Adaptive Use

It's Not Just for Breakfast Anymore

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Building Type: Industrial Adaptive Use
Study of the South Bend, Indiana, Studebaker Corridor

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Thesis Committee Member: Andrea Urban
Consultant: K.C. Pocius

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This book is dedicated to my mother, without whose support it would have never been possible. Thanks Mom.

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Abstract

Because their structure tends to outlive their function, buildings have continually needed to adapt to new uses. This is especially true for industrial buildings. Many are obsolete because of their multi-story configurations and vast amount of floor space. The possibilities of reusing these buildings for their original function is unlikely. But because of their large size they have considerable impact on their site and surrounding area by their sheer bulk. Instead of demolition, adaptive use can provide an inexpensive and exiting alternative.

The goals of a successful adaptive use project are, from the standpoint of economics, to take a relatively money losing situation and turn it into some profitable means again. From the historical standpoint, adaptive use provides the opportunity to preserve a piece of history in the built form, and provide a sense of pride for the community.

The Following document illustrates the benefits and processes of adaptive use with emphasis on the industrial building. South Bend, Indiana's Studebaker Corridor has been chosen for a case study demonstrating this adaptive use process.
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chapter one

Introduction
Widespread interest in recycling old buildings is accepted as an outgrowth of the historic preservation movement. Up until the early 1960's, the desire to preserve buildings for their architectural or historical significance was limited. The exceptions being monuments connected with the American Revolution or Civil War or sites associated with American heroes such as George Washington.(Mendelson,p.6)

Today, appreciation has deepened to include people, places, and entire neighborhoods of less than national importance, and the field has broadened to include utilitarian buildings and works of engineering that formerly were not considered architecture at all.

"The passing of time has given formerly unrecognized structures distinction of antiquity. Preserving old buildings as museums is an idea that has been discarded, it has been replaced by the belief that such structures continue to have productive economic lives."(Mendelson,p.6)

**Benefits**

Old Buildings offer a focus for local pride in areas that otherwise may lack character and tradition, but when underutilized, they do little to enhance the vitality and stability of the neighborhoods in which they are located. Furthermore, they usually become a drain on available financial resources (public and private); whereas an appropriately adapted old building could remain occupied and maintained, generating property taxes without losing historic integrity.
Because of the growing interest in history and preservation of the built environment, preservation has led to an increased awareness of the value of old buildings and historic areas. Many communities have created historic districts and attractions. City administrators have commissioned evaluations of historically and architecturally significant buildings in attempts to preserve these buildings and their environments. By doing so, a city's or neighborhood's character can be preserved, and re-establish a stronger sense of pride for its residents.

A large centrally-located rehabilitation project can have a vitalizing influence on the surrounding neighborhood. In Indianapolis, the city commitment of money to save Union Station (see figure 1) led to private real estate investment of $50 million in the same area. (Kidney, p. 7) The city was, in effect, demonstrating a faith in a depressed area in the center by putting up a specific sum of money for a specific project. But sometimes a small risk is necessary to make things happen.
chapter two

Adaptive Use: A New Movement
Over the last few years changing economic conditions, rising costs, decreasing availability of developable property, and fewer attractive large-scale development ventures, have forced real estate professionals to seek alternatives which will maximize investment objectives.

Definition

Renovation, rehabilitation, restoration, or recycling, by whatever term it is known, the reclaiming of old buildings for adaptive use has become an important element in architectural practice and construction activity.

Not only have the hard facts of the late twentieth century economics given renovation a new focus, but they have pointed toward a new found desire for esthetic, historic and humanistic reasons, which the character and space of old buildings offer.

Adaptive use is the process by which structurally sound older buildings are developed for economically viable new uses. Such buildings may be historically important, architecturally distinctive, or simply underutilized structures which exhibit signs of life under a facade of age and neglect. (ULI-Adaptive, p.3) Many of these structures are now returning healthy financial rewards to their developers as a result of imaginative planning and support by sponsors and financial backers.

Adaptive use has become of mutual interest to those groups concerned with the preservation of our cultural, historical, and architectural heritage, and to the real estate investment community striving to widen development
opportunities. (ULI-Adaptive,p.1) Knowledgeable investors and developers, with the help of incentives created by the Federal government, in the last few years have increasingly turned their attention to this arena, and as a result, a new type of real estate development has appeared in the form of adaptive use.

Economic Aspects

Economical feasibility has been a major factor in the growth of reuse. Businessmen have become involved in preservation and rehabilitation as costs have become attractive when compared with increasingly expensive new construction.

Increasingly, the rehabilitation of a building is being seen as an alternative to new construction. In 1976, modernization expenditures in the United States were about $10 billion, up $2 billion from 1975. Boston alone had $154 million in renovation in 1976 compared to $41 million in new construction.(see fig. 2-3) The national remodeling market is expected to approach $80 billion annually this decade.(Mendelson,p.15)

Various economic advantages of reuse are possible. One is its usually lower cost compared with new construction material and labor provide considerable opportunity for savings. Rehabilitated buildings do not usually need steel or concrete frames; so they have low structural cost, usually less than half that of new construction.
Other cost savings of rehabilitation over new construction arise from the shorter periods necessary to prepare properties for occupancy. In the first place, the amount of work can continue without excessive concern over the possibility of inclement weather. Because of this reduced preparation period, interim financing will be reduced, saving about 5 to 10 dollars per square foot. (Mendelson, p.16) Also, this means that the project can be rented sooner, increasing revenues for the developer.

Communities also have economic stakes in reuse. Frequently the buildings occupy important locations which traditionally have generated property tax revenues. The buildings present an image of quality, stability, and continuity. This impact may generate further development for the surrounding areas.
chapter three

Industrial Buildings: An Old Building Type
With New Life
The warehouse, loft and factory buildings, abandoned when a changing technology or a shift in the location of a city's commercial-industrial district made them obsolete, have begun to have new and useful lives, converted with skill and imagination and economy, into interesting and unusual places to work. Since such buildings are frequently found in clusters in one section of a city, the renovation of a building often leads to the revitalization of a whole area.

A New Appreciation

Because of changes in manufacturing patterns, in transportation systems, and in the location of the labor force, many industries have left the center city for the suburbs or other regions. This migration has often left many abandoned or underutilized industrial buildings on the fringe of a city's central business district. Empty and lifeless, large scale industrial buildings can have a negative visual and social impact on an area and can cost a city a great deal in lost tax revenues. (ULI-Adaptive, p.217)

One of the main concerns and problems with the reuse of industrial buildings is that often the buildings occupy whole city blocks. Many are outdated or obsolete because of their multi-story configurations and vast amount of floor space. The possibilities of reusing these buildings for their original function with a single tenant is highly unlikely. In most cases, the building must be subdivided to accommodate a number of tenants to function by today's methods.

These buildings, however, frequently can contribute to the vitality and interest of an urban area by being recycled. With the right solution, this type of structure can make an enormous impact on a city.

Until recently, the industrial building was virtually ignored by all but those who built or worked in it. Long thought unimportant by scholars, unattractive by historic preservationists, and unsuitable for new uses by businessmen, such structures are now the subject of considerable interest from all three quarters. (Kidney, p.xi)

There has been a growing realization that industrial architecture is exploitable architecture. That is, that it offers opportunities to house non-industrial activities conveniently. For the scholar, the factory may represent the most important single building type of the past 200 years, an architectural record of the technological transformation of western Europe and North America that began in the Eighteenth century. For the preservationist, it is now recognized as contributing important evidence of our social and cultural past. And lastly, for the potential investor, who in the best sense is also a preservationist, industrial buildings frequently offer easily subdivided interior space, housed within durable construction that yields higher quality and less expensive space than could be obtained in a new building of compatible size. (Kidney, p.xi)

Reuse projects involving industrial buildings may have been the first adaptive use efforts to capture widespread public attention. Loft living became a familiar practice in light industrial districts such as SoHo in New York
Ghirardelli Square in San Francisco (see fig. 4) and Trolley Square in Salt Lake City (see fig. 5-8) demonstrated that recycling could be both popular and profitable, and similar commercial complexes have opened all over the country. (ULI-Adaptive, p. 217)

The success of these adaptive use projects has depended on more than economics. A new appreciation of industrial buildings, aesthetically as well as historically, has refined their values as important resources within the urban environment. These buildings provide visual documentation of America's industrial development, reflecting both changes in manufacturing methods and advancements in building technology. (ULI-Adaptive, p. 217)

Their brick, stone or concrete facades are often designed to reflect the functions of the buildings. A sense of strength, simplicity, and dignity can be expressed in these utilitarian structures. Windows are usually arranged in rhythmic patterns, and decorative elements such as arches, brick corbeling, or corner quoins break the severity of exterior walls. Interiors are characterized by exposed structural elements of heavy timber, cast iron, or concrete, and by great volumes of open space.
fig. 5

fig. 6

fig. 7

Wrought-iron railings on the second level are new but based on a turn-of-the-century design.

fig. 8

Interior of the car shop, September 1918.
chapter four

The Project Feasibility Study
Following the initial overview of a project’s potential, a detailed feasibility evaluation is often required. This more detailed evaluation should encompass four key areas: market and economic evaluation; site and locational analysis; structural and physical evaluations; and architectural and historical aspects. (see fig. 9)

One can find financial support as well as informational support from various public and governmental groups for studies of background material concerning architectural, historical, site, and locational considerations. Often times, research has already been applied to evaluate some of these key factors. Market and economic studies, as well as structural and architectural evaluations have often been undertaken by both private and public groups interested in historic preservation.

