allocate funds to restoration projects. In fact, the first large scale infusion of government funds for Lowell came from the collaborative efforts of its citizens and strong lobbying by Massachusetts governor Michael Dukakis.¹⁷⁰

Another guideline for the community revitalization organization to perform is the pursuit of future tenants. The plan needs to be promoted to the business establishment in order to create interest and hopefully bring in tenants. It is feasible that these tenants might be enticed to contribute funds to the restoration in lieu of better rental arrangements.

The last task for the revitalization organization is the pursuit of loans and grants from multiple sources. Also, while the site is undeniably, historically significant, it still needs to be included with the New Jersey and National Registers of Historic Places. Register

eligibility is good according to Robert Gutter of Acroterion, a historical survey firm.¹⁷¹ A preliminary application must be completed by Vicon or any interested party to begin the process. They can easily obtain an application by writing to: The State of New Jersey Department of Environmental Protection, Division of Parks and Forestry, Historic Preservation Office, CN 404, Trenton, NJ 08625. Once this is done and Butler Center is included in the registries Vicon can receive some outstanding financial benefits.

The distinction of being added to these registries permits owners and some lessees of historic buildings to take a 20 % income tax credit on the cost of rehabilitating such buildings for industrial or commercial purposes.¹⁷² Furthermore, historic preservation bond matching grants and low interest loans for rehabilitation are available to state, county and municipal agencies. The community revitalization organization could apply for that as a municipal agency. My master plan intends to beautifully rehabilitate Butler Center and in doing so increases the likelihood of making tax savings substantially help pay for this endeavor. Butler Center has a tremendous potential to become an excellent example of adaptive reuse. If its potential were developed it would truly be one of the most enjoyable facilities to either shop, learn, or conduct business.

CHAPTER 9

CONCLUSION

Why do we bother with adaptive reuse? Is the process of converting a building to a use other than that for which it was designed worth the pursuit? When one considers that buildings link us to our past, give our neighborhoods character, provide a source of civic identity, and offer an array of economic possibilities, such as reducing construction costs, then adaptive reuse becomes a truly powerful and worthwhile enterprise.

But how does one judge whether such an architectural venture is a success or failure? Is it simply a black or white matter, or perhaps it is on a dynamic continuum allowing for varying degrees of each. In any case, judgement is always in the eye of the beholder. This is why a standard of success is crucial for a useful discussion, and for this reason the standard for this study is Lowell. The accomplishments of Lowell undoubtedly provide a sound example of a successful adaptive reuse campaign.

Lowell is held as a success because it authentically restored its huge collection of historic buildings by finding new uses for them, but also in that it was a concerted effort of cooperation among many individuals and organizations. Although the city suffered severe economic depression as a result of the southern textile exodus it experienced a tremendous rebirth through adaptive reuse. It began with a vision embraced by its citizens. This led to the creation of public and private groups working together to raise restoration funds and put them into action. Concepts such as making the city into cultural and historical parks grew out of this vision. Their ambition produced a city of rehabilitated historical buildings, as well as a revitalized economy. United States representative Chet Atkins even stated "Historic preservation is for everybody and...historic preservation is good for

business. In Lowell it has built a community spirit that has helped attract business and investment."¹⁷³

Although it is true that the city obtained a sizeable amount of government aid to achieve its rehabilitation, substantial private development was critical to the accomplishment of its complete restoration. In fact, as one looks at Lowell, it is evident that its building-scape is a wonderful marriage between historic parks nestled among the many thriving businesses. The parks bring in substantial gains from tourism while adaptive reuse has created an alluring setting for businesses both small and large such as Wang Computer Inc. Therefore, Lowell teaches that adaptive reuse principles when they are applied to historically significant buildings gain viability when they integrate public and private interests. Moreover, it points out how great a success is attained within the symbiotic relationship between the public and private sectors.

This lesson can be applied to the site at Butler, New Jersey. The town of Butler, like Lowell, grew up around its factory. When the industrial exodus occurred in the mid-twentieth century both locations felt its great pull by seeing their prize industries leave. What was left were empty shells of once great buildings. The old hard rubber factory at Butler eventually became viewed as an eyesore, as well as economic drag on the community. The town was hungry for the restoration of the complex and jobs. However, that is where the similarities with Lowell begin to diminish.

Butler's revitalization effort, although producing a functioning building, still falls short of a complete success. The town had visions of the building being used for civic and private use. It was hoped it would include housing for the elderly, municipal offices, and a new police and fire company headquarters. Like Lowell, the town did not have the funds

to accomplish this task on their own. Unfortunately neither did they have the knowledge, nor expertise that Lowell did to pursue an authentic adaptive reuse project. Because of that the factory complex is only a shadow of what it could be. However, my master plan provides several guidelines for both Vicon and the town to follow in order to help them obtain the funds to remedy the financial situation. It shows the necessary steps Vicon needs to take to benefit from tax incentives, low interest loans and grants available to historic buildings. If Vicon did implement the master plan it would prosper considerably and the town would have many of its original desires for the Center fulfilled.

