# LACLEDE'S LANDING: INVESTIGATION OF ADAPTIVE USE AND INFILL DESIGN IN AN URBAN AREA

by

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## PREFACE

One of the obvious motives for reusing old buildings is that they link us to our past; they have become a part of our cultural heritage and their preservation is necessary to maintain a sense of place in an increasingly mass-produced society. Many old buildings deserve preservation because of their architectural beauty and the character and scale they add to the built environment. Their retention also helps to conserve that environment by recycling irreplaceable resources. Preservation of old buildings in itself fulfills basic cultural and social needs.

Source: Built to Last: A Handbook on Recycling Old Buildings, p. 8.

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Ben Bronson, Owner
Sol Cherrick, Owner
John Kennedy, Owner

Laclede's Landing Redevelopment Corporation Board of Directors (1979)

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INTRODUCTION

As a society, it is our responsibility to retain our existing building fabric for future generations. We must retain our built environment as the foundation of society's evolution. The built environment may be preserved, it may be revitalized through integration of new uses in an existing structure or it may be enhanced by infill construction whose design respects the existing environmental fabric. This thesis proposes revitalization and infill construction for two existing warehouses in Laclede's Landing, St. Louis: the Bronson Hide Building and the Cherrick Building. The design considers the urban design and architectural preservation issues involved in creating an urban residential community. Emphasis in the thesis is placed on the economic feasibility, the functional relationships, and the aesthetic qualities of the proposed adaptive use and infill design project.

A mixed-use condominium/retail adaptive use project is currently under construction and the Laclede's Landing Redevelopment Corporation is seeking additional residential development proposals to complete the desired mixed-use fabric of the district. The Bronson Hide and Cherrick buildings represent not only a "typical" adaptive use project appropriate to academic study but one for which adaptive use studies are relevant and marketable today.[1]

Adaptive-use projects may be similar in many aspects but their context and redevelopment methodology will differ from project to project. The exact nature of the context and the development strategy determines the success of the project or the redevelopment district. The site's context and its history are important elements of analysis. Equally important is the redevelopment methodology, the restrictions on development and the projected long range plan. The Laclede's Landing Redevelopment Corporation initiates and regulates development within the district.

The district's location also determines its successful redevelopment (Figure 1). The proposed project site is adjacent to the St. Louis central business district and the Jefferson Expansion Memorial. Thus, it is located within a short distance of the existing office, retail, cultural and tourist facilities.

The individual buildings, their location within the district, their history, and the environmental elements of their site are analyzed within the context of the Laclede's Landing district (Figure 2). The building and use restrictions of the Laclede's Landing Redevelopment Corporation which apply to the proposed project site are also examined. The existing buildings and proposed infill are analyzed and illustrated in plan, section, elevation, and through photographs in Chapter IV.

Issues involved in combining residential and retail activities investigated include the relationship of residential and retail uses, the context of the district, the site, users, individual building types and relationships to the riverfront. Residential development is defined and programmed to respond to the selected target occupants, the functional/ service issues, and goals of housing both within the context of the Landing and in relation to mixed-use development.

A two-part economic feasibility study has been prepared to determine the financial viability of the buildings. The first feasibility study precedes the design stage and is based on figures obtained from similar

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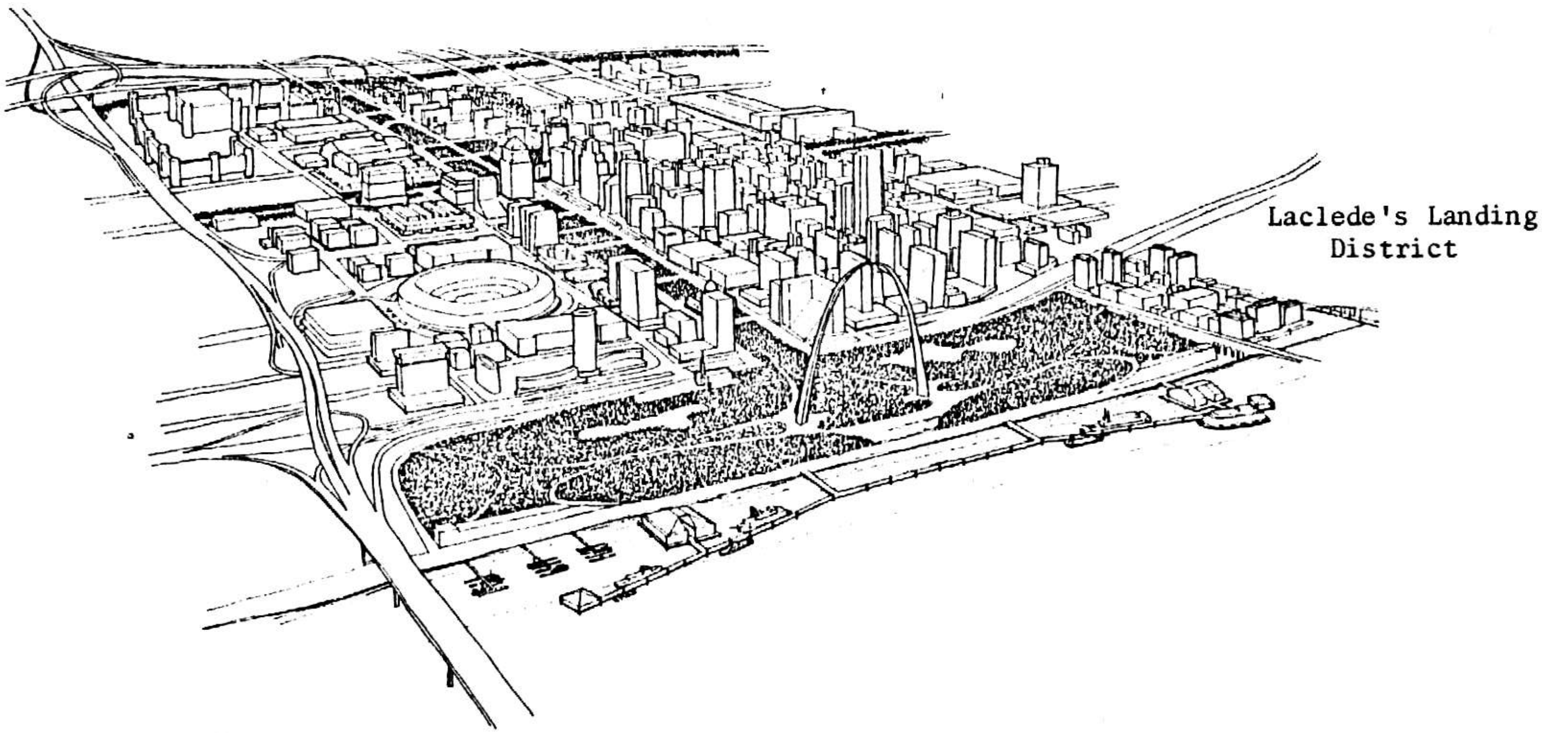



Figure 1. View Looking West at Downtown St. Louis from the Mississippi River

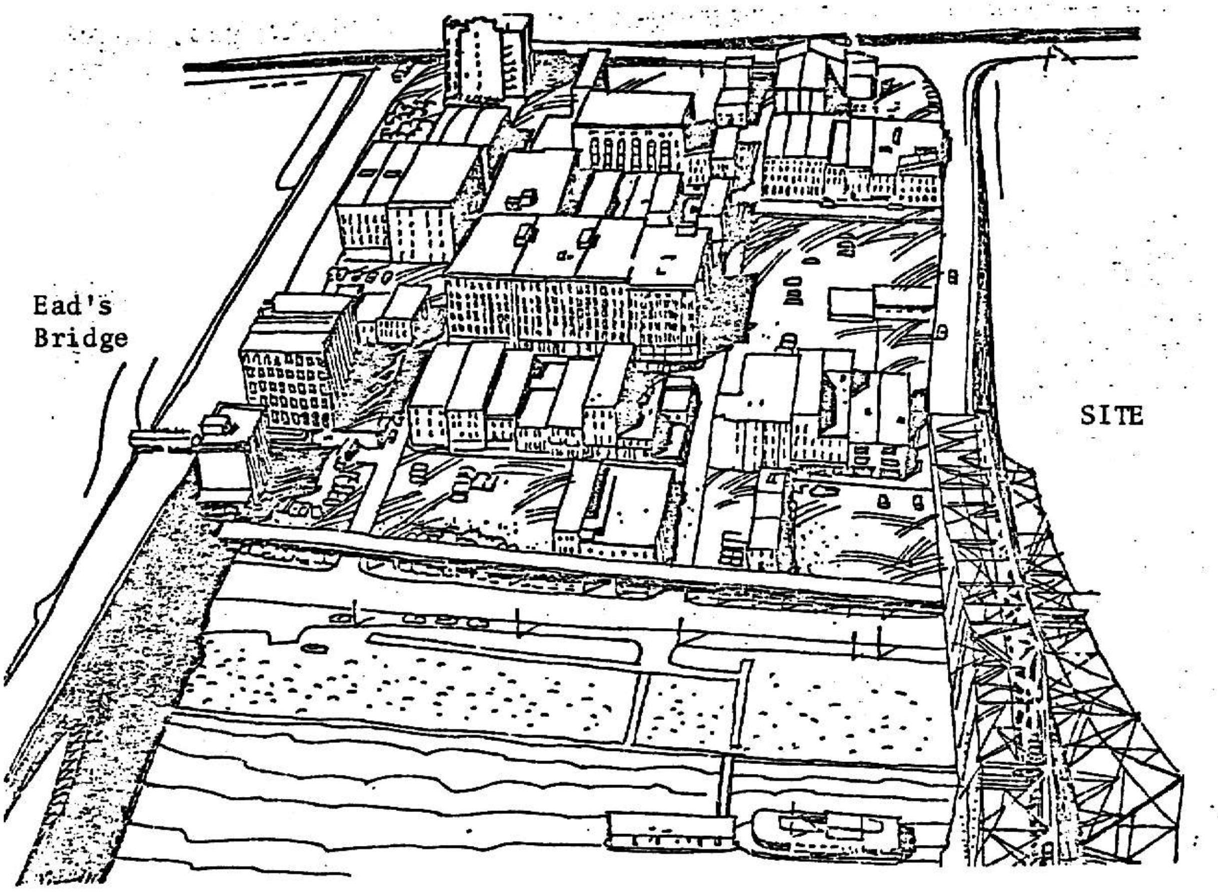



Figure 2. Laclede's Landing District

Site

1. Cherrick Building
2. Bronson Hide Building
3. Vacant Site - Proposed Infill

buildings within the district.[2] This study is used to shape the financial constraints of the design. The second feasibility study evaluates the design proposal financially, and the effectiveness of the economic guidelines.

An important aspect of this investigation is to provide an understanding of the historical context of the buildings selected for adaptive use and the Laclede's Landing District. The current conditions of the existing buildings are analyzed for their architectural quality and structural stability. Appropriate cleaning methods, repair and replacement procedures are discussed and recommended on the basis of design methodology and economic feasibility.

Throughout the development of the thesis proposal and design, emphasis is placed on the investigation of the design issues of adaptive use and infill design. In such a project, there are differences in scale and architectural articulation between the historic building and adjacent contemporary architecture which creates a challenging design task. It is difficult to change the function of an existing building to a different use and articulate the corresponding changes in image. The thesis integrates, applies, and refines developed methodologies and issues involved with adaptive use and infill design.

# PART I

## CHAPTER I

## ISSUES OF ADAPTIVE USE AND INFILL DESIGN

> The quality and character of a town reside in the sum of its multiple and often fragmented inter-relationships in the spaces between buildings no less than in the buildings themselves; in its uses of land and juxtaposition of functions; the social mix of its communities; in the workday objects and structures with which we furnish it; with the wider landscape setting in which it finds itself. . . . What is essential is that somehow, we achieve much more purposeful control over the process of change, so that what is best from the past is retained, and what is less than good is replaced by something better--thus constantly enriching the environment rather than eroding and diminishing it.[3]
>
> Michael Middleton, 1977

Architecture is an expression of its age and in a complete environment there must be a sense of past, present and future. The growth of a community is a process which reflects the evolution of the built environment as it responds to new requirements, programs, philosophies, technologies and methods in construction. The physical environment should represent this historic continuum symbolic of people's values. There will be new construction in old and historic areas, and these new buildings will frequently be constructed next to older buildings. The older buildings will need to be symbolically and physically modified as the times change, as will the new buildings as they in turn become old. The older structure can rarely be preserved in a static form. From the day building construction is completed the building begins a process of becoming obsolete, one that needs alteration or replacement due to changes in the building's functional requirements, building technology and the philosophy of aesthetics and design. Thus it is important to understand how to deal with this relationship of old to new and how to integrate new uses with the old.

Adaptive use is a method by which an existing structure is adapted to a new use and may involve radical intervention in the internal organization of space. Adaptive use is not a new phenomenon because structures tend to outlive their original functions and many have been continuously adapted to new uses. The physical retention of structures which can incorporate new uses provides a sense of continuity and stability of the physical environment for succeeding generations. The present existence of these structures has allowed the inhabitants and visitors to retain contact with their heritage through a link with the past and its development. Retention of the historic fabric has provided insights into societies' development and has, for some, inspired a respect for the aesthetics and craftsmanship of another time. When properly adapted, these buildings demonstrate the validity of past forms and materials to the functions of today's life.

Adaptive use has become very popular today because of the renewed appreciation of the aesthetics and craftsmanship of previous generations, the buildings' location, the desire to recycle to save energy and the knowledge that it is normally cheaper to re-use the existing structure than to build a new one. The modern movement is known for its lack of adornment and during phases of this period ornament was considered "a crime." The contrast of this architectural philosophy to previous ones has aided in the renewed appreciation of architectural ornament and design styles of older structures. Restoration and adaptive use of existing buildings saves scarce and expensive materials and the craftsmanship found in the careful detailing of the buildings' ornament. The rich textures and historical character which identify a particular area for its design quality or its styles can be retained through recycling and adapting the building's uses. The renewed appreciation of the uniqueness of these older buildings and often their prime location within a commercial district, now attracts redevelopment.

The economic recession in the mid 1970's and the growing concern about energy conservation created interest in recycling existing structures. Renovating buildings is more labor intensive than new construction, "for every million dollars of renovation work generates 107 jobs, versus 68 for a new building."[4] Renovation work also allows construction to proceed despite weather conditions because it concentrates on refitting the interior, not building the structure. Buildings are seen as stored energy when they are analyzed for the energy that was required to make the materials, to deliver the materials to the site, to construct the building, to operate and maintain the building over the years. Retrofitting a building to a useable state saves considerable energy versus the expenditure of energy required both to demolish it and construct a new building on the site.

To preserve historic and architecturally significant buildings, new economic functions must be discovered for them. Although museums may provide a new economic function for a building, a community can only support a limited number of museums and other such related uses. Contrary to an increasingly popular belief, it is not always cheaper to adapt an old building than to tear it down and rebuild a new one in its place. The relative economy or expense of renovations depends on a specific project's situation and quality of construction. Adaptive use is typically more expensive if the new use is not compatible with the characteristics of the old building and extensive changes are required. George Notter of Anderson, Notter, Finegold makes the point:

> The plus factor is achieved by developing the potential assets into a final project of greater amenity--one having the right location, more space in either height

> or volume, more area or more character, materials of a special quality or a potential for time savings in construction. . . . But the total cost he concedes is often the same in the end.[5]

Often individuals decide to recycle a building out of a feeling for history, beauty and tradition rather than strictly for financial considerations.

Adaptive use challenges the architect to be innovative in problem solving and design. The urban fabric can be enhanced through conserving the beauty, the identity and the basic materials of an existing structure while responding to modern needs and reflecting modern philosophies. The design of an adaptive use project requires continual interpretation of the existing architecture and a response to it which comprises both humility and strength in architectural design. These design requirements and others such as meeting new building codes and responding to new functional and programatic requirements need to be considered. With these considerations in mind, it is often more difficult to design and rehabilitate existing buildings than it is to design new buildings. Some of the major design issues involve the selection of one or more of the following approaches for the design methodology of the project: preservation, restoration, conservation, adaptive use and replication.[6]

New construction can add much to an older or historic district by filling the vacant gaps in fabric, by enlarging or creating a new addition to an existing building, and replacing what was lost or could not be replaced. There is still a lot to learn about designing buildings which blend within their urban context rather than asserting their own importance. Infill design has been defined as the "art of putting new buildings among old."[7] Not all buildings can be designed as monuments. We must create a fabric which includes background buildings.

It is important to study carefully the continuum of the district's historic fabric design relationships and elements such as proportions, rhythm, floor-to-ceiling relationships, window proportions and detailing. The differences in scale and style between historic buildings and modern architecture offer both design challenges and opportunities because not only have scale relationships changed between historic buildings and today's modern architecture but the system of proportion and the system of social and functional expression, have changed. Several factors have influenced these changes. The scale of a building usually relates to the function of the building and the scale definition of its basic unit. New building programs demanded larger building spans and new building construction techniques. The functional justification for high ceiling heights in traditional buildings was to allow daylight through tall narrow windows and to respond to climatic conditions. Modern buildings allowed windows to be turned on their sides and the ceiling height reduced. These proportional changes have created a very difficult design integration between traditional and modern architecture. For example an old building may contain four stories in the same height as five in a new building. Equally important to the scale of the building is the proportion of the windows. The change in construction techniques and proportional relationships has affected the rhythm of mass/void relationships between the old and new. It is important to understand the vertical and horizontal relationship of existing building details and proportion in relating infill structures. Detail design consideration should be given to the depth and articulation of elevations, windows and doors.

Infill design depends on understanding the existing fabric of the context and the creation of a design which either respects or contrasts its environment. Among the design issues of concern are the degree of alteration of historic structures which should be permitted; the elements that constitute compatible design; and the extent to which cost and functional considerations should be allowed to take precedence over historical accuracy and aesthetics. Seven basic design approaches which are discussed below include the invisible addition, the anonymous addition, re-creation, polite deception, tokenism, contrast, and compatible contemporary additions.[8]

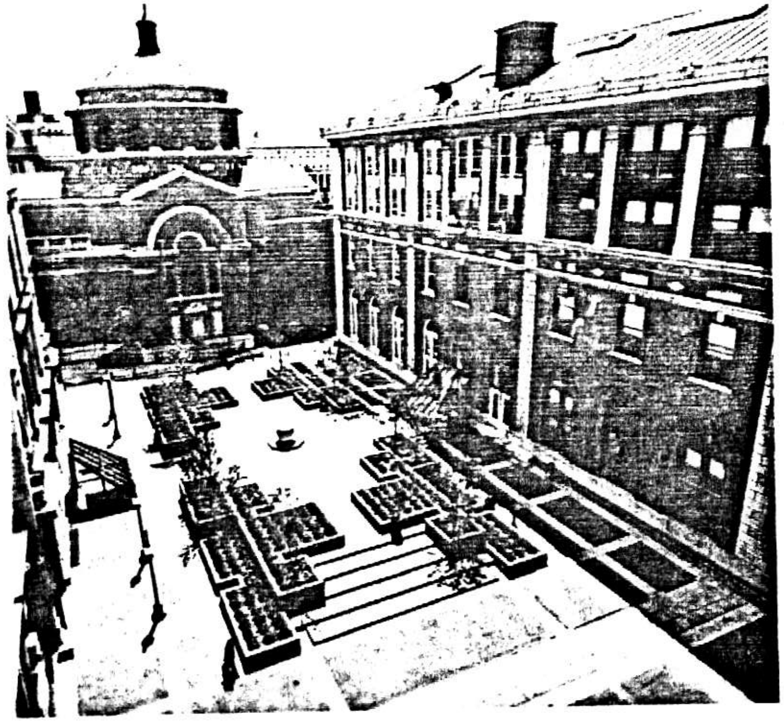
The invisible addition is underground construction of the additional space requirements. This underground construction allows the additional space to be concealed under a garden or plaza. Many uses such as art galleries may be placed underground and skylighted for natural light. Architect Giancarlo DeCarlo designed an underground reading room for the University of Urbino, Italy; the room is skylighted with a garden above. This underground addition retained the original open space between buildings in the adaptive use project converting a 17th century convent into the Law School. The recent addition to McKim Mead and White's Avery Hall at Columbia University is beneath a plaza, which retains the historic formal quadrangle and provides an excellent example of this invisible addition method (Figures I-1 and I-2).

The anonymous addition may be handled in several manners. One is to add to a historic building by a glass or plastic enclosure which protects the original exterior from the weather. This method adds protected interior space for lobbies and other activities. Anderson Notter Finegold's addition to the Mechanics Hall in Worcester, Massachusetts dramatizes the rear elevation in the evening. Appropriate for lobby spaces, the lighting accentuates the historic building fabric although it is concealed in glass

The
reading
room is
placed
under the
plaza

Figure I-1. Reading Room, University of Urbino Italy ·

Source: Old and New Architecture, p. 98.



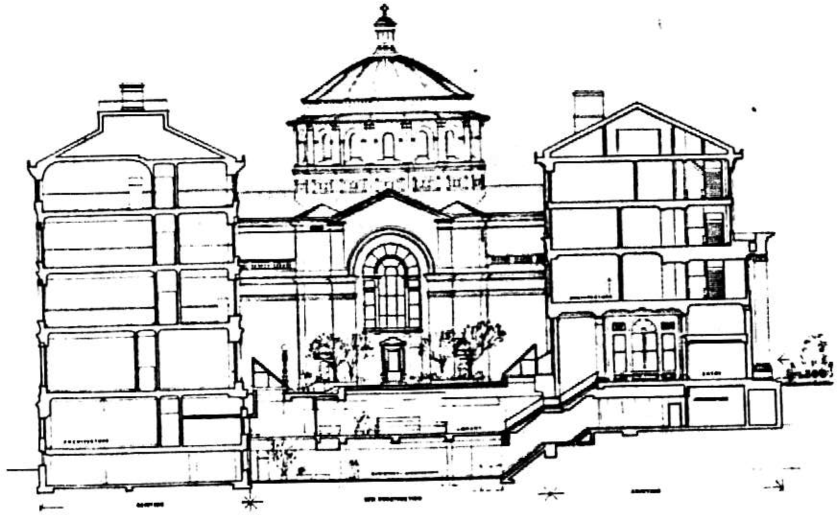


Figure I-2. Avery Hall Extension to a 1912 McKim, Mead and White. (1977, Alexander Kouzmanoff). Columbia University, New York City. There is a two story connection between the plaza.

Source: Old and New Architecture, p. 97.

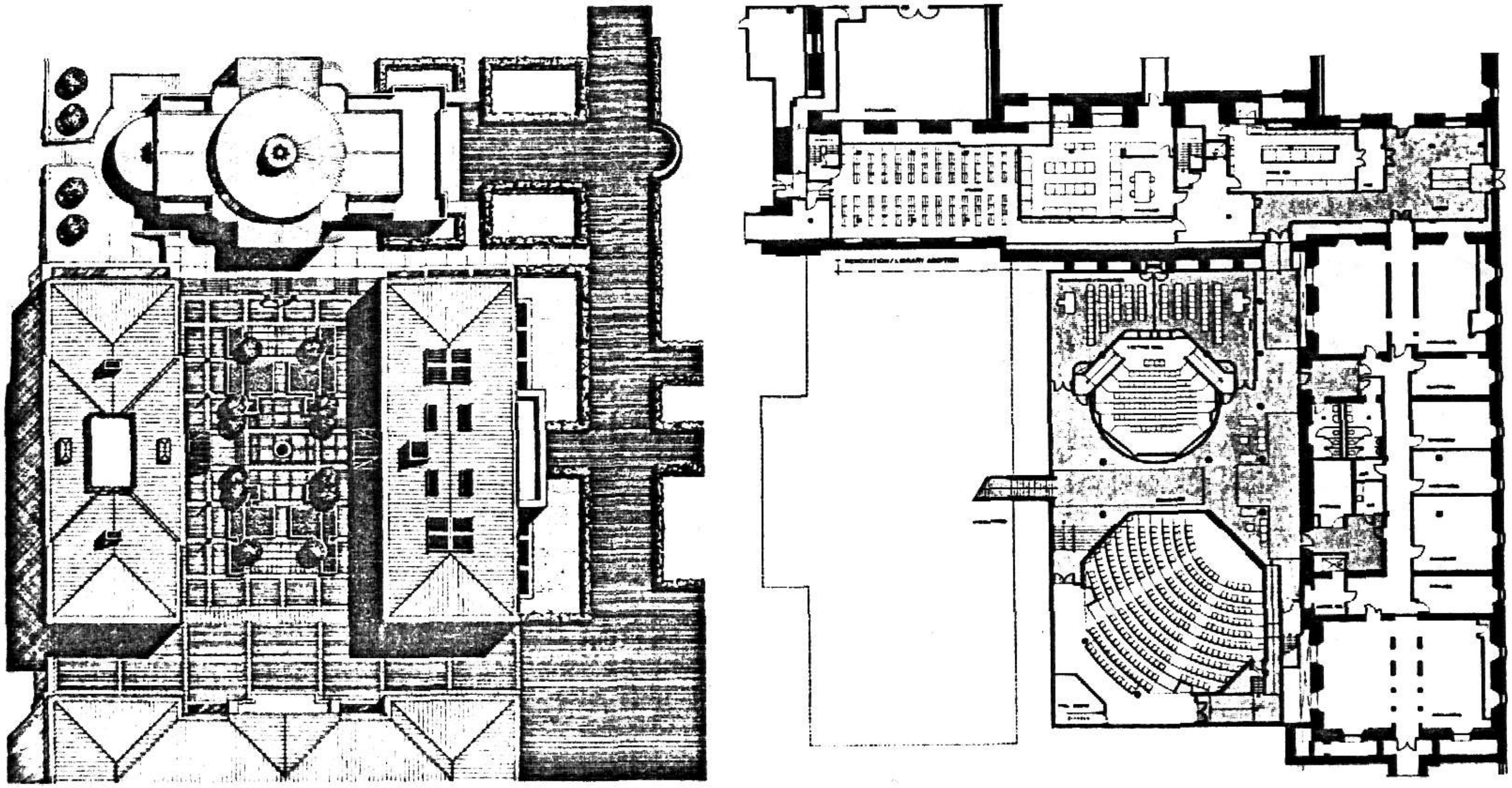


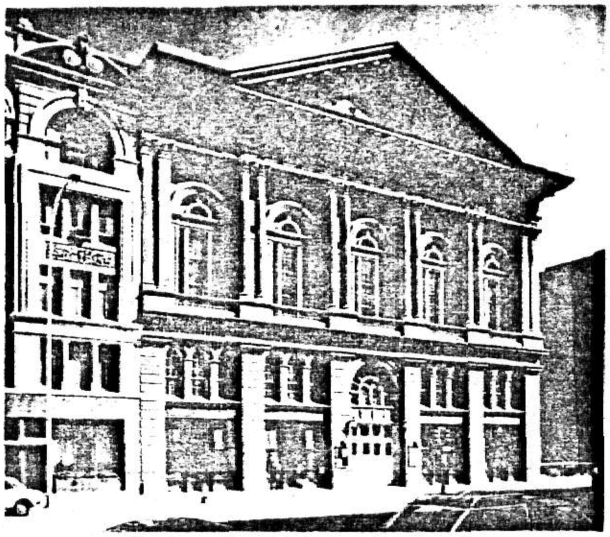
Figure I-2 (cont.)  Plans of Avery Hall Extension.

(Figure I-3). Another method of anonymous addition is the construction of a new building in mirror glass which totally reflects the image of the historic and surrounding buildings. The Equitable Building is an example which reflects the St. Louis Courthouse (Figure I-4). An anonymous addition, so different and so unrelated to the original, may be created so that the eye makes no connection between old and new. This approach may yield a building that is so different from the original that it commands attention through its contrast. While it may succeed in not imitating the original, the contrast detracts from both the new and old buildings (Refer to Venture and Rauch's addition to Cass Gilberts 1917 Museum, Figure I-5).

Re-creation is a design approach which copies the designs of the past with today's materials and labor. Many buildings, especially true of banks, try to recreate the designs of Colonial Williamsburg. This approach is criticized for its lack of originality, the lack of expression of the current design philosophies and that it may influence the untrained observer into believing what is actually new is historic.

One approach of polite deception employs stepping a building back so that its bulk and height are not apparent. Polite deception may create the feeling that the existing style yet retains its modern integrity. Another method of this polite deception is the use of illusionist wall painting to create a trompe l'oeil between what is existing and what has been added. The illusionist painter Richard Haas painted the wall of the Boston Architectural Center which had been previously a 5,000 square foot eyesore in the Boston skyline into a rendition of a great place in the classical tradition of the Ecole des Beaux Arts (Figure I-6).

The city of St. Louis has utilized the technique of painting on blank building faces although these paintings have not been architectural

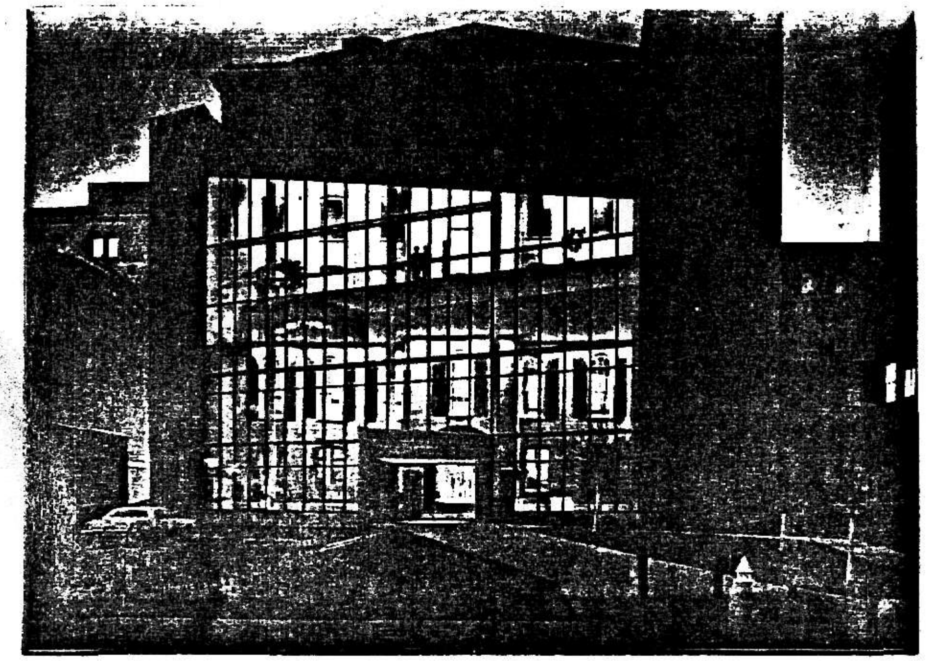


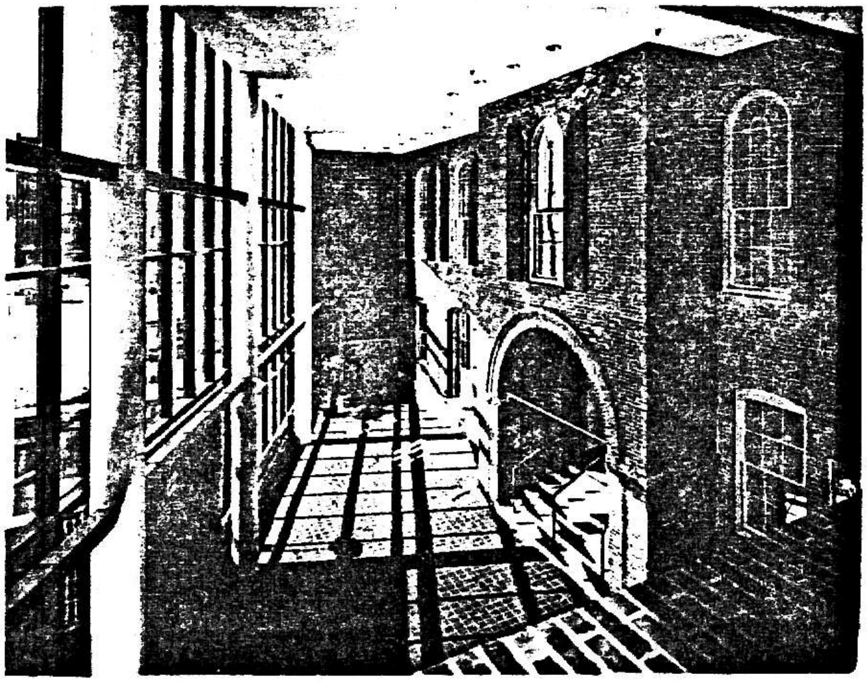
Original Facade

Mechanics Hall Restoration and Addition (1978 Anderson Notter Finegold) Worcester Mass. (Photos: Steve Rosenthal)

Figure I-3

Source: Old and New Architecture, p. 101.





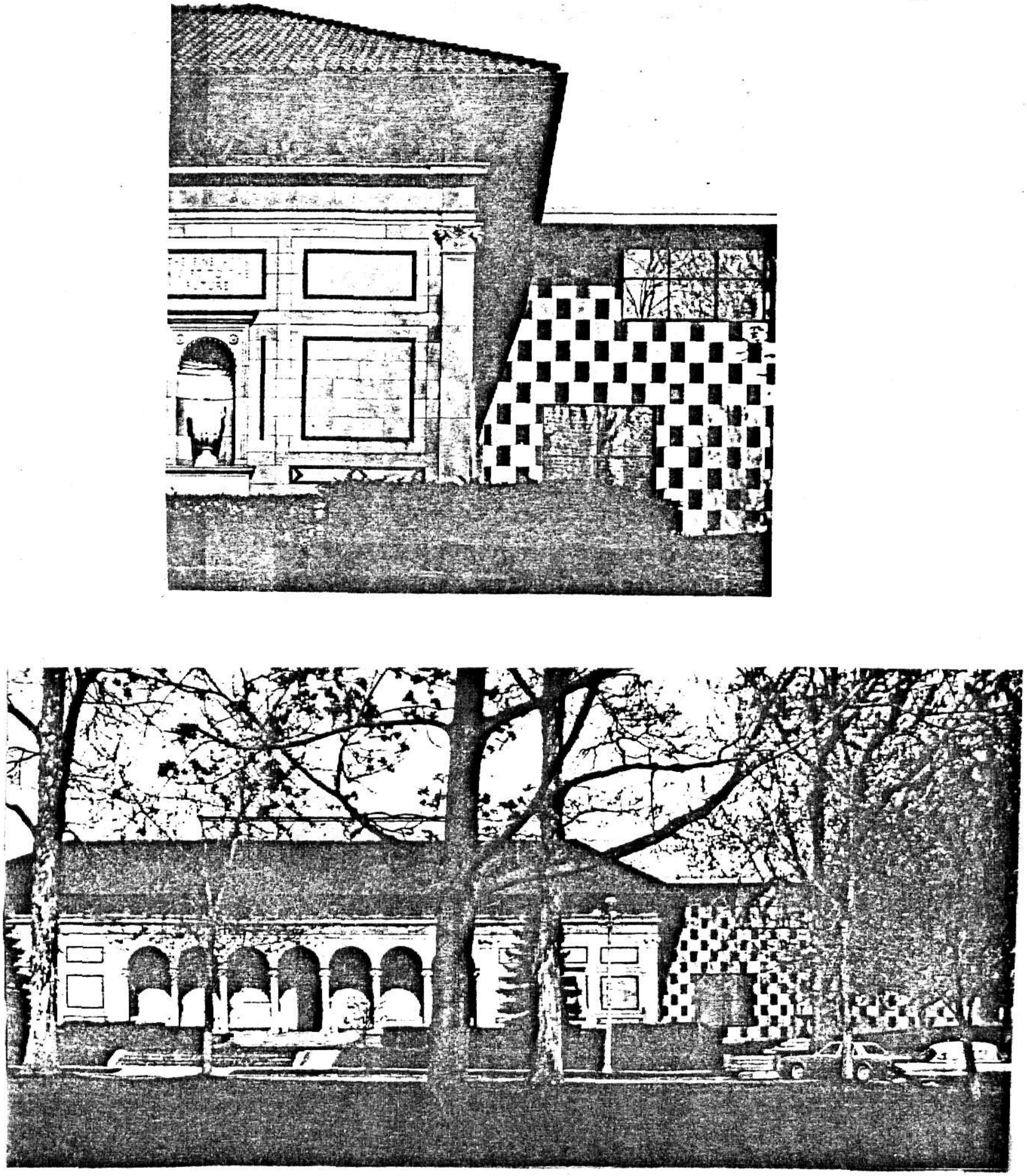
Addition to Rear Facade - A Glass Enclosure

Figure I-3 (Cont.)

The Equitable Building

St. Louis, Missouri

Figure I-4

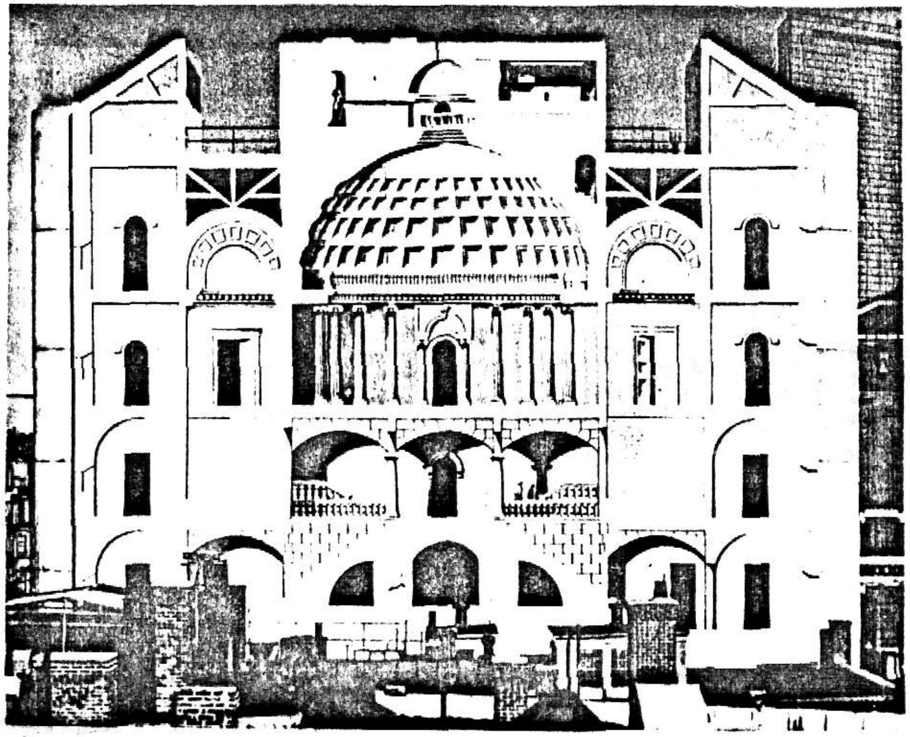


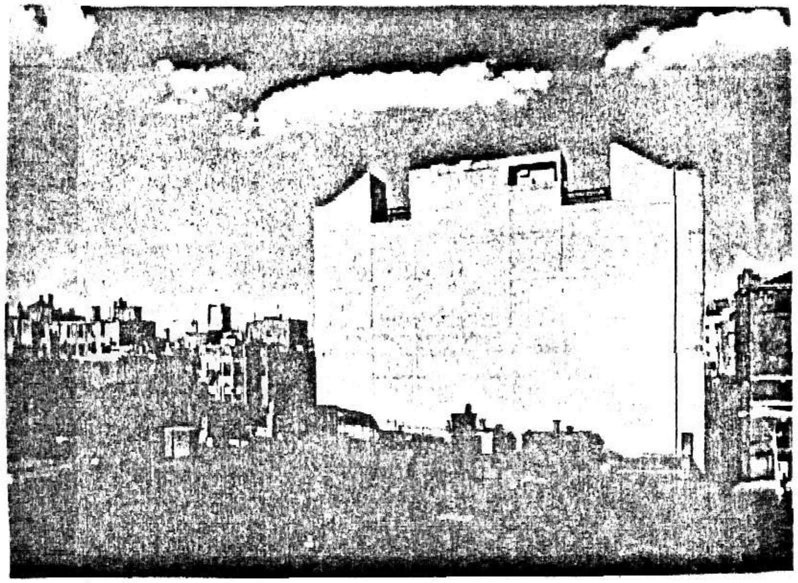
Allen Memorial Art Museum addition (1976, Venturi and Rauch).

Oberlin College, Oberlin, Ohio. (Photos: Thomas Bernard)

Figure I-5

Source: Old and New Architecture, p. 103.





Boston Architectural Center Mural
(1977, Richard Haas), Boston

Figure I-6

Source: <u>Old and New Architecture</u>, p. 113

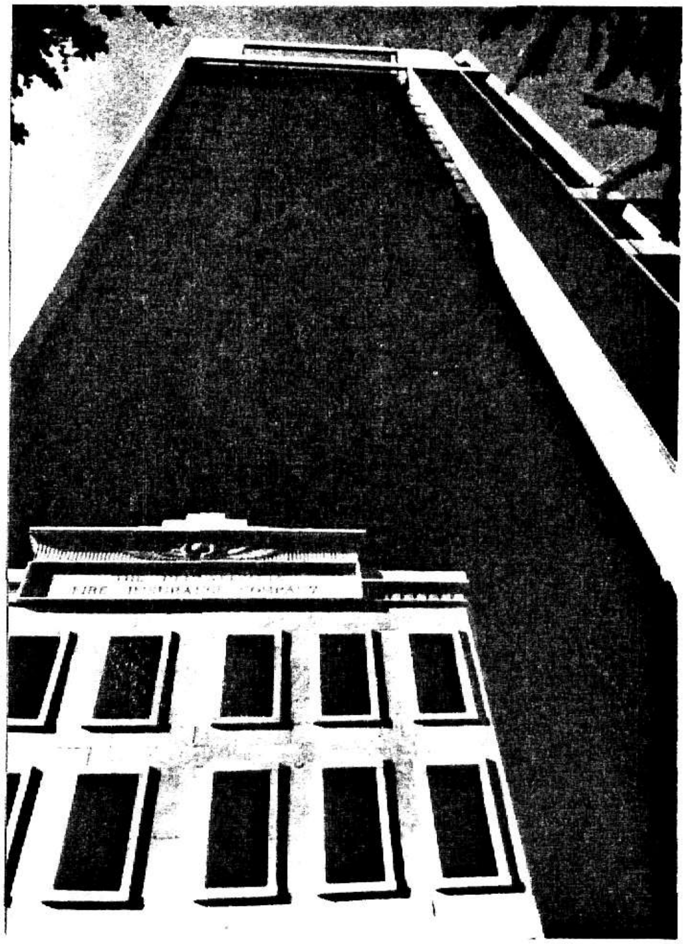
in nature, but more like murals or pop art. Even painted, the blank building faces will never achieve the spatial qualities of the previously adjacent building which has been removed. (In St. Louis's case, for one level of parking.) (Figure I-7)

The design approach of tokenism is the incorporation of an artifact or piece of the old building as a historic symbol with new construction exemplified in the Penn Mutual Building, Mitchell/Guirgola Architects (Figures I-8 and I-9). There is a controversy over this approach since all but a small portion of this building is lost and that which remains is treated like a piece of sculpture. However, the alternative is complete destruction. Another example of tokenism is seen in Zions Cooperative Mercantile Institution, reputed to be America's first department store, founded in 1868. The building was demolished with the exception of its facade that was incorporated into a new mall as a thin stage set (Figure I-10).

The design approaches of compatibility and contrast are the two most popular approaches. Contrast utilizes totally new forms to evoke or enhance the existing building fabric. Sometimes contrast and opposition are used to call attention to the new building. One of the most visually contrasting additions is Michael Graves' addition to the Benacerraf House in 1969 (Figure I-11). The method of contrast is used also to draw clear differentiation between what is new and what is old, unlike the recreation method. This clear difference between old and new adds to the integrity of both. Prior to the modern movement, new contrasting additions were directly attached to the existing buildings. An alternative connection is the link which intermediates between the old and new addition. This link may set back from the facade plane or it may be flush with the facade plane of the


Wall Mural
St. Louis, Missouri

Figure I-7

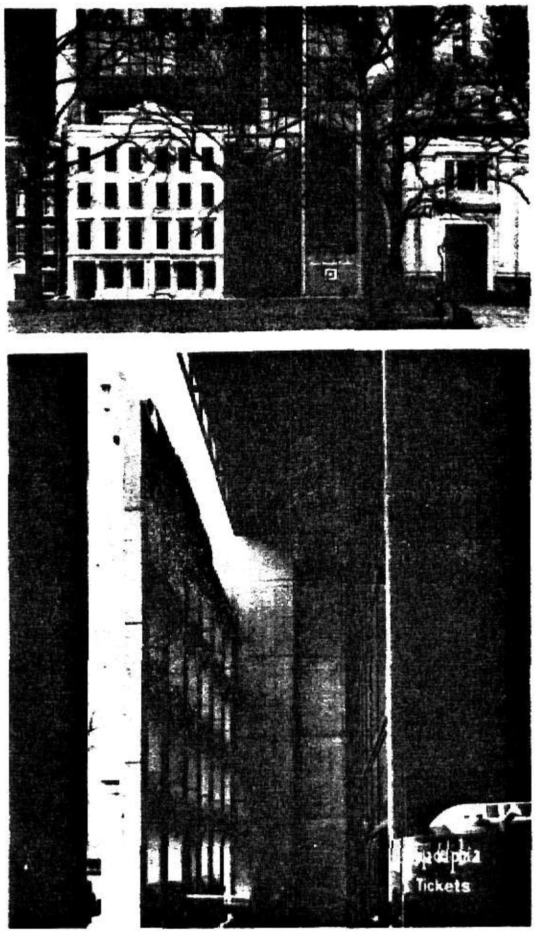


Penn Mutual Tower

The Original Facade and New Addition
Philadelphia, Pennsylvania (Photo:
Rollin R. La France)

Figure I-8

Source: Business of Preservation, p. 107

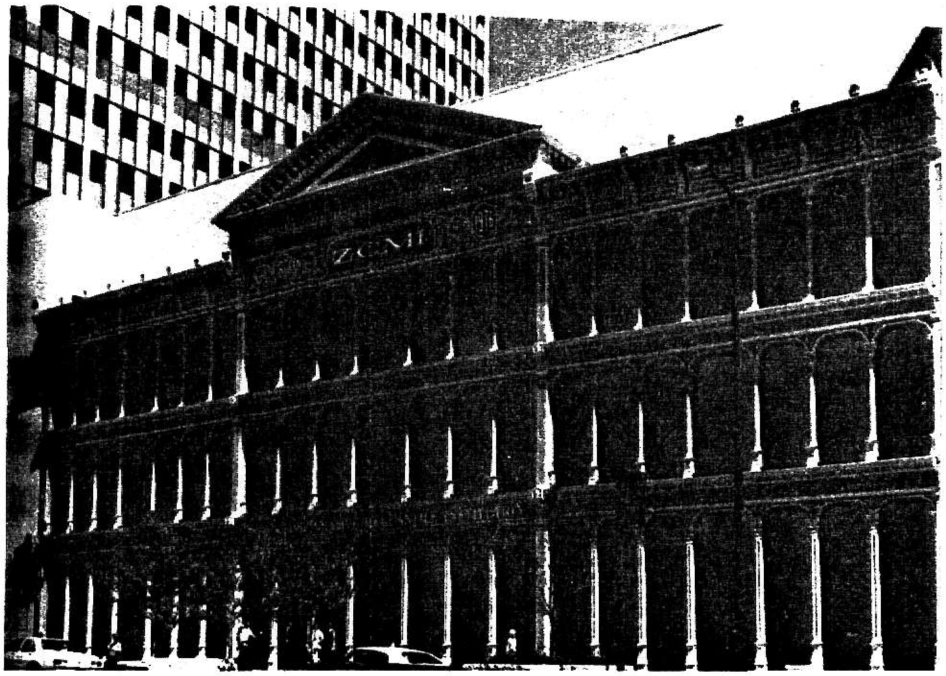



Penn Mutual Tower

Original facade forms a free standing sculpture screen (Photo: Rollin R. La France)

Figure I-9

Source: Business of Preservation, p. 106

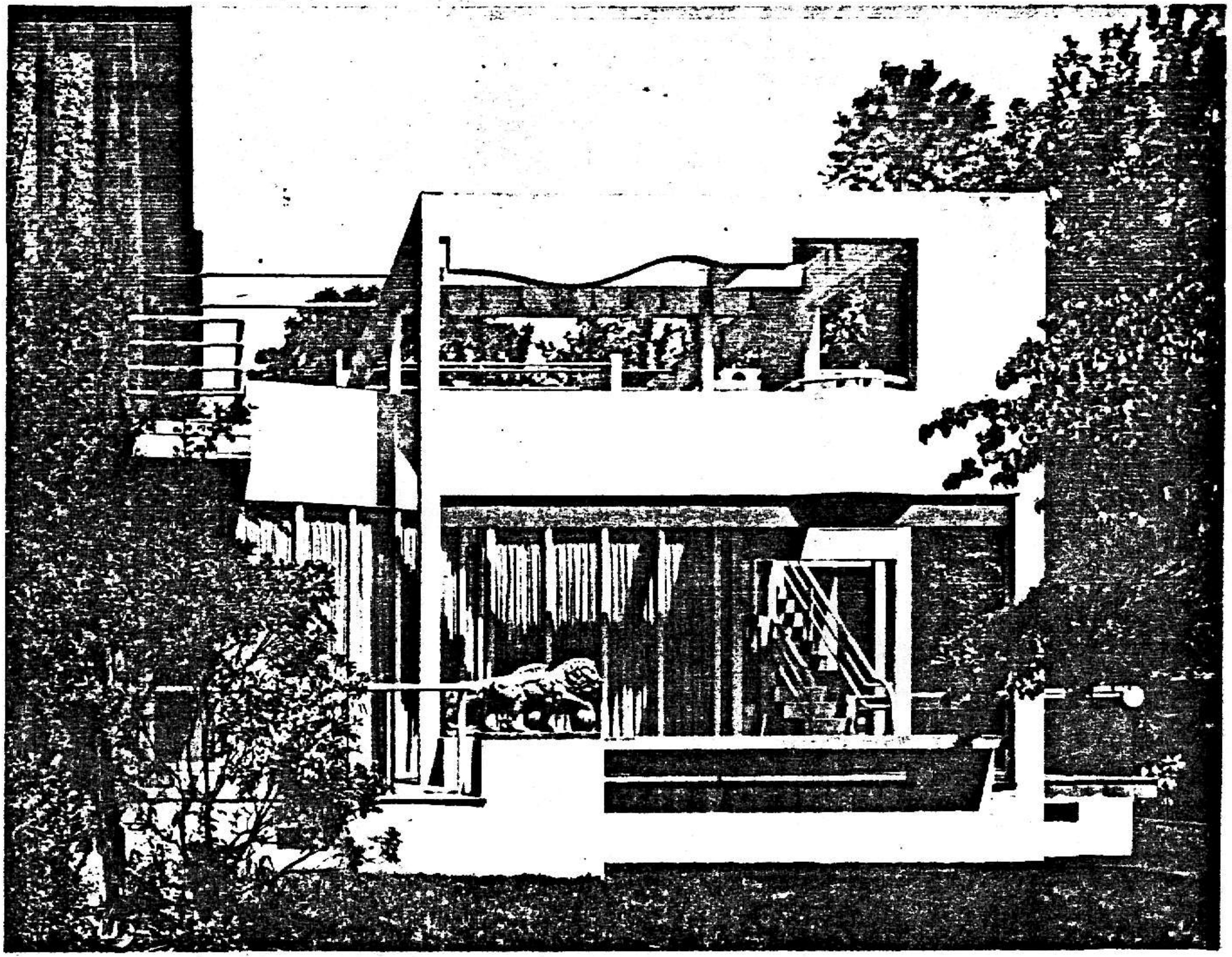



Zion's Cooperative Mercantile Institution

The restored facade incorporated in the new mall.

Figure I-10

Source: Business and Preservation, p. 109



Addition (1969, Michael Graves) to the Benacerraf House (1908, W. B. Harris), Princeton, N.J. (Photo: Laurin McCracken)

Figure I-11

Source: Old and New Architecture, p. 74

old or new building. In actuality the link does not connect the two buildings. Instead it pleads no contest (Figure I-12).

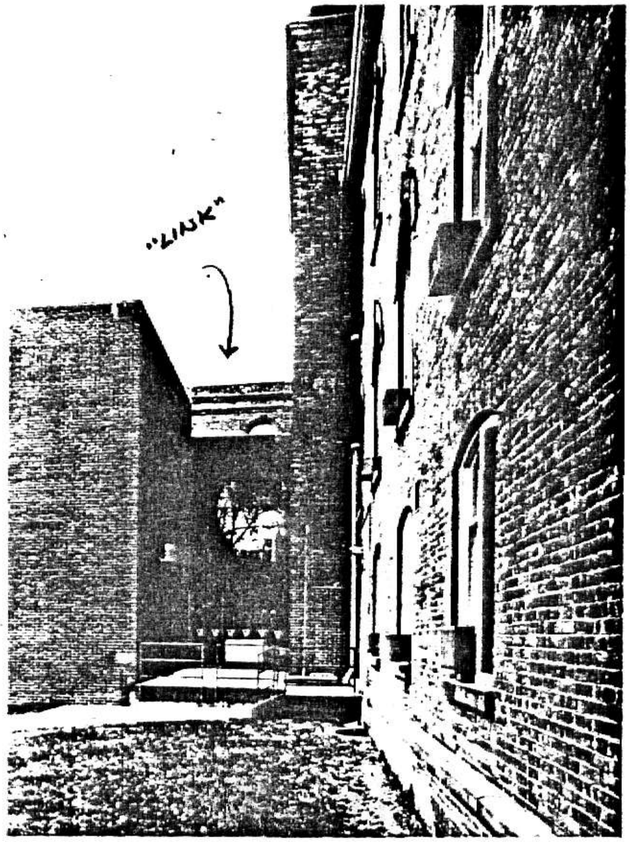
Compatible or sympathetic design approaches use contemporary technology and vocabulary but relate the new building to the adjacent older buildings through design elements such as scale, proportion, color, texture and materials. It is often difficult to establish a resemblance between buildings of different eras adjacent to each other. Buildings that blend too well with their surrounding context are labled non-original and non-creative and thus out-of-character with mainstream contemporary architecture. A solution that is considered creative is often a personal architectural statement whose strength lies in how well it stands out from its surroundings. The goal is to create a visually integrated fabric that is both original and respective of its context.

HISTORIC DISTRICT ORDINANCES AND DESIGN GUIDELINES

Many organizations, cities and historic districts sought guarantees to prevent clashes between old and new architecture through the establishment of ordinances for historic districts, design guidelines, definitions, and design review boards. Most ordinances do not address the philosophy or technology of preservation. These ordinances are administered by an ever changing membership of appointed board members. Santa Fe, New Mexico is representative of one of the oldest historic district ordinances.

Santa Fe recognized its architectural heritage in 1926 with the formation of the Old Santa Fe Association. The Association's goals were

> To preserve and maintain the ancient landmarks, historical structures and traditions of Old Santa Fe, to guide its growth and development in such a




"Link" between the Main Building, James Renwick (1865) and the Vassar College Center (1977). The Main Building, in the French II Empire Style, is on the National Register. Addition by Shelpey Bulfinch Richardson and Abbott.


Grace Building (left), New York City; S. O. M. (1972).

Linkages Between Buildings

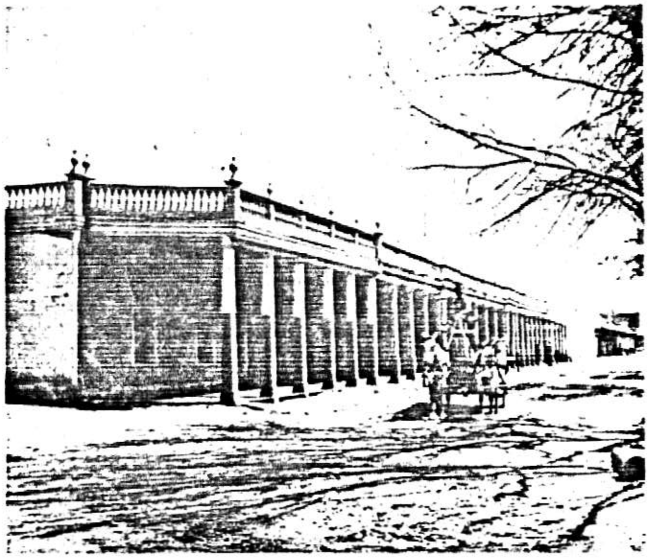
Figure I-12

Source: Brolin, Architecture in Context: Fitting New Building with Old, p. 47.

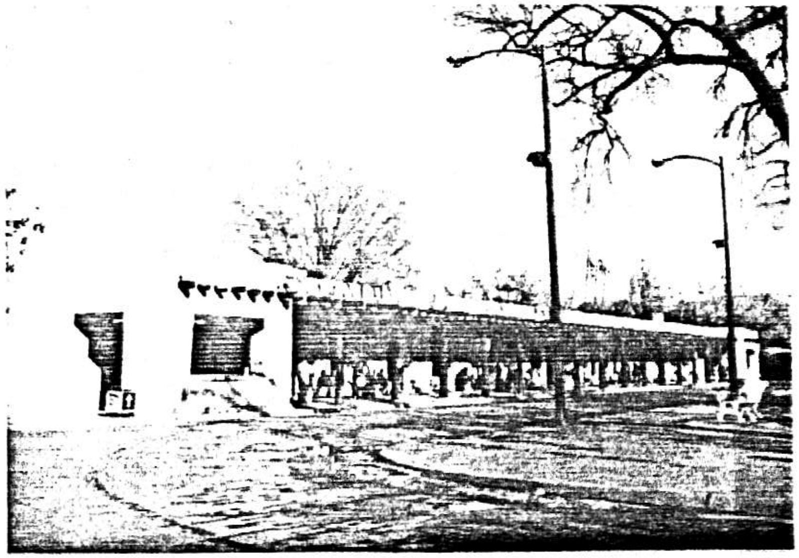
> way as to sacrifice as little as possible of that unique charm, born of age, tradition and environment which are the priceless assets and heritage of Old Santa Fe.[9]

In 1957, the Santa Fe Ordinance of Historic Zoning "was enacted to protect the character of the historic area by requiring that new construction harmonize with the old." This exemplifies one of many "let's look like we were built yesteryear" types of control. Another is in Alexandria, Virginia where the controlled style emphasizes the brick Federal period instead of Santa Fe's adobe. The ordinances set forth the parameters of details, architectural style and color for all to conform. The Santa Fe ordinance would have all architecture within the historic district resemble the "Pueblo" or "Territorial" periods. Interpretation of the ordinance is accomplished by the Architectural Review Board. The ordinance emphasizes conformity by dictating the language and materials of design leaving, according to some architects, little room for creative expression. This imitation of a historical period prevents forthcoming structures from expressing their own special needs and reflecting their time period. Santa Fe began conforming prior to the establishment of the ordinance in 1910 when it restored the Palace of Governors from its 19th century Victorian style to resemble what it should have looked like in the early days. The 1950's remodeling of the neoclassical First National Bank to the "Santa Fe Style" also illustrates how this required conformity of style destroys the sense of historic continuum in the evolution of the building fabric (Figure I-13).

It is also important that historic districts prevent the stylized franchises from mimicking the districts' style. In Taos, New Mexico, Kentucky Fried Chicken planned its standard red and white striped mansard



Victorianized Palace of the Governors (1610), Santa Fe, seen about 1883 before its "restoration." (Photo: Ben Wittick, Museum of New Mexico)

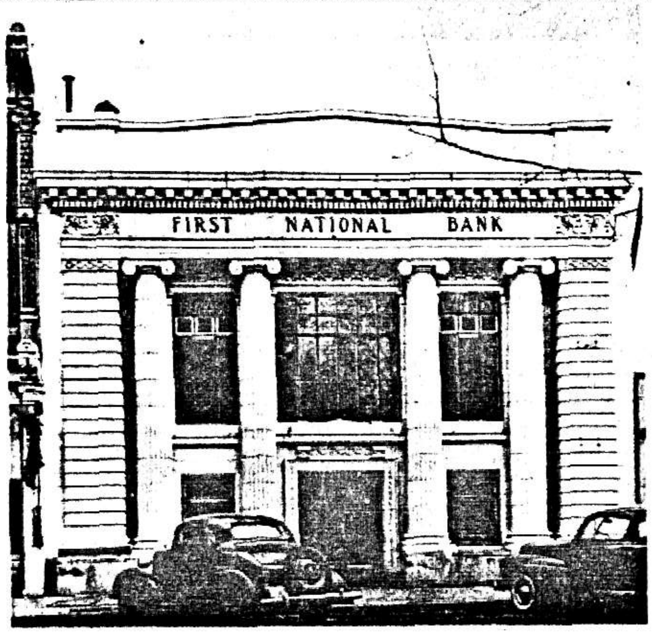


Palace of the Governors, "earlied up" to resemble its original style. (Photo: John P. Conron)

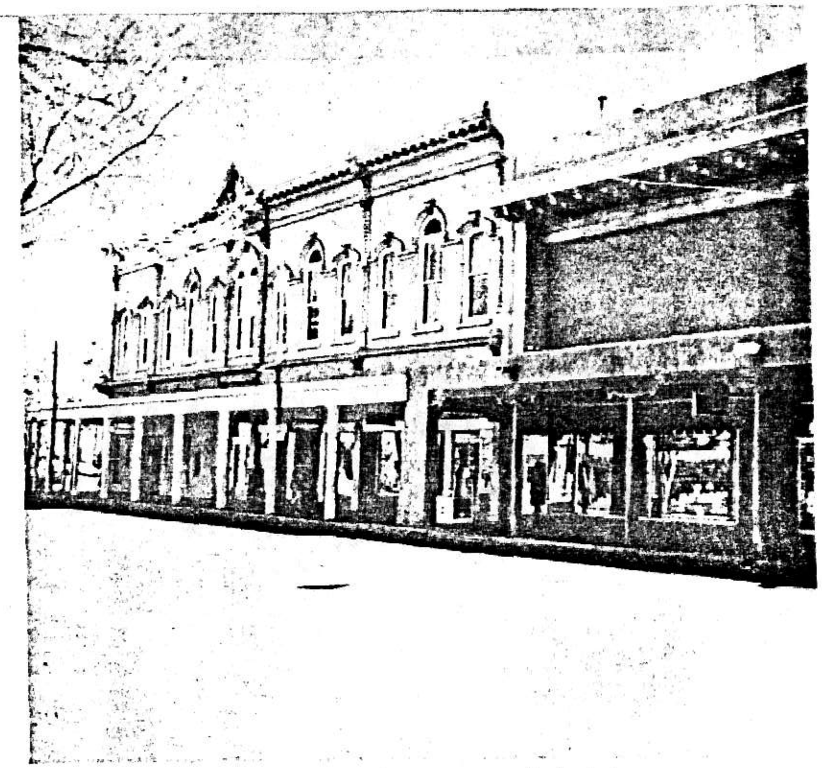
Santa Fe Remodeling

Figure I-13

Source: Old and New Architecture, p. 137.




Neoclassical First National Bank (c. 1925), Santa Fe. (Photo: Museum of New Mexico)



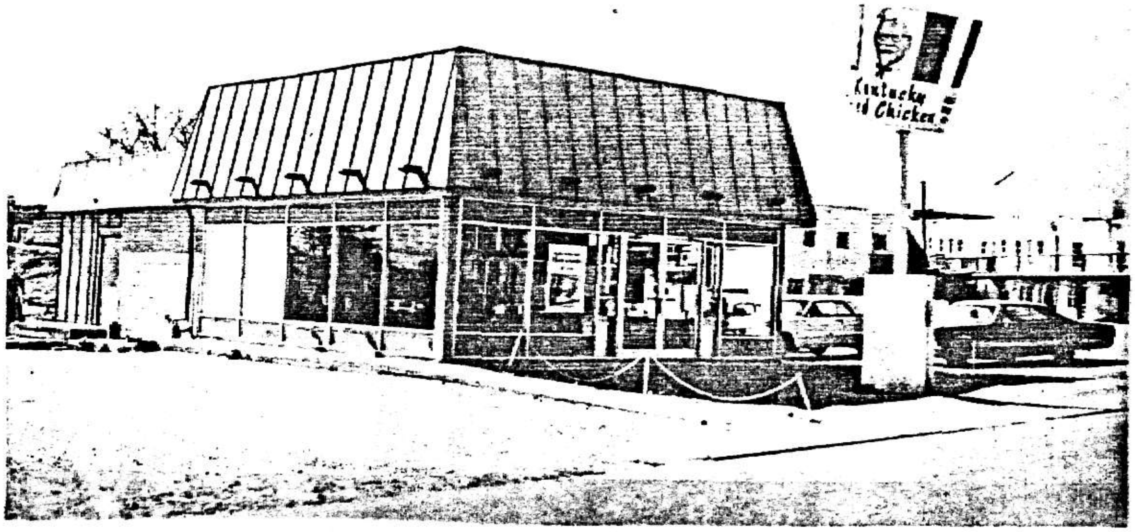
Underneath the 1950s remodeling in the "Santa Fe style" (right) is the former First National Bank. (Photo: John P. Conron)

Figure I-13 (Cont.)

chicken restaurant. The citizens objected until a compromise was reached. Instead of the red and white structure, an earth tone building with fake vigas (roof support beams) projecting from the mansard was constructed. The design could have been a more honest expression and creative interpretation of the regional style (Figure I-14).

Design guidelines have been established in many areas in an attempt to protect historic districts from poor infill design and to establish the elements that constitute compatible design. With a great deal of new architecture conflicting with its context it has seemed safer to regulate adherence to a certain style or period than to encourage uncertainty in design. Most historic district design guidelines are one of the following three types: rehabilitation and maintenance, new construction, and signage (Appendix A-3, Laclede's Landing Sign Guidelines). Some review boards have also devised criteria to aid in the decisions on proposals to demolish or move buildings.

Most review board activity concentrates on rehabilitation and maintenance. Rehabilitation guidelines not only aid the review board, but they also help inform the local property owner and local government of methods for maintaining the character of existing buildings. Two good references which provide a checklist for rehabilitation work are Guidelines for Rehabilitating Old Buildings (by the U.S. Department of Housing and Urban Development and Department of the Interior) (Appendix A-2) and the Secretary of the Interior's Standards for Rehabilitation (Department of the Interior). The focus of these guidelines is to retain as much as possible of the original building fabric. Also of prime concern is the protection of existing materials from further deterioration through the use of inappropriate construction methods and preservation technology.




Kentucky Fried Chicken franchise outlet, Taos, N.M.
A stylized franchise to imitate local building style.

Figure I-14

Source: Old and New Architecture, p. 140

Most new construction guidelines are essentially variations and refinements of the pioneering Savannah (Georgia) Guidelines developed in the 1960's as a part of the city's urban and neighborhood renewal program (Appendix A-4, additional guideline formats and Appendix A-3, Laclede's Landing's Guidelines). The city of Savannah has measurable standards for evaluating new development in their historic district. The criteria include:

1. Height
2. Proportion of buildings' front facades
3. Proportion of openings within the facade
4. Rhythm of solids to voids in the front facade
5. Rhythm of spacing of buildings on streets
6. Rhythm of entrance and/or porch projections
7. Relationship of materials
8. Relationship of textures
9. Relationship of color
10. Relationship of architectural details
11. Relationship of rough shapes
12. Walls of continuity
13. Relationship of landscaping
14. Ground cover
15. Scale
16. Directional expression of front elevation
    (Appendix A-4 - Illustrations)

Any new structure in the area must incorporate at least six of these criteria in the design. It is recommended that all of the sixteen criteria should be carefully studied and evaluated both during the design process and commented on in the design proposal. The intention of these guidelines is to prohibit disruption of the environment's context without stylistic requirements. This method recommends a performance guide by which to analyze design. These guidelines allow flexibility and do not dictate design. For example, criteria number three, proportion of openings within the facade, illustrates the relationship of width to the height of windows and doors. It does not limit the style, shape, or configuration.

Following these criteria will not guarantee an excellent infill building or one that fits the context of the environment. The Savannah guidelines do provide a means by which to analyze the relationship between old and new buildings. Furthermore, such guidelines can focus on special visual and spatial qualities of an area and provide a framework for both deciding appropriateness and measuring the decision against the minimum standard of the district. These guidelines also promote a defined quality and provide the foundation for consistent decisions. Having defined design guidelines also reduces the possibility of court challenges from unaccepted proposals. Established guidelines inform property owners of the character of their district and how their applications will be reviewed and according to what standards.

Good design guidelines can not assure design excellence, because there are no simple formulas for architectural design. However, they may offer a way to analyze design and possibly prevent the intrusion of an obviously offensive structure into a historic area. At the same time these design guidelines may stifle creative design which creates the diversity of style and character in environments. Some historians believe that it is necessary to establish a visual continuum of growth and thus there needs to be a variety of historical architectural expressions each designed of and in its own time, experimenting and expressing new ideas. Some design guidelines prohibit or inhibit this continuum of design. Design guidelines which encourage imitation of the existing fabric rob the buildings of their own historic integrity. These copies may not be discernible from original buildings. The integrity of the district is best served by new architecture expressing its own time with respect for the historic fabric.

Review Boards

The ordinances and design guidelines provide the framework for interpretation by the design review board which administers the controls. The design review board's major task is to process applications for approval of design or rehabilitation appropriateness. Clearly established guidelines and procedures for review help to assure review which is orderly, consistent, and based on established reasons versus emotional opinions. These procedures should comply with state enabling legislation which legally guarantees the process. The task of the review board and its staff is to prevent designs that are below an established minimum standard of appropriateness. The review board members are not legally authorized to make judgments based on personal taste.

The administration by review boards is as important if not more important than the ordinances and guidelines they administer. Some review boards have a frequently changing membership of appointed members. Each individual board member may offer a wide variety of interpretation, and emphasis based on their personal expertise and their understanding of architectural, preservation and urban design issues. In reference to private review boards or building committees, the appointed members may have a limited historical and design knowledge. These lay members, while limited in their historical or architectural judgments, may accurately reflect community values necessary to the review process. It is preferred that review boards be comprised of qualified professionals and local residents. The guidelines, ordinances and procedures should be publicly and professionally oriented in vocabulary, illustration, length and complexity in accordance to legal precedent. Emphasis should be placed on supplying important research data and education programs about the district for review board members and the local public. Attention should also be given to the procedures and methods of analyzing new construction proposals for the district. Often review boards are not prepared to deal with new construction proposals within their historic district. In most cases, new construction requests consume more time per application than other requests.

In any case, the proposals' acceptance or rejection is based on the review committee's knowledge, design philosophy, judgment and taste in the administration and the interpretation of these guidelines and ordinances.

# CHAPTER II

## LACLEDE'S LANDING

### THE DISTRICT'S ARCHITECTURAL AND HISTORICAL SIGNIFICANCE

The nine block district of Laclede's Landing is the last remaining area in St. Louis which retains the physical character and the nineteenth century history of the city's riverfront. The Laclede's Landing District contains thirty brick buildings constructed in the 1880's; several are the best surviving examples of the nineteenth-century commercial architecture in St. Louis. In addition, Laclede's Landing is the only site remaining in the city which retains its natural slope to the riverfront and the original street pattern. The thirty-two foot wide streets, patterned around regular, rectangular blocks was established in the original survey for the French village. The village grew around the trading post established in 1763 by Pierre Laclede and Auguste Chouteau.

The river-borne commerce was enhanced by the introduction of steamboats in 1817. Regular steamboat service linked the Mississippi Valley and the Ohio River and further strengthened St. Louis as a transportation node. The steamboat brought additional European immigrants and goods which transformed a trading post into a commercial center of national importance. The introduction of the steamboat created new warehouse and wharf development along the river on both sides of the French Village. These commercial functions began to replace the self-contained homesteads of the Landing. The levee was not developed for its scenic values; it became a place of intense trading activity.

By 1840, the Landing included a variety of commercial activities such as a mill, a foundry, commercial shops and owners' residences. In 1849, a fire destroyed fifteen square blocks just south of the Landing district. A new approach to construction technology allowed St. Louis to rapidly rebuild its commercial district. The new technology involved prefabricated building components (columns, ornamentation, etc.). The cast iron store fronts, developed in the Eastern cities in the 1840's, allowed for larger window openings and a greater variety of ornamental details. The prefabricated components could be speedily bolted on site. The new technology of prefabricated cast iron for the supporting framework was an early approach to curtain wall construction. Many of the buildings of the Landing utilize the cast iron facade and the remaining walls are load-bearing masonry walls.

In addition to the previous developments, the completion of Eads Bridge in 1874 stimulated even more industrial development along the riverfront. Designed by James Buchanan Eads, it was the first bridge in America to substitute steel for cast iron. Eads also introduced the pneumatic caisson which had been developed in Europe. The bridge was constructed for two levels of traffic: one for trains and the other for vehicles. The freight trains that were valuable for industrial uses were routed along the riverfront between the levee and Third Street. Eads' Bridge defines the southern boundary of the Laclede's Landing District (Figure II-1).

Having survived the nineteenth century fire and twentieth century redevelopment, Laclede's Landing is the single district which reflects the appearance of the levee in the earlier days of the city's commercial growth. The construction of the Jefferson Expansion Memorial cleared the levee of the buildings which contained both the original French Village and the character

Laclede's Landing

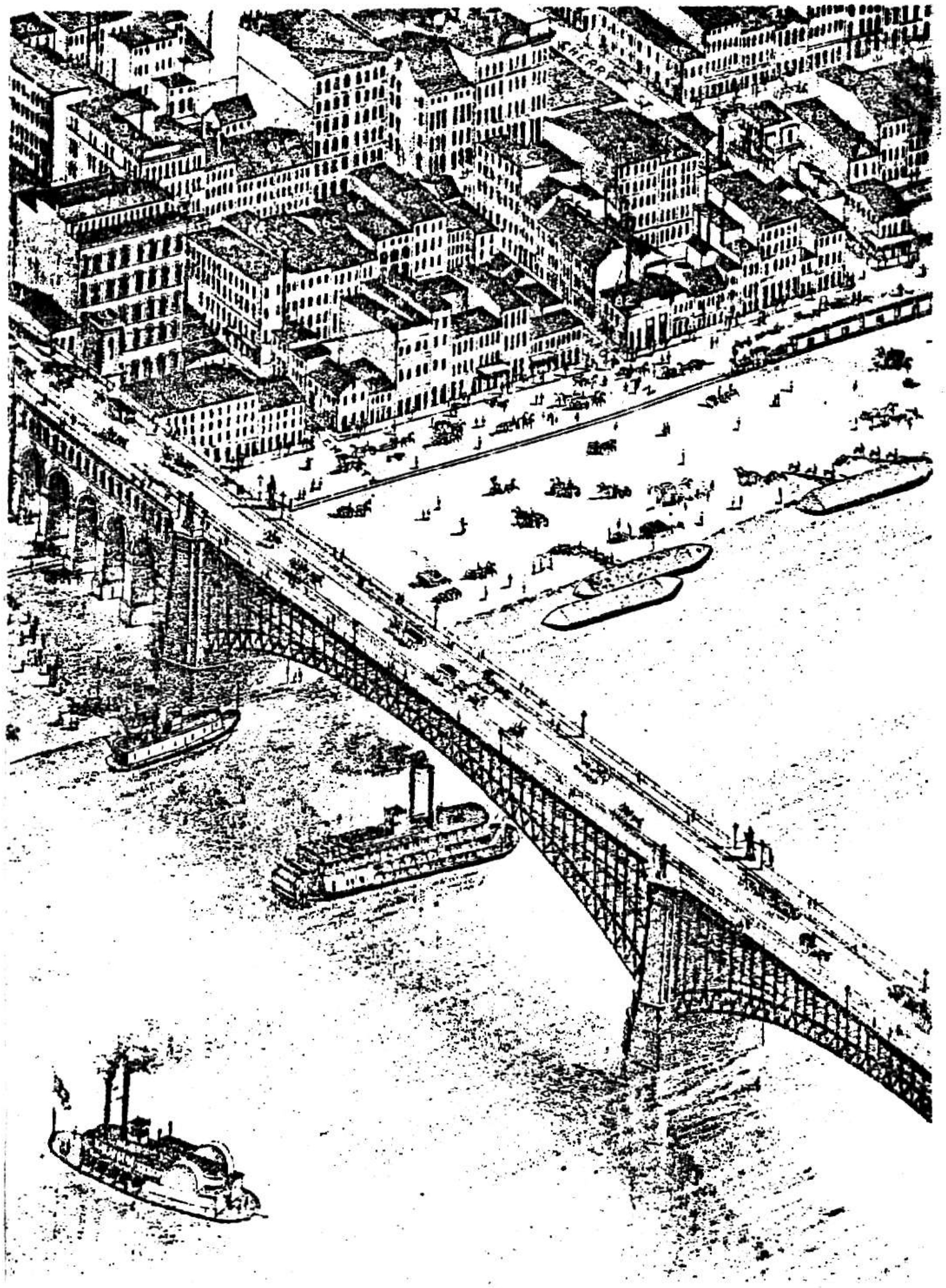


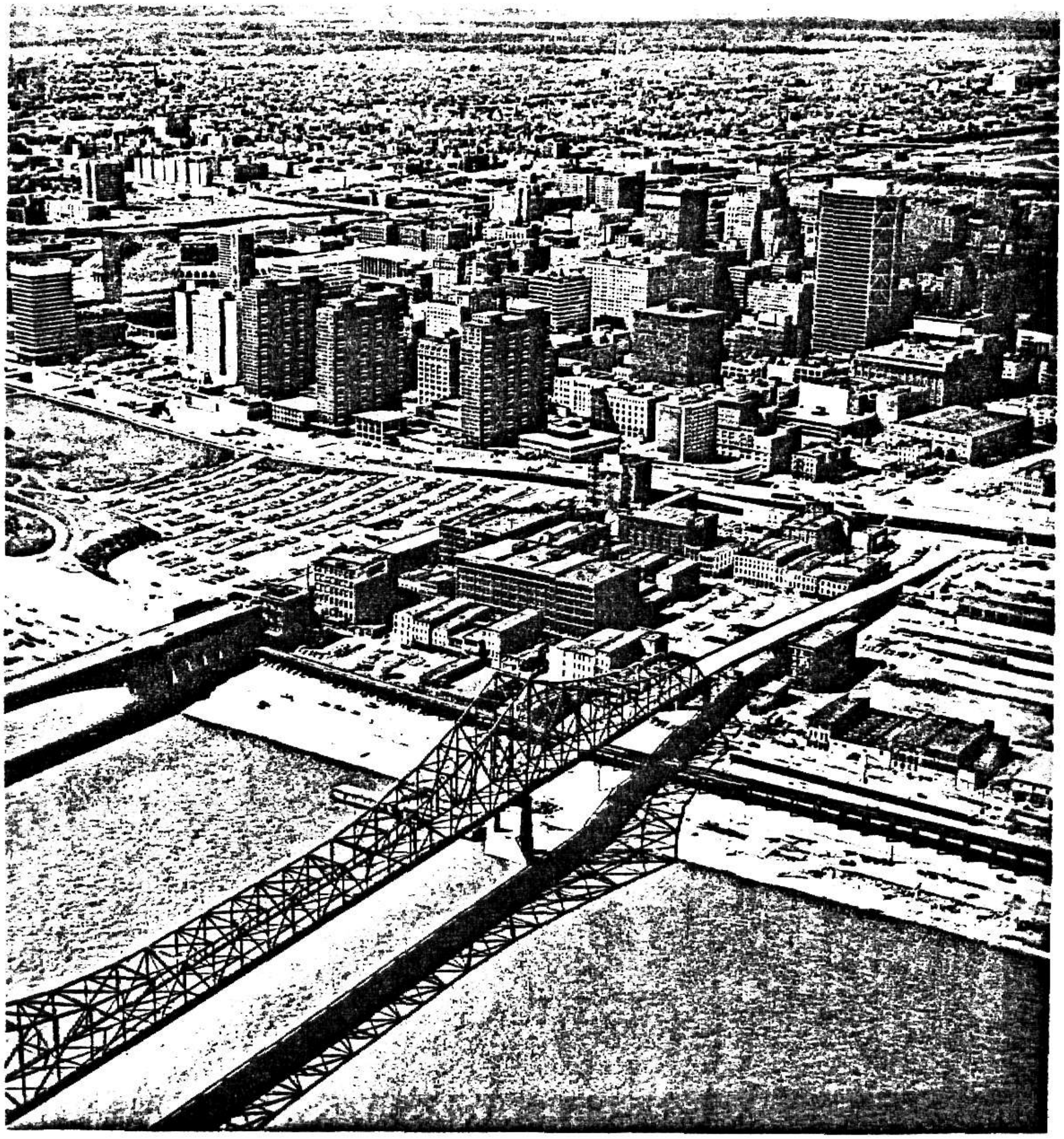
Figure II-1. Eads' Bridge

Compton and Dry's Pictorial St. Louis, a series of lithographs which show all buildings in St. Louis in 1875, confirms that extensive changes have occurred along the St. Louis riverfront.