Checklist for an Adaptive Use Project

The checklist is intended to take those interested in adaptive use through the successive steps needed to realize the potential of an underutilized industrial building and to avoid unpleasant surprises. Some of the points are addressed to the profit-oriented developer, especially the ‘amateur’ who is converting a building for his own use or as a practical means of saving it, while others are addressed primarily to the preservationist who wants to see the building converted to some public use but who is dealing all the same with a structural work, governed by various laws, and requiring money for its upkeep. (Kidney, p. 4)
Market and Economic Evaluation

While developments such as Ghirardelli Square (fig. 4.2) have received favorable market acceptance, in smaller communities the market for adaptive use space, particularly for specialty shopping use, would not be as strong, and potential tenants might not be able to support the rent levels required after rehabilitation investments. In converting an older industrial building to a residential space, for example, it is essential to assess the market for residential use at projected price levels in the context of neighborhood quality and service. (ULI-Adaptive, p. 12)

A thorough market feasibility survey and analysis will help to test potential acceptance of the proposed project and is essential to proper evaluation of a recycling project.

An evaluation of the competition will be useful in determining the extent to which others are saturating the market demands. Because similar reuse projects are rare in a local market, it may be necessary to evaluate projects outside of that area in order to gather information on operating and physical characteristics similar to those of the proposed development.

Pull all findings together into a development program with economic guidelines based on the market analysis. Detailed information should be given concerning the development concepts to be considered; the amount of space which can be marketed all at once or in phases; and special design features which will give the project a competitive edge over the other similar uses in the market area. (ULI-Adaptive, p. 13)
The following are steps that may be taken in the evaluation process. These steps have been extracted from *Working Places* by Walter Kidney and *Adaptive Use* by the Urban Land Institute.

1) Check the potential for adaptation by considering the size of the building, its column spacing, ceiling heights, and interior spaces, and judge the ease or difficulty with which other uses may be fitted to the existing structure.

2) Find out the prognosis for the building as things are now. Is the building fully and efficiently used? In addition to the owner, consult city planning officials, state and federal planners, persons in the real estate business, and anyone who may be aware of plans for the building and its surrounding neighborhood. Keep an eye on the newspapers for developments affecting the building. Check the stability of present use of the building and its recent history of ownership and evaluate the continued use of that building if it were to remain.

3) Check the laws and codes and regulations governing the proposed use or uses.(see Appendix A)

4) Get city officials interested at the start of the project. Find alternative ways to show how the project can be beneficial to the neighborhood or to the city as a whole.

5) Find out what demand there is for the uses you are thinking of and what is being paid for space such as yours. In adapting for industrial buildings it may be difficult for specific data so stress the quality of space the building offers and the distinction that it can have from being associated with the city's history.

6) Check the financial resources, both direct and indirect. Federal and state agencies may be the first places to contact.(see Appendix A)

**Site and Location Evaluation**

The location and site characteristics of a property are always important factors in the evaluation of an adaptive use project. Key characteristics of the surrounding area include parking availability, transportation access, plans in progress which will alter the site, and the overall level of public services and safety.

In conducting a site analysis, the principle factors to be considered are the existing and planned uses of adjoining properties and their compatibility with the proposed reuse, recreational and entertainment offerings in the area, the social and environmental quality of the area, and the competitive structure of real estate sales and rentals.(ULI-Adaptive,p.14)

Survey the neighborhood and its present routes of access, and find out about the neighborhood's future. Different functions demand different surroundings. Consider not only the neighborhood as it is but as it will be when you have finished.

**Structural and Physical Analysis**

Physical and structural characteristics must be thoroughly inspected to determine a structure's suitability for the proposed new use. Buildings with severe structural problems may not be suitable for recycling. While the quality of original materials and craftsmanship in older buildings may be superior to that found in new construction, years of neglect can leave bricks and interior and exterior details, as well as structural and support systems, in need of extensive work.(ULI-Adaptive,p.14)
Most building codes are based on characteristics that relate to new construction. Factors such as floor area ratios, building setbacks, interior and exterior common area potentials, height restrictions, floor loading capacities, foundation and structural requirements, stairway configurations, parking requirements, access for the physically disabled, and ventilation and sanitary facilities represent major considerations that need to be examined in light of the building and fire codes disposition toward new buildings. (ULI-Adaptive, p.15) Generally, a reused structure will need to be brought up to the modern standards of the building codes.

Consult a historic preservationist, they are to be preferred because they are more sensitive to the history and architecture of the building, and to the correct process which a good rehabilitation should conform.

Questions to be raised include: Who built the structure? What style is it? When was it constructed? What were the original and subsequent uses of the building? Why is the building or elements significant?

The architectural potential of a structure is a primary consideration in successful recycling. The architect's ability to recognize and develop this potential can be the difference between financial success of failure of a project. Space utilization, interior circulation, architectural graphics, as well as imaginative use of materials can all be combined to give the structure unique character with economically efficient use of space.

**Historical and Architectural Evaluation**

The historical evaluation of a building will sometimes result in its being placed on the National Register of Historic Places or on an equivalent state or local register of historic properties. (ULI-Adaptive p.16) Such recognition for a structure may benefit the owner or developer of the adaptive use project in terms of tax abatements or incentives, increase in the image and marketability of the property, and access to public funding and other benefits. Sometimes the building(s) may be part of a district or neighborhood zoned as historic; this may also provide financial support for its occupants. There may be restrictions that will need to be checked as part of the overall architectural and historical evaluation, to avoid harming the character within the structure or district.

The evaluation criteria is used to separate and analyze information essential for determining which buildings should be retained and which might or should be demolished.

The following are steps that may be taken in this evaluation process. These steps were extracted from *Working Places* by Walter Kidney and *Adaptive Use* by the Urban Land Institute.

1) Determine the value of the context, considering the building as a single part of the rehabilitation plan for the entire area. The evaluation also judges whether a building can accommodate one or more of the proposed new uses for the community.
2) Study the architectural merit, considering the design quality of each building. Take into account its proportion, size, detailing, and quality of both design and construction, as well as its relationship to adjacent structures.

3) Once again consider both the external and internal structural conditions of each building, in terms of its suitability for rehabilitation. Ask the question: Can the structure be the main architectural element of the project?

4) Review the project's historical merit. Consider the history of each building and judge its contribution to the history of the city and community.

Often times determining the architectural significance is the most difficult task. In most cases personal feelings or taste are used. In some peoples' eyes a run-down, deteriorated building is simply not valued architecture. To others, that building can be seen as great hope and opportunities for a community. With each view, a checklist to make the decision process easier and make better and sound judgements, may be the best answer. Here, public opinion is a good place to turn if the pros and cons of the project stack evenly.