The town of Butler did not take their plan and strongly promote it to the community at large. Nor did they enlist the help of state and federal officials. This is unfortunate because it is undeniable that Butler's factory building, being the first hard rubber manufacturer in America, would certainly have been a prime candidate for government funds. Furthermore, the town did not promote their plan among a broad private sector as was done in Lowell. The consequence of this is that the site's character is one dimensional with industry, and the rehabilitation was rather lackluster and incomplete due to Vicon's basic housing needs, as well as its shortage of available funds. However, the master plan remedies that problem with the creation of the community revitalization organization which oversees construction, promotion, and the pursuit of loans, grants, and tax incentives.

Vicon can not be faulted for their reasons for wanting to move into the factory, but it did not share the same dream as the town. Nor did they have any interest in restoring the factory in a compatible historical manner. Vicon was not originally a developer. They simply needed a large facility to contain their own business. The resulting restoration is

indicative of this.

Although other companies do inhabit the structure today, possibly indicating a growing developer mentality by Vicon, the building is still not what it could be. It is one sided in that the companies which are present are mostly manufacturing in nature like Vicon. This does not fully embrace the needs, interests and economic potential of the community. As such, if the economy continues to see a decline in manufacturing, which has been a trend for over a decade, Butler Center could have quite a difficulty in being profitable. In contrast, the master plan delivers both authentic rehabilitation, as well as a thoughtfully diverse program of use for the Center.

The idea for the master plan is derived from a careful study of Lowell, site analysis, and feasibility study. Lowell shows that a dichotomy of uses for buildings translates into attracting a broader group of people. This is beneficial since a broader group can usually sustain a facility better than a narrow one. My master plan points out that Butler and its surrounding area is quite suitable for a successful retail component citing demographic trends, such as the baby boomers, and socio-economics.

Furthermore, the master plan intelligently situates office/ professional space above retail space thus taking advantage of shifting shopping trends that demand more efficiency. In addition, the complimentary civic side of my plan means more patrons coming to the facility. Also, having the police department in the complex has several positive spin-offs. First, it creates a more secure, and therefore a more attractive, setting for renters and patrons. Second the police department's presence will make the day care center at the facility more attractive to prospective parents. Also, the day care facility brings Butler Center up to date with progressive real estate complexes that offer such amenities to attract and keep tenants.

Lastly, the whole site is complimented by the artist studios, museum, library, and visitor's center. Such allurements will draw the desirable baby boomers who are interested in cultural events, and have most of the discretionary income. All these components add a distinct and interesting character to the Center which will surely entertain both young and old. Also, the facility will offer those shoppers who are tired of the ubiquitous mall scene a fresh shopping experience.

The master plan is a wonderful orchestration of diversity that is greatly enhanced by the old American Hard Rubber Company's charming masonry architecture. This program of uses would enable Butler Center to achieve a broader and more stable financial footing thus making it profitable into the next generation. Like Lowell's experience my master plan shows that adaptive reuse principles gain viability when both the community and private sector is brought together in the final product. Adaptive reuse can empower individuals and communities to preserve their heritage of buildings, as well as enhance their quality of life.

**APPENDIX A
AMERICAN HARD RUBBER COMPANY PRODUCT LISTING**

As the early licenses indicate, articles manufactured were:

Sheets, rods tubes and combs	Dental rubber
Artificial whalebone*	Knitting needles, thimbles*
Imitation of Jet for jewelry, bracelets, brooches, chains*	Harness trimmings*
Brush handles, Mirror-backs*	Pipe bits
Atomizers*	Truss pads and springs*
Syringes, Drug supplies	Knife handles
Razor scales*	Buttons*
Cane and umbrella handles*	Lens rims*
Penholders, inkwells, rulers*	Eyeglass frames*
Engraved and embossed borders*	Snuff boxes*
Keyplates, finger plates*	Door knobs and escutchens*

Those marked with an asterisk, about 75%, have long been eliminated from the list of manufacture; however, as years have passed new industries developed and as fast as old items had to be dropped from manufacture, new ones appeared on the list such as:

Water meter goods	Magneto insulations
Croquet balls	Chair fittings
Telephone handles*	Tank lining
Telephone ear & mouthpieces*	Pipe lining
Photographic trays	I.C. Tubing
Battery Jars & covers molded	Bowling balls
Shoe cleats	Refrigerator doors & sills
Screw driver handles	Refrigerator covers & lids
Anode dipping process	Toilet sundries*
Pipe and fittings	Caster wheels
Pumps	Radio panels*
Battery jars handmade	Radio parts*
Retainer sheets	Rayon industry moldings
Butt plates	Tank car linings
Switchboard handles	Submarine jars - laminated
Automobile steering wheels	Microporous separator
Automobile handles - insets*	Cafatrays

Only six of the above items (*) have become obsolete, about 17% during the last 30 years.

SOURCE: Schelhammer, Herman L. Hard Rubber Technology. New York: 1948.