Source: Hagen, This Is Our St. Louis, p. 292.

of early industrial St. Louis from Eads Bridge to Poplar and Third Street. The Gateway Arch is a monument which symbolizes the "gateway" to the West. Historically, St. Louis' development had depended on the westward expansion of America with the rising tide of immigrants in the nineteenth century and the concept of the city literally as a "gateway to the West." The arch was built in 1964 after a competition won by Eero Saarinen in 1948. The arch commemorates Jefferson's Louisiana Purchase. This memorial includes the arch, an underground museum and a ninety-acre landscaped park. Construction of the Veterans Memorial Bridge (later renamed Dr. Martin Luther King Jr. Bridge) and two highway bridges since 1940 caused the removal of other early structures and the dislocation of many nineteenth century factories and warehouses in the area. Eads' Bridge, Dr. Martin Luther King Bridge and the elevated Mark Twain Expressway further isolate the Landing from the city. Both the construction of these bridges and especially the vast amount of land cleared for the arch damaged the historic fabric of the St. Louis riverfront by changing its scale and isolating the remaining portions of the no longer continuous commercial riverfront district (Figure II-2).

The role of downtown has changed in St. Louis as it has in many American cities. Fifty years ago, government, job diversity, cultural life, entertainment, shopping variety and a range of housing alternatives could be found in a tight matrix around the center of the city which became known as downtown. Slowly, and hardly perceivable, the need and purpose of downtown was changed as the mobile middle class moved from the congestion of the city to the residential spaces in the suburbs. Decentralization of commerce and industry also greatly influenced the decline of downtown as the center of activity. Recently the downtown has begun to regain a few of its original



Laclede's Landing is located in foreground of the St. Louis Central Business District.

Figure II-2

Source: Laclede's Landing, p. 19.

qualities as a center for activity. This is partially due to spiraling energy costs, particularly in transportation.

Laclede's Landing now offers amenities which are drawing the professional middle class back downtown. The location is very important, being adjacent to the riverfront and in close proximity to the central business district, the Convention Center, major highways and bridges, and to the Jefferson Expansion Memorial (Figure II-3). An additional amenity is its architectural quality which is enhanced by its scale, the building heights which range from three to seven stories and the district's similarity of construction and materials. The existing architectural fabric provides for the creative functional reuse of the traditional historic architecture for a variety of retail, office space, residential housing, dining and entertainment.

What little remained of the historic commercial fabric of Laclede's Landing was being abandoned for other facilities in the metropolitan area during the 1960's. There were difficulties with previous development attempts during the 1960's prior to the establishment of the Laclede's Landing Redevelopment Corporation. The City Planning Commission recommended Laclede's Landing for designation under Chapter 353 of the Missouri Urban Redevelopment Law and it was approved by the Board of Aldermen in 1966. This law allowed a developer relief from property taxes and the use of eminent domain. Two development plans were submitted in 1968. However, due to delays and a serious national economic recession, the project did not materialize. The city terminated its redevelopment contract with developers in 1972. In 1974, the Laclede's Landing Redevelopment Corporation was formed and the redevelopment plan became official in December 1975. The approved

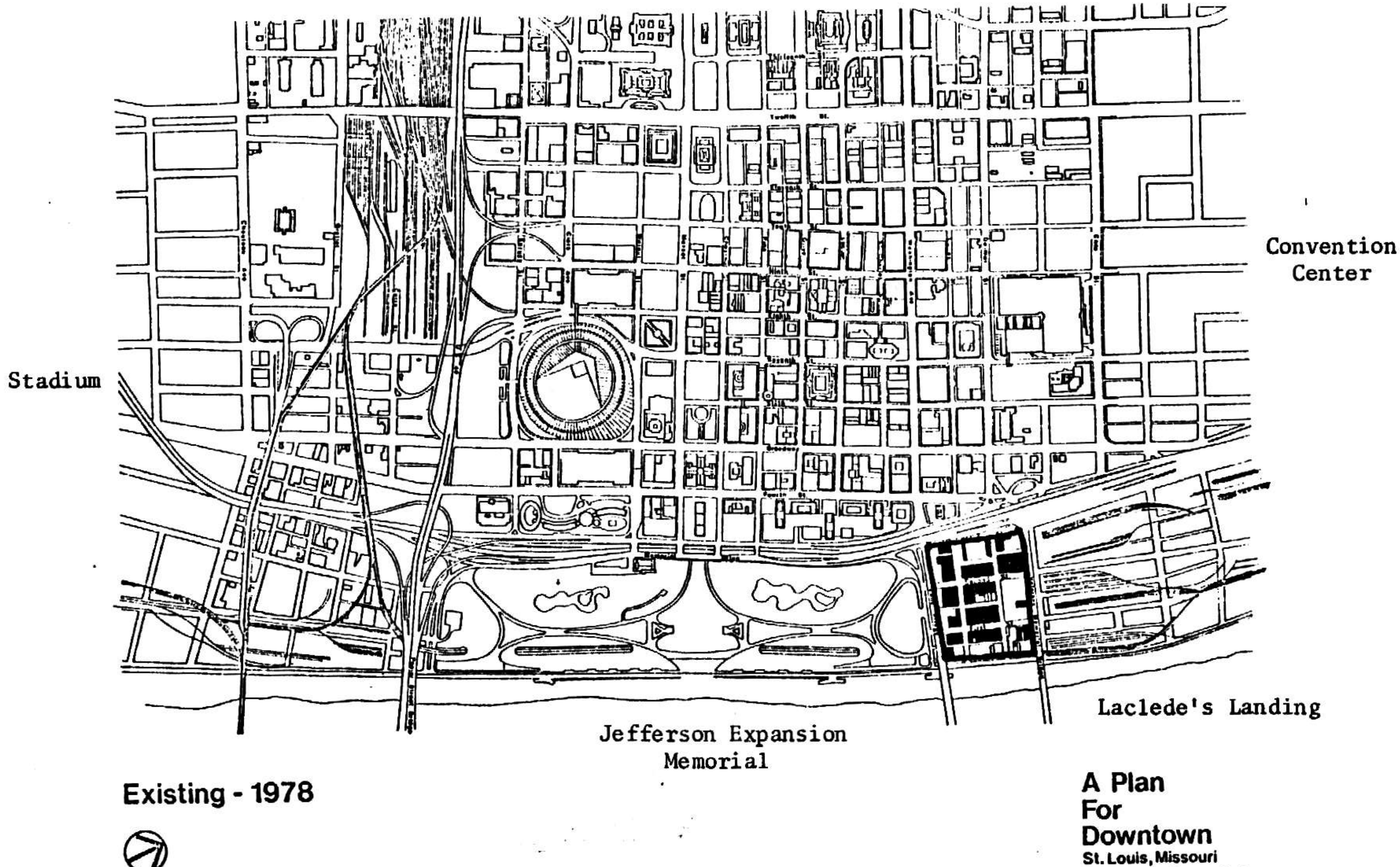



Figure II-3. Laclede's Landing in Relation to St. Louis Central Business District and Key Locations

Source: Lacledes' Landing Redevelopment Plan

plan provides for the rehabilitation of approximately 1,000,000 square feet of existing space for mixed use development of residential, retail, office and entertainment activities.

Laclede's Landing was entered on the National Register of Historic Places on August 25, 1976. The nomination by interested individuals and the declaration of Laclede's Landing shows that there is an interest in the functional reuse of the traditional historic fabric.

## THE LACLEDE'S LANDING REDEVELOPMENT CORPORATION

### THE ROLE OF THE REDEVELOPMENT CORPORATION

The revitalization of an area or district requires much more than the individual redevelopment of a few structures. The district must be economically stabilized and signs of future investment and redevelopment must be apparent to investors. The redevelopment corporation, in the case of Laclede's Landing, is the primary development agent that provides the stimulus, the creative initiator, the organization, the management, the orchestration of the project and the liaison between the various disciplines and organizations that create economic revitalization. The corporation is both the guardian of the district and the liaison between private investors, the general public, private organizations, the city and governmental officials. The redevelopment corporation must have control and understanding over all the factors affecting the development of the district, and from this understanding, the corporation must establish an economic strategy, a development plan, design guidelines and development agreements. Control over the type and concentration of usages is necessary to produce an economically stable and permanent environment.

THE LEGAL DOCUMENTS OF THE REDEVELOPMENT CORPORATION

It is important both for the designer and investor to understand the legal and legislative issues that facilitate the amenities of the redevelopment corporation and its redevelopment process. The Urban Redevelopment Corporations Law, Chapter 353 of the Revised Statutes of the State of Missouri 1969, establishes incentives to stimulate private investment and redevelopment of blighted areas in cities. This law grants a selected developer (the Redevelopment Corporation) the State's power of eminent domain to acquire the approved development site. This enables the developer to condemn and buy properties at the fair market price instead of an inflated speculative price. One of the benefits of the use of eminent domain is it allows a developer to change the image of the area. The second incentive of Chapter 353 provides a tax abatement rate of 100% for the first ten years. For the next fifteen years, taxes upon both the land and improvements shall be based on 50% of the normal assessed valuation. After this total twenty-five year period, taxes on the land and improvement shall be assessed at full value. The city administration in St. Louis has established a policy which requires the redevelopment corporation during the first ten years of property ownership to pay in-lieu-of tax payments equivalent to the ad valorem tax paid on property improvements during the calendar year prior to the year purchased. This results in the City losing no property taxes as a result of the redevelopment proposal. The Procedural Ordinance 49583 sets forth the local administrative requirements established to administer the Urban Redevelopment Corporations Law (353).

According to this law, the Board of Aldermen and the Mayor must declare the proposed site to be a "blighted area." Then a corporation must be formed. The first legal document is the Development Plan submitted by the redevelopment corporation in accordance with 353. This legal document provides the development methodology; delineates the role of the private investor, the city and development corporations; the method of organization; and a timetable for the activities. Design controls and operational controls for individual projects are also delineated in this plan. The development plan is legally important because it establishes the architectural integrity of the project.

After the development plan is approved by the Board of Aldermen an ordinance is established. (Ordinance 57085 approved the Development Plan submitted by the Laclede's Landing Redevelopment Corporation.) This ordinance authorizes the Mayor and Comptroller to enter into a contract on behalf of the City of St. Louis with the Laclede's Landing Redevelopment Corporation, thereby designating it as the official developer of the area.

The second corporate legal agreement is the Parcel Development Agreement which is necessary to obtain tax abatement for individual projects. This agreement spells out what the property owner will do, when, and how he does it. Prior to this the owner also must submit his plans for development including architectural drawings, time schedules, outline specifications and materials. These preliminary plans will be reviewed by the corporation. Following approval of the preliminary plans the owner and the corporation will enter into an agreement (the Parcel Development Agreement) under the terms that the owner will construct the improvements in accordance to the approved preliminary plans. If the owner and the corporation are unable to reach agreement on the plans or contractual arrangement appeals may be made to the Appellate Board. If the owner fails to live up to the agreements the Redevelopment Corporation may take any action to compensate what he has not completed. Condemnation is a possibility.

The important elements of the plan are:

1. The Corporation can grant property tax relief, over a scheduled 25-year period, by signing contracts with individual owners after their plans have been approved by the Corporation.

2. The development will contain rehabilitation and new construction. In the Landing, approximately 40 buildings will be rehabilitated for a total of 950,000 sq. ft. There is adequate land available for at least 750,000 sq. ft. of new construction.

3. The development plan establishes categories for each building in the Landing, indicating whether it will remain, possibly be removed, or will be removed.

4. The development plan evaluates uses for each block, indicating the amount allowable, on a block by block basis.

5. The City of St. Louis has committed itself to expend approximately $1,000,000 for such improvements as new lighting, a new street, landscaping, curbing, etc.

6. The development plan sets a definite plan for pedestrian and vehicular movement within the Landing, implemented on a phased basis over a period of five years.

7. The development plan states that most of the parking for the Landing will be on the perimeter of the area, with new construction required to contain some parking for its proposed uses.[10]

The third corporate document is the Urban Design Guidelines. According to Bill Maritz, president of Laclede's Landing Redevelopment Corporation, "The Landing is a unique area of the St. Louis riverfront. It is vitally important that policies governing such issues as landscaping, lighting, exterior renovation, graphics, signage, etc., be coordinated and interrelated." This is particularly important when the development involves a multiplicity of ownerships and financial input from both the public and private sectors. With this in mind the Planning Committee of the Board of

Directors began formulating Design Guidelines. The architectural firm HOK Associates was selected to develop the guidelines. The Design Guidelines, included with the Development Plan and the Parcel Development Agreement, comprise the corporation's documents that are utilized in their decision-making process. The corporation hopes that the documents will assist the investors' decision regarding the potential of the Landing (Appendix A-3).

## THE CORPORATION'S STRUCTURE

The Laclede's Landing Redevelopment Corporation acts as an "umbrella agency," planning and overseeing the slow and laborious rejuvenation of Laclede's Landing's nine square blocks. Tom Purcell who helped found the corporation serves as its executive director and was one of the group of eleven people which included Laclede's Landing property owners and civic interests. Purcell has a deep emotional commitment to the Landing. It takes a deep commitment and understanding of the issues involved to work with these damaged old warehouse structures. The alternative to revitalization is demolition of the existing district or further deterioration. As executive director he administers the decisions of the Redevelopment Corporation and works with a variety of individuals and organizations.

In redevelopment it is important that various disciplines integrate their talent and expertise to benefit the district and the corporation serves as a tool in this integration. One method of integrating these interested individuals is to develop a Board of Directors which includes these individuals and corresponding committees such as a planning and finance committee. This allows interested individuals an opportunity to voice their feelings, to render their services and/or expertise, and to participate in the revitalization of their district. The corporation therefore provides both the means to encourage and allow this participation. The corporation, however, maintains the necessary leadership to orchestrate the development for the welfare of all concerned such as the public, the city, and those not represented in the above participatory manner.

The individuals who founded the Redevelopment Corporation felt the most appropriate way to develop the Landing was to establish a central organization made up of one-half of property owners and one-half of diverse interest groups. Since the original redevelopment concept was formulated with the participation of property owners, upon agreement of the concept a management committee was formed to set up the bylaws. These bylaws were presented to the property owners. Within three months the bylaws were approved and $50,000 of stock had been raised.

> It was a very democratic and creative process and it still is. Anybody can buy stock, but nobody is obligated to buy stock. The shareholders include banks, property owners, utility companies, legal and architectural firms and community agencies such as Downtown Inc. and the Regional Commerce and Growth Association. This gives us access to all the elements of decision making. The not-for-profit corporation is not itself a redeveloper of the Landing but instead oversees private redevelopment corporations.[11]

LACLEDE'S LANDING REDEVELOPMENT PLAN

According to the development plan of Laclede's Landing Redevelopment Corporation the redevelopment plan is to contain a mixture of land uses. The mixture and percentage of the land uses per block is specified in their <u>Urban Design Guidelines for Laclede's Landing</u>. The area is to combine the rehabilitation of existing structures, particularly those of historic significance, the demolition of obsolete structures and the infill of new structures compatible with the rehabilitated structures and fabric of the Landing. Laclede's Landing is to provide St. Louis with a mixture of office, commercial, entertainment, residential and other uses. The proposed redevelopment will create new opportunities in the area for day and evening activities reinforcing the activities in the St. Louis Convention Center, Central Business District and Jefferson Expansion Memorial for both tourists and residents. It is therefore desirable to develop the area to encourage pedestrian and vehicular linkages and convenience to both the activities within the district and surrounding it. The Redevelopment Corporation places emphasis on the quality of development in Laclede's Landing and on the quality of architectural design coordination between rehabilitation and new construction. According to the plan the scale and unique character of the area should be preserved and maintained through the visual elements, the diversity of uses and consideration for the physical relationship of the street and building fabric. The Redevelopment Corporation goals are to provide improved vehicular and pedestrian access and controls which emphasize a diversity of usage. These uses are predominantly commercial, in part tourist and visitor oriented, and the provision on a very restricted basis of residential and warehousing uses. Agreements between the corporation and property owners subject the property to the controls of the Development Plan which pertain to the maintenance, occupancy and use of property, standards of construction and rehabilitation to preserve the unique character of the area. The Development Plan provides a method of review of design plans and specifications for new construction or rehabilitation by the Redevelopment Corporation Committee. The enhancement of property values and the stabilization of the neighborhood increase economic and financial benefits to the city and its inhabitants. This type of activity promotes tourist trade and establishes a market trade.

Additional Redevelopment Corporation goals include:

> The encouragement of new construction visually compatible with old and compatible in diversity of use with other structures in the area.
>
> Afford the greatest scope for continuing vitality through private renewal and architectural creativity within appropriate controls and standards.
>
> Residential development will be encouraged. . . . All such units will be constructed for middle income families and above.[12]

The city plays an important role in providing capital improvements. The Corporation and the city have developed a good work rapport, which is necessary for successful redevelopment. The city's support of the redevelopment corporation's project is important. The following discussion delineates the city's responsibilities as outlined in the Redevelopment Plan (Figure III-6, location of these streets and areas). The city will continue the construction of a major parking structure at the Jefferson National Expansion Memorial. Consideration will be given to construction of a major parking structure north of Martin Luther King Bridge between First Street and Second Street by the city or a private developer. The city will repair and renovate the existing streets and curbs with materials established by the city and the Corporation. All material and product selections, and the construction techniques will be reviewed by both the city and the Corporation, meeting the design standards for public improvements established by the Corporation. The city will acquire the right of way for and widen Commercial Street from Lucus to the new North Entry Drive. The right of way will be acquired by the city for the construction of the new North Entry

Drive adjacent to Martin Luther King Bridge. Installation of new street lights will be completed approximately the same time as the sidewalk and street renovation. The sidewalks will be repaired and rebuilt with the materials and at the grade levels agreed on by the city and Corporation. This may include installation at an elevation permitting installation of brick walks over the concrete walk by adjacent property owners. The city will work with the Corporation, interested individuals, public and private agencies to upgrade and rehabilitate the Terminal Railroad Trestle, Eads Bridge and its underpasses, the levee, the wharf area in the vicinity of the Landing, the area under Martin Luther King Bridge, the area between Washington Avenue and Eads Bridge. (Recently the decision to remove the railroad track from Wharf Street was approved.) The city will also work with other agencies to develop transit routes serving the Landing. Specifically envisioned are a trolley along Wharf Street and other city connections. Also the extension of downtown bus routes is proposed to the Landing (Figures III-7 and III-8). The Corporation will work with the city to encourage the creation of a pedestrian walkway serving the Landing. Working with the Port Authority, the city will encourage development north of the Landing compatible with development in the area. Financial investments in the Landing are encouraged by the city's public improvements and cooperation with other agencies to develop the area. Repair and new construction of streets, sidewalks, lighting and other public improvements demonstrate the city's faith in the area's renovation and improves the existing environment.

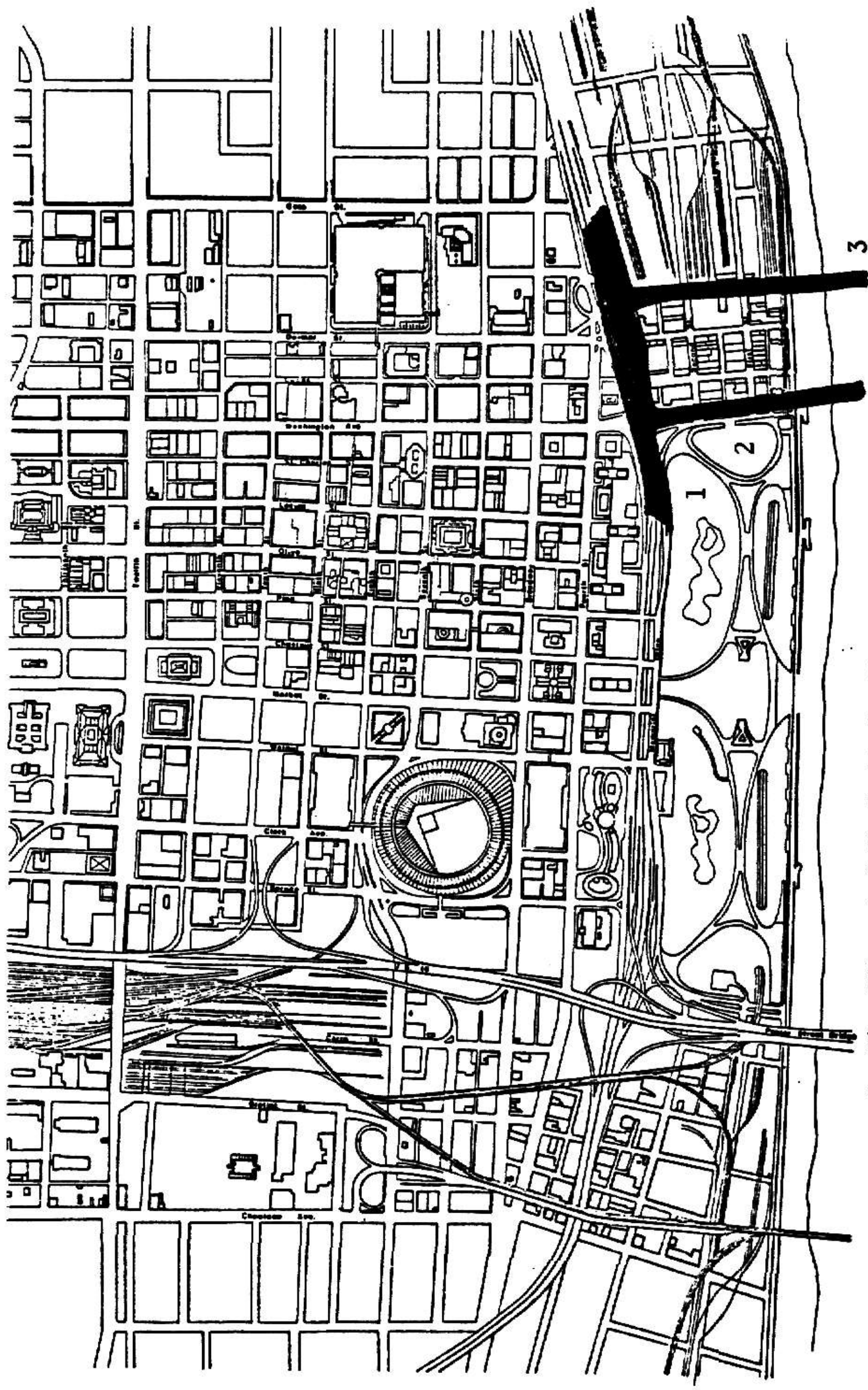
## CHAPTER III

## SITE ANALYSIS, LACLEDE'S LANDING

The development area of Laclede's Landing is legally described as:

> The development area shall be bound on the east by the "Outer Harbor Line" of the Mississippi River, on the north by the center line of Dr. Martin Luther King Drive and on the eastward extension thereof, and on the south by the center line of Eads' Bridge, and on the west by the center line of Third Street.[13] (Figure III-1.)

In the following discussion of the proposed development's location, the photographs beginning with Figure IV-5 may be of assistance in identifying the buildings and their location within the context of the district. The Cherrick and Bronson Hide Buildings proposed for adaptive use development are located on a prime corner location in the district, at the intersection of First Street and Delmar Boulevard (Morgan). (Figure III-2 shows the location of the proposed project locations within the district.) The building located diagonally across from the Cherrick Building (the southwest corner of the intersection) is one of the three nationally significant structures in the Landing. This building is referred to as Raeder Place and is recognized for its cast iron facade (Figure III-3). The Architectural Survey of Laclede's Landing (1976) (Figure III-4) also recognizes the Bronson Hide Company Warehouse, 806-808 North First Street and the Riverfront Design Center, 612-616 North Second Street (Figure III-5) as nationally significant structures. The vacant lot immediately to the west of and facing the Cherrick and Bronson Hide Buildings is currently being utilized for parking. Construction for a four hundred room

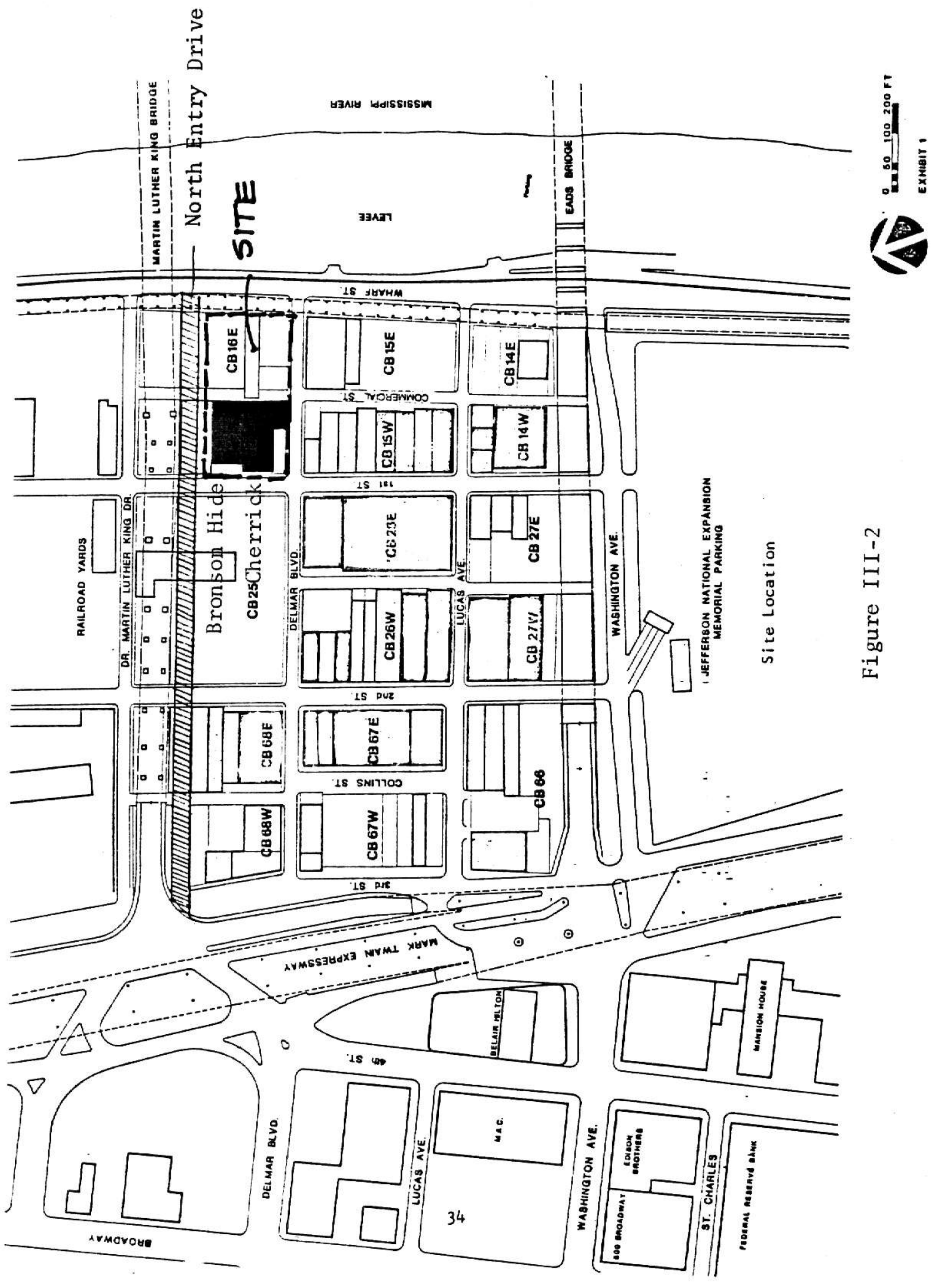



1. The Elevated Mark Twain Expressway
2. Eads Bridge
3. Dr. Martin Luther King Bridge

The Highway and Bridges Which Isolate Laclede's Landing from Central Business District

Figure III-1

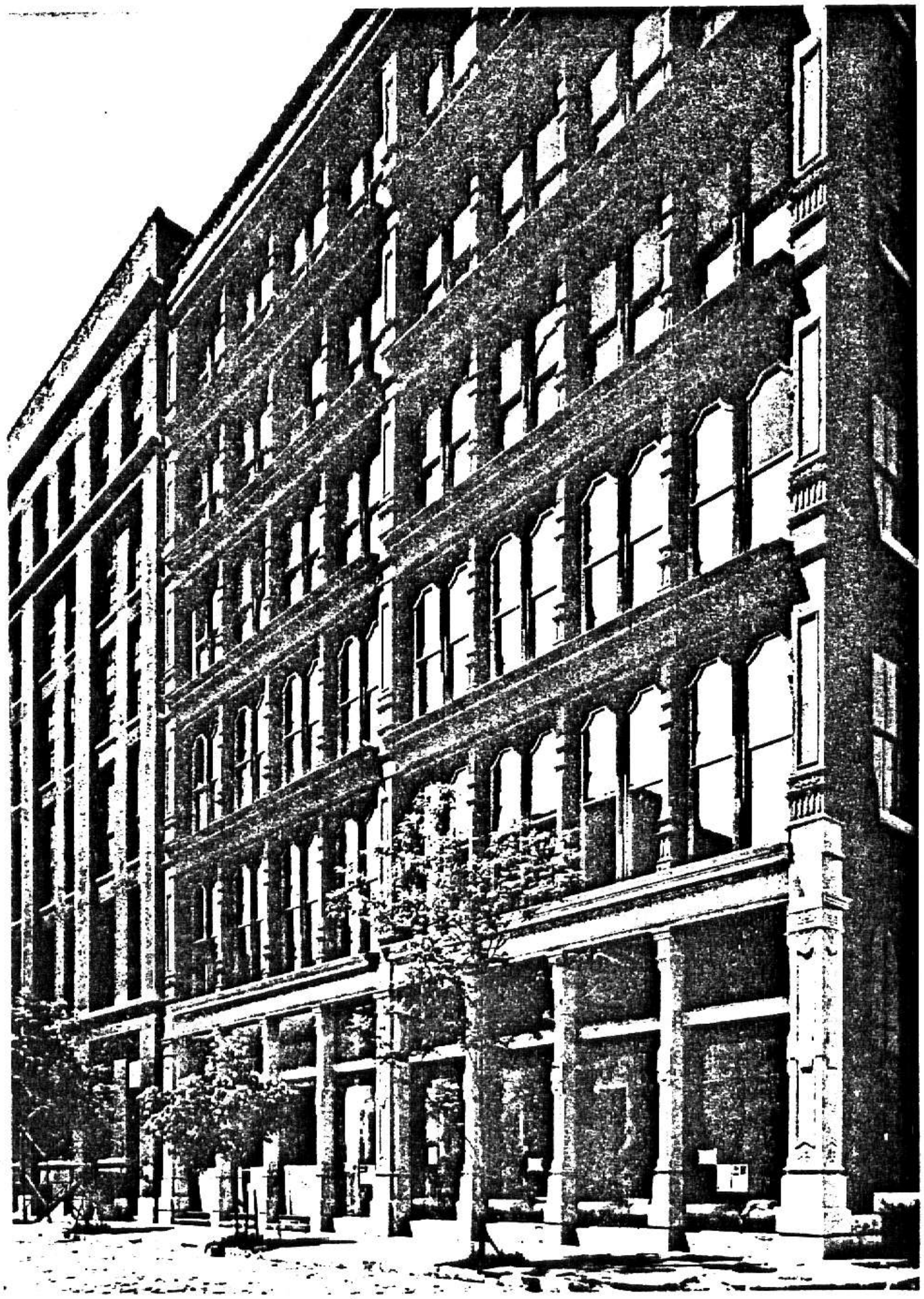
Source: Laclede's Landing Redevelopment Plan




Site Location

Figure III-2

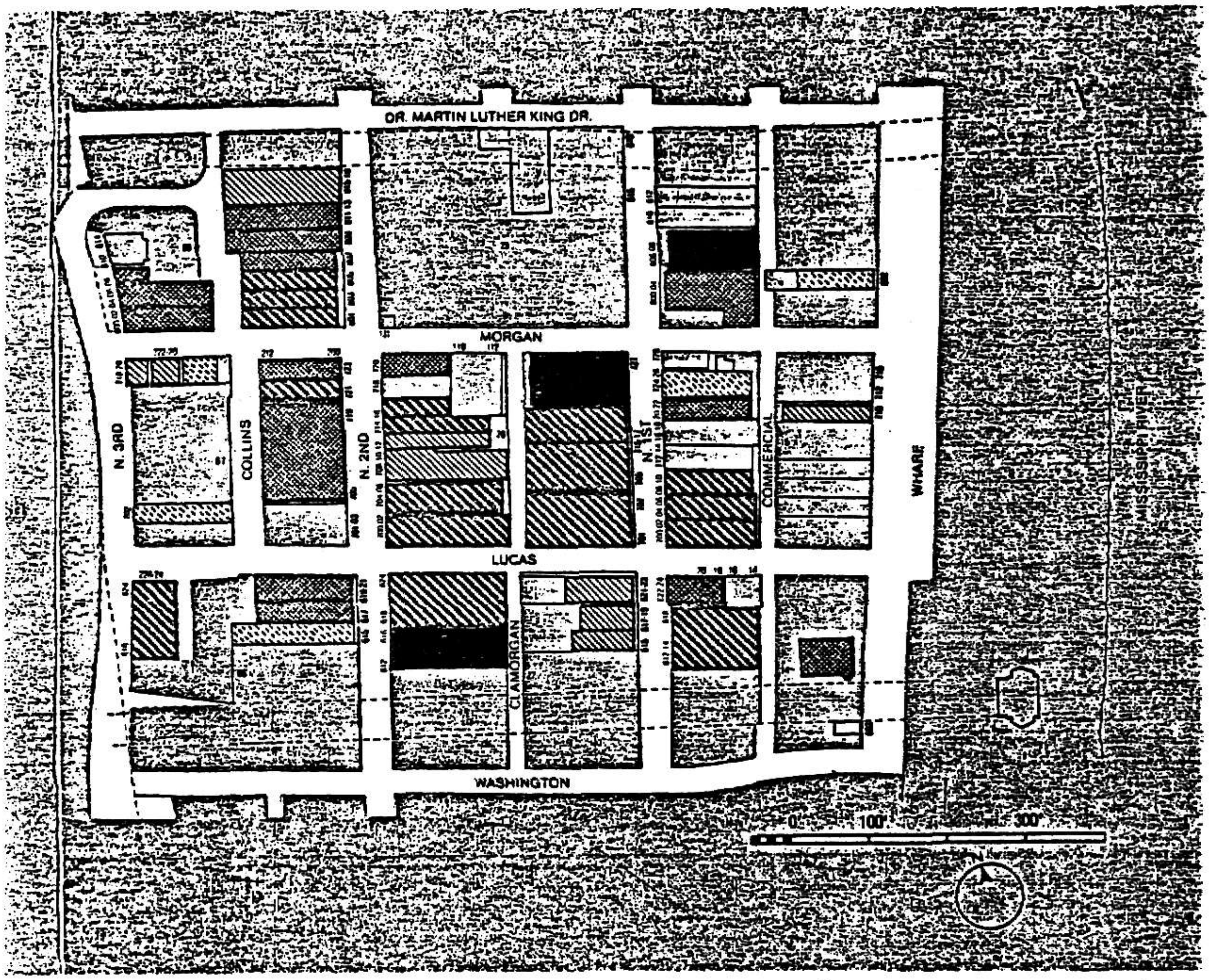
Source: Laclede's Landing Redevelopment Corporation



RAEDER PLACE

Figure III-3

Source: Laclede's Landing, p. 19.




<u>Architectural Survey of Laclede's Landing</u>
April 1976
Survey for the Community Development Agency

<u>Legend</u>

- National Significance
- State Significance
- City Significance

Demolition would be a major cultural loss

- Neighborhood Significance
- Architectural Merit

Demolition would diminish integrity of neighborhood

- Little or No Architectural Merit

Demolition would be inconsequential or advantageous

Figure III-4

Source: <u>Laclede's Landing</u>, p. 33

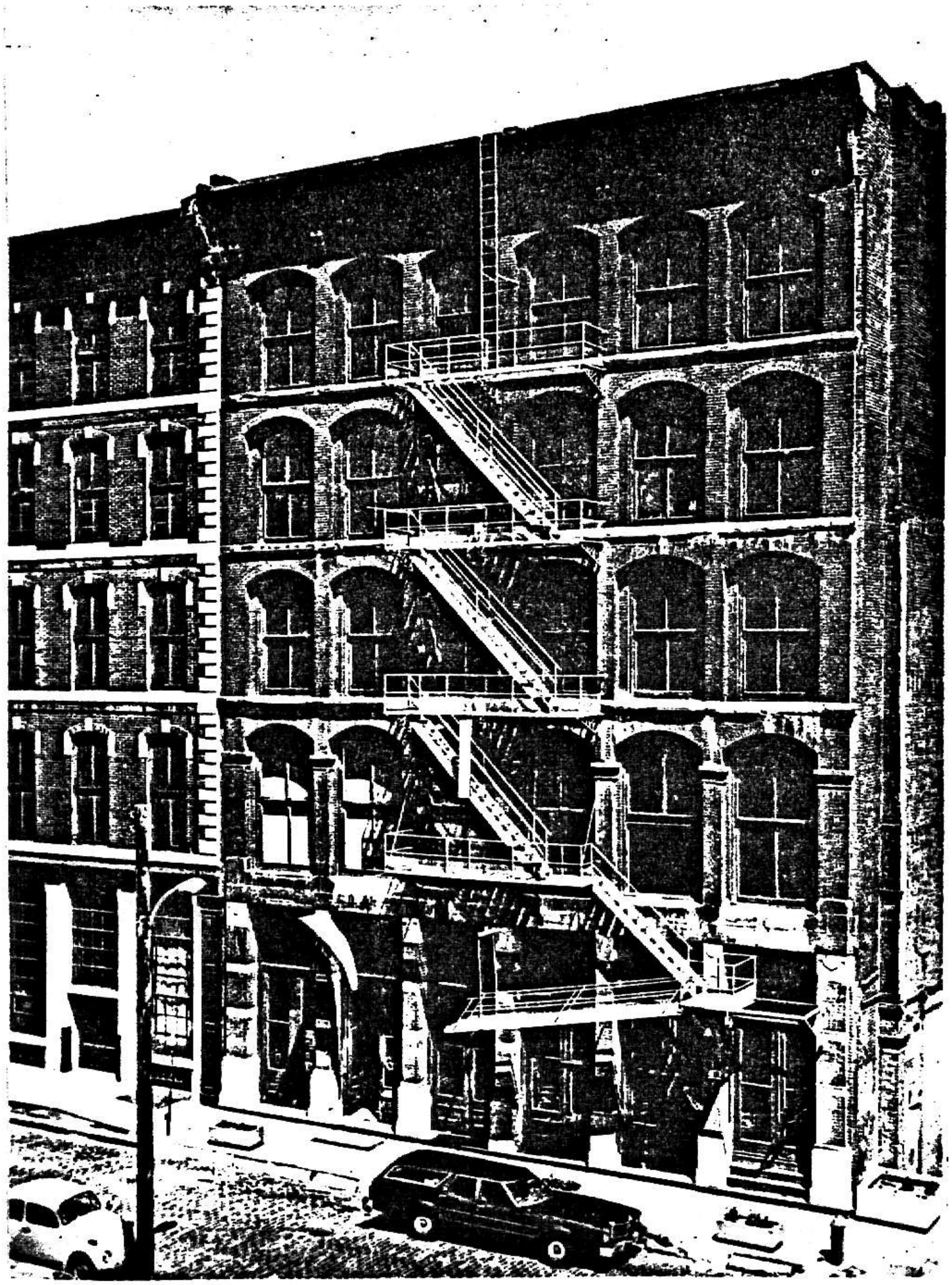


Figure III-5. Riverfront Design Center

Source: Laclede's Landing, p. 24.

hotel is proposed for this vacant lot, City Block 25. The construction of a new vehicular entry, referred to as North Entry Drive, south of the Martin Luther King Bridge provides excellent viewing by vehicular traffic of the north elevation of the Bronson Hide Company and the proposed infill structure. The site for the proposed infill structure is City Block 16E. The site's prime location in regards to the riverfront provides it with locational importance in the district even though it is not located within the current center of the district's activity. This activity occurs on both First Street and Second Street between Lucus and Delmar Boulevard (Morgan). The most important feature of the proposed residential and commercial development is its location which provides for the visual and physical connection to the Mississippi River. The proposed development has the opportunity to utilize and relate to the historic district's natural slope to the River in its construction to enhance and provide visual connection to the River.

In addition to the normal elements of site analysis (such as pedestrian and vehicular circulation), Laclede's Landing has particular physical features which are expected by the Redevelopment Corporation to be reinforced to preserve and enhance the identity of Laclede's Landing. These four basic physical features include: the walled edge of the Mark Twain Expressway; two bridges, Martin Luther King Bridge and the historic Eads' Bridge; the river oriented features and the historic district (Laclede's Landing's nine square blocks laid out according to original street plan and riverbank topography). The railroad trestle and the Wharf Street granite cobble levee are river oriented features that act to unify the riverfront north and south of the levee. The site elements follow:

1. Vehicular Circulation

Major vehicular entry to the district occurs on Washington Avenue south of Eads' Bridge. Construction of a New North Entry Drive south of Martin Luther King Bridge is proposed (Figure III-2). This new entry will provide excellent exposure for retail establishments within the proposed project sites. The aim of the Redevelopment Corporation is to reduce the vehicular circulation within the district and emphasize pedestrian circulation. During Phase 1B of their plan, Delmar will be closed day and night to vehicular traffic. During Phase 2 Lucus Avenue within the Landing will be closed to traffic in the evening. The closing of these streets will resolve the major vehicular and pedestrian conflicts especially at major street intersections. Delivery will be confined to the alleys. The plans for vehicular and pedestrian circulation traffic in the district affects the circulation and connections for the proposed development of City Block 16 East and 16 West. The Redevelopment Corporation proposes the construction of a new street between these two blocks. This new street is actually a continuation of Commercial Street to the new North Entry Drive. Portions of this street extension have previously been used as for trucks servicing the warehouses. Plans to convert the alley to street uses include a combination of service deliveries, vehicular and pedestrian access. (Figures III-6 and III-7 show the proposed Downtown People Mover and the Laclede's Landing Hotel Shuttle.)

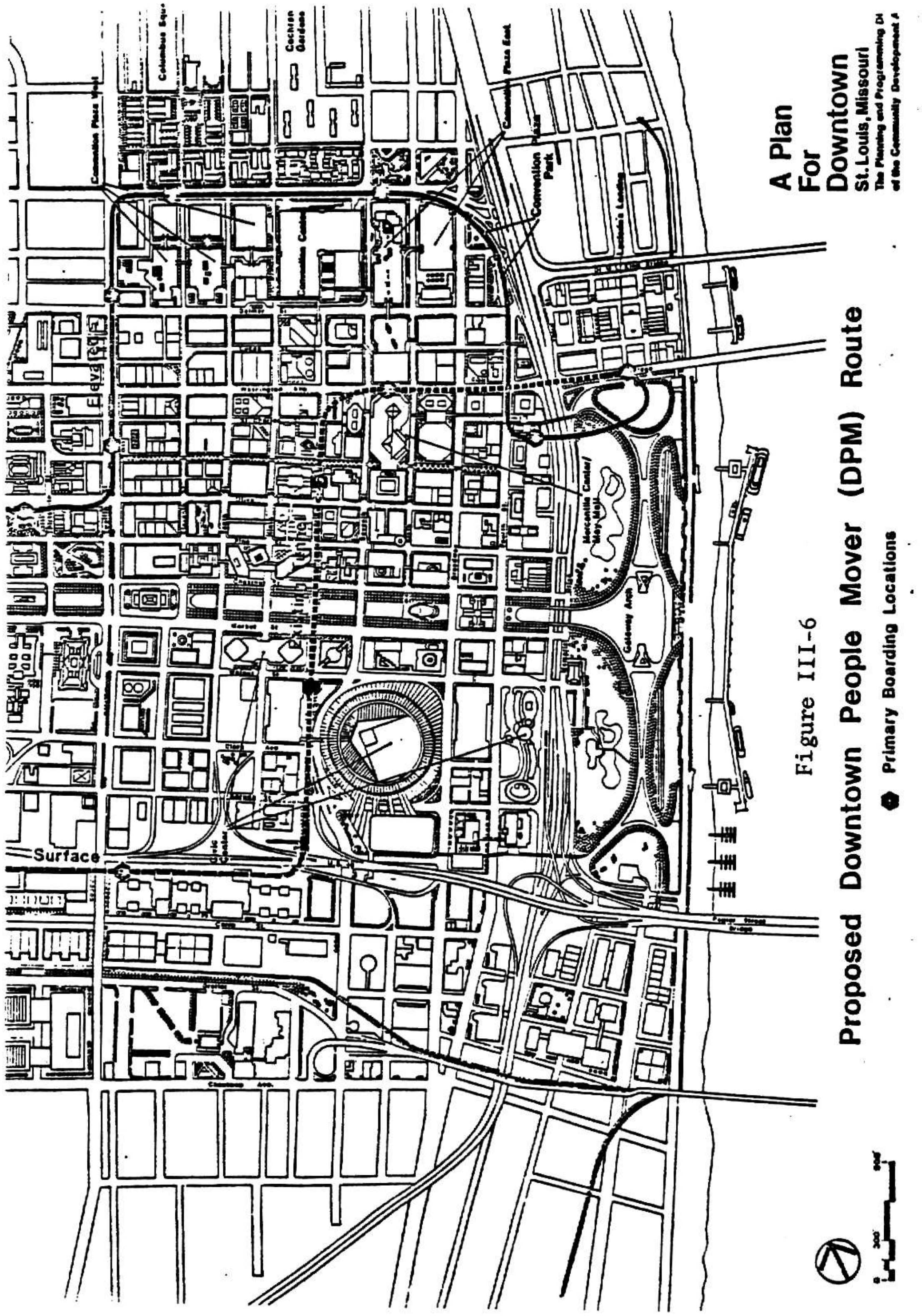



Figure III-6

Source: Laclede's Landing Redevelopment Plan

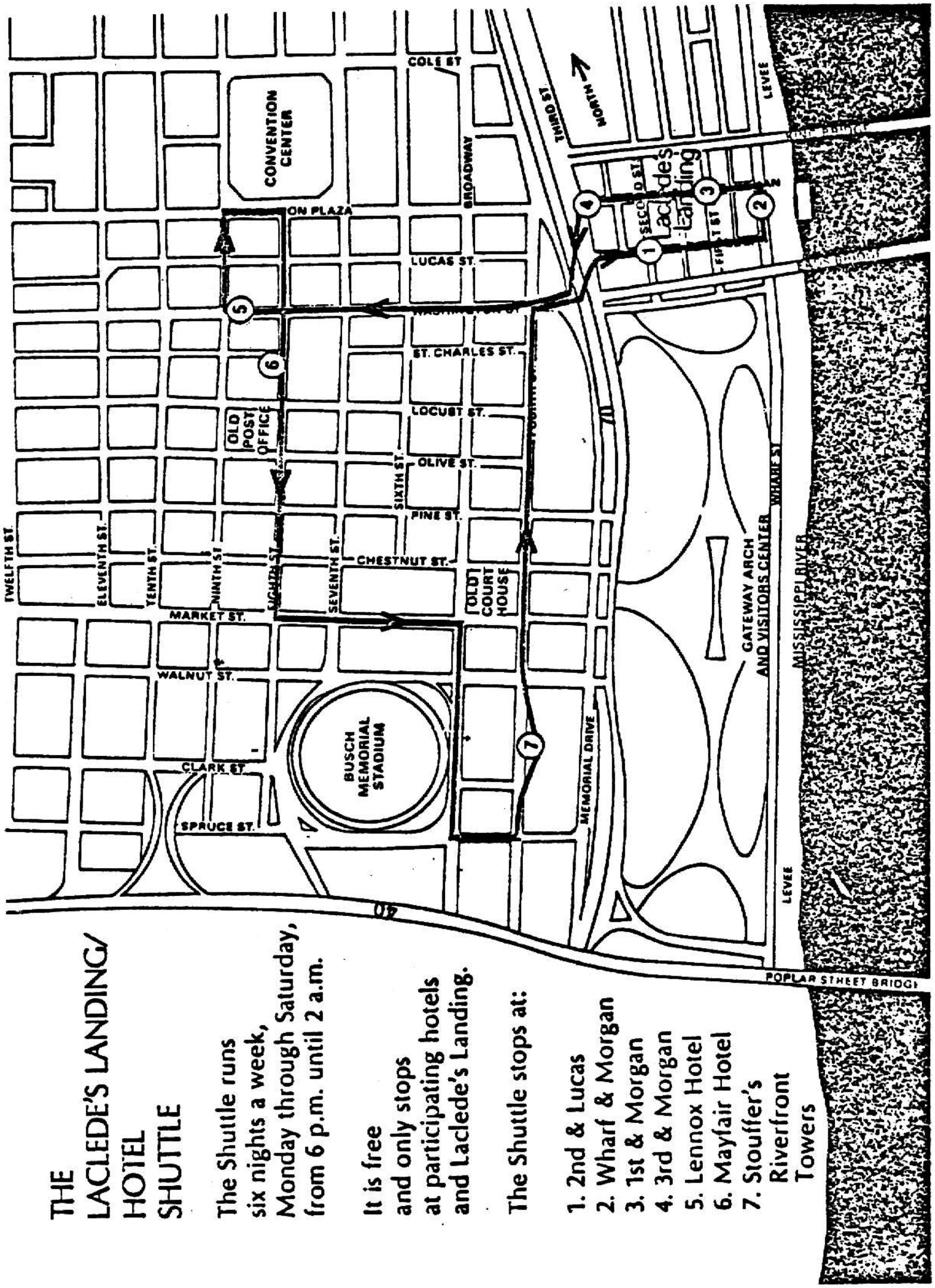



Figure III-7

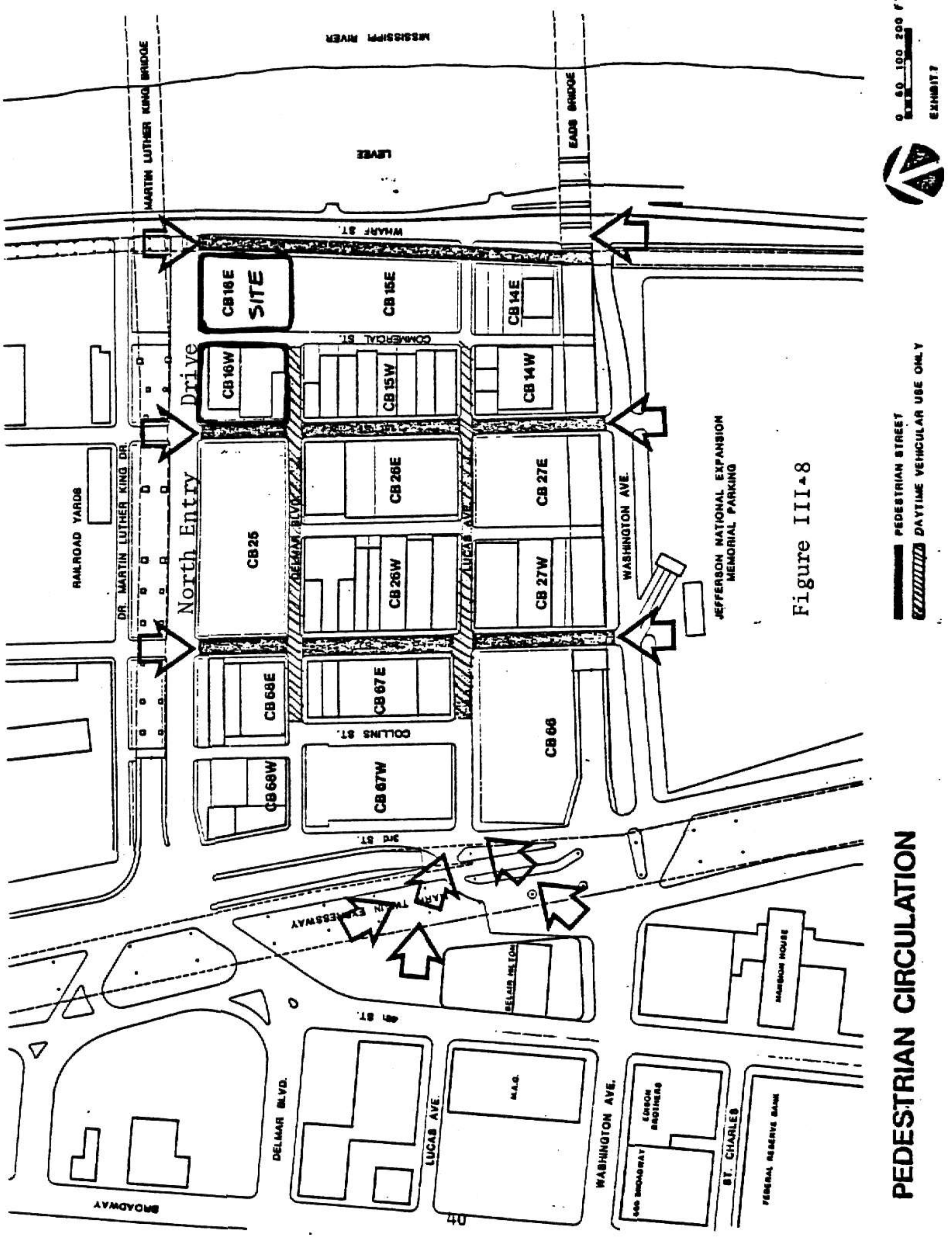
Source: Laclede's Landing Redevelopment Corporation

2. Pedestrian Circulation

The pedestrian walkways from the Central Business District Core and Convention Center are critical to the development of Laclede's Landing. Pedestrian access will occur primarily from the Jefferson Expansion Memorial beneath Eads' Bridge, under the Mark Twain Expressway at Washington and along a path from Lucus under the expressway. (See Figure III-8 for a diagram of pedestrian circulation.) Major pedestrian circulation within the district occurs on First Street, Second Street, Lucus Avenue and Delmar Boulevard. During the later phases of the development plan these streets are to become totally pedestrian both during the day and evening. First Street is one of the major entries to the Landing from major parking areas which will increase pedestrian traffic in front of the retail stores of the Bronson Hide and Cherrick Buildings. Commercial and retail development is proposed along Commercial Street in the infill structure, the Cherrick and Bronson Hide Buildings. These developments and their design will encourage pedestrian circulation along Commercial Street and between blocks. The Laclede's Landing Redevelopment Corporation plans to develop a major pedestrian way on the west side of Wharf Street to further enhance the waterfront orientation of the Landing. To respond to this emphasis, retail and commercial development is proposed along this pedestrian way on Wharf Street.

3. Dr. Martin Luther King Bridge

This bridge is located adjacent to the Bronson Hide site, north of the proposed New North Entry Drive. The Redevelopment

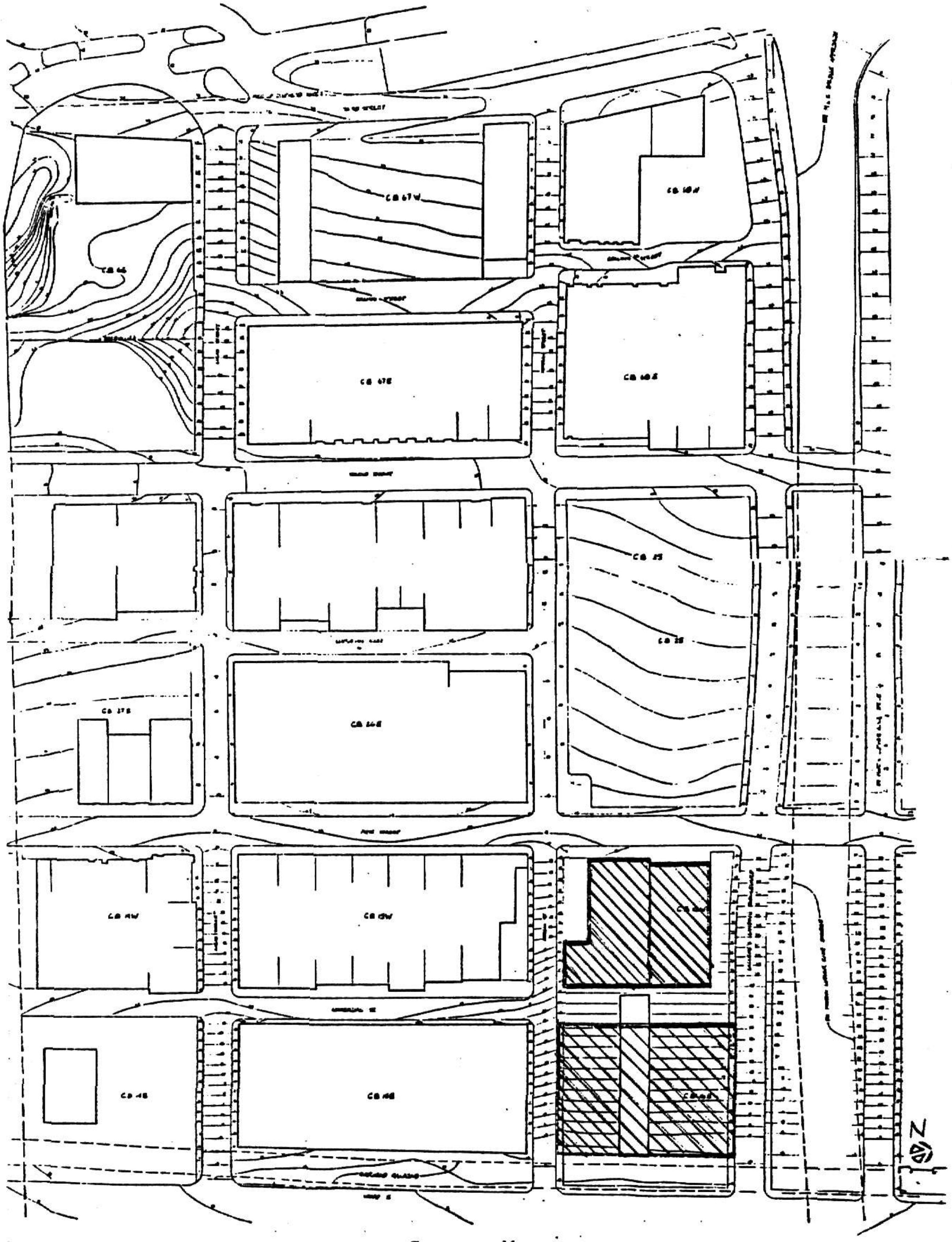



Source: Laclede's Landing Redevelopment Plan

Corporation recommends the restoration and the improvement of the physical appearance of the bridge and the right-of-way beneath the bridge. Proposals include a new sidewalk, trees, lighting, a masonry screen wall and planted ground cover or cobblestones in the space under the bridge. Painting is also recommended for the bridge.

4. Site Topography

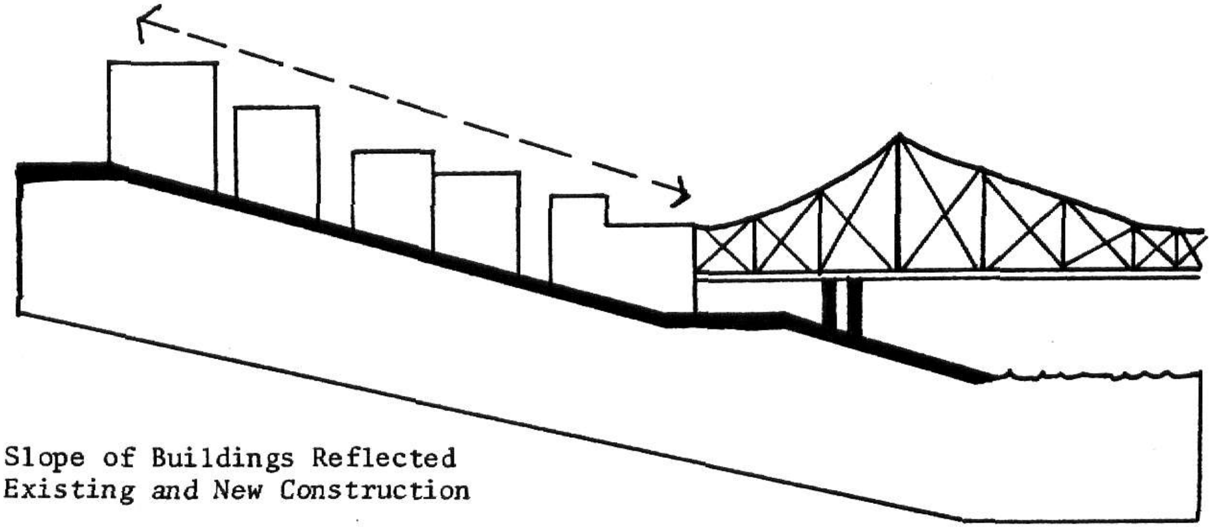
Laclede's Landing is the only part of the Old Village of St. Louis where the land retains the natural slope to the Mississippi River. The topography, a critical design factor, is of special importance to the sites of the Bronson Hide, Cherrick and proposed infill developments. (See Figure III-9 for the contour map.) The topography allows new construction to approximate the line of topographical slope in their building massing and heights. This stepped massing would further accent the historical slope down to the river. The existing topography aids in creating an interesting and integrated pedestrian district, through allowing pedestrian entry and circulation through the buildings on various levels. For example, an individual may enter either the Bronson Hide or Cherrick building on First Street and exit one level lower on Commercial Street. This advantage of the sloping topography not only allows the pedestrian to change levels from their entry on Commercial Street and exit two levels below on Wharf Street, but it also allows for partial concealment of the parking structure within the slope. The development of arcades through these buildings to another street and buildings will increase the



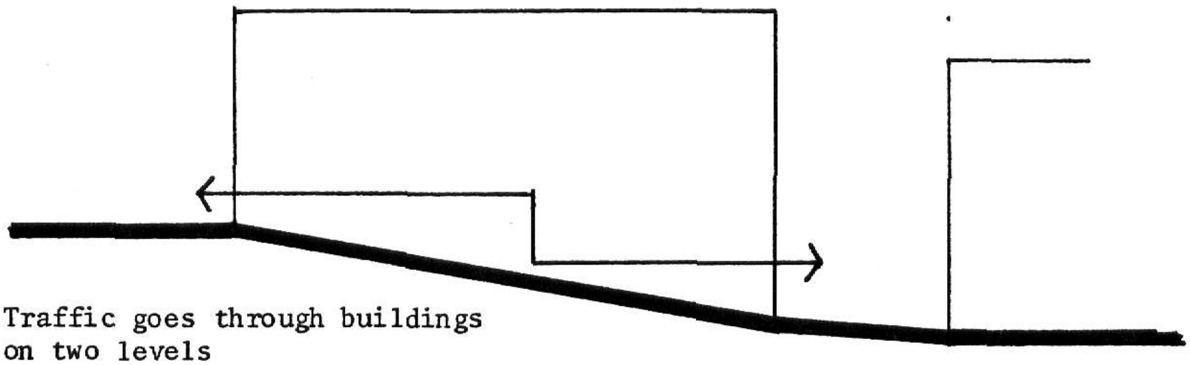
Contour Map

Figure III-9

Source: HOK Architects

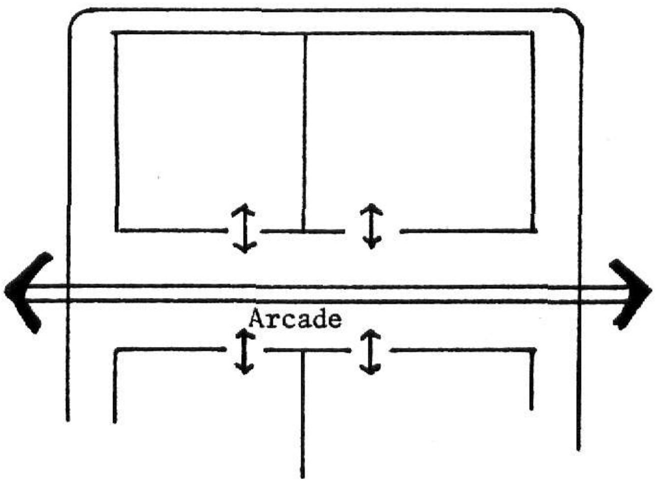


Slope of Buildings Reflected
Existing and New Construction



Traffic goes through buildings
on two levels

The Cherrick and Bronson Hide Buildings




The use of arcades to increase traffic flow between the blocks and access to shops.

Building Forms

Figure III-10

traffic flow between blocks. This will provide and encourage traffic to building locations not on the major activity streets. It will also encourage pedestrian atmospheres where developments and their designs will respond to the pedestrian versus vehicular orientation (Figure III-10).

5. Views

Views are important to one's orientation in the Landing and to the experience of its relationship to the Gateway Arch, the downtown district and most importantly, the riverfront (Figure III-11). It is important to enhance and preserve existing views to important landmarks located within and beyond Laclede's Landing. Key views include "corridor" views looking downhill to the river and an "axial" view of the arch from the alley between First and Second Streets. Views can be exploited from various building interiors, rooftops, view overlooks and ground level. The infill structure should be carefully designed to preserve the views of the riverfront from the Cherrick and Bronson Hide Buildings. The new structure should also exploit the views available from its location.

6. Relationship to the River

The redevelopment plan's goal is to maintain visual and physical immediacy of the Landing to the river which few cities have preserved and improved. Both the views of the river and pedestrian access from the proposed development will attract visitors to and through the Landing to the levee. Parking on the levee will be discouraged.

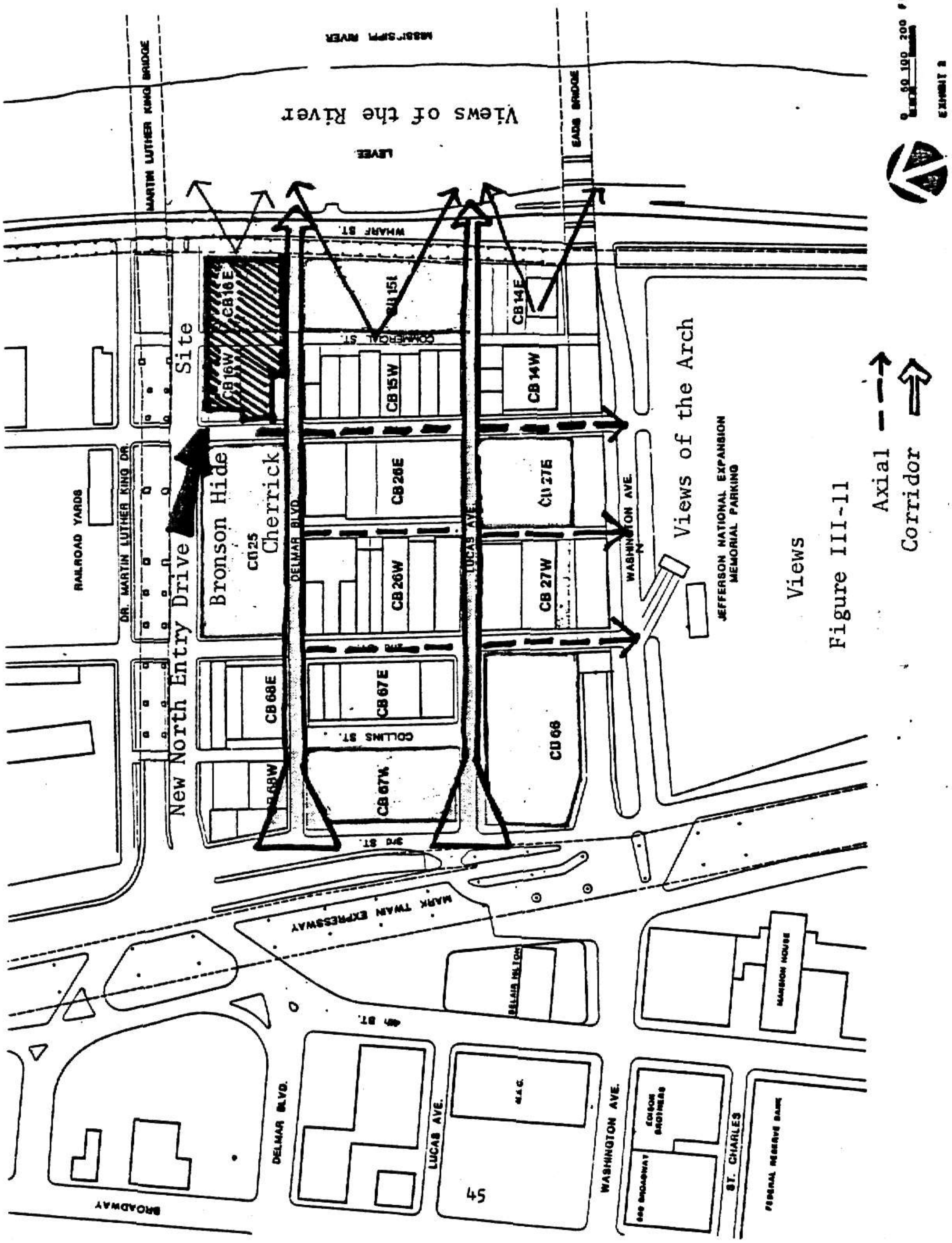



Figure III-11

Source: Laclede's Landing Redevelopment Corporation

7. Climate

Climatic factors, when considered by a designer, affect a building's form, orientation, its construction, and the choice of building materials. Climatic data is therefore an important issue in environmentally conscious design. The effects of a few climatic factors follow. The sun affects the amount of solar radiation heat gain and natural light. The sun should be taken into account by the designer especially when he is designing the location of windows and living spaces. The wind affects the stress load on a building, its interior and exterior ventilation, air infiltration into the building and when combined with building mass location, the pressure from surrounding buildings. The rain and snowfall affect the form of the roof and its access during heavy snowfall. This is particularly important during the winter with snow removal in a pedestrian oriented environment (See Appendix B-2 for specific climate data).

8. Noise

Consideration to the noise activity in the area relates to bridge and highway traffic, pedestrian and vehicular circulation in the district, railway traffic, barges and riverboat activity and entertainment establishments within the area. It may be desirable to minimize the noise conflicts for the residential units. Emphasis should be given to the sound transmission between the units to insure privacy and comfort. Yet it is important to understand that certain types of noise may be an attraction factor which denotes excitement and activity to people. Sounds that denote the excitement and activity in the district are river noises, people talking on the streets and low level music which escapes from the entertainment locations. Many of the residents may enjoy these noises at low levels. However, unpleasant noises would be generated by traffic, people screaming and excessively loud entertainment noises. Therefore, contact with these noises should be at the discretion of the resident through opening windows or walking outside. These noises should not invade their private residence or community spaces such as lobbies and meeting rooms.

9. Landscaping

Vegetation did not exist in the Laclede's Landing district until trees were planted along the major pedestrian walkways. Future landscaping has the potential of being a key element of identifying privacy and orientation. Future street landscaping will help to create a pleasant pedestrian environment. Vegetation may also be used to enhance the physical structures such as the Martin Luther King Bridge right-of-way.

# CHAPTER IV

## BUILDING ANALYSIS

### CHARACTERISTICS OF THE LACLEDE'S LANDING DISTRICT

The fabric of the Laclede's Landing District is defined by a rectalinear grid pattern which remains flat from North Second Street to North First Street and then sharply slopes to the river (See Figure III-10). The main streets, both north-south and east-west, are similar in width. The alleys provide an exception, with narrower streets located between North Second Street and North First Street, and North First Street and Wharf Street (named Clamorgan and Commercial Street respectively). The lack of ornamentation on the building facades adjacent to these alleys and the lack of sidewalks aid in defining the streets' use as alleys. The originally treeless sidewalks are uniform along major streets. The storefront elevations also reinforce the pedestrian and vehicular circulation. The building fabric of the Landing, with few exceptions, fills the entire lot with rectangular half block long buildings (street to alley) with narrow street frontage (approximately one-third of the building length) and ranging from three to seven stories in height. These rectangular masses reinforce the rectangular grid of the street pattern. The block located between Clamorgan alley and North First Street contains the highest and most uniform massing of the district, with the other building heights varying greatly.

The primary characteristics of the district which are reflected throughout the district include rectangular building massing, flat roofs, consistent use of brick as the building material, originally similar in coloration (today the Cherrick Building is painted white), and each building expresses its own window portions, style and rhythm. The secondary characteristics include a variety of facade treatments, ranging from elaborate cast iron store fronts to unadorned brick fronts with occasional use of cast iron building components and ornamentation.

The Laclede's Landing District is a fragment of the similar buildings which once densely lined the riverfront. Laclede's Landing is all that remains following the demolition for expressways, bridges and the arch. The building fabric which remains in Laclede's Landing is also a fragment of the dense development pictured in Compton and Dry's Pictorial St. Louis (Figure II-1). Numerous vacant sites have replaced the previous building fabric. The vacant sites need to be infilled to complete the historic district's original building massing.

## BUILDING HISTORY AND DESCRIPTION

While little information exists on the history of the Bronson Hide and Cherrick Buildings, they are clearly contributors to the late nineteenth century commercial fabric of the Laclede's Landing District. The buildings were selected for their location in the district, their relationship to the river and the challenge of adapting warehouse buildings with architectural significance. Both buildings have spatial and architectural restrictions as well as design opportunities. Design challenges exist in the revitalization methodology and the design of infill construction to relate both to the two existing buildings chosen and to the historic district (Figure IV-1).