Financing
Many communities have been using Community Development Block Grant money to partially finance adaptive use projects, while some have used urban renewal funds (see Appendix A) At the national level, the National Preservation Fund, established in 1971, operated as a revolving fund. More and more, communities have been establishing such funds, usually administered through preservation groups at the local level. The purpose of the fund is to provide loans and grants for buying and rehabilitating historic structures. (ULI-Adaptive, p.24)

There are many other financial support agencies, groups, funds, and grants to help finance the adaptive use project. Not all aid is for historic structures alone. There are tax laws which can also help speed up the rehabilitation process, and allow for more time being spent on research. Appendix A lists some of these agencies and grants that can be useful for an adaptive use project.
chapter five

The Project Implementation
After the detailed planning and financing phase, the final step in the adaptive use process is implementation. This stage includes the physical rehabilitation of the property, project management, and marketing. (see fig. 10)

Close construction management and effective and quick decision making are critical to avoid substantial cost overruns. These cost overruns and lost time in rehabilitation directly affect the economic viability of the project, not only in direct cost increases, but also in lost rents due to delays. (ULI-Adaptive, p. 33)

When the project is completed, management of the facilities will often be critical to the overall success of the reuse. This is particularly true in regards to commercial buildings, when turnover of merchants and related management problems can lead to failure of a project which has otherwise been successfully recycled. (ULI-Adaptive, p. 33)

Rehabilitation

During the physical rehabilitation of the structure, close attention should be given to construction management. Since all adaptive use projects are unique in many ways, the close supervision of an experience architect and/or preservationist is crucial in controlling rehabilitation costs. Costs can be saved by determining early whether the building is suitable for the proposed use or uses and then by preparing realistic development parameters.
It is important to try to abide by construction budgets once they are established. This is not always possible because of the many unknown factors which can be encountered in older buildings. But through good management, the potential rehabilitation cost overruns can be minimized.

The recycling of existing building materials can also be a cost savings and should be investigated prior to the actual rehabilitation work.

As noted before, experience has shown that by preparing and implementing well conceived architectural plans, rehabilitation costs associated with adaptive use projects can be comparable to costs of new construction and in many cases have been 25 to 30 percent less. (ULI-Adaptive, p.34) Recycling projects are primarily labor intensive with less materials required than new construction. Therefore, through adaptive use efforts, one can offer a highly competitive product.

Management

Overall project management from initial development through completion and into the future represents one of the most significant areas of responsibility for a real estate venture. (ULI-Adaptive, p.35) This is especially true for the adaptive use project where a greater number variables may occur in terms of the physical characteristics of the building.

The project manager should be located on site, if possible. The manager will allow for greater control of time and costs. The manager’s duties may include continuing liaisons among the sponsor, building occupants, and others involved in the daily functions of the rehabilitation are important. (ULI-Adaptive, p.35) The manager should also coordinate promotional efforts for the development.

Long-term property management and maintenance are also critically important to the viability of the development. The importance of these functions should be reflected in the projects operating budget. Continued preventive maintenance should be practiced to further extend the economic life of the building.

Marketing

Project marketing can also be an important part of implementation. The fact that a building is already built, allows for a significant amount of marketing time. This is good for project financing, and this early marketing generates early cash flow.

An important component of the marketing program is the selection of the building uses. The proper combination of uses can be essential to the success of the recycling project. For example, specialty retail stores, major anchors and restaurants should complement each other. In leasing space in a specialty retail center, a balance should also be achieved between chain operations and local merchants. The former are important because they are proven generators of sales, the latter because they contribute the local flavor that is important to a specialty center. (ULI-Adaptive, p.35)
Since existing structures are, in most instances, protected from the outside elements, with visible potential floor layouts, early marketing is possible in adaptive use projects. With these projects it is easiest to discuss with potential users early in the development process. The developer can save time and money by initially designing and providing space to meet the needs of specific users.

Careful architectural and design treatment in the marketing areas may prove very useful in leasing efforts, since most individuals are not familiar with the advantages of older buildings until they are fully renovated. Accordingly, the areas set aside for marketing, should reflect the quality and image of the project which makes it unique and noteworthy compared to conventional new construction. Graphics and marketing brochures which describe the historic significance and distinctive physical features of the building will contribute to a successful marketing venture. (ULI-Adaptive,p.35)

The design considerations should reflect the information collected from the for key areas; the market and economic evaluation, the site and location analysis, the structural and physical considerations, and the architectural and historical aspects of the project. This data can help push the design in many ways. Most often, the design concepts can be found within a small portion of the project, like a detail, the orientation, or the architecture of the structure itself.
chapter six

Case Study: The South Bend Studebaker Corridor
The objective of this study was to assess the feasibility of redevelopment of the Studebaker Corridor, in South Bend, Indiana. The evaluation of the area economic trends, review of the history of the Studebaker Corporation and its impact on the community, population and employment trends, site and building evaluations, architectural analysis, and the quality of life, were all part of the research.

The majority of the findings focus on an understanding of the economic context for the community which strongly determines the reuse potentials for a project. A careful look at supply and demand to determine specific suitable functions for the Corridor, and to provide the city of South Bend alternatives to demolition by using this information is the goal.

Much of the research material has been obtained from prior studies performed by the Department of Redevelopment, the University of Michigan Urban Projects Team, and by the Battelle Research Institute.

Introduction

Because the Studebaker Corporation has so long been a part of the South Bend community and the community has been so much a part of the Studebaker heritage, the area for redevelopment should render adequate historical significance. Through reading the history of the Studebaker Corporation, it is clear how rapidly the business grew. As the business grew, so did the community around it. There was such a rapid growth in the industry that the Studebaker Corporation became a community operation. Entire families were employed by Studebaker. It was not unusual for three
generations of one family to be employed by Studebaker at the same time. For a more in-depth history of the Studebaker Corporation, see Appendix C.

The Studebaker Motor Corporation became the center of heavy industry in the city of South Bend. In the 1930’s it reached its peak employment with over 22,000 employees. (Debt. Economic Dev., p.4) Because of this tremendous growth, the entire city benefited. More and more money and people were entering the community so the rapid expansion of new businesses were directly the result of Studebaker’s success. Prospective businesses saw the economic growth developing in South Bend and quickly took advantage of the opportunity, expanding the size of the city to major status.

After World War II, operations at the Studebaker Corporation began to decline. This continued into the 1960’s. Studebaker shut down its operations on December 9, 1963, when employment was roughly 6,000 and its annual payroll was $30 million. (Dept. Economic Dev., p.4) Now, Studebaker is no longer in operation in South Bend, but its impact lingers on. The memories are still fresh in the community’s resident’s minds, and the desire to preserve these memories are possible with the revitalization of the Studebaker Corridor.

Location
The city of South Bend is located in the central portion of northern Indiana. The project area, (see fig 11) which encompasses the main plant complex of the former Studebaker Motor Corporation, as well as other
underutilized land adjacent to the plant, consists of approximately 220 acres located near the southwest portion of the Central Business District.

The Studebaker Corridor is bounded, generally, by the Conrail tracks on the north, the north/south alley between Main and Michigan Streets on the east, Indiana Avenue and Cotter Streets on the south, and Prairie Avenue on the west. (Dept. Economic Dev., p.3)

Recent Development

Current Development in the South Bend area includes the renovation of the Union Station and the construction of Stanley Coveleski Regional Stadium (Chicago White Sox Farm Club), both of which are located just north of the railroad tracks on the northern most boundary of the Studebaker Corridor. Other development includes the opening up of the Michigan Street mall to vehicular traffic again, the Century Center and Marriott/First Source Bank complexes, the East Raceway for river recreation, and numerous ongoing construction in the downtown area. The redevelopment of the Corridor area would provide a continuation of this downtown improvement push.

The Problem

One of the major problems with the Studebaker buildings is the fact that they are large multi-story facilities. Realistically, these buildings would have to be subdivided to be reusable. The configuration of each floor is another important factor. Most of the Corridor buildings are narrow to provide for natural light, so tenants must rely on elevators to supply and transport goods if the building were used for industrial, retail, office, or housing. If renovation is the approach, most likely the buildings would be leased to multiple tenants. A major factor influencing this are the high cost of new mechanical systems to make the buildings reusable again. This is typical for any building in the Corridor.

As a result of underutilization, the buildings have not generated enough income to be adequately maintained and have continued to deteriorate, resulting in a downward spiral of decreasing property values.

The problems of the Corridor are heavily influenced by the extent of economic activity anticipated in the region. If there is no demand for space, then there is no reason the city will reuse the property. This is a 'market driven' problem. A second major influence for reuse are the buildings capabilities. This is determined by the physical and structural evaluation.

Image

The Studebaker Corridor has different meanings to different people. Many in the community have expressed the view that the buildings should be demolished. Others feel that the buildings are a part of the city and should be retained if economically possible. Neither solution is easy, as it has been obvious over the past twenty-five years.