APPENDIX B**LIST OF DRAWINGS**

Existing conditions:

First Floor Plan of Complex

Site Map

Axonometric of Complex 1907

Axonometric of Complex 1995

Section Building #8

Sanborn Insurance Maps 1905, 1911, 1920, 1928, 1928-49, 1976-Present

Proposed conditions:

First Floor Plan of Complex

Second Floor Plan of Complex

Third Floor Plan of Complex

Circulation/Courtyard Scheme

Proposed Partial Site Section Through Courtyard, View West

Proposed Site Section, View North

Site Map/Proposed Parking

Proposed First Floor Plan and Front Elevation of the Artists' studios (Building #14)

Proposed First Floor Plan and Front Elevation of the Library (Building #11)

Proposed First Floor Plan and Front Elevation of the Police and Municipal Bldg #15

Proposed Partial First and Second Floor Plan and Elevation of Office/Commercial Space

Demolition to a Portion of Building #15

Proposed Side Elevation and Plan of Typical Entrance

Partial Elevation of Existing vs. Restored Bay

Model Scale: 1"=30'

APPENDIX C
ADDITIONAL DRAWINGS

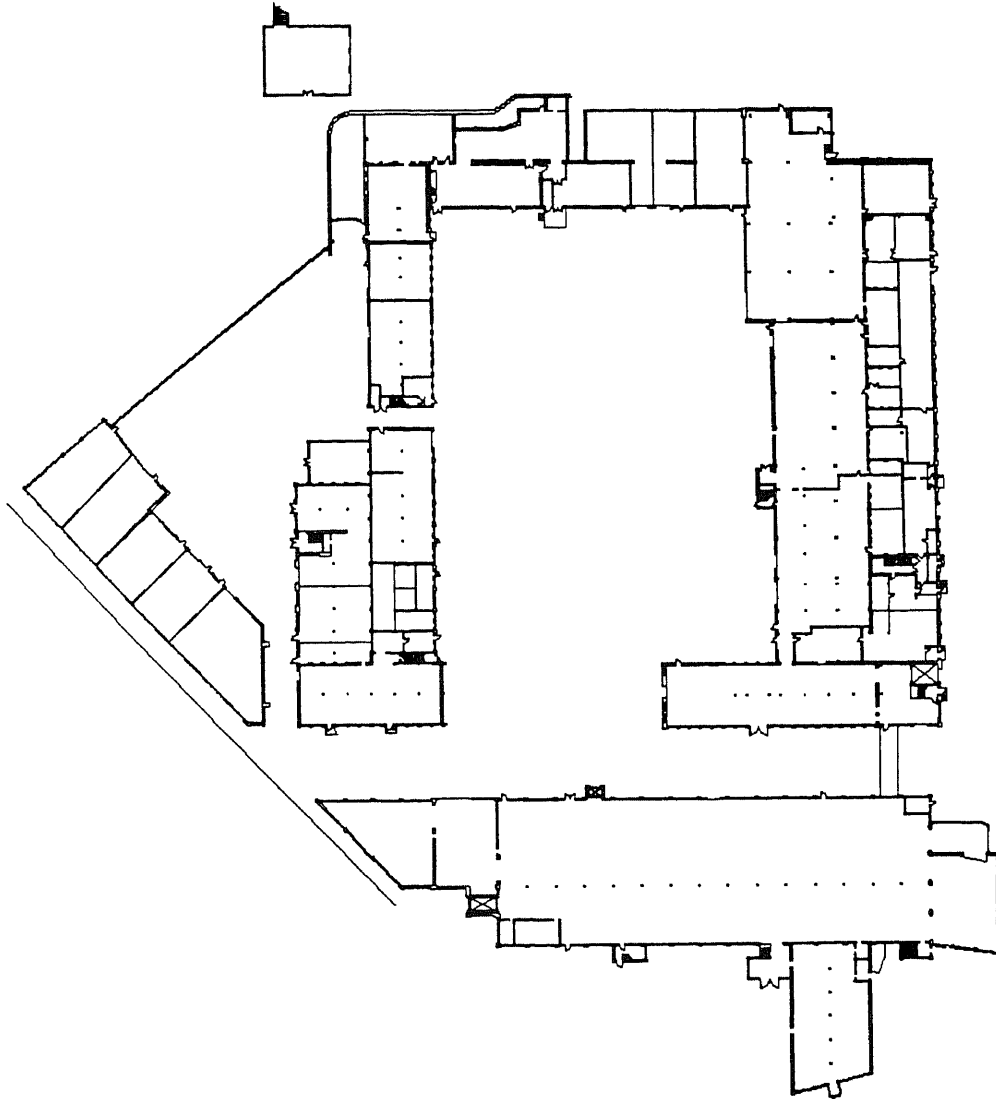


Fig.76. Existing First Floor Plan of Complex