The construction dates for both the Bronson Hide Building and Cherrick Building vary according to the source. The Laclede's Landing History and

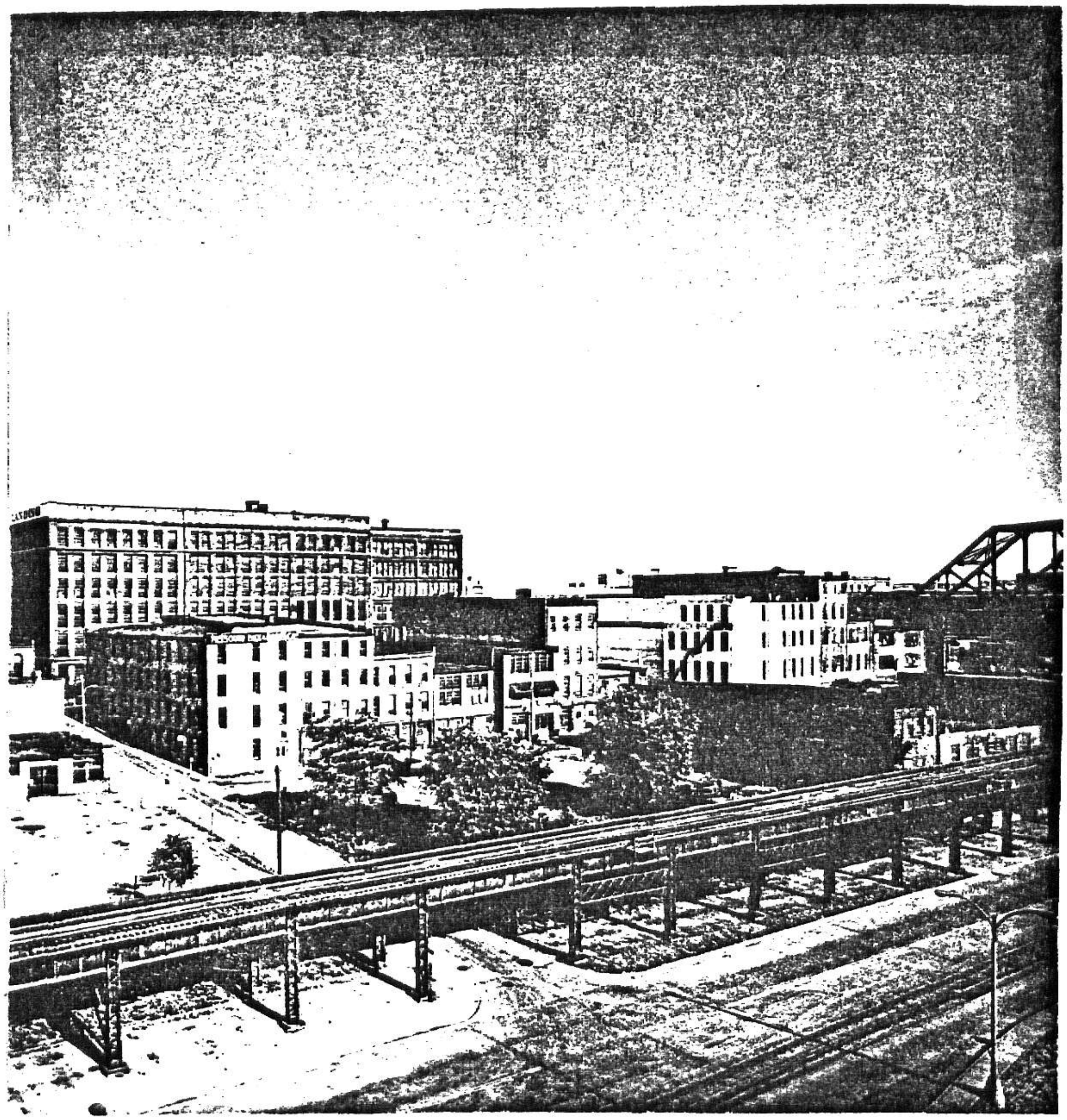
Architectural Guide by Carolyn Hewes Toft and Osmund Overby suggest that the Bronson Hide Building was constructed prior to 1875 due to its inclusion in the Compton and Dry view of St. Louis in 1875 (Figure II-1). This same source suggests that the Cherrick Building was constructed about 1884.[14]

Information from the Archival Library at City Hall in St. Louis, however, illustrates that the Cherrick Building was constructed prior to the Bronson Hide Building. The microfilm which contains dimensioned plans and construction information about several St. Louis buildings records the construction date for the Bronson Hide Building as 1898 and the Cherrick Building four years earlier in 1894.

Investigation of both buildings revealed a detail which suggests that the Bronson Hide Building was constructed prior to the Cherrick Building (Figure IV-2). The brick wall of the Cherrick Building is constructed around the projecting detail of the Bronson Hide Building. This detail exists on both the east and west facades.

## THE BRONSON HIDE BUILDING

The Bronson Hide Company Warehouse (pre-1875)[15] at 806-808 North First Street is one of the three most significant structures remaining in the district according to the Architectural Survey (Figure III-4). The building appears in the 1875 view of St. Louis by Compton and Dry (Figure II-1). Ben Bronson, the owner, "admits his company will probably be displaced in the future when its buildings will become offices or restaurants."[16] The Bronson Hide Company opened in 1912 and once occupied a building where the north leg of the St. Louis arch now stands. The company moved to its present building in the 1930's when the area was cleared for the monument. Traditionally dozens of fur and hide houses lined the



The Cherrick and Bronson Hide Buildings looking north from Ead's Bridge along the riverfront.

Figure IV-1

Source: Laclede's Landing, p. 15.

Cherrick Building　　　　Bronson Hide Building

Figure IV-2

Mississippi River because of St. Louis's origination as a fur trading settlement. Today the Bronson Hide Company is the last remaining hide company in the area. Some manner of recognition should be given to the history of hide companies on the riverfront. The hides arrive fleshed, to the Bronson Hide Company. They are then salted and cured for fourteen days before they are graded, bundled and shipped--mostly overseas for shoe leather.

The Bronson Hide Building is four stories with load bearing walls of brick, six bays wide with stone trim and cast iron ornamentation. All that remains of the original ground level storefront is the cast iron columns with fluted shafts and modified Corinthian capitols, personalized with intriguing faces (See Figure IV-3). The original Victorian building has been altered several times, as demonstrated in the window fenestration and plain cornice. Unfortunately early photographs of this building have not been located to determine its original design. The second floor has double arched openings for tall narrow french doors preceded by ornamental cast iron railings. The third floor has a wider spacing between the double arches which form the opening. The more detailed arched window fenestration, with small panes, suggests the classical period; the Victorian work had few widely spaced mullion divisions. The fourth floor doubles the previously established six-bay rhythm with the use of very narrow arched windows. The cornice is typically very ornate in Victorian buildings. The very elaborate cornice of the Bronson Hide Building is illustrated in Compton and Dry's 1875 view of St. Louis (Figures IV-5, IV-6, IV-9 and IV-10).

The north elevation will be exposed with the adjacent two-story warehouse building is removed for the New North Entry Drive. The rear elevation (east) basement level is exposed due to the sloping site and opens

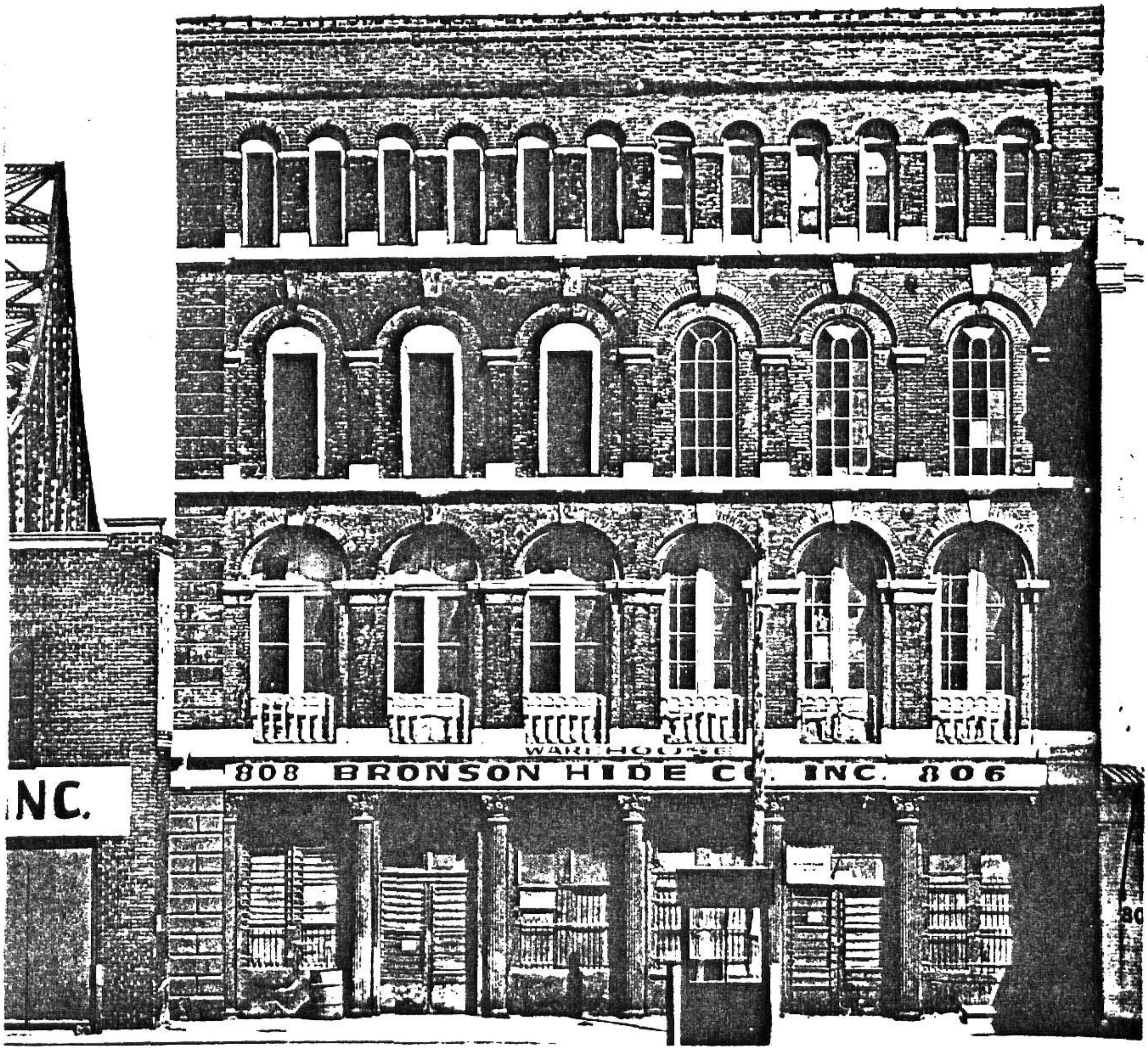



Figure IV-3. Bronson Hide

Source: Laclede's Landing, p. 16.

onto Commercial Street. The building height changed as the result of a tornado in 1923 which removed the upper two levels on the northeast half of the building (See the plans and sections, Figures IV-25 to IV-32 for further details). Although the facade is four stories, the northwest corner of the third and fourth floors is only twenty-six feet deep. The different window arches of the rear elevation and the different brick coloration revealed in Figure IV-10, on the north and east elevation further suggest major alterations in the original building. The six bay rhythm of the facade is repeated on the rear elevation. There is great variety in the window fenestration, none of which appear to represent the original fenestration.

THE CHERRICK BUILDING

The Cherrick Distributing Company Warehouse is located adjacent to the Bronson Hide Company at 800-804 North First Street. The Cherrick Building is a corner building located at one of the prime intersections in the Landing: North First Street and Delmar Boulevard (Morgan). The Cherrick Building is assumed to have been constructed later than the Bronson Hide Building. The Cherrick Building is three stories with load-bearing walls of brick. Its simple brick construction lacks the adornment of the Bronson Hide Building with the exception of corbeled lintels and cornice. No evidence has been discovered to suggest the first floor brick piers were originally cast iron columns. The Cherrick Building continues the same floor levels and the same number of bays as the Bronson Hide Building; however, it increases the percentage of mass to void. As the photographs illustrate, the wall plane receives more emphasis because of the wider windows spaced further apart and window frame set closer to the wall plane (Figures IV-7 and IV-13). The slope of the topography exposes the partial stone basement on Delmar and Commercial Street. The south elevation is set back from First Street and Delmar creating a seventy-six by twenty-one foot open space which is currently being used for parking (Figures IV-7 and IV-12). The seventy-six foot wall and the setback twenty-one foot wall fronting First Street have no openings. The remaining portion of the south elevation which is not set back has five bays of openings on four levels. The exception is that no opening exists on the western bay of the fourth floor according to the rhythm established on previous floors (Figure IV-12). The intended rear elevation (east) along Commercial Street has unusual window spacing as seen in Figures IV-8 and IV-11.

## REDEVELOPMENT CORPORATION DESIGN GUIDELINES

The city block 16E has been designated for major development by Redevelopment Plan. All new construction will be carefully regulated to assure conformance with design objectives and criteria for the Laclede's Landing area.

Building heights are an essential element in preserving characteristics of the area. The evaluations of the appropriate building height restrictions were established in relationship to the Jefferson Expansion Memorial and the terrain of the area.

> City Block 16W--no structure to be erected higher than the existing buildings (Bronson Hide and Cherrick).
>
> City Block 16E (a vacant lot)--no structure can be erected above 75' measured from Commercial Street (elevation 502').

Ground coverage has been determined as an essential element taking into account the character and usual relationship of other structures and the relative height and mass of the buildings by city block.

City Block 16W--100% ground coverage.

City Block 16E--100% ground coverage.

Building Codes--"All new construction in the Development Area shall comply with the applicable requirements of the Building Codes of the City of St. Louis and other applicable municipal ordinances."[17] All rehabilitation shall comply with the above codes and ordinances to the extent modified or interpreted for rehabilitation or reconstruction.

Signs are restricted to non-animated, non-flashing type signs identifying only the establishment and/or nature of its products. No sign shall project above the roof and no sign shall be painted directly onto any brick wall. All signs shall be presented for approval by the Corporation.

Buildable Area Allowed (not including parking)

| | |
|---|---|
| City Block 16W-- 57,617 max. sq. ft. | 57,617 |
| City Block 16E--2-0,000 max. sq. ft. | 90,000 min. |

Refer to Figure V-1 for the table of percent of total buildable area for this project. The buildable area percentage of residential usage on site 16E and 16W is assumed to be 100%.

Roof forms--No sloping roof forms are allowed on rehabilitation, new infill or major new construction.

Refer to the Design Guidelines for Laclede's Landing in Appendix A-3.

BUILDING PLANS, SECTIONS AND PHOTOGRAPHS
OF THE BRONSON HIDE BUILDING
AND CHERRICK BUILDING

PLAN SOURCE: HOK Architects, St. Louis, Missouri

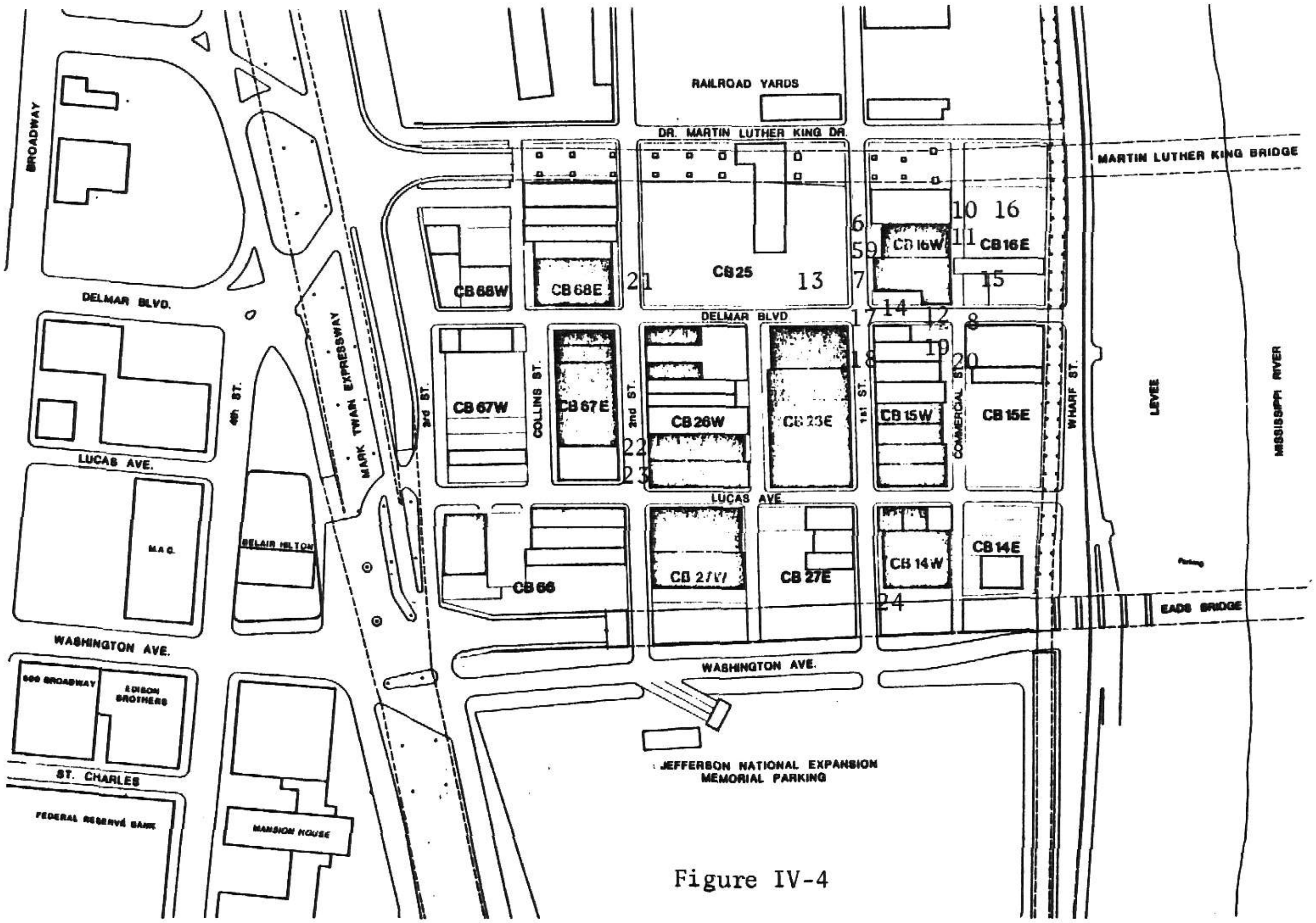



Figure IV-4

Illustration Key

EXISTING BUILDINGS

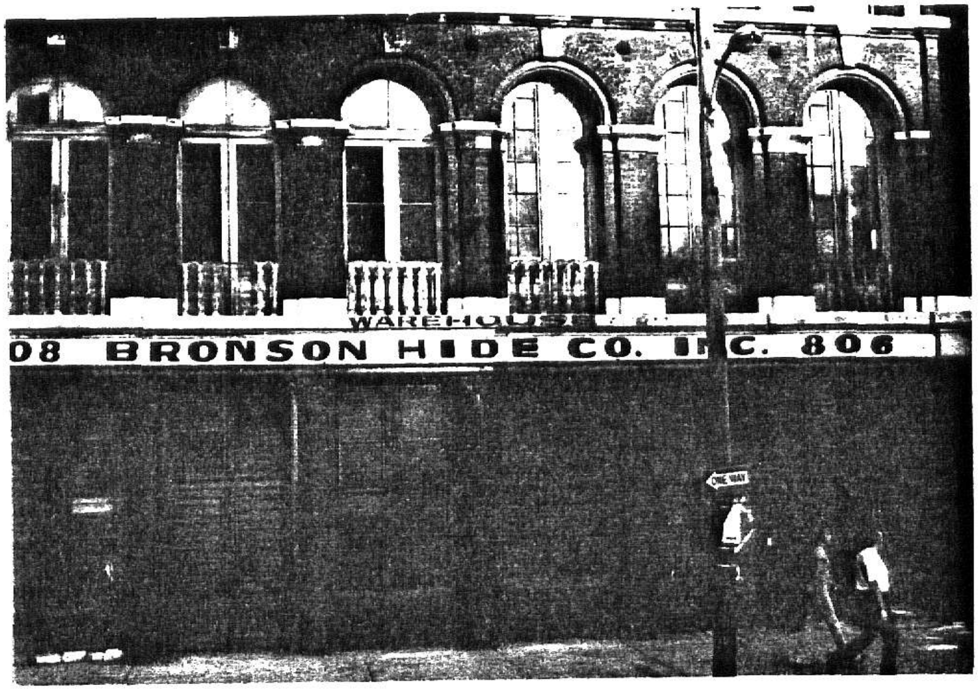



Figure IV-5. Bronson Hide (West Elevation)


Figure IV-6. Bronson Hide (To be removed for new North Entry Drive)

Figure IV-7. Cherrick (West Elevation)

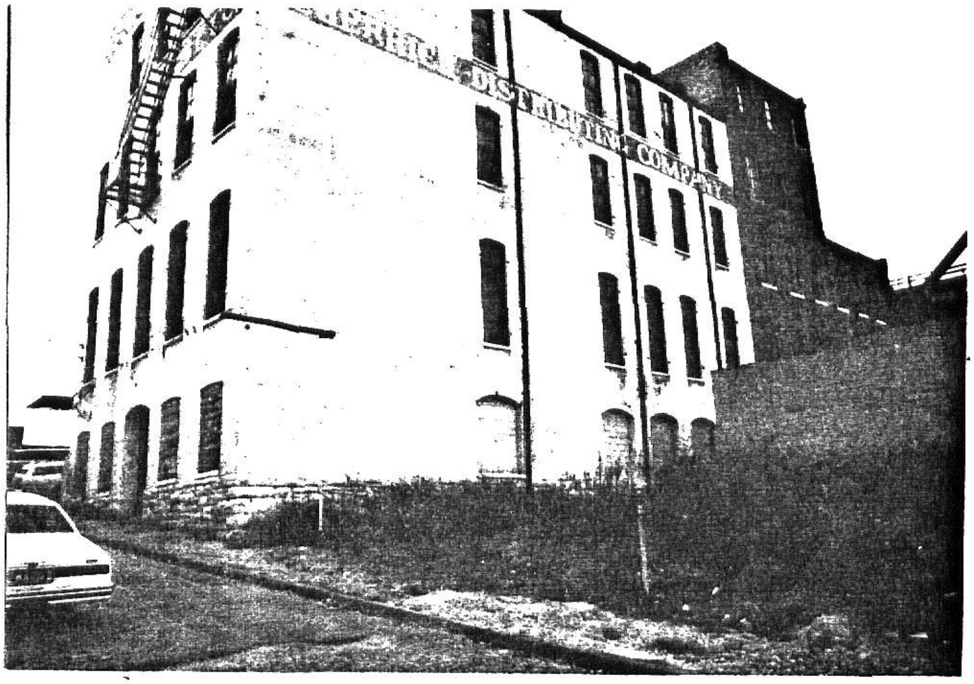


Figure IV-8. Cherrick Southeast (Rear) Elevation

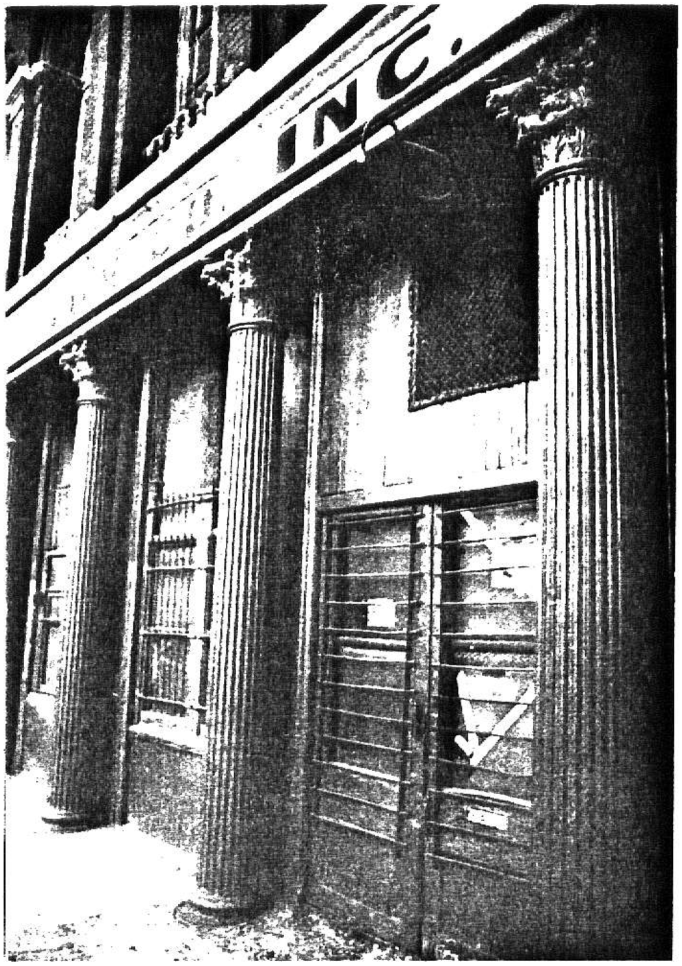



Figure IV-9. Bronson Hide
Column Detail

Figure IV-10. Bronson Hide
East (Rear)
Elevation

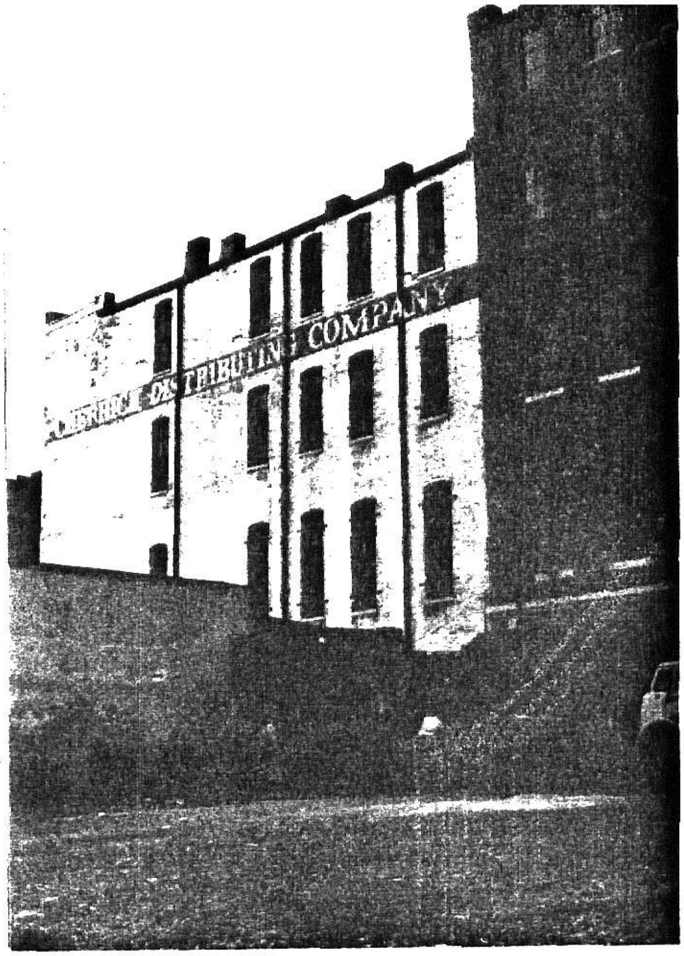



Figure IV-11. Cherrick (Rear) East Elevation

Figure IV-12. Cherrick South Elevation

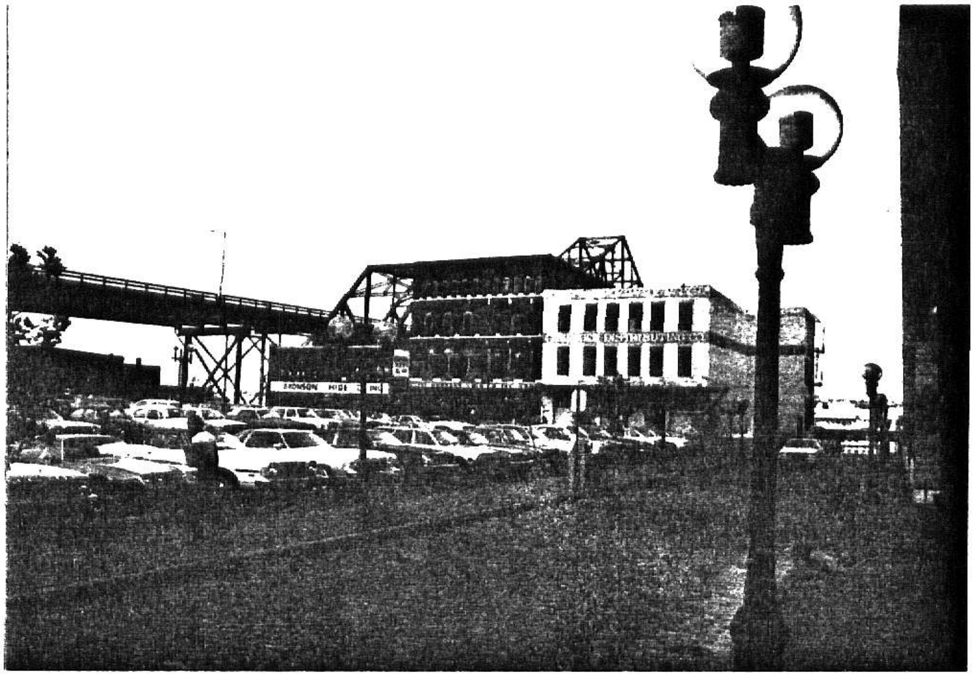


Figure IV-13. Building Facade West First Street


Figure IV-14. Cherrick South Elevation

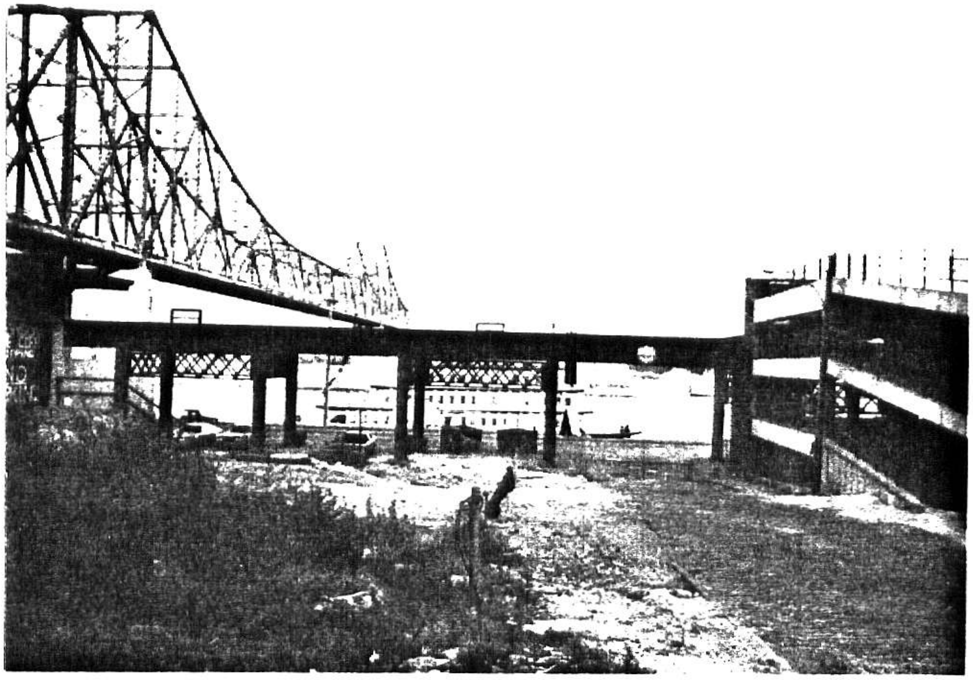


Figure IV-15. View from Rear of Cherrick to River

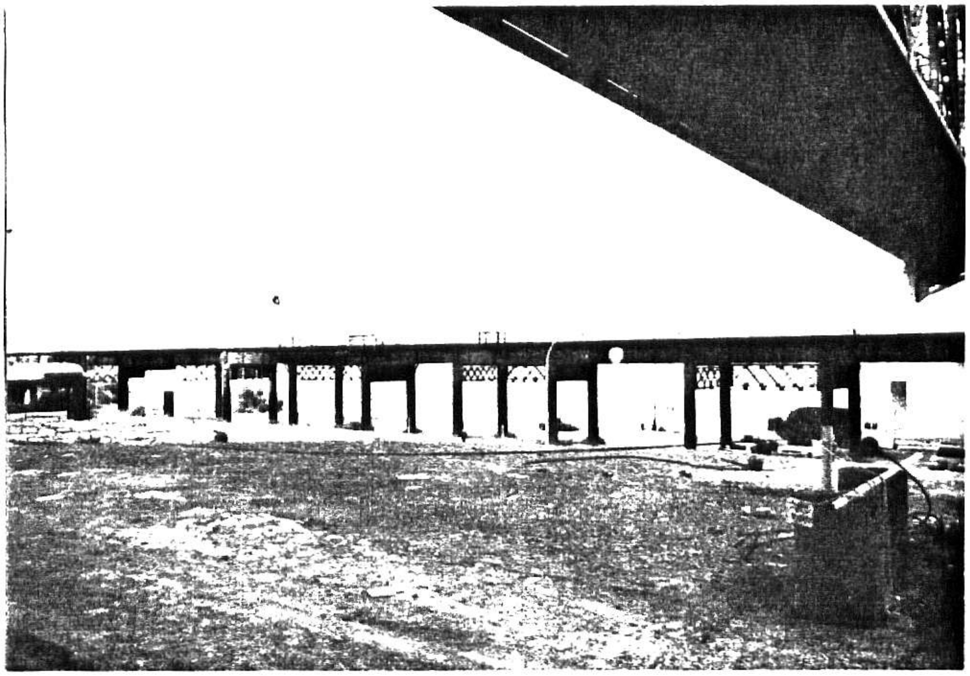


Figure IV-16. View from Rear of Bronson to River North-East

Figure IV-17. First and Morgan Raeder Place


Figure IV-18. Raeder Place

Figure IV-19. Morgan and Commercial (Southwest)

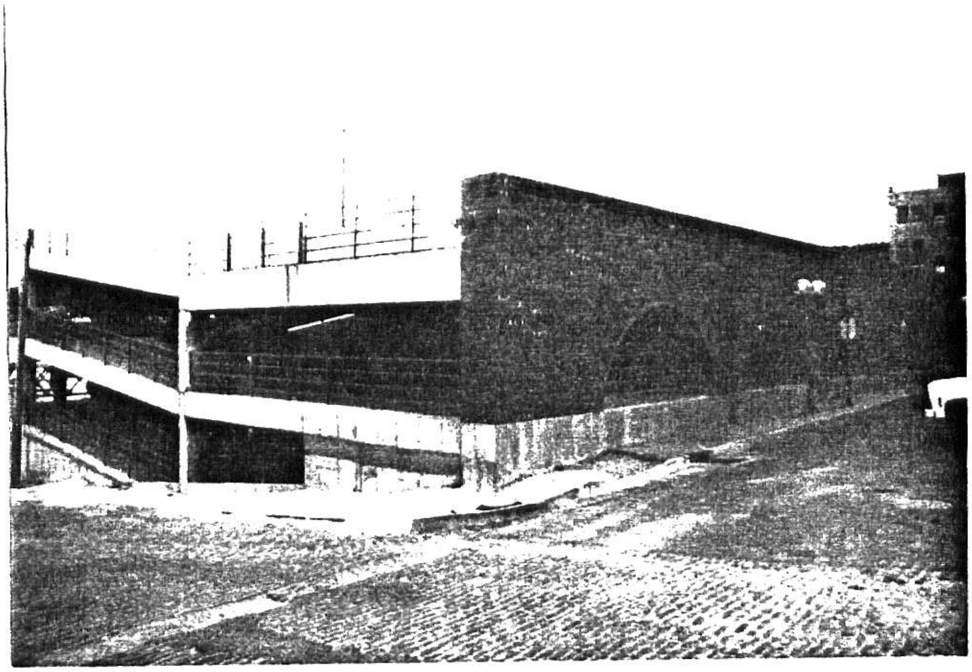


Figure IV-20. Morgan and Commercial (Southeast)


Figure IV-21. Second and Morgan (West)

Figure IV-22. Witte Hardware Building
Second Street (West)

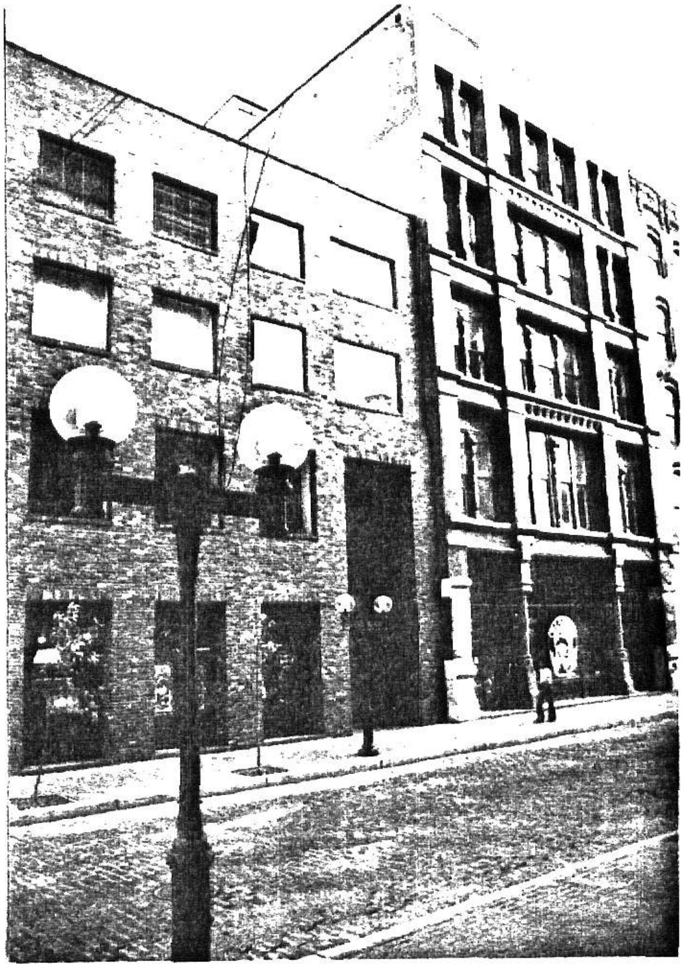


Figure IV-23. Old Judge Building
Second Street (E)

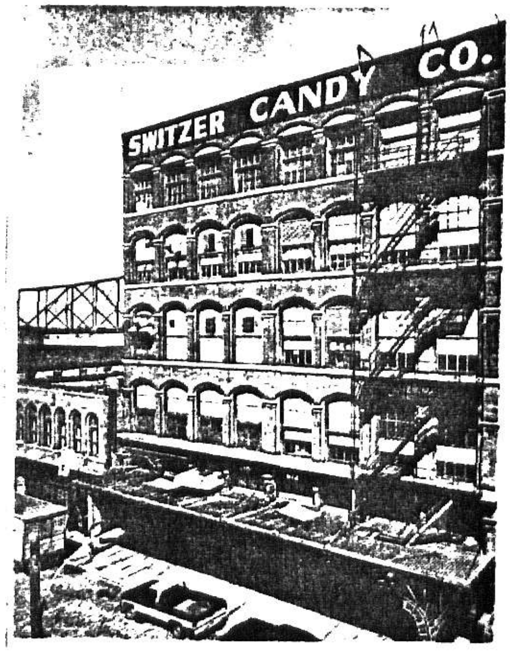
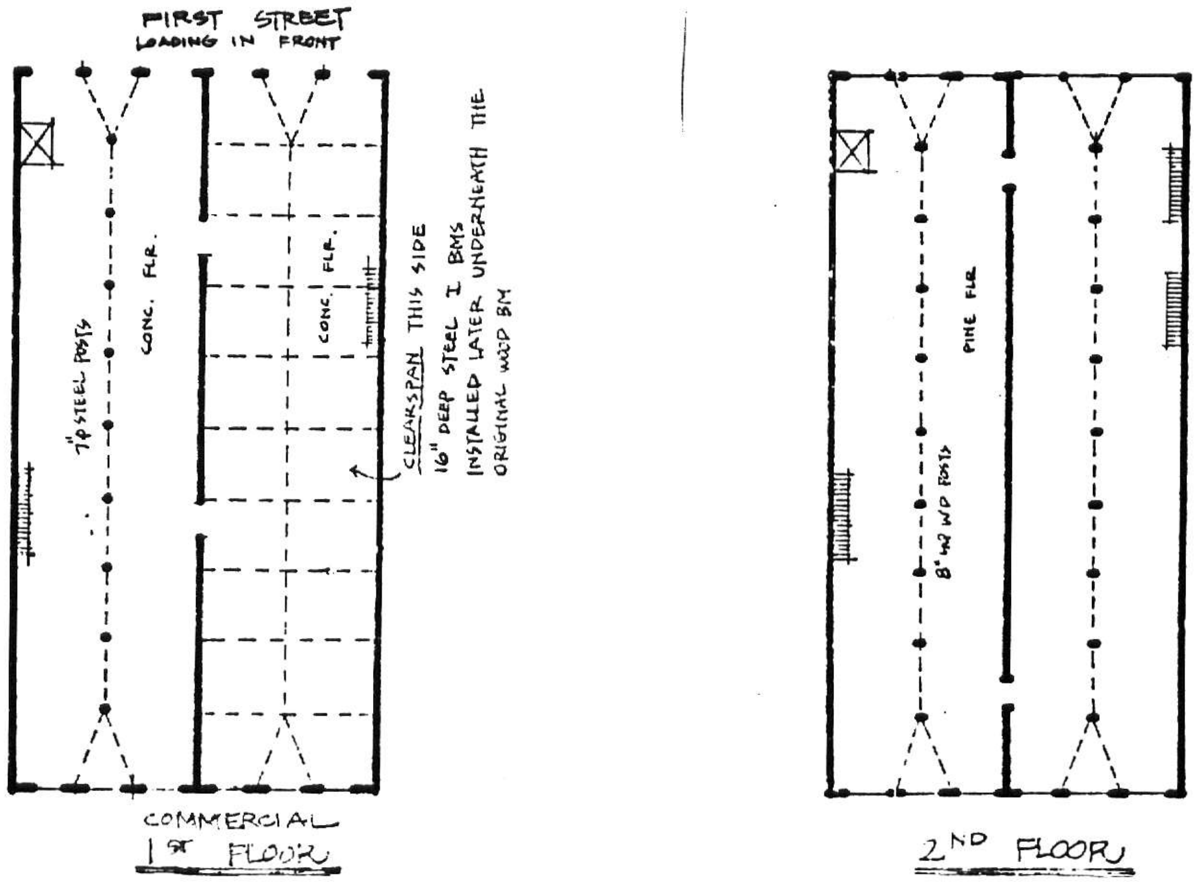



Figure IV-24. Switzer Candy Company
First Street

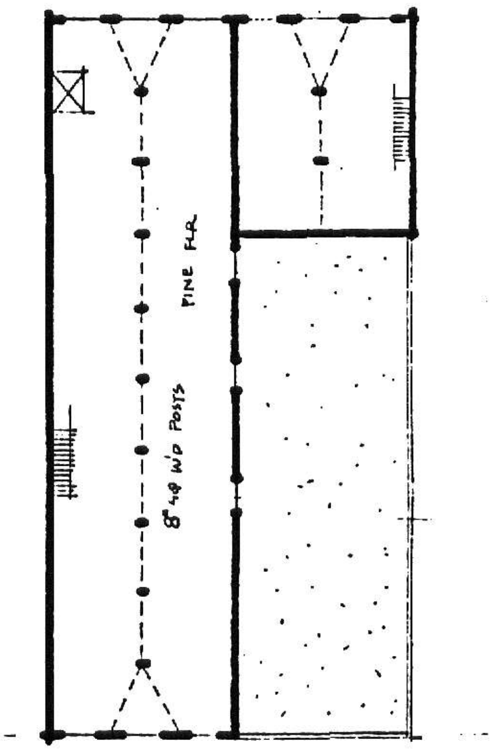



Bronson Hide Building 806 North First Street

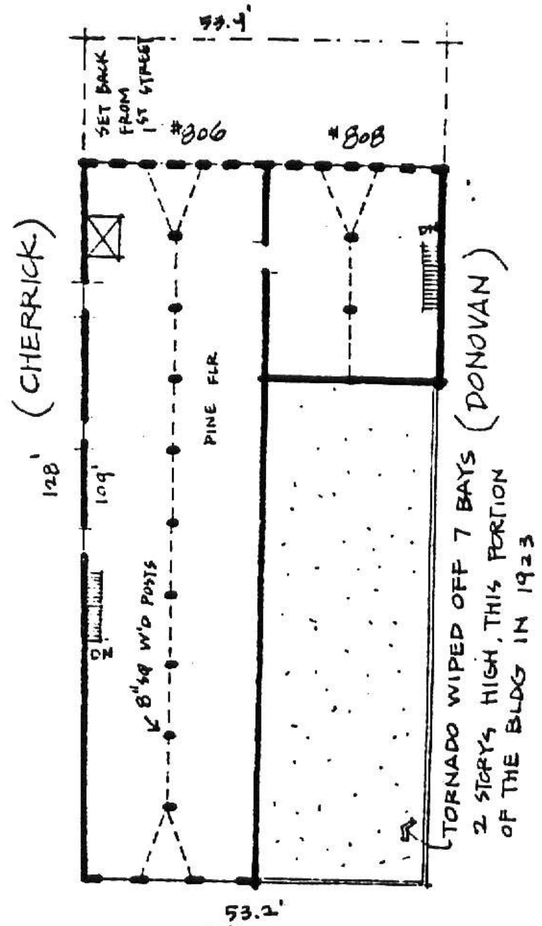
Figure IV-25

North
1"=30'-0

Source: HOK Architects




3RD FLOOR



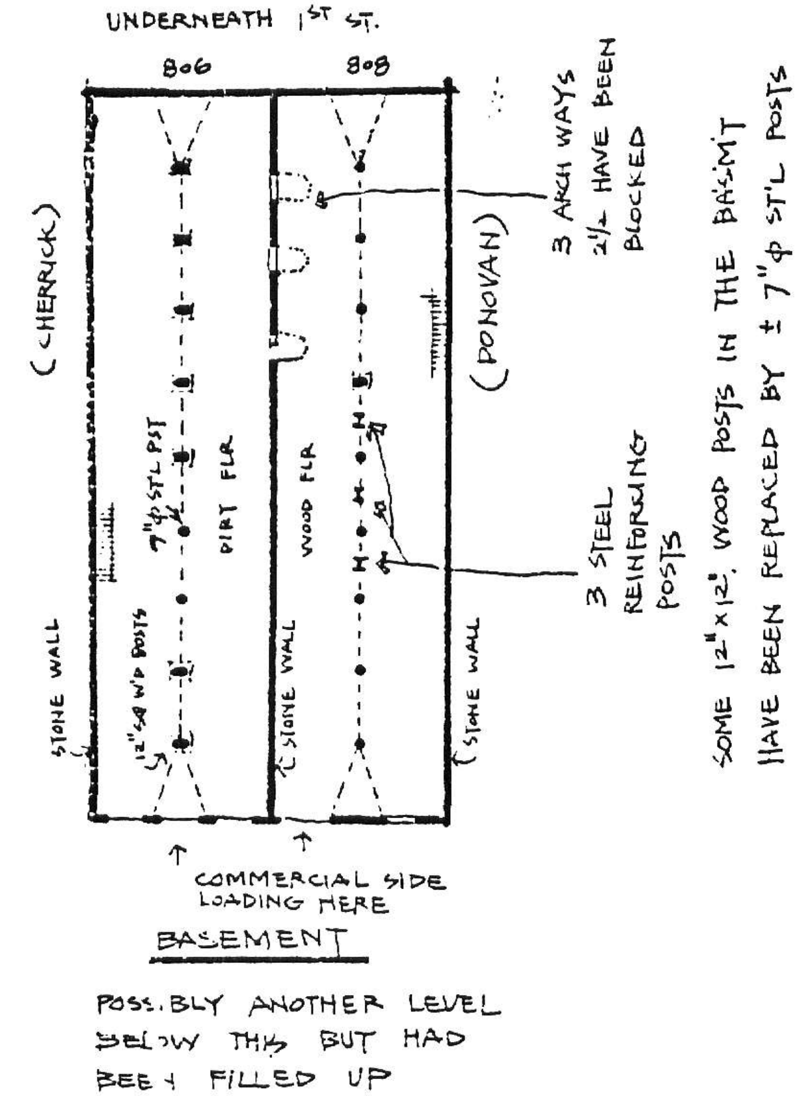

4TH FLOOR

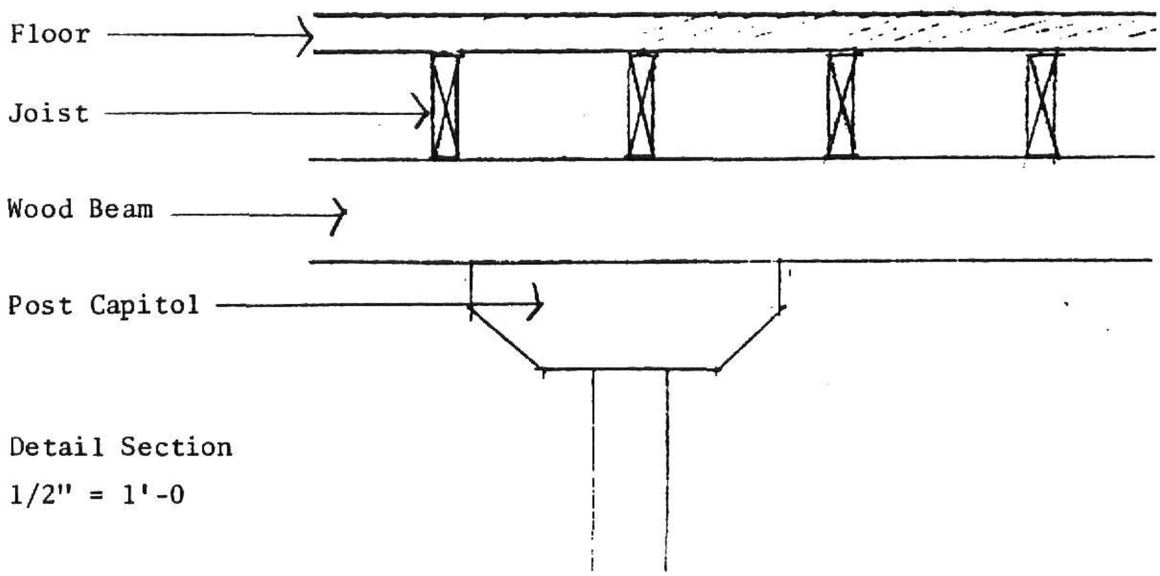
Bronson Hide Building 806 North First Street

North
1"=30'-0

Figure IV-26

Source: HOK Architects



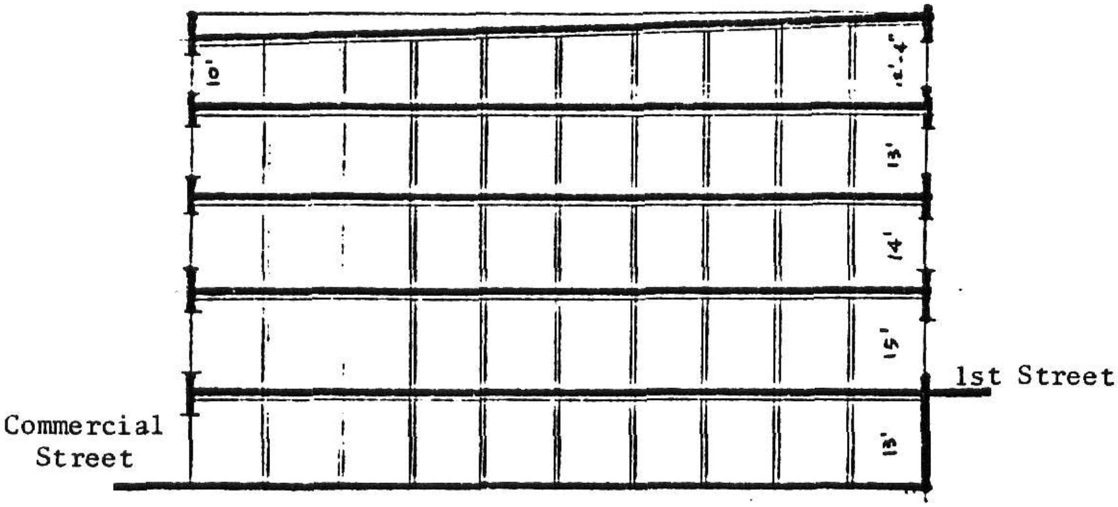




Detail Section
1/2" = 1'-0

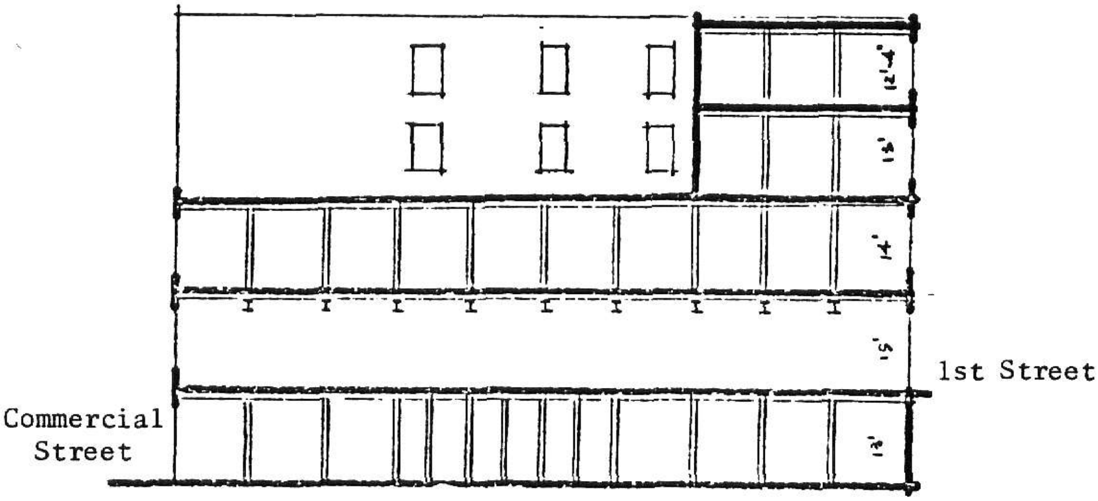
Figure IV-27. Bronson Hide Building
806-808 North First St.

North
1"=30'-0"

Source: HOK Architects




Section of #806 Looking South




Section of #808 Looking South

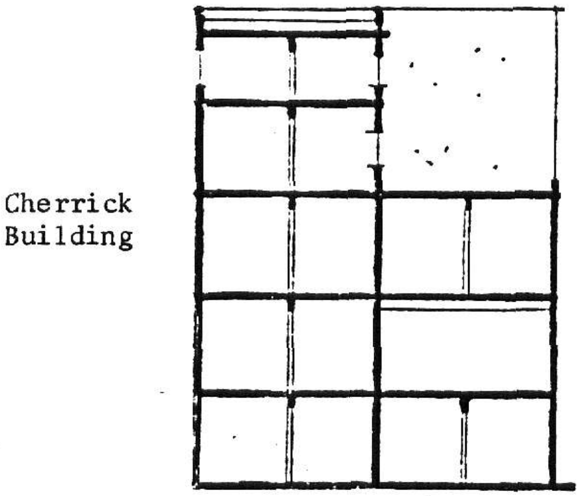



Figure IV-28. Bronson Hide Building
806-808 North First Street 1"=30'-0"

Source: HOK Architects

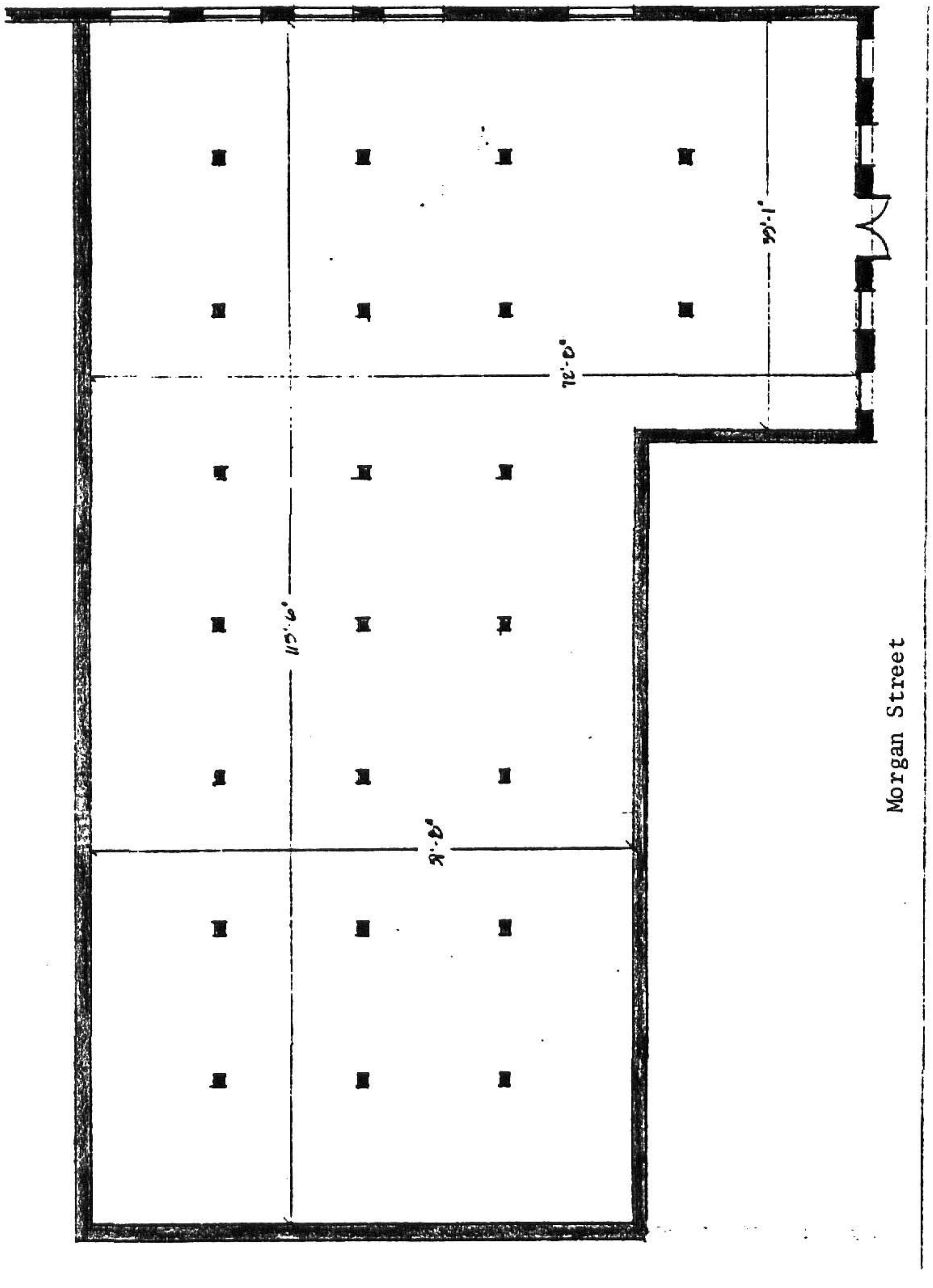



Figure IV-29. Cherrick Building: First Floor
800 North First Street

N

Scale 1/16"=1'-0

Source: HOK Architects

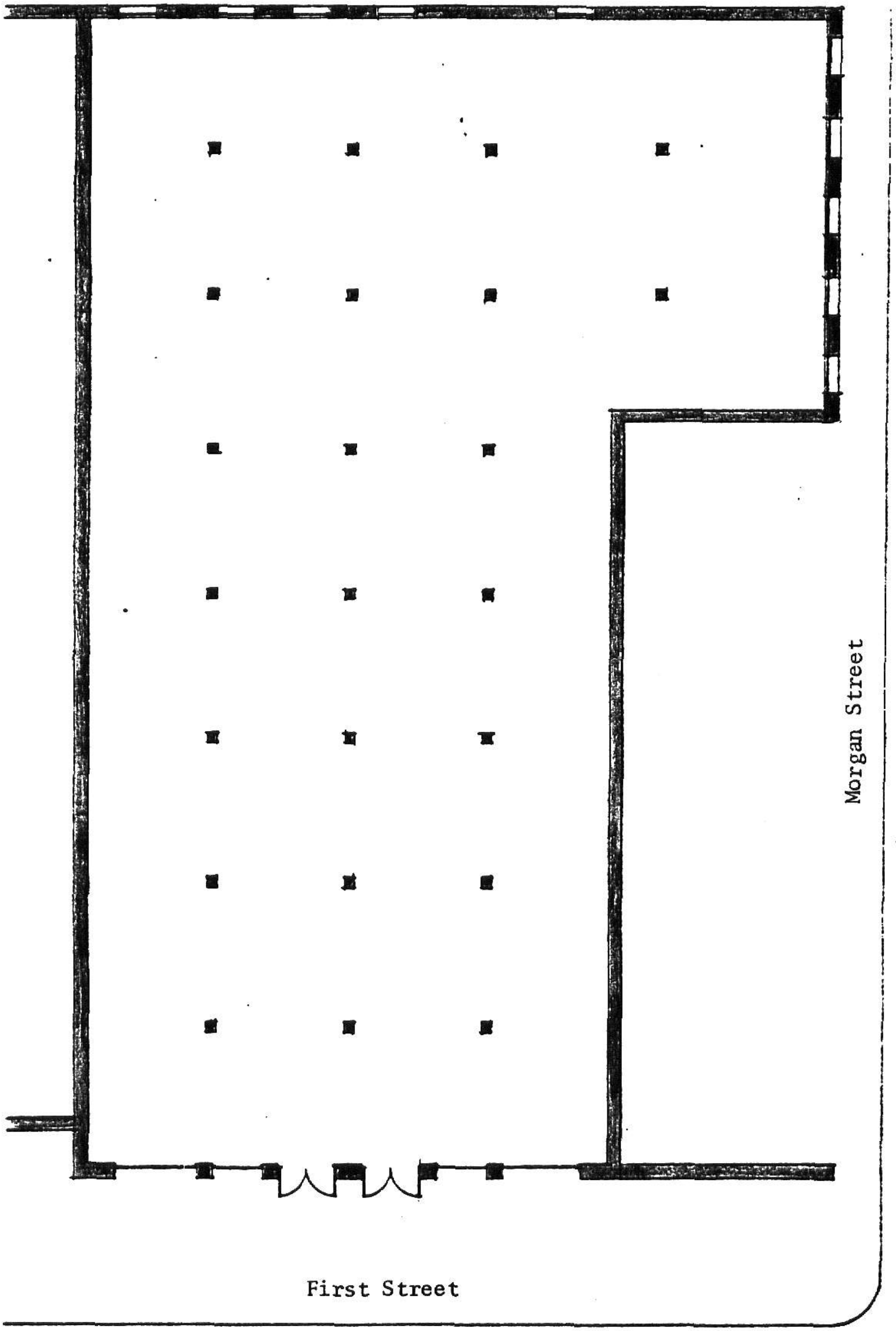
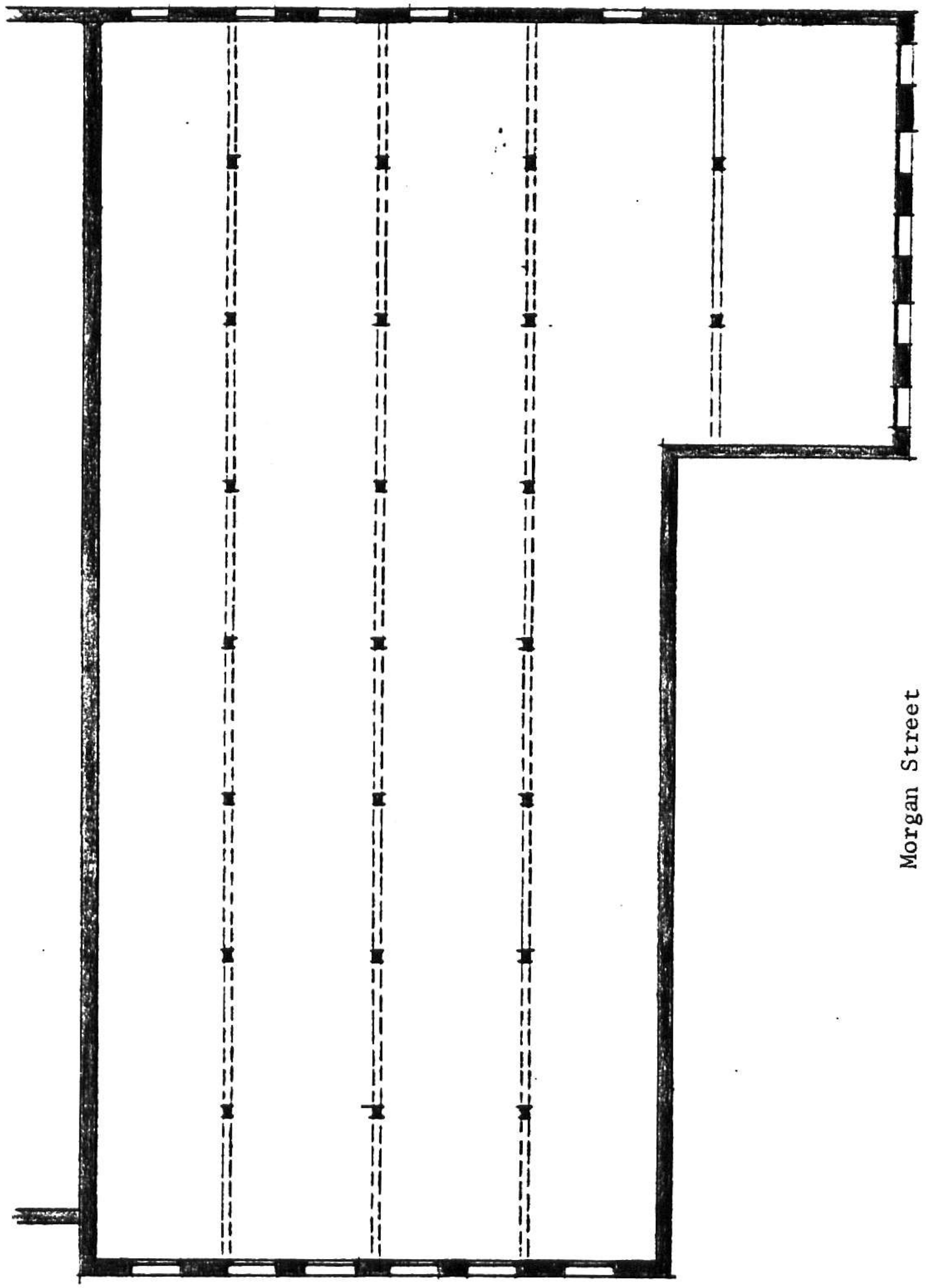



Figure IV-30. Cherrick Building: Second Floor
800 North First Street

N

Source: HOK Architects

Scale 1/16"=1'-0



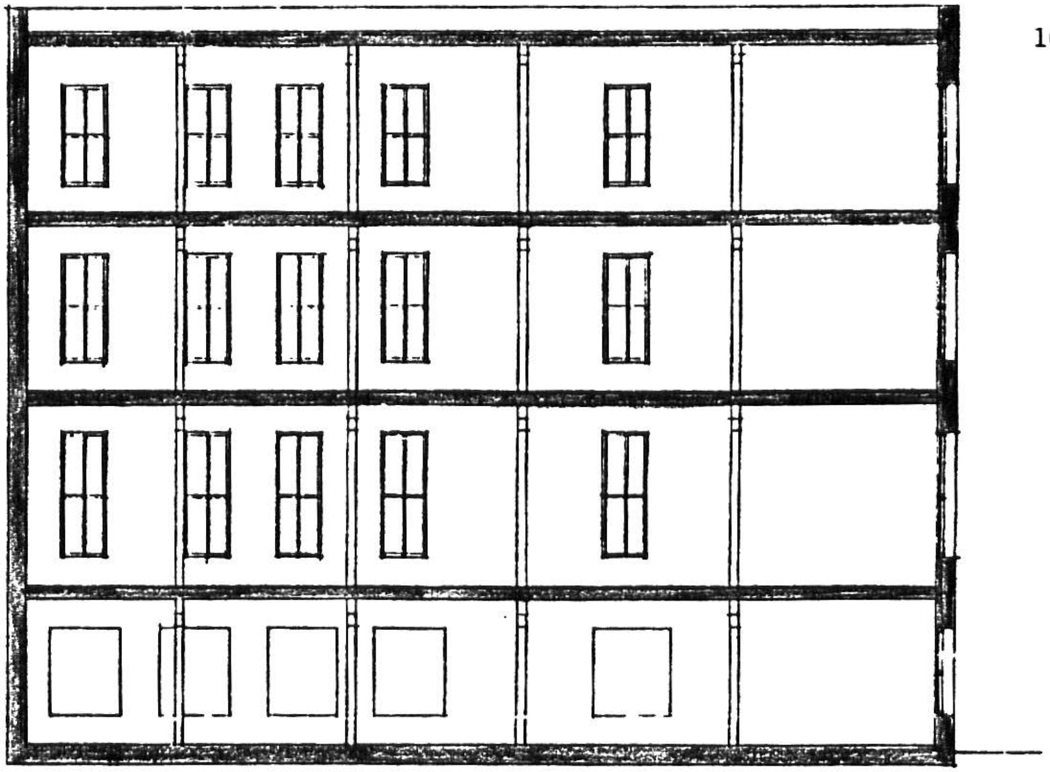

First Street

Figure IV-31. Cherrick Building: Third and Fourth Floor
800 North First Street

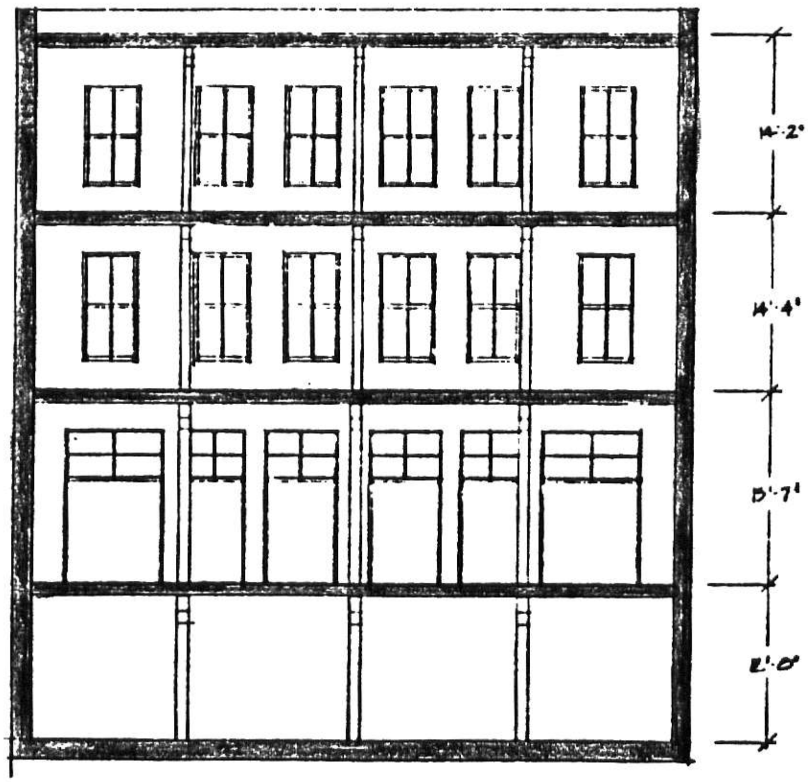
N

Source: HOK Architects

Scale 1/16"=1'-0



Section B-B Looking East




Section A-A Looking West

Source:
HOK Architects

Figure IV-32. Cherrick Building
800 North First Street

Scale 1/16"=1'-0

# CHAPTER V

## PROPOSED ADAPTIVE USES

The proposed adaptive uses include a combination of retail, special uses and residential development. As part of the 1975 Redevelopment Plan the Corporation has designated building use percentages for each block. These percentages were developed to insure a variety of land uses to create a multi-use district for daytime and evening activities. (See Figure V-1 for these block percentages.) For City Block 16 West which is comprised of the Bronson Hide and Cherrick Buildings, the plan recommends the following maximum Building Use Requirements: Office 80%, Retail 30%, Residential 50%, Entertainment 10%, Special 60%, Wholesale 40% and Industrial 10%. Special uses are defined as restaurants, theatres, amusement, recreation and cultural places, clubs, artist studios, and similar facilities. Entertainment and bars are included in a separate category. City Block 16 East, the vacant property, has the following maximum Building Use Requirements: Office 70%, Retail 20%, Residential 70%, Hotel 70%, Entertainment 10%, Special 90%. The proposed project is based on these building use requirements, and the design opportunities of the existing structures and the vacant site. Also influencing the project is the consideration for the lack of residential development within the district and the financial feasibility of the uses selected.

### RETAIL

Laclede's Landing, when fully developed, will provide approximately one million square feet of new and rehabilitated commercial and residential

See the following chart for land use categories and the designated percentages for each block as outlined in the 1975 Development Plan for the Laclede's Landing Redevelopment Corporation.

| CITY BLOCK NUMBER | OFFICE | RETAIL | RESIDENTIAL | HOTEL | ENTERTAINMENT | SPECIAL | WHOLESALE | INDUSTRIAL |
|---|---|---|---|---|---|---|---|---|
| 14E | 80 | 30 | 80 | 80 | 10 | 80 | 0 | 0 |
| 14W | 80 | 30 | 80 | 80 | 10 | 80 | 40 | 20 |
| 15-16E | 70 | 20 | 70 | 70 | 10 | 90 | 0 | 0 |
| 15W | 70 | 20 | 70 | 70 | 10 | 90 | 0 | 0 |
| 16W | 80 | 30 | 50 | 0 | 10 | 60 | 40 | 10 |
| 25 | 90 | 90 | 90 | 90 | 10 | 90 | 0 | 0 |
| 26E | 70 | 30 | 50 | 0 | 10 | 40 | 20 | 0 |
| 26W | 70 | 30 | 50 | 0 | 10 | 40 | 20 | 20 |
| 27E | 80 | 30 | 50 | 80 | 10 | 60 | 40 | 0 |
| 27W | 80 | 30 | 50 | 0 | 10 | 60 | 40 | 0 |
| 66 | 90 | 90 | 90 | 90 | 10 | 90 | 0 | 0 |
| 67E | 70 | 30 | 50 | 0 | 10 | 40 | 20 | 20 |
| 67W | 90 | 90 | 90 | 90 | 10 | 90 | 0 | 0 |
| 68E | 80 | 30 | 50 | 0 | 10 | 60 | 40 | 10 |
| 68W | 80 | 30 | 50 | 0 | 10 | 60 | 40 | 0 |

Building Uses on a Block-by-Block Basis

Figure V-1

Source: Urban Design Guidelines for Laclede's Landing, p. 40.

space. By the end of 1980, the Landing will have 400,000 total square feet of renovated space. Currently, almost half of the office space has been provided. Negotiations are underway for the proposed four hundred room hotel.

The market for specialty retail and dining facilities in the Laclede's Landing district are comprised of: the employee market, the St. Louis area market, the residential market, and the transient market comprised of tourists and others from out of town. The percentage of tourists and the transient market in general greatly decreases at the end of the tourist season (June to September). The tourist market represents 30% to 50% of the total trade. The present Landing user population is very pleased with the district, especially its atmosphere. They feel that it is growing, successful and attractive. The current users are generally young and relatively affluent.

Laclede's Landing currently offers the St. Louis market place a unique combination of dining/entertainment and office uses in a historic and urban setting adjacent to the riverfront. The dining and entertainment facilities were the first uses developed in the district. Recent renovation of the Witte Hardware Building and the Christian Peper Tobacco Building greatly increased the office space development, thus increasing the number of employees in the district. Although retail development has been occurring since the initial phases of the project, recent attention has been given to further retail development by the Merchants Association and the Redevelopment Corporation.

The retail market can be further developed in the various areas. Shops catering to impulse purchases should be located along the paths from the parking areas to various destinations such as the riverfront, major dining/entertainment facilities, destination shops[18] and the Arch. These shops include gift shops, bookstores, art galleries and antique shops. The destination shops would be such shops as a camera shop, a specialty food shop, clothing stores and major entertainment like a cinema.

An important segment of the buying public, besides the tourists, to concentrate on are the office workers employed in the Landing. Items which will attract these buyers include hardward supplies, clothing, specialty foodshops and a pharmacy. These same items would also be attractive to people residing in the Landing. The Landing employees, future residents and the hotel patrons will greatly improve the market in the Landing, especially during the winter months. The hotel patrons are important to retailers, especially those in the restaurant, gift shop, and pharmaceutical markets.

The potential supportable square footage for specialty retail and restaurants in the Landing district is as follows: specialty food 3,000 s.f., apparel and accessory 15,000 s.f., furniture, home furnishings 17,000 s.f., pharmacy 2,000 s.f., hardware 4,000 s.f., miscellaneous 25,000 s.f. and restaurants 108,000 s.f. for a total of 174,000 s.f.[19] Potential miscellaneous space includes: antique, hobby, camera, import, luggage and leather, gift, jewelry, tobacconist, florist, sporting goods shops; art gallery and artisans studio, book stores and a cinema.