Many people have noted that a major problem with leasing and selling space would be the current image of the Corridor buildings and land. The image is complicated by the history of the Studebaker plant closing as well as the
TABLE 1
Population and Other Demographic Estimates

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<th>Michigan Counties</th>
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TABLE 2
Employment Trends

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<th>Unemployment Rate</th>
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</thead>
<tbody>
<tr>
<td>South Bend and Mishawaka MSA</td>
<td>125,200</td>
<td>117,400</td>
<td>7,800</td>
<td>6.2%</td>
</tr>
</tbody>
</table>

Source: Indiana Employment Security Division, Research and Statistics (February 1987)

TABLE 3
Population Trends

<table>
<thead>
<tr>
<th></th>
<th>1970</th>
<th>1980</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Joseph County</td>
<td>244,827</td>
<td>241,617</td>
<td>-1.3%</td>
</tr>
<tr>
<td>Region</td>
<td>454,469</td>
<td>477,657</td>
<td>5.1%</td>
</tr>
<tr>
<td>Indiana</td>
<td>5,195,392</td>
<td>5,490,179</td>
<td>5.7%</td>
</tr>
<tr>
<td>United States</td>
<td>203,235,298</td>
<td>226,504,825</td>
<td>11.4%</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of the Census

condition of the buildings and the general neglect of the area as evidenced by the debris scattered about the site. Many developers say they wouldn't bring prospective clients to the corridor simply because of the existing negative image. The improvement of this image is a major design issue.

Demolition Alternative

Many feel that the current conditions of the Corridor buildings are beyond repair. Their alternative is to demolish and construct a new building(s) on the site. A major problem with demolition is the high cost. Because of the heavy construction, typical implosion methods could not be used, instead, the old method of a crane and wrecking ball would have to be used. The total cost of demolition of the Studebaker buildings would be $2.40 per square foot. One example, the total cost would be $1,320,000, for the demolition of the Transwestern Building alone. (Dept. Economic Dev., p. 26)

Population and Economic Trends

The 1980 census for St. Joseph county shows a population of 241,617. The population of South Bend is 109,727. This population is found within the city's corporate 30.71 square miles. (Dept. Economic Dev., p. 8) While the state of Indiana's and the United States' population have increased, St. Joseph county's population had a 1.3 percent decline from 1970 to 1980. These population trends are typical for many older manufacturing communities.(see tables 1-3)
Employment patterns indicate that although the South Bend area is becoming more of a service economy, there are specific sectors in the durable goods industry that are expanding.

A brief study into the market projections for the South Bend area was performed. The following discoveries were made. (see also tables 4-5)

1) An overall vacancy rate for the South Bend community for retail space is currently approximately 2.7 percent.
2) There are no major department anchors in the downtown area. The majority of the anchors are currently very successful in the strip developments and mall centers outside of the central business district.
3) Current retail activity in downtown South Bend is best described as a diverse group of small shops disbursed throughout the downtown area. Some are older established businesses, while others are new and uncertain of their market appeal.(Zuchelli,p.10)
4) Retail activity in downtown South Bend has remained steady since 1980, and there are indications that there are additional demands that could be established.
5) Examples of specialty retail centers have been identified as the type of facilities downtown retailers should consider as competition because of the probable lack of a major anchor coming back to the downtown South Bend.
6) Ideally, the city would need to provide retail facilities that appeal to unique niches in the market.
7) The retail potential Net Unmet Demand for the South Bend Area is 278,450 S.F. between 1985-1990. Much of this demand is from the downtown businessman and visitors.(Zuchelli,p.10)

<table>
<thead>
<tr>
<th>Business Type</th>
<th>Space Needs (Square Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catering Business</td>
<td>2,000</td>
</tr>
<tr>
<td>Ladies Apparel</td>
<td>2,000</td>
</tr>
<tr>
<td>Collectibles Shop</td>
<td>800</td>
</tr>
<tr>
<td>Frozen Yogurt</td>
<td>600-1,000</td>
</tr>
<tr>
<td>Pizza by the Slice</td>
<td>600</td>
</tr>
<tr>
<td>Deli Restaurant</td>
<td>2,000</td>
</tr>
<tr>
<td>Gourmet Coffee Shop</td>
<td>500</td>
</tr>
<tr>
<td>Sandwich Shop</td>
<td>800-1,000</td>
</tr>
<tr>
<td>Shoe Repair</td>
<td>500-1,000</td>
</tr>
<tr>
<td>Variety Store</td>
<td>10,000</td>
</tr>
<tr>
<td>Pizza Restaurant</td>
<td>4,000</td>
</tr>
<tr>
<td>Video Rental</td>
<td>1,000</td>
</tr>
<tr>
<td>Jazz Cabaret/Restaurant</td>
<td>3,000</td>
</tr>
<tr>
<td>Theater Restaurant</td>
<td>4,000</td>
</tr>
<tr>
<td>Express Mail Service Center</td>
<td>500</td>
</tr>
</tbody>
</table>

Source: South Bend Department of Redevelopment.
### Projected Retail Sales Potential
#### City of South Bend - Non-Downtown Worker Population

<table>
<thead>
<tr>
<th>Selected Categories</th>
<th>Change Projected Sales City of South Bend</th>
<th>Change Projected Sales Downtown Workers</th>
<th>City of South Bend Net Retail Sales Potential</th>
<th>Sales/Square Foot</th>
<th>New Square Feet of Space Demanded</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1985-1990</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Merchandise</td>
<td>$14,500,000</td>
<td>$1,800,000</td>
<td>$12,700,000</td>
<td>$160</td>
<td>79,375</td>
</tr>
<tr>
<td>Apparel &amp; Accessories</td>
<td>$4,500,000</td>
<td>$560</td>
<td>$3,940,000</td>
<td>$160</td>
<td>24,625</td>
</tr>
<tr>
<td>Furniture, Home Furnishings</td>
<td>$5,700,000</td>
<td>$70,000</td>
<td>$5,000,000</td>
<td>$133</td>
<td>37,600</td>
</tr>
<tr>
<td>Eating/Drinking</td>
<td>$13,900,000</td>
<td>$1,720,000</td>
<td>$12,180,000</td>
<td>$240</td>
<td>50,750</td>
</tr>
<tr>
<td>Miscellaneous/ Specialty</td>
<td>$14,300,000</td>
<td>$1,700,000</td>
<td>$12,530,000</td>
<td>$186</td>
<td>67,370</td>
</tr>
<tr>
<td><strong>1990-1995</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Merchandise</td>
<td>$9,100,000</td>
<td>$1,640,000</td>
<td>$7,460,000</td>
<td>$180</td>
<td>41,445</td>
</tr>
<tr>
<td>Apparel &amp; Accessories</td>
<td>$2,300,000</td>
<td>$52,000</td>
<td>$2,380,000</td>
<td>$180</td>
<td>13,200</td>
</tr>
<tr>
<td>Furniture, Home Furnishings</td>
<td>$3,500,000</td>
<td>$64,000</td>
<td>$2,860,000</td>
<td>$145</td>
<td>19,725</td>
</tr>
<tr>
<td>Eating/Drinking</td>
<td>$9,000,000</td>
<td>$1,570,000</td>
<td>$7,430,000</td>
<td>$204</td>
<td>36,400</td>
</tr>
<tr>
<td>Miscellaneous/ Specialty</td>
<td>$8,700,000</td>
<td>$1,620,000</td>
<td>$7,080,000</td>
<td>$262</td>
<td>27,000</td>
</tr>
<tr>
<td><strong>1995-2000</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Merchandise</td>
<td>$9,900,000</td>
<td>$1,980,000</td>
<td>$7,920,000</td>
<td>$200</td>
<td>39,600</td>
</tr>
<tr>
<td>Apparel &amp; Accessories</td>
<td>$3,100,000</td>
<td>$62,000</td>
<td>$2,480,000</td>
<td>$200</td>
<td>12,400</td>
</tr>
<tr>
<td>Furniture, Home Furnishings</td>
<td>$3,900,000</td>
<td>$77,000</td>
<td>$3,130,000</td>
<td>$155</td>
<td>20,200</td>
</tr>
<tr>
<td>Eating/Drinking</td>
<td>$9,500,000</td>
<td>$1,890,000</td>
<td>$7,610,000</td>
<td>$220</td>
<td>34,600</td>
</tr>
<tr>
<td>Miscellaneous/ Specialty</td>
<td>$9,800,000</td>
<td>$1,950,000</td>
<td>$7,850,000</td>
<td>$280</td>
<td>28,000</td>
</tr>
</tbody>
</table>

*Not including downtown workers.*

The change in projected sales for City of South Bend minus change projected sales to downtown workers equals retail potential to City residents who don't work downtown. This number is divided by sales per square foot to determine square feet of space demanded.


table 5
Quality of Living

One of the most outstanding features of conducting business within the South Bend community is the areas excellent quality of life. Recently, INC. Magazine listed the South Bend area as one of the nations job creation and entrepreneurial "hot spots." They ranked South Bend as 24th in a list of 154 American communities in terms of job creation and entrepreneurial activity. The relative cost of living has a pertinent effort not only for the attraction and retention of employees with important skills, but also on the wage structure of a given community. (Battelle Resource Analysis p.36) Comparative costs show South Bend to be below the national average, compared with communities of like size, and well below that of larger metropolitan centers in the midwest. The cost of living in the area is 6.7% below the national average and 25-45% lower than the cost of living in major metropolitan areas. (see table 7) (Dept. Economic Dev., p.8)

While population in the South Bend area has declined slightly, the quality of life, energy cost, and transportation system represent an adequate resource for development and growth. Employment patterns indicate that although South Bend is becoming more of a service economy, there are still sectors in industry expanding. In addition, the recent "Dinosaur Building" legislation has increased the favorability of state tax laws to reuse the Corridor buildings.