Fig.77. Proposed Partial Site Section Through Courtyard, View West

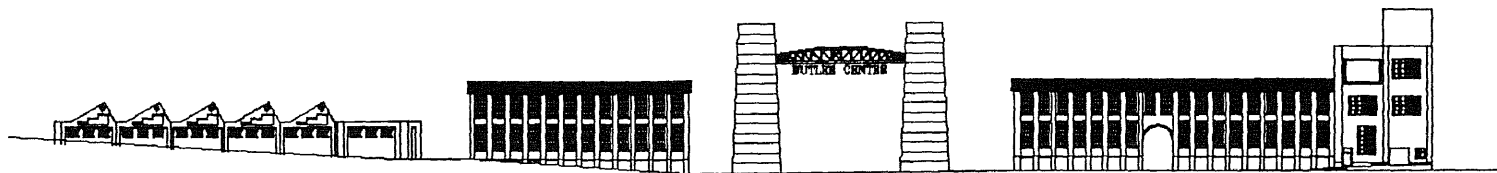


Fig.78. Proposed Site Section, View North

APPENDIX D
MODEL PHOTOS

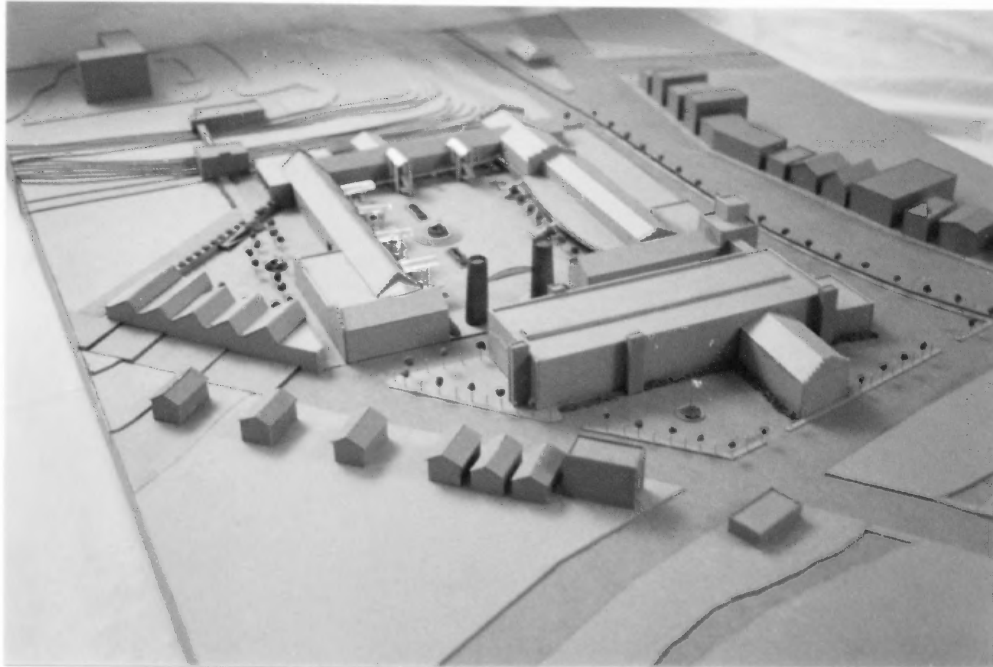


Fig.79. Model view looking north

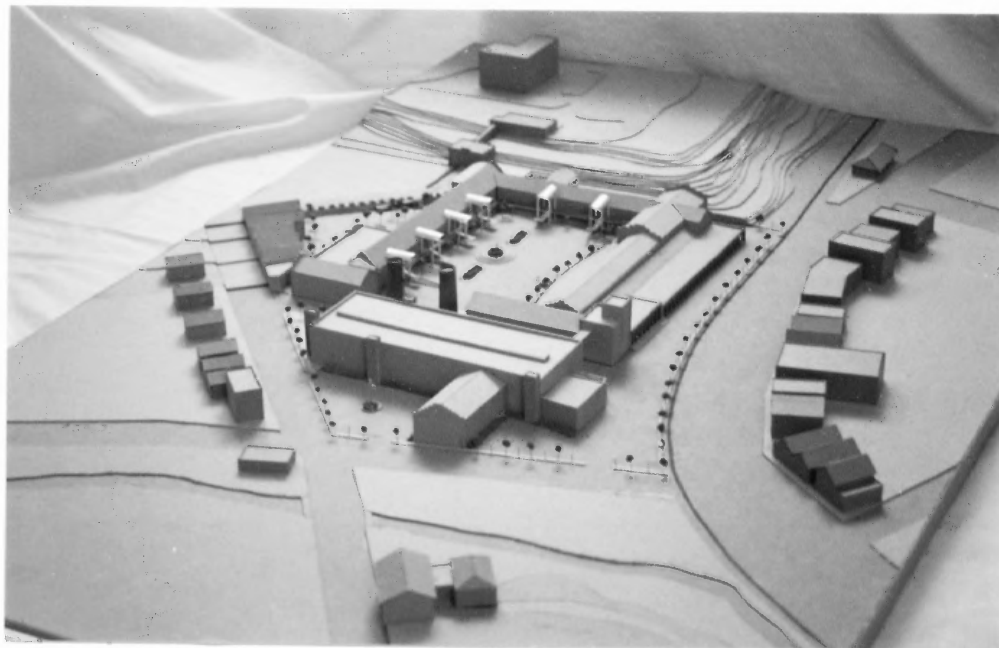


Fig.80. Model view looking west

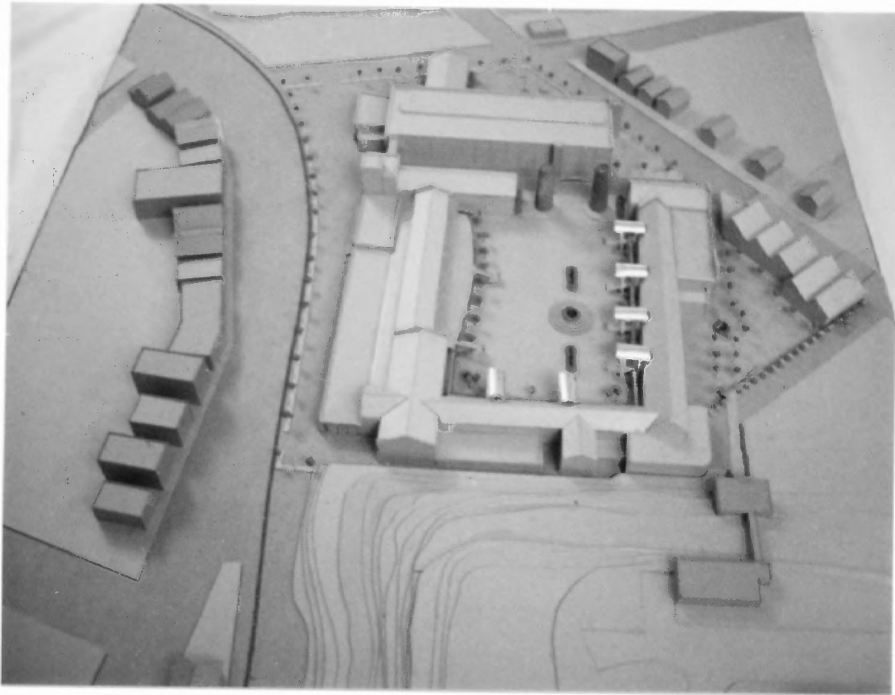


Fig. 81. Model view looking northwest

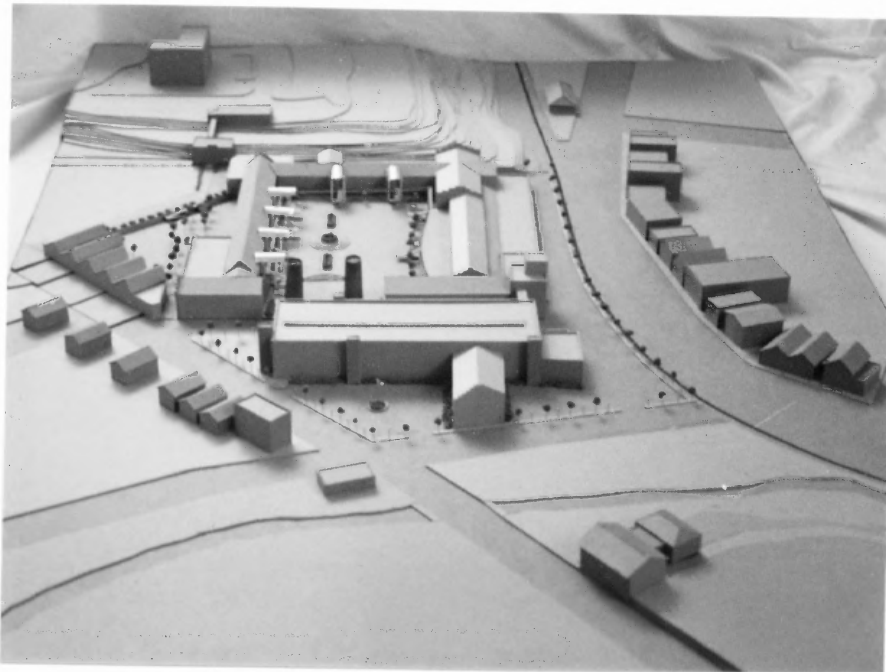


Fig. 82. Model view looking southeast

ENDNOTES

- ¹ William J. Murtagh, Keeping Time: The History and Theory of Preservation in America, (New York: Sterling Publishing Co., Inc., 1993), p. 116.
- ² Randolph Langenbach, A Future From The Past: The Case for Conservation and Reuse of Old Buildings in Industrial Communities, (Washington, D.C.: U.S. Government Printing Office, 1977), p. 63.
- ³ Langenbach, p. 63.
- ⁴ Langenbach, p. 63.
- ⁵ Langenbach, p. 63.
- ⁶ Gene Bunnell, Built To Last: A Handbook on Recycling Old Buildings, (Washington: Preservation Press, 1977), pp. 8-13.
- ⁷ Bunnell, pp. 8-13.
- ⁸ Bunnell, pp. 8-13.
- ⁹ Bunnell, pp. 8-13.
- ¹⁰ Bunnell, pp. 8-13.