In the revitalization of a district it was important to develop food services and food related uses first, as the Landing has done. The restaurants established the appeal of the area and provided a magnet for the development. It is then important to establish specialty retail shops. Duplication should be avoided in both specialty retail shops and restaurants; each should provide a unique image and offer unusual items. At the same time, a consistent and high level of quality should be offered to cultivate repeat business from the non-transient trade.

Placement and distribution of the retail users in relation to restaurants within the Landing should be carefully planned. The north-south pedestrian and vehicular circulation routes should be emphasized and the high exposure ground floor spaces reserved for retailers. Provided that the restaurant has a good reputation and that good ground floor access and signage is provided, it is easier for a restaurant to thrive in an upstairs or downstairs location than it is for a specialty retailer.

The Cherrick and Bronson Hide Buildings are located on one of the major north-south arteries. These buildings offer excellent potential for street level retail development. Both of these buildings also offer the opportunity to develop an arcade through the buildings which changes levels between First and Commercial Streets. With the infill construction also located on Commercial Street another north-south artery, pedestrian oriented, may be developed as an exciting retail node. This development may be further enhanced by continuing the through-the-block pedestrian circulation, established in the previous block, through to the riverfront which would also change grade levels. This may be an important alternative for encouraging use of the Landing during the winter months. Both an outdoor and indoor pedestrian way could be developed emphasizing the river and the project's activity zones. The site of the infill construction also provides the opportunity for retail development along Wharf Street. Wharf Street will have a major pedestrian sidewalk adjacent to the proposed site. Wharf Street is the major vehicular artery which continues north and south of the Landing (connecting it to the Arch) along the river levee. The proposed development's retail shops will be based on the potential types and space allocations previously mentioned.

## RESIDENTIAL DEVELOPMENT

The Laclede's Landing Redevelopment Corporation is currently seeking and reviewing residential development proposals to complete their projected mixed-usage fabric of the district. Residential development within the district provides a co-existing market for the commercial and retail services. Commercial spaces have a faster and greater return on investment than residential developments. Therefore commercial development of the district has occurred more rapidly than the residential development. To insure that Laclede's Landing becomes and remains a successful, stable and permanent environment the area needs the personality of an active, exciting urban neighborhood. The physical setting alone, no matter how well it is designed, cannot insure the excitement and the social interaction which mark a successful community. The Laclede's Landing Redevelopment Corporation is anxious to introduce residential development to provide both a stabilizing element and continuous activity within the district.

### THE CONDOMINIUM MARKET

In January 1975 the United States Department of Housing and Urban Development (HUD) studied the impact of condominium housing on the U.S. market, the extent, the nature of its problems and the abuses related to such housing. In an investigation into the purchasers of condominiums: "The study shows that outside of retirement and recreation areas, condominiums appeal primarily to two groups--the 'young married,' childless couples of 25-34, and 'empty nesters,' couples 45-64 whose children are no longer living at home."[20] The study also concluded that the following groups were the major consumers. The new or young households which do not expect to have children for several years and have above average income. This group favors condominiums because they combine the several assets of equity accumulation, tax benefits, locational convenience including accessibility to place of work, and other urban activities, and convenience in low maintenance. The middle-age households with above average and/or wealth, without children are interested in condominiums for similar reasons. They would like either to move out of rental units to build up equity yet retaining the rental unit conveniences or move from single family housing to enjoy the conveniences of condominiums or their accessibility features. The next group includes individuals under age 65 who are seeking to move to a smaller, more convenient residence (their children have left home). Two additional groups which are major consumers include: retirement-age individuals with a moderate or above average wealth who are seeking a warmer climate and high income and/or high accumulated wealth seeking a second home in a resort or entertainment area.

The major consumer of the residential units in Laclede's Landing is expected to be career or dual income childless couples 30-40. The major purchasers for condominiums also tend to be of above average income and/or wealth households and a greater share of childless or one-child households. This is due to the equity requirement and tax incentives which encourage the middle-income rather than low-income population. And since it is a development of higher density, less space and usually located near the central business district (exception resort locations) than single family residences, they discourage most large families. Some condominium developments may discourage children in their bylaws.

## THE LACLEDE'S LANDING RESIDENTIAL MARKET

The combination of Laclede's Landing's locational, environmental, economic and usage factors restricts the types of residential development within the district. The district is surrounded by highways, tourist traffic and industrial uses along the riverfront. The initial residential developments will lack the amenities often found in typical neighborhoods, such as access to grocery stores, shoe repair shops, and laundry facilities. However, such amenities are located nearby in the central business district. These amenities need to be developed within the district in the future. The neighborhood also lacks accessibility to schools and supervised play spaces. The present neighborhood environment suggests exclusion of children from the neighborhood, especially during its initial development and until appropriate amenities are developed in which to raise children.

The Redevelopment Corporation is also concerned with the stability of the residential neighborhood and the type of inhabitants. The Redevelopment Corporation's goal is to develop a neighborhood of inhabitants who will live there several years and who are responsible for the maintenance of their homes. The market that the Redevelopment Corporation is encouraging is a middle to upper class economic range to insure quality and permanent development. The Redevelopment Corporation is interested in condominium development. Condominium development provides personal ownership as well as many other advantages (discussed in Appendix D-1) versus apartment development in which the inhabitants are usually more transient and are rarely responsible for maintenance. This project proposes residential condominium development based on the recommendation of the Laclede's Landing Redevelopment Corporation, the profit advantages to the developer, and economic and locational analysis of the market.

## ADVANTAGES TO THE DEVELOPER

"From the comparison of condominium developments and rental office developments, it can be concluded that a developer can realize a faster return on his investment by developing a condominium in the 20,000 to 50,000 square foot building range. By doing this he can more rapidly reinvest his money in other ventures."[21] Thus developers and investors are becoming increasingly interested in condominium development as an alternative to rental units. Apartment and rental unit owners are experiencing a cost squeeze. As inflation has rapidly increased operating expenses and interest rates have continued to rise sharply, and economic and political restraints have prevented rent levels from keeping pace. This has resulted in the reduction of economic return on rental housing investments below that which has been acceptable. Also sharply increasing land prices, rising construction costs are requiring developers to achieve a more efficient use of land through higher density developments. In addition, the developer of a condominium project has the alternative of retaining sizeable portions for his own use. For example, a portion may be retained by the developer as a condominium unit for rental purpose to a restaurant or retail operation to achieve additional income. The developer may also sell it as a condominium unit which is used as retail and/or office space.

## RESIDENTIAL PROGRAM

### Community Interaction and Design Relationships

Design affects community interaction within a multi-family housing development through the arrangement of community spaces, the private units and the circulation paths. Design can provide a space for activity and stimulate emotions, but it cannot create activity or experience. A designer should determine the spatial and physical adjacencies which best suit the users and type of project. A variety of spaces for both visual and physical social contact and interaction should be provided as part of the design relationships. The designer should provide opportunities for choices in path, in social interaction, for exposure and integration with the surrounding environment; for example, either a visual contact or accessible path to the riverfront. Living spaces can be arranged to allow for intermingling with public zones and also allowing each resident private zones with identities of their own. The unit owner should be able to identify community spaces, places of recreation, "his" home and establish an image of his edges and boundaries from others in the complex. In a multi-family housing development, with co-ownership of community space, it is important to define entry to community zones and separate entry to individual dwellings. To many families their front door is a symbol of private ownership, and these front doors should be given more personality and individuality. Public or private zones should be defined throughout the condominium complex and within the living unit.

A sense of neighborhood or community can be created through spatial organization such as visual and physical linkages to shared activity spaces. Character statements can be used to identify the housing/retail development from other areas in the Laclede's Landing district, a sense of community, and the identification of individual homes. Variety can be a character statement which creates interest in the living environment and one method is to vary building form, unit configuration, and their relationship to each other. Perhaps some units have very visual and social contacts where others may be relatively isolated. Thus the buyer has a choice in the location of his unit in relationship to social contact, privacy, location to common areas such as recreational facilities, which of the three proposed buildings and the unit's location on a specific floor. The building structure, open spaces, recreational facilities and individual unit design should be properly designed to utilize climatic conditions and to maximize energy efficiency. Open spaces should be located where the regular paths of its users cross so that they receive constant casual use and a passive system of security. Landscape should be utilized as a key element of success in identity; privacy; orientation; roof top development; the atmosphere of recreational, common spaces and open spaces.

Excitement may be provided in a variety of vertical and horizontal sequential movement techniques. Vertical movement may provide excitement by utilizing level changes in both common areas and housing units which also aid in zoning activities. Transitional spaces provide the connection of diverse activity spaces and may be delineated in scale. The entry lobby space serves as a special link in the building introduction from outside to inside--an active but peaceful image change from the street. This link must express a housing image rather than a commercial. It should be inviting but not so much that non-users are drawn in for security reasons. The lobby space may serve as a place for people to wait for rides or to watch the activities of Laclede's Landing. A clearly organized movement and transition should occur from vehicular experience to pedestrian circulation to the lobby through open spaces and common spaces to the individual's home.

## Marketable Design Features

Design should allow flexibility in the individual housing units. This flexibility will allow each individual to utilize his living space and express his personal attitudes and values. The following value analysis illustrates only three general categories of individuals. It is impossible to expect to resolve the use patterns and living preferences of people due to the infinite range and variety of personalities and individual values. Discussion of the values and housing preferences of the previously identified target market offers an understanding of their design preferences which may create an environment that aids in marketing these projected units.

John P. Dean in his article "Housing design and family values" published in Urban Housing discussed the various attitudes and values of professional and career oriented individuals.[22] He refers to the following three types: the integrated individual, the emancipated and the status-striving. Each of these types should be considered merely as an ideal typical construct that is only more or less approximated in any real life setting. These types illustrate the great variety of individuals which may reside in the projected residential development.

| Values | Examples of use patterns flowing from this value orientation |
|---|---|
| Integrated individualized type. Cooperative furtherance of member's self-realization of his potentialities and objectives. Coordination of family activities for the attainment of individual ends. Some property family oriented, but also some emphasis on individual possessions. Individual rights given in return for individual responsibilities. Mutual concern for individual happiness. | 1. Frequent interaction of family members with other institutions.<br>2. Easy come and go, informal entertaining, segregated leisure activities.<br>3. The gearing of simultaneous individual pursuits, with appropriate privacy, space, and equipment.<br>4. Servicing the family at home with simplified economic tasks (a good bet for a modern house of contemporary design). |
| Emancipated type. Personal pursuit of individual goals to the exclusion of (or conflict with) other family members. Coordination, if any, from individual realization of personal benefits from cooperation. Individual property with little or no oblication to family welfare. Heavy concern for self-interest, with the troubles of others conceived as their own responsibility. | 1. The integration of individual activities in social groupings outside the dwelling.<br>2. Minimum of activities in the home, which becomes primarily dormitory in function.<br>3. Maximum personal privacy, separate breakfasts, snacks and sleeping times.<br>4. Housekeeping service, delicatessen meals, call-for-and-deliver services (a good bet for congregate living facilities). |

Status-striving type. Pursuit of career success and secure social position, and the accoutrements of status and prestige. Activities of individual family members are scanned with an eye to how they reflect upon the family status, strong encouragement to competitive success in community affairs.

1. Activities of family members organized for the pursuit of extra-family goals.
2. Frequent social entertaining and much attention to well appointed house furnishings.
3. Planning by the social calendar, hospitality and the well-stocked larder and sideboard.
4. Maid service where possible (a good home with appropriate status symbols).

The following are marketable value preferences which are also confirmed by additional sources. These values apply to singles or married, non-family professionals of a middle to upper class economic group adapted in Barbara Behrens Gers' article "Young Marrieds on the Move," Housing, January 1979.

Association with Success

Low Maintenance

Recreation

Architectural Excitement/Design

Wide Open Floor Patterns

Space to Entertain

Roomy Master Suites

Uncramped Kitchens

Second Bedroom Space New Use

Private Outdoor Space

These individuals are looking for a house which is easy to maintain, the house that suits the busy life of a working professional. They are also looking for a sophisticated design so they can display their homes to friends or business associates.

1. Association with success

   Many career oriented individuals are out to establish themselves. They are on their way in a career but have not made it to the top.

2. Low maintenance

   The majority of married couples both have careers. Therefore they are less interested in a residential unit which requires considerable time for maintenance, especially exterior household repairs and yard work such as cutting the grass.

3. Recreation

   "For many husband-and-wife families, affectional, companionship, recreational, aesthetic, and personal values within the home are balanced by a wide range of pursuits outside the home, such as occupational advancement, participation in community affairs, sports and other forms of recreation."[23] Some form of on-site recreational common facilities should be provided in the development. There has been an increase in individuals' concern for their physical health and fitness. For many this takes the form of daily physical activity (for example, games of handball, jogging).

4. Architectural excitement/design

   The homeowners are interested in an exciting architectural environment, one that demonstrates the current taste (fashion) that they are proud to display to their friends and business associates. They are however equally concerned about the resale potential of their residence. They are not interested in short lived fashions or way-out design, because they are interested in both the value appreciation and the closely related market appeal of their unit.

5. Wide open floor plans, desire to entertain

The spatial planning has no need to be rigid in its zoning (especially in childless homes). Attention is given to showing and decorating the whole house in contrast to primary design focus on the formal living room. Emphasis is placed on drama of spaces that open up to one another. They favor the dining room, the kitchen and major living spaces that relate to each other and open freely into each other, a design which also has good traffic patterns that simplifies clean-up time and encourages entertaining. It is also important to include spaces that provide privacy, spaces that each individual can call his own. This space should be visually and acoustically private. Space needs to be included in the planning for storage of personal items such as hobby materials.

6. Roomy master suites

Career couples spend the day out of the house; often their jobs call for long hours. They also participate in sporting activities. "Sixty to eighty percent of their time at home is spent sleeping, getting ready for bed or dressing for work. So the master bedroom takes on primary focus."[24] Glamorized master baths, extensive closet space, master bathrooms which contain two sinks and spacious dressing areas because both adults need dressing space. The space normally provided for a second bedroom is often utilized as an office, study space, or private hobby space.

7. Uncramped kitchens

The kitchen needs adequate counter space and storage because food preparation during the week is at a premium. The inclusion of a breakfast bar and/or kitchen table saves steps for quick breakfasts, sandwiches or coffee. This allows for the formal dining area to be undisturbed and as a result the dining room requires less maintenance. Space should be allocated for a microwave and fast food preparation. Cooking is becoming a popular hobby. Both mates occasionally enjoy fixing special meals. There is a rising interest in gourmet cooking and entertaining.

8. Private outdoor space

The outdoor space is used for barbecuing, outdoor eating and entertaining. The primary concern is privacy from adjacent housing units.

Functional/Service Relationships

The Bronson Hide and Cherrick Buildings and the infill building need to be carefully designed to obtain the maximum leasable area versus non-revenue producing areas. The inefficiency factor or percent non-revenue producing areas is normally 15% in new construction and 20-25% in adaptive use projects. Additional project goals include the following relationship: easy and pleasurable access to other components of the complex and the surrounding areas; location of quiet areas both within each unit and the common areas away from noise sources such as vehicular traffic and mechanical equipment. For example, this may be achieved by locating the living spaces above street level to lessen the street noises. It is very important to use sound proof construction techniques especially in party walls.

A. Condominium Complex

1. Parking

Parking for the condominium complex will be located in the infill building. The parking should be easily accessible to all three building projects. The accessibility is especially important when the residents are carrying numerous products such as groceries to their living units. The parking spaces should also be generous to aid in loading and unloading access. Security of the parking garage and the path from garage to the living unit is a primary objective; this may require additional lighting and a passive system of security through visibility from adjacent spaces or units. The parking provided needs to be defined as residential parking only. This will aid in security and in reserving the spaces for residents.

2. Entry to the Condominium Complex

The major condominium entires need to be identifiable as the entry into the private residential complex. This entry should not be confused with entry into the commercial spaces. A security system needs to be designed to restrict entry to the residents and their guests. Orientation for guests as to the location of specific units needs to be provided. This entry needs to be directly accessible from the parking area.

3. Lobby

The lobby provides an introductory space for the condominium complex. The lobby serves as a welcome for guests and as an important transitional space for the residents from the public outdoors to their private complex (housing development). The lobby provides a waiting area which visually connects residents and visitors with the street activities. A sense of community may be established by a warm, inviting atmosphere which encourages interaction with the central location of mailboxes and conversational seating arrangements. The number of main entries and lobbies will be defined during the design development process when the site and both the level and location of the parking garage, the commercial spaces and residential units are fully analyzed. Special emphasis will be given to the character of the lobby space and entry. This may be better suited in the adaptive design for the existing buildings or there may be greater flexibility in the new infill construction. These spaces may be developed as one central entry and lobby to the residential complex or as separate entries and lobbies for each of the proposed buildings of the complex. The first alternative may provide a greater sense of community and interaction for all of the complex's residents. The second alternative may provide for a more intimate and informal environment due to its smaller scale. If the second alternative is utilized, community interaction will be encouraged in the other common community spaces and recreational facilities.

4. Orientation

   Not only does the entry need to be identifiable, but orientation needs to be provided to the community spaces and to the individual residential units.

5. Transition Spaces

   Careful design attention should be given to the transition spaces which provide the circulation paths and spatially link various functions and activity spaces. The transition spaces provide many design alternatives for defining public and private zones.

Important transition spaces within the complex include the transition from parking to the residential complex, the main entrance to the residential unit, the residential units to recreational areas and community spaces, the residential unit to the laundry facility, the residential complex both to the surrounding environment and to the riverfront.

6. Recreational Facilities

The recreational facilities will include a small indoor swimming pool, handball courts and exercise facilities. These spaces need to be carefully located for access and for their noise generation. The recreational facilities will be available through a private Health Club available to those of the condominium complex and other individuals who may be working or living in the Laclede's Landing area. Meeting rooms or party rooms will also be included in the Health Club.

7. Laundry Facilities

The laundry facilities need to be located near the community spaces for passive security and accessibility from the units by residents carrying clothes. It is also important to isolate the potential noise from the residential units.

8. Waste Disposal

The waste disposal collection needs to be accessible to the individual units for their daily disposal. The central waste disposal collection equipment should be located away from living spaces, and the path to the disposal unit should not be along a main pedestrian route of either the residential complex or the surrounding district. This location however needs to be accessible to removal equipment. The noise should be isolated from residential units.

9. Mechanical Space

The mechanical space for both the community spaces and the individual units should be isolated from living spaces and be designed with extensive sound and vibration control. Ample storage should also be allocated adjacent to the major mechanical equipment locations. The mechanical systems serving each residential unit should be under individual control and metering.

B. Individual Living Units

1. Zoning Interior Uses

In residential design careful zoning of conflicting uses needs to be considered for the protection of privacy and comfort. Active and passive areas may be buffered acoustically and visually by closets, hallways or stairways. The need for strict zoning in these condominiums where there are few if any children is less important due to the lack of children's noises. However, buffering the kitchen noises from the dining and living spaces is desirable through moveable partitions, raised counters and overhead counters which allow open planning in the kitchen. Bedrooms should be zoned away from the active areas of the home by closets, hallways or baths.

2. Entry Foyer

The entry foyer provides the transition space between public and private zones. The entry foyer should be located adjacent to the living room, while retaining a restricted view of the interior spaces for security from strangers. The entry should also be located close to the kitchen for ease in carrying groceries and other items. Coat storage should also be provided in the foyer.

3. Living Room

The living room should be adjacent to the entry and the dining area. This room should be generous in size because it serves as the major living area and it provides space for group entertainment. Since it is a major living space an exterior view is important.

4. Dining Area

The dining should be flexible in its arrangement, providing a pleasant space for two and an area to entertain a group. For ease in serving it should be adjacent to or in conjunction with the kitchen.

5. Kitchen

The kitchen should be located adjacent to the dining room and adjacent to the entry for carrying groceries, etc. Generous space should be allocated for food and utensil storage, counter top work space, large appliances (built-in and portable). Small eating alcoves or counter-top bars are very convenient for lunches, quick meals, coffee and snacks. Ample space should be allowed for movement within the kitchen for two people or more if semi-formal entertainment centers on gourmet food preparation. For many families the kitchen is an important living space and more space may be desired.

6. Master Bedroom

The defined market is interested in additional space in the master bedroom. This additional space should be large enough for two people and have strong visual appeal. The master bedroom will be designed with dressing space for two, generous closet and storage space, and adjacent to or containing a bathroom. Emphasis will be placed on exterior views and privacy both from other interior zones and from adjacent living units. Some of the housing units should be designed for singles and older couples. This market is interested in two master bedrooms designed for one individual with generous space allocations.

7. Bathrooms

The master bath should be convenient both for two people preparing for work and in location to the dressing area of the bedroom. The bathroom should contain special fixtures such as oversized vanities with two basins, large mirrors, and interesting plumbing and lighting fixtures. A small half bath may be located adjacent to the major living spaces for guests and for convenience.

8. Second Bedroom

This may be utilized as a main bedroom by older couples or singles. This second bedroom is often used as an office, a study or hobby area. Ample storage space should be allocated.

9. Private Outdoor Space

Private outdoor spaces act as extensions of a home's interior; carefully placed windows and doors may visually expand inside rooms out to the edges of decks, patios or balconies. Careful attention should be given to its privacy from adjacent housing units. The outdoor space is used for barbecuing, outdoor eating and entertainment.

# CHAPTER VI

# DESIGN ISSUES

## ADAPTIVE USE

The Laclede's Landing District's design approach to adaptive use is to retain as much as possible of the exterior building fabric. (Refer to the Guide*lines* Appendix A-3). The original materials should be restored and preserved through appropriate repair and maintenance. Often the rehabilitation of these buildings produces a state similar to the way the building looked following construction. The cleaning and restoration of the buildings in the District has removed their patina which is the quality of character which accumulates over time, through weathering or change in coloration, and expresses an object's age. From the day that these buildings were constructed they became covered with air pollution from the use of coal to power steamboats, adjacent industries and heat businesses. Air pollution changes the coloration of building materials and contributes to the materials' physical deterioration. These buildings, being industrial and commercial in use, did not receive proper maintenance and were continually being adapted to meet new commercial functions. The building as it was originally designed and constructed rarely exists today.

The Laclede's Landing Redevelopment Corporation is promoting and controlling the redevelopment of a dirty, deteriorated, industrial district to a clean, active, exciting, well designed district. The primary objective of the Redevelopment Corporation for the district is to achieve a well balanced multi-use environment consisting of a uniquely attractive commercial, residential, shopping, dining and entertainment center for St. Louis residents and tourists to visit frequently.

The objectives of the design methodology of the combined development of the Cherrick, Bronson Hide and new infill building are similar to those of the Cannery and Ghirardelli Square, San Francisco, California. The Cannery and Ghirardelli Square have both been proven to be successful adaptive use projects by the public and design professionals. Ghirardelli Square is a 1964 adaptation of the Ghirardelli chocolate factory into a ninety tenant shopping complex. The Cannery is a 1967 adaptation of the three story Del Monte Cannery into a collection of specialty shops and restaurants (Appendix C).

There are two major differences between the proposed development in Laclede's Landing and the San Francisco developments. All three projects have been developed for specialty shops, dining and entertainment uses. The Laclede's Landing project, however, also focuses on the incorporation of luxury condominiums as well as the retail uses. The second major difference involves the climate. St. Louis's cold winters and extremely hot summers prevent a great deal of the successful open spaces utilized in the California projects.

The primary design objectives of the Cannery and Ghirardelli Square include preserving the general appearance of an old factory, creating exciting visual drama and the feeling of mobility. The building was cleaned and the brick was painted to improve the building's physical appearance. All of the factory equipment was removed and some physical changes were made in the location of openings. The interior brick walls and members were cleaned and exposed. The resulting product was a complex of buildings containing open interior bays with exposed existing materials for which a variety of tenant spaces and circulation systems were designed. The key to creating visual drama and the feeling of mobility was to create views of people on different levels. The California climate encourages outdoor spaces such as open arcades, outdoor escalators, open stairways and plazas, all of which were successfully used in the Cannery and Ghirardelli Square projects. Another tool in creating visual drama involves the mystery and anticipation of what is around the corner. Color, interesting store displays and staggered corridors all contribute to the excitement and enjoyment of the spaces. The Cannery and Ghirardelli Square have also utilized contemporary details and materials of glass, metal and plastic in their new construction. These materials and details have been used to accent both the newly constructed elements and the existing building materials which serve as an interesting, inviting background.

The objectives and design methodology of the proposed development in Laclede's Landing are similar to those of the Cannery and Ghirardelli Square. Individual interpretations, modifications, and new concepts have been developed to respond to the differences in projects and the special needs of the proposed development. Chapter VII, "Analysis of Existing Conditions and Recommendation for Renovation and Adaptive Use," contains detailed information on the design and renovation techniques for the Cherrick and Bronson Hide Buildings. Refer to this chapter and both the demolition and design proposals drawings (located with the book cover) for more detailed information concerning both the exterior and interior design.

The design methodology for the public retail use of the Cherrick and Bronson Hide Buildings, and the integral connection to the new infill building follows. The exterior of the existing buildings will be cleaned and renovated to provide an interesting appearance and entry. Some of the interior brick will be exposed in the Cherrick Building. The walls of the Bronson Hide Building will be drywalled and additional wall treatments will be selected by the tenant. The ceilings in both buildings will be exposed wood framing members, exposed mechanical systems and colorful acoustical panels between the exposed wood joists. Of the retail and common residential spaces the wood and cast iron columns will be exposed to aid in expressing the original materials of a warehouse.

Due to climatic differences between California and St. Louis, unlike the Cannery and Ghirardelli Square projects, the open public spaces are required to be enclosed and are also limited in square footage allocation by the buildings' size. To encourage pedestrian flow between the two existing buildings and the new infill, a shop lined circulation system was developed. Entry to the Cherrick Building occurs on the second level and continues through the building to an open atrium stair which connects to a central space in the Bronson Hide Building. One travels down the stairs to the first level of the Cherrick Building across to and exiting through the Bronson Hide Building to the alley. From the alley the pedestrian views the marqueed entry of the retail space of the infill building. Following the line of the overhead residential bridge, the pedestrian enters the large two-story atrium space lined with shops and terminating in a wide, short flight of stairs to the next retail level. From the second retail level, stairs continue to the third level which overlooks the main atrium space. Key factors to the success of this circulation system include the visual drama of viewing people on different levels and viewing shop merchandise from a variety of locations. The interior storefronts are glass to maximize visibility of the merchandise and customers within the store. The open stair atrium of the existing buildings allows an integral connection of the two buildings and the creation of an exciting space. The view upwards is the atrium of the residential units through an interior skylight. The open stair in the atrium space encourages people to investigate the lower spaces. In the same manner, the atrium of the new building encourages people to travel up the open stairs to investigate upper level shops. Both stair applications allow people and shops to be viewed on several levels and create a feeling of mobility in the spaces. Staggered corridors and the use of color aid in the drama and mystery of experiencing the spaces.

Throughout the adaptive use of the Cherrick and Bronson Hide Buildings the use of contemporary details and materials of glass, metal and plastic accent the rich existing textures and define the new infill materials from the existing building fabric. The quality of the contemporary detailing and material provide an indication to the shopper about the store's type and quality of merchandise as well as creating luxury residences.

The private entry to the residential condominiums is located on the new North Entry Drive. One enters from the landscaped outdoor area and circular drive into the lobby located on the second level of the Bronson Hide Building. The lobby contains a seating area in which to wait for a visitor or ride and the mail boxes for the complex. The elevator use is restricted to residents by a key. The residents may enter the elevator from the parking and commercial levels as well as any residential floor. The elevator is in the Bronson Hide Building adjacent to the corridor which connects to the pedestrian bridge which connects to the new infill building which provides the access to parking and the Health Club. The elevator also opens into a lobby which is next to the atrium. These lobbies provide gathering or waiting areas for the residents of each floor. The residential units of both the Bronson Hide and the Cherrick Buildings connect at this atrium location.

The residential unit walls of the atrium and the walls along the adjacent corridor will be a textured glass block which will allow light to penetrate the units while securing privacy. The atrium provides interest through the penetration of light into the corridors and lobbies of the residential complex and views of lower floors, both residential and commercial.

The wood framing and the ceiling of the residential units will be cleaned and renovated to provide an interesting appearance which exposes the existing fabric of the building. The interior brick walls of the Cherrick Building will be carefully cleaned (not sandblasted) to expose the texture of the original wall surface. The interior walls of the Bronson Hide Building are in poor condition and will be drywalled. All interior partitions are drywall in both buildings. Additional wall treatments and floor covering materials will be selected by the tenant. The ceilings in both buildings will be exposed wood framing members and exposed mechanical systems.

## INFILL CONSTRUCTION: THE CHERRICK BUILDING AND BRONSON HIDE BUILDING

### Cherrick Building

Historic photographs and survey plans illustrate the existence of a separate building one floor higher than the Cherrick Building at the corner of First Street and Delmar (Morgan) (Figure VI-3). The Cherrick Building wraps around the remaining seventy-six by twenty-one foot open space. This corner is very prominently located on the major vehicular and pedestrian route within the Laclede's Landing District. A primary characteristic of the building massing in the Laclede's Landing District is the reinforcement of the corners. The construction of an addition to the Cherrick Building is proposed to reinforce this characteristic of the District. This addition allows for a necessary fire escape, to be constructed in an appropriate location as part of the new construction, allowing existing floor construction to remain intact. This infill structure also increases the density of the site by 6,384 square feet which increases the financial feasibility of the project. Construction of the addition to the Cherrick Building will also protect the soft brick of the south wall from further deterioration. The south wall was originally a party wall protected on both sides. This is evident both from the lack of openings in the portion of the south facade and the ghost of the beam pockets of an adjoining building (Figure VII-8).

The Cherrick Building addition will be constructed of an 8x8 white tile block with flush vertical coarses and raked horizontal coarses in a running bond pattern. This material and pattern was selected to blend with the existing building, while clearly being constructed of a different material.

Bronson Hide Building

Infill construction is proposed to replace the upper two levels of the northwest corner of the Bronson Hide Building assumed to have been removed by a tornado. The proposed addition will restore the original symmetry in the building design on the west facade and reinforce the corner.

The infill addition also increases the site density and allows the upper levels of the fire stairs to be contained in the new construction.

The Bronson Hide infill addition will be constructed of an 8"x8" tile block which is a shade lighter than the existing brick (Appendix G). The tile blocks are set with a flush vertical coarse and a raked horizontal coarsing in a running bond pattern. The material and pattern were selected to blend with the existing materials while obviously reading as a different material and a new addition. The materials of both infill additions are the same but different in color to provide continuity in the additions while blending with the color of their building.

The window shapes of the infill additions respond to the design of each addition and are not the same proportions as the existing windows. The windows of the infill additions and the windows designed for new openings in the existing buildings (not replacement windows) are vinyl clad aluminum windows.

The design elements are best depicted in the drawings located within the book cover.

INFILL DESIGN

The infill design proposed for the vacant site will also emphasize harmony and compatibility with the fabric existing in Laclede's Landing. The new construction will not attempt to imitate the surrounding buildings; rather, it will maintain its own integrity by expressing its own time and needs. Respect will be given to the primary characteristics of the existing buildings in the historic district, such as rectangular massing. The proposed design will also adhere to the Redevelopment Corporation's Master Plan and Design Guidelines.

The proposed infill is located on an adjacent site separated from the adaptive use sites by a street. The only physical connection of these three buildings will be through an enclosed elevated pedestrian walkway and Commercial Street.

The methodologies expressed in compatible, creative design approach apply to the infill design. The site's location within the District is important for those who enter from the levee, as a symbol and entrance to the District. With the exception of its adjacency to the Bronson Hide and Cherrick Buildings, the infill building is removed from the core of the historic buildings. It is adjacent to a new parking garage, a new vehicular entry to the District and the riverfront. Its location, therefore, provides greater design opportunity as compared to infilling a site surrounded by historic structures.

The residential parking requirement for the development of the three buildings necessitates the construction of a parking garage. A view of the river is desirable from the buildings; however, the adjacent railroad structure restricts this view. The parking garage is designed to act as a podium for the new building both concealing parking within the natural slope of the site and raising the development to obtain unobstructed views from the residential units.

The parking garage could not be constructed deeper in the site due to the location of bedrock. The construction of parking to serve as a podium also raises retail uses above flood stage. This factor prevented the location of retail shops along Wharf Street beneath the railroad trestle.

Retail development is located along Commercial Street to encourage the street's use as a pedestrian street and to bring shoppers exiting from the Bronson Hide and Cherrick Buildings' lower level to and in the new building. The entry to the interior mall of the new building is denoted by a marquee and large glass facade.

The interior retail spaces are located on three levels to create visual interest from a variety of locations and the feeling of mobility which encourages investigation of the retail spaces.

Adjacent to the second level of retail space on the eastern half of the building (riverside) is the location of the pool basin which is supported by the structure of the parking garage. The next level in this location contains the Health Club Facilities which have a view of the river which is occasionally interrupted by the elevated trains. The pool is located to obtain the southern sun on the outside deck.

The parking levels, the retail and Health Club facilities' location on the eastern half of the building raise the residential units above the elevated railroad trestle and train height.

The condominium units begin on the level above the Health Club facility and northern retail shops. This level contains the main residential lobby and the pedestrian bridge connection to the existing buildings. The residents of the existing buildings park in the garage, travel up the elevator above the public spaces and cross through the lobby and pedestrian bridge to their units. The two level main lobby includes conversation seating groups, an exterior deck, laundry and tenant storage facilities.

The main exterior entry for the condominium complex in the new building is located at the corner of Commercial Street and the New North Entry Drive. Commercial Street is designed to be a pedestrian street with minor pick-up and delivery to the residential entry. This entry contains a lobby for viewing and waiting for guests or rides, access to the elevator and mail boxes. The elevators are restricted to residents and the handicapped. Access to the residential floors is by a key.

The condominium units are very spacious with outdoor sundecks and views of the river. Allowances are provided for interior wall covering and carpeting which will be selected by the residents. Contemporary details and materials of glass, glassblock, metal, wood and plastic will be used throughout the new building. Emphasis is placed on the quality of detailing and materials to provide luxury residential units and exciting retail and health club facilities.

The exterior building materials are brick with accents of glazed brick. The windows are insulated double pane glazing and vinyl clad frames. Glass block is used in the parking garage and pool to allow light penetration. The interior and exterior commercial storefronts are black anodized aluminum.

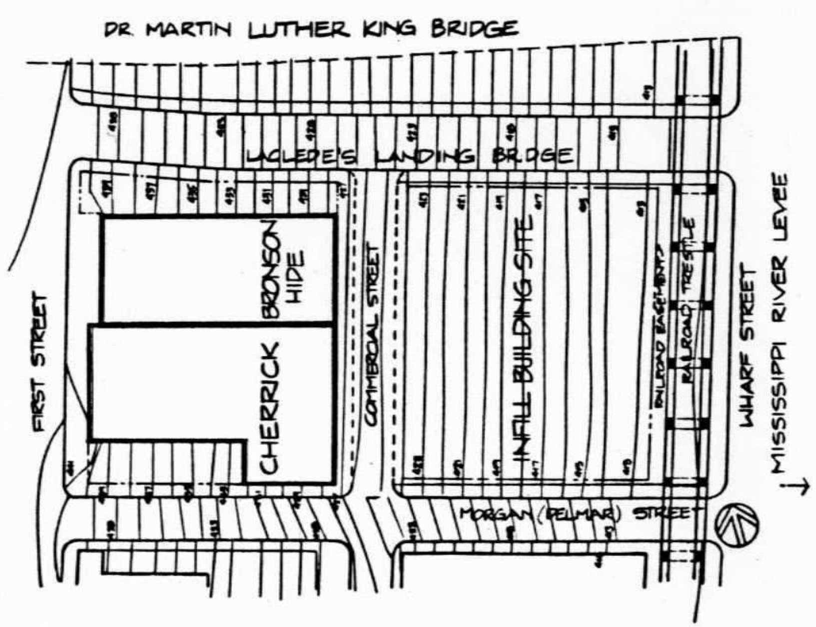
The design is best depicted in the drawings located in Chapter VI. The design take-off estimate further defines the type and quality materials used in the project.

# DESIGN PROPOSAL AND DEMOLITION DRAWINGS

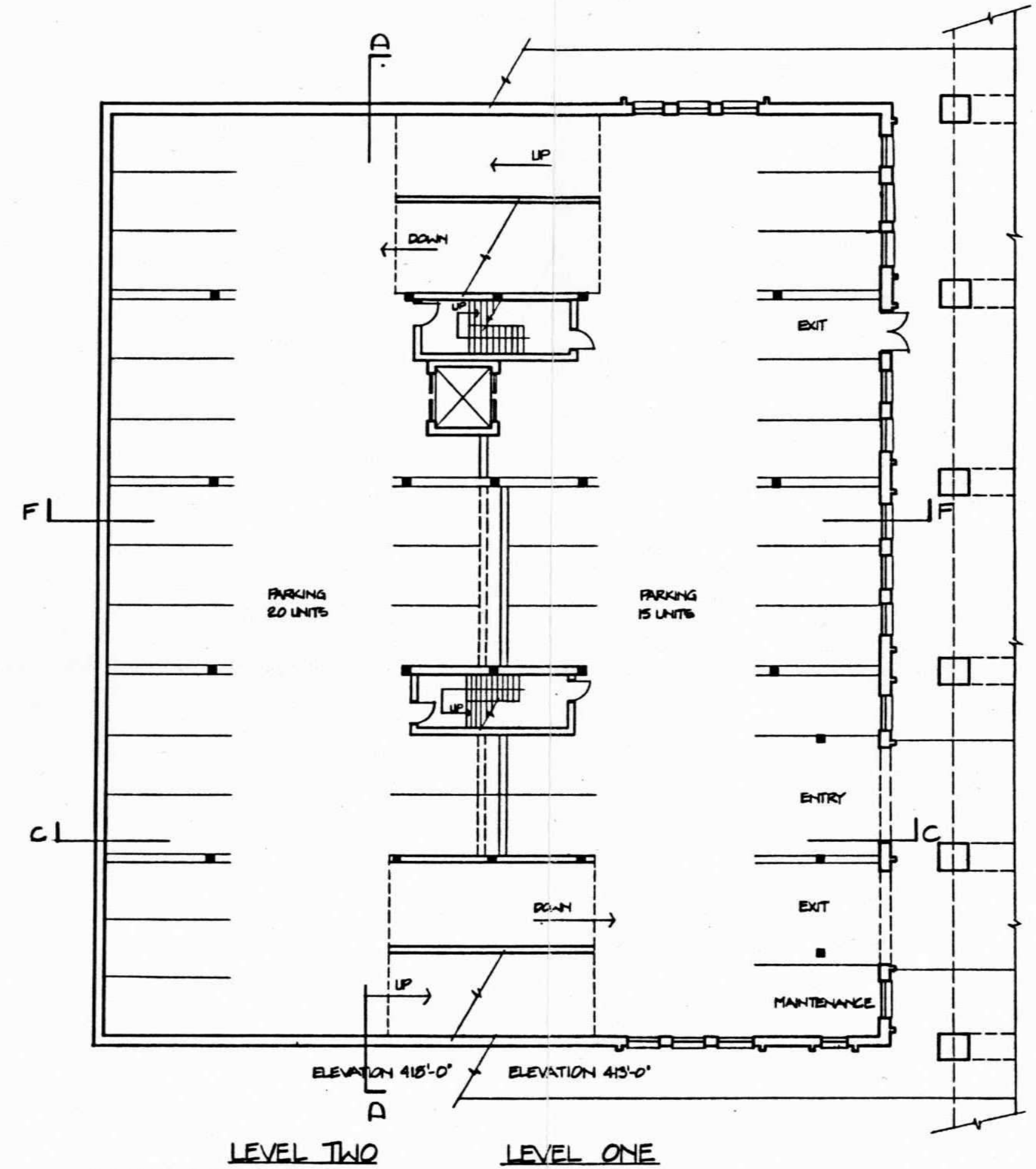
# LACLEDE'S LANDING

## INVESTIGATION OF ADAPTIVE USE AND INFILL DESIGN IN AN URBAN AREA

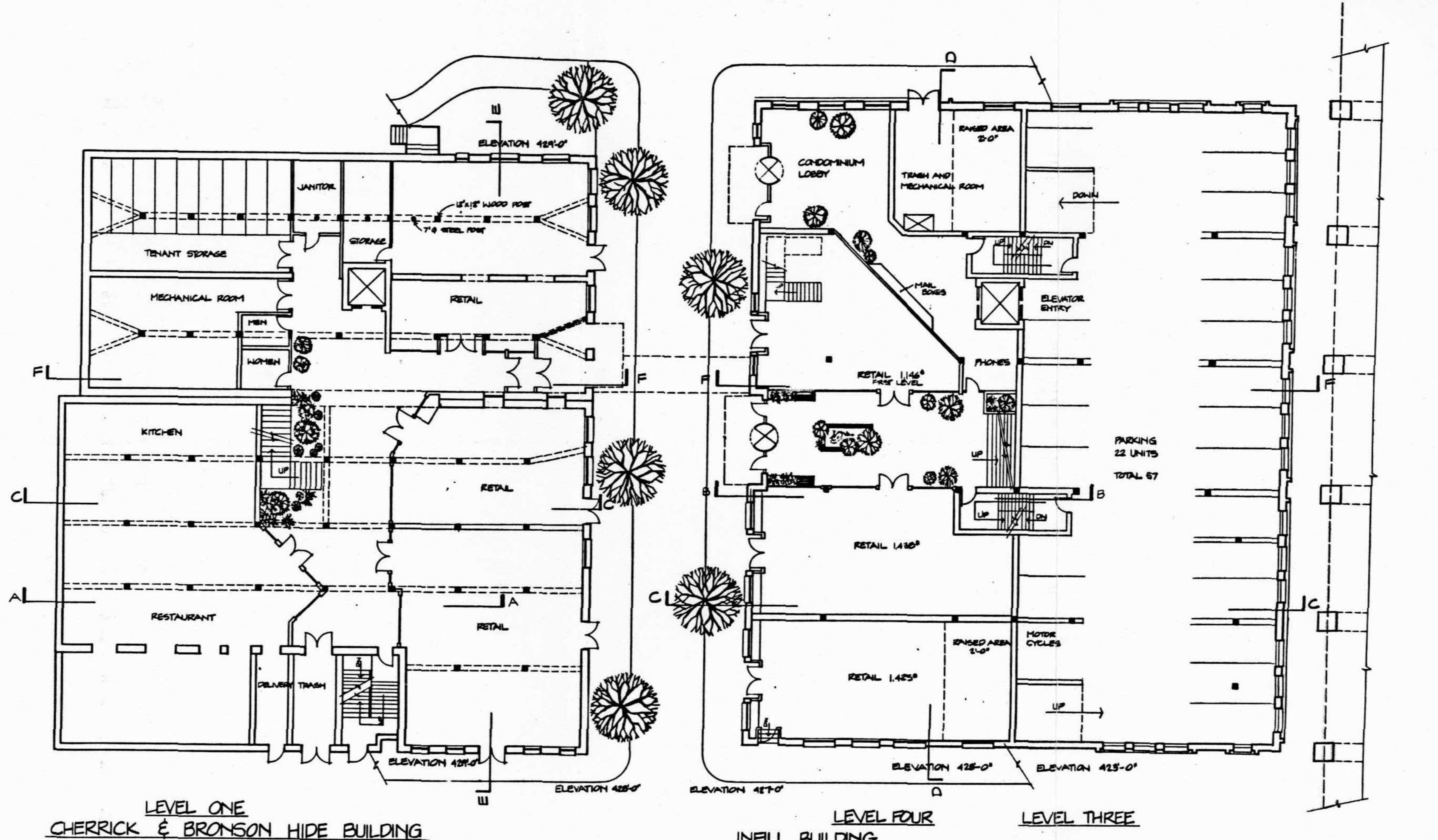
KANSAS STATE UNIVERSITY
MASTER'S THESIS 1981
DESIGNER: CHERI SPENER FAVIER
ADVISORS: R. WAGNER
R. LONGSTRETH
R. WEISENBURGER

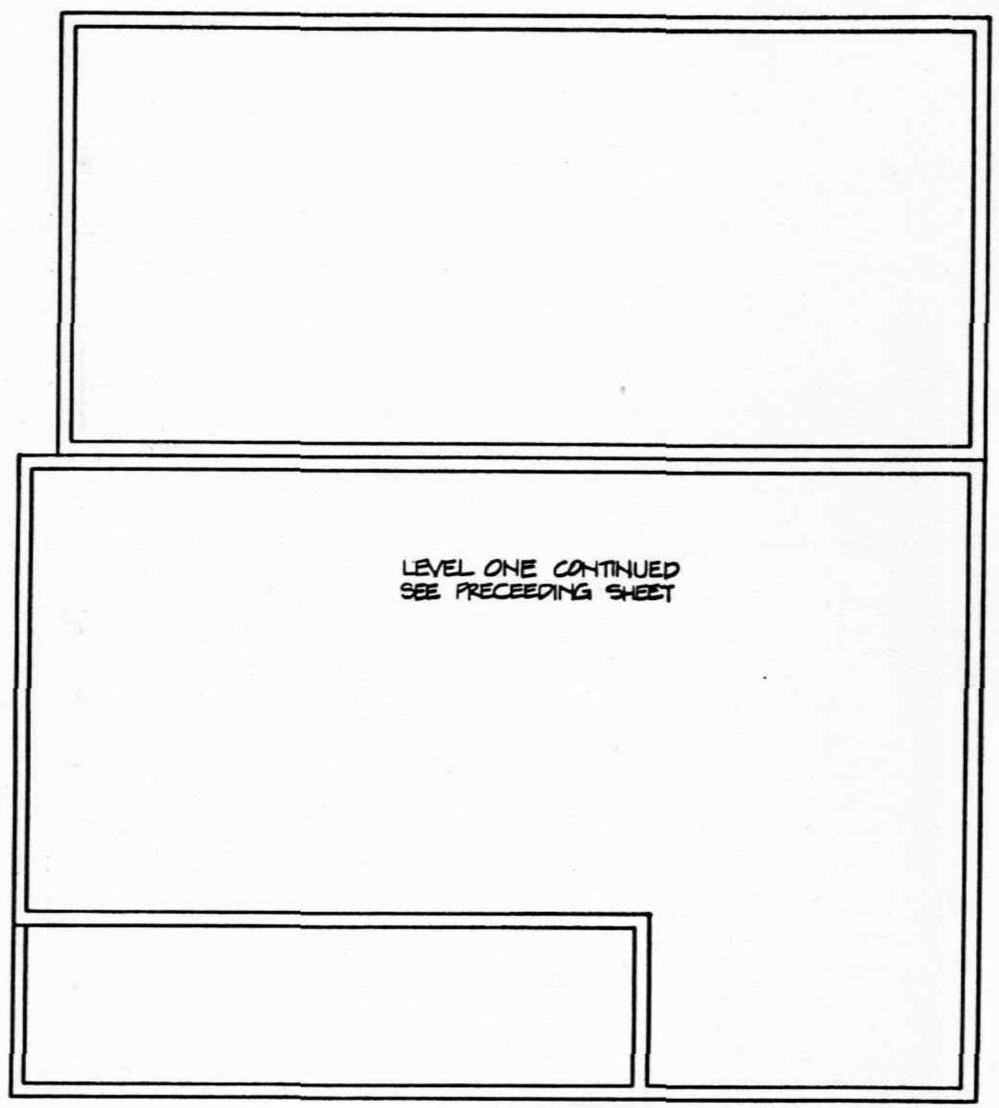



SITE PLAN

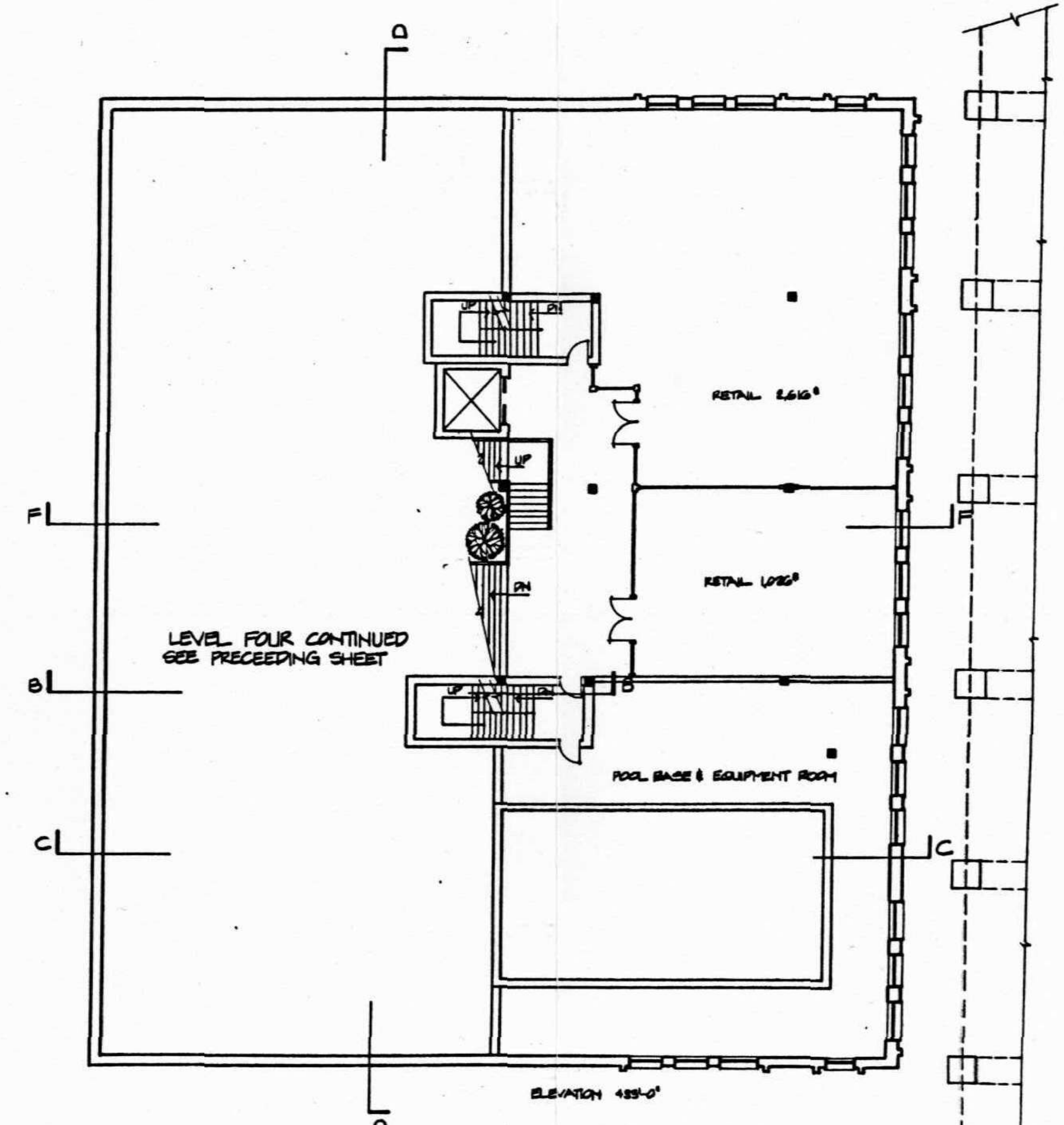



INFILL BUILDING

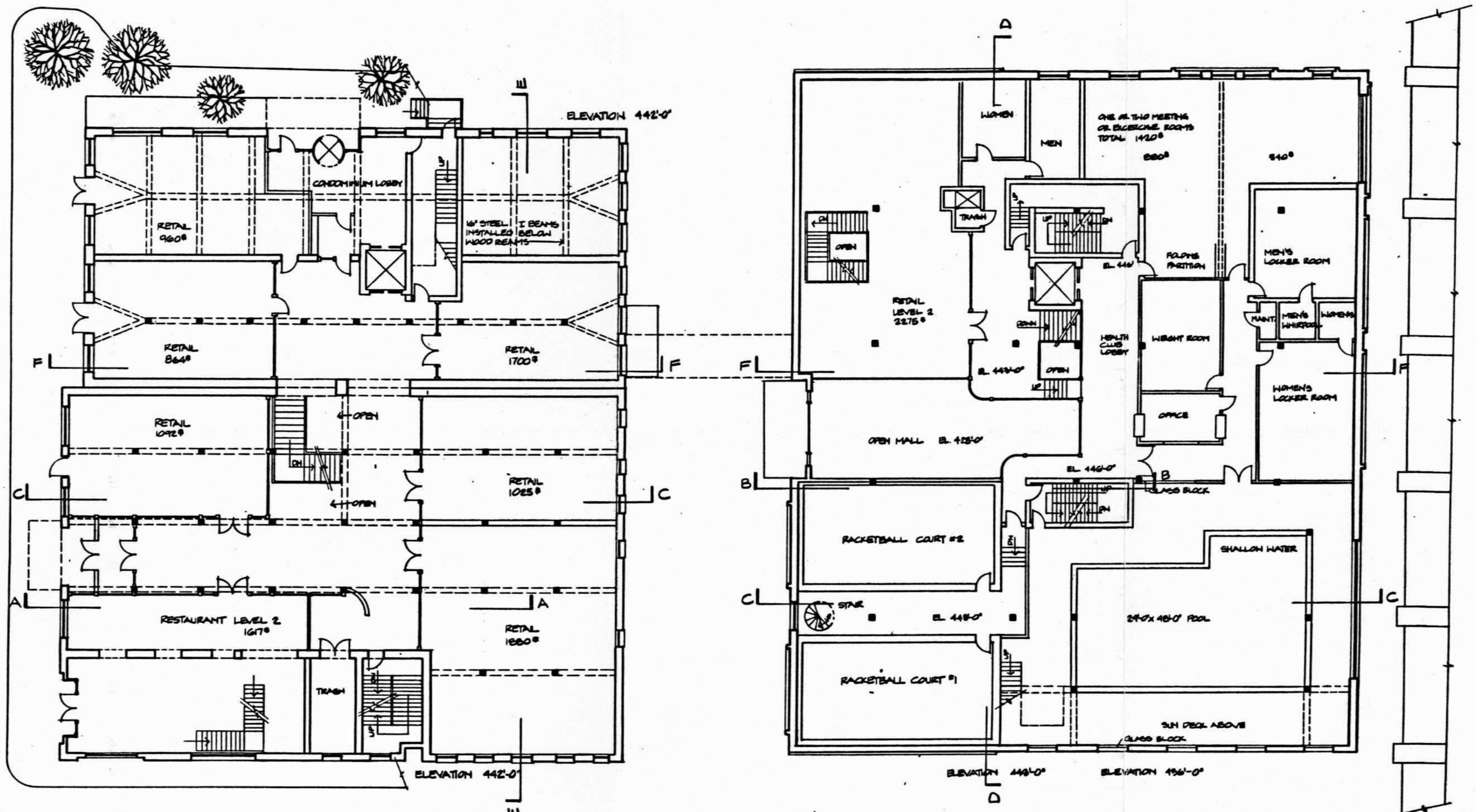

ELEVATION 429'-0"
JANITOR
12"x12" WOOD POST
7" Ø STEEL POST
TENANT STORAGE
STORAGE
MECHANICAL ROOM
RETAIL
MEN
WOMEN
KITCHEN
UP
RETAIL
RESTAURANT
RETAIL
DELIVERY TRASH
ELEVATION 429'-0"
ELEVATION 428'-0"
ELEVATION 427'-0"
CONDOMINIUM LOBBY
TRASH AND MECHANICAL ROOM
RAISED AREA 3'-0"
DOWN
MAIL BOXES
ELEVATOR ENTRY
PHONES
RETAIL 1,146' FIRST LEVEL
UP
PARKING
22 UNITS
TOTAL 57
UP
DN
RETAIL 1,430'
RAISED AREA 2'-0"
MOTOR CYCLES
RETAIL 1,425'
UP
ELEVATION 428'-0"
ELEVATION 423'-0"
LEVEL ONE
CHERRICK & BRONSON HIDE BUILDING
LEVEL FOUR
LEVEL THREE
INFILL BUILDING