The Dinosaur Building legislation in Indiana is an effort to find new uses for the obsolete factories built 20 or more years ago and left vacant for at least 2 years. To qualify a building must enclose a minimum of 100,000 square feet

### TABLE 7

<table>
<thead>
<tr>
<th>City, State</th>
<th>All Items</th>
<th>Groceries</th>
<th>Housing</th>
<th>Utilities</th>
<th>Transportation</th>
<th>Health Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Bend, IN</td>
<td>92.2</td>
<td>92.5</td>
<td>90.2</td>
<td>91.8</td>
<td>93.7</td>
<td>55.9</td>
</tr>
<tr>
<td>Anderson, IN</td>
<td>94.5</td>
<td>99.9</td>
<td>91.5</td>
<td>93.1</td>
<td>93.0</td>
<td>94.3</td>
</tr>
<tr>
<td>Fort Wayne, IN</td>
<td>94.3</td>
<td>101.2</td>
<td>93.6</td>
<td>93.7</td>
<td>90.4</td>
<td>84.2</td>
</tr>
<tr>
<td>Indianapolis, IN</td>
<td>97.6</td>
<td>100.0</td>
<td>97.0</td>
<td>87.8</td>
<td>107.7</td>
<td>95.8</td>
</tr>
<tr>
<td>Warsaw, IN</td>
<td>97.8</td>
<td>99.2</td>
<td>91.3</td>
<td>112.8</td>
<td>101.3</td>
<td>95.1</td>
</tr>
<tr>
<td>Decatur, IL</td>
<td>94.5</td>
<td>89.9</td>
<td>88.3</td>
<td>104.5</td>
<td>98.1</td>
<td>91.1</td>
</tr>
<tr>
<td>Rockford, IL</td>
<td>102.8</td>
<td>100.8</td>
<td>86.2</td>
<td>120.8</td>
<td>98.2</td>
<td>106.5</td>
</tr>
<tr>
<td>Springfield, IL</td>
<td>101.0</td>
<td>95.3</td>
<td>102.3</td>
<td>113.2</td>
<td>97.1</td>
<td>102.7</td>
</tr>
<tr>
<td>Benson Harbor, MI</td>
<td>103.4</td>
<td>102.9</td>
<td>110.4</td>
<td>92.5</td>
<td>104.3</td>
<td>97.6</td>
</tr>
<tr>
<td>Jackson, MI</td>
<td>95.6</td>
<td>97.3</td>
<td>85.0</td>
<td>104.4</td>
<td>94.2</td>
<td>97.3</td>
</tr>
<tr>
<td>Kalamazoo, MI</td>
<td>107.3</td>
<td>97.8</td>
<td>111.9</td>
<td>104.8</td>
<td>109.9</td>
<td>116.1</td>
</tr>
<tr>
<td>Lansing, MI</td>
<td>105.2</td>
<td>101.0</td>
<td>106.6</td>
<td>87.5</td>
<td>107.7</td>
<td>124.9</td>
</tr>
<tr>
<td>Marquette, MI</td>
<td>100.6</td>
<td>103.6</td>
<td>88.8</td>
<td>103.1</td>
<td>107.7</td>
<td>126.8</td>
</tr>
<tr>
<td>Traverse City, MI</td>
<td>108.9</td>
<td>101.7</td>
<td>113.4</td>
<td>103.5</td>
<td>106.8</td>
<td>108.0</td>
</tr>
<tr>
<td>St. Cloud, MN</td>
<td>98.1</td>
<td>97.7</td>
<td>88.7</td>
<td>107.4</td>
<td>104.3</td>
<td>103.1</td>
</tr>
<tr>
<td>St. Paul, MN</td>
<td>102.7</td>
<td>94.6</td>
<td>111.0</td>
<td>98.3</td>
<td>111.9</td>
<td>103.7</td>
</tr>
<tr>
<td>Akron, OH</td>
<td>96.9</td>
<td>92.0</td>
<td>93.8</td>
<td>118.8</td>
<td>92.6</td>
<td>100.4</td>
</tr>
<tr>
<td>Cincinnati, OH</td>
<td>102.2</td>
<td>103.9</td>
<td>106.6</td>
<td>114.8</td>
<td>101.5</td>
<td>93.6</td>
</tr>
<tr>
<td>Cleveland, OH</td>
<td>101.7</td>
<td>100.0</td>
<td>95.6</td>
<td>100.0</td>
<td>112.6</td>
<td>104.9</td>
</tr>
<tr>
<td>Columbus, OH</td>
<td>103.3</td>
<td>103.9</td>
<td>96.3</td>
<td>112.9</td>
<td>106.7</td>
<td>98.4</td>
</tr>
<tr>
<td>Lorain, OH</td>
<td>100.3</td>
<td>98.1</td>
<td>101.0</td>
<td>110.4</td>
<td>91.9</td>
<td>94.8</td>
</tr>
<tr>
<td>Appleton, WI</td>
<td>94.1</td>
<td>92.9</td>
<td>99.8</td>
<td>101.5</td>
<td>88.4</td>
<td>88.1</td>
</tr>
<tr>
<td>Fond du Lac, WI</td>
<td>99.6</td>
<td>96.0</td>
<td>111.9</td>
<td>91.8</td>
<td>99.4</td>
<td>92.5</td>
</tr>
<tr>
<td>Green Bay, WI</td>
<td>98.6</td>
<td>99.0</td>
<td>100.4</td>
<td>93.7</td>
<td>108.1</td>
<td>94.2</td>
</tr>
<tr>
<td>La Crosse, WI</td>
<td>96.9</td>
<td>96.4</td>
<td>92.5</td>
<td>109.0</td>
<td>98.8</td>
<td>85.5</td>
</tr>
<tr>
<td>Marquette, WI</td>
<td>95.2</td>
<td>98.3</td>
<td>90.1</td>
<td>92.8</td>
<td>105.0</td>
<td>86.0</td>
</tr>
<tr>
<td>Oshkosh, WI</td>
<td>100.1</td>
<td>92.2</td>
<td>119.3</td>
<td>91.0</td>
<td>96.2</td>
<td>80.0</td>
</tr>
<tr>
<td>Stevens Point, WI</td>
<td>99.1</td>
<td>99.1</td>
<td>94.5</td>
<td>92.5</td>
<td>101.3</td>
<td>96.6</td>
</tr>
</tbody>
</table>

Source: Inter-City Cost of Living Index—Second Quarter, 1986.
American Chamber of Commerce Researchers Association.
and be 75 percent or more vacant. This legislation allows communities to designate buildings as enterprise zones that would become eligible for special tax credits. (Dept. Economic Dev., p. 8)

Building and Site Conditions

The majority of the buildings within the complex were constructed during the 1920s, and consist of reinforced concrete frames and brick curtain walls with large steel sash windows. A few of the buildings date back to the late 1800s and are constructed of heavy timber and have brick exteriors. The general deteriorating appearance of the structures and surrounding areas is very harmful to the attraction of new businesses.

The Studebaker Corridor area is zoned for industrial purposes. However, current uses suggest a different zoning of less intense utilization. Specifically, over half of the available space is vacant; with the remaining space being used for warehousing and manufacturing. These are continually fluctuating.

The Studebaker Corridor is often separated into two areas, the northern section and the southern section. Sample Street is the dividing line.