- ¹¹ Walter C. Kidney, Working Places: The Adaptive Use of Industrial Buildings, (Pittsburgh, Penn.: Ober Park Associates, Inc., 1976), p. xi.
- ¹² Kidney, p. xi.
- ¹³ Langenbach, p. 5.
- ¹⁴ Langenbach, p. 75.
- ¹⁵ Thomas Dublin, Lowell: The Story of an Industrial City, (Washington D.C.: U.S. Government Printing Office, 1992), p. 7.
- ¹⁶ Dublin, P. 7.
- ¹⁷ Dublin, p. 7.
- ¹⁸ John Coolidge, Mill and Mansion, (New York: Russell & Russell, 1967), p. 121.
- ¹⁹ Coolidge, p. 122.
- ²⁰ Leland Roth, A Concise History of American Architecture, (Harper and Row, Publishers, 1977), p. 80.
- ²¹ Coolidge, p. 18.
- ²² Coolidge, p. 18.
- ²³ Coolidge, p. 19.
- ²⁴ Roth, p. 80.
- ²⁵ Roth, p. 80.
- ²⁶ Dublin, p. 40.
- ²⁷ Dublin, p. 40.
- ²⁸ Coolidge, p. 19.
- ²⁹ Thomas Bender, Toward an Urban Vision: Ideas and Institutions in Nineteenth-Century America, (Kentucky: The University Press of Kentucky, 1975), p. 32.
- ³⁰ Coolidge, p. 9.
- ³¹ Coolidge, p. 20.
- ³² Dublin, p. 32.
- ³³ Coolidge, p. 21.
- ³⁴ Dublin, p. 32.
- ³⁵ Coolidge, p. 20.

- ³⁶ Dublin, p. 33.
- ³⁷ Roth, p. 80.
- ³⁸ Coolidge, p. 9.
- ³⁹ Langenbach, p. 53.
- ⁴⁰ Langenbach, p. 53.