LEVEL ONE CONTINUED
CHERRICK & BRONSON HIDE BUILDING



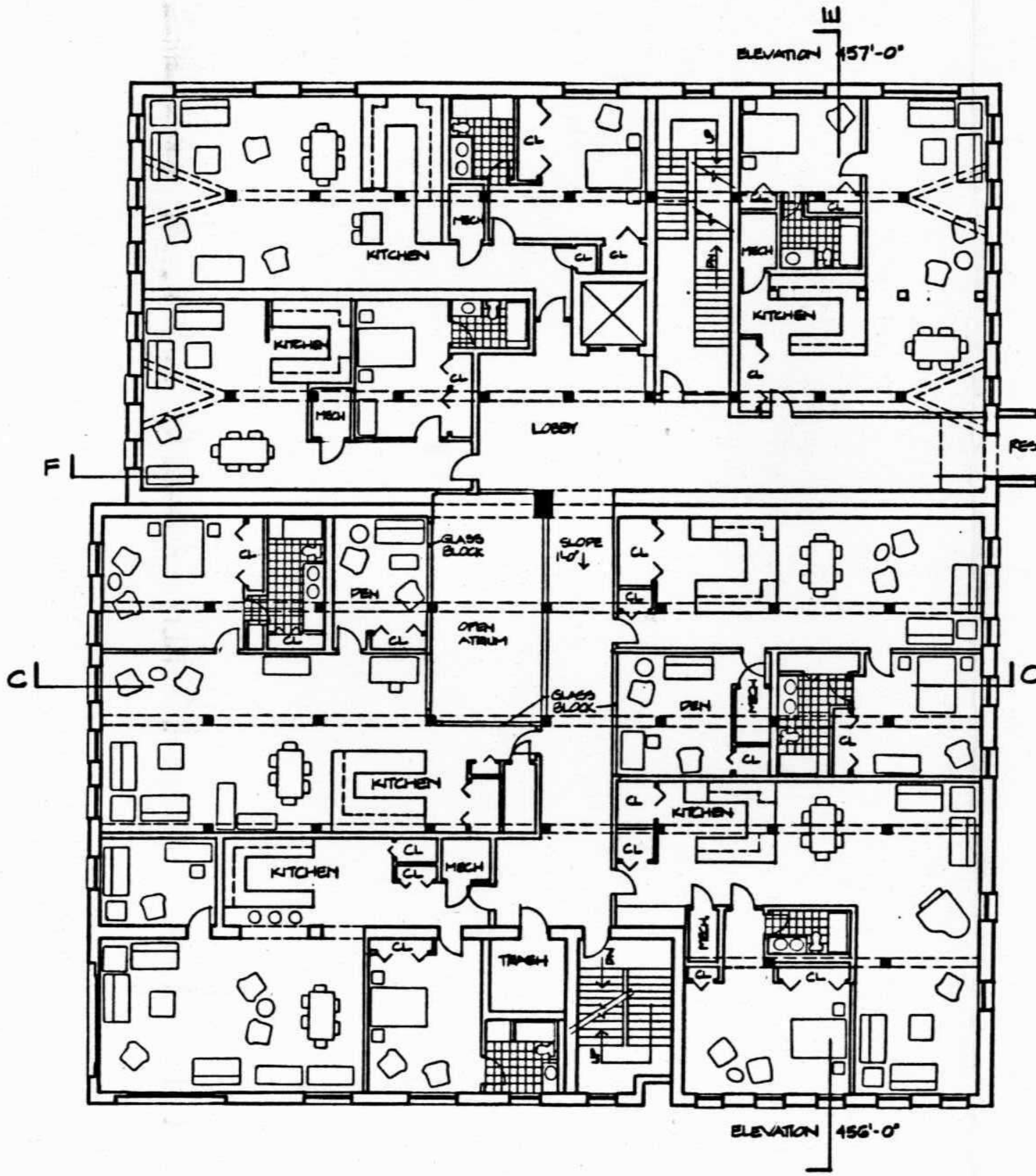

LEVEL FOUR CONTINUED LEVEL FIVE
INFILL BUILDING



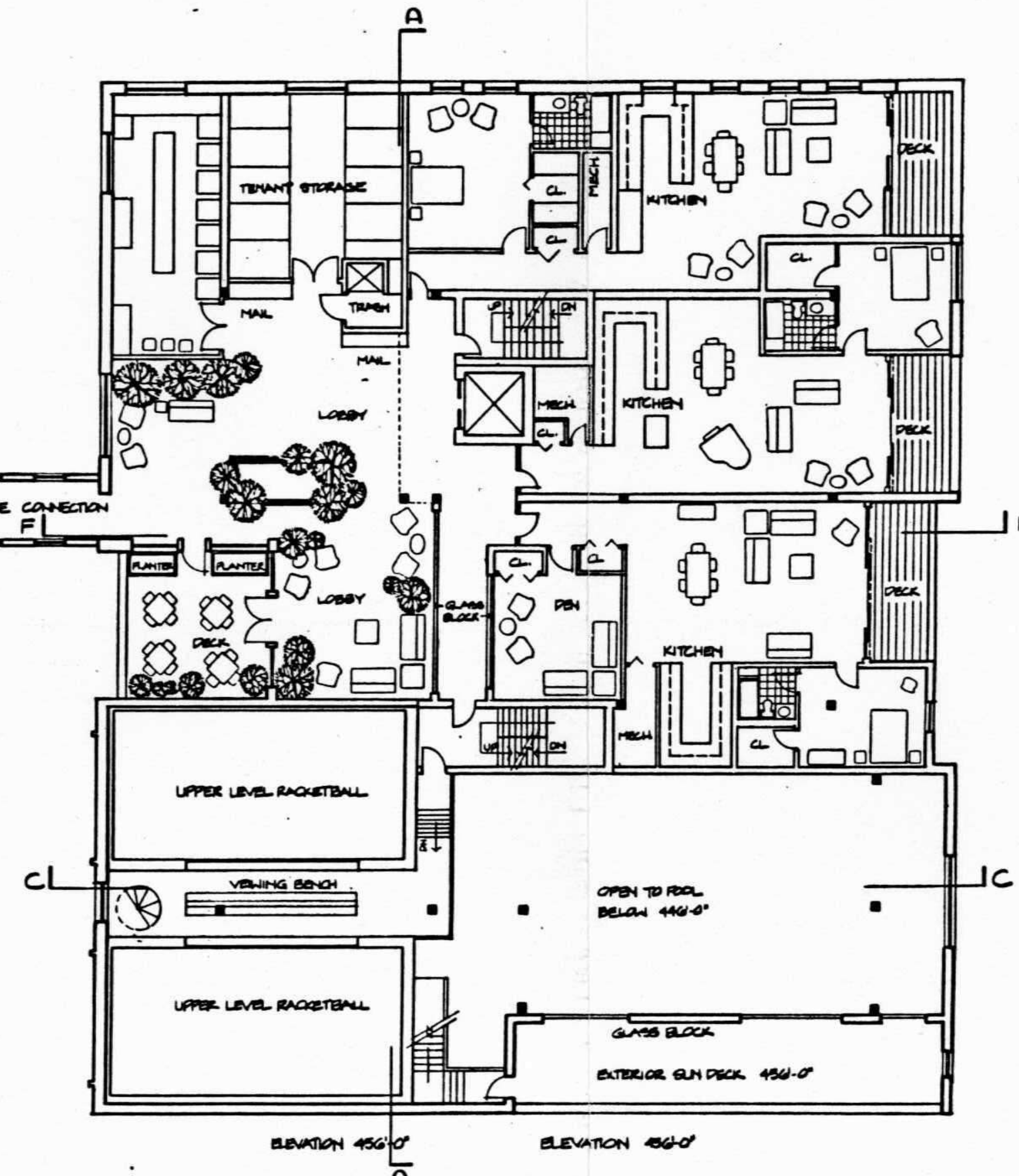

LEVEL TWO
CHERRICK & BRONSON HIDE BUILDING

LEVEL SIX.
INFILL BUILDING

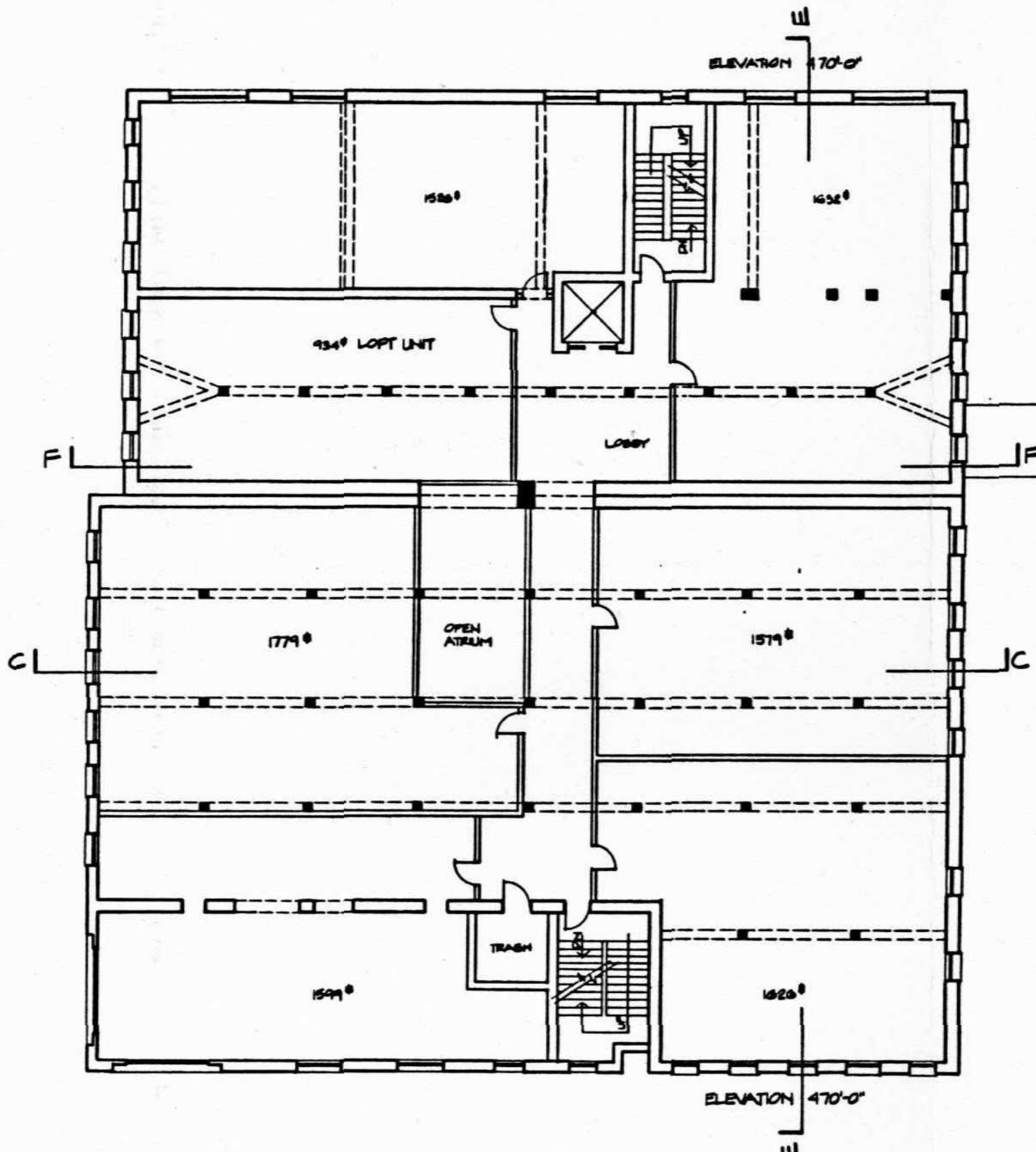
LEVEL SEVEN



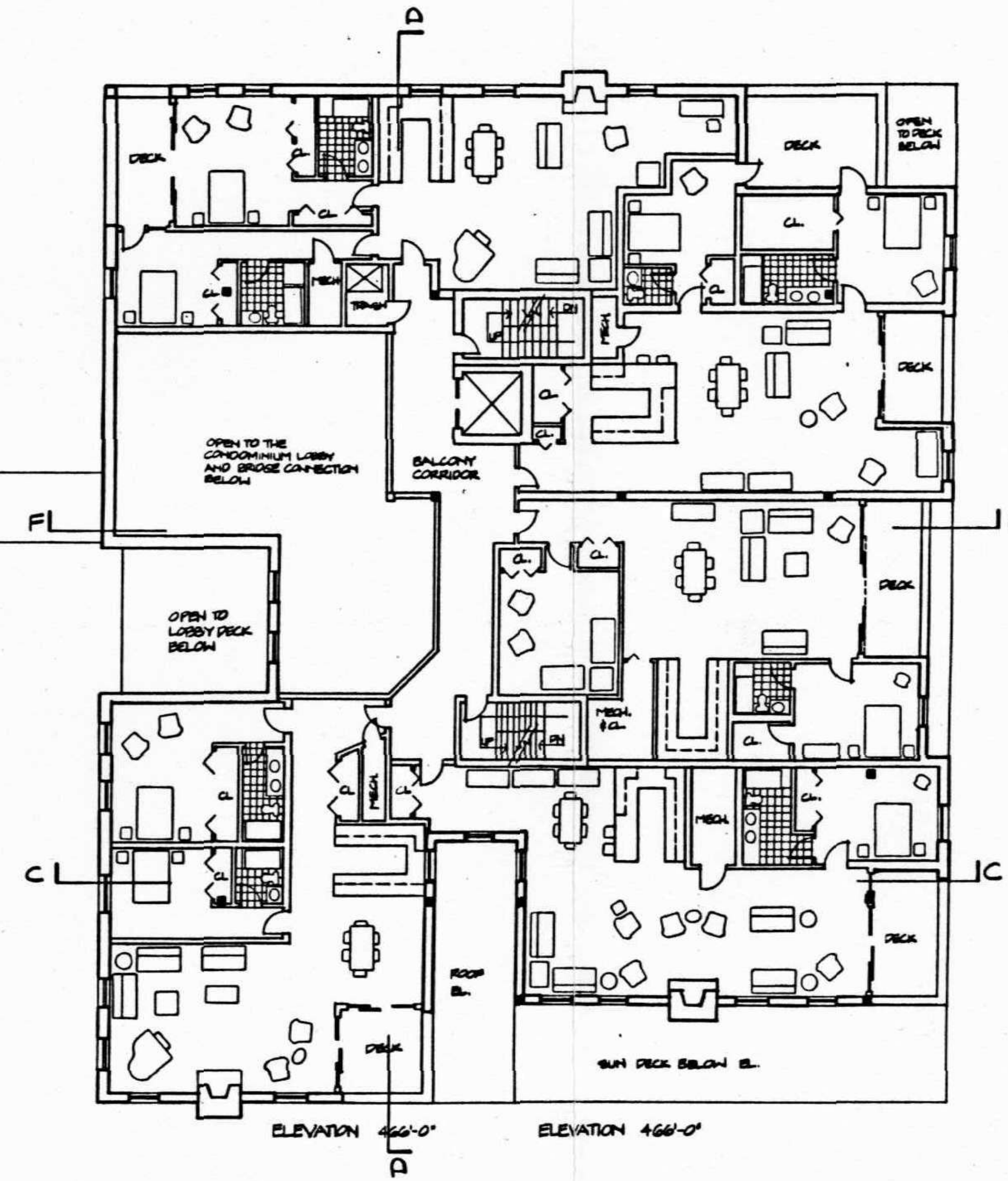

LEVEL THREE
CHERRICK & BRONSON HIDE BUILDING



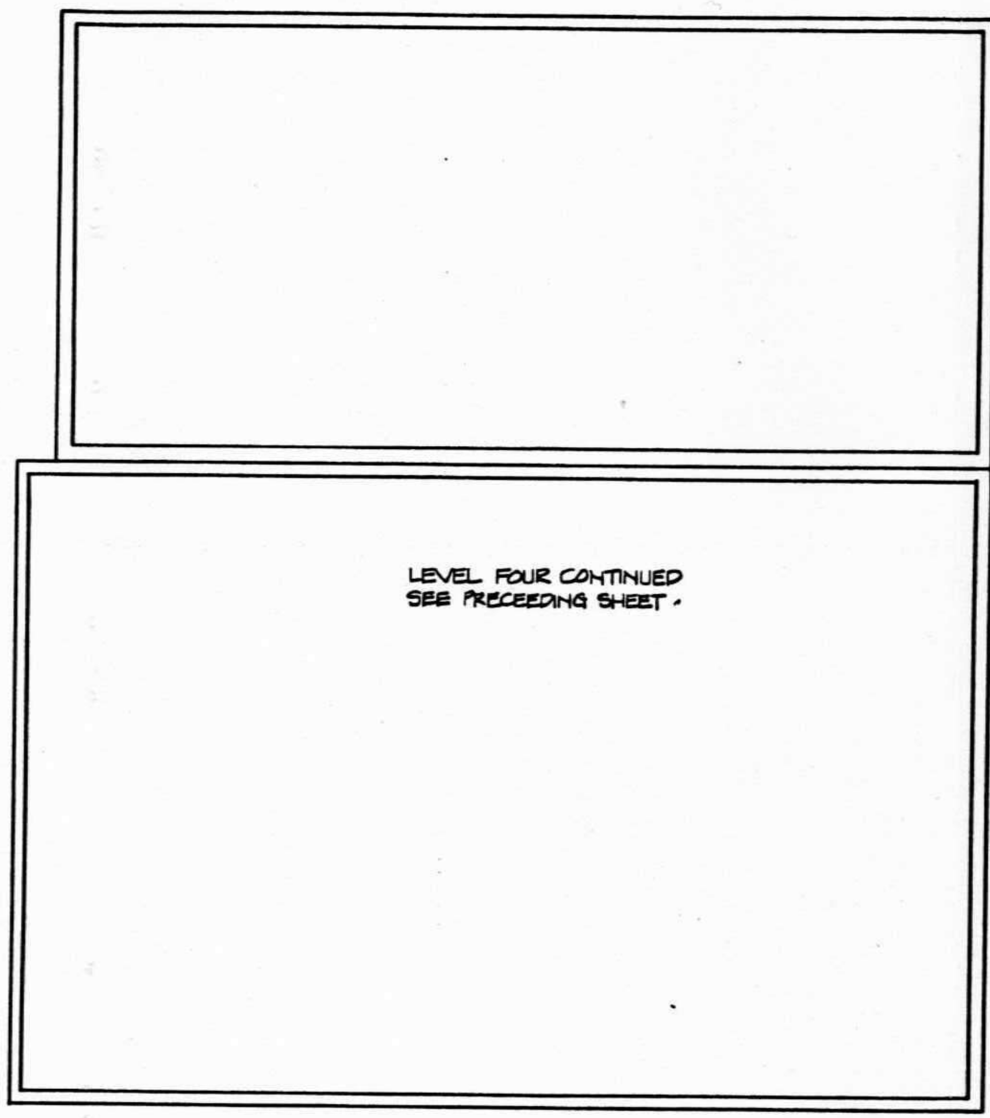

LEVEL EIGHT
INFILL BUILDING



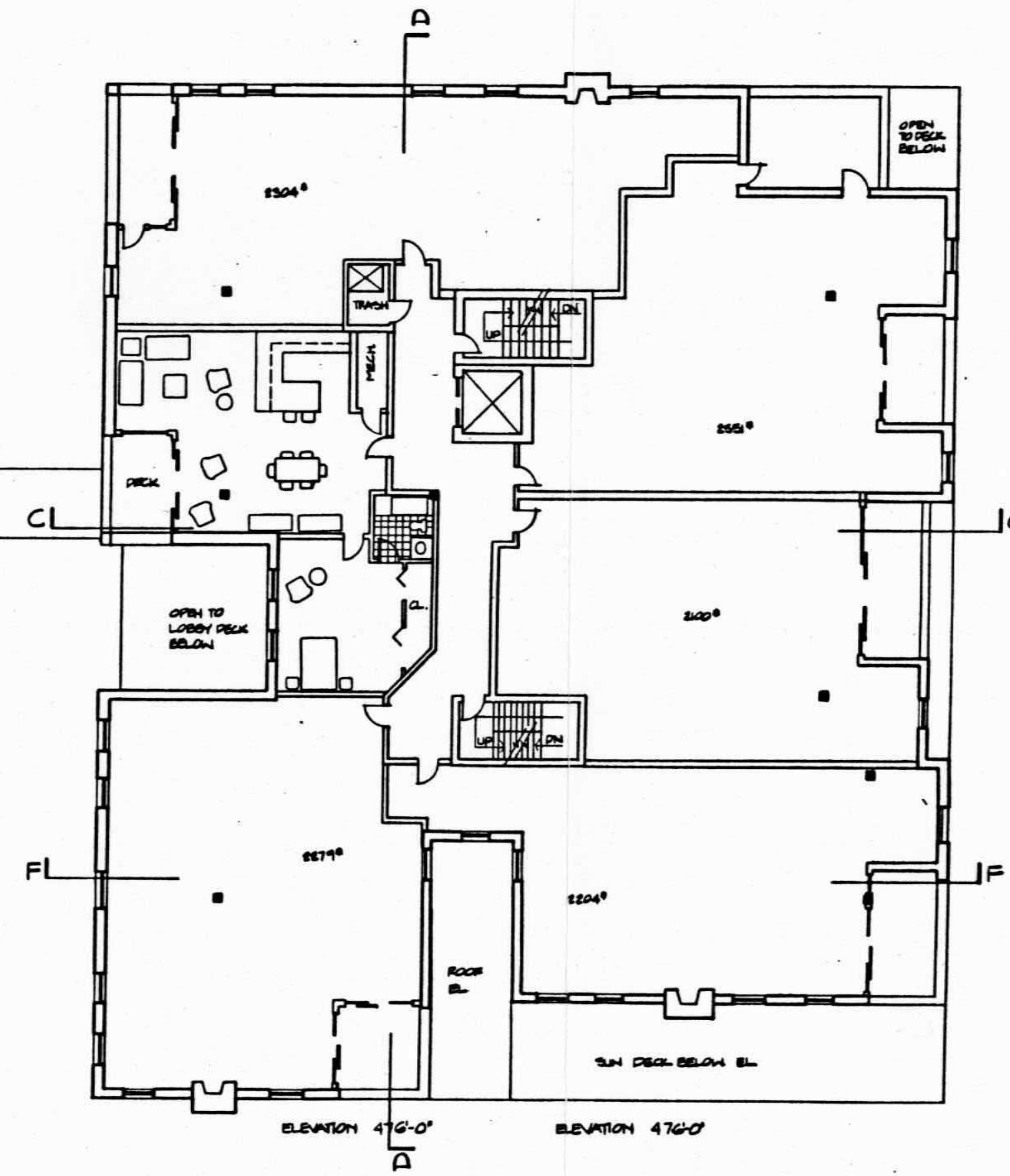

LEVEL FOUR
CHERRICK & BRONSON HIDE BUILDING



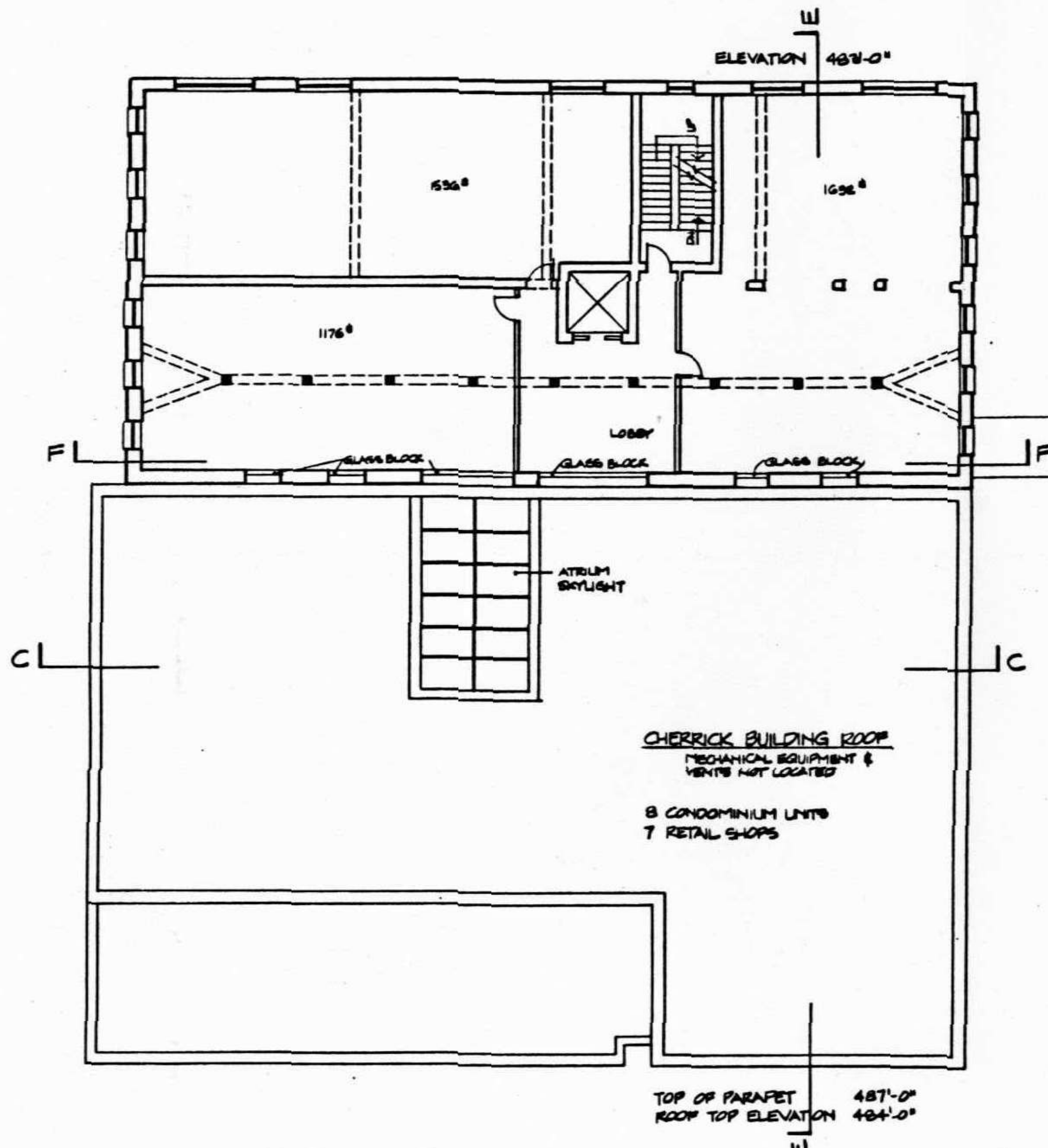

LEVEL NINE
INFILL BUILDING



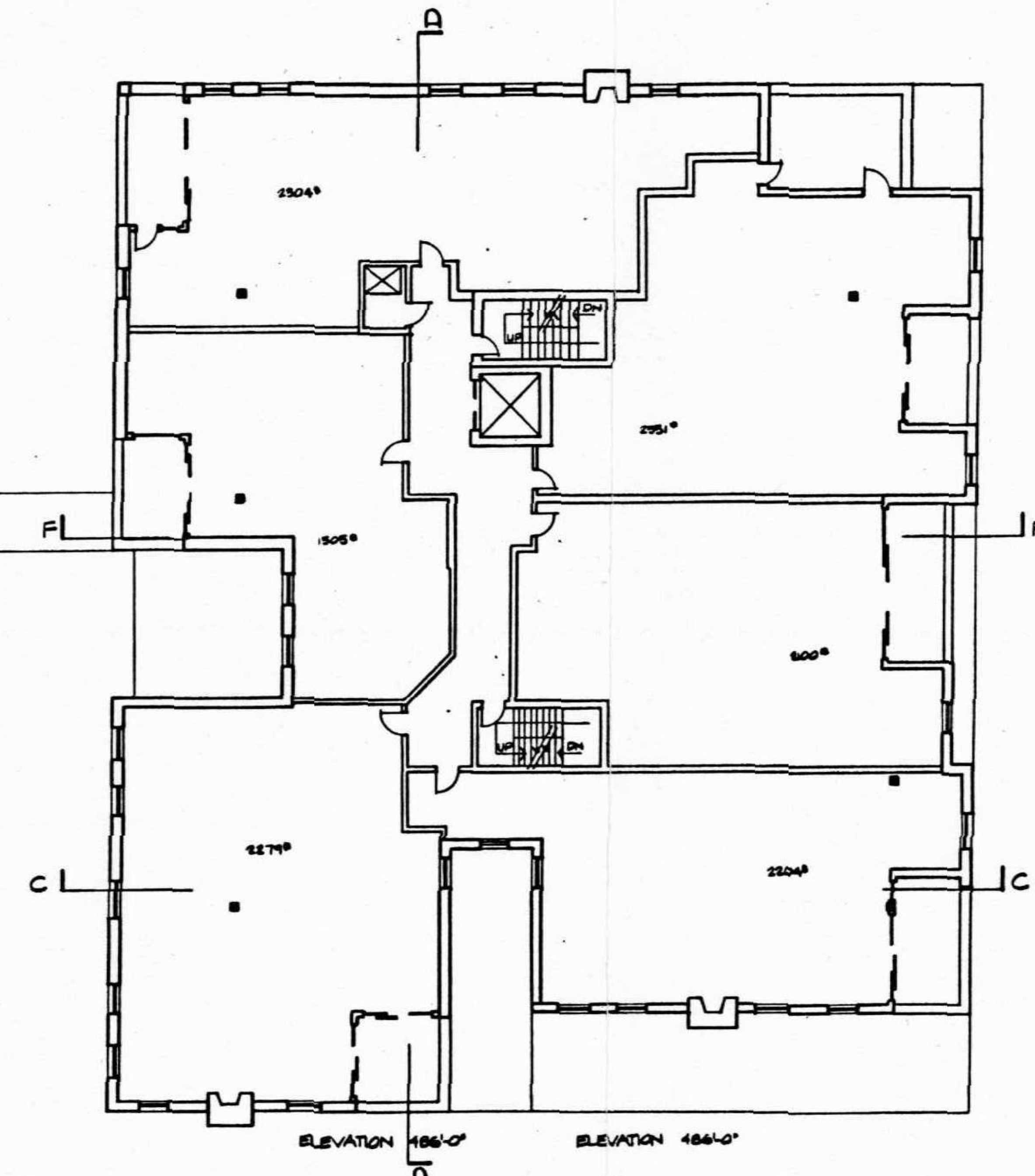

LEVEL FOUR CONTINUED
CHERRICK & BRONSON HIDE BUILDING



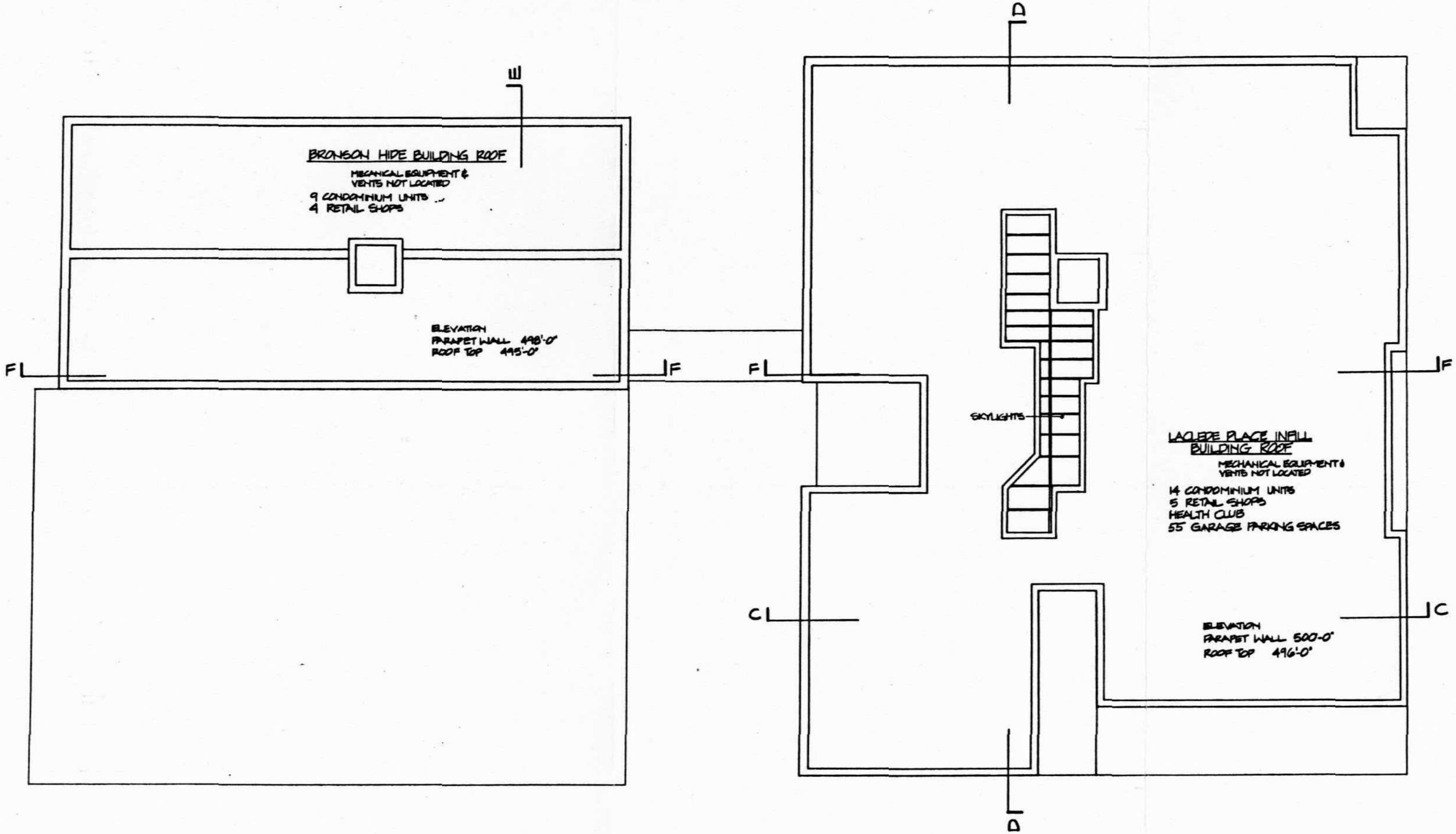

LEVEL TEN
INFILL BUILDING




LEVEL FIVE
CHERRICK & BRONSON HIDE BUILDING

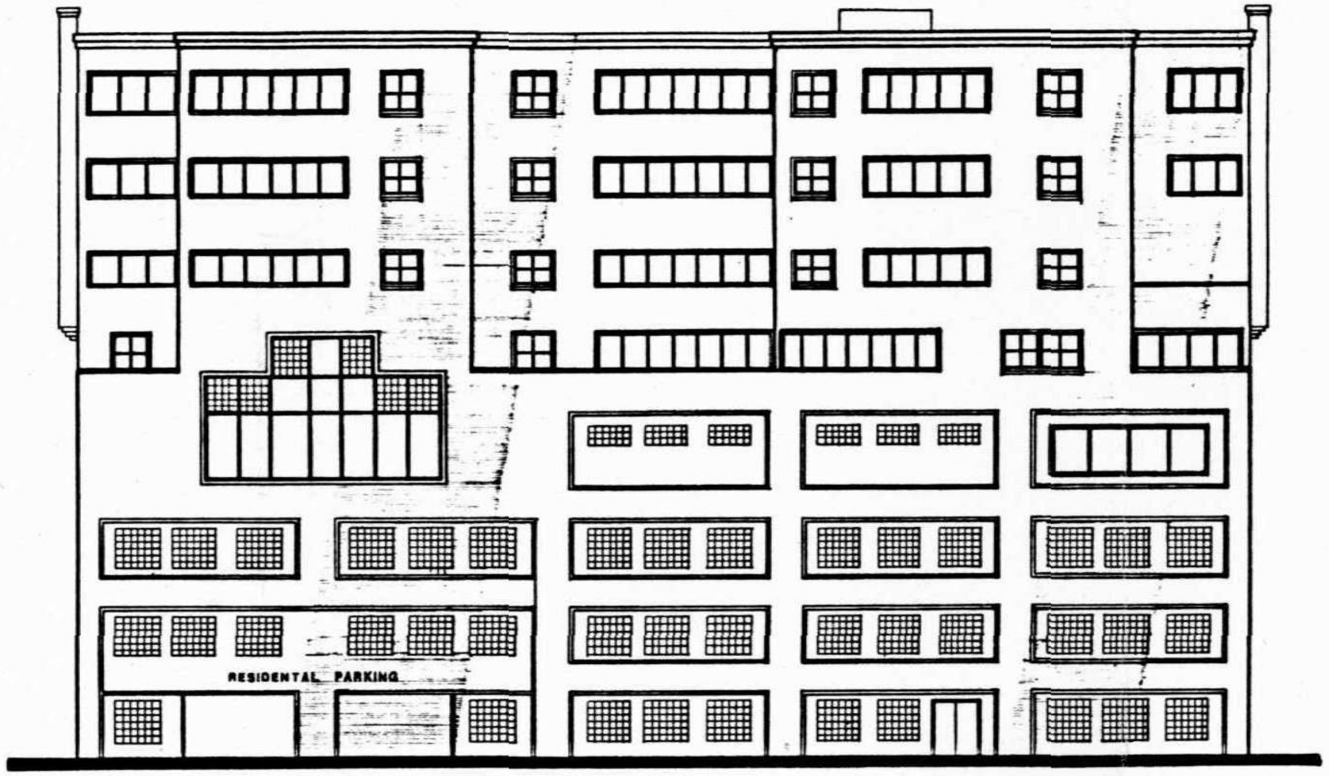



LEVEL ELEVEN
INFILL BUILDING




ROOF
BRONSON HIDE BUILDING

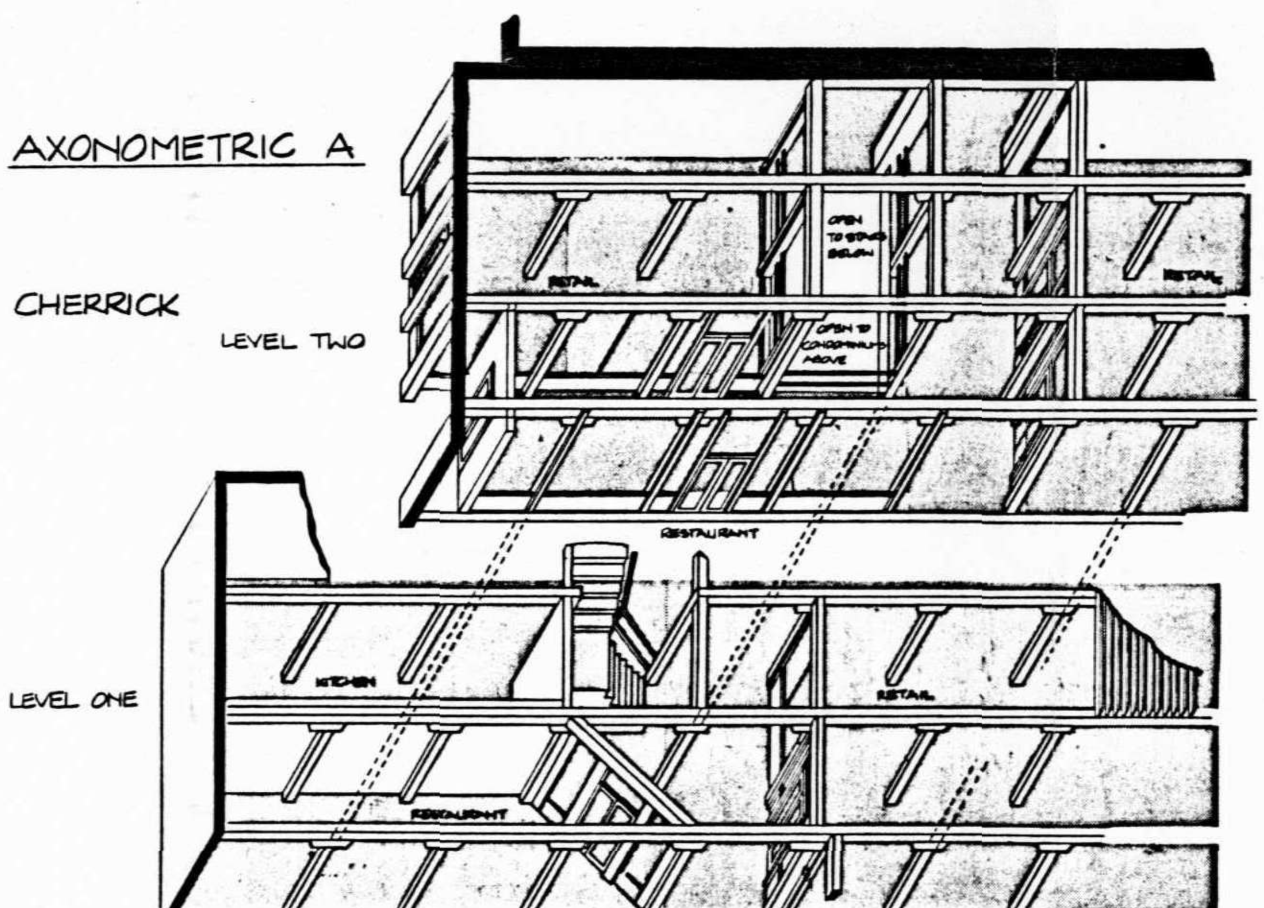
ROOF
INFILL BUILDING



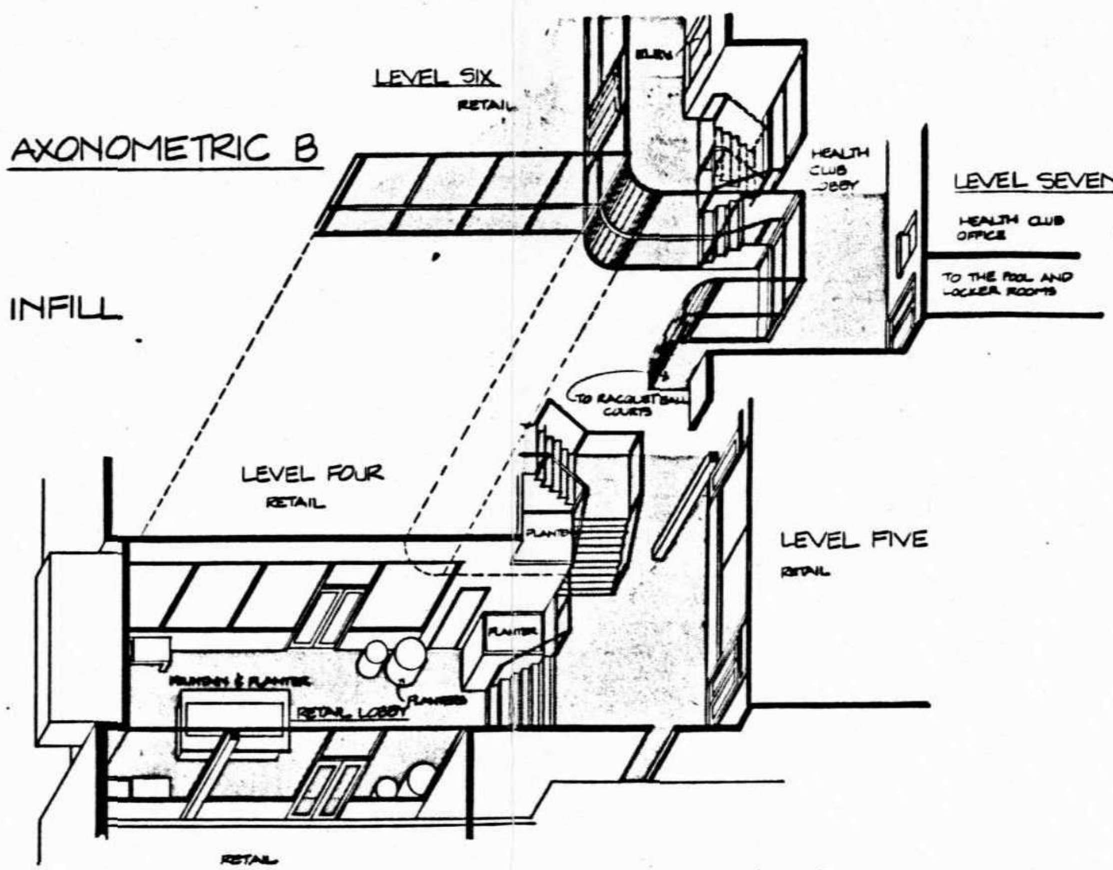

EAST ELEVATION INFILL BUILDING

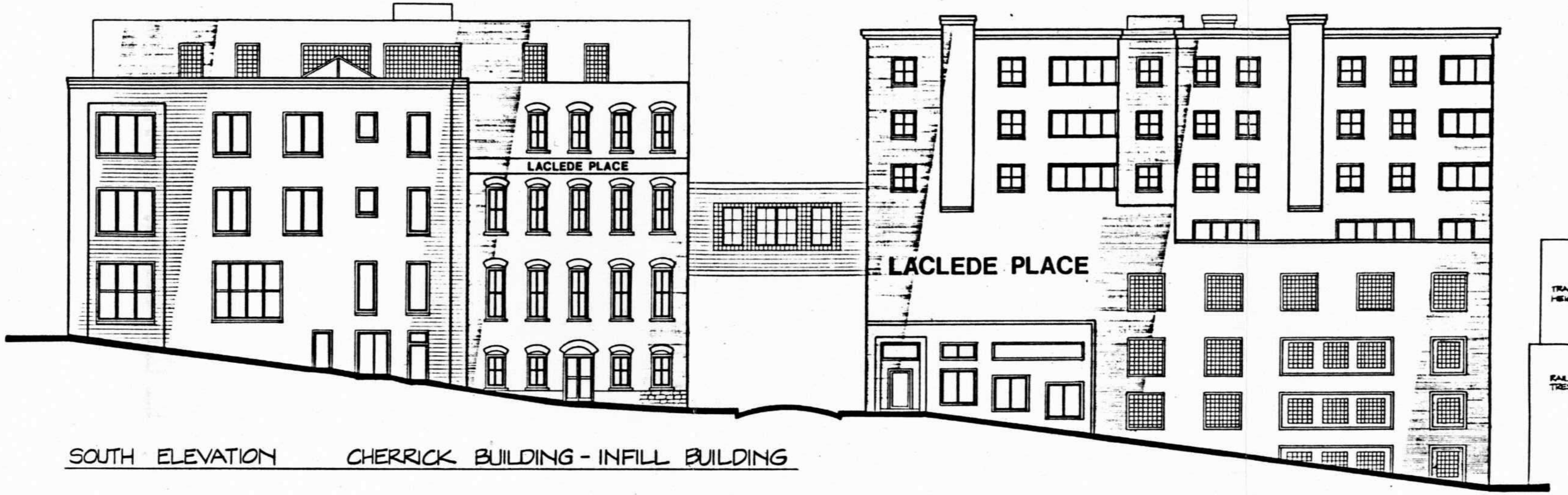

WEST ELEVATION BRONSON HIDE & CHERRICK BUILDINGS

AXONOMETRIC A

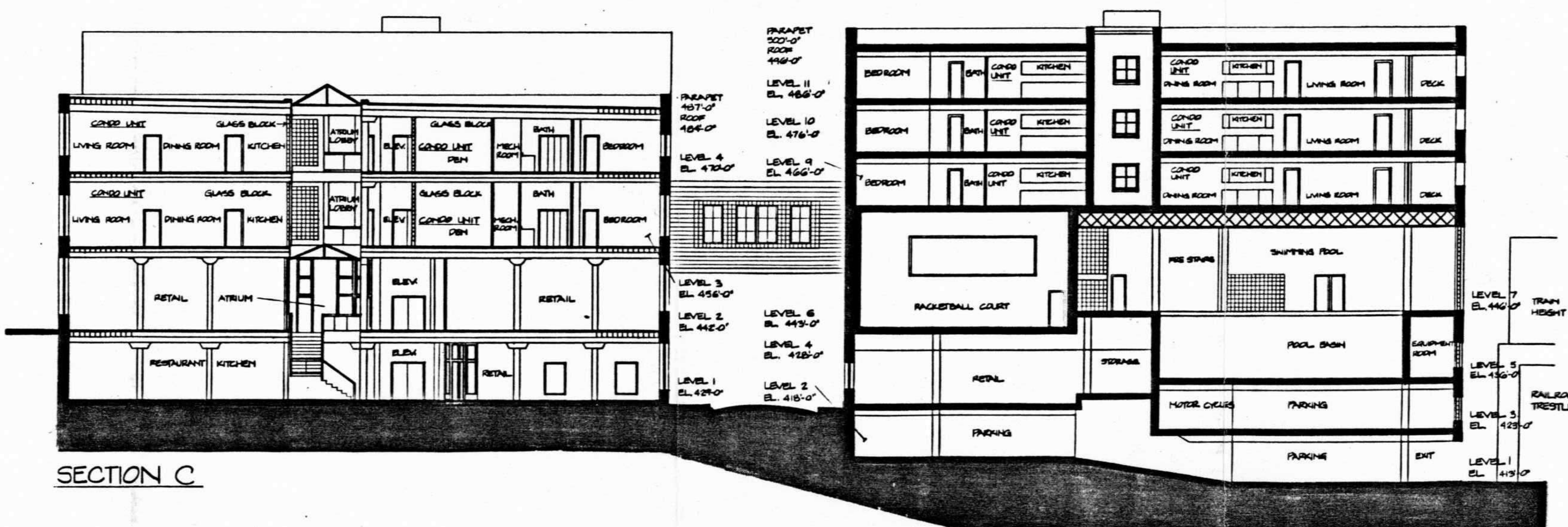



AXONOMETRIC B





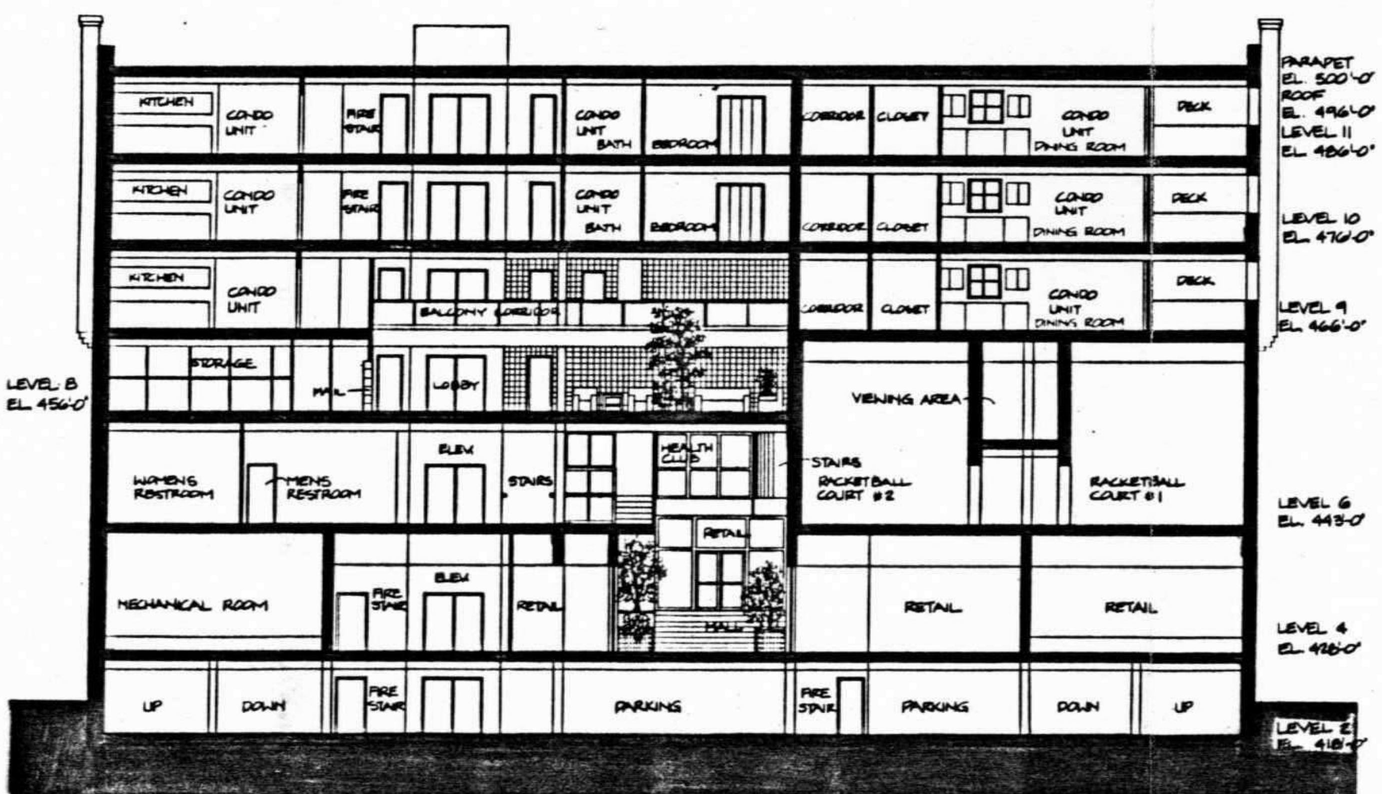

SOUTH ELEVATION CHERRICK BUILDING - INFILL BUILDING



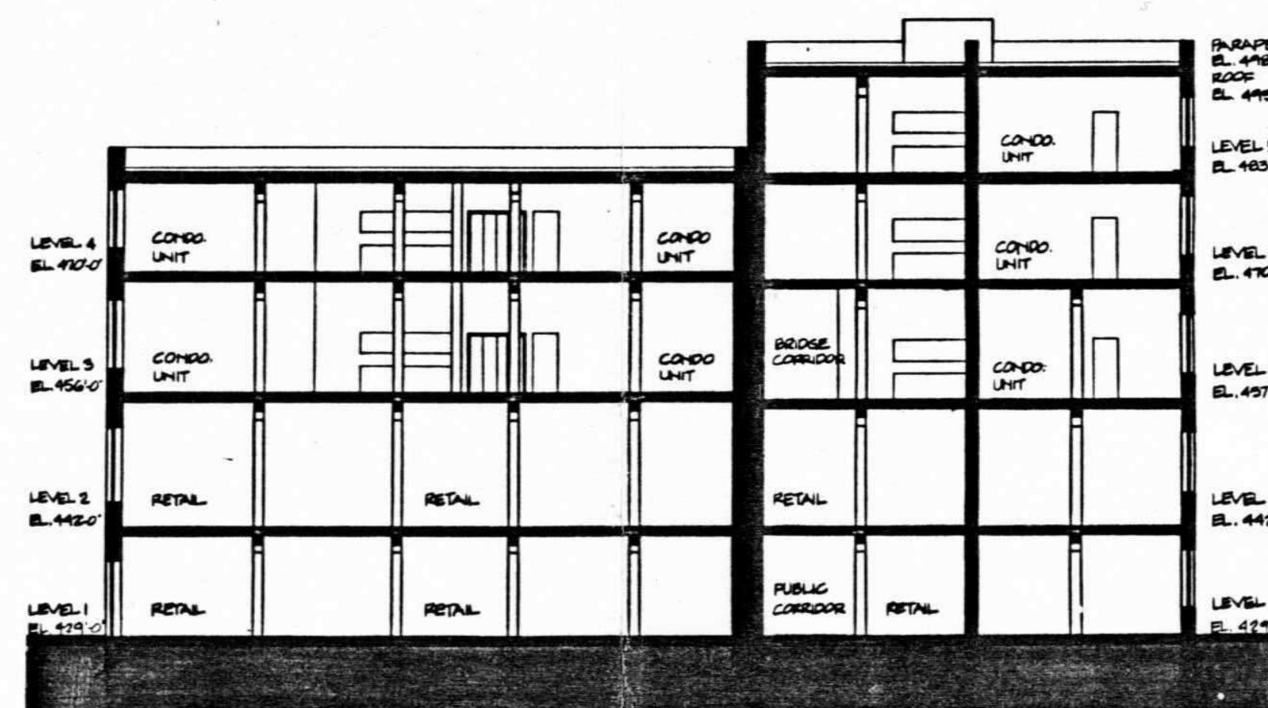

SECTION C


WEST ELEVATION INFILL BUILDING

EAST ELEVATION CHERRICK & BRONSON HIDE BUILDINGS

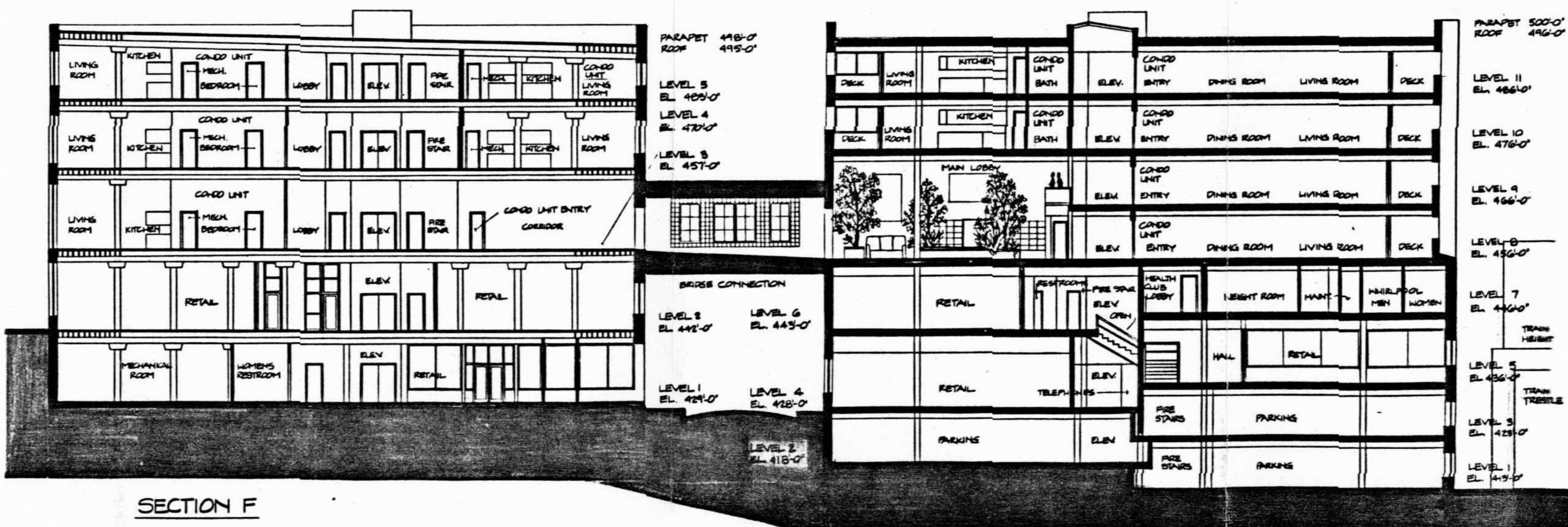



SECTION



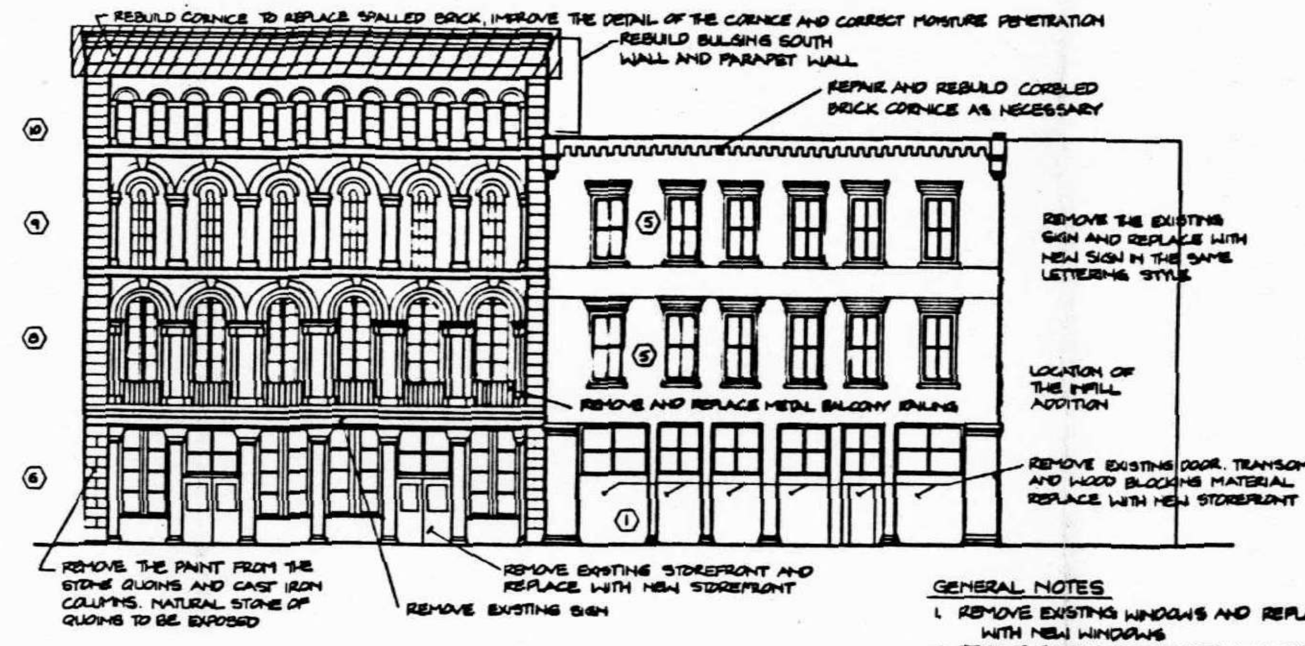

SECTION


NORTH ELEVATION INFILL BUILDING - BRONSON HIDE BUILDING




SECTION F

# DEMOLITION DRAWINGS

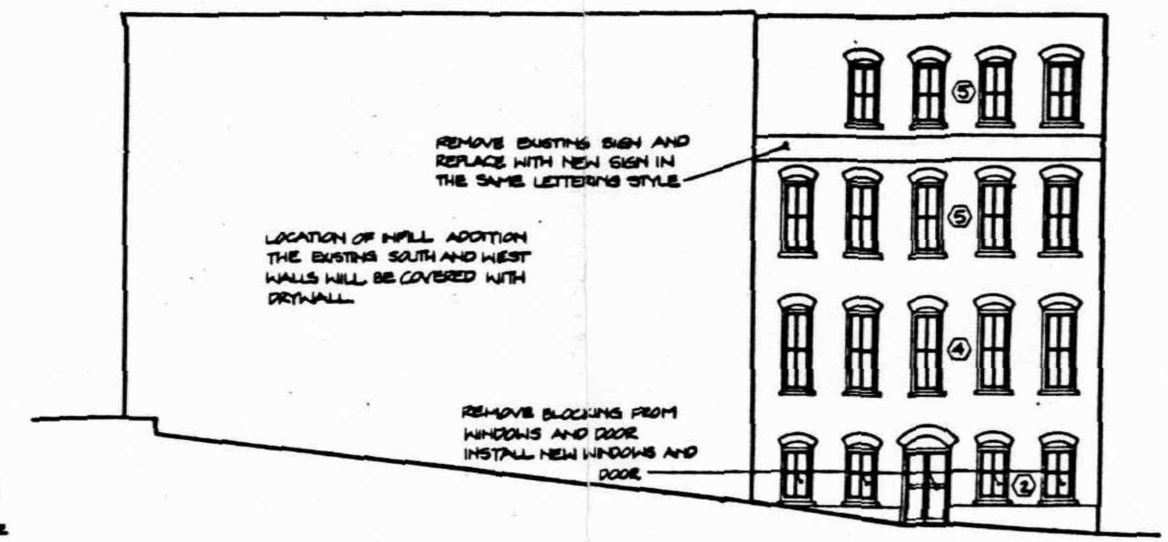



DEMOLITION ELEVATION

WEST ELEVATION

GENERAL NOTES

1. REMOVE EXISTING WINDOWS AND REPLACE WITH NEW WINDOWS
2. REMOVE EXISTING STOREFRONTS AND REPLACE WITH NEW STOREFRONTS
3. REMOVE EXISTING RAINWATER DRAINAGE SYSTEMS AND REPLACE WITH A ROOF DRAIN
4. REPAIR OR REPLACE STONE LINTELS AND BRICK AS NECESSARY AS OUTLINED IN THE TEXT.
5. REPAIR OR REPLACE ALL CORBELED BRICK DETAILS AND SPALLED BRICK AS NECESSARY

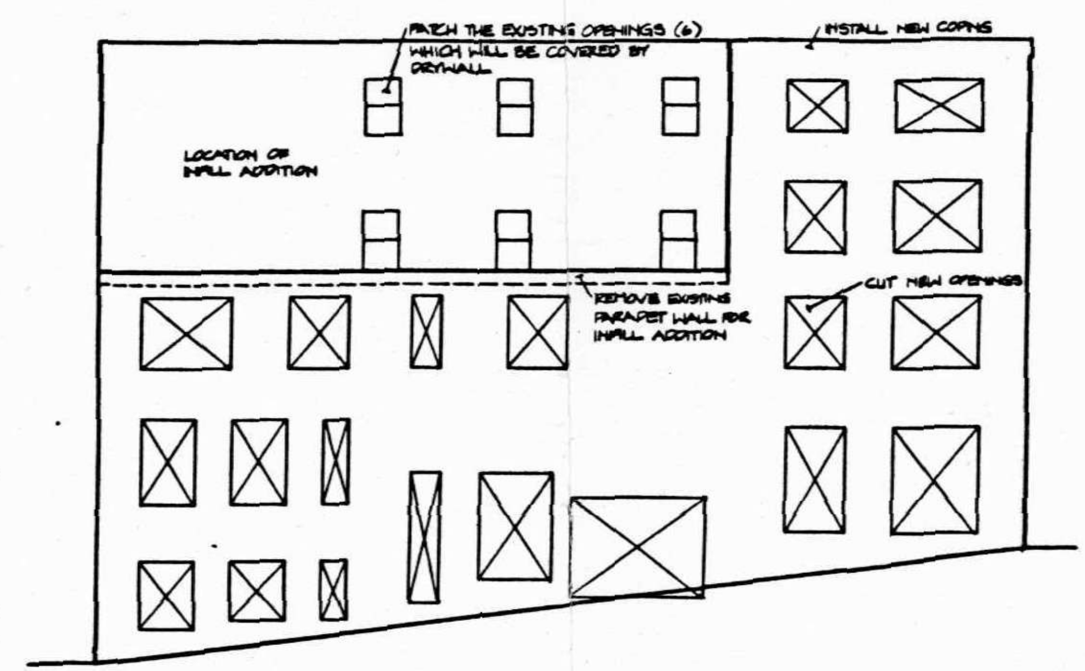



DEMOLITION ELEVATION

SOUTH ELEVATION .

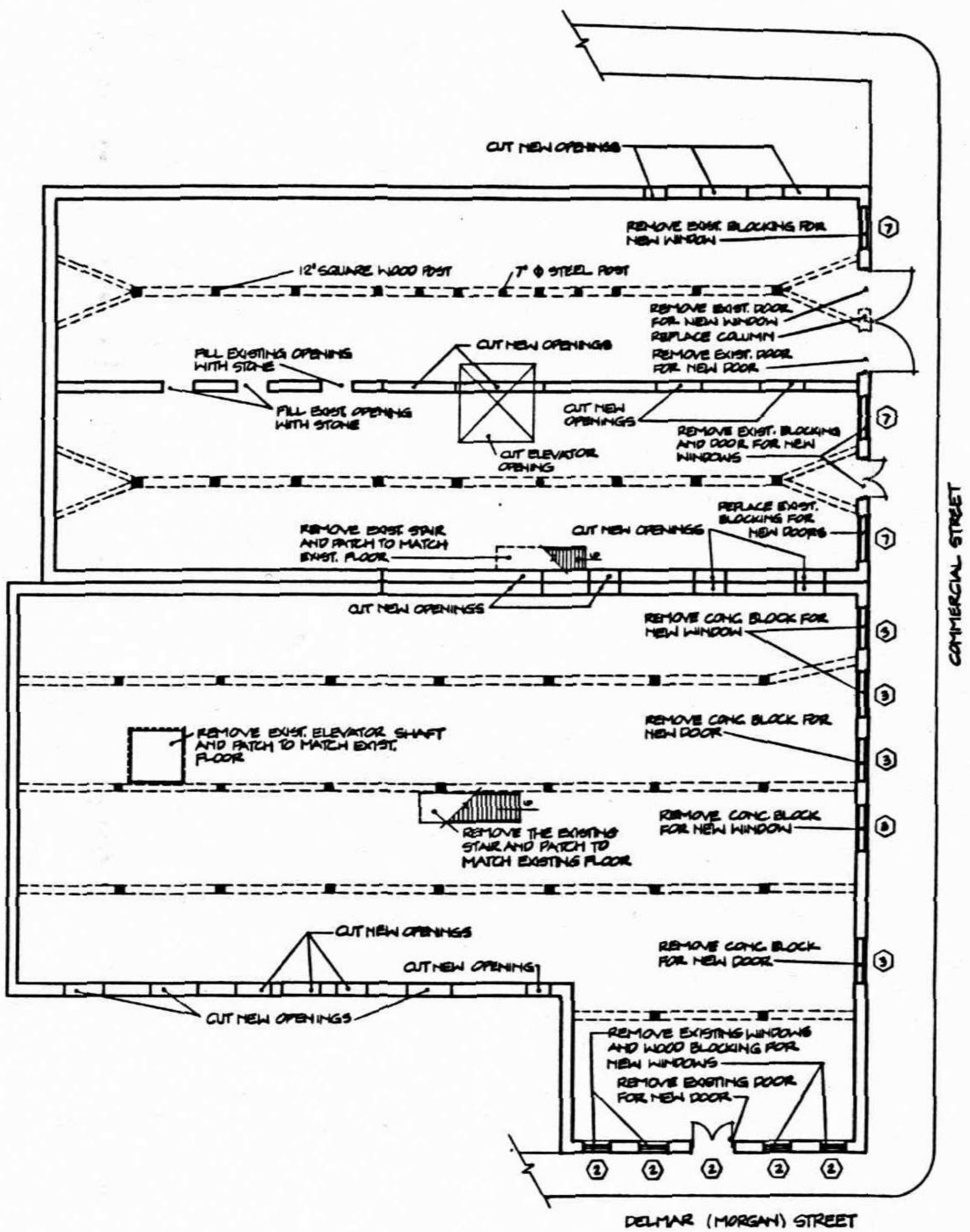

DEMOLITION ELEVATION

EAST ELEVATION



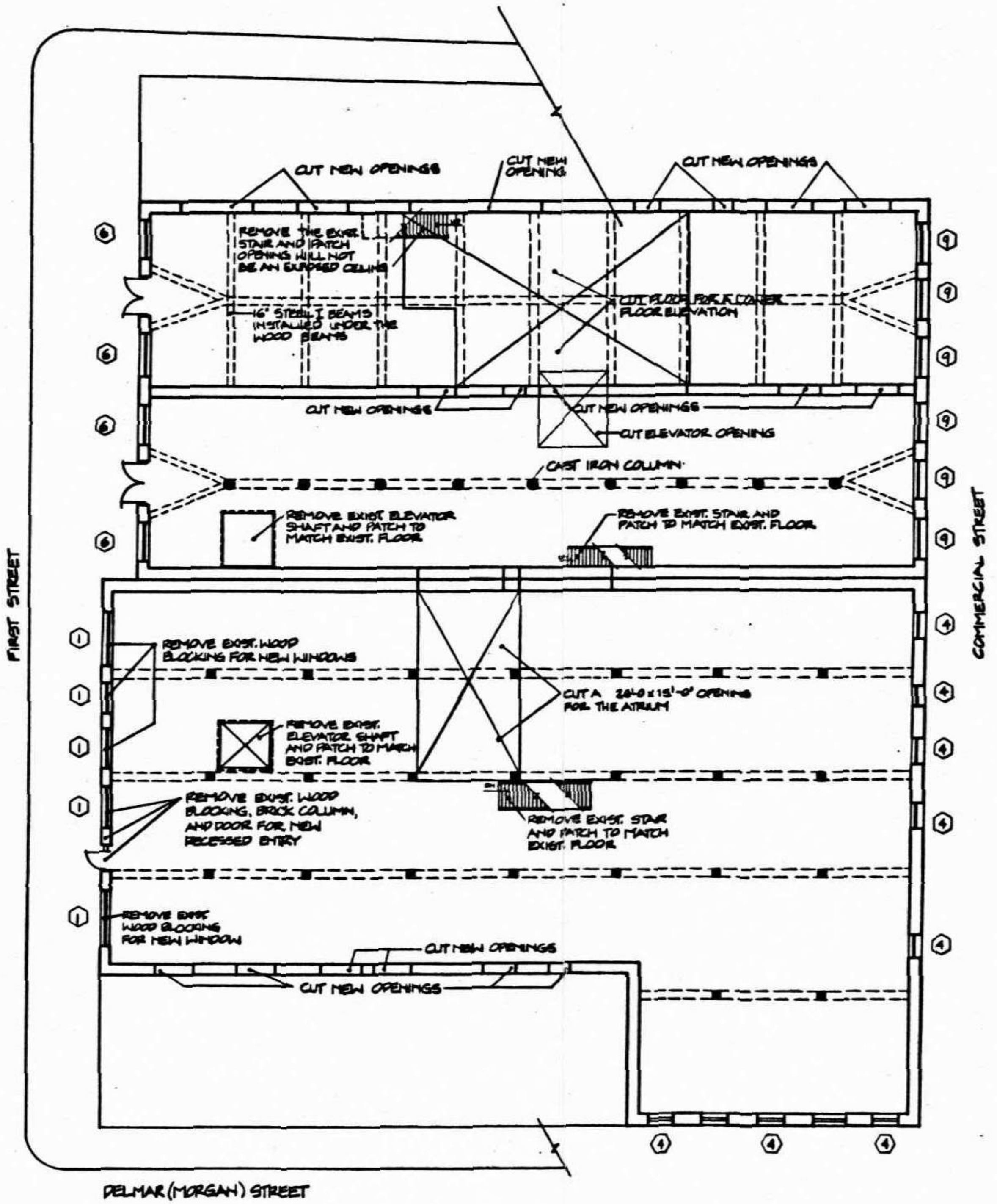

DEMOLITION ELEVATION

NORTH ELEVATION



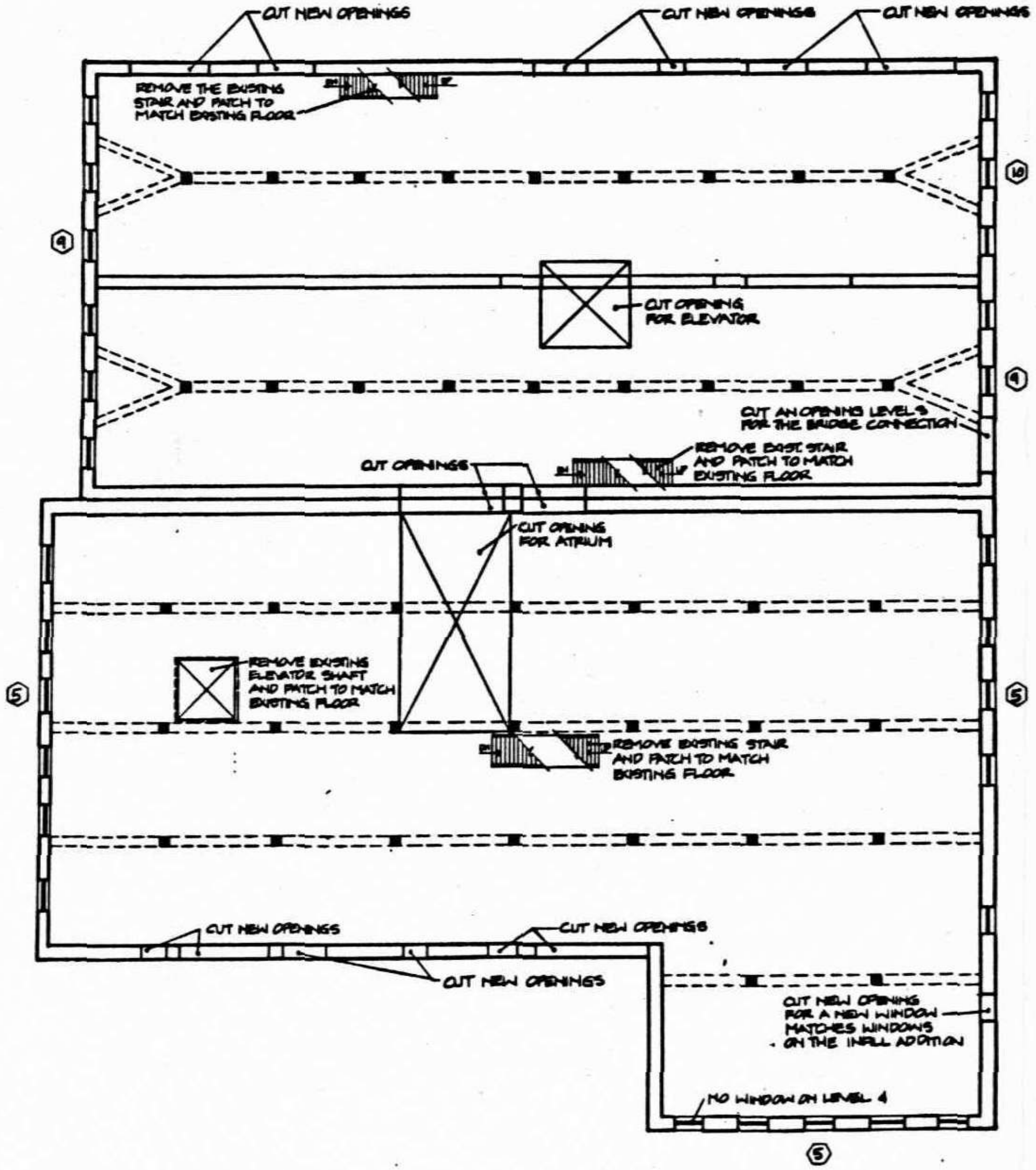

LEVEL ONE
SCALE 1/8"=1'-0

NOTES
1. FOUNDATION WALLS ARE STONE
2. WINDOW REPLACEMENT TYPES



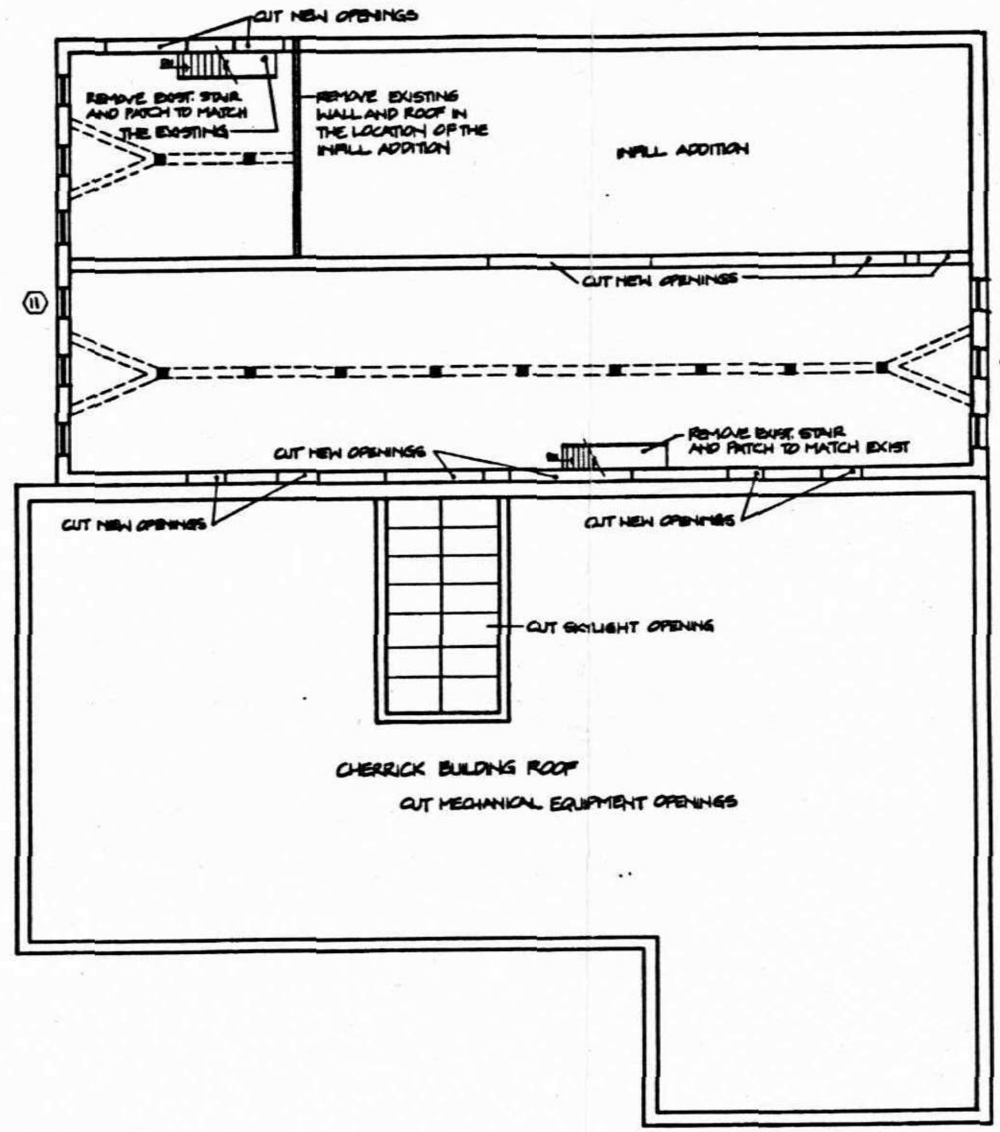

LEVEL TWO
SCALE 1/8"=1'-0"

NOTES
1. WINDOW REPLACEMENT TYPES




LEVEL THREE & FOUR
SCALE 1/8"=1'-0

NOTES
1. WINDOW REPLACEMENT TYPES




LEVEL FIVE
SCALE 1/8"=1'-0"

NOTES
1. WINDOW REPLACEMENT TYPES
2. BRONSON HIDE ROOF
CUT MECHANICAL EQUIPMENT OPENINGS
REBUILD AND REPAIR SOUTH PARAPET WALL AND WEST CORNICE

# PART II

# CHAPTER VII

## ANALYSIS OF EXISTING CONDITIONS AND RECOMMENDATION FOR RENOVATION AND ADAPTIVE USE

The text in this chapter is presented in list format to enable the reader to quickly identify the recommendations, the reason for the recommendation and the material and/or methods of repair or replacement. A numerical system has been devised for identification of the elevation and floor level referenced in the discussion. The numerical system corresponds to the labeled elevations and floor levels in Figures VII-1 and VII-2. The first letter and number represent the elevation and the second number indicates the floor level. For example, W-2:1 is west elevation #2: floor level #1. Refer to the Design Proposal Drawings Chapter VI for the new storefront for the cornice replacement, the infill additions to the existing buildings and the new infill building. Refer to the demolition plans and elevations to reference the recommendations and to locate window types. Appendix G is the paint schedule which is also referenced in the demolition elevations. The manufacturers materials specified in this chapter may be substituted with equivalent products.

### Description of Work - Priority List

The highest priority is to adequately stabilize the building structurally and to make the building weathertight. Of primary concern is the prevention of water penetration through the roof and parapet wall.

### EXTERIOR

1. Analyze the structural stability of the building and temporarily repair serious conditions.

WINDOW TYPES

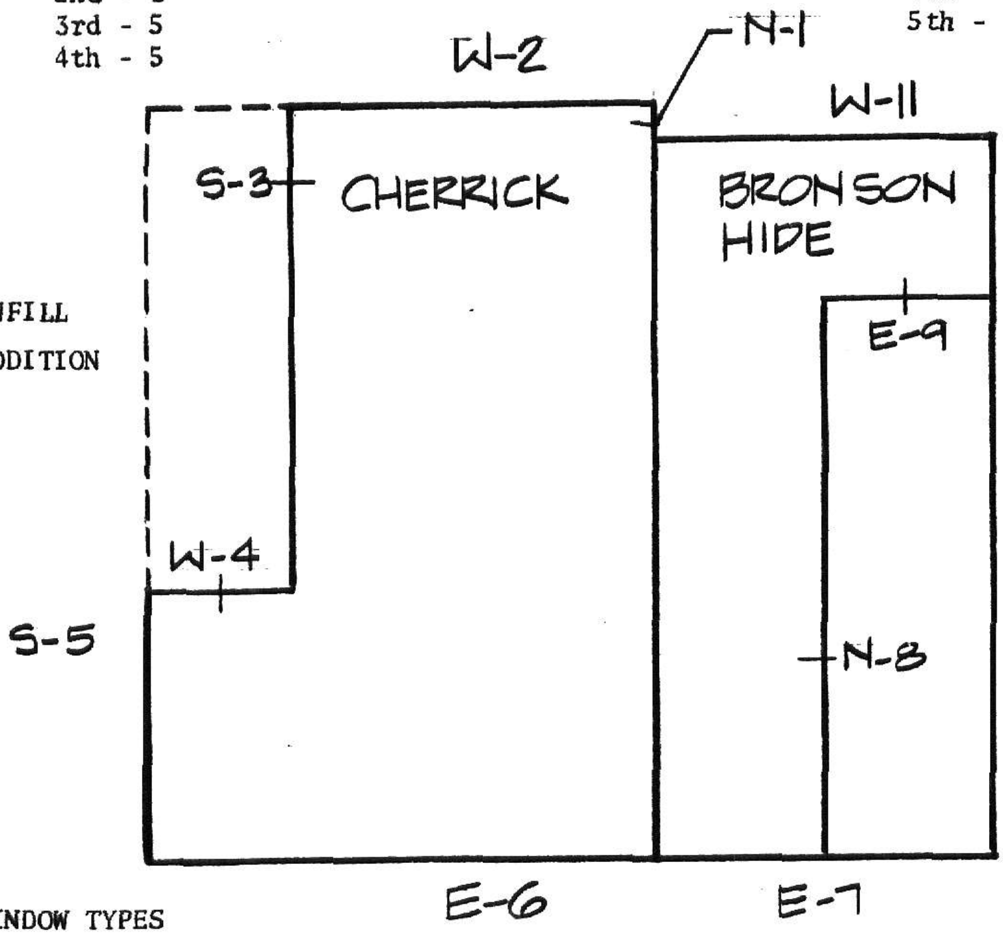
2nd - 1
3rd - 5
4th - 5

WINDOW TYPES

2nd - 6
3rd - 8
4th - 9
5th - 11

INFILL

ADDITION




INFILL

ADDITION

(Fourth and

fifth levels)

WINDOW TYPES

1st - 2
2nd - 4
3rd - 5
4th - 5

WINDOW TYPES

1st - 3
2nd - 4
3rd - 5
4th - 5

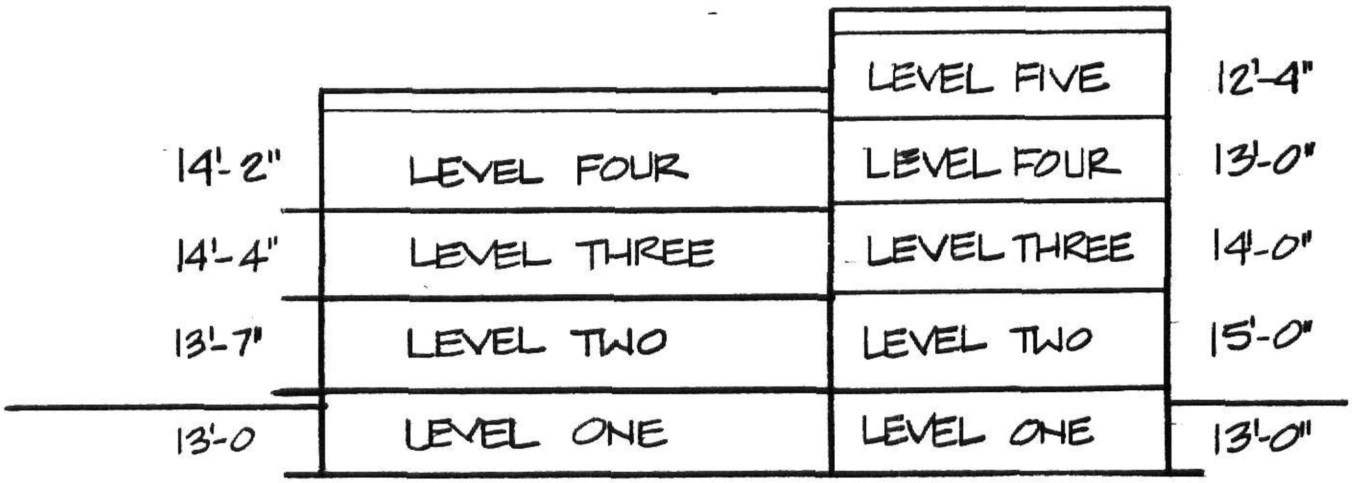
WINDOW TYPES

1st - 6
2nd - 7
3rd - 9-10
4th - 9
5th - 12

Figure VII-1

ELEVATION AND WINDOW

TYPE KEY PLAN




COMMERCIAL STREET ELEVATION

Figure VII-2. Key to Floor Levels

2. Make the buildings weathertight. Repair the roof, rainwater drainage systems, and additional sources of water penetration.
3. Clean the exterior masonry surfaces.
4. Repair, replace and repoint the masonry surfaces using bricks which match the existing material and using the same tooling style.
5. Remove the existing storefronts and all windows. Install new storefronts and windows as specified.
6. Paint the masonry surfaces as specified and all window frames.

Care should be taken in scheduling the renovation so that tasks which require scaffolding will be accomplished simultaneously.

INTERIOR

1. Clean the interior of the Bronson Hide Building, first and second levels.
2. Mark areas to be removed for new openings or surfaces which will not be exposed so that these areas are not cleaned and renovated.
3. Clean the existing masonry and wood surfaces to be exposed.
4. Repair and replace brick and wood framing members as necessary. All structural problems should be repaired or replaced.
5. Install all new mechanical and electrical systems.
6. Construct new stairs and install the elevator.
7. Install new gyp-crete flooring.
8. Install all new drywall partitions, interior storefront glazing, woodworking and cabinetry.

THE CHERRICK BUILDING: GENERAL CONDITIONS

The Cherrick Distributing Company Warehouse is generally in very good physical condition (Figures VII-3-14). The building is a masonry, load-bearing structure with interior wood beams, columns and flooring system. Examination indicated minor bowing of the south wall and differential settlement cracks at the window openings although not enough to cause structural damage. Water damage caused by a leaking common wall and roof is evident on areas of the north wall. The interior structural elements of the Cherrick Building are in very good physical condition. The interior spaces are empty and cleaned of debris. However, the existing stairs, elevator and approximately one third of the floor decking will need to be replaced.

The stairs and elevator are in deteriorated condition and are inappropriate for the proposed new use of the building. Portions of the floor decking have deteriorated, especially in locations adjacent to the walls where moisture from the walls penetrated the wood decking. Prolonged contact to dampness has allowed portions of the wood to be attacked by fungi, which deteriorates the wood cells and affects the strength of the wood.

All structural members should be examined for structural damage from fungus and insects. The roof and drainage systems will also need to be examined for deteriorated materials and leakage. The exterior and interior elements of the building need to be cleaned to remove built up layers of dirt which retains odors, harbors insects and retains moisture.

## THE CHERRICK BUILDING EXTERIOR CONDITIONS AND TYPICAL RECOMMENDATIONS

### MASONRY

Approximately forty years ago, the original red brick of the building was painted white. The building should be repainted white for the following reasons:

1. Removing the existing white paint would damage the protective glazing of the brick units.
2. The brick is soft and is spalling due to water penetration. Two coats of a water repellent masonry latex paint will aid in the resolution of the moisture problem.
3. A new coat of paint will improve the marketable appearance of the building from its present dirty, deteriorated condition.
4. The Cherrick warehouse is one of the few painted light colored buildings within the Laclede's Landing District and thus the color differentiation quickly identifies the Cherrick Building from the other red brick buildings. The white color also emphasizes the white details on the dark red Bronson Hide Building.

General cleaning and repointing procedures are delineated in Appendix E: Masonry. Specific instructions for the Cherrick Building follow:

1. Clean the brick walls, N-1, W-2, S-5 and E-6. Protect the stone walls from the brick cleaning procedure.

   If the cleaning procedure tested in several locations does not achieve the desired appearance and level of paint removal, then apply a diluted solution of a chemical paint stripper such as Sure Klean Heavy Duty Paint Stripper. The solution should be a sufficient concentration to remove loose paint residue without damaging the glazed brick surface.

2. Repair the masonry walls N-1, W-2, S-5 and E-6 by replacing all spalled, cracked or broken bricks to match the existing brick and repoint to match the existing tooling style. The masonry walls S-3 and W-4 will be enclosed and protected by the infill addition. Repoint walls S-3 and W-4.
3. The corbeled brick cornice and corbeled window lintels need to be repaired, replaced and repointed as necessary to match the existing appearance and proportions. There are signs of differential settlements along the corbeled lintels which should be analyzed and repaired (Figure VII-6).
4. Repair and replace as necessary the stone sills with the intent of protecting and maintaining the existing face of the sills. Carefully remove the deteriorated material without damaging the adjacent material which is in good condition.
5. After the building has been cleaned, tuckpointed and allowed to dry thoroughly, paint the building with two coats of white masonry latex paint. Do not paint walls S-3 and W-4.
6. The chemical paint stripper used on the brick walls should not be used to clean the stone walls (S-5 and E-6). The stone should be cleaned using soap and the low pressure water cleaning method discussed in Appendix F-1. Repair, replace and repoint the stone

facade areas to match the existing material and tuckpointing style.

WINDOWS

All existing windows should be replaced to provide higher thermal insulation than that which currently exists. New windows are also recommended in the residential locations to obtain a window with an integrated screen detail. Windows on all facades, levels one and two are discussed in the section of recommendations for the facade in which they occur (Refer to the demolition plans and elevations for window replacement types).

Window Type 5 Residential Windows - Levels 3-4

1. Replace existing windows W-2:3&4, S-5:3&4, and E-6:3&4 with the following new windows.

   The new windows should be constructed of 1/2" thick, clear double pane glass set in wood frames. Screens should be provided on the inside of the windows. The window detailing should match the existing frames, mullions, mutins and lites. The wood windows should be primed with an oil base primer. The window frame should be painted with a light grey latex paint. The window sash, mutins and mullions should be painted with a shade darker grey latex paint (Appendix G: Paint Schedule).

ROOF AND DRAINAGE SYSTEM

The roof needs to be replaced to prevent further structural damage to the interior and exterior building elements. Prior to replacing the roof of the Cherrick Building, the roof of the Bronson Hide Building must be repaired. The water is draining off the Bronson Hide Building down the south wall onto the roof of the Cherrick Building and continuing down the adjoining center wall of the two buildings. This water penetration is staining the interior wood, creating conditions for fungus growth in the framing members and is causing structural deformation in both adjoining masonry walls.

The original cornice coping appears to have deteriorated or to have been removed (Figure VII-7). The coping needs to be replaced and properly flashed along the parapet wall. The rainwater drainage systems, including the gutters, downspouts and leaders, should be removed and replaced with a roof drain system during the installation of a new roof. The new roof should be a built-up roof with additional insulation. The areas surrounding the current rain water drainage system should be examined for water damage resulting from leaks in the system.

NORTH ELEVATION (N-1)

Five-foot brick elevation connecting to the Bronson Hide west elevation.

N-1 Recommendations

1. Clean the masonry surfaces.
2. Repair, replace and repoint the brick as necessary.
3. Install a new concrete coping after repairing the parapet wall and roof. Repair, replace and repoint the corbeled brick cornice as necessary.
4. Paint the brick with a masonry latex paint.

WEST ELEVATION (W-2)

The foundation wall is below grade at the first level and is discussed in the analysis of the interior condition section. The original warehouse storefront has been altered and no pictorial documentation of the facades has been discovered. The existing storefront consists of boarded openings and a single door. The design recommendation is to replace the existing transom windows and doors with contemporary design and materials. The materials will be grey-tinted glazing and black anodized aluminum frames. The contemporary details will replace the location and proportions of the transom window, the frames, the mullions, the mutins and the lites of the building period. The contemporary materials have been chosen to allow the designed replacement to represent the period details while obviously not being the original storefront. These materials were also chosen to unify the storefronts of the buildings through the use of the same materials (Figures VII-3 and VII-4). (Refer to the Design Proposals, Chapter VI.)

The removal of the loading dock guards has exposed chipped and broken brick units. The exposure of these bricks has revealed the original red masonry color of the building (Figure VII-4). The masonry columns should have broken or spalled bricks repaired or replaced and the columns should be tuckpointed.

A metal canopy, which was not original, has been removed from the building. The attachment location of this canopy should be analyzed for any evidence of earlier canopy treatments. The bricks located in the area of the canopy which have been damaged should be replaced to match the existing brick and repointed in the same tooling style (Figures VII-5 and VII-6).

W-2 Recommendations (Figures VII-3-6)

1. Clean the masonry elevation.
2. Repair, replace and repoint the brick as necessary.
3. Paint the masonry elevation with two coats of a white masonry latex paint.

W-2:1

The foundation wall is below grade.

W-2:2

First Street storefront entrance.

4. Remove the boarding materials from the openings and remove the existing transom windows prior to masonry cleaning and repointing.
5. Examine the location where the metal canopy was removed for any evidence of earlier canopy treatments. The bricks damaged in the area of the canopy should be replaced to match the existing brick and repointed in the same tooling style.
6. Repair or replace broken or spalled bricks and in the same style, tuckpoint the masonry columns.
7. Replace the storefront with a new storefront of contemporary design. (Refer to design proposal Chapter VI.) Window Type 1: grey-tinted glazing, black anodized aluminum frames, detailed to match frame, mullion, mutin, and lite proportions of the period.

W-2:3&4

8. Repair, replace and repoint the corbeled window lintels as necessary.

9. Repair and replace as necessary the stone sills.
10. Replace windows on W-2:3 and 4 with Window Type 5 discussed in Window section and illustrated in demolition plans.
11. Install a new concrete coping along the top of the wall after repairing the parapet wall and roof. Repair, replace and repoint the corbeled brick cornice as necessary.

SOUTH (S-3) and WEST (W-4) ELEVATION (Figure VII-8)

These facades will be enclosed and drywalled within the infill addition. The only necessary repair will be structural stabilization of the two walls. The south wall bows out and should be examined for structural stability. Figure VII-8 provides visual evidence of an earlier building occupying the present open space: note the ghost of beam pockets and the spalling of brick. The wall original was a common wall constructed of a soft brick because of its previous protection on both sides.

S-3 and W-4 Recommendations

1. Examine the walls for structural damage and repair as necessary.
2. Correct the moisture problems of the roof and parapet wall in these locations to prevent water penetration of the walls.