The southern section is in much better condition because of its high utilization rate characterized by a few strong users. The northern section is in very poor condition, and is very discouraging to potential users. Some of the problems are: debris left over from the Studebaker Corporation; vacant and deteriorating buildings; unused rail tracks;
overgrown vegetation; deteriorating interior roads and parking areas; broken and irregular fences; unused mechanical equipment in and on the buildings; and some structural deterioration due to lack of maintenance. Maintenance items in particular include broken windows, concrete deterioration to the point that reinforcing bars are exposed, deteriorating doors, and loose brick.

On map 1, a rating has been given to each of the buildings in the Corridor concerning the condition of their envelope. As seen, the majority of the buildings receiving a "low" or "poor" rating are in the northern section. On map 4, under-utilized buildings and open space are shown. From this we observe only one building south of Sample Street with low utilization. And we also see that intense under-utilization is located in the northern section. The largest and most visually dominant being the Shetland Industries building and the Transwestern Warehouse.

**Building Utilization**

The major industrial users in the Corridor are South Bend Lathe, Allied Products, and Huckins Tool and Die in the southern section. There are no industrial users in the northern section.

There are varying types and sizes of the warehousing operations in the Corridor, due to the large amounts of floor space available. Warehousing has a relatively inexpensive cost, but equally low income. The largest warehouses are Standard Surplus, which houses an inventory of Studebaker related parts and merchandise, South Bend Warehouse, and
## Occupancy (in square feet)
### Studebaker Plant Complex

<table>
<thead>
<tr>
<th>Building</th>
<th>Occupant or Owner</th>
<th>Total</th>
<th>Occupied</th>
<th>Vacant</th>
</tr>
</thead>
<tbody>
<tr>
<td>112</td>
<td>Midwest Distributing Co.</td>
<td>54,000 s.f.</td>
<td>27,000 s.f.</td>
<td>27,000 s.f.</td>
</tr>
<tr>
<td>69</td>
<td>South Bend Warehouse, et al</td>
<td>160,000 s.f.</td>
<td>160,000 s.f.</td>
<td></td>
</tr>
<tr>
<td>84, 113A, 113B</td>
<td>Shetland Properties</td>
<td>793,784 s.f.</td>
<td>20,000 s.f.</td>
<td>773,784 s.f.</td>
</tr>
<tr>
<td>33, 34, 35, 108</td>
<td>Avanti Motor Corp.</td>
<td>261,700 s.f.</td>
<td>261,700 s.f.</td>
<td></td>
</tr>
<tr>
<td>53, 58</td>
<td>Standard Surplus</td>
<td>274,900 s.f.</td>
<td>274,900 s.f.</td>
<td></td>
</tr>
<tr>
<td>47, 47A, 48, 48A</td>
<td>Transwestern/Rhodes</td>
<td>542,400 s.f.</td>
<td>80,000 s.f.</td>
<td>462,400 s.f.</td>
</tr>
<tr>
<td>1A</td>
<td>Vandalia/Valley Equipment</td>
<td>13,000 s.f.</td>
<td>13,000 s.f.</td>
<td></td>
</tr>
<tr>
<td>96</td>
<td>Huckins Tool &amp; Die</td>
<td>18,360 s.f.</td>
<td>18,360 s.f.</td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>South Bend Lathe</td>
<td>462,000 s.f.</td>
<td>462,000 s.f.</td>
<td></td>
</tr>
<tr>
<td>92</td>
<td>Corridor Properties, et al</td>
<td>160,000 s.f.</td>
<td>120,000 s.f.</td>
<td>40,000 s.f.</td>
</tr>
<tr>
<td>85</td>
<td>Michiana Regional Warehouse</td>
<td>500,000 s.f.</td>
<td>150,000 s.f.</td>
<td>350,000 s.f.</td>
</tr>
<tr>
<td>86, 93, 93A, 142</td>
<td>Allied Products (South Bend Stamping Division)</td>
<td>1,568,400 s.f.</td>
<td>880,900 s.f.</td>
<td>687,500 s.f.</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>4,808,544 s.f. (100%)</strong></td>
<td><strong>2,467,860 s.f. (51.4%)</strong></td>
<td><strong>2,340,684 s.f. (48.6%)</strong></td>
</tr>
</tbody>
</table>

Source: Studebaker Corridor Study  
Updated July 1985

* Not including South Bend Community School Corporation (building #62) and the Municipal Services Facility (noted in Table 1)
the Shetland building, which is the largest warehousing facility. (see also tables 8-10)

The South Bend Community School Corporation occupies the largest office building in the Corridor. But it is anticipated that the school corporation will be vacating this building within several years.

Three buildings make up the majority of the vacant space. They are the Shetland building which is only utilized for overflow warehousing, and the Transwestern building, which only a portion of its floor space is being used for storage. This is also the only building presently owned by the city of South Bend. The Foundry building, in the southern section, remains vacant for the most part.

There are about 2.5 million square feet represented by the under-utilized buildings. This constitutes the majority of the Studebaker property in the northern section.

Financial Alternatives

Table 11 shows relative costs to reuse alternatives for a typical Corridor building. The retail/office option appears to offer the most potential even though the renovation costs are substantially higher than the other alternatives. Light manufacturing, while less expensive to renovate, will also have lower rental rates. This option is what the city of South Bend is most considering. The parking garage is the least expensive to renovate, but also has limited income generating potentials.
Upgrading the condition of any one building in the Studebaker Corridor will not be successful using a short term approach. Similar experiences in other cities, like Cincinnati’s Union Station renovation, have demonstrated that unless a comprehensive, long term strategy is developed, the Studebaker Corridor will continue in its deteriorated condition. Vacancies will remain high, property values and taxes will be depressed and employment opportunities for the community will be at a loss.

The buildings in the Studebaker Corridor offer an excellent opportunity for rehabilitation. Demolition should not even be a consideration because of the history and significance of the Studebaker Corridor.

The Design Project

The final portion of this case study is the design project. The results are intended to provide the city of South Bend with a look at what might be a possible solution for the Studebaker Corridor. The design ideas and concepts have been derived from the preceding market and economic study performed in the city of South Bend and more specifically the Studebaker Corridor.

Although the Corridor is not listed on the National Register, I felt that the best way to preserve the integrity of the buildings and site would be to assume it was, thus all design decisions carefully followed the Secretary of the Interior Standards for Rehabilitation.(see appendix B) This would also allow the Studebaker Corridor the chance to be listed in the future.

The product is not intended to illustrate how the Corridor has to be, rather it offers the residents and city officials of South Bend one creative alternative to demolition.

Since the heritage of the Studebaker operations was and remains so important to the community of South Bend and St. Joseph County, the preservation of architectural, structural, and implied elements such as nostalgic implementations are very important in any design decisions.

As in all adaptive use projects, the ability to present a finished product that is both economically and visually successful is the intended result. The market research does not always insure the success of a building alone. The need to provide the users and consumers with unique spaces in which to operate is very crucial to a successful project. This quality of space runs hand in hand with the overall image expressed by the building before renovation and by the expression applied and implied within. Without the right combination of elements, both original and applied, the spaces may lose their originality and character. This would defeat the purpose of preserving the structure for its historical or architectural significance.

Because the southern section of the Corridor appears to be operating fairly successfully, the design project was primarily concerned with the underutilized and deteriorated northern section. By contact with city officials and using collected data, a site plan was created expressing the variety of functions that may take place within the Studebaker Corridor.(see fig.12)
The functions are as follows: Standard Surplus and the South Bend School Corporation building will remain the same. The former Avanti Motor Corporation Building has been designated to house the Studebaker museum and and working museum/operation demonstrating the manufacturing processes of today by using hi tech., robotic machinery. South Bend Warehouse is designated for conversion into a parking structure since the added functions will demand the space. The Transwestern building is designated to be partially converted into housing/apartments and partially converted into a parking structure. The Shetland Industries Building, the largest structure in the Corridor, has been allocated for space for retail, office, and hotel facilities.

Much of the study and image sketches were utilizing the possibilities within the Shetland building because of its prominence within the Corridor. Its six-story height makes it visible from the downtown area. It overlooks the recently renovated Union Station (see fig.13) and newly constructed stadium to the north, and appears to be the anchor and guardian to the rest of the Corridor buildings to its south.