- ⁴¹ Langenbach, p. 53.
- ⁴² Langenbach, p. 53.
- ⁴³ Allen Freeman, "Lessens From Lowell," Historic Preservation, (Nov/Dec 1990), p. 7.
- ⁴⁴ Freeman, p. 7.
- ⁴⁵ Dublin, p. 82.
- ⁴⁶ Dublin, p. 90.
- ⁴⁷ Dublin, p. 90.
- ⁴⁸ C. Chandler Bryan, Jr., "The Remaking of a Mill Town: High-Tech, Public-Private Partnership, and Economic Redevelopment in Lowell, Massachusetts," (Diss. Harvard College, 1986), p. 5.
- ⁴⁹ Bryan, p. 46.
- ⁵⁰ Bryan, p. 58.
- ⁵¹ Bryan, p. 58.
- ⁵² Bryan, p. 62.
- ⁵³ Bryan, p. 51.
- ⁵⁴ Bryan, p. 51.
- ⁵⁵ Bryan, p. 50.
- ⁵⁶ Bryan, p. 52.
- ⁵⁷ Bryan, p. 53.
- ⁵⁸ Bryan, p. 56.
- ⁵⁹ Bryan, p. 53.
- ⁶⁰ Bryan, p. 3.
- ⁶¹ Bryan, p. 3.
- ⁶² Bryan, p. 3.
- ⁶³ Langenbach, p. 57.
- ⁶⁴ Freeman, p. 4.
- ⁶⁵ Bryan, p. 48.
- ⁶⁶ Bryan, p. 51.
- ⁶⁷ Bryan, p. 51.
- ⁶⁸ Acroterion, New Jersey Historic Sites Inventory, (Morris County Cultural Resources Survey, 1987), p. 1.
- ⁶⁹ Acroterion, p. 1.
- ⁷⁰ Acroterion, p. 1.
- ⁷¹ Acroterion, p. 2.
- ⁷² Acroterion, p. 2.
- ⁷³ Acroterion, p. 2.
- ⁷⁴ Acroterion, p. 2.
- ⁷⁵ Acroterion, p. 2.
- ⁷⁶ Sharon Doremus, "Butler- The Company Town," County Circular, (Winter 1981), p. 1.