SOUTH (S-5) ELEVATION (Figure VII-9) Commercial Street and Morgan (Delmar) Street

The spalling brick and peeling paint is evidence of the moisture problems of the roof, parapet wall and rain water drainage systems which need immediate attention.

S-5 Recommendations

1. Remove the wood blocking from the lower level windows (Level 1).
2. Clean the brick surfaces and protect the stone surfaces during the cleaning procedure.
3. Clean the stone surfaces.
4. Repair, replace and repoint the brick and stone surface to match the existing materials and tooling styles.
5. Repair and replace the stone sills as necessary.
6. Install new windows.
7. Paint the brick with two coats of white masonry paint.

S-5:1

8. Window Type 2. Install a new door and windows which are similar in design and proportion to the existing door and windows. The materials will be a grey-tinted glazing and black anodized aluminum.

S-5:2

9. Window Type 4. Install new windows of the same design and materials as Window Type 5 except replace the clear glazing with a grey-tinted glazing.

   The grey-tinted glazing is used to reduce solar ray emmitance into the retail spaces which causes glare and fading of merchandise.

S-5:3 and 4

10. Install new windows: Window Type 5.
11. Install a new concrete coping along the top of the wall after repairing the parapet wall and roof.

EAST ELEVATION (E-6) (Figure VII-10) Commercial Street

E-6 Recommendations

1. Remove the concrete blocking material from the original window and door openings.
2. Remove all rainwater drainage systems including gutters, downspouts and leaders. Repair attachment locations to match the brick and to prevent water penetration during the cleaning process.
3. Clean the brick surfaces and protect the stone surfaces from the brick cleaning procedures.
4. Clean the stone surfaces.
5. Repair, replace and repoint the brick and stone surfaces to match the existing materials and tooling styles.
6. Repair and replace the stone sills as necessary.
7. Install new windows.
8. Paint the brick with two coats of white masonry paint.

E-6:1

9. Window Type 3. Install new doors and windows with proportions similar to the Storefront Window Type 1 and Window Type 2. (Refer to design proposals Chapter VI.) The materials of Window Type 3 are grey-tinted glazing and black anodized aluminum frames.

E-6:2

10. Install new windows: Window Type 4.

E-6:3 and 4

11. Install new windows: Window Type 5.

12. Install a new concrete coping along the top of the wall after repairing the parapet wall, rainwater drainage system attachment systems and roof.

## CHERRICK BUILDING - INTERIOR CONDITIONS AND TYPICAL RECOMMENDATIONS

(Figures VII-11-14)

### Preparation for New Construction

Carefully mark areas to be removed, those not exposed in the final construction, and new openings to be cut out, so that those areas are not cleaned and restored. Such areas include teh location of the cut-out atrium, the opening connection cut to the Bronson Hide Building, those walls to be covered with drywall, and new drywall partition locations. (Refer to the demolition plans and the design proposal Chapter VI.) Remove the existing stairs and elevator. Repair and patch the openings to match the existing construction with new wood members or reuse the cut-out members that are in good condition.

### THE EXPOSED CEILING AND COLUMNS

The wood columns, beams, floor joists, bracing and underside of the floor decking will be exposed on all floors. The mechanical systems will be exposed within the ceiling joists. Currently the wood framing members are covered with several layers of paint and some have been stained by water penetration (Figures VII-11-14). (Refer to Appendix F for Cleaning Wood and Paint Removal Methods.)

### FLOOR DECKING

The wood floor decking should be replaced as necessary to achieve structural stability. Deteriorated floor decking occurs particularly adjacent to the masonry walls where moisture has penetrated the wood. Apply Gyp-crete, a light weight concrete, to the floor decking. Gyp-crete is a floor covering material which is fire rated and levels the floor in preparation for carpeting or tile installation.

INTERIOR BRICK WALLS

The brick walls will be exposed on levels 2, 3 and 4. The brick walls should be cleaned with a bristle brush and a diluted solution of paint stripper, such as Sure Klean Heavy Duty Paint Stripper, of sufficient concentration to remove the existing paint. Test patches in several locations should be evaluated to determine the necessary concentration. The interior brick may be softer than the exterior brick, therefore requiring a gentler cleaning treatment. Sandblasting is not recommended because a sealer would have to be applied to prevent the mortar and brick from "dusting." This chemical sealer may change the color of the brick. Sandblasting will also greatly change the texture of the brick while an appropriate diluted chemical paint stripper will not. Any structural problems should be repaired and repointed as necessary. The new mortar mix should match the color, strength and tooling of the existing mortar. Refer to Figures VII-12-14 for masonry conditions.

LEVEL ONE (Figure VII-11) Commercial Street Entry (Retail Use)

1. Examine the stone foundation walls for water penetration and structural settlement. Repoint the stone walls as necessary to

prepare the surface to receive a vapor barrier and insulation for a new drywall.

2. Examine the wood beams, columns, and flooring system for structural damage and repair or replace as necessary. The first column in the southwest corner should be carefully examined for structural stability because a fire may have occurred in this location.
3. Clean and finish the exposed wood ceiling framing members and wood columns.
4. The existing concrete floor appears to be in good condition. The floor should be carefully examined particularly for waterproofness. Additional water and sewer systems may necessitate the removal of the current floor and installation of a new concrete floor.

<u>LEVEL TWO</u> First Street Entry (Retail Use)

1. Examine all wood columns, beams and flooring system for structural deterioration. Clean and finish these wood members.
2. Clean the masonry walls of paint.
3. Remove the concrete pad located on top of the floor surface in the northeast corner of the second level. Repair and replace the flooring system as necessary.
4. Repair and replace the floor decking as necessary and install the Gyp-crete floor.

<u>LEVELS THREE AND FOUR</u>

1. Examine all wood columns, beams and flooring system for structural deterioration. Clean and finish these wood members.

2. Clean the masonry walls of paint.
3. Repair and replace the floor decking as necessary and install the Gyp-crete floor.

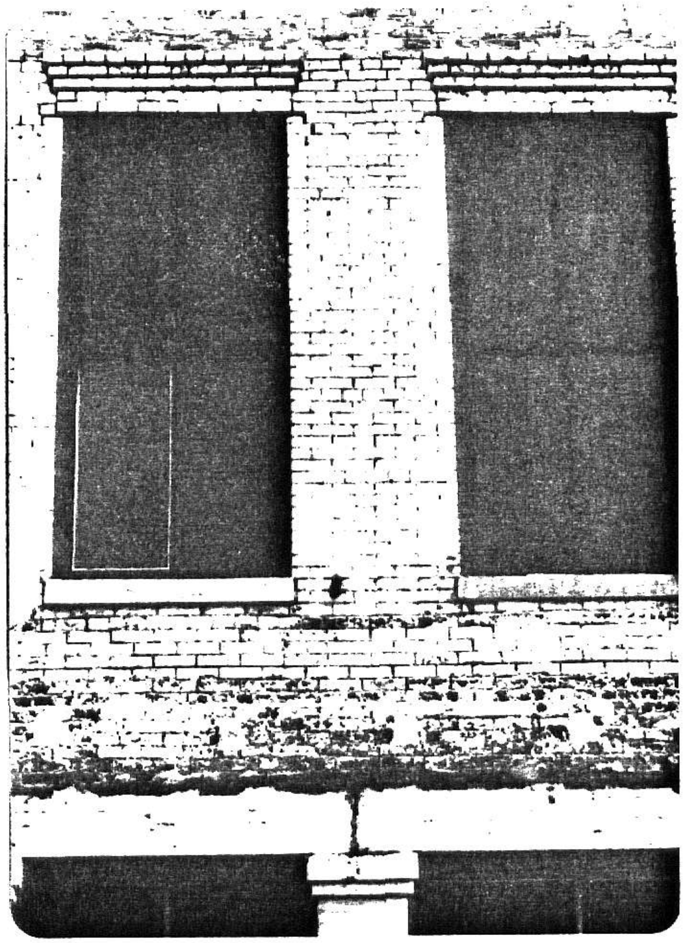

Figure VII-3. West Elevation


Canopy
Attachment

Loading Dock
Guards Removed

Figure VII-4. West Elevation
Storefront Facade


Figure VII-5. West Elevation
Canopy Prior to Removal



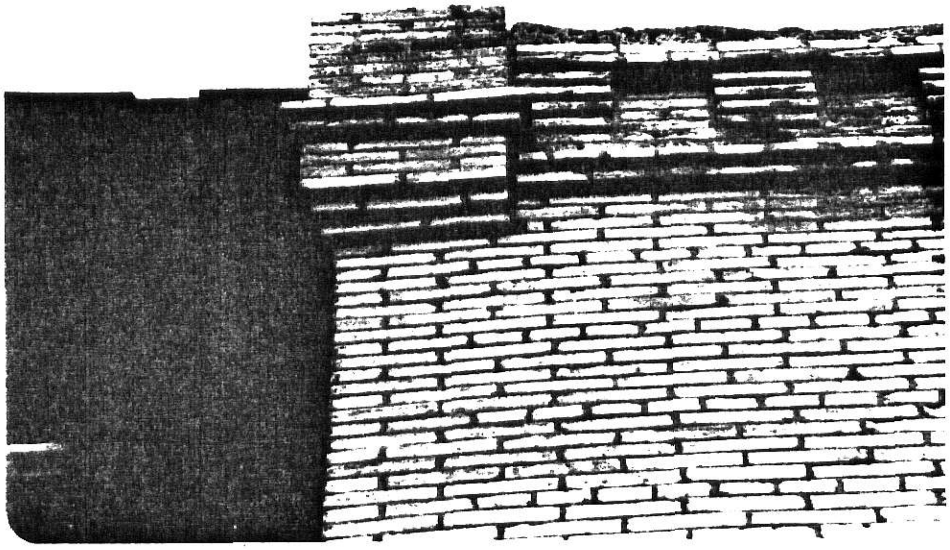
Structural
Stress Cracks
and
Settlements

Stone Sill Deterioration

Spalling Brick

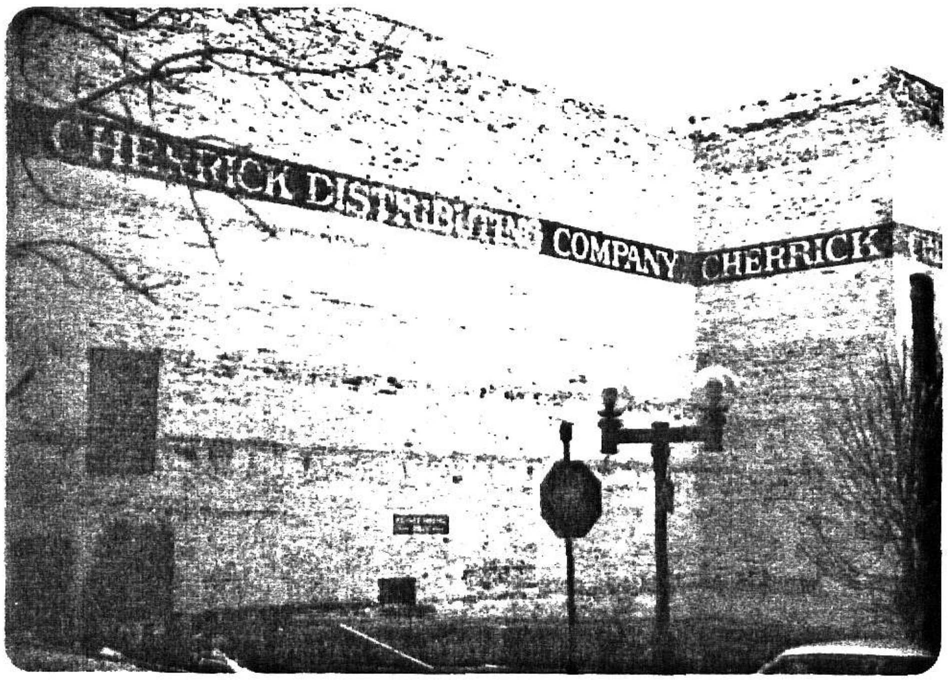
Canopy Attachment

Figure VII-6. West Elevation



Spalling

Figure VII-7. West Elevation
Brick Corbeled Cornice




Spalling

Beam Pocket
Ghost

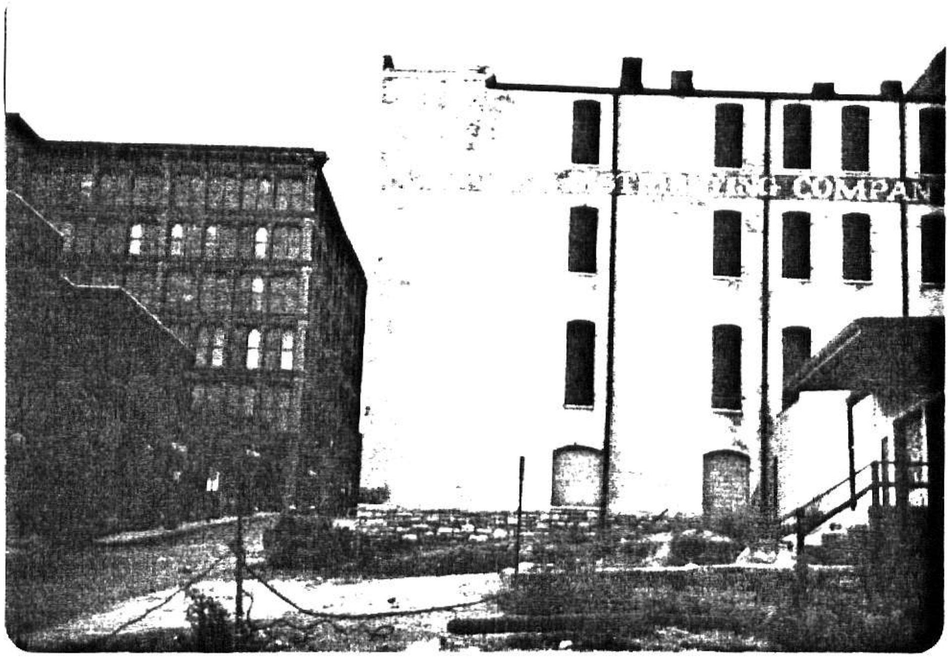
Figure VII-8. South and West Elevation
Evidence of Building Located on Vacant Site

Spalling Brick

Broken Windows

Boarded Openings

Figure VII-9. South Elevation

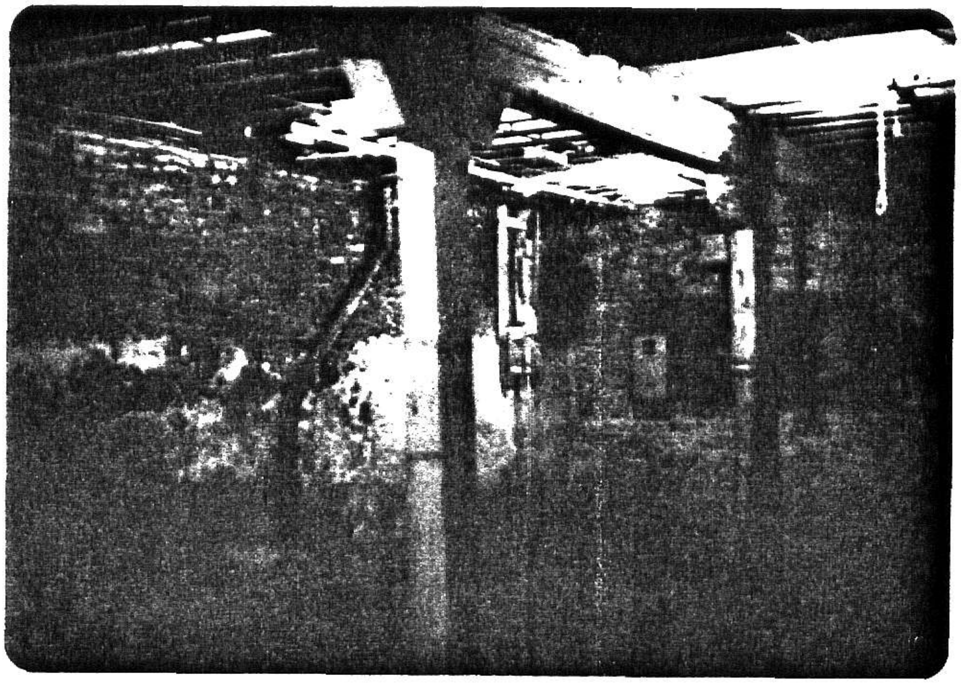



Downspout Locations

Blocked Openings

New Windows Added

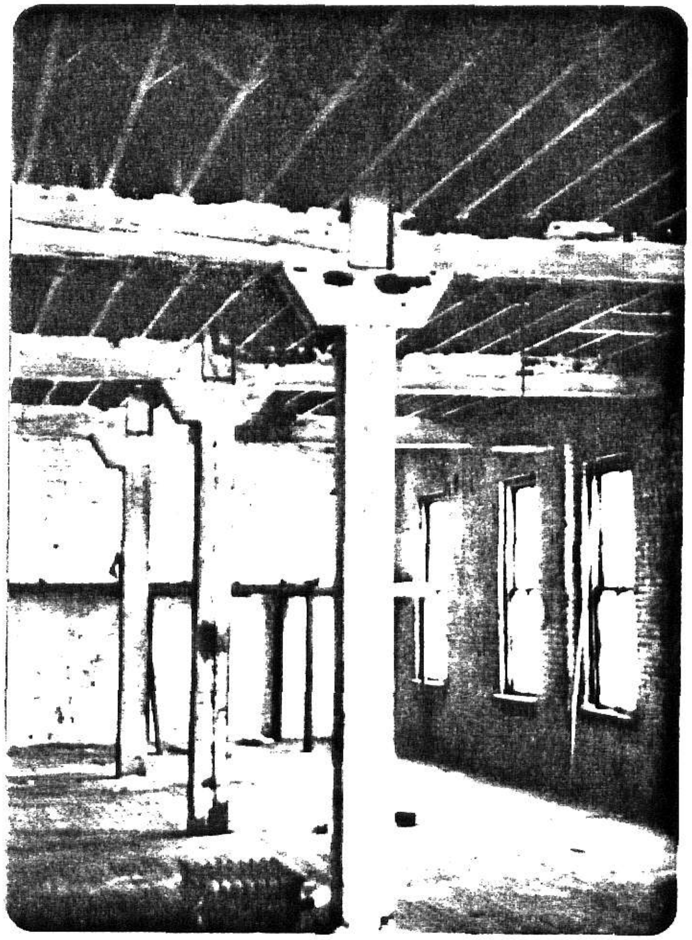
Figure VII-10. East Elevation



Condition of Stone Wall Construction Prevents Exposure

Beam Charred and Stained Due to Fire

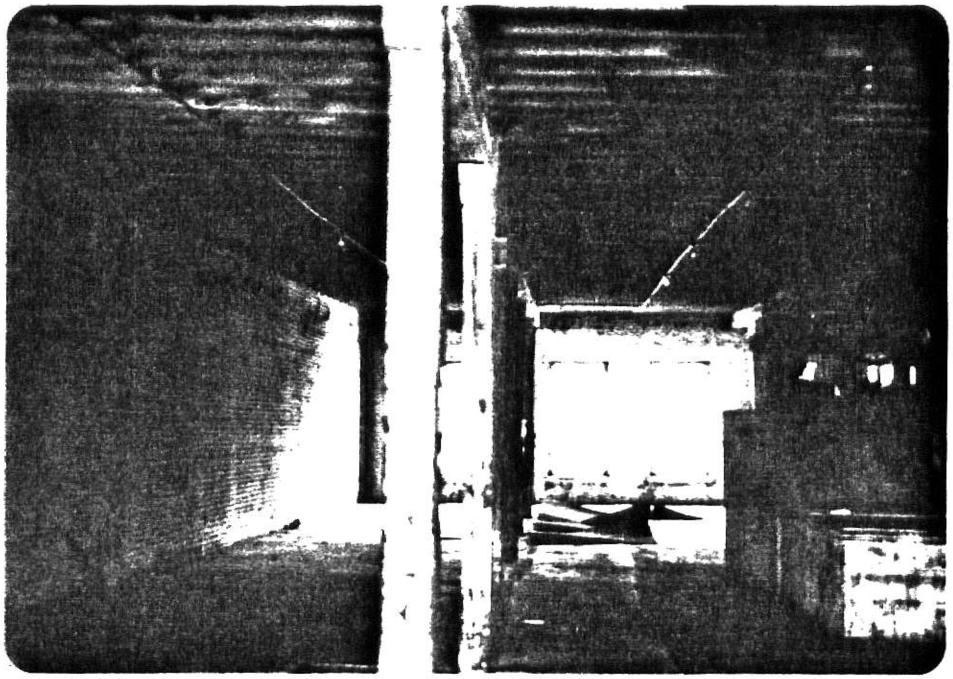
Figure VII-11. Level One - Southwest Corner



Wood Framing Members to be Cleaned and Exposed

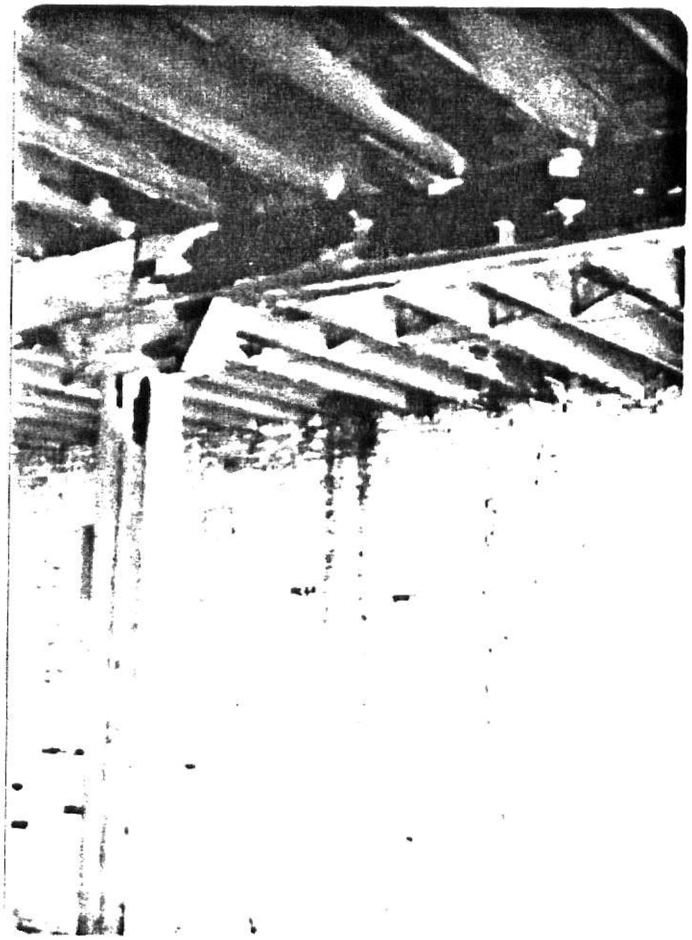
Brick Walls to be Cleaned and Exposed

Figure VII-12. Level Two - East Wall



Staining on Wood Framing Materials

Figure VII-13



Framing Members

Water Staining Brick and Structural Stress

Figure VII-14

## THE BRONSON HIDE BUILDING: GENERAL CONDITIONS

The Bronson Hide Warehouse is generally in poor physical condition (Figures VII-15-33). The warehouse is a masonry load-bearing structure of brick, six bays wide with stone trim and cast iron ornamentation. The structure has an interior masonry load-bearing wall dividing the building from west-east at the center. The interior structural components are typically wood framing members: joist, beams and columns. Exceptions to the wood framing members include steel I-beams replacing wood beams and columns on the northern half of the second level and cast iron columns replacing wood columns on the southern half of the second level. The eastern portion of the second level on both sides of the interior masonry wall have had interior concrete walls, ceilings and floors constructed over the original surfaces to create workrooms.

The interior structural elements of the Bronson Hide Building are in fair physical condition. The interior spaces are currently partially occupied by the hide curing company. However, the existing stairs, elevator, and approximately one third of the floor decking will need to be replaced. The existing stairs and elevator are in deteriorated condition and have no historical or architectural significance. Portions of the floor decking have deteriorated, especially in locations adjacent to the walls where moisture from the walls penetrated the wood decking. Prolonged contact with dampness have allowed portions of the wood to be attacked by fungi which deteriorates the wood cells and affects the strength of the wood. All structural members should be analyzed for structural problems, especially those members which are water stained.

The first level (basement) and second level are currently being used by a hide curing company. These areas need to be specially cleaned to remove accumulated salt, chemicals, and blood from the interior surfaces and to also remove the odors which accompany the curing process. A tornado, reportedly removed the fourth and fifth levels of the building on the northern half of the structure. As a result of improper repair of the area damaged by the tornado, wood framing members in the surrounding area have been damaged and stained by water penetration. The east replacement wall and roofing over the northern half of the third level will need to be removed for the construction of the infill addition.

The exterior and interior elements of the building will need to be cleaned. The roof and drainage systems will also need to be examined for deteriorated materials and leakage. All of the windows will need to be replaced and the window rope molding will need to be repaired. A large percentage of the window openings have been boarded up or have temporary window repairs. The ornamental metal window railing has deteriorated and will need to be replaced.

## THE BRONSON HIDE BUILDING EXTERIOR CONDITIONS AND TYPICAL RECOMMENDATIONS

### MASONRY

General cleaning and repointing procedures are delineated in Appendix E: Masonry. Specific instructions for the Bronson Hide Building follow:

1. Attention must be given to the selection of appropriate cleaning pressures. A very low pressure water cleaning method should be used and the pressures should be tested. These tests should be evaluated over a period of time for the effects of weather. One objective for the Bronson Hide Building is to clean the elevation of discoloring dirt accumulation and to improve the

appearance of the brick detailing, rather than to create the appearance of being new. The gentlest method of cleaning should always be used, even if a second cleaning application is required. Special attention should be given to the effects of the cleaning methods on various materials which comprise the elevation, for example the stone detailing and the cast iron columns.

2. The stone quoins on the first and second level should be carefully non-abrasively cleaned using a low pressure water method to remove the paint. If the paint is not removed a very diluted solution of chemical stripper such as Sure Klean Heavy Duty Paint Stripper may be used. The natural exposure of the stone is desired. However, these quoins may be repainted, especially if the paint can not be removed without damaging the stone.

3. Repair, replace and repoint the masonry as necessary. Remove spalling brick and replace it with brick that matches the existing brick material. The bricks removed from the north elevations may be used as replacement bricks if they match the existing. It is very difficult to match old bricks with new standard bricks both in color and size. New bricks may have to be specially manufactured to reproduce the same brick as the existing. The quality of brick detailing in the Bronson Hide Building is worth the additional reconstruction expense to produce a matching brick.

The original cornice has been removed and replaced with a simple brick cornice. The original cornice may have been destroyed by the tornado. The brick work immediately above the missing horizontal cornice band shows extensive spalling (Figure VII-17). Both the extensive spalling and the bulging along the south parapet wall indicate the immediate repair or replacement of the roof and rainwater drainage systems (Figure VII-18). To repair the extensive spalling, the missing cornice and the bulging parapet wall, the masonry walls in these locations need to be removed and reconstructed (the west (W-11) and the south walls).

4. Examine and evaluate the condition of all stone ornamentation on the west elevation (W-11) and all of the stone sills. A few pieces of the stone ornamentation have severely deteriorated and are missing large portions of the original detail (Figure VII-19). Some of the stone sills display minor cracking and spalling while others have lost their entire face due to cracking along the bedding plane. An analysis of the existing condition and a cost analysis should provide a basis for deciding on the means of repair. The stone details may be patched and painted to match their original configuration or the deteriorated detail may be removed and replaced with the same material or an alternate material. The cost analysis should be based on the type of material, the means of attachment and the quantitative extent of the repairs. Examination of the deteriorated stone details may reveal an inappropriate construction detail or improper maintenance which may allow moisture penetration. Such construction details should be corrected prior to new

material installation. It may be possible, following careful investigation to patch and resculpture the necessary stone ornamentation in place and paint it to match the existing stone work. These stone details may have been painted previously and this should be determined during the examination of the condition of the ornament.

5. Following the Redevelopment Corporation's plan for Laclede's Landing, the three level building adjacent to the north wall of the building will be removed for the construction of a new street, thus leaving the previously protected wall (north) exposed to weathering. The historical survey plat plans located at the Pitzman Survey and Engineering Company, St. Louis, indicate the Bronson Hide Building was constructed prior to adjacent construction of the north building. This would indicate that the existing north facade was constructed out of hard masonry intended for exposure versus the soft brick usually used for a common wall.

The north wall at both the first and second levels has not been penetrated to connect the Bronson Hide Building to the adjacent building which is also used by the firm. Additional historical information from old photographs and the survey plot plans reveals a larger building was previously constructed adjacent to the north facade (Figure VII-34). Careful consideration should be given to cleaning methods used on the north elevation following the removal of the present building and exposure of the north facade. There may be damage to the facade resulting from recent and previous building attachments. The masonry should be repaired, replaced and/or repointed as necessary along the north facade to match the original conditions. Perform a brick analysis to determine the hardness of the north facade brick to determine if there will be possible future damage due to its composition. If the masonry is soft and porous a water repellent coating may be needed. However, it is not recommended unless necessary. This water repellent coating may be a latex paint which allows the bricks to breathe and prevents entrapment of moisture within the brick. Painting the north facade may also be needed to improve the walls' appearance due to building attachment scars. If the scars are minor, they will be left exposed to reveal previous attachment to another building.

6. The masonry cleaning of the Bronson Hide Building should remove only the necessary dirt and should not create the appearance of a new building. Excessive cleaning will reveal earlier brick patching, particularly evident on the east and north facade walls resulting from previous storm damage (Figure VII-20).
7. All painted signs should be removed from masonry using gentlest cleaning procedures (Figure VII-21). The signs being removed are not significant historical advertisements, such as the Bronson Hide sign above the second level entry.

WINDOWS

The aesthetic appearance of the west elevation of the Bronson Hide will be preserved. However, the deteriorated details will be replaced with ones of more efficient and contemporary design. The approach will be taken because of the building's architectural value to the Laclede's Landing District. Despite careful research, photographic documentation of the west facade has not been located. Various details are missing and there is little (if any) evidence of their former appearance. Thus accurate restoration is impossible. Therefore these details should be replaced with contemporary materials of compatible design. One of the most important questions in the restoration of the west and east elevations is selection of an appropriate window replacement. The strength of the composition is the critical design factor.

The building is very symmetrically designed on the exterior and interior. A load-bearing masonry wall runs west to east at the center of the building dividing it into two separate interior spaces. A popular hypothesis for this occurrence is that two businessmen decided to construct a building with two separate interior spaces. The existence of two interior stairs, one for each half of the building aids in confirming the ownership assumption. The critical question, however, is did each owner decide to articulate his window fenestration in a manner different from the other. Without accurate photographic documentation or additional sources of information this question can not be answered. The current window condition on the third level is a very decorative window treatment on the southern half of the facade, and boarded window openings suggesting a different window form on the north half of the facade (Figure VII-15). The existing decorative windows on the southern half also can not be confirmed as the original window treatment. The east elevation (Commercial Street) also illustrates different treatments on each half of the building. The window fenestration on the east elevation has also been altered. The original north upper level may have been destroyed by either the earlier mentioned tornado and/or a more recent explosion behind the building which has also destroyed a number of the windows. The decorative window treatments should be used on the north and south halves of the building to preserve the symmetrical design and decorative elements of the building. An alternative solution which expresses the building as two halves would be to replace the northern windows with contemporary windows and retain the decorative windows on the southern half of the facade. This approach would divide the building and reduce the strength of its symmetrical design. The second alternative is more correct from a re-creation approach because it does not recreate details which are documented as the original, and does not install them in a location where they may never have existed.

In compliance to the originally stated design goal of replacing window fenestration to obtain a symmetrical building, the french doors should continue across the third level for a total of six windows. The french door detail occurs only on the west elevation (W-11). The existing wood frame french doors open in to the building. The ornamental balcony railing detail does not permit these doors to be open to the exterior. The design recommendation is to construct new wood french doors/windows with a stationary panel to slightly above rail height and with slightly larger door frame to allow the door to open to the exterior of the building without damaging stone detailing and open above the balcony rails.

<u>WINDOW TYPE 8</u> Residential Windows - Level Two (W-11)

1. Construct a new wood window with a stationary panel so that

the window resembles the existing french door. The stationary wood panel should be slightly higher than the rail height and the window frame should be slightly larger to allow the window to open to the exterior without damaging the stone detailing and open above the balcony rail.

2. The alteration in the french door construction is proposed to retain the exterior visual quality of the door. A screen application to the exterior would be necessary to open the doors to the interior. The interior wood screens should be designed in wood frames to provide an appearance of integration with the new window.

<u>WINDOW TYPE 9</u> W-11:4, E-6:3-4

The windows on the fourth level are metal set directly on the stone lintels. The unique feature of this window is that the center glazing panel is hinged and opens to the exterior.

1. A new metal window should be constructed to match the existing window proportions and details. The arched portion of the window is designed as a fixed insulated transom.
2. The lower portion of the window is a 1/2" thick clear double pane insulated glass, metal casement window with an integrated interior screen.

   This window detail will also be the replacement for the majority of windows on the east elevation.
3. The wood rope molding should be repaired and replaced as necessary for all windows on the front elevation: levels four and five; on the east elevation levels two, three, four and five.

WINDOW TYPE 11 Residential Windows (W-11:5)

1. A new wood arched window should be constructed to replace the twelve existing windows with a 1/2" thick clear double pane insulated glass casement window with integrated screens. The casement window should have three mutin division to resemble the existing proportions.
2. The wood rope molding should be repaired and replaced as necessary for all windows on the W-11:5.

ROOF AND DRAINAGE SYSTEM

The roof needs to be replaced to prevent further structural damage to the interior and exterior building elements. The water penetration of the west elevation is creating extensive spalling of the cornice. The water is penetrating the south wall and is causing it to bulge out. The water which is penetrating the south wall is damaging both the Cherrick and Bronson Hide Buildings by continuing down the adjoining center wall. This water penetration is staining the interior wood, creating conditions for fungus growth in the framing members and is causing structural deformation in both adjoining walls.

The west elevation parapet wall and cornice will be rebuilt. The south bulging wall will also be rebuilt. The cornice coping should be replaced and the parapet wall should be repaired and properly flashed along all elevations. The rainwater drainage systems including the gutters, downspouts and leaders should be removed and replaced with a roof drain system during the installation of a new roof. The new roof should be a built up roof with additional insulation. The areas surrounding the current rainwater drainage system should be examined for water damage resulting from leaks in the system.

WEST ELEVATION (W-11) (Figures VII-15-17, 19, 21-23)

The original warehouse storefront has been altered several times and no pictorial documentation of the original storefront has been located. The design recommendation is to replace the existing transom, windows and doors with contemporary design and materials of grey-tinted glass and black anodized aluminum frame. The new storefront design should be different than the Cherrick, to represent its own proportions, while similar design details and materials unite the two buildings along the street. The use of similar details allows the two buildings to read as a unified development.

The cast iron columns should be cleaned with a wire brush or with a low pressure (20 to 100 psi) sandblasting at a range of 3 to 12 inches with a fine mesh grit to remove the layers of paint, rust and corrosion. Extreme care should be taken to retain the ornate detailing of the column capitols and fluting along the shaft (Figure VII-16). The cast iron columns should be immediately primed and painted to prevent oxidation (Appendix E).

The ornamental cast iron balcony railing needs to be replicated due to its degree of deterioration. The existing balcony railing should be examined for its material composition and fabricated detailing. The design detail may be replicated by taking a mold of the remaining portions of the railing with allowances added for shrinkage of the new material. The railing may be reconstructed out of fiberglass or cast iron. Both of these materials should be examined for their fabrication detail, the durability of the product, the installation detail, maintenance requirements, and for their fabrication and installation cost. Discussion of the above issues with manufacture representatives should provide the basis for the selection of a replication procedure. If cast iron is chosen it should be primed and painted to prevent future corrosion.

<u>WEST ELEVATION (W-11) Recommendations</u> (First Street Entry)(Retail Use)

1. Clean the brick elevation and protect the stone quoins and details.
2. Clean the stone surfaces.
3. Repair, replace and repoint the brick and stone surfaces as necessary to match the existing materials and tooling styles.

<u>W-11:1</u>

Foundation wall below grade.

<u>W-11:2</u>

4. Remove the existing storefront windows and doors.
5. Clean the cast iron columns by sandblasting. Prime and repaint the columns green.
6. Install Window Type 6, the new storefront windows and doors according to the design proposal, Chapter VI. The materials are grey-tinted glass and black anodized aluminum frames.

<u>W-11:3</u> (Residential Use)

7. Remove the existing windows and install Window Type 8.

<u>W-11:4</u> (Residential Use)

8. Remove the existing windows and install Window Type 9.

<u>W-11:5</u> (Residential Use)

9. Remove the existing windows and install Window Type 11.

10. Remove the existing brick cornice from the horizontal cornice band and reconstruct according to the design proposal. Attention will be given to the parapet wall construction and flashing.

NORTH ELEVATION N-10

According to the Laclede's Landing Redevelopment Plan, the building attached to the North Elevation will be removed for a new major entry into the district. The north elevation will need to be structurally and aesthetically analyzed following the adjacent building's demolition. All new window and entry additions will be contemporary in material and design. The retail levels will receive grey-tinted glazing and black anodized aluminum frames. The residential windows will be wood casements with clear glazing (Refer to the design proposal, Chapter VI). It is desired that the building attachment scars be patched and exposed to reveal the history of a previous building. However, it may be necessary to cover the scar marks with a masonry paint if the brick exposed is soft.

NORTH ELEVATION (N-10) Recommendations

1. Removal of the adjacent building by building owner or city.
2. Repair building attachments in preparation for cleaning.
3. Analyze the structural, aesthetic and material condition of the brick elevation.
4. Clean the masonry surfaces.
5. If the brick matches the brick of the west elevation, carefully salvage the brick for re-use when cutting new openings.

6. Following careful evaluation, determine whether the building should be painted for structural or aesthetic reasons.
7. Install a new concrete coping along the top of the fifth level wall after repairing the parapet wall and roof. The parapet wall above the third level at the location of the infill addition will be removed for new construction.

NORTH ELEVATION (N-8) and EAST ELEVATION (E-9) (Figures VII-20, 25, 26)

A new addition will infill the current void in levels 4 and 5 at bays 4, 5, and 6. The original portion of this building is assumed to have been destroyed during a tornado. The infill addition will restore the original symmetry of the east and north facade (Figures VII-20, 25, 26). (Refer to the design proposal, Chapter VI, for the infill addition.) The north (N-8) elevation will not be exposed on the interior because of its previous patching appearance. The wall will receive a vapor barrier, insulation and drywall.

NORTH (N-8) and EAST (E-9) Elevation Recommendations

To prepare for construction of the infill addition:

1. Remove the existing wall material on the east elevation (E-9).
2. Remove the existing roof over the third level at this void location. Remove the roofing material in a manner which retains the existing wood, ceiling beams, joist and bracing member.
3. Remove the parapet wall on the north elevation.
4. Remove the stepped coursing at the center of the east elevation

levels 4 and 5 to allow a straight vertical connection to the infill addition.

EAST ELEVATION (E-7) Recommendations (Figures VII-20, 24, 25)

1. Clean the brick surfaces and protect the stone quoins and stone details from the brick cleaning procedure.
2. Clean the stone surfaces.
3. Repair, replace and repoint the brick and stone as necessary to match the existing materials and tooling style.
4. Patch and repair the stone sills as necessary.
5. Remove all rain water drainage systems including gutters, downspouts, leaders and attachment components.

E-7:1 Commercial Street Entry (Retail Use)

6. Remove the existing storefront wood blocking material and doors.
7. Window Type 7. Install new storefront windows and doors of contemporary materials and design (Refer to design proposal drawings, Chapter VI). The materials are grey-tinted glazing and black anodized aluminum frames.
8. Paint the existing concrete pillars a green masonry latex paint.

E-7:2 (Retail Use)

9. Cut the opening for the pedestrian bridge connection. Salvage existing brick to be used as replacement brick. The surrounding window details should be protected during construction of the bridge.
10. Remove the concrete patch on the fourth bay from the south at the second level. Patch the opening with brick to match the

existing brick and tooling style (Figure VII-24).

11. Remove the existing windows and install Window Type 10.
12. Window Type 10 is the same frame and proportion of Window Type 11 except that the glazing is a grey-tint and not clear glazing.

E-7:2

13. Repair and replace the wood window rope molding as necessary.

E-7:3

14. Remove the existing windows and install Window Type 9 on the southern half of the elevation.
15. Repair and replace the wood window rope molding.
16. Remove the windows on the northern half of the elevation and install Window Type 12. Window type 12 is a 1/2" thick clear double pane insulated wood casement window with an integrated interior screen. The window proportions resemble the existing window and have mutins at the third points of the window glazing.

E-7:4

17. Remove the existing windows and install Window Type 9.

E-7:5

18. Remove the existing windows and install Window Type 13. Window Type 13 is the same as Window Type 12 with the exception of different dimensions.
19. Install a new concrete coping along the top of the wall after repairing the parapet wall and roof.

SOUTH ELEVATION (Figures VII-17-18)

Repair the rainwater drainage system, the roof and the parapet wall.

Rebuild the portion of the south wall to correct the bulging wall condition created by water penetration (Figures VII-17-18).

South Elevation Recommendations

The wall extends a floor above the Cherrick Building.

1. Repair the drainage system, roof and parapet wall.
2. Clean the masonry surfaces.
3. Rebuild the bulging wall condition and other portions of the wall as necessary.

THE BRONSON HIDE BUILDING - INTERIOR CONDITIONS AND TYPICAL RECOMMENDATIONS

(Figures VII-27-33)

PREPARATION FOR NEW CONSTRUCTION

Preparation for new construction must follow the cleaning of existing odors and accumulated elements resulting from the building's use for fresh hide tanning. Carefully mark areas to be removed, new openings to be cut out, and those not exposed in the final construction so that those areas are not cleaned and restored. Such areas include the location of the new elevator shaft and new fire stairs. Remove the existing stairs and elevator. Repair the structural framing members by splicing. Cut the new fire stair and elevator shaft openings. New wood members or the discarded framing members may be used to replace missing members by splicing (if the discarded framing members are structurally stable).

The wood framing members will be exposed as ceiling on all floors. The mechanical systems will be exposed between or below the floor joist. Follow the cleaning and paint removal procedures outlined in Appendix E for wood.

LEVEL ONE AND TWO (Figures VII-27-29)

The cleaning process to remove residue and odors:

The material surfaces being cleaned are warehouse materials which lack significant detail. The stone walls are roughly constructed and are not intended for exposure. The wood beams and columns are the most significant interior materials. The primary cleaning concern is for the complete removal of odors and the prevention of salt, chemicals and blood migration in the existing materials at any future time.

The cleaning procedures involve sandblasting with a low pressure (20-100 psi), all structural framing members and walls to remove accumulated salts, blood and chemicals from the surface of the materials (Sandblasting- Appendix E). Completely clean out all residue and allow the building to air out. Use a Lysol wash to remove all organic compounds still remaining. Steam clean the walls, floor and the wood framing members to remove absorbed salts, blood and chemicals. The steam cleaning process penetrates the surface and allows the absorbed chemicals to migrate out of the wall. Seal the wall and wood framing members to prevent further moisture penetration and leaching which would bring very deeply absorbed chemicals to the surface at a later date. After mechanical systems have been installed, add a new layer to the concrete floor and apply insulation and drywall to the walls.[25]

MASONRY

The masonry walls of the Bronson Hide Building will not be exposed due to undesirable existing conditions resulting from structural deformation, water penetration and repairs previously made. The walls should be repaired and tuck pointed as necessary. The walls will be insulated and drywalled.

THE EXPOSED CEILING AND COLUMNS (Figures VII-31-32)

The wood columns, beams, floor joist, bracing and underside of the floor decking will be exposed on all floors. The mechanical systems will be exposed within the ceiling joist. Currently the wood framing members are covered with several layers of paint and some have been stained by water penetration. (Refer to Appendix F for cleaning wood and paint removal methods.)

FLOOR DECKING

The wood floor decking should be replaced as necessary to achieve structural stability. Deteriorated floor decking occurs particularly adjacent to the masonry walls where moisture has penetrated the wood. Apply Gyp-crete, a light weight concrete, to the floor decking. Gyp-crete is a floor covering material which is fire rated and levels the floor in preparation for carpeting and tile installation.

LEVEL ONE Commercial Street Entry (Retail Use)

1. Examine the stone foundation walls for water penetration and structural settlement. Repoint the stone walls as necessary and prepare the surface to receive a vapor barrier and insulation for a new drywall.
2. Examine all wood framing members for structural damage and repair or replace as necessary. Seal the wood as outlined in Appendix F.

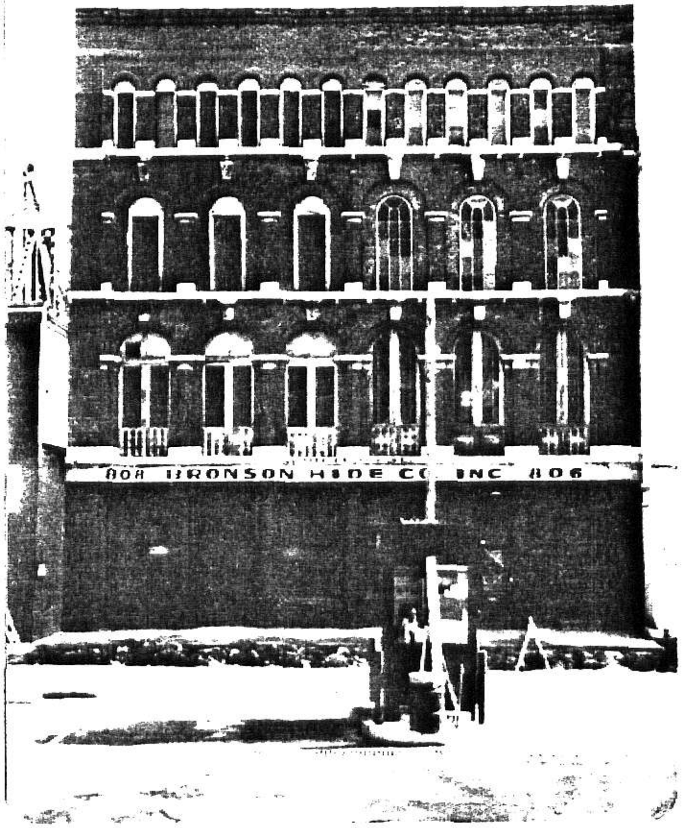
3. Add a new layer to the concrete floor following installation of mechanical systems.

<u>LEVEL TWO</u> First Street Entry (Retail Use and Condominium Entry on the North)

1. Remove the raised projecting concrete flooring, ceiling and walls located in the eastern third of the second level. The concrete should be removed in a manner which retains the existing wood columns, beams, joist and cast iron columns. Replace the floor decking and install Gyp-crete floor surface. The floor level should be level with the floor level of the Cherrick Building at the connection point.
2. Clean and seal the wood framing members (Appendix F).
3. Repair and repoint the masonry walls as necessary. Install insulation and drywall.
4. Install the acoustical ceiling to conceal the 14" steel I beams on the northern half of the first level.

<u>LEVELS THREE, FOUR AND FIVE</u> (Figures VII-30-33) (Residential Use)

1. Repair and repoint the masonry walls as necessary. Install insulation and drywall.
2. Clean and seal the wood framing members (Appendix F).
3. Replace the floor decking and install Gyp-crete floor surface.




Variety of Window Fenestration Divides the Building into Two Halves

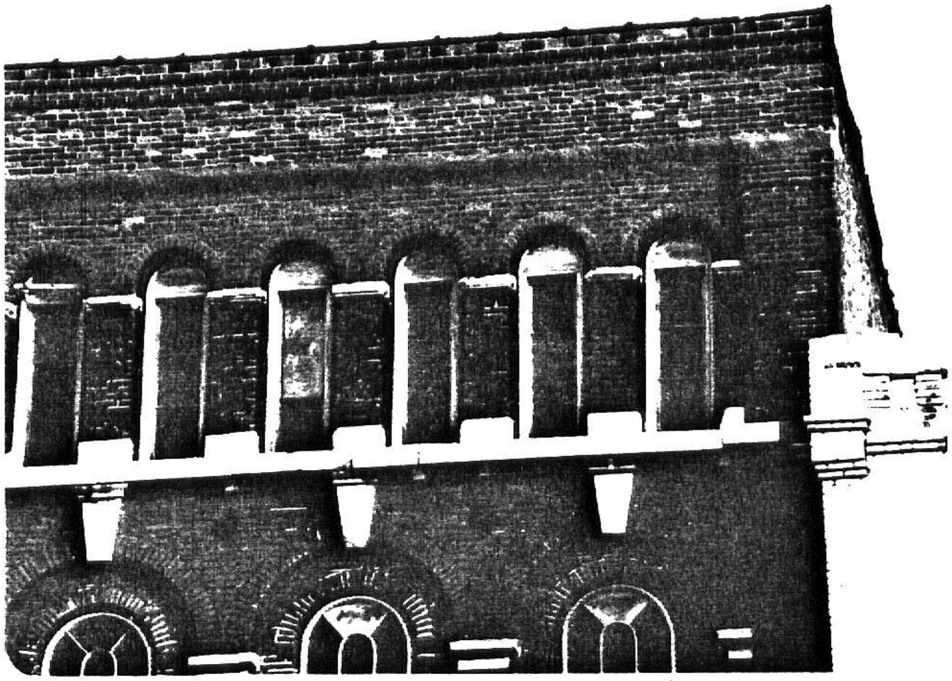
Storefront

Figure VII-15. West Facade


Cast Iron Column Detailing

Built Up Paint Layers

Figure VII-16. West Facade

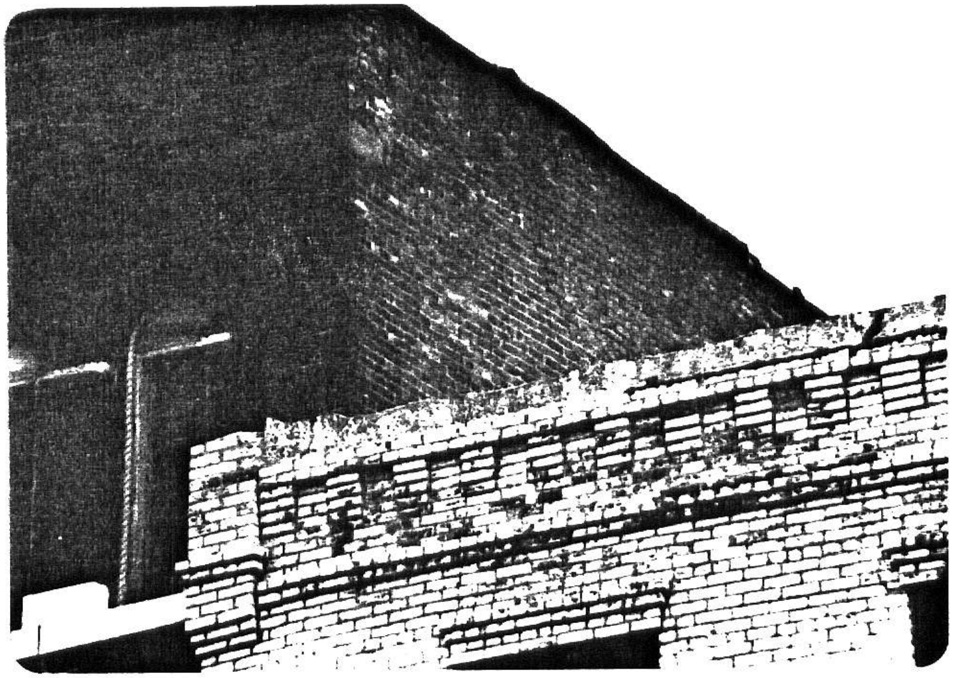


Spalling Brick

Cornice Removed and Patched

Dirt and Inappropriate Repointing

Figure VII-17. West Elevation

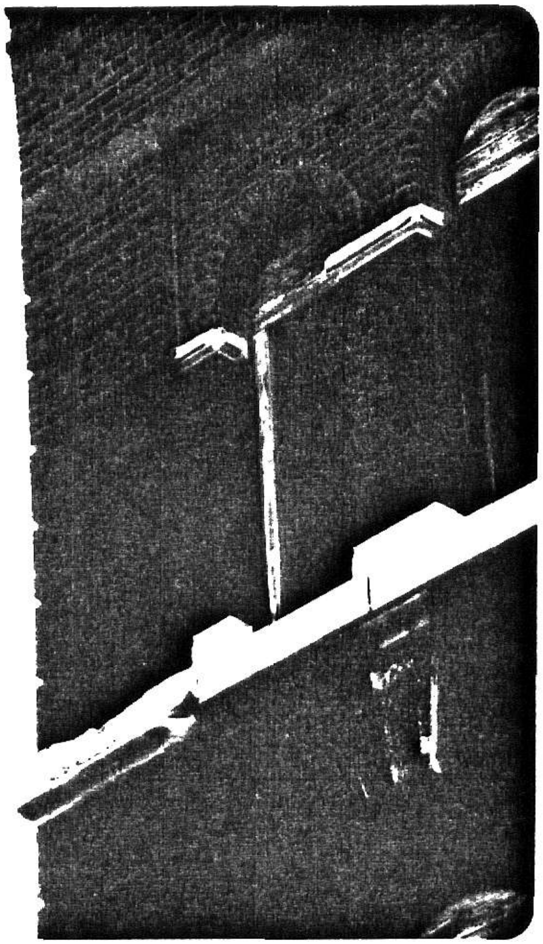


Parapet Wall Damage

Bulging Wall

Cherrick Cornice Deterioration

Figure VII-18. South Elevation



Deteriorated Stone

Deteriorated Stone

Considerable Dirt
Build Up on Stone
Detail

Figure VII-19. West Elevation

New Brick
Construction
and Window
Openings

Figure VII-20. East Elevation


Stained Stone Details

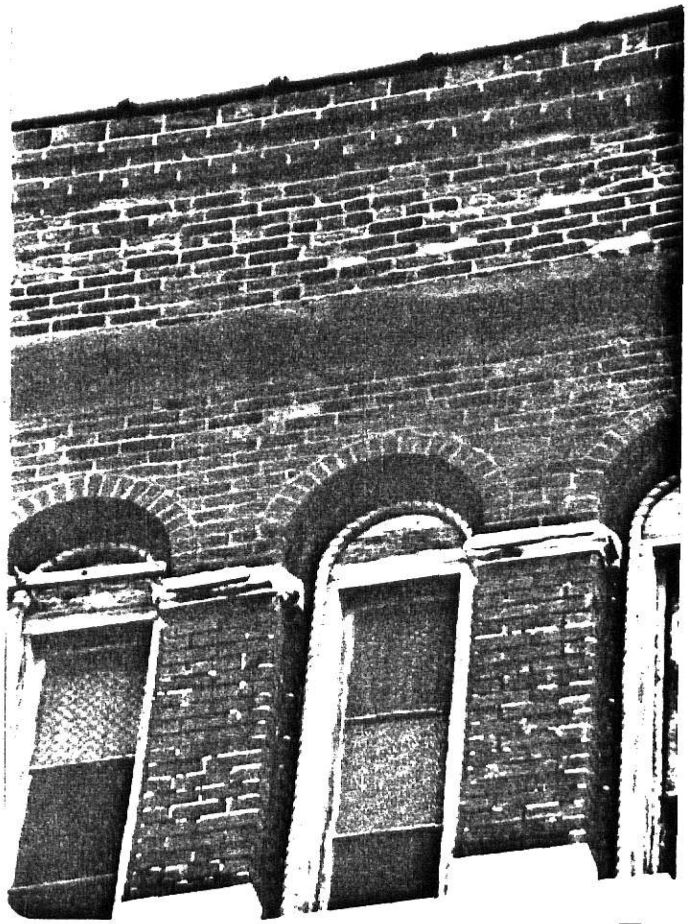
French Door to be Reconstructed

Deteriorated Cast Iron Railing to be Replaced

Signage to be Removed

Figure VII-21. West Elevation
Interior Level Three

Figure VII-22. West Elevation
Interior Level Four



Spalling Brick

Cornice Alteration

Rope Molding Detail

Repointing Necessary

Figure VII-23. West Elevation Interior Level Five

Brick Reconstruction

Stone Sill Spalling

Recent Window Additions

Replace Concrete Patch with a Masonry Patch

Clean Stone Quions Column and Beam

Figure VII-24. East Elevation

Brick Reconstruction

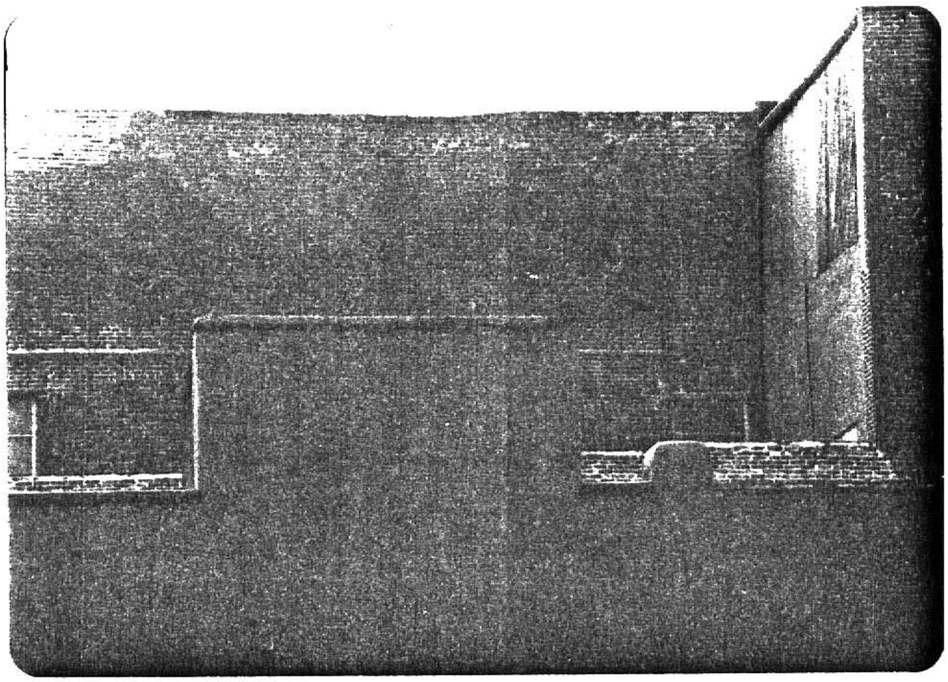
Recent Windows

Rope Molding Missing

Stone Sill Spalling

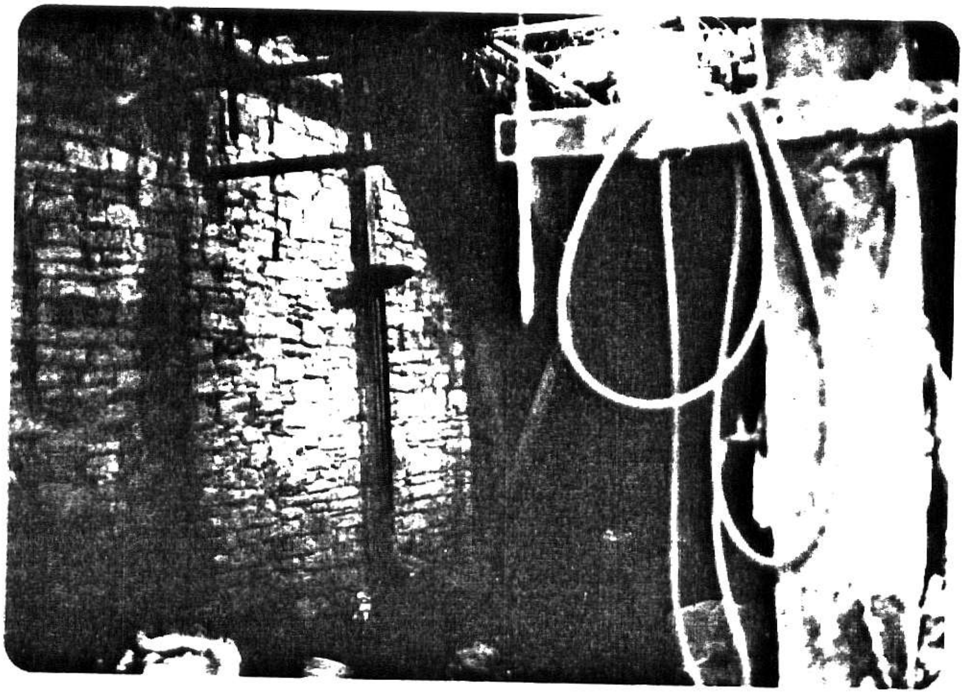
Windows Altered and Patched
Following an Adjacent
Building Explosion

Figure VII-25. East Elevation



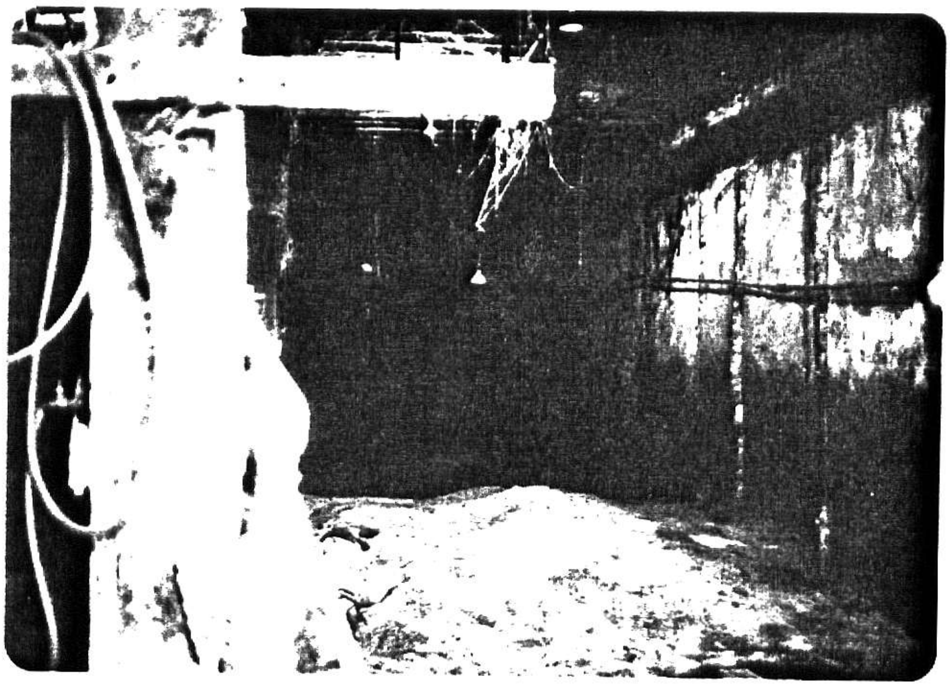
Location of
Infill
Addition

Figure VII-26. North and East Elevation



Staining and Chemical Absorption in the Stone Walls

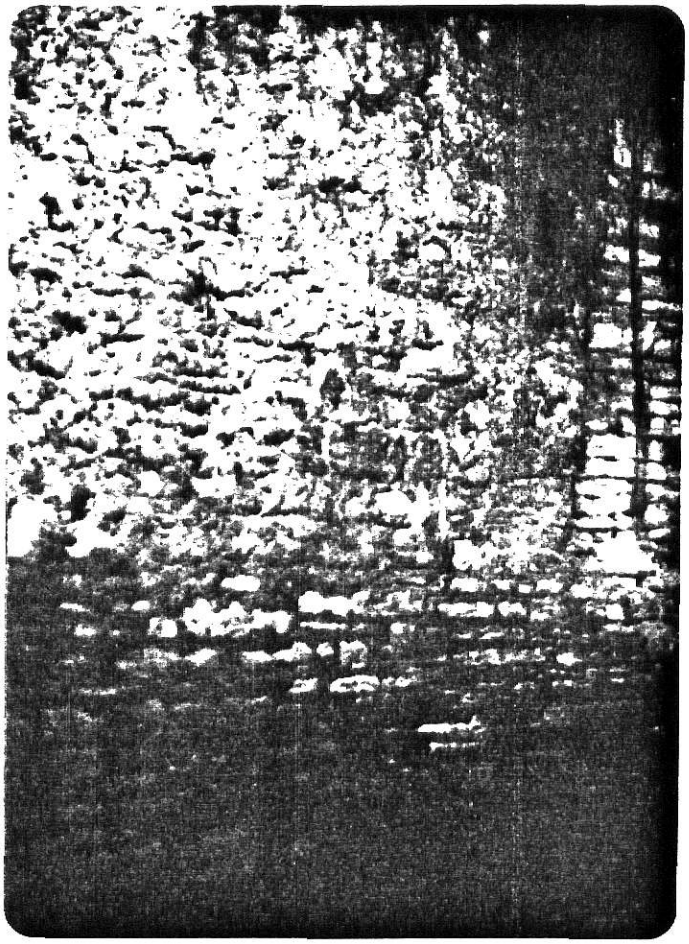
Figure VII-27. Level One



Line of Absorption in the Wall of Chemicals and Blood

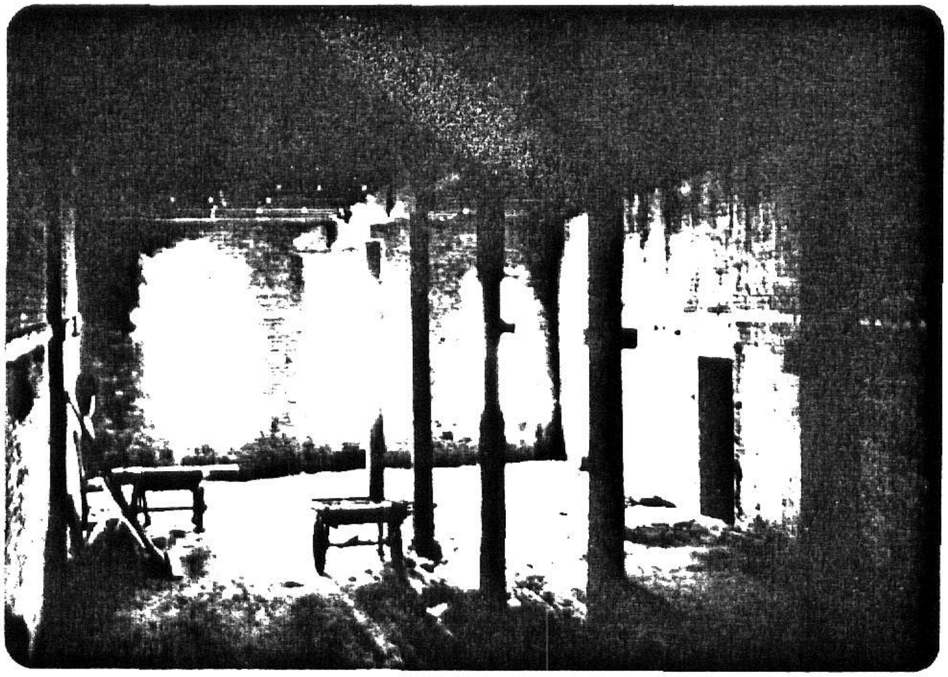
Similar Absorption in the Wood Members

Figure VII-28. Level One



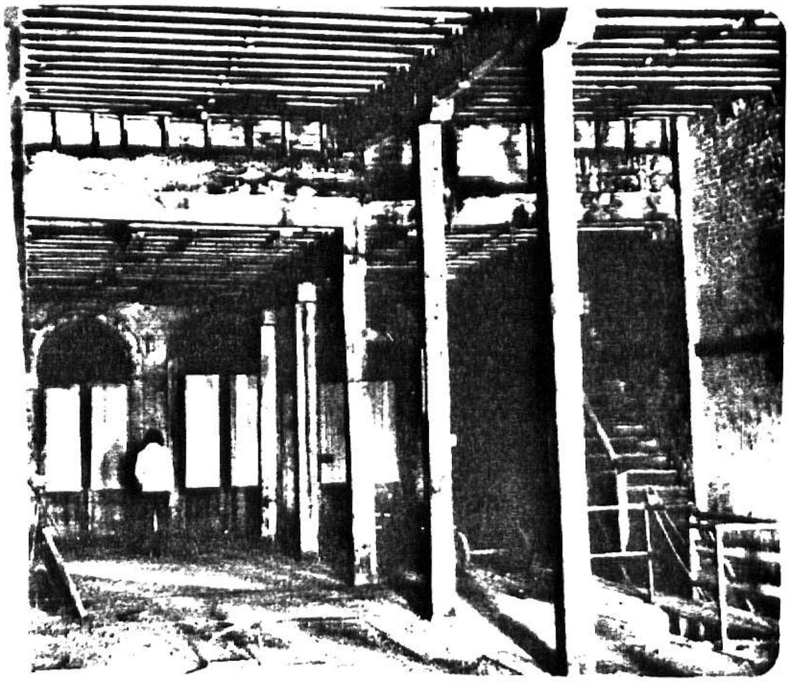
Chemical Absorption and Saturation on Stone Walls

Figure VII-29. Level One



Patched Windows Changed from Taller Arched Opening

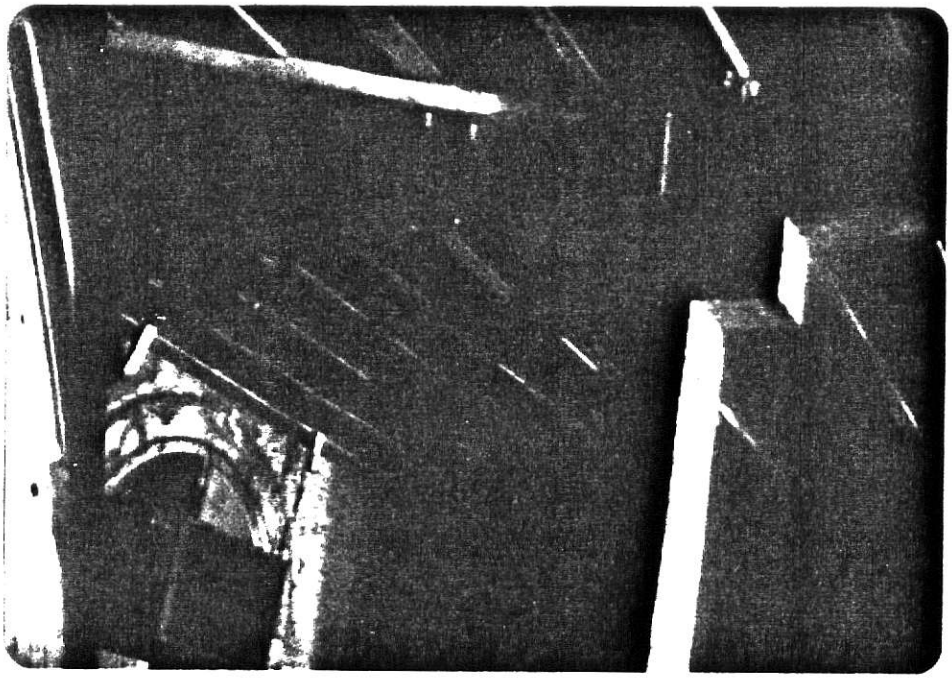
Figure VII-30. Level Three
East Wall Northern Half



Roof Above (Upper Levels Removed by a Storm)

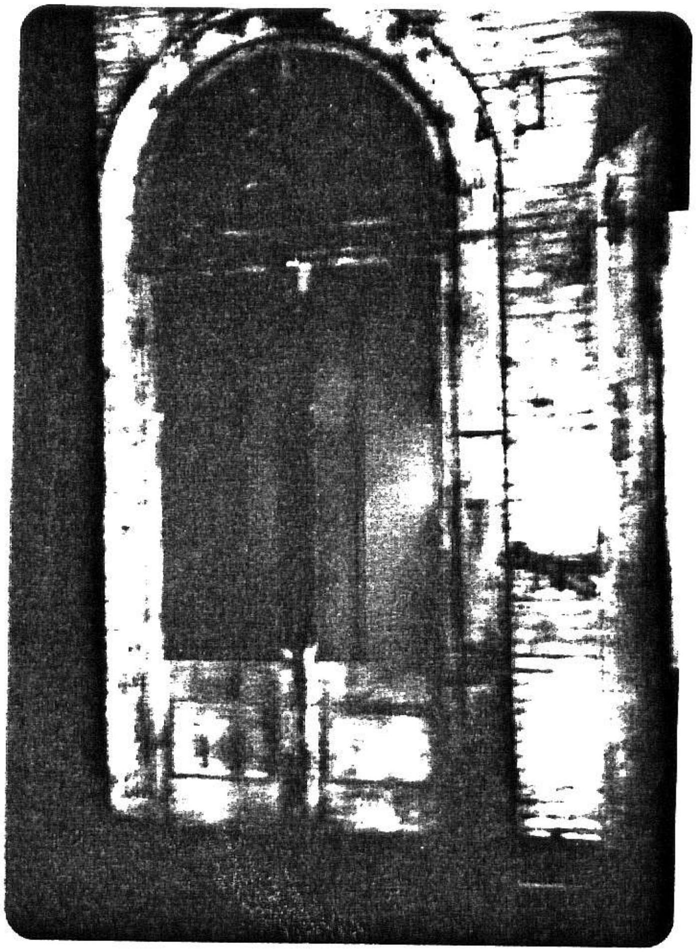
Water Staining

Figure VII-31. Level Three
West Wall Northern Half



Branched Beam Detail Due to Arched Windows

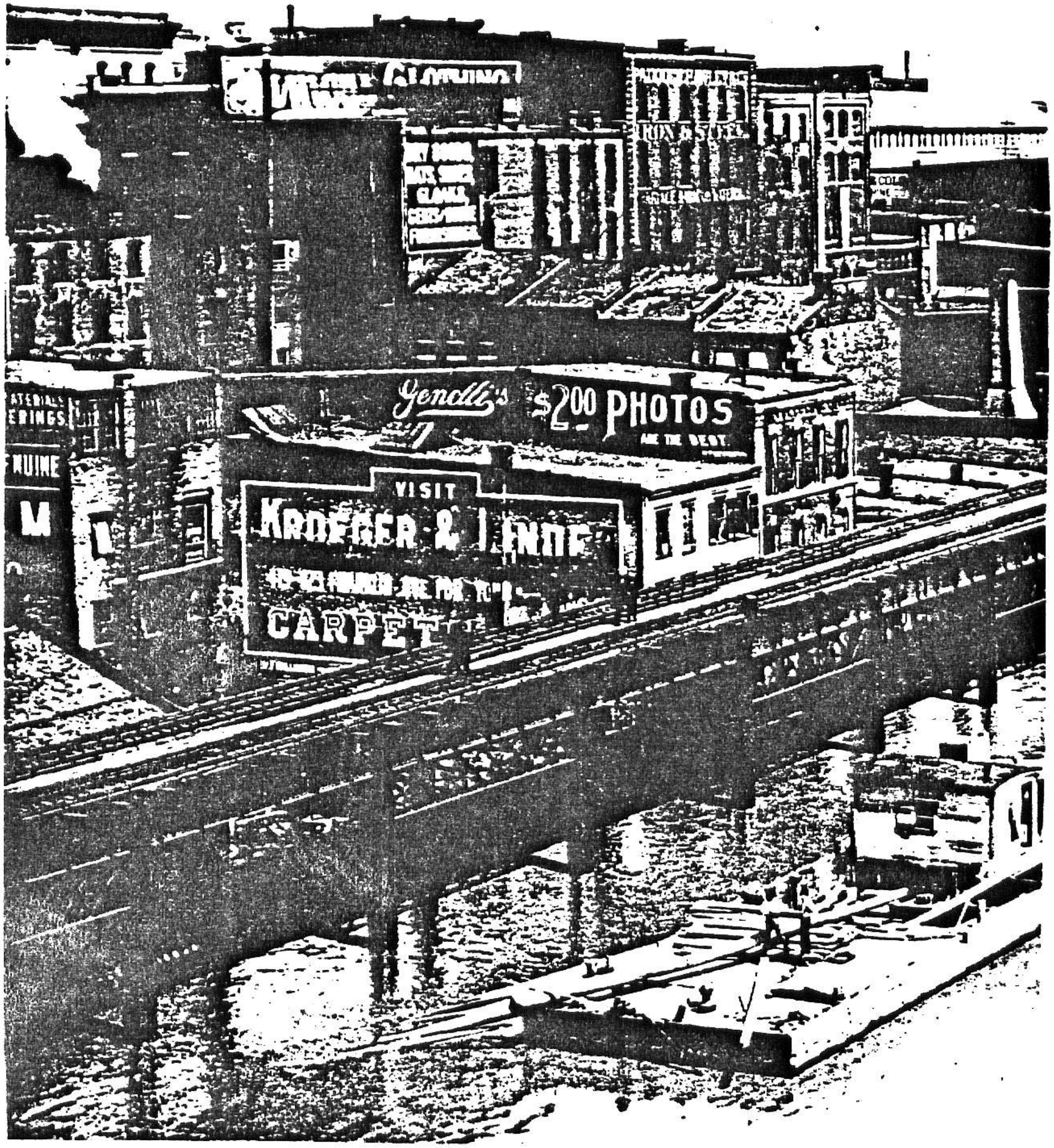
Figure VII-32



Window Deatil of French
Door Location and
Appearance

Not the Appropriate Detail
to Reconstruct
Refer to Facade Photo -
South Bays

Figure VII-33. Level Three
East Wall North Half




The Levee Looking North from Eads Bridge During a Flood in the 1890's.