One way to provide a unique quality with any project is by being playful with existing and implied elements. One very prominent feature within the Shetland building are the overwhelming mushroom columns. These columns range in diameter from three feet in the basement to sixteen inches on the sixth floor spaced twenty-five feet on center. The super structure is in good condition.
Because of the enormous impact and prominence of the structure, a major design decision was made to incorporate the structure as one of the main features. The idea of designing walls that would wrap around the column to give the user of the facility the opportunity to experience the structure was incorporated into major circulation areas. The feature can be seen in the study sketch, the section perspective and the floor plans. (see fig. 14-16)

Other elements utilized within this building are steel, glass and brick. All of these elements are rustic and typical of the factory in the early 1900's. The use of these elements in the project can be seen in other drawings. (see fig. 17-19)

Playfully designed elements were implied within the developable land of the Corridor. Most notably is the image of the 1929 Studebaker automobile which forms the large plaza to the south of the Shetland building. This playful element is formed by the use of different colored and textured pavings and with earth shaping. The symbolic headlights of the automobile are functional fountains, and the windshield becomes a pool of water. (see figs. 12, 20)

The design project is the product of a combination of research information collected and architectural elements available. The conclusion to preserve a piece of history for the community of South Bend rather than destroying the only part of Studebaker that is left is the major concern. The Studebaker Corridor offers an excellent opportunity for adaptive use.
chapter seven

Conclusion
This publication was developed to help explain the many reasons for the growing interest in reusing older buildings and the planning and development process and techniques used to implement successful adaptive use projects.

Adaptive use is quickly gaining the attention of the real estate and financial communities, public agencies, preservation groups, architects and planners, and property owners who are beginning to recognize the values of older structures. Factors such as quality and inherent character of the original structure; potential cost savings during the construction period; availability of underutilized properties with strategic locations; positive effects associated with property values and taxes on surrounding land uses; and increased awareness, understanding, and cooperation of varied interest groups which jointly develop such properties are but some of the influences which have generated this recent surge of adaptive use developments and proposals. (ULI-Adaptive, p.36)

Realistic planning guidelines must be developed early in the process in order to be successful. The benefits of retaining older structures should be evaluated from the perspectives of market, financial, and physical planning, as well as from the standpoint of preserving our built environment. (ULI-Adaptive, p.36)

The bottom line, economically, in an adaptive use project should be rewarding in terms of financial returns to the developer. Equally rewarding is the fact that a product has been created which can have a long-term positive effect on the community. Historically, adaptive use can restore a sense of pride to a forgotten neighborhood and provide the community with the restoration of their past.
appendix A

Law and Adaptive Use Resources
Federal Law
The foundation of the present historic preservation structure in the United States is the National Historic Preservation Act of 1966. It authorizes the Secretary of the Interior to maintain a National Register of Historic Places and to make matching grants for preservation purposes to the State and to the Nation Trust for Historic Preservation; it also strengthened the role of the Advisory Council on Historic Preservation.

The Advisory Council's functions are to act as the 'watchdog' over the federally-sponsored programs affecting National Register properties. Under Section 106 of the National Historic Preservation Act, the Council must be given an opportunity to comment on any proposed action that might affect a property.

Among other things the Advisory Council publishes a free 'Report' eight times a year, listing cases submitted to it for comment of legislation and other events affecting preservation at the national level. The National Trust also publishes Advisory Council information on current legislation.

State Law
The State Historic Preservation Officer (SHPO), appointed by the governor, form the State liaison with the United States Department of the Interior. His duties are to supervise historic surveys and preservation planning, to nominate properties for National and/or State Registration listing, to consult with people regarding historic properties, to administer Department of the Interior grants, and to do preliminary Section 106 reviews before the Advisory Council takes the application.

Local Laws
Historic District zoning, tax abatement, easements, development rights, and transfers are mainly administered at the local level. Other compliances in an adaptive use or historic preservation project at the local level include: the building codes, the zoning laws, and the health, safety, and parking laws.

source: The Adaptive Use of Industrial Buildings by Walter Kidney pages 141,142
The Tax Reform Act

In order to help preserve the architectural and aesthetic beauty of America's cities, Congress, in 1978, enacted the Rehabilitation Investment Tax Credit (RITC) as part of the Revenue Act of that same year. Its purpose was to encourage the rehabilitation of historic and other older buildings through federal tax incentives. This initial program authorized a 10 percent RITC for each renovation dollar spent.

The Tax Reform Act of 1986 overhauled the entire tax law. Congress repealed many tax credits and deductions in order to reduce tax rates while keeping the Act revenue neutral. The RITC, however, was retained and remains a valuable incentive. (Ohio Historic Preservation Office, p.1)

Following the 1986 Act, RITC rates are 20 percent for a historic building, and 10 percent for a non-historic building. A historic building is one that is either listed on the National Register of Historic Places (National Register) or one that contributes to a national or local historic district. A non-historic building is one built before 1936. (Ohio Historic Preservation Office, p.1)

To be eligible for the Tax Act incentives, a building must be used in a trade or business or held for rental. A non-historic building must be used for non-residential purposes; a historic building may be used for either residential or non-residential purposes. Non-residential use includes commercial use, such as an office building, and transient residential use, such as a hotel or motel. It does not include an apartment building. The use is determined after rehabilitation. (Ohio Historic Preservation Office, p.1) The guidelines for rehabilitation, according to the Secretary of Interior Standards, can be found in the appendix of this report.

Community Development Block Grants:

This program provides grants to states, cities and other units of local government and to developers and citizens associations of assisted new communities. Activities must be part of a community development program, plans for which are submitted to HUD as part of the grant application. Eligible activities include: Acquisition and restoration of historically and architecturally significant property, natural and scenic areas, recreation sites and open space, and the construction of public facilities. Eligible rehabilitation activities include financing the rehabilitation of privately owned property through grants, direct loans, loan guarantees or other means when done in support of the grantee's community development program.

Comprehensive Planning Assistance Program 40(Section 701):

This program provides grants to states and cities with populations of 50,000 or more, areawide metropolitan planning agencies, certain urban counties, or government units with special planning needs and Indian tribal bodies. A broad range of activities is available for the necessity to develop and carry out a comprehensive plan as part of an ongoing planning process. Historic preservation planning is an eligible activity. Activities can encompass surveys to
Identify significant structures and sites. Criteria for historic preservation includes: established evaluation of properties that are significant; consideration of the relationship of historic sites to other elements in the planning; determining the preliminary cost estimates for rehabilitation of the property; and preparation of historic preservation items into a program of action indicating responsible agencies and time tables.

Rehabilitation Loans and Grants:

This program provides loans and grants to repair and rehabilitate properties within the boundaries of federally assisted urban renewal, neighborhood development or code enforcement projects. In some cases, persons may qualify for both grants and residential rehabilitation loans. Loans and grants may cover costs of work to correct actual code violations or conditions apt to deteriorate into violations within a two year period. Rehabilitation loans cover costs of meeting specific objectives of urban renewal projects may also cover general improvements such as additions, renovations and remodeling. Some loans may cover the costs of converting buildings to other uses.

Urban Renewal Program:

This program advances loans and grants to state and local public agencies authorized to carry out projects for slum prevention and the redevelopment of blighted, deteriorated urban areas. Projects may include planning activities related to historic preservation. These activities include surveys to identify historically and architecturally significant properties within the urban renewal area and determine the feasibility of their rehabilitation or restoration; the preparation of historic preservation plans for project areas; the preparation of educational materials emphasizing the distinctive qualities of the areas; the preparation of property restoration standards; and the provision of staff to aid property owners in solving common problems on the design of the property.

Grants-in-Aid for Historic Preservation: Acquisition and Development:

This program matches grants to states and territories and the National Trust for Historic Preservation for acquisition and development of historic properties. Grants to states and territories are awarded under an annual application that covers all proposed survey, planning, acquisition and development activities for the year. A project must be in accord with the state's statewide historic preservation plan as approved by the Department of Interior. The property being acquired or developed must be listed in the National Register; there must be a need for financial assistance for preservation or the property must be owned by the National Trust for Historic Preservation.

Grants-in-Aid for Historic Preservation: Surveys and Planning:

This program is designed to match grants to states and territories for historical surveys and planning and to the National Trust for Historic Preservation for educational and technical assistance programs. These grants cover up to 50% of the costs. The purpose of the program is to finance
surveys by which historic properties are identified, evaluated, included in the state inventory of historical structures or sites, and when appropriate, nominated for the listing in the National Register, the federal government's list of buildings, structures, objects, sites and districts considered worthy of preservation.