- ⁷⁷ Doremus, p. 1.
- ⁷⁸ Lawrence C. Wassner and Charles K. Payne, Butler New Jersey, (Butler, NJ: The Butler Argus, 1951), p. 52.
- ⁷⁹ Wassner and Payne, p. 52.
- ⁸⁰ George J. Fritz, The Hard Rubber Industry at Butler New Jersey, Unpublished p. 1.
1. ⁸¹ Wassner and Payne, p. 54.
- ⁸² Fritz, p. 1.
- ⁸³ Fritz, p. 1.
- ⁸⁴ Bender, p. 33.
- ⁸⁵ Wassner and Payne, p. 54.
- ⁸⁶ Doremus, p. 1.
- ⁸⁷ Doremus, p. 1.
- ⁸⁸ Acroterion, p. 2.
- ⁸⁹ Fritz, p. 1.
- ⁹⁰ Fritz, p. 1.
- ⁹¹ Fritz, p. 2.
- ⁹² Deborah Walsh, "Famous Henry art found in Chicago," Suburban Trends,
- ⁹³ Fritz, p.1.
- ⁹⁴ Doremus, p. 2.
- ⁹⁵ Fritz, p. 7.
- ⁹⁶ Fritz, p. 7.
- ⁹⁷ Fritz, p. 7.
- ⁹⁸ Wassner and Payne, p. 52.
- ⁹⁹ Doremus, p. 2.
- ¹⁰⁰ Acroterion, p. 3.
- ¹⁰¹ Acroterion, p. 3.
- ¹⁰² Acroterion, p. 3.
- ¹⁰³ Fritz, p. 4.
- ¹⁰⁴ Acroterion, p. 3.
- ¹⁰⁵ Acroterion, p. 4.
- ¹⁰⁶ Acroterion, p. 5.
- ¹⁰⁷ Doremus, p. 2.
- ¹⁰⁸ Bender, p. 32.
- ¹⁰⁹ Wassner and Payne, p. 52.
- ¹¹⁰ Fritz, p. 8.
- ¹¹¹ Fritz, p. 9.
- ¹¹² Fritz, p. 13.
- ¹¹³ Fritz, p. 13.
- ¹¹⁴ Wassner and Payne, p. 54.
- ¹¹⁵ Fritz, p. 12.
- ¹¹⁶ Fritz, p. 12.
- ¹¹⁷ Fritz, p. 12.
- ¹¹⁸ Fritz, p. 13.
- ¹¹⁹ Wassner and Payne, p. 54-55.
- ¹²⁰ Fritz, p. 16.

- ¹²¹ Fritz, p. 16.
- ¹²² Fritz, p. 16.
- ¹²³ Wassner and Payne, p. 55.
- ¹²⁴ Susan Headden, "Can Vicon Return What Amerace Took?" Suburban Trends, June 11, 1978, p. 3.
- ¹²⁵ Cornelius Hubner, "Didja Know???" Smoke Rise Club News, July 1, 1988, p. 59.
- ¹²⁶ Cornelius, p. 59.
- ¹²⁷ Headden, p. 1.
- ¹²⁸ Headden, p. 4.
- ¹²⁹ Rosemarie Bailey, "Vicon Move May Help Revitalize Downtown Butler," Suburban Trends, Dec. 26, 1979, p. 1.
- ¹³⁰ Headden, p. 4.
- ¹³¹ Bailey, p 2.
- ¹³² Bailey, p. 2.
- ¹³³ Headden, p. 2.
- ¹³⁴ Clyde McBride, Personal interview, Sept. 1994.
- ¹³⁵ McBride
- ¹³⁶ McBride
- ¹³⁷ Acroterion, p. 9.
- ¹³⁸ Miriam Lacob, "Butler Rubber Mill: Modern Phoenix," Suburban Trends, Jan. 29, 1981, p. 38.
- ¹³⁹ Bailey, p. 1.
- ¹⁴⁰ Lacob, p. 40.
- ¹⁴¹ Schneekloth, Feuerstein, and Campagna, Changing Places: Remaking Institutional Buildings, (New York: White Pine Press, 1992), pp. 216-217.
- ¹⁴² Acroterion, p. 9.
- ¹⁴³ Headden, p. 3.
- ¹⁴⁴ Headden, p. 4.
- ¹⁴⁵ Headden, p. 3.
- ¹⁴⁶ Richard C. Sorenson, MAI, "Project Development: Success or Failure?" The Appraisal Journal, April 1990, p. 1.
- ¹⁴⁷ Bryan, p. 3.
- ¹⁴⁸ Sorenson, p. 1.
- ¹⁴⁹ Sorenson, pp. 1-2.
- ¹⁵⁰ New Jersey Municipal Data Book (Palo Alto, CA: Information Publications, 1991), p. 67.
- ¹⁵¹ New Jersey Municipal Data Book, p. 67.
- ¹⁵² New Jersey Municipal Data Book, pp. 67 & 588.
- ¹⁵³ M. Leanne Lachman, "Demographics: The Key to Successful Real Estate Projects in The 1990s," The Real Estate Finance Journal, Summer, 1990, p. 2.
- ¹⁵⁴ Lachman, p. 2.
- ¹⁵⁵ Lachman, p. 2.
- ¹⁵⁶ Francesca Turchiano, "The (Un)Malling of America," American Demographics, April 1990, p. 3.
- ¹⁵⁷ Lachman, p. 2.