Figure VII-34

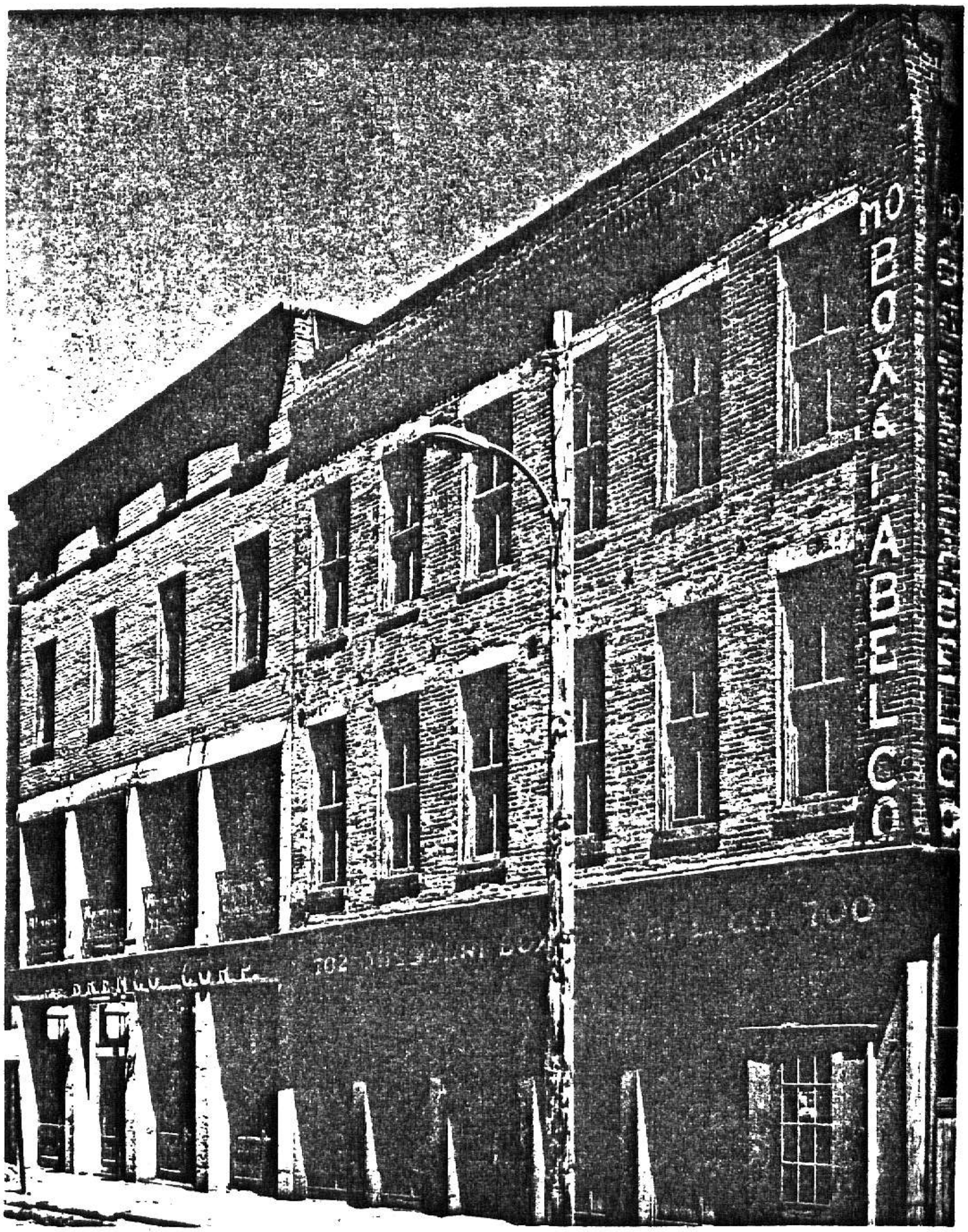
Source: Hagen, <u>This Is Our St. Louis</u>, p. 322.

# CHAPTER VIII

## FEASIBILITY ANALYSIS

Laclede's Landing is in its fourth year of active development. Between 1976 and the end of 1980, the Landing will have 400,000 total square feet of renovated space, consisting of 340,000 square feet of office space and 60,000 square feet of restaurant space. Seventeen condominium apartment units are presently under construction in existing warehouse buildings on First Street (Figure VIII-1). A four hundred room luxury hotel is also being negotiated. When the Landing is developed in accordance to the Redevelopment Corporation's Master Plan, it will include one million square feet of leasable floor area consisting of 700,000 square feet of office space and 300,000 square feet of restaurant, retail and condominium space. These figures include future proposals for 200 units of additional condominium space and a second, larger hotel.

The Bronson Hide and Cherrick Buildings are located on First Street, and the vacant site fronts Wharf Street. Both sites are a prime circulation route for pedestrians and vehicles in the Laclede's Landing District. Both of these sites suggest ideal locations for retail and residential development. The residential development on the vacant site will have views of the riverfront. The proposed development of the vacant site, the Cherrick, and the Bronson Hide Buildings includes a total of 40,000 square feet of retail, restaurant and special uses; 33 condominium apartment units with parking and 9,600 square feet of common community space. The proposed condominium project offers several community facilities not offered by the condominium project




Riverhouse Buildings - Retail and 17 Condominiums

Figure VIII-1

Source: Laclede's Landing, p. 21.

under construction such as a swimming pool, handball courts, an exercise room and laundry facilities.

The construction cost, both gross and net square footages for the various uses and buildings are presented in Figure VIII-2, Cherrick; Figure VIII-3, Bronson Hide; and Figure VIII-4, Infill Building. The Cherrick and Bronson Hide Buildings development is restricted to the percentage of use per specific block defined in the development plan. According to the plan, the Cherrick and Bronson Hide Buildings comprise Block 16 West (Refer to Figure V-1 for the block percentages). Residential development in these two buildings is restricted to fifty percent of the total area. The basements and first floors of these two buildings open on to Commercial Street and First Street respectively. These floors offer prime locational space for special use, retail and restaurants because of the exposure at ground level. The special use, retail and restaurant space is needed to complete the percentages of uses according to the Redevelopment Plan. The spaces along First Street provide an excellent location for specialty shops along one of the major paths from parking to the center of the district. Assuming the basements and first floor of both buildings to be retail, special and restaurant use totals 24,910 gross square feet. The second and third floors of the Cherrick and the second, third and fourth floors of the Bronson Hide comprise 26,844 gross square feet proposed for residential development. Based on an average of 1,500 square feet for a condominium unit within the district, the Cherrick will contain eight units and the Bronson Hide seven units for a total of fifteen units. Development of the vacant site (Block 16E) was limited to a maximum of 76,000 square feet comprised of a combination of the maximum percentages: 70% residential, 70% office,

Figure VIII-2

THE CHERRICK BUILDING

| AREA | Gross ф | Net ф | Cost $ |
|---|---|---|---|
| MAXIMUM BUILDABLE AREA | 27,780 ф | | |
| RENTABLE AREA | | 25,000 ф | |
| GROSS CONDOMINIUM AREA (50% block of the Bronson Hide and Cherrick Building allowed) | 13,890 ф | | |
| RENTABLE APARTMENT AREA 80%<br>8 units @ 1500 square feet<br>2nd and 3rd floor<br>Gross/Net Ratio 80% | | 12,500 ф | |
| GROSS RETAIL AND SPECIAL AREA | 13,890 ф | | |
| RENTABLE RETAIL AND SPECIAL AREA<br>20% Mechanical and Circulation Space<br>Gross/Net Ratio 80% | | 11,112 ф | |
| <u>CONSTRUCTION COST (GROSS)</u> | | | $640,000 |
| CONDOMINIUM - 50% of Building<br>13,890 ф at $25 per square feet<br>Construction Cost = $347,250 | 13,890 ф | | $25<br>$347,250 |
| RETAIL AND SPECIAL AREA<br>13,890 ф at $21 per square feet<br>Construction cost = $292,750 | 13,890 ф | | $21<br>$292,750 |
| <u>COST PER UNIT/SQUARE FEET*</u> | | | |
| Condo/Unit $58,939<br>Parking/Condo Unit $20,928<br>Health Club/Condo Unit $22,501 | | | |
| <u>TOTAL COST PER CONDO UNIT</u><br>at 1500 ф per unit with amenities cost per square foot | | | $102,358<br>$68 ф |
| <u>RETAIL COST PER SQUARE FOOT</u> | | | $30 ф |

*Includes 10% profit

Figure VIII-3

THE BRONSON HIDE BUILDING

| | Gross ф | Net ф | Cost $ |
|---|---|---|---|
| **AREA** | | | |
| MAXIMUM BUILDABLE AREA | 23,974 ф | | |
| RENTABLE AREA (80%) | | 19,179 ф | |
| GROSS CONDOMINIUM AREA (50% of the block Bronson Hide and Cherrick Buildings allowed) | 12,954 ф | | |
| RENTABLE APARTMENT AREA @ 80% 7 units, floors 2,3 and 4 4 units at 1469 ф , or 3 units at 1489 ф Gross/Net Ratio 80% | | 10,364 ф | |
| GROSS RETAIL & SPECIAL | 11,020 ф | | |
| RENTABLE RETAIL & SPECIAL AREA 20% Mechanical and Circulation Space Gross/Net Ratio 80% | | 8,816 ф | |
| **CONSTRUCTION COST (Gross)** | | | $719,220 |
| CONDOMINIUM 12,954 ф at $31.50 per square feet construction cost = $408,051 | 12,954 ф | | $408,051 |
| RETAIL AND SPECIAL 11,020 ф at $28.23 per square feet construction cost = $311,169 | 11,020 ф | | $28.23 $311,169 |
| COST PER UNIT/SQUARE FEET* | | | |
| Condo/unit | | | $532,861 |
| Parking/Condo Unit | | | $146,496 |
| Health Club/Condo Unit | | | $143,185 |
| **TOTAL COST PER CONDO UNIT** | | | $119,540 |
| at 1500 ф per unit with amenities cost per square foot | | | $81 ф |
| **RETAIL COST PER SQUARE FOOT** | | | $37 ф |

*includes 10% profit

Figure VIII-4

VACANT SITE/INFILL BUILDING

| | Gross ф | Net ф | Cost $ |
|---|---|---|---|
| <u>AREA</u> | | | |
| MAXIMUM BUILDABLE AREA | 76,000 ф | | |
| RENTABLE AREA | | | |
| <u>HEALTH CLUB AREA</u> | | | |
| Gross | 9,600 | | |
| Net | | 8,000 | |
| Managers Office 100 ф | | | |
| 1 meeting room 500 ф | | | |
| 1 game room 500 ф | | | |
| 1 exercise room 300 ф | | | |
| 1 weight room 300 ф | | | |
| locker room 450 ф | | | |
| laundry 190 ф | | | |
| <u>HEALTH CLUB AREA</u> | | | |
| 2340 ф at $49.75 per square foot construction cost = $116,415 | | 2,340 | $116,415 |
| SWIMMING POOL | | 3,500 | |
| 3500 ф at $77.55 per square foot construction cost = $271,425 | | | $271.425 |
| RACQUETBALL COURTS | | 2,160 | |
| 2160 ф at $49.35 per square foot construction cost = $106,596 | | | $106,596 |
| TOTAL NET SQUARE FEET | | 8,000 | |
| Gross/Net Ratio 80% | | | |
| Mechanical and Circulation | | 1,600 | |
| Gross | 9,600 | | |
| Total Construction Cost | | | $494.436 |
| RETAIL - 1 floor | 15,200 | | |
| Mechanical and Circulation 20% | | 12,160 | |
| 15,200 ф at $30.85 per square foot construction cost = $468,920 | | | $468,920 |
| Gross/Net Ratio 80% | | | |

Figure VIII-4 (Cont.)

VACANT SITE/INFILL BUILDING

| | Gross 中 | Net 巾 | Cost $ |
|---|---|---|---|
| PARKING | | | |
| 15 Condos, Bronson Hide & Cherrick & 18 Condo New Building, 33 Condo Units x 1.5 spaces per unit = 50 spaces | | | $295,000 |
| 50 Spaces x $5,900 per unit = $295,000 | | | $295,000 |
| 50 x 350 = 17,500 + 5% Mechanical=875 | | | |
| Total 18,375 | 18,375 | | |

Figure VIII-4 (Cont.)

VACANT SITE/INFILL BUILDING

| | Gross | Net | Cost $ |
|---|---|---|---|
| <u>GROSS CONDO AREA</u> | | | |
| 32,825 ф at $34.10 per square foot construction cost = $1,119,333 | 32,825 ф | | $1,119,333 |
| RENTABLE CONDO AREA | | 26,620 ф | |
| Gross/Net Ratio 80% | | | |
| Number of Units = 18 at an average of 1459 | | | |
| <u>CONSTRUCTION COST</u> | | | |
| Health Club Area 9,600 ф cost varies see preceding page | | | $494,436 |
| Parking Area 50 x $5,900 | | | $295,000 |
| Retail and Special Area 15,200 ф x $30.85 | | | $30.85<br>$468,920 |
| Condominium Area 32,825 ф x $34.10 | | | $34.10<br>$1,119,333 |
| | | Total | $2,377,689 |
| <u>COST PER UNIT/SQUARE FEET</u> (includes 10% profit) | | | |
| Condo Cost/Unit | | | $104,844 |
| Parking Cost/Condo Unit | | | $20,928 |
| Health Club/Condo Unit | | | $22,501 |
| CONDO TOTAL COST plus amenities 1459 ф | | | $148,261 |
| cost per square foot | | | $102.00ф |
| RETAIL PER SQUARE FEET | | | $49.00ф |
| <u>DEMOLITION</u> | | | |
| Concrete and concrete block warehouse twenty-five feet wide, sixteen feet high, and one hundred and forty-seven feet long | | | |

Figure VIII-4 (Cont.)

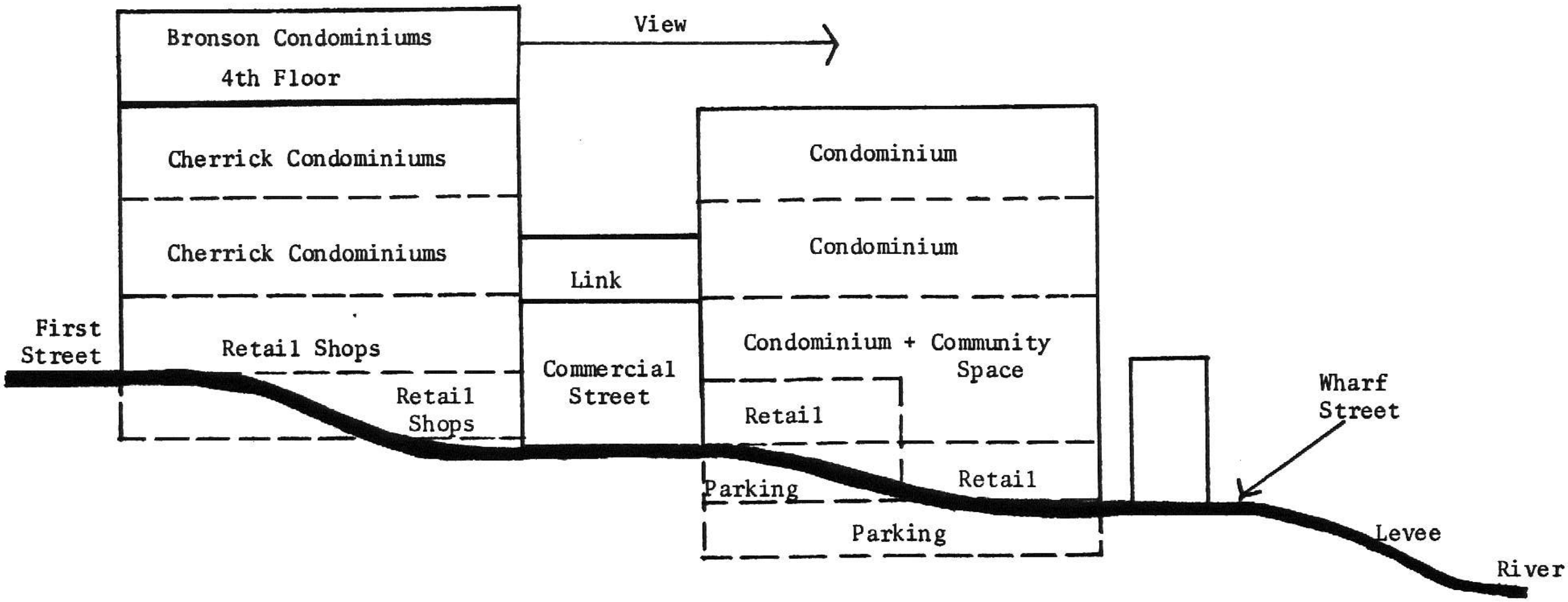
VACANT SITE/INFILL BUILDING

| | Gross | Net | Cost $ |
|---|---|---|---|
| 58,800 cubic feet | | | |
| 2,178 cubic yards | | | |
| Demolition by cubic feet for concrete .12 | | | $7,056 |
| Disposal for concrete by cubic years $3.08 | | | $6,708 |
| Dump charges for building construction material $3.50 per cubic yard | | | $7,623 |
| + Any additional charges | | | |
| Total Demolition Cost | | | $22,000 |

20% retail, and 90% special (Figure V-1). The development restrictions also include a height limitation of 75' from the corner of Commercial and Delmar Streets. However, the property allows for two levels to be constructed into the slope of the ground (Figure VIII-5). The height of the new development should be kept relatively low to allow for a view of the river from the upper floors of the Cherrick and Bronson Hide. The vacant site offers development opportunities for retail on the ground floor of Commercial Street, a high exposure location and access to Wharf Street. Assuming development of half a floor of retail along both Commercial and Wharf Street, this provides a total of 15,200 gross square feet of retail (Figure VIII-4). Retail development along Commercial provides a double loading along both sides of the street for retail activities which encourages pedestrian traffic and business (Figures VII-5 and VIII-6). The retail and special use development has been restricted to allow for more residential development and parking requirements.

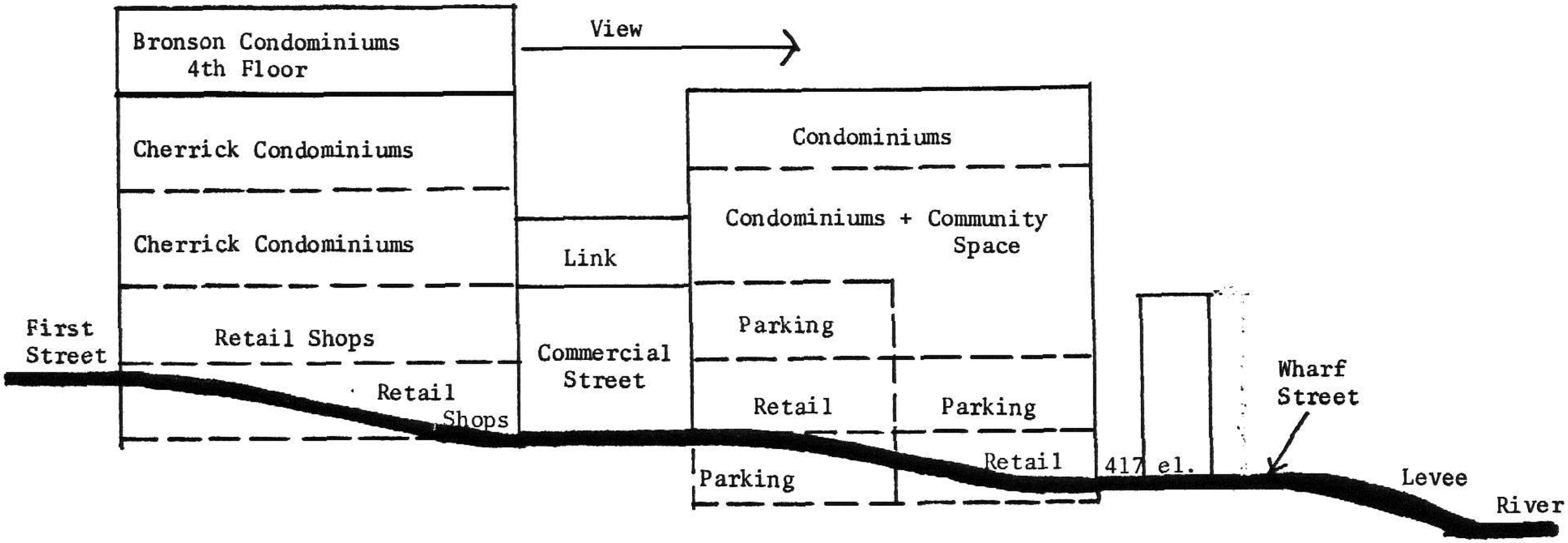
The community spaces for the residential property in the three buildings is 9,600 gross square feet. The community spaces consist of a 30 x 40 foot swimming pool; two handball courts; one exercise room; an adjacent men and women's locker room for ten people with 72 lockers; and a laundry facility.

Both the parking and community facilities which are located in the new building will be assessed to each apartment unit. The parking requirements are 1.5 spaces per unit, which for 33 residential units equals 50 spaces at 350 square feet. The total parking requirement equals 18,375 square feet or one floor plus 25% of another floor of the vacant property. The Redevelopment Plan requires parking to be concealed, which suggests that it should be located behind the retail spaces along Wharf Street and the level




Alternative #1 - Sites and Buildings

Figure VIII-5




Alternative #2 - Sites and Buildings

Will be used if the water table is too high or if there is a rock foundation that will not permit construction below 417 elevation.

Figure VIII-6

below which cuts back into the slope (Figures VIII-5 and VIII-6). The remaining 32,825 square feet of the infill site will contain eighteen residential condominium units with an average of 1,459 square feet per unit.

The redevelopment and renovation figures for the Cherrick and Bronson Hide Buildings are based on the confidential feasibility analysis for two condominium adaptive use proposals for similar structures located in Laclede's Landing for 1980. The figures have been adjusted to respond to the differences in the existing buildings and development proposals such as location, quality, and existing conditions. The new construction costs are based on the <u>1980 Means Cost Data</u> for average cost and construction quality. The demolition cost is based on the <u>1980 Means Cost Data</u> for demolition of concrete/masonry construction. Additional development cost, financing cost, and operating expenses were calculated on similar, adjusted percentages as those of the confidential feasibility analysis. For all three proposed building developments the interest rate is assumed to be 13% and a twenty-five year mortgage with a base year beginning 1980 (Refer to Figure VIII-7 for the assumed time frame for adaptive use and construction of the infill building).

<u>The Cherrick Building</u>

The source of funds for the Cherrick Building is a $760,000 construction loan, $290,000 equity and $60,000 partner loan for a total of $1,110,000 (Figure VIII-8). The funds will be used to acquire both the building ($270,000) and the land ($30,000), and to renovate the building. The renovation costs are $25Φ for residential use ($347,250) and $21Φ for retail uses ($292,750) for a total of $640,000. Additional use of funds includes development cost for supervision and management; fees for architects, engineering, legal, accounting, permits, insurance and taxes; interest during construction

Figure VIII-7

TIME FRAME ASSUMED

Adaptive Use - Cherrick and Bronson Hide

| | | | |
|---|---|---|---|
| Year 1 | January - March | 1981 | Design |
| | March - May | 1981 | Construction Documents |
| | May | 1981 | Bid |
| | June - December | 1981 | Construction |
| | December | 1981 | Rent-up and Sale of Apartments |
| Year 2 | January | 1982 | Begin Retail Income<br>20% Vacancy - Retail |
| Year 3 | January | 1983 | 15% Vacancy - Retail |
| Year 4 | January | 1984 | 10% Vacancy - Retail |
| Year 5-25 | January | 1985-<br>2005 | 5% Vacancy - Retail |

New Building

| | | | |
|---|---|---|---|
| Year 1 | January - April | 1981 | Design |
| | April - June | 1981 | Construction Documents |
| | July | 1981 | Bid |
| Year 2 | August 1981 - May | 1982 | Construction |
| Year 2 | June | 1982 | Rent-up and Sale of Apartments |
| | July | 1982 | Begin Retail Income<br>20% Vacancy - Retail |
| Year 3 | January | 1983 | 15% Vacancy - Retail |
| Year 4 | January | 1984 | 10% Vacancy - Retail |
| Year 5-25 | January | 1985-<br>2005 | 5% Vacancy - Retail |

Figure VIII-8

| THE CHERRICK BUILDING | YEAR 1<br>1 Jan 81 | END YEAR 1<br>13 Dec 81 | YEAR 2<br>31 Dec 82 | |
|---|---|---|---|---|
| SOURCE | Design + Const<br>$ | Sale<br>$ | Rented<br>$ | Comments |
| EQUITY | $350,000 | | E | $290,000 partner contribution |
| CONSTRUCTION DEBT | $760,000 | | | $60,000 partner loan |
| INCOME<br>Retail | | | $152,790 | Gross<br>11$ x $13,890 |
| Condominium<br>Parking $167,424*<br>Health Club $180,008* | | $471,512 | | (8 units x $58,939) |
| VACANCY ALLOWANCE<br>Retail 1st year 20%, Year 3 15%, Year 4 10%, Year 5 on 5% | | | $-30,558 | |
| | $1,110,000 | $471,512 | $122,232 | |
| USE OF FUNDS | | | | |
| Acquisition-Land | $30,000 | | | |
| Acquisition Building | $270,000 | | | |
| CONSTRUCTION | | | | |
| Renovation | $640,000 | | | Condo $347,250<br>Retail $292,750<br>12.5% Gross |
| Development | $51,200 | | | |
| Architecture and Engineering Fees | $65,000 | | | 10% Gross |
| Rentup Fees | | $12,500 | | .45 x Gross |
| Interest on Construction | $33,000 | | | |
| Redevelopment Corporation Assessment | $6,400 | | $6,400 | 1% construction cost |

Figure VIII-8 (Cont.)

| THE CHERRICK BUILDING | YEAR 1<br>1 Jan 81<br><br>Design +<br>Const<br>$ | END YEAR 1<br>13 Dec 81<br><br>Sale<br>$ | YEAR 2<br>31 Dec 82<br><br>Rented<br>$ | Comments |
|---|---|---|---|---|
| DEBT SERVICE | | | | |
| Partner Interest | $7,200 | | $7,200 | |
| Permanent Loan** Interest | | | $39,221 | |
| Principal | | | $1,715 | |
| OPERATING EXPENSE | | | | |
| Merchant Association | | | $1,000 | |
| Management | | | $13,200 | |
| Maintenance | | | $18,000 | |
| Taxes | | | $500 | |
| Insurance | | | $5,000 | |
| Utilities | | | $1,800 | |
| Legal-Accounting | | | $2,000 | |
| | $1,102,800 | | $96,036 | |
| SOURCE | $1,110,000 | $471,512 | $112,232 | |
| USE | $1,102,800 | $-12,500 | $-96,036 | |
| NET SURPLUS | $7,200 | $459,012<br>-$459,000<br>12 | $26,196 | |

Note: **loan $760,000
-$459,000

$301,000 at 13% 25 years x .136

$40,936 each year

* transferred to new building

on the mortgage and the partners loan, the redevelopment corporation assessments; a total of $162,800. Total use of funds is therefore $1,102,800. Subtracting the use of funds from the source returns a $7,200 net surplus at the end of design and construction (Year 1).

The sale of the apartment units occurs in December 1981 with all units pre-sold at an average of $53,939 each for eight units for a total income from sales of $471,512. The only expense which occurs during this period is for selling the apartments and renting the retail spaces for a total of $12,500 which leaves a net surplus of $459,012. To reduce the permanent loan, $459,000 of this net surplus is used to reduce the $760,000 construction loan to a loan of $301,000 which reduces principal and interest in the succeeding years. The partner loan is not reduced so that it will provide the partners with a steady yearly income. During Year 2 income is calculated at $11⌀ per gross retail space with a 20% vacancy, 15% vacancy for Year 3, 10% for Year 4, and 5% vacancy allowance for each of the following years (5-12). The funds in Year 2 are used to pay for the Redevelopment Corporation assessment, partner interest, the permanent loan payment, and operating expenses for a total of $96,036. The net surplus of funds is therefore $26,196.

Bronson Hide

The source of funds for the Bronson Hide Building is a construction loan of $767,000, $292,824 in equity and a $59,976 partner loan for a total of $1,120,000 (Figure VIII-9). The funds are used to purchase the building ($227,753) and land ($27,083). The renovation cost for apartments are $31.50⌀ ($408,051) and retail spaces are $28.23⌀ ($311,169).

Figure VIII-9

| THE BRONSON HIDE BUILDING | YEAR 1<br>1 Jan 81 | END YEAR 1<br>31 Dec 81 | YEAR 2<br>31 Dec 82 | |
|---|---|---|---|---|
| SOURCE | Design + Const<br>$ | Sale<br>$ | Rented<br>$ | Comments |
| EQUITY | $352,800 | | | $292,824 partner contribution |
| DEBT | $767,200 | | | $59,976 partner loan |
| INCOME | | | | |
| Retail | | | $121,220 | $11 x 11,020 ¢ |
| Condominium - 7 units<br>Garage $146,496*<br>Health Club $143,185* | | $532,861 | | |
| VACANCY ALLOWANCE<br>Retail 2 years 20%<br>3 years 15%, 4 years 10%, 5 years on 5% | | | $-24,244 | |
| | $1,120,000 | $532,861 | $96,976 | |
| USE OF FUNDS | | | | |
| Acquisition-Land | $27,083 | | | |
| Acquisition Building | $227,753 | | | |
| CONSTRUCTION | | | | |
| Renovation | $719,220 | | | Condo $408,051<br>Retail $311,169 |
| Development | $44,112 | | | 1.84 x gross |
| Architecture and Engineering Fees | $57,058 | | | $2.38 x gross |
| Rentup Fees | | $10,788 | | Cherrick .45 x 23,974 gross |
| Interest on Construction | $28,529 | | | |
| Redevelopment Corporation Assessment | $5,514 | | $5,514 | 1% cost |

Figure VIII-9 (Cont.)

| THE BRONSON HIDE BUILDING | YEAR 1<br>1 Jan 31<br>Design + Const<br>$ | END YEAR 1<br>31 Dec 81<br>Sale<br>$ | YEAR 2<br>21 Dec 82<br>Rented<br>$ | Comments |
|---|---|---|---|---|
| DEBT SERVICE | | | | |
| Partner Interest | $6,209 | | $6,209 | |
| Permanent Loan** Interest | | | $31,950 | |
| Principal | | | $1,397 | |
| OPERATING EXPENSE | | | | |
| Merchant Association | | | $861 | |
| Management | | | $10,126 | |
| Maintenance | | | $15,533 | |
| Taxes | | | $429 | |
| Insurance | | | $4,290 | |
| Utilities | | | $1,594 | |
| Legal Accounting | | | $1,724 | $34,557 |
| | $1,115,478 | $10,788 | $79,627 | |
| SOURCE | $1,120,000 | $532,861 | $96,976 | |
| USE | -$1,115,478 | -$10,788 | -$79,627 | |
| NET SURPLUS | $+4,522 | $522,073<br>-$522,000<br>$+73 | $+17,349 | |

Note: **construction debt
13% 25 years

767,200
522,000

245,200
.136

33,347

* transferred to new building

The renovation cost for the Bronson Hide is higher than the Cherrick Building due to repair and replacement of the brick cornice ornamentation in brick corbeling, cast iron columns on the exterior, cast iron balustrade on the second floor and more detailed window shapes and divisions. The interior of the Bronson Hide requires more cleaning of the interior because of the encrustation of chemicals, salt and blood on all interior surfaces due to its use as a hide curing warehouse. Careful attention needs to be given to the removal of the very bad odor which currently exists. Structural problems may also occur when the one story warehouse is removed on the north side. The renovation cost in the Landing ranges from $24⌷ -$44⌷ and on another condominium/retail proposal of $55⌷ for renovation within the Landing.

Other uses of funds include development; fees, architectural, engineering, legal, accounting, permit, taxes, insurance, construction interest, Redevelopment Corporation assessment, and partner interest for a total of $141,422. The difference between the source of funds and the use of funds returns a net surplus of $4,522.

The apartments will be pre-sold during the end of the first year of design and construction, December 1981. The apartments are sold for an average of $76,123 a unit for seven units ($532,861). The only expense during this period is rent-up fees for the sale of the apartments and renting the retail spaces for a total of $10,788. The difference of the apartment sales and rent-up fees yields $522,861 net surplus. To reduce the $767,200 loan, $522,000 of this net surplus is used to leave a $245,200 loan. The partner loan is not reduced to provide the partners with a steady yearly income. The second year receives income on retail space calculated at $11 x gross square footage. A 20% vacancy allowance is used for the second year, 15% vacancy for the third year, 10% for the fourth year and 5% for the remaining years (5-25).

The use of funds during the second year include the Redevelopment Corporation assessment, the partner interest, the reduced permanent loan and operating expenses for a total of $19,627. The difference between the retail income and use of funds results in a $13,633 net surplus.

The Infill Building

The proposed new construction requires a construction loan of $3,111,270, equity of $1,184,368 and a partner loan of $242,582 for a total of $4,538,220 (Figure VIII-10). The acquisition cost of the land was calculated on an assumed $2.80 a square foot.[23] The following assumptions produced the figure of $2.80: vacant land costs less than developed land, the location has an excellent view of the river and is located on Wharf Street, the property does not front a major pedestrian oriented street as do the properties for which the land costs were given, and there is considerable slope to the site.

Demolition costs for a concrete block, narrow warehouse is $22,000 (Figure VIII-4). Additional costs include development cost; fees, architect, engineer, legal, accounting, insurance, taxes, permits, etc.; interest on construction loan, and Redevelopment Corporation assessments for eighteen months; and partner loan interest for a total of $3,837,198. The design and construction time for the new building is assumed to be 18 months versus the 12 month renovation time assumed for the existing buildings. The longer construction period increases the cost of the project, especially in the amount of construction loan interest. A net surplus of $701,022 results following the design and construction period.

Figure VIII-10

| VACANT SITE - INFILL BUILDING | YEAR 1<br>1 Jan 81 | END YEAR 1<br>31 June 82 | YEAR 2<br>31 Dec 82<br>(6 Months) | |
|---|---|---|---|---|
| SOURCE | Design + Const<br>$ | Sale<br>$ | Rented<br>$ | Comments |
| EQUITY | $1,426,950 | | | $1,184,368<br>$242,582 |
| DEBT | $3,111,270 | | | |
| INCOME | | | | |
| Retail $12 | | | $91,200 | $182,400<br>12 x $15,200<br>÷ 2 (6 months) |
| INFILL BUILDING | | | | |
| Condo | | $1,887,192 | | |
| Parking | | $367,704 | | |
| Health Club | | $405,018 | | |
| CHERRICK (transferred | | | | |
| Parking | | $167,424 | | |
| Health Club | | $180,008 | | |
| BRONSON (transferred | | | | |
| Parking | | $146,496 | | |
| Health Club | | $143,185 | | |
| VACANCY ALLOWANCE | | | | |
| Retail 2 years 20% Year 3 15%, Year 4 10%, Year 5 on 5% | | | $-9,120 | $18,240 ÷ 2 |
| | $4,538,220 | $3,297,027 | $82,080 | |
| USE OF FUNDS | | | | |
| Acquisition-Land | $50,778 | | | |
| Acquisition Building | -- | | | |
| Demolition (see breakdown) | $22,000 | | | garage $295,000<br>health club $494,436 |
| CONSTRUCTION New | $2,377,689 | | | Retail $468,920<br>Condo $1,119,333 |

Figure VIII-10 (Cont.)

| VACANT SITE - INFILL BUILDING | YEAR 1<br>1 Jan 81 | END YEAR 1<br>31 June 82 | YEAR 2<br>31 Dec 82<br>(6 Months) | |
|---|---|---|---|---|
| | Design + Const<br>$ | Sale<br>$ | Rented<br>$ | Comments |
| Development | $297,211 | | | |
| Architectural and Engineering Fees | $237,769 | | | |
| Rentup Fees | | $21,611 | | .45 x gross not including parking/health club $48,025 |
| Interest on Construction | $669,191 | | | |
| Redevelopment Corporation Assessment | $35,665 | | $11,888 | $23,777 ÷ 2 (6 months) |
| DEBT SERVICE | | | | |
| Partner Interest | $146,895 | | $73,448 | $146,895 ÷ 2 (6 months) |
| Permanent Loan Interest | | | paid off | |
| Principal | | | | |
| OPERATING EXPENSE | | | | |
| Merchant Association | | | $1,364 | $2,728 ÷ 2 |
| Management | | | $25,080 | $50,160 ÷ 2 |
| Maintenance | | | $24,620 | $49,240 ÷ 2 |
| Taxes (.625 x 1,250,000 | | | $74,990 | $149,980 ÷ 2 |
| Insurance (.179) | | | $6,802 | $13,604 ÷ 2 |
| Utilities (.06479) | | | $2,462 | $4,924 ÷ 2 |
| Legal Accounting (.0719) | | | $2,732 | $5,464 ÷ 2 |
| | | | | $138,050 |
| | $3,837,198 | $21,611 | $223,386 | |

Figure VIII-10 (Cont.)

| | | | | |
|---|---|---|---|---|
| SOURCE | $4,548,220 | $3,297,027 | $82,080 | |
| USE | 3,837,198 | 21,611 | 223,386 | |
| SURPLUS | $+701,022 | $3,275,416<br>-3,111,270<br>$+164,146 | $-141,306 | Construction loan<br>$3,111,270<br>-$3,111,270<br>0 |

Figure VIII-11

ALTERNATIVE #2

| INFILL BUILDING | YEAR 2<br>(6 Months)<br>31 June 82 - 31 Dec 1982 | |
|---|---|---|
| SOURCE | Rented<br>$ | Comments |
| EQUITY | | |
| DEBT | | |
| INCOME | | |
| Retail | $91,200 | total $182,400 ÷ 2 for 6 months |
| Maintenance fee monthly $100/unit $1200/unit per year | | |
| INFILL BUILDING #3 | $10,800 | 18 units x 1,200 =$21,600 ÷ 2 |
| CHERRICK | $4,800 | 8 units x 1,200 = $9,600 ÷ 2 |
| BRONSON HIDE | $4,200 | 7 units x 1,200 = $8,400 ÷ 2 |
| | | $39,600 |
| VACANCY ALLOWANCE | $-9,120 | $19,800 |
| SOURCE OF FUNDS | $101,880 | |
| USE OF FUNDS | | |
| Redevelopment Corporation Assessment | $11,888 | no acquisition, demolition, construction, Development Arch. Eng. Fees, Rentup fees, interest on const. or permanent loan (paid off) Cost during Year 2 |
| Partner Interest | $73,448 | |
| OPERATING EXPENSES | | |
| Merchant Association | $1,364 | |
| Management | $25,080 | Total Operating Expenses |
| Maintenance | $24,620 | |
| Taxes | $74,990 | $138,050 |
| Insurance | $6,802 | |
| Utilities | $2,462 | |
| Legal, Accounting | $2,732 | |
| | $223,386 | |
| SOURCE | $101,880 | |
| USE | $223,386 | |
| NET DEFICIT | -$121,506 | |

Figure VIII-12

| CHERRICK<br>CASH FLOW FORECAST | YEAR 2<br>1982 | YEAR 3<br>1983 | YEAR 4<br>1984 | YEAR 5<br>1985 | YEAR 6<br>1986 | YEAR 7<br>1987 |
|---|---|---|---|---|---|---|
| VACANCY ALLOWANCE | (20%)($-30,558) | (15%)($-22,919) | (10%)($-15,279) | (5%)($-7,640) | (5%)($-7,640) | (5%)($-7,640) |
| NET OPERATING INCOME (w/o debt service, -vacancy) | 122,232 | 129,872 | 137,511 | 145,150 | 145,150 | 145,150 |
| DEBT SERVICE | | | | | | |
| Partner Loan | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 |
| Permanent Loan Interest | 39,221 | 38,907 | 38,643 | 38,345 | 38,008 | 37,628 |
| Principal | 1,715 | 2,029 | 2,293 | 2,591 | 2,928 | 3,308 |
| TOTAL Principal and Interest (P+I) | 48,136 | 48,136 | 48,136 | 48,136 | 48,136 | 48,136 |
| PRE-TAX CASH FLOW (NOI-TOTAL P+I) | 74,096 | 81,736 | 89,375 | 97,014 | 97,014 | 97,014 |
| + AMORTIZATION | 1,715 | 2,029 | 2,293 | 2,591 | 2,928 | 3,308 |
| - DEPRECIATION | 86,049 | 78,561 | 71,682 | 65,430 | 59,745 | 54,574 |
| TAXABLE INCOME | -10,238 | 5,204 | 19,986 | 34,175 | 40,197 | 45,748 |
| TAX @ 50% OF TAXABLE INCOME | -- | 2,602 | 9,993 | 17,088 | 20,099 | 22,874 |
| AFTER TAX CASH FLOW | -- | 2,602 | 9,993 | 17,087 | 20,098 | 22,874 |

Figure VIII-12 (Cont.)

| CHERRICK CASH FLOW FORECAST | YEAR 8 1988 | YEAR 9 1989 | YEAR 10 1990 | YEAR 11 1991 | YEAR 12 1992 |
|---|---|---|---|---|---|
| VACANCY ALLOWANCE | (5%)($-7,640) | (5%)($-7,640) | (5%)($-7,640) | (5%)($-7,640) | (5%)($-7,640) |
| NET OPERATING INCOME (w/o debt service, -vacancy) | 145,150 | 145,150 | 145,150 | 145,150 | 145,150 |
| DEBT SERVICE Partner Loan | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 |
| Permanent Loan Interest | 37,198 | 36,712 | 36,163 | 35,542 | 34,841 |
| Principal | 3,738 | 4,224 | 4,773 | 5,394 | 6,095 |
| TOTAL Principal and Interest (P+I) | 48,136 | 48,136 | 48,136 | 48,136 | 48,136 |
| PRE-TAX CASH FLOW (NOI-TOTAL P+I) | 97,014 | 97,014 | 97,014 | 97,014 | 97,014 |
| + AMORTIZATION | 3,738 | 4,224 | 4,773 | 5,394 | 6,095 |
| - DEPRECIATION | 49,868 | 45,583 | 41,680 | 38,123 | 34,882 |
| TAXABLE INCOME | 50,884 | 55,655 | 60,107 | 64,285 | 68,227 |
| TAX @ 50% OF TAXABLE INCOME | 25,442 | 27,828 | 30,054 | 32,143 | 34,114 |
| AFTER TAX CASH FLOW | 25,442 | 27,827 | 30,053 | 32,142 | 34,113 |

Figure VIII-13

| CHERRICK<br>CASH FLOW FORECAST | YEAR 1<br>1982 | YEAR 2<br>1983 | YEAR 3<br>1984 | YEAR 4<br>1985 | YEAR 5<br>1986 | YEAR 6<br>1987 |
|---|---|---|---|---|---|---|
| PRE-TAX CASH FLOW | 74,096 | 81,736 | 89,375 | 97,014 | 97,014 | 97,014 |
| +10% TAX CREDIT | 74,376 | 74,376 | 74,376 | 74,376 | 74,376 | 74,376 |
| -TAX | -- | 2,602 | 9,993 | 17,088 | 20,099 | 22,874 |
| TOTAL RETURN | 148,472 | 153,510 | 153,758 | 154,302 | 151,291 | 148,516 |
| Project<br>ROI ($1,110,000) | 13.4% | 13.8% | 13.85% | 13.9% | 13.6% | 13.4% |
| ROE ($350,000)<br>Total Contrib. &<br>Loan by Partners | 42.4% | 43.4% | 43.9% | 44% | 43.2% | 42.4% |
| TOTAL PARTNER<br>CONTRIBUTIONS<br>ROE ($290,000) | 51.2% | 52.9% | 53% | 53.2% | 52.2% | 51.2% |

Figure VIII-13 (Cont.)

| CHERRICK<br>CASH FLOW FORECAST | YEAR 8<br>1988 | YEAR 9<br>1989 | YEAR 10<br>1990 | YEAR 11<br>1991 | YEAR 12<br>1992 | |
|---|---|---|---|---|---|---|
| PRE-TAX CASH FLOW | 97,014 | 97,014 | 97,014 | 97,014 | 97,014 | |
| +10% TAX CREDIT | 74,376 | 74,376 | 74,376 | 74,376 | 74,376 | |
| -TAX | 25,442 | 27,828 | 30,054 | 32,143 | 34,114 | |
| TOTAL RETURN | 145,948 | 143,562 | 141,336 | 139,247 | 137,276 | |
| <u>Project</u><br>ROI | 13.1% | 12.93% | 12.73% | 12.5% | 12.4% | |
| ROE ($350,000)<br>Total Contrib. &<br>Loan by Partners | 41.7% | 41% | 40.4% | 39.8% | 39% | |
| TOTAL PARTNER<br>CONTRIBUTIONS<br>ROE ($290,000) | 50.3% | 49.5% | 48.7% | 48% | 47.3% | |

Note: ROI = Return on Investment

ROE = Return on Equity

Figure VIII-14

| CHERRICK<br>CASH FLOW FORECAST | YEAR 2<br>1982 | YEAR 3<br>1983 | YEAR 4<br>1984 | YEAR 5<br>1985 | YEAR 6<br>1986 | YEAR 7<br>1987 |
|---|---|---|---|---|---|---|
| EACH PARTNER<br>5 Partners Assumed in Following Calculations | | | | | | |
| INTEREST RETURN<br>($7,200 ÷ 5) | 1,440 | 1,440 | 1,440 | 1,440 | 1,440 | 1,440 |
| INCOME TOTAL RETURN<br>($ TOTAL RETURN ÷ 5) | 29,694 | 30,702 | 30,752 | 30,860 | 30,258 | 29,703 |
| TOTAL INCOME<br>(INTEREST + RETURN) | 31,134 | 32,142 | 32,192 | 32,300 | 31,698 | 31,143 |
| INTEREST/LOAN<br>$1,440/$12,000 | 12% | 12% | 12% | 12% | 12% | 12% |
| ROE<br>Income Return/ Contribution<br>$29,694/$58,000 | 51% | 55.4% | 55.5% | 55.7% | 54.7% | 53.7% |
| TOTAL<br>ROI Per Partner<br>Total Interest & Return ÷ Total Investment Loan + Contrib. ($70,000) | 44.5% | 45.9% | 46% | 46.14% | 45.3% | 44.5% |

Figure VIII-14 (Cont.)

| CHERRICK<br>CASH FLOW FORECAST | YEAR 8<br>1988 | YEAR 9<br>1989 | YEAR 10<br>1990 | YEAR 11<br>1991 | YEAR 12<br>1992 | |
|---|---|---|---|---|---|---|
| <u>EACH PARTNER</u><br>5 Partners Assumed in Following Calculations | | | | | | |
| INTEREST RETURN<br>($7,200 ÷ 5) | 1,440 | 1,440 | 1,440 | 1,440 | 1,440 | |
| INCOME TOTAL RETURN<br>($ TOTAL RETURN ÷ 5) | 29,190 | 28,712 | 28,267 | 27,849 | 27,455 | |
| TOTAL INCOME<br>(INTEREST + RETURN) | 30,630 | 30,152 | 29,707 | 29,289 | 28,895 | |
| INTEREST/LOAN<br>$1,440/$12,000 | 12% | 12% | 12% | 12% | 12% | |
| ROE<br>Income Return/<br>Contribution<br>$29,694/$58,000 | 52.8% | 52% | 51.2% | 50.5% | 49.8% | |
| <u>TOTAL</u><br>ROI Per Partner<br>Total Interest & Return<br>÷ Total Investment Loan<br>+ Contrib.<br>($70,000) | 43.8% | 43.6% | 42.4% | 41.8% | 41.3% | |

Figure VIII-15

| BRONSON HIDE CASH FLOW FORECAST | YEAR 2 1982 | YEAR 3 1983 | YEAR 4 1984 | YEAR 5 1985 | YEAR 6 1986 | YEAR 7 1987 |
|---|---|---|---|---|---|---|
| VACANCY ALLOWANCE | (20%)($-24,244) | (15%)($-18,183) | (10%)($-12,122) | (5%)($-6,061) | (5%)($-6,061) | (5%)($-6,061) |
| NET OPERATING INCOME (w/o debt service, -vacancy) | 96,976 | 103,037 | 109,098 | 115,159 | 115,159 | 115,159 |
| DEBT SERVICE | | | | | | |
| Partner Loan | 6,209 | 6,209 | 6,209 | 6,209 | 6,209 | 6,209 |
| Permanent Loan Interest | 31,950 | 31,695 | 31,480 | 31,237 | 30,962 | 30,652 |
| Principal | 1,397 | 1,653 | 1,866 | 2,110 | 2,385 | 2,695 |
| TOTAL Principal and Interest (P+I) | 39,556 | 39,556 | 39,556 | 39,556 | 39,556 | 39,556 |
| PRE-TAX CASH FLOW (NOI-TOTAL P+I) | 57,420 | 63,481 | 69,542 | 75,603 | 75,603 | 75,603 |
| + AMORTIZATION | 1,397 | 1,653 | 1,866 | 2,110 | 2,385 | 2,695 |
| - DEPRECIATION | 88,212 | 80,669 | 73,726 | 67,406 | 61,980 | 56,406 |
| TAXABLE INCOME | -29,395 | -15,535 | -2,318 | 10,307 | 16,008 | 21,892 |
| TAX @ 50% OF TAXABLE INCOME | -- | -- | -- | 5,154 | 8,004 | 10,946 |
| AFTER TAX CASH FLOW | -- | -- | -- | 5,153 | 8,004 | 10,946 |

Figure VIII-15 (Cont.)

| BRONSON HIDE CASH FLOW FORECAST | YEAR 8 1988 | YEAR 9 1989 | YEAR 10 1990 | YEAR 11 1991 | YEAR 12 1992 | |
|---|---|---|---|---|---|---|
| VACANCY ALLOWANCE | (5%)($-6,061) | (5%)($-6,061) | (5%)($-6,061) | (5%)($-6,061) | (5%)($-6,061) | |
| NET OPERATING INCOME (w/o debt service, -vacancy) | 115,159 | 115,159 | 115,159 | 115,159 | 115,159 | |
| DEBT SERVICE | | | | | | |
| Partner Loan | 6,209 | 6,209 | 6,209 | 6,209 | 6,209 | |
| Permanent Loan Interest | 30,302 | 29,906 | 29,459 | 28,954 | 28,382 | |
| Principal | 3,045 | 3,441 | 3,888 | 4,394 | 4,965 | |
| TOTAL Principal and Interest (P+I) | 39,556 | 39,556 | 39,556 | 39,556 | 39,556 | |
| PRE-TAX CASH FLOW (NOI-TOTAL P+I) | 75,603 | 75,603 | 75,603 | 75,603 | 75,603 | |
| + AMORTIZATION | 3,045 | 3,441 | 3,888 | 4,394 | 4,965 | |
| - DEPRECIATION | 51,625 | 47,263 | 43,285 | 39,655 | 36,338 | |
| TAXABLE INCOME | 27,023 | 31,781 | 36,206 | 40,342 | 44,230 | |
| TAX @ 50% OF TAXABLE INCOME | 13,512 | 15,891 | 18,103 | 20,171 | 22,115 | |
| AFTER TAX CASH FLOW | 13,511 | 15,890 | 18,103 | 20,171 | 22,115 | |

Figure VIII-16

| BRONSON HIDE<br>CASH FLOW FORECAST | YEAR 2<br>1982 | YEAR 3<br>1983 | YEAR 4<br>1984 | YEAR 5<br>1985 | YEAR 6<br>1986 | YEAR 7<br>1987 |
|---|---|---|---|---|---|---|
| PRE-TAX CASH FLOW | 57,420 | 63,481 | 69,542 | 75,603 | 75,603 | 75,603 |
| +10% TAX CREDIT | 82,894 | 82,894 | 82,894 | 82,894 | 82,894 | 82,894 |
| -TAX | -- | -- | -- | 5,154 | 8,004 | 10,946 |
| TOTAL RETURN | 140,314 | 146,375 | 152,436 | 153,343 | 150,493 | 147,551 |
| **Project**<br>ROI ($1,120,000) | 12.5% | 13% | 13.6% | 13.7% | 13.4% | 13.2% |
| ROE ($352,800)<br>Total Contrib. & Loan by Partners | 39.8% | 41.5% | 43.2% | 43.5% | 42.7% | 41.8% |
| TOTAL PARTNER CONTRIBUTIONS<br>ROE ($292,824) | 47.9% | 50% | 52% | 52.4% | 51.4% | 50.4% |

Figure VIII-16 (Cont.)

| BRONSON HIDE CASH FLOW FORECAST | YEAR 8 1988 | YEAR 9 1989 | YEAR 10 1990 | YEAR 11 1991 | YEAR 12 1992 | |
|---|---|---|---|---|---|---|
| PRE-TAX CASH FLOW | 75,603 | 75,603 | 75,603 | 75,603 | 75,603 | |
| +10% TAX CREDIT | 82,894 | 82,894 | 82,894 | 82,894 | 82,894 | |
| -TAX | 13,512 | 15,891 | 18,103 | 20,171 | 22,115 | |
| TOTAL RETURN | 144,985 | 142,606 | 140,394 | 138,326 | 136,382 | |
| Project<br>ROI ($1,720,000) | 13% | 12.7% | 12.5% | 12.4% | 12.2% | |
| ROE ($352,800) Total Contrib. & Loan by Partners | 41% | 40.4% | 39.8% | 39.2% | 38.7% | |
| TOTAL PARTNER CONTRIBUTIONS<br>ROE ($292,824) | 49.5% | 48.7% | 47.9% | 47.2% | 46.6% | |

Figure VIII-17

| BRONSON HIDE<br>CASH FLOW FORECAST | YEAR 2<br>1982 | YEAR 3<br>1983 | YEAR 4<br>1984 | YEAR 5<br>1985 | YEAR 6<br>1986 | YEAR 7<br>1987 |
|---|---|---|---|---|---|---|
| EACH PARTNER<br>5 Partners Assumed in Following Calculations | | | | | | |
| INTEREST RETURN<br>$6,209 ÷ 5 | 1,242 | 1,242 | 1,242 | 1,242 | 1,242 | 1,242 |
| INCOME TOTAL RETURN<br>($ TOTAL RETURN ÷ 5) | 28,063 | 29,275 | 30,487 | 30,669 | 30.099 | 29,510 |
| TOTAL INCOME<br>(INTEREST + RETURN) | 29,305 | 30,517 | 31,729 | 31,911 | 31,341 | 30,752 |
| INTEREST/LOAN<br>$1,242/$11,995 | 10.4% | 10.4% | 10.4% | 10.4% | 10.4% | 10.4% |
| ROE<br>Income Return/<br>Contribution<br>$28,063/$58,565 | 47.9% | 50% | 52% | 54.5% | 51.4% | 50.4% |
| TOTAL<br>ROI Per Partner<br>Total Interest & Return<br>÷ Total Investment Loan<br>+ Contrib. ($70,560) | 41.5% | 43.2% | 45% | 45.2% | 44.4% | 43.6% |

Figure VIII-17 (Cont.)

| BRONSON HIDE<br>CASH FLOW FORECAST | YEAR 8<br>1988 | YEAR 9<br>1989 | YEAR 10<br>1980 | YEAR 11<br>1991 | YEAR 12<br>1992 | |
|---|---|---|---|---|---|---|
| EACH PARTNER<br>5 Partners Assumed in Following Calculations | | | | | | |
| INTEREST RETURN<br>($6,209 ÷ 5) | 1,242 | 1,242 | 1,242 | 1,242 | 1,242 | |
| INCOME TOTAL RETURN<br>($ TOTAL RETURN ÷ 5) | 28,997 | 28,521 | 28,079 | 27,665 | 27,276 | |
| TOTAL INCOME<br>(INTEREST + RETURN) | 30,239 | 29,763 | 29,321 | 28,907 | 28,518 | |
| INTEREST/LOAN<br>$1,242/$11,995 | 10.4% | 10.4% | 10.4% | 10.4% | 10.4% | |
| ROE<br>Income Return/<br>Contribution<br>$28,063/$58,565 | 49.5% | 48.7% | 47.9% | 47.2% | 46.6% | |
| TOTAL<br>ROI Per Partner<br>Total Interest & Return<br>÷ Total Investment Loan<br>+ Contrib. ($70,560) | 42.9% | 42.2% | 41.6% | 41% | 40.4% | |

Figure VIII-18

| INFILL BUILDING CASH FLOW FORECAST | YEAR 2 (6 MONTHS) 1982 | YEAR 3 1983 | YEAR 4 1984 | YEAR 5 1985 | YEAR 6 1986 | YEAR 7 1987 |
|---|---|---|---|---|---|---|
| VACANCY ALLOWANCE | (20%)($-9,120) | (15%)($-27,360) | (10%)($-18,240) | (5%)($-9,120) | (5%)($-9,120) | (5%)($-9,120) |
| NET OPERATING INCOME (w/o debt service, -vacancy) | 82,080 | 155,040 | 164,160 | 173,280 | 173,280 | 173,280 |
| DEBT SERVICE Partner Loan | 73,448 | 146,895 | 146,895 | 146,895 | 146,895 | 146,895 |
| Permanent Loan Interest | -- | -- | -- | -- | -- | -- |
| Principal | -- | -- | -- | -- | -- | -- |
| TOTAL Principal and Interest (P+I) | 73,448 | 146,895 | 146,895 | 146,895 | 146,895 | 146,895 |
| PRE-TAX CASH FLOW (NOI-TOTAL P+I) | 8,632 | 8,145 | 17,265 | 26,385 | 26,385 | 26,385 |
| + AMORTIZATION | -- | -- | -- | -- | -- | -- |
| - DEPRECIATION | 118,845 | 213,992 | 192,593 | 173,334 | 156,000 | 140,400 |
| TAXABLE INCOME | -110,213 | -205,847 | -175,328 | -146,949 | -129,615 | -114,015 |
| TAX @ 50% OF TAXABLE INCOME | -- | -- | -- | -- | -- | -- |
| AFTER TAX CASH FLOW | -- | -- | -- | -- | -- | -- |

Figure VIII-18 (Cont.)

| INFILL BUILDING CASH FLOW FORECAST | YEAR 8 1988 | YEAR 9 1989 | YEAR 10 1990 | YEAR 11 1991 | YEAR 12 1992 | |
|---|---|---|---|---|---|---|
| VACANCY ALLOWANCE | (5%)($-9,120) | (5%)($-9,120) | (5%)($-9,120) | (5%)($-9,120) | (5%)($-9,120) | |
| NET OPERATING INCOME (w/o debt service, -vacancy) | 173,280 | 173,280 | 173,280 | 173,280 | 173,280 | |
| DEBT SERVICE<br>Partner Loan | 146,895 | 146,895 | 146,895 | 146,895 | 146,895 | |
| Permanent Loan Interest | -- | -- | -- | -- | -- | |
| Principal | -- | -- | -- | -- | -- | |
| TOTAL Principal and Interest (P+I) | 146,895 | 146,895 | 146,895 | 146,895 | 146,895 | |
| PRE-TAX CASH FLOW (NOI-TOTAL P+I) | 26,385 | 26,385 | 26,385 | 26,385 | 26,385 | |
| + AMORTIZATION | -- | -- | -- | -- | -- | |
| - DEPRECIATION | 126,360 | 113,724 | 102,352 | 92,117 | 82,905 | |
| TAXABLE INCOME | -99,975 | -87,339 | -75,967 | -65,732 | -56,520 | |
| TAX @ 50% OF TAXABLE INCOME | -- | -- | -- | -- | -- | |
| AFTER TAX CASH FLOW | -- | -- | -- | -- | -- | |

Figure VIII-19

| INFILL BUILDING CASH FLOW FORECAST | YEAR 2 (6 MONTHS) 1982 | YEAR 3 1983 | YEAR 4 1984 | YEAR 5 1985 | YEAR 6 1986 | YEAR 7 1987 |
|---|---|---|---|---|---|---|
| PRE-TAX CASH FLOW | 8,632 | 8,145 | 17,265 | 26,385 | 26,385 | 26,385 |
| +10% TAX CREDIT | none | none | none | none | none | none |
| -TAX | -- | -- | -- | -- | -- | -- |
| TOTAL RETURN | 8,632 | 8,145 | 17,265 | 26,385 | 26,385 | 26,385 |
| <u>Project</u> | | .00179 | .0038 | 58 | | |
| ROI ($4,538,220)* | .38% | .18% | .4% | .6% | .6% | .6% |
| ROE ($1,426,950)* Total Contrib. & Loan by Partners | 1.2% | .57% | 1.2% | 1.8% | 1.8% | 1.8% |
| TOTAL PARTNER CONTRIBUTIONS ROE ($1,184,368)* | 1.46% | .69% | 1.5% | 2.2% | 2.2% | 2.2% |

*Note: 1/2 of these numbers times total return for 6 months.

Figure VIII-19 (Cont.)

| INFILL BUILDING<br>CASH FLOW FORECAST | YEAR 8<br>1988 | YEAR 9<br>1989 | YEAR 10<br>1990 | YEAR 11<br>1991 | YEAR 12<br>1992 | |
|---|---|---|---|---|---|---|
| PRE-TAX CASH FLOW | 26,385 | 26,385 | 26,385 | 26,385 | 26,385 | |
| +10% TAX CREDIT | none | none | none | none | none | |
| -TAX | -- | -- | -- | -- | -- | |
| TOTAL RETURN | 26,385 | 26,385 | 26,385 | 26,385 | 26,385 | |
| Project<br>ROI ($4,538,220) | .6% | .6% | .6% | .6% | .6% | |
| ROE ($1,426,950)<br>Total Contrib. &<br>Loan by Partners | 1.8% | 1.8% | 1.8% | 1.8% | 1.8% | |
| TOTAL PARTNER<br>CONTRIBUTIONS<br>ROE ($1,184,368) | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% | |

Figure VIII-20

| INFILL BUILDING<br>CASH FLOW FORECAST | YEAR 2<br>1982 | YEAR 3<br>1983 | YEAR 4<br>1984 | YEAR 5<br>1985 | YEAR 6<br>1986 | YEAR 7<br>1987 |
|---|---|---|---|---|---|---|
| EACH PARTNER<br>5 Partners Assumed in Following Calculations | | | | | | |
| INTEREST RETURN<br>$146,895 ÷ 5* | 14,690 | 29,379 | 29,379 | 29,379 | 29,379 | 29,379 |
| INCOME TOTAL RETURN<br>($ TOTAL RETURN ÷ 5)* | 1,726 | 1,629 | 3,473 | 5,277 | 5,277 | 5,277 |
| TOTAL INCOME<br>(INTEREST + RETURN) | 16,416 | 31,008 | 32,852 | 34,656 | 34,656 | 34,656 |
| INTEREST/LOAN<br>$29,379/($242,582)* | 12% | 12% | 12% | 12% | 12% | 12% |
| ROE<br>Income Return/<br>Contribution<br>$1,726/$1,184,368 | .29% | .14% | .29% | .45% | .45% | .45% |
| TOTAL<br>ROI Per Partner<br>Total Interest & Return<br>÷ Total Investment Loan<br>+ Contrib. ($1,426,950) | 2.3% | 2.17% | 2.3% | 2.4% | 2.4% | 2.4% |

*Calculated for 6 months

Figure VIII-20 (Cont.)

| INFILL BUILDING<br>CASH FLOW FORECAST | YEAR 8<br>1988 | YEAR 9<br>1989 | YEAR 10<br>1990 | YEAR 11<br>1991 | YEAR 12<br>1992 | |
|---|---|---|---|---|---|---|
| EACH PARTNER<br>5 Partners Assumed in Following Calculations | | | | | | |
| INTEREST RETURN<br>$146,895 ÷ 5 | 29,379 | 29,379 | 29,379 | 29,379 | 29,379 | |
| INCOME TOTAL RETURN<br>($ TOTAL RETURN ÷ 5) | 5,277 | 5,277 | 5,277 | 5,277 | 5,277 | |
| TOTAL INCOME<br>(INTEREST + RETURN) | 34,656 | 34,656 | 34,656 | 34,656 | 34,656 | |
| INTEREST/LOAN<br>$29,379/$242,582 | 12% | 12% | 12% | 12% | 12% | |
| ROE<br>Income Return/<br>Contribution<br>$5,277/$1,484,368 | .45% | .45% | .45% | .45% | .45% | |
| TOTAL<br>ROI Per Partner<br>Total Interest & Return<br>÷ Total Investment Loan<br>+ Contrib. ($1,426,950) | 2.4% | 2.4% | 2.4% | 2.4% | 2.4% | |

Figure VIII-21

ALTERNATIVE #2 (Add Maintenance Fee to NOI)

| INFILL BUILDING<br>CASH FLOW FORECAST | YEAR 2<br>(6 MONTHS)<br>1982 | YEAR 3<br>1983 | YEAR 4<br>1984 | YEAR 5<br>1985 | YEAR 6<br>1986 | YEAR 7<br>1987 |
|---|---|---|---|---|---|---|
| VACANCY ALLOWANCE | (20%)($-9,120) | (15%)($-27,360) | (10%)($-18,240) | (5%)($-9,120) | (5%)($-9,120) | (5%)($-9.210) |
| NET OPERATING INCOME (w/o debt service, -vacancy)* | 101,880 | 194,640 | 203,760 | 212,880 | 212,880 | 212,880 |
| PARTNER LOAN | 73,448 | 146,895 | 146,895 | 146,895 | 146,895 | 146,895 |
| PERMANENT LOAN INTEREST | -- | -- | -- | -- | -- | -- |
| PRINCIPAL | -- | -- | -- | -- | -- | -- |
| TOTAL Principal and Interest (P+I) | 73,448 | 146,895 | 146,895 | 146,895 | 146,895 | 146,895 |
| PRE-TAX CASH FLOW (NOI-TOTAL P+I) | 28,432 | 47,745 | 56,865 | 65,985 | 65,985 | 65,985 |
| + AMORTIZATION | -- | -- | -- | -- | -- | -- |
| - DEPRECIATION | 118,845 | 213,992 | 192,593 | 173,334 | 156,000 | 140,400 |
| TAXABLE INCOME | -90,413 | -166,247 | -135,728 | -107,349 | -90,015 | -74,415 |
| TAX @ 50% OF TAXABLE INCOME | -- | -- | -- | -- | -- | -- |
| AFTER TAX CASH FLOW | -- | -- | -- | -- | -- | -- |

*Add $19,800 (6 Months) or $39,600 (1 Year) to NOI for Maintenance Fees

Figure VIII-21 (Cont.)

ALTERNATIVE #2 (Add Maintenance Fee to NOI)

| INFILL BUILDING CASH FLOW FORECAST | YEAR 8 1988 | YEAR 9 1989 | YEAR 10 1990 | YEAR 11 1991 | YEAR 12 1992 | |
|---|---|---|---|---|---|---|
| VACANCY ALLOWANCE | (5%)($-9,120) | (5%)($-9,120) | (5%)($-9,120) | (5%)($-9,120) | (5%)($-9,120) | |
| NET OPERATING INCOME (w/o debt service, -vacancy)* | 212,800 | 212,800 | 212,800 | 212,800 | 212,800 | |
| PARTNER LOAN | 146,895 | 146,895 | 146,895 | 146,895 | 146,895 | |
| PERMANENT LOAN INTEREST | -- | -- | -- | -- | -- | |
| PRINCIPAL | -- | -- | -- | -- | -- | |
| TOTAL Principal and Interest (P+I) | 146,895 | 146,895 | 146,895 | 146,895 | 146,895 | |
| PRE-TAX CASH FLOW (NOI-TOTAL P+I) | 65,985 | 65,985 | 65,985 | 65,985 | 65,985 | |
| + AMORTIZATION | -- | -- | -- | -- | -- | |
| - DEPRECIATION | 126,360 | 113,724 | 102,352 | 92,117 | 82,905 | |
| TAXABLE INCOME | -60,375 | -47,739 | -36,367 | -26,132 | -16,920 | |
| TAX @ 50% OF TAXABLE INCOME | -- | -- | -- | -- | -- | |
| AFTER TAX CASH FLOW | -- | -- | -- | -- | -- | |

*Note: Add $19,800 (6 Months) or $39,600 (1 Year) to NOI for Maintenance Fees

Figure VIII-22

ALTERNATIVE #2 (Add Maintenance Fee to NOI)

| INFILL BUILDING CASH FLOW FORECAST | YEAR 2 (6 MONTHS) 1982 | YEAR 3 1983 | YEAR 4 1984 | YEAR 5 1985 | YEAR 6 1986 | YEAR 7 1987 |
|---|---|---|---|---|---|---|
| PRE-TAX CASH FLOW | 28,432 | 47,745 | 56,865 | 65,985 | 65,985 | 65,985 |
| +10% TAX CREDIT | -- | -- | -- | -- | -- | -- |
| -TAX | -- | -- | -- | -- | -- | -- |
| TOTAL RETURN | 28,432 | 47,745 | 56,865 | 65,985 | 65,985 | 65,985 |
| <u>Project</u> ROI ($4,538,220)* | 1.25% | 1.% | 1.25% | 1.45% | 1.45% | 1.45% |
| ROE ($1,426,950)* Total Contrib. & Loan by Partners | 4% | 3.3% | 4% | 4.6% | 4.6% | 4.6% |
| TOTAL PARTNER CONTRIBUTIONS ROE ($1,184,368)* | 4.8% | 4% | 4.8% | 5.6% | 5.6% | 5.6% |

*Note: 1/2 of These Numbers Times Total Return for 6 Months

Figure VIII-22 (Cont.)

ALTERNATIVE #2 (Add Maintenance Fee to NOI)

| INFILL BUILDING<br>CASH FLOW FORECAST | YEAR 8<br>(6 MONTHS)<br>1988 | YEAR 9<br>1989 | YEAR 10<br>1990 | YEAR 11<br>1991 | YEAR 12<br>1992 |
|---|---|---|---|---|---|
| PRE-TAX CASH FLOW | 65,985 | 65,985 | 65,985 | 65,985 | 65,985 |
| +10% TAX CREDIT | -- | -- | -- | -- | -- |
| -TAX | -- | -- | -- | -- | -- |
| TOTAL RETURN | 65,985 | 65,985 | 65,985 | 65,985 | 65,985 |
| Project<br>ROI ($4,538,220)* | 1.45% | 1.45% | 1.45% | 1.45% | 1.45% |
| ROE ($1,426,950)*<br>Total Contrib. &<br>Loan by Partners | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% |
| TOTAL PARTNER<br>CONTRIBUTIONS<br>ROE ($1,184,368)* | 5.6% | 5.6% | 5.6% | 5.6% | 5.6% |

*Note: 1/2 of These Numbers Times Total Return for 6 Months

Figure VIII-23

ALTERNATIVE #2

| INFILL BUILDING<br>CASH FLOW FORECAST | YEAR 2<br>1982 | YEAR 3<br>1983 | YEAR 4<br>1984 | YEAR 5<br>1985 | YEAR 6<br>1986 | YEAR 7<br>1987 |
|---|---|---|---|---|---|---|
| <u>EACH PARTNER</u><br>5 Partners Assumed in Following Calculations | | | | | | |
| INTEREST RETURN<br>$146,895 ÷ 5 | 14,690 | 29,379 | 29,379 | 29,379 | 29,379 | 29,379 |
| INCOME TOTAL RETURN<br>($ TOTAL RETURN ÷ 5) | 5,686 | 9,549 | 11,373 | 13,179 | 13,179 | 13,179 |
| TOTAL INCOME<br>(INTEREST + RETURN) | 20,376 | 38,928 | 40,752 | 42,558 | 42,558 | 42,558 |
| INTEREST/LOAN<br>($242,582) | 12.1% | 12.1% | 12.1% | 12.1% | 12.1% | 12.1% |
| ROE<br>Income Return/<br>Contribution<br>($1,184,368) | .96% | .81% | .96% | 1.1% | 1.1% | 1.1% |
| <u>TOTAL</u><br>ROI Per Partner<br>Total Interest & Return<br>÷ Total Investment Loan<br>+ Contrib. ($1,426,950) | 2.9% | 2.7% | 2.9% | 3% | 3% | 3% |

Figure VIII-23 (Cont.)

ALTERNATIVE #2

| INFILL BUILDING<br>CASH FLOW FORECAST | YEAR 8<br>1988 | YEAR 9<br>1989 | YEAR 10<br>1990 | YEAR 11<br>1991 | YEAR 12<br>1992 | |
|---|---|---|---|---|---|---|
| EACH PARTNER<br>5 Partners Assumed in Following Calculations | | | | | | |
| INTEREST RETURN | 29,379 | 29,379 | 29,379 | 29,379 | 29,379 | |
| INCOME TOTAL RETURN ($ TOTAL RETURN ÷ 5) | 13,179 | 13,179 | 13,179 | 13,179 | 13,179 | |
| TOTAL INCOME (INTEREST + RETURN) | 42,558 | 42,558 | 42,558 | 42,558 | 42,558 | |
| INTEREST/LOAN ($242,582) | 12.1% | 12.1% | 12.1% | 12.1% | 12.1% | |
| ROE<br>Income Return/ Contribution ($1,184,368) | 1.1% | 1.1% | 1.1% | 1.1% | 1.1% | |
| TOTAL<br>ROI Per Partner<br>Total Interest & Return ÷ Total Investment Loan + Contrib. ($1,426,950) | 3% | 3% | 3% | 3% | 3% | |

Figure VIII-24

| AVERAGES | YEAR 2 1982 | YEAR 3 1983 | YEAR 4 1984 | YEAR 5 1985 | YEAR 6 1986 | YEAR 7 1987 |
|---|---|---|---|---|---|---|
| ROE TOTAL PARTNER CONTRIBUTION CHERRICK | 51.2% | 52.9% | 53% | 53.2% | 52.2% | 51.2% |
| ROE BRONSON | 47.9% | 50% | 52% | 52.4% | 51.4% | 50.4% |
| ROE NEW BLDG #2 | 4.8% | 4% | 4.8% | 5.6% | 5.6% | 5.6% |
| ROE TOTAL PARTNER CONTRIBUTION-AVERAGE | 34.6% | 35.6% | 36.6% | 37% | 36.4% | 35.7% |
| ROI PER PARTNER* CHERRICK | 44.5% | 45.9% | 46% | 46.14% | 45.3% | 44.5% |
| ROI PER PARTNER BRONSON | 41.5% | 43.2% | 45% | 45.2% | 44.4% | 43.6% |
| ROI PER PARTNER NEW BLDG #2 | 2.9% | 2.7% | 2.9% | 3% | 3% | 3% |
| ROI PER PARTNER AVERAGE | 29.6% | 30.6% | 31.3% | 31.4% | 30.9% | 30.4% |

Figure VIII-24 (Cont.)

| AVERAGES | YEAR 8 1988 | YEAR 9 1989 | YEAR 10 1990 | YEAR 11 1991 | YEAR 12 1992 | AVERAGES FOR 11 YEARS |
|---|---|---|---|---|---|---|
| ROE TOTAL PARTNER CONTRIBUTION CHERRICK | 50.3% | 49.5% | 48.7% | 48% | 47.3% | 50.6% |
| ROE BRONSON | 49.5% | 48.7% | 47.9% | 47.2% | 46.6% | 49.5% |
| ROE NEW BLDG #2 | 5.6% | 5.6% | 5.6% | 5.6% | 5.6% | 5.3% |
| ROE TOTAL PARTNER CONTRIBUTION-AVERAGE | 35.1% | 34.6% | 34.1% | 33.6% | 33.2% | 35% |
| ROI PER PARTNER CHERRICK | 43.8% | 43.6% | 42.4% | 41.8% | 41.3% | 44.1% |
| ROI PER PARTNER BRONSON | 42.9% | 42.2% | 41.6% | 41% | 40.4% | 42.8% |
| ROI PER PARTNER NEW BLDG #2 | 3% | 3% | 3% | 3% | 3% | 2.95% |
| ROI PER PARTNER AVERAGE | 29.9% | 29.6% | 29% | 28.6% | 28.2% | 30% |

Note: ROI = Return on Investment

ROE = Return on Equity

* Total interest + Return ÷ Total Investment Loan + Contribution

Figure VIII-24 (Cont.)

| AVERAGES | YEAR 2<br>1982 | YEAR 3<br>1983 | YEAR 4<br>1984 | YEAR 5<br>1985 | YEAR 6<br>1986 | YEAR 7<br>1987 |
|---|---|---|---|---|---|---|
| PROJECT ROI CHERRICK | 13.4% | 13.8% | 13.85% | 13.9% | 13.6% | 13.4% |
| PROJECT ROI BRONSON | 12.5% | 13% | 13.6% | 13.7% | 13.4% | 13.2% |
| PROJECT ROI NEW BLDG #2 | 1.25% | 1% | 1.25% | 1.45% | 1.45% | 1.45% |
| PROJECT ROI AVG. | 9% | 9.3% | 9.6% | 9.68% | 9.5% | 9.4% |
| PARTNER CONTRIBUTION + LOAN | | | | | | |
| PROJECT ROE CHERRICK | 42.4% | 43.4% | 43.9% | 44% | 43.2% | 42.4% |
| PROJECT ROE BRONSON | 39.8% | 41.5% | 43.2% | 43.5% | 42.7% | 41.8% |
| PROJECT ROE NEW BLDG #2 | 4% | 3.3% | 4% | 4.6% | 4.6% | 4.6% |
| PROJECT ROE AVG. PARTNER CONTRIBUTION + LOAN | 28.73% | 29.4% | 30.4% | 30.7% | 30.2% | 29.6% |

Figure VIII-24 (Cont.)

| AVERAGES | YEAR 8<br>1988 | YEAR 9<br>1989 | YEAR 10<br>1990 | YEAR 11<br>1991 | YEAR 12<br>1992 | AVERAGES<br>FOR 11 YEARS |
|---|---|---|---|---|---|---|
| PROJECT ROI CHERRICK | 13.1% | 12.93% | 12.73% | 12.5% | 12.4% | 13.2% |
| PROJECT ROI BRONSON | 13% | 12.7% | 12.5% | 12.4% | 12.2% | 12.9% |
| PROJECT ROI NEW BLDG #2 | 1.45% | 1.45% | 1.45% | 1.45% | 1.45% | 1.37% |
| PROJECT ROI AVG. | 9.18% | 9% | 8.89% | 8.78% | 8.68% | 9.2% |
| PARTNER CONTRIBUTION + LOAN | | | | | | |
| PROJECT ROE CHERRICK | 41.7% | 41% | 40.4% | 39.8% | 39% | 41.9% |
| PROJECT ROE BRONSON | 41% | 40.4% | 39.8% | 39.2% | 38.7% | 37.3% |
| PROJECT ROE NEW BLDG #2 | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% | 4.37% |
| PROJECT ROE AVG. PARTNER CONTRIBUTION + LOAN | 29.1% | 28.7% | 28.3% | 27.9% | 27.4% | 27.9% |

Note: ROI = Return on Investment

ROE = Return on Equity

All of the apartments are pre-sold in June 1982. Selling these units six months later prevents flooding the residential market at one time. Income is on an average of $104,844 per apartment unit for 18 units ($1,887,192). The income includes the cost of the new building's parking and community space cost for each unit, and the same cost for each unit in the Cherrick and Bronson Hide Buildings which is transferred to the new building's income. The total income is $3,297,027 with $21,611 used for renting and selling fees for a net surplus of $3,275,416. To reduce the $3,111,270 loan, $3,111,270 is taken from the net surplus to pay off the total loan and retain a net surplus of $164,146.