National Register of Historic Places:

This program was created to maintain a national list of properties worthy of preservation because of their significance in architecture, history, archaeology and culture. The National Register includes all historic sites in the National Parks system, all property designated as National Historic Landmarks, and properties of state and local significance. Properties that are districts can be nominated for listing by the states through the state historic preservation offices. Listing in the National Register is a prerequisite for preservation assistance under Grants-in-Aid for Historic Preservation but does not insure financial assistance under this or any program. The National Register's purpose is to serve as a tool for environmental planning, identifying resources that should be considered in any proposed development.

National Survey of Historic Sites and Buildings/National Historic Landmarks Program:

This program was set up to study and identify potential National Historic Landmarks; districts, sites, buildings, structures, and objects of national significance that illustrate the historical heritage of America. Property eligible for Historic Landmark Designation is automatically listed in the National Register.
appendix B

Secretary of the Interior Standards
The Secretary of the Interior's Standards for Rehabilitation

1. Every reasonable effort shall be made to provide a compatible use for a property which requires minimal alteration of the building, structure or site and its environment, or to use a property for its originally intended purpose.*

2. The distinguished original qualities or character of a building, structure or site and its environment shall not be destroyed. The removal or alteration of any historic material or distinctive architectural features should be avoided when possible.*

3. All buildings, structures and sites shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create an earlier appearance shall be discouraged.*

4. Changes which may have taken place in the course of time are evidence of the history and development of a building, structure, or site and its environment. These changes may have acquired significance in their own right, and this significance shall be recognized and respected.*

5. Distinctive stylistic features or examples of skilled craftsmanship which characterize a building, structure or site shall be treated with sensitivity.*

6. Deteriorated architectural features shall be repaired rather than replaced, wherever possible. In the event replacement is necessary, the new material should match the material being replaced in composition, design, color, texture and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplication of features, substantiated by historical, physical or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other buildings or structures.*

7. The surface cleaning of structures shall be undertaken with the gentlest means possible. Sandblasting and other cleaning methods that will damage the historic building materials shall not be undertaken.*

8. Every reasonable effort shall be made to protect and preserve archaeological resources affected by, or adjacent to any project.*

9. Contemporary design for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant historical, architectural or cultural material and such design is compatible with the size, scale, color, material, and character of the property, neighborhood or environment.*
10. Wherever possible, new additions or alterations to structures shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be unimpaired.*

* source: Preserving America's Heritage, p.22
appendix C

History of the Studebaker Corporation
Studebaker, the world’s oldest manufacturer of highway vehicles, was founded on February 16, 1852, when two brothers, Henry and Clem Studebaker, opened a small blacksmith and wagon-building shop in South Bend. Their total capital amounted to $68 and their plant consisted of two forges there first year. Three wagons were built and sold during their first year in business. (Studebaker National Museum)

In 1856, Henry and Clem built their first carriage, and a year later they accepted their first big order; a request from the government for 100 wagons for Federal troops in Utah. In 1858, a third brother, John Mohler, known as "J.M.", joined the enterprise, and invested his savings that he earned building wheelbarrows and repair work.

In 1860, another brother, Peter, entered the organization and became its chief salesman. By this time the capital had been increased to $10,000, and the small blacksmith shop had been taken over by a shop large enough for making both wagons and carriages, and a small show room to display them. By 1867, assets amounted to more than $223,000, and their business was growing so rapidly that the need for reorganization became imperative. (Studebaker National Museum) So in 1868, The Studebaker Brothers Manufacturing Company was formed and three of the brothers were top officials. Clem headed the organization as president, J. M. was treasurer, and Peter as secretary. The working force at the time amounted to 190 employees.

During the Civil War, Studebaker built wagons, carts, and harness sets for the Union armies, and by 1870 had expanded to such proportions that they had to expand the business and establish a branch in St. Joseph, Missouri. At that time, Jacob, the fifth of the Studebaker brothers, and who for many years was to manage the carriage division, joined the company.

In 1874, Studebaker sales for the first time reached the $1,000,000 mark, and the company was producing one vehicle completely every seven minutes.

Studebaker's experimentation with the "horseless carriage" began in 1897, and in 1902 the first self-propelled vehicle, an electric runabout, was made and sold. The company continued to build electric vehicles until 1912, and during the ten years of their production, 1,841 were made and distributed.

The first Studebaker gasoline-powered automobile appeared in 1904. It was a five passenger, two cylinder, 15-horsepower car with a chain drive. It was known as the "Model C" and was priced at $1,500 without the top. By the end of the year Studebaker was producing 20 different models of pleasure and business automobiles; both electric and gasoline-powered.

A complete reorganization of the company occurred in 1911. They abandoned the name under which it produced and operated for so long, "The Studebaker Brothers Manufacturing Company", and began its career as "The Studebaker Corporation." During the 43 years in which the
company had carried on business under the earlier title, more than 1,000,000 vehicles were built. These represented a total value of more than $119,000,000.

Studebaker became a valuable asset to governments as well. When the United States entered World War I, Studebaker became one of the first manufacturing organizations in the nation to be at the disposal of the government. During the war years Studebaker's total production was valued in excess of $220,500,000, with the U.S. Government war order nearly $31,000,000 and orders from foreign governments to $24,000,000. These orders included ambulances, carts, artillery wheels, and mine anchors. (Studebaker National Museum)

The World War I figures were impressive, but those numbers were easily outdone during World War II. Studebaker's output of Flying Fortress engines, military trucks, and other war materials amounted to $1,200,000,000. To make possible the aircraft engine building divisions, new plants were erected in South Bend, Chicago, and Fort Wayne.

Studebaker quickly reconverted its production facilities to peacetime operations after World War II, and was the first automobile builder to offer a completely re-designed, postwar vehicle to the public. The new cars were enthusiastically acclaimed both at home and abroad, and won for Studebaker a reputation for style leadership. Particularly impressive were the designs of the Avanti automobile. However, these popular designs were not enough to compensate for other problems, such as the distance from other auto makers in Detroit. In the 1950s it was becoming apparent that Studebaker could not compete with such auto giants as General Motors, Ford and Chrysler.

A merger with Packard in 1954 did not remedy the situation. In 1959 the introduction of the Lark brought more success, but the other big companies soon introduced their own small cars and Studebaker's sales went down again. In December of 1963 the inevitable announcement was made, Studebaker would cease automobile production in South Bend.
bibliography

Adaptive use case studies with a discussion of the characteristics of 10 building types.


Presents buildings which have been adaptively reused in categories such as places to live, work, shop, and play. Each case study evaluates whether or not the adaptive use was sympathetic to the original building and its surroundings.


This book discusses the economics aspects of preserving old buildings.


The book offers descriptive information concerning the adaptive use of industrial buildings. Many case studies are used to demonstrate different adaptations.


A brief introduction to what refurbishment is and how it can help a community. This book covers a good number of case studies where refurbishment was incorporated.


This book goes into detail of the benefits of adaptive use. It discusses the fact that not all buildings have to be historically significant to be beneficial to a community. It also provides a number of case studies.


This book provided information on the Rehabilitation Tax Credit.

Rehabilitation of Historic Buildings: An Annotated Bibliography

A good source of information on restoration. An annotated bibliography covering many different types of structures.


A source that details how a city can use financial incentives to help preservation.

The Department of Economic Development. *Revitalization Strategies for the Studebaker Corridor*. The Department of Economic Development. South Bend, IN, 1987

This is a very good source about a recent feasibility study for an industrial alternative for the Studebaker Corridor. The study includes such data as population trends, market outlook, and quality of living in St. Joseph County.
This book provided a number of Federal resources available for preservation


Proposals for adaptive reuse of various industrial and commercial complexes as case studies. Cost breakdown and funding alternatives are also investigated along with provisions of the 1976 Tax Reform Act and design proposals.


Provides the reader with ideas by documenting creative ways in which planners and architects have rehabilitated old buildings. Incorporated are drawings, specifications, and examples of work.


The book is devoted solely to adaptive use, discussing economics, recent adaptive use activities, and several case studies. Helps increase the awareness of the benefits of adaptive use.


This book covers downtown development and the process by which development occurs. Case studies are used throughout as examples.


This provided the 10 steps by the Department of the Interior that must be followed in order to comply with the National Register.

Zuchelli, Hunter & Assoc.. *Market Analysis of Downtown Retail Activity and Strategic Recommendations for Retail Retention and Expansion*. Zuchelli, Hunter & Assoc., Annapolis MD 1986

This market analysis is a study performed for the city of South Bend and St. Joseph County. It documents market trends, population, and job distribution for the city and county concerning retail activity.