- ¹⁵⁸ Lachman, p. 2.
- ¹⁵⁹ Lachman, p. 4.
- ¹⁶⁰ Lachman, p. 4.
- ¹⁶¹ Turchiano, p. 3.
- ¹⁶² Turchiano, p. 3.
- ¹⁶³ Turchiano, p. 3.
- ¹⁶⁴ Turchiano, p. 3.
- ¹⁶⁵ Turchiano, p. 3.
- ¹⁶⁶ Walsh, "Businesses a Fixture in Downtown Butler," Suburban Trends, May 16, 1993, p. A9.
- ¹⁶⁷ Lachman, p. 4.
- ¹⁶⁸ Lachman, p. 4.
- ¹⁶⁹ Lachman, p. 4.
- ¹⁷⁰ Bryan, p. 51.
- ¹⁷¹ Acroterion, p. 5.
- ¹⁷² New Jersey and National Registers of Historic Places Preliminary Application. (Trenton, New Jersey: State of New Jersey Department of Environmental Protection, Division of Parks and Forestry, Historic Preservation Office, 1995.) program.
- ¹⁷³ Freeman, p. 4.

REFERENCES

- Acroterion. New Jersey Historic Sites Inventory. Morristown: Morris County Cultural Resources Survey, 1987.
- Bailey, Rosemarie. "Vicon move may help revitalize downtown Butler," Suburban Trends. Dec. 26, 1979, p. 1.
- Bender, Thomas. Toward an Urban Vision: Ideas and Institutions in Nineteenth-Century America. Kentucky: The University Press of Kentucky, 1975.
- Bryan, C. Chandler, Jr. "The Remaking of a Mill Town: High-Tech, Public-Private Partnership, and Economic Redevelopment in Lowell, Massachusetts." Diss. Harvard College, 1986.
- Bunnell, Gene, Built to Last: A Handbook on Recycling Old Buildings. Washington: Preservation Press 1977.
- Coolidge, John. Mill and Mansion. New York: Russell & Russell, 1967.
- Doremus, Sharon. "Butler-The Company Town," The Morris County Circular. Vol. 5, No.2, 1981, pp. 1&3.
- Dublin, Thomas. Lowell: The Story of an Industrial City. Washington D.C.: U.S. Government Printing Office, 1992.
- Freeman, Allen. "Lessons From Lowell," Historic Preservation. Nov./Dec. 1990, pp. 1-9.
- Fritz, George J. The Hard Rubber Industry at Butler New Jersey. circa 1950. Unpublished.
- Headden, Susan. "Can Vicon Return What Amerace Took?" Suburban Trends. June 11, 1978, p. 1,3-5.
- Hubner, Cornelius. "Didja Know???" Smoke Rise Club News. July 1, 1988. pp. 46-59.
- Kidney, Walter C. Working Places: The Adaptive Use of Industrial Buildings. Pittsburgh, Penn.: Ober Park Associates, Inc., 1976.
- Lachman, M. Leanne. "Demographics: The Key to Successful Real Estate Projects in the 1900s," The Real Estate Finance Journal. Summer, 1990, p.2.
- Langenbach, Randolph. A Future From The Past: The Case for Conservation and Reuse of Old Buildings in Industrial Communities. Washington D.C.: U.S. Government Printing Office, 1977.

Lacob, Miriam. "Butler Rubber Mill: Modern Phoenix," Suburban Trends. Jan. 29, 1981, pp. 38&40.

McBride, Clyde. Personal Interview. Sept 1994.

Murtagh, William J. Keeping Time: The History and Theory of Preservation in America. New York: Sterling Publishing Co., Inc., 1993.

New Jersey and National Registers of Historic Places Preliminary Application. Trenton, New Jersey: State of New Jersey Department of Environmental Protection, Division of Parks and Forestry, Historic Preservation Office, 1995. program.

New Jersey Municipal Data Book. Palo Alto, CA: Information Publications, 1991, p. 67.

Roth, Leland. A Concise History of American Architecture. New York: Harper and Row, Publishers, 1979.

Sanborn Atlases, 1905-1928.

Schelhammer, Herman L. Hard Rubber Technology. New York: 1948.

Schneekloth, Feuerstein, and Campagna. Changing Places: Remaking Institutional Buildings. New York: White Pine Press, 1992.

Sorenson, Richard C. MAI. "Project Development: Success or Failure?" The Appraisal Journal, April 1990, p.1.

The Secretary of the Interior. Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. Washington: Preservation Assistance Division, Department of the Interior National Park Service, 1990.

Turchiano, Francesca. "The (Un)Malling of America," American Demographics. April 1990, p.3.

Walsh, Deborah. "Famous Henry Art Found in Chicago," Suburban Trends. pp. 1&3.

Walsh, Debrorah. "Businesses a Fixture in Downtown Butler," Suburban Trends. May 16, 1993. p. A9.

Wassner, Lawrence C. and Payne, Charles K. Butler New Jersey. Butler, New Jersey: The Butler Argus, 1951.