## CASH FLOW FORECAST PROCEDURE

The cash flow forecast continues the examination of the feasibility analysis in Figures VIII-8 through VIII-11 for years one and two. This examination is continued from Year 2 through Year 12 for a total of ten years in Figures VIII-12 to VIII-24. Inflation as in all previous figures is not calculated. As the years of operation increases the vacancy rate drops from 20% in the first year to 5% in the years following Year 5. The net operating income increases to reflect the additional income received from the reduction of the vacancy rate. The reducing interest and increasing principal on the permanent loan are characteristic of an old structure. It is also assumed that improvements will be depreciated on a component basis which will average, with the exception of the elevator improvements to a composite life of 20 years. The depreciation for the infill project is calculated at a 150% Declining Balance for 15 years on the construction cost ($2,377,689).

The investor in the three proposed developments is assumed to be in a 50% income tax bracket. The taxable income multiplied by 50% yields the tax due. The pre-tax cash flow is added to the 10% Tax Credit and from this total the taxes are subtracted to yield the total return on the project. It has been assumed that the improvements will qualify as "certified rehabilitation" pursuant to Section 191(d)(4), IRS amortized loan. The pre-tax cash flow is calculated by subtracting the total principal and interest payment from the net operating income. The pre-tax cash flow is added to the amortization (principal); the depreciation is subtracted to obtain the taxable income. Depreciation for the Cherrick and Bronson Hide at a 150% declining balance for 15 years for the building shell, 200% declining balance for the elevator for 15 years, and 150% declining balance for the improvements for 20 years. This calculation assumes that the property qualifies for the use of accelerated depreciation methods such as a certified historic district. Accordingly, a 10% tax investment has been projected on the amount to be expended for elevator and other improvements, except to the extent such improvements expand the size of the present building. No tax credit is given to new construction.

The return on investment (ROI) for the project is the total return divided by the total source of funds invested. The return on investment for the Cherrick Building ranges from 13.9% to 12.4% for 10 years (average 13.2%) and the Bronson Hide ranges from 13.7% to 12.2% for 10 years (average 12.9%). Both of these buildings return more than the 10% ROI desired from the project. The infill building barely makes a return on investment ranging from .38% to .6% in the remaining 8 years. This is well below the desired return on investments. This could be raised by the following methods: by charging more rent to receive more income, raising the selling price for the apartments to reduce the partner interest payments, to reduce the amount spent on development and construction, and to charge a maintenance fee to aid in covering the expenses. The rent fee of $12 a square foot on the infill building is at the highest market price within the Landing (normal rents range from $8 to $11#). The condominium selling price is also at the maximum market rate and the partners desire the steady interest payment at the given amount of $146,895 a year. The construction cost can not be lowered without falling below the desired quality rate. Therefore, a maintenance fee is charged to each apartment in all three buildings and credited to the infill building to cover operating expenses on the common facilities and parking. The maximum reasonable maintenance charge per living unit is $100 a month ($1,200 a year). A much higher maintenance fee would need to be charged to cover the actual operating expenses. Infill Building Alternative 2 includes this maintenance fee in the calculations (Figures VIII-11 and VIII-21 to VIII-23). The resulting return on investment for alternative 2 is improved but still well below the desired amount; the ROI ranges from 1% to 1.45% for the remaining eight years (average 1.37%). At this point, one might consider the proposed adaptive use of the Cherrick and Bronson Hide Buildings which make the desired ROI and not construct the new building. The new building, although it produces a very low ROI, is necessary to sell the condominium spaces in the existing buildings at a profit because it includes the necessary amenities of parking and community space. If the three buildings are combined, the resulting ROI is an average of 9.2%. This return on investment is below the desired ROI; however, the loss on building three may aid in reducing the investor's (50% tax bracket) taxes, and the appreciation of the three projects, especially the new building, may be considerable in the future.

The return on equity is calculated by the return on investment divided by the total equity. The average return on equity was 41.9% for the

Cherrick Building, 37.3% for the Bronson Hide, 4.37% for the new building alternative #2, for a total average of all three buildings of 27.9%.

The total return on equity for the five partners was calculated at total income return divided by the total partner contribution (not including interest income or partner loan). The average ROE for the Cherrick Building is 50.6%, for the Bronson Hide 49.5%, for the new building alternative #2 5.3%, for a total ROE of the three buildings of 35%.

The total return on investment for each partner is the total interest received plus the return divided by each partner's contribution and loan. The ROI for each partner is 44.1% for the Cherrick Building, 42.8% for the Bronson Hide, 2.95% for the new building alternative #2, for a total of the three projects of 30% for each partner (Figure VIII-24).

Combining the three buildings in one development package allows the project to be economically feasible.

# CHAPTER IX

## DESIGN TAKE-OFF COST ESTIMATE

The design take-off cost estimate has been conducted to evaluate the construction cost of the proposed design to determine the project's feasibility. The detailed take-off estimate also defines the quality and types of materials proposed in the design.

The design take-off cost analysis is based on the following sources and assumptions.

- All cost figures are derived from:

  <u>Mean's - Repair and Remodeling Cost Data 1981</u>

  <u>Mean's Construction Cost Data 1981</u>

  <u>Mean's Building Systems Cost Guide 1978</u> (adjusted to 1981 prices)

- All cost figures include overhead and profit
- The City is responsible for construction of the sidewalks around the existing buildings and the sidewalks around the infill development
- The City is responsible for street lighting, drainage, signage, and all other public improvements
- The construction cost analysis for residential units in all three buildings includes primed drywall partitions and ceiling with two coats of finish paint. There is no allowance for wall covering to be selected and installed by the owner. Included in the cost analysis is a $130 allowance for carpet

and installation. The carpet will be selected by the owner. An average amount of electrical distribution is included for all individual units; receptacles, and switches have also been included. The owner of the residential unit is responsible for the selection and installation of fixtures. No allowance has been included for the fixture costs.

- The commercial shops also have a carpeting allowance (commercial grade). An average amount of electrical distribution is included for all commercial shops. The receptacles, switches and floures-cent fixtures have also been included in the estimate.

TABLE IX - 1

CHERRICK BUILDING - COST COMPARISON

| Design Take-Off Estimate | Feasibility Estimate |
|---|---|
| General Construction | |
| $1,303,613 | $640,000 |
| Leasable Area | |
| 23,521 | 23,612 |
| Gross Square Feet | |
| 35,872 | 27,780 |
| General Construction Cost Per Square Foot | |
| $36.00 | $23.00 |
| Development Fees (at 1.25 x gross square feet) | |
| $4,484 | $3,473 |
| Architectural, Engineering and Other Fees (10% General Construction Cost) | |
| $130,361 | $64,000 |
| Total Cost | |
| $1,303,613 | $640,000 |
| 4,484 | 3,473 |
| 130,361 | 64,000 |
| $1,438,458 | $707,473 |

TABLE IX - 2

BRONSON HIDE - COST COMPARISON

| Design Take-Off | Feasibility Estimate |
|---|---|
| General Construction Cost | |
| $1,152,003 | $719,220 |
| Leasable Area | |
| 17,320 | 19,180 |
| Gross Square Feet | |
| 27,000 | 23,974 |
| General Construction Cost Per Square Foot | |
| $42.67 | $30.00 |
| Development Fees (at 1.84 x gross square feet) | |
| $4,968 | $4,411 |
| Architectural, Engineering and Other Fees (at 10% of General Construction Cost) | |
| $115,200 | $71,922 |
| Total Cost | |
| $1,152,003 | $719,220 |
| 4,968 | 4,411 |
| 115,200 | 71,922 |
| $1,272,171 | $795,553 |

TABLE IX - 3

NEW INFILL BUILDING - COST COMPARISON

| Design Take-Off Estimate | Feasibility Estimate |
|---|---|
| General Construction Cost | |
| $5,072,955 | $2,377,689 |
| Leasable Area | |
| 117,234 | 66,395 |
| Gross Square Feet | |
| 123,404 | 76,000 |
| General Construction Cost Per Square Foot | |
| $41.00 | $31.00 |
| Development Fees (at 1.25 x gross square feet) | |
| $15,426 | $9,500 |
| Architectural, Engineering and Other Fees (at 10% of General Construction Cost) | |
| $507,296 | $237,769 |
| Total Cost | |
| $5,072,955 | $2,377,689 |
| 15,426 | 9,500 |
| 507,296 | 237,769 |
| $5,595,677 | $2,624,958 |

CONCLUSIONS

| | Design Take-Off Estimate | Feasibility Estimate |
|---|---|---|
| Gross Construction Cost Per Square Foot | | |
| CHERRICK | $36.00 | $23.00 |
| BRONSON HIDE | $42.67 | $30.00 |
| INFILL | $41.00* | $31.00 |

*This cost appears to be low. This is due to the lack of finishes in the retail, condominiums, and health club facility. The actual cost should be $55-60/sq. ft.

In each case, the design take-off estimate is 57%, 42% and 32% above the feasibility estimate. This increased cost is due in part to the preliminary cost estimate of $23-$30 per square foot. This was considered average for the district's rehabilitation cost. It was discovered in January that the cost should have been $35 per square foot for rehabilitation space.

Additional high cost features were designed into the project to increase its marketability. These items include the following.

Cherrick Building

- Interior storefront glazing
- An atrium cut through the building
- Skylights
- Total window replacement
- Cleaning interior brick surfaces
- A four level infill addition

<u>Bronson Hide Building</u>

- Condominium entry, drive and lobby (north side)
- Total window replacement
- Additional tenant storage space
- The cost of an elevator and shaft
- The infill addition (2 levels)

The high rehabilitation construction cost, especially for the Bronson Hide Building may argue for its removal and the construction of a new building. The building is in poor condition and requires much repair and replacement work. However, a new building would be unable to be constructed with the exterior detailing and high ceiling of the Bronson Hide Building at a cost of $46 square feet.

The cost of the infill construction was higher than expected due to the cost of constructing a large building with above average quality in both materials and workmanship. The parking garage and pool/racquetball-health club facility increased the construction cost of the structural systems. The amount of mechanical and electrical systems required for the large mixed-use project also greatly increased the construction cost.

Despite the increased costs, the development of the three buildings offers an economically feasible project. The combination of adaptive use and new construction allows the developer to take advantage of several previously mentioned tax credits. These tax credits and other loan variations could be analyzed to produce the additional money to fund the development.

TABLE IX - 4

CHERRICK BUILDING

DESIGN TAKE-OFF ESTIMATE

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| Division 1 | | | |
| 1.44 Scaffolding | | | |
| 2 months - old | 88-CSF | | $7040 |
| 4 months - new | 48-CSF | $40 | $7680 |
| Subtotal | | | $14,720 |
| Division 2 | | | |
| 2.3 Bulk Excavation | 711-CY | $ .75 | $533 |
| 2.3 Hauling Debris | 711-CY | $1.30 | $924 |
| Subtotal | | | $1457 |
| Division 3 | | | |
| B.1 Concrete Strip Footings forms/reinforcing (Infill Addition) | 192-LF | $19 | $3648 |
| B.1 Concrete Foundation Walls forms/reinforcing 8" (Infill Addition) | | | |
| 13'-0 High | 22-LF | $167.26 | $3680 |
| 8'-0 High | 75-LF | $105 | $7875 |
| 3'-0 High | 95-LF | $35 | $3395 |
| B.1 4" Thick Concrete Slab reinforcing (Infill Addition) | 1650-SF | $2.03 | $3350 |
| 3. Concrete Flat Slab forms/reinforcing (Infill Addition) | 160-CY | $159.80 | $25568 |
| 3. Concrete Columns 2' Sq Tied forms/reinforcing (Infill Addition) | 13-CY | $359.50 | $4674 |

*CSF - Hundred square feet

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| 3. Concrete Beams 2x2 forms/reinforcing (Infill Addition) | 148-CY | $309 | $45732 |
| 3.3 Ganolithic Topping 2" Floor & Basement | 24747-SF | $1.44 | $35636 |
| Subtotal | | | $133,558 |
| Division 4 | | | |
| 4.12 Masonry Wall 4' Tile 8" Block (Infill Addition) | 4380-SF | $7.12 | $31186 |
| 4.2 Replacement Brick | 397-SF | $6.45 | $2562 |
| B.4 Brick Cleaning and Repointing Exterior | 12710-SF | $3.77 | $47917 |
| Interior | 7926-SF | $3.77 | $29881 |
| B.4 Parapet Wall/Coping | 269-SF | $41 | $11029 |
| B.4 Parapet Wall/Coping (Infill Addition) | 100-SF | $49 | $4900 |
| 4.3 Glass Block: Sculptured 8"x8" | 632-SF | $9.40 | $5940 |
| 4.3 Concrete Block Wall (Infill Addition) | 1274-SF | $3.44 | $4382 |
| 4.3 Concrete Block Wall Firerated 4 hour | 3808-SF | $5.40 | $20563 |
| 4.4 Limestone Sills (Replacement) | 6-CF | $47 | $282 |
| Subtotal | | | $158,642 |
| Division 5 | | | |
| B.3 Steel Stair Cement Pan Tread 24 Risers + Landing | 4 Each | $4292 | $17168 |
| Subtotal | | | $17168 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| **Division 6** | | | |
| 6.1 Bridging (Wood) | 1 Hundred pair | $210 | $210 |
| 6.1 Joist | 1 Hundred board feet (approx. 500') | $655 | $655 |
| 6.1 Drywall Partition | 14616-SF | $1.69 | $24701 |
| 6.1 Drywall Partition | 6688-SF | $3.13 | $20933 |
| 6.1 Drywall Partition (Infill Addition) | 2522-SF | $1.25 | $3153 |
| 6.1 Underlayment 1/2" Plywood | 2200-SF | $ .71 | $1561 |
| 6.2 Kitchen Cabinets Maximum | 224'x8 units-LF | $125 | $28000 |
| 6.2 Counter top (Average) | 224/x8 units-LF | $15 | $3360 |
| 6.2 Prefab Open Stair Cedar 3'-6x13'-0 | 1 Each | $860 | $860 |
| 6.2 Prefab Open Stair Cedar 7'-0x13'-0 | 1 Each | $1720 | $1720 |
| 6.2 Prefab Railing, Balaster 3'-0x13'-0 | 2 Each | $500 | $1000 |
| Subtotal | | | $86,153 |
| **Division 7** | | | |
| 7.2 Roof Deck Insulation | 8249-SF | $1.66 | $13693 |
| 7.4 Built up Roof Asphalt, Gravel | Square (100 SF) | $105 | $8661 |
| 7.6 Downspouts | 240-LF | $2.05 | $492 |

| DESCRIPTION | | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|---|
| 7.6 | Gutters | 76-LF | $2.38 | $181 |
| 7.8 | Skylight (Interior) | 400-SF | $9.55 | $3820 |
| B 5 | Smoke Hatch | 2 Each 2'-6x3'-0 | $647 | $1294 |
| | Skylight Vent | 2 Each 2'-6x8'-0 | $1264 | $2528 |
| B 5 | Smoke Hatch | 1 Each 2'-6x3'-0 | $562 | $562 |
| 7.8 | Skylight | 17 Each 44x45 | $446 | $7582 |
| B 5 | Skylight Insulation and Cutout | 11 | $846 | $9306 |
| Subtotal | | | | $48,119 |

Division 8

| | | | | |
|---|---|---|---|---|
| 8.1 | Metal Fire Door | | | |
| | Average Exterior | 1 Each | $254 | $254 |
| | Minimum Interior (Baked Enamel) | 4 Each | $247 | $988 |
| 8.1 | Hollow Metal Door and Frame 4'x8' (B.E.) | 4 Each | $351 | $1404 |
| B 6 | Wood Panel Door Exterior | 8 Each | $297 | $2376 |
| B 6 | Wood Interior Hollow Core Door | 30 Each | $150 | $4500 |
| B 6 | Bi-Fold Door Panel | | | |
| | 3x6'-8" | 18 Each | $222 | $3996 |
| | 6'-6'-8" | 14 Each | $339 | $4746 |
| B 4 | Anodized Door and Transom | | | |
| | 3'-0x13'-0 | 2 Each | $2586 | $5172 |
| | 6'-0x7'-0 | 3 Each | $2696 | $8088 |
| B 4 | Anodized Door and Transom 6'-0x13'-0 | 1 Each exterior 4 Each interior | $4916 | $24580 |
| | 6'-0x10'-0 | 3 Each | $3637 | $10911 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| 8.4 Storefront System 12'-0 Commercial | 2088-SF | $12.66 | $26434 |
| 8.4 Metal Fixed Window | | | |
| 5'x6' | 3 Each | $300 | $900 |
| 3'x6' | 4 Each | $220 | $880 |
| Transom Window Metal 3'x5'-0 | 6 Each | $230 | $1380 |
| 8.6 Wood Windows with Screen | 12 Each | $380 | $4560 |
| | 29 Each | $360 | $10440 |
| 8.6 Wood Casement 7'-11x6'-3 | 10 Each | $775 | $7750 |
| 8.7 Lock Set Exterior of Condominium Unit | 8 Each | $32 | $256 |
| 8.7 Lock Push-Pull | 12 Each | $275 | $3300 |
| 8.7 Panic Door | 1 Each | $220 | $220 |
| Subtotal | | | $123,135 |
| Division 9 | | | |
| 9.2 Drywall Ceiling | 4950-SF | $ .85 | $4208 |
| 9.3 Ceramic Tile Bathroom Tub Area Condominium | 8 Each | $180 | $1440 |
| Bathroom Floor Condominium | | $3.21 | $2568 |
| 9.3 Quarry Tile Floor | 3591-SF | $4 | $14364 |
| 9.5 Wood Fiber Tile Acoustical/Flameproof | 4950-SF | $ .90 | $4455 |
| 9.5 Complete Suspended Ceiling | 3300-SF | $ .83 | $2739 |
| 9.6 Commercial Carpet | 11934-SF | $15 | $179010 |
| 9.6 Floor Allowance per Condominium Unit | 13166-SF | $13 | $17158 |
| 9.8 Painting Drywall | 26328 | $ .27 | $7109 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| Alternative A | | | |
| 9.8 Remove Paint from Trusses and Repaint | 32995-SF | $2.44 | $80507 |
| Alternative B | | | |
| B 4 Sandblast Wood Dry Method | 32995-SF | $ .70 | $23097 |
| 9.8 Repaint Trusses | 32995-SF | $ .70 | $32097 |
| 9.8 Vinyl Wall Covering | 2976-SF | $1.14 | $3393 |
| 9.8 Painting Windows | 3408-SF | $ .60 | $2045 |
| Subtotal | | | $284,683 |
| Division 10 | | | |
| Directory Board | | $575 | $575 |
| Trash Chute | 3 | $595 | $1785 |
| Subtotal | | | $2,360 |
| Division 11 | | | |
| 11.1 Appliances Oven, sink, refrigerator, range, microwave | 8 Each Condo | $3400 | $27200 |
| 11.1 Dishwasher | 8 Each Condo | $600 | $4800 |
| 11.1 Compactor | 8 Each Condo | $300 | $2400 |
| 11.1 Range Hood | 8 Each Condo | $150 | $1200 |
| Subtotal | | | $35,600 |
| Division 12 | | | |
| Omit | | | ---- |
| Subtotal | | | 0000 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| **Division 13** | | | |
| Omit | | | --- |
| Subtotal | | | 0000 |
| **Division 14** | | | |
| 14.1 Dumbwaiter | | $8250 | $8250 |
| 14.1 Elevator<br>Shared Cost with Bronson Hide<br>($44,000) | | | $22000 |
| Subtotal | | | $30,250 |
| **Division 15** | | | |
| 15.1 Gas Pipe<br>(Black Iron)<br>1/2" Distribution | 600-LF | $4.23 | $2538 |
| 1/2" Main | 55-LF | $6.80 | $374 |
| 15.1 Sewage Pipe<br>(Cast Iron)<br>8" Pipe (vertical runs) | 165-LF | $27 | $4455 |
| 4" PVC Soil Branches<br>8 Units | 240-LF | $13.15 | $3156 |
| Public | 50-LF | $13.15 | $658 |
| 15.1 Copper Water Pipe<br>2" Main | 55-LF | $15.20 | $836 |
| Copper Branches to 1"<br>8 Units | 400-LF | $8 | $3200 |
| 15 PVC Air Conditioning<br>Connection | 114-LF | $8.80 | $1003 |
| Main boiler/chiller pipes<br>6" | 110-LF | $17.15 | $1887 |
| 2" | 55-LF | $8.80 | $482 |

| DESCRIPTION | | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|---|
| 15 | Galvanized Ductwork<br>Distribution | 11710-LB | $2.57 | $30095 |
| | Return Air | 5855-LB | | $15047 |
| 15 | Bathrooms per unit<br>3 Fixtures, Access<br>Service, Piping | 8 Each<br>Unit | $2003 | $17624 |
| B 8 | Public Restroom<br>Women<br>(1/2 Cost to Bronson Hide) | -- | -- | $2007 |
| B 8 | Public Restroom<br>Men<br>(1/2 Cost to Bronson Hide) | -- | -- | $3285 |
| 15 | Broiler (Cast Iron)<br>Gas Fired<br>(1/2 Cost to Bronson Hide<br>Total $7,750) | -- | -- | $3875 |
| 15 | Roof Top Commercial<br>Air Conditioning | 18200-SF | $3.90 | $70980 |
| B 8 | Heating & Cooling<br>Condominiums<br>1600 SF | 9646-SF | $4.25 | $41000 |
| | 2000 SF | 3558-SF | $4.52 | $16082 |
| B 8 | Fire Sprinkler (Dry)<br>1st Floor 6000 | 8249-SF | $5.15 | $42482 |
| | Additional Floors | 11897-SF | $2.24 | $26649 |
| 15.3 | Water Heater<br>(gas) Condominiums | 8 Each | $235 | $1880 |
| 15.5 | Vent Chimney | | | |
| | Heater | 144 VLF<br>per unit | $7.25 | $1044 |
| | Water Heater | 144 VLF | $7.25 | $1044 |
| Subtotal | | | | $291,683 |

| DESCRIPTION | | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|---|
| **Division 16** | | | | |
| 16 | Residential Electrical Service Single phase | 8 per unit | $914 | $7312 |
| B 9 | Receptacles per unit | 8 per unit | $1160 | $9280 |
| B 9 | Switches per apt. unit | 8 per unit | $616 | $4928 |
| B 9 | Commercial Electrical Service per shop | 6 per shop | $1755 | $10530 |
| B 9 | Flourescent Fixtures each shop and halls | 192 Each (1 fixture per 75 ⌀ clg) | $214 | $41088 |
| B 9 | Switches commercial | 21 Each 10 fixtures per switch | $103 | $2163 |
| Subtotal | | | | $75,301 |
| **Division 17** | | | | |
| Omit | | | | --- |
| Subtotal | | | | 0000 |
| **Division 18** | | | | |
| 18.1 | Concrete Floor Demolition | 784-SF | $1 | $784 |
| Subtotal | | | | $784 |

CHERRICK BUILDING

| | |
|---|---|
| Division 1 | $14,720 |
| Division 2 | $ 1,457 |
| Division 3 | $133,558 |
| Division 4 | $158,642 |
| Division 5 | $17,168 |
| Division 6 | $86,153 |
| Division 7 | $48,119 |
| Division 8 | $123,135 |
| Division 9 | $284,683 |
| Division 10 | $ 2,360 |
| Division 11 | $35,600 |
| Division 12 | -- |
| Division 13 | -- |
| Division 14 | $30,250 |
| Division 15 | $291,683 |
| Division 16 | $75,301 |
| Division 17 | -- |
| Division 18 | $ 784 |
| Total General Construction Cost | $1,303,613 |

TABLE IX - 5

BRONSON HIDE

DESIGN TAKE-OFF ESTIMATE

| DESCRIPTION | | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|---|
| Division 1 | | | | |
| 1.44 | Scaffolding<br>Steel tubular | | | |
| | East - 2 months | 34-CSF | $80 | $2720 |
| | North - 4 months | 35-CSF | $160 | $5600 |
| | Front - 3 months | 26-CSF | $120 | $3120 |
| Subtotal | | | | $11400 |
| Division 2 | | | | |
| 2.6 | Base Coarse<br>3" deep gravel | 250-SY | $1.15 | $288 |
| 2.6 | Brick Paving | 750-SF | $4.71 | $3533 |
| 2.6 | Concrete Curb | 123-LF | $10.70 | $1316 |
| 2.6 | Brick Sidewalk | 304-SF | $4.71 | $1432 |
| 2.8 | Ground Cover | 556<br>per 100 plants<br>12" apart = #<br>sq. ft. | $42 | $23352 |
| 2.8 | Yews | 4 Each | $38 | $152 |
| 2.8 | Oak Tree | 2 Each | $77 | $154 |
| 2.8 | Forsythia Bushes | 4 Each | $19.90 | $80 |
| Subtotal | | | | $30,307 |
| Division 3 | | | | |
| 3 | Elevator Shaft Wall<br>Concrete Columns | 1104-CY | $359.50 | $14700 |
| | Concrete Beams | CY | $309 | $9270 |
| 3.3 | Granolithic Topping | 18750-SF | $1.44 | $27000 |
| Subtotal | | | | $50,970 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| Division 4 | | | |
| 4.1 Steel Lintels | 15 Each | $13.10 | $197 |
| | 2 Each | $18 | $36 |
| | 1 Each | $9 | $9 |
| 4.12 Infill Addition | 5200-SF | $7.12 | $37024 |
| B 4 Brick Cleaning and Repointing Exterior | 9422-SF | $3.77 | $35520 |
| 4.2 Replacement Brick Red/Running Bond | 589-SF | $6.10 | $3592 |
| B 4 Coping/Parapet Wall 4" Brick 8" Block | 208-SF | $41 | $8528 |
| 4.3 Concrete Block Wall | 4032-SF | $5.40 | $21773 |
| B 4 Parapet Wall Infill Addition 4" Brick 8" Block | 100-SF | $46 | $4600 |
| B 4 Sandblast Masonry Dry System Level 1 | 2704-SF | $ .61 | $1649 |
| B 4 Steam Clean Walls and Floor Level 1 | 8104-SF | $ .42 | $3404 |
| 4.4 Limestone Sill | 6-CF | $47 | $282 |
| Subtotal | | | $116,614 |
| Division 5 | | | |
| 3.14 Metal Beams | 3750-SF | $3.40 | $12750 |
| 3.16 Metal Wide Rib Floor Lightweight Concrete | 3750-SF | $1.60 | $6000 |
| 3.34 Metal Columns | 224-LF | $10.45 | $2340 |
| B 3 Steel Stair Cement Pan Tread 24 Risers and 1 Landing | 3 Each | $4292 | $12876 |
| Subtotal | | | $33,966 |

| DESCRIPTION | | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|---|
| Division 6 | | | | |
| 6.1 | Elevator Shaft Wall<br>Drywall Chasewall | 2760-SF | $3.87 | $10681 |
| 6.1 | Drywall Partition<br>2 7/8" 1 Hour Firerated | 26937-SF | $1.69 | $45424 |
| 6.1 | Drywall Partition<br>4 1/2" 2 Hour Firerated | 20971-SF | $3.13 | $65639 |
| 6.1 | Bridging - Wood | Hundred pair | $210 | $210 |
| 6.1 | Joist - Wood | Hundred Board Feet (500') | $655 | $655 |
| 6.1 | Underlayment<br>1/2" Plywood Floor Deck | 1250-SF | $ .71 | $888 |
| 6.1 | Infill Addition<br>Fixed Wall Partition | 6708-SF | $1.25 | $8385 |
| 6.2 | Kitchen Cabinets<br>Maximum | 28x9 units LF | $125 | $31500 |
| 6.2 | Countertop (Average) | 28x9 units LF | $15 | $3780 |
| Subtotal | | | | $167,262 |
| Division 7 | | | | |
| 7.2 | Roof Deck<br>Insulation 3" R20 | 5400-SF | $1.66 | $8964 |
| 7.4 | Built Up Roof<br>Asphalt Gravel | 5400-SQ<br>100-SF | $105 | $5670 |
| 7.6 | Downspouts<br>3x4 Rect. Galv. | 222-LF | $2.05 | $455 |
| 7.6 | Gutters Galv.<br>6" | | $2.38 | $176 |
| BH | Roof Hatch | 1 Each<br>2'-6x3'-0 | $562 | $562 |
| Subtotal | | | | $15,827 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| Division 8 | | | |
| 8.1 Metal Firedoor<br>Average Exterior | 1 Each | $254 | $254 |
| Minimum Interior<br>baked enamel | 4 Each | $247 | $988 |
| 8.1 Hollow Metal Door & Frame<br>8'x8' Black Enamel | 2 Pair | $592 | $1184 |
| 8.1 Hollow Metal Door & Frame<br>4'x8' Black Enamel | 0 Each | $351 | -- |
| 8.1 Hollow Metal Door & Frame<br>3'x7' Black Enamel | 4 Each | $312 | $1248 |
| 8 Wood Interior Hollow Core Door | 27 Each | $150 | $2835 |
| 8.2-B6 Wood Panel Door Exterior | 9 Each | $297 | $2673 |
| B 6 Bifold Door<br>Paneled Pine<br>3'x6'-8 | 15 Each | $222 | $3330 |
| 6'x6'-8 | 12 Each | $339 | $4068 |
| 8.4-B4 Anodized Door & Transom<br>3'x13' | 3 Each | $2586 | $7758 |
| B 4 Anodized Door and Transom<br>6'x13' | 5 Each | $4916 | $24580 |
| 8.4 Revolving Door | 1 Each | $13000 | $13000 |
| 8.4 Storefront System<br>Black Anodized<br>12'-0 Commercial | 1356-SF | $12.66 | $17166 |
| 8.6 4 Leaf Casement<br>7'-11x6'-3 | 23 Each | $775 | $17825 |
| 8.5 Replacement Window 3'x9'<br>(Steel) Single Casement &<br>Screen<br>Insulated | 17 Windows<br>($24 SF)<br>Each Opening | $648 | $11016 |
| 8.6 Transom above Window<br>Insulated<br>(Metal) | 17 Windows | $50 | $850 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| 8.6 French doors/Windows 4'x10' Wood with Screens | 6 Windows | $800 | $4800 |
| 8.6 Wood Casement Window Insulated, Screened | 12 Windows | $290 | $3480 |
| 8.6 Wood Transom above Small Windows Insulated | 12 Windows | $33 | $396 |
| 8.6 Wood Casement Window 3'x5 1/2' Screen, Insulated | 3 Windows | $320 | $960 |
| 3'x6 1/2' | 3 Windows | $370 | $1110 |
| 8.7 Lockset - Condominium Units Apartment Exterior | 9 Each | $32 | $288 |
| 8.7 Lock Push/Pull Bar for Doors | 7 Each | $275 | $1925 |
| 8.7 Panic Hardware | 1 Each | $220 | $220 |
| 8.7 Push/Pull Plate | 2 Each | $58 | $116 |
| Subtotal | | | $122,070 |
| Division 9 | | | |
| 9.2 Drywall Ceiling 1/2" Fire Resistant | 3300-SF | $ .85 | $2805 |
| 9.3 Quarry Tile | 3066-SF | $4 | $12264 |
| 9.3 Ceramic Tile Condominium | 9 Units | $180 | $1620 |
| | 550-SF | $3.21 | $1766 |
| | 900-SF | $3.21 | $2889 |
| 9.5 Complete Suspended Ceiling | 2742-SF | $ .83 | $2276 |
| 9.6 Commercial Carpet | 5987-SF | $15 | $89805 |
| 9.6 Flooring Allowance Per Unit | 12033-SF | $13 | $156429 |
| 9.8 Painting Doors & Windows | 2981-SF | $ .60 | $1789 |
| 9.8 Painting Dry | 32400-SF | $ .27 | $8748 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| Alternate A | | | |
| 9.8 Remove Paint from Trusses and Repaint | 32995-SF | $2.44 | $80507 |
| 9.8 Vinyl Wall Covering | 436-SF | | |
| Alternate B | | | |
| B 4 Sandblast Wood Trusses | 22500-SF | $ .70 | $15750 |
| 9.8 Paint Trusses | 22500-SF | $ .93 | $20925 |
| Subtotal | | | $317,066 |
| Division 10 | | | |
| 10.1 Directory Board | | $575 | $575 |
| 10.1 Mail Box | 17 Each | $90 | $1530 |
| Subtotal | | | $2,105 |
| Division 11 | | | |
| 11.1 Appliances Oven, Sink, Range Refrigerator, Microwave | 9 Each Unit | $3400 | $30600 |
| 11.1 Dishwasher | 9 Each Unit | $600 | $5400 |
| 11.1 Compactor | 9 Each Unit | $300 | $2700 |
| 11.1 Range Hood | 9 Each Unit | $150 | $1350 |
| Subtotal | | | $40,050 |
| Division 12 | | | |
| Omit | | | --- |
| Subtotal | | | 000 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| Division 13 | | | |
| Omit | | | --- |
| Subtotal | | | 000 |
| Division 14 | | | |
| 14.1 Elevator<br>Shared cost with Cherrick<br>Building ($44,000) | | | $22,000 |
| Subtotal | | | $22,000 |
| Division 15 | | | |
| 15.1 Cast Iron Sewage Pipe<br>8" pipe x 2 vertical runs | 136-LF | $27 | $3672 |
| 4" soil branches PVC<br>30' per unit x 9<br>50 public | 320-LF | $13.15 | $4208 |
| 15.1 Copper Water Pipe<br>2" main | 68-LF | $15.20 | $1034 |
| 15.1 Gas Black Iron<br>1/2" distribution | 540 | $4.23 | $2284 |
| 1 1/2" main x 68'-0" | 68-LF | $6.80 | $462 |
| B 8 Fire Sprinkler<br>Dry 6000 ⌀ | | | |
| First Floor + 20 (1) | 5400-SF | $5.15 | $27810 |
| Add Floor + 20 (4) | 7637-SF | $2.24 | $17106 |
| 8.32 Boiler Cast Iron<br>Gas fired 1225 MGH<br>(shared cost with Cherrick<br>Building $7,750) | 1 Each | $3875 | $3875 |
| 15.5 Vent Chimney<br>4" heater | 237 VLF per unit | $7.25 | $1718 |
| water heater | 237 VLF per unit | $7.25 | $1718 |
| 15 B8 Bathroom Apartment<br>3 fixtures, access.<br>service piping | Each | $2203 | $19827 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| B 8 Public Restroom<br>Women 2 fixtures<br>(1/2 shared with the Cherrick Building $4,014) | Each | $2007 | $2007 |
| B 8 Public Restroom<br>Men 2 Fixtures<br>(1/2 shared with the Cherrick Building $6,571) | Each | $3285 | $3285 |
| B 8 Heating/Cool System<br>1,200 SF + 20% | 4161-SF | $4.68 | $19473 |
| 1,600 SF + 20% | 7872-SF | $4.25 | $33456 |
| Subtotal | | | $145,535 |
| Division 16 | | | |
| 16 B9 Residential Electrical<br>Service/Condominium<br>Single Phase | 9 Per Unit | $914 | $8226 |
| B9 Receptacles per unit | 9 per Unit | $1160 | $10440 |
| B9 Switches per unit | 9 per Unit | $616 | $5544 |
| B9 Commercial Electrical<br>Service per shop | 4 Per Shop | $1755 | $7020 |
| B9 Flourescent Fixtures each 15¢<br>Commercial and Halls | 165 Each<br>1 Fixture for 75 Ceiling | $214 | $35310 |
| B9 Commercial Switches | 17 Each<br>10 Fixtures per Switch Each | $103 | $1751 |
| Subtotal | | | $68,291 |
| Division 17 | | | |
| Omit | | | --- |
| Subtotal | | | 000 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| 18.1 Concrete Floor Demolished | 2500-SF | $1 | $2500 |
| 18.1 Concrete Wall and Ceiling Demolished | 4000-SF | $1.50 | $6000 |
| Subtotal | | | $8,500 |

BRONSON HIDE

| | |
|---|---|
| Division 1 | $11,440 |
| Division 2 | $30,307 |
| Division 3 | $50,970 |
| Division 4 | $116,614 |
| Division 5 | $33,966 |
| Division 6 | $167,262 |
| Division 7 | $15,827 |
| Division 8 | $122,070 |
| Division 9 | $317,066 |
| Division 10 | $2,105 |
| Division 11 | $40,050 |
| Division 12 | -- |
| Division 13 | -- |
| Division 14 | $22,000 |
| Division 15 | $145,535 |
| Division 16 | $68,291 |
| Division 17 | -- |
| Division 18 | $8,500 |
| Total General Construction Cost | $1,152,003 |

TABLE IX - 6

NEW INFILL BUILDING

DESIGN TAKE-OFF ESTIMATE

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| Division 1 | | | |
| 1.1 Scaffolding steel tubular 6-12 stories one month | 356-CSF for one year | $696 | $247776 |
| Subtotal | | | $247,776 |
| Division 2 | | | |
| 2.1 Demolition Building concrete and concrete block warehouse on site | | | |
| Demolition by cubic feet concrete | 58880-CF | $ .12 | $7056 |
| Disposal for concrete | 2178-CY | $3.08 | $6708 |
| Dump charges | 2178-CY | $3.50 | $7623 |
| 2.3 Bulk Excavation | 5000-CY | $ .75 | $3750 |
| 2.3 Hauling | 5000-CY | $1.30 | $6500 |
| 2.9 Pedestrian Bridge-Covered steel truss | 680-SF | $50 | $34000 |
| enameled, insulated metal spandrel panels | 1024-SF | $13 | $13312 |
| spandrel glass, insulated | 336-SF | $8 | $2688 |
| Subtotal | | | $81,637 |
| Division 3 | | | |
| B1 Strip Footing 3'-0x1' 4000psi | 520-LF | $19 | $9880 |
| B1 Spread Footings 4'x1' 4000psi | 20 Each | $113 | $2260 |
| B1 Foundation Wall 3500psi Conc 12" 4'-0 | 140-LF | $55 | $21700 |
| 8'-0 | 240-LF | $106 | $25440 |
| 13'-0 | 140-LF | $132 | $18504 |

| DESCRIPTION | | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|---|
| B1 | Concrete Floor<br>6" thick slab<br>on grade 3000psi<br>6" bank | 16800-SF | $2.60 | $43680 |
| 3.3 | Gunite pool<br>2 x 4" thick maximum<br>gunite and mesh at $9.60 | 2012-SF | $19.20 | $38630 |
| 3 | Elevator shaft wall | | | |
| | Concrete columns | 53-CY | $359.50 | $19173 |
| | Concrete beams | 53-CY | $309 | $16377 |
| PARKING GARAGE | | | | |
| 3 | Double Tee<br>14" depth<br>2" topping | 16800 | $6 | $100800 |
| 3 | Beam conc<br>1'-2"x16" wide<br>forms reinforcing | 68-CY | $309 | $21012 |
| 3 | Columns conc<br>2'square tied<br>forms reinforcing | 36-CY | $359.50 | $12942 |
| STRUCTURE | | | | |
| 3 | Flat slab<br>8"x30'x30'<br>100psf | 2253-CY | $159.80 | $360000 |
| 3 | Columns conc<br>2' Square tied<br>6 floors 10'<br>1 floor 15' | 228-CY | $359.50 | $82019 |
| 3 | Concrete beams<br>2'x2' forms reinforcing | 154-CY | $309 | $47586 |
| Subtotal | | | | $820,003 |

Division 4

| | | | | |
|---|---|---|---|---|
| 4.1 | Steel Lintels<br>Over all masonry doors<br>& windows<br>openings | 10 Each<br>2'-0 | $7.13 | $71 |
| | | 62 Each<br>3'-0 | $9 | $558 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| | 107 Each 4'-6 | $13.10 | $1401 |
| | 64 Each 5'-0 | $15 | $960 |
| | 42 Each 6'-0 | $18 | $756 |
| | 17 Each 8'-0 | $24 | $408 |
| | 2 Each 14'-0 | $49 | $98 |
| 4.12 Masonry Wall 4" brick 2" block | 41088-SF | $8.31 | $341441 |
| B 4 Coping Parapet wall 4" brick 12" block | 520-SF | $49 | $25480 |
| 4.3 Glass Block Plain 8x8 | 1128-SF | $9.85 | $11111 |
| 4.3 Glass Block Sculptured 8x8 | 40-SF | $9.40 | $376 |
| 4.3 Glass Block Suncontrol | 441-SF | $11.82 | $5213 |
| 4.3 Firestair Concrete block 4 hr | 12000-SF | $5.40 | $64800 |
| Subtotal | | | $452,673 |

Division 5

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| B 3 Steel Stairs (Firestairs) 4'-0 Metal Pan Cement Tread | | | |
| 24 Risers + Landing | 1 Each | $4292 | $4292 |
| 16 Risers + Landing | 6 Each | $3185 | $19110 |
| 8'-0 24 Risers | 1 Each | $8584 | $8584 |
| 4'-0 8 Risers | 2 Each | $1593 | $3185 |
| 24 Risers (shop stair) | 1 Each | $4292 | $4292 |

| DESCRIPTION | | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|---|
| | 16 Risers (Pool stair) | 1 Each | $3185 | $3185 |
| | 12 Risers (Mechanical room) | 1 Each | $2632 | $2632 |
| 5.4 | Spiral Stair<br>Aluminum Risers<br>6'-0 Diameter<br>Oak tread | 16 Each | $160 | $2650 |
| Subtotal | | | | $47,840 |

Division 6

| | | | | |
|---|---|---|---|---|
| 6.1 | Fixed Wall Partition<br>Exterior Perimeter | 41088-SF | $1.25 | $51360 |
| 6.1 | Cedar Floor Deck<br>3" thick | 2592-SF | $3.45 | $8943 |
| 6.1 | Drywall System<br>2 7/8 1FR STC35 | 50328-SF | $1.69 | $85054 |
| 6.1 | Drywall Systems<br>4 1/2 2FR STC48 | 60083-SF | $3.13 | $188060 |
| 6.1 | Elevator Shaft Wall<br>Drywall for chase wall<br>5" + 1 5/8 metal studs | 3600-SF | $3.87 | $13932 |
| 6.2 | Kitchen Cabinets<br>Min 89 | 560-LF | $125 | $70000 |
| 6.2 | Countertop (average) | 560-LF | $15 | $8400 |
| Subtotal | | | | $428,233 |

Division 7

| | | | | |
|---|---|---|---|---|
| 7.2 | Roof Deck<br>Insulation 3" | 16800-SF | $1.66 | $27888 |
| 7.4 | Builtup Roof<br>Asphalt Gravel | 168-SF | $105 | $17640 |
| BH | Roof Hatch | Each<br>2'-6x2'-0 | $562 | $1124 |
| BH | Smoke Hatch<br>Vent | 2 Each<br>2'-6x8 | $1264 | $2528 |
| | | 2 Each<br>2'-6x3 | $647 | $1294 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| 7.8 Skylight | 77 Each 44x45 | $446 | $7582 |
| | 11 Each | $846 | $9306 |
| Subtotal | | | $67,362 |
| Division 8 | | | |
| 8.1 Metal Fire Door | | | |
| Avg. exterior | 1 Each | $254 | $254 |
| Min. interior (baked enamel) | 23 Each | $247 | $5681 |
| 8.1 H Metal Door + Frame 8'x8' (baked enamel) | 1 PR | $592 | $592 |
| 8.1 H Metal Frame + Door 4'x8' (baked enamel) | 9 Each | $312 | $2808 |
| 8.13 Roof Drain Vent Conductors Leaders (first floor additional ft. 10'-0) | | $310 | $310 |
| B 6 Wood Panel Door Interior Wood Hollow Core Door 3'-0 | 20 Each | $297 | $5940 |
| B 8 Bifold Door Paneled Pine | | | |
| 3x6'-8 | 23 Each | $222 | $5106 |
| 6x6'-8 | 40 Each | $339 | $13560 |
| 8.3 Sliding Glass Door 6' wide | 42 Window/ Doors | $500 | $21000 |
| 8.3 Sliding Glass Door 3' wide | 25 Window/ Doors | $250 | $6250 |
| 8.4 B4 Anodized Door + Transom 3'x13' | 4 | $2568 | $10272 |
| B4 Anodized Door + Transom 6'x13' | 13 | $4916 | $63908 |

Note: All windows aluminum vinyl clad insulated glass, screens (wood window price most accurate)

| DESCRIPTION | | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|---|
| 8.4 | Revolving door | 2 | $13000 | $26000 |
| 8.4 | Storefront System - Black<br>Anodized<br>Commercial 12'-0 | 2495-SF | $12.66 | $31523 |
| 8.4 | Balanced doors<br>Aluminum and glass<br>3'x7 black | 6 Each | $3660 | $21960 |
| 8.6 | 2- 1'-10x3'-2<br>Wood Casement<br>Insulated, screen | 90 Windows | $350 | $31500 |
| 8.6 | Picture Window<br>3 Divisions<br>Insulating<br>3- 3'x4'-6 | 7 Windows<br>3 Window<br>Each 9'-0 | $260 | $1820 |
| 8.6 | Fixed Window<br>Insulated Metal<br>4x4 | 30 Windows | $220 | $6600 |
| 8.6 | Fixed Window<br>Insulated<br>4x7-1/2 | 5 Windows<br>Pool | $300 | $1500 |
| 8.6 | Fixed Window<br>Metal Insulated<br>4x3 | 5 Windows | $200 | $1000 |
| 8.6 | Fixed Glass<br>Metal Insulated<br>2x4 | 10 Windows | $110 | $1100 |
| 8.7 | Lock Set Condominiums<br>Exterior | 20 Each | $32 | $640 |
| 8.7 | Entrances<br>Lock/Push/Pull Bar | 20 Each | $275 | $5500 |
| 8.7 | Panic Door | 2 Each | $220 | $440 |
| 8.7 | Push/Pull Plate | 12 Each | $58 | $696 |
| Subtotal | | | | $323,275 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| Division 9 | | | |
| 9.2 Drywall Ceiling 1/2" Fire Resistant | 101-SF | $ .85 | $8649 |
| 9.3 Ceramic Tile | | | |
| Pool Floor | 2016-SF | $4.86 | $9798 |
| Pool Walls, Ceiling | 4788-SF | $2.79 | $13359 |
| Condo - Bath Tub Area | 20 Each | $180 | $3600 |
| Condo Bathroom Floor | 2100-SF | $3.21 | $6741 |
| Public Restrooms Locker Rooms Floor & Walls | 2453-SF | $3.21 | $7874 |
| 9.3 Quarry Tile Floor All Lobbies & Public Areas | 7564-SF | $4 | $30256 |
| 9.3 Stair Tread Riser Abrasive Quarry Tile | 428-SF | $8.90 | $3809 |
| 9.5 Complete Suspended Ceiling | 22170-SF | $83 | $18401 |
| 9.5 Wood Fiber Tile Flameproof Acoustic Absorbent | 102-SF | $90 | $9158 |
| 9.6 Commercial Carpet Allow Heavy Traffic | 10175-SF | $15 | $152625 |
| 9.6 Flooring Allow Per Unit | 42732-SF | $3 | $555516 |
| 9.8 Painting Drywall 1 Prime + Coat | 14850-SF | $ .27 | $4010 |
| 9.8 Painting Doors | 6000-SF | $ .60 | $3600 |
| | 5310-SF | $ .60 | $3186 |
| 9.8 Vinyl Wall Covering Heavy Weight | 22500-SF | $1.14 | $22500 |
| Subtotal | | | $853,082 |

| DESCRIPTION | | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|---|
| Division 10 | | | | |
| 10.1 | Directory Board | 1 Each | $575 | $575 |
| 10.1 | Mail Box<br>5x12x15 | 20 Each | $90 | $1800 |
| 10.1 | Trash Chute<br>30" aluminum | 7 Floor | $595 | $4165 |
| 10.1 | Prefab Fireplace | 180-VLF | $30 | $5400 |
| 10.1 | Fireplace Logs | 9 Each Unit | $180 | $1620 |
| 10.1 | 2 Tier Lockers<br>15" Wide | 64 Each | $44 | $2816 |
| 10.1 | Operable Partition | 40-SF | $19.75 | $798 |
| Subtotal | | | | $17,174 |
| Division 11 | | | | |
| 11.1 | Appliances<br>Oven, Sink, Refrigerator<br>Range, Microwave | 20 Each Apartment | $3400 | $68000 |
| 11.1 | Dishwasher | 20 Each Apartment | $600 | $12000 |
| 11.1 | Compactor | 20 Each Apartment | $150 | $3000 |
| 11.1 | Range Hood | 20 Each Apartment | $150 | $3000 |
| 11.1 | Dryer | 5 Each | $575 | $2875 |
| 11.1 | Washer | 7 Each | $700 | $4900 |
| Subtotal | | | | $93,775 |
| Division 12 | | | | |
| Omit | | | | --- |
| Subtotal | | | | 000 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| <u>Division 13</u> | | | |
| 13.1 Racquetball Court | Per Court | | |
| Wall | | $12600 | $25200 |
| Floor | | $6325 | $12650 |
| Ceiling | | $3350 | $6700 |
| Lighting | | $1975 | $3950 |
| 13.1 Swimming Pool Equipment | SF of Pool | $34 | $45696 |
| Subtotal | | | $94,196 |
| <u>Division 14</u> | | | |
| 14.1 Elevator | | $80000 | $80000 |
| Subtotal | | | $80,000 |
| <u>Division 15</u> | | | |
| 15.1 Cast Iron Sewage Pipe | | | |
| 8" pipe 6 vertical runs | 496-LF | $27 | $13392 |
| 8" pipe 1 vertical run 45' | 45-LF | $27 | $1215 |
| 8" pipe 1 vertical run 32' | 32-LF | $27 | $864 |
| 4" soil branches PVC | | | |
| 30 per unit x 20 | 600-LF | $13.15 | $7890 |
| 50 public x 5 | 250-LF | $13.15 | $3288 |
| 15.1 Copper Water Pipe | | | |
| 1 vertical | 45-LF | $25 | $1125 |
| 3" Main | | | |
| 6 vertical | 496-LF | | $12400 |
| 1 vertical | 32-LF | | $800 |
| Copper Branches 1 1/2" | | | |
| 50' per unit x 20 | 1000-LF | $11.60 | $11600 |
| 70' Commercial x 4 | 280-LF | | $3248 |

| DESCRIPTION | | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|---|
| 15.1 | PVC Airconditioning Connection<br>3 - 2" pipes per unit | 450-LF | $8.80 | $3960 |
| | Main Boiler Chiller Pipes<br>2 - 6" 84x2 | 168-LF | $17.15 | $2881 |
| | 1 - 2" | 84-LF | $8.80 | $739 |
| 15 | Galvanized Ductwork | | | |
| | 5 lbs per LF 150' per unit | 150000-LB | $2.57 | $269850 |
| | 1800' Commercial | 52500 | | $134925 |
| 8.41 | Roof Top Systems<br>multizone<br>airconditioning<br>commercial | | | |
| | Apartment Corridors | 11040-SF | $3.10 | $34224 |
| | Department Store | 24240-SF | $4.50 | $109080 |
| | Sport Areas Interior | 12480-SF | $8.55 | $106704 |
| 15.1 | Gas Distribution<br>Black Iron | | | |
| | 3/4" Distribution<br>50' per unit x 20 | 1000-LF | $3.34 | $3340 |
| | 2 1/2 Main<br>4x78' vertical | 312-LF | $12.05 | $3760 |
| | 1 x 32' vertical | 32-LF | $12.05 | $386 |
| 15.1 | 4" Roof Drain | 4 Each | $185 | $740 |
| B8 | Bathroom Condominiums<br>3 Fixtures, Access.<br>Service piping | 26 Each | $2203 | $57278 |
| B8 | Bathroom Condominiums<br>Powder Room<br>2 Fixture/piping | 2 Each | $1618 | $3236 |
| B8 | Public Restroom<br>Women 2 Fixture<br>Locker Room | 1 Each | $4014 | $4014 |
| | Public Restroom<br>Women 4 Fixture | 1 Each | $6110 | $6110 |

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| B8 Public Restroom<br>Men 2 Fixture<br>Locker Room | 1 Each | $6571 | $6571 |
| Public Restroom<br>Men 4 Fixture | 1 Each | $10987 | $10987 |
| B8 Heating Cooling System<br>Per Unit | | | |
| 1600 SF + 20% | 3010-SF | $4.25 | $12793 |
| 2000 SF + 20% | 9908-SF | $4.52 | $44784 |
| 3000 SF + 20% | 29814-SF | $4.64 | $138337 |
| 15 B8 Fire Sprinkler<br>Dry 6000 | | | |
| 1st Floor + 20 | 16800-SF | $5.15 | $86520 |
| Add Floor + 20 | 25200-SF | $2.24 | $56448 |
| 8.322 Gas Fired Steel Boiler<br>1750 MBH | | $10775 | $10775 |
| 15.2 Whirlpool Bath +<br>Supply Waste Rough in<br>Vent 56x46x23 | 2 Each | $3985 | $7970 |
| 15.3 Water Heater Gas<br>Residential 30 gal. | 20 Each | $235 | $4700 |
| 15.5 Swimming Pool Heater<br>Gas Fired 92MBH | | $1200 | $1200 |
| 15.5 Vent Chimney<br>5" Water Heater | 450-VLF per apartment | $7.95 | $3578 |
| 15.7 Garage Ventilators<br>500 CFM 10" | 12 Fans | $490 | $5880 |
| Subtotal | | | $1,191,170 |

Division 16

| DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|
| 16 B9 Residential Electrical<br>Service single phase | 20 Per Unit Apartment | $914 | $18280 |

| | DESCRIPTION | TOTAL DIMENSION | UNIT COST | TOTAL COST |
|---|---|---|---|---|
| B9 | Receptacles per unit 14 | 20 Per Unit Apartment | $1230 | $24600 |
| B9 | Switches per unit 8 | 20 Per Unit Apartment | $746 | $14920 |
| B9 | Commercial Electrical Service per Shop | 9 Per Shop | $1775 | $15975 |
| B9 | Flourescent Fixtures each 159 Square Feet | 896 Each 1 Fixture for 75 Ceiling | $214 | $191744 |
| B9 | Switch | 90 Each 10 Fixtures per switch | $103 | $9270 |
| Subtotal | | | | $274,789 |

## NEW INFILL BUILDING

| | |
|---|---|
| Division 1 | $247,776 |
| Division 2 | $81,637 |
| Division 3 | $820,003 |
| Division 4 | $452,673 |
| Division 5 | $47,840 |
| Division 6 | $428,233 |
| Division 7 | $67,362 |
| Division 8 | $323,275 |
| Division 9 | $853,052 |
| Division 10 | $17,174 |
| Division 11 | $93,775 |
| Division 12 | -- |
| Division 13 | $94,196 |
| Division 14 | $80,000 |
| Division 15 | $1,191,170 |
| Division 16 | $274,789 |
| Total General Construction Cost | $5,072,955 |

# PART III

# CHAPTER X

## CONCLUSIONS

The protection and retention of the Cherrick Building and the Bronson Hide Building is the primary goal of the project. The preservation of these two buildings is an important part of the building fabric of the historic district. Careful consideration has been given to the recommendation of appropriate cleaning methods, repair and replacement procedures in order to protect these historic buildings from further deterioration. The three buildings have been designed to relate to each other as part of a single development project while retaining their individual character. Emphasis has been placed on the visual connection between spaces and the existing elements (wood columns, exposed ceiling framing and brick walls) in the two existing buildings.

The basic rectangular form of the new building could be reduced in size and changed in form on the upper floors. The remaining space from these form changes would typically have become an exterior plaza or exposed roof. Due to the wide spectrum of severely hot and cold weather conditions in St. Louis and shadow patterns created by the buildings in the Landing, these outdoor plazas are impractical. The exposed roofs are unpleasant for other units to look out upon. Further, the infill building is the same height as the existing buildings and yet it would have been desirable to view the river from the existing buildings. However, the roof and the mechanical systems would not have been a desirable view. The residential units of the new building all have views of the riverfront.

The construction cost for the proposed development is high; however, the project was designed for the middle to upper class. There is a market for luxury condominiums adjacent to the central business district. This type of development investment will also provide economic security to the district and encourage redevelopment. The key to the project's economic feasibility is the development of the three properties as one development. If the Cherrick or Bronson Hide Buildings had been developed individually or together, they would have lacked the space required for residential parking and other spatial requirements without extensive changes in the existing buildings. The new building, had it been developed individually, would not have been able to take advantage of the tax breaks available on the historic buildings.

The proposed design and development of the three buildings is a visual and economic asset to the redevelopment of Laclede's Landing. It is a development designed to retain and enhance the physical qualities and characteristics of the historic district.

FOOTNOTES

[1]The redevelopment of a tannery building such as the Bronson Hide is similar to the A. C. Lawrence Tannery Building which was converted to apartments by Anderson Notter and Associates in Boston (Appendix C).

[2]In practice a thorough market study would be undertaken to obtain income and expenditure information of similar projects in the St. Louis area, as well as determining the uses to which the buildings would be put. However, this was outside of the scope of the thesis. Therefore a brief comparative study of similar buildings in Laclede's Landing was undertaken in consultation with developers to develop cost/expenditure information.

[3]Michael Middleton, "Civic Trust of Britain 1973 National Trust Annual Meeting," in Massachusetts Department of Community Affairs, Built to Last: A Handbook on Recycling Old Buildings (Washington, D.C.: The Preservation Press, National Trust for Historic Preservation, 1977), p. 109.

[4]Barbara Lee Diamonstein, Buildings Reborn: New Uses, Old Places (New York: Harpers Row Publishers, 1978), p. 17.

[5]Ibid., p. 26.

[6]Refer to James Marston Fitch's Definitions (Appendix A-1), The Art Bulletin, p. 448.

[7]"Infill," The Architect's Journal, 17 January 1973.

[8]Peter Blake, "The Architecture of Courtesy," in Old and New Architecture Design Relationships, pp. 90-114.

[9]"Historic Santa Fe Today," The Historic Santa Fe Foundation.

[10]Development Plan of Laclede's Landing Redevelopment Corporation for the Development of Laclede's Landing.

[11]Mary Huss, "Helping the Landing Take Off," The Riverfront Times No. 23 (February 21-March 6, 1979), p. 6.

[12]Ibid., p. 7.

[13]Development Plan of Laclede's Landing Redevelopment Corporation, p. 9.

[14]Carolyn Hewes Toft and Osmund Overby, Laclede's Landing: A History and Architectural Guide (St. Louis: Landmarks Association of St. Louis, 1973), p. 17.

[15]Ibid., p. 17.

[16]Rick Stoff (staff writer), "The Small Industries are Dwindling on Laclede's Landing," The St. Louis Globe-Democrat, March 13, 1979

[17]Development Plan, p. 33.

[18]Called "magnet" shops in shopping centers, usually department stores.

[19]"Executive Summary: Retail/Restaurant Market Potential, Laclede's Landing," Team Four, September 1980, p. 5.

[20]United States Department of Housing and Urban Development, HUD Condominium Cooperative Study: Volume 1 National Evaluation (Washington, D.C.: U.S. Government Printing Office, July 1975).

[21]John Melaniphy, Commercial and Industrial Condominiums (Washington, D.C.: The Urban Land Institute, 1976), p. 44.

[22]John P. Dean, "Housing Design and Family Values," ed. Wheaton, Milgram, Myerson, Urban Housing (New York: The Free Press, 1966), p. 128.

[23]Ibid., p. 132.

[24]Ibid., pp. 90, 91.

[25]Cleaning method recommended by Mr. Jerry Veleskee; Knight, Remmele, Eaton, Topeka, Kansas.

BIBLIOGRAPHY

American Institute of Architects. Life Cycle Cost Analysis, A Guide for Architects. 1977.

American Institute of Architects Journal. "The Process of Life Cycle Cost Analysis: Projecting Economic Consequences of Design Decisions," November 1976, pp. 72-73.

American Institute of Real Estate Appraisers. Residential Condominiums: A Guide to Analysis and Appraisal. Chicago, 1976.

The Architect's Journal. "Infill, " 17 January 1973.

Association for Preservation Technology Bulletin, Vol. IX, No. 4, 1977. The 1905 Catalogue of Iron Store Fronts, Designed and Manufactured by George C. Mesker & Co. Architectural Iron Works, Evansville, Indiana.

Berman, Daniel S. How to Orgainze and Sell a Profitable Real Estate Condominium. Englewood Cliffs, N.J.: Prentice Hall, Inc., 1966.

Briggs, Larry. Program for Design 6: River Quay, Kansas City, Missouri Living-Marketing Center. 1978-1979, Kansas State University, Manhattan, Kansas.

Brolin, Brendt C. Architecture in Context: Fitting New Building with Old. New York: Van Nostrand Reinhold Co., 1980.

Canestaro, James. Real Estate Financial Feasibility Analysis Handbook. University of Wisconsin-Madison, January 1978.

Cantacuzino, Sherban. New Uses for Old Buildings. London: Architectural Press, Ltd.

Clurman, David. The Business Condominium. New York: John Wiley, 1973.

Clurman, David and Edna Hebard. Condominiums and Cooperatives. New York: Wiley Interscience, 1970.

Contract HEW 100-75-0172. "Life Cycle Budgeting and Costing as an Aid in Decision Making," Executive Summary, September 1976, Naramore, Bain, Brady and Johnanson, Seattle, Washington.

Cullen, Gorden. The Concise Townscape. New York: Van Nostrand Reinhold Co., 1977.

Dahman, Ron M. Paper presented to AIA/DC Continuing Education Workshop, "Life Cycle Engineering," Zurheide Herrmann Inc., July 11, 1978, St. Louis Engineers Club.

David, Sam, ed. The Form of Housing. New York: Van Nostrand Reinhold Co., 1977.

Development Plan of Laclede's Landing Redevelopment Corporation for the Development of Laclede's Landing.

Diamonstein, Barbara Lee. Buildings Reborn: New Uses, Old Places. New York: Harpers Row Publishers, 1978.

Dickerson. Planning and Design. Lexington Book, 1975.

Energy Research and Development Administration. Life Cycle Costing Emphasizing Energy Conservation: Guidelines for Investment Analysis. Washington, D.C., 1976.

Engstrom, Robert and Mark Putman. Planning and Design of Townhouses and Condominiums. Washington, D.C.: Urban Land Institute, 1979.

Gayle, Margret, David W. Look and John G. Waite. Metals in America's Historic Buildings. United States Heritage Conservation and Recreation Service, Technical Services Division. Washington, D.C., 1980.

General Services Administration Federal Supply Service. "Life Cycle Costing."

Gideon, Sigfreid. Space, Time and Architecture. Cambridge, Mass.: Harvard University Press, 1976.

Grezzo, Anthony D. Condominiums: Their Development and Management. Washington, D.C.: U.S. Government Printing Office, 1972.

Hagen, Harry M. This is Our St. Louis. St. Louis, Mo.: Knight Publishing Co., 1970.

HOK Associates. Urban Design Guidelines for Laclede's Landing. St. Louis, Mo.

Hollander, Gerald M., P.E., Ph.D. "Life Cycle Cost--a Concept in Need of Understanding." Director of Planning and Development, Office of Construction Veterans, Paper presented to AIA/DC Continuing Education Workshop, July 11, 1978.

Holmström, Ingmar and Christina Sandstrom. Maintenance of Old Buildings: Preservation from the Technical and Antiquarian Standpoint. National Swedish Building Research Summaries D10-1975.

Housing, 5/1978, Vol. 53, Number 5, 1/1979, Vol. 55, Number 5, 8/79, pp. 53-59.

Hubin, Vincent. Warning! Condominium Ownership May be Dangerous to Your Health, Wealth and Peace of Mind. Homewood, Illinois: Dow-Jones-Irwin, 1976.

Landmarks Preservation Commission, New York. Soho - Cast Iron Historic District Designation, Report, 1973.

Lawson, Fred. Hotels, Motels and Condominiums: Design, Planning and Maintenance. Boston, Mass.: Cahners Books International, Inc., 1976.

Lee, Steven James. Buyer's Handbook for Cooperatives and Condominiums. New York: Van Nostrand Reinhold Co., 1978.

Mackay, David. Multiple Family Housing from Aggregation to Integration. New York: Architectural Book Publishing Co., 1977.

Macsia. Housing. Cambridge, Mass.: MIT Press, 1959.

Massachusetts Department of Community Affairs. Built to Last: A Handbook on Recycling Old Buildings. Washington, D.C.: Preservation Press, National Trust for Historic Preservation, 1977.

Means - Building Systems Cost Guide, 1978. Robert Sturgis Godfrey, ed. Kingston, Mass.: Robert Snow Means Co., Inc., 1978.

Means - Building Construction Cost Data, 1981. Robert Sturgis Godfrey, ed. Kingston, Mass.: Robert Snow Means Co., Inc., 1981.

Means - Repair and Remodeling Cost Data, 1981. William D. Mahoney, ed. Kingston, Mass.: Robert Snow Means Co., Inc., 1981.

Melaniphy, John. Commercial and Industrial Condominiums. Washington, D.C.: The Urban Land Institute, 1976.

The National Park Service, Office of Archaeology and Historic Preservation. Preservation Brief #1. The Cleaning and Waterproof Coating of Masonry Buildings. 1978.

________. Preservation Brief #2. Repointing Mortar Joints in Historic Brick Buildings. 1977.

________. Preservation Brief #6. Dangers of Abrasive Cleaning to Historic Buildings. 1978.

National Trust for Historic Preservation. "Information from the National Trust for Historic Preservation Economic Analyses of Adaptive Use Projects--Trolley Square." Washington, D.C.: The Preservation Press, 1976.

Norcross, Dr. Carl. Townhouses and Condominiums Residents' Likes and Dislikes. A special report, ULI Urban Land Institute, Washington, D.C., 1973.

Papageorgiou, Alexander. Continuity and Change. New York: Praeger Publishers, 1971.

Philips, Morgan and Dr. Judith Selwyn. Epoxies for Wood Repairs in Historic Buildings. U.S. Dept. of the Interior, Office of Archaeology and Historic Preservation, 1978.

The Preservation Press, National Trust for Historic Preservation. Economic Benefits of Preserving Old Buildings.

Stephen, George. Remodeling Old Houses: Without Destroying Their Character. New York: Alfred A. Knopf, 1972.

Stoff, Rick (staff writer). "The Small Industries Are Dwindling on Laclede's Landing." The St. Louis Globe-Democrat, 12 March 1979.

Stone. Building Design Evaluation. E & F Spon Ltd., 1976.

________. Building Economy. Pergamon Press, 1966.

Team Four. "Executive Summary: Retail/Restaurant Market Potential, Laclede's Landing," September 1980.

Toft, Carolyn Hewes. The History and Significance of Laclede's Landing. St. Louis, Mo.

Toft, Carolyn Hewes and Osmund Overby. Laclede's Landing: A History and Architectural Guide. St. Louis: Landmarks Association of St. Louis, 1973.

United States Department of Housing and Urban Development. Historic Preservation Plan. Washington, D.C.: U.S. Government Printing Office.

________. HUD Condominium Cooperative Study: Volume 1 National Evaluation. Washington, D.C.: U.S. Government Printing Office, July 1975.

United States Department of Treasury. Office of Industrial Economic Business Building Statistics, 1971.

The Urban Land Institute. Financial Management of Condominiums and Home-owners Associations. Washington, D.C.: 1975; rev. 1978.

Warner, Raynor, Sibyl Groff, Ranne Warner and Sandi Weiss. Business and Preservation. New York: Inform, 1978.

Wolf, Peter. Another Chance for Cities. New York: Whitney Museum of American Art, 1970.

Wolfe, David. Condominium and Homeowner Associations that Work on Paper and in Action. Washington, D.C.: Urban Land Institute, 1978.

Worksett, Roy. The Character of Towns. London: Architectural Press, 1969.

# APPENDIX A

# APPENDIX A-1

## JAMES MARSTON FITCH'S DEFINITIONS

The American delegation will submit the following definitions for consideration to the International Commission on Monuments and Sites Conference to revise definitions of the Venice Charter of 1964.

Preservation: the maintenance of the artifact in the same physical condition as when the object was received by the curatorial agency. Nothing is added to or subtracted from the esthetic corpus of the artifact. In the case of buildings, any interventions necessary to preserve their physical integrity (e.g., equipment for protection against fire, theft, or intrusion; installation of heating, cooling, or lighting systems, etc.) are to be cosmetically unobtrusive.

Restoration: the process of returning the artifact to its physical condition during some previous stage of its morphological development. The precise stage will be determined either by historical association (the way Independence Hall looked on 4 July 1776) or the formal esthetic integrity of the monument as conceived and built. Intervention at this level is more radical than simple preservation.

Conservation and consolidation: actual intervention in the physical fabric of the building to insure its continued visual and/or structural integrity. Such measures can range from relatively minor therapies (fumigation against termites [Royal Palace, Honolulu]; stone cleaning [Notre Dame de Paris]) to very radical ones (consolidation of dessicated wood [Vasa warship, Stockholm]; insertion of new foundations [under the central tower at York Minster, England]). The consequences of such measures are ordinarily invisible when completed.

<u>Reconstitution</u>: a more radical version of the above, where the building can be saved only by its piece-by-piece dismantling and subsequent re-assembly, either <u>in situ</u> or on a new site. Reconstitution <u>in situ</u> is ordinarily the consequence of disaster like war or earthquakes, where most of the original constituent parts remain in being but scattered or <u>disjecta</u> (Cathedral of Antigua, Guatemala; Bridge of S. Trinita, Florence). On occasion, it may be necessary to dismantle a building and reassemble it on the same site (Old State Capitol, Springfield, Illinois). Reconstitution on new sites (outdoor architectural museums such as Stockholm's Skansen, Sturbridge Village, or Bethpage Village in the United States) is usually necessitated by the transplanted structure's being too large or too heavy to be moved to its new site intact.

<u>Adaptive use</u>: often the only way in which old buildings can be saved is by structural modifications to meet the requirements of new tenants. This can sometimes involve fairly radical intervention, especially in the internal organization of space; in this case, any or all of the above levels of intervention may be called for.

<u>Reconstruction</u>: the re-creation of vanished buildings on their original site. The reconstructed building acts as the tangible, three-dimensional surrogate of the original structure, the physical form being determined by archaeological, archival and literary evidence. This is one of the most radical forms of intervention, also hazardous culturally. All attempts to reconstruct the past, no matter what academic and scientific resources are available, necessarily involve subjective hypotheses. In historiography, such hypotheses can be and indeed are constantly revised; in architecture the hypothesis is obdurate, intractable, not easily rectified. Even so, there are instances in which the reconstruction may be culturally justifiable, e.g., the

Royal Palace, Warsaw; the Governor's Palace and House of Burgesses, Williamsburg; the Treasure House, Iwo, Japan.

Replication: the fabrication of an exact copy of a still-existing artifact. The replica co-exists with the original; thus the replica can be more accurate than the reconstruction because the prototype is available as a control for proportion, color, texture, etc. This is a most hazardous intervention (e.g. the Getty Museum in Malibu, the Parthenon, in Nashville). Nevertheless it has specific utility in certain cases--as when the replica stands in the open air as surrogate for an original that has been moved to the controlled environment of a museum (Michelangelo's David in Florence; the Pisani sculptures of the Baptistry at Pisa).

That we Americans are able to offer such definitions as these is a mark of our maturing comprehension of the size and complexity of the task ahead of us. And we must recognize that this maturation is based upon centuries of European--and above all, English--experience with the preservation of the artistic and historic patrimony. It is a virtue of Madsen's book that he surveys this experience in a manner at once so succinct and precise.[23]

## INTRODUCTION

Across the Nation, citizens are discovering that older buildings and neighborhoods are important ingredients of a town's or a city's special identity and character. They are finding that tangible and satisfying links to the past are provided by structures, shopping streets, and residential and industrial areas in their cities and towns that have survived from earlier periods. Often, however, these important buildings and neighborhoods have suffered years of neglect or they seem outdated for the needs of modem living. But with thoughtful rehabilitation, many can be successfully revitalized. In rehabilitating older resources to contemporary standards and codes, however, it is important that the architectural qualities that have distinguished them in the past are not irretrievably discarded and lost to the future.

Although specifically developed to assist property owners eligible to receive Historic Preservation Loans and for local officials responsible for the community development block grant program of the Housing and Community Development Act of 1974, these Guidelines will help any property owner or local official in formulating plans for the rehabilitation, preservation, and continued use of old buildings, neighborhoods, and commercial areas.* They consist of eight principles that should be kept in mind when planning new construction or rehabilitation projects. The checklist suggests specific actions to be considered or avoided to insure that the distinguishing qualities of buildings or neighborhood environments will not be damaged by new work. In addition, whenever possible, advice should be sought from qualified professionals, including architects, architectural historians and planners, who are skilled in the preservation, restoration, and rehabilitation of old buildings and neighborhoods.

When the buildings or areas being considered for rehabilitation are listed or eligible for listing in the National Register of Historic Places, property owners and local officials responsible for the work should, as a first step, contact the appropriate State Historic Preservation Officer, in addition to consulting with experienced professionals. Where comprehensive surveys (to identify properties eligible for National Register listing) have not yet been completed in a project area, the undertaking of such surveys should be discussed with appropriate local officials and with the State Historic Preservation Officer.

Lists of HUD offices, State Historic Preservation Officers and other helpful offices and organizations, a bibliography of useful publications, and definitions of terms are attached as appendices to these Guidelines.

## I. GUIDELINES

1. Every reasonable effort should be made to provide a compatible use for buildings which will require minimum alteration to the building and its environment.

2. Rehabilitation work should not destroy the distinguishing qualities or character of the property and its environment. The removal or alteration of any historic material or architectural features should be held to the minimum, consistent with the proposed use.

3. Deteriorated architectural features should 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 duplications of original features, substantiated by physical or pictorial evidence rather than on conjectural designs or the availability of different architectural features from other buildings.

4. Distinctive stylistic features or examples of skilled craftsmanship which characterize older structures and often predate the mass production of building materials, should be treated with sensitivity.

5. Many changes to buildings and environments which have taken place in the course of time are evidence of the history of the building and the neighborhood. These changes may have developed significance in their own right, and this significance should be recognized and respected.

U.S. Dept. Interior, April 1977
HUD-465 F

*All residential structures listed, or determined eligible for inclusion, in the National Register of Historic Places, either individually or as part of a district, are eligible for Historic Preservation Loans. Informational leaflets concerning Historic Preservation Loans are available from FHA-approved lending institutions, HUD offices, or State Historic Preservation Officers. Information concerning the National Register of Historic Places is available from the appropriate State Historic Preservation Officer (see Appendix 1).

The primary objective of the community development block grant program is the development of viable urban communities by providing decent housing and a suitable living environment and by expanding economic opportunities, principally for persons of low- and moderate-income. This goal is to be achieved through elimination of slums and blight and detrimental living conditions, conservation and expansion of housing, increased public services, improved use of land, increased neighborhood diversity, and preservation of property with special values. Information about the community development block grant program can be obtained from HUD offices (see Appendix 1).

6. All buildings should be recognized as products of their own time. Alterations to create an appearance inconsistent with the actual character of the building should be discouraged.

7. Contemporary design for new buildings in old neighborhoods and additions to existing buildings or landscaping should not be discouraged if such design is compatible with the size, scale, color, material, and character of the neighborhood, building, or its environment.

8. Wherever possible, new additions or alterations to buildings should be done in such a manner that if they were to be removed in the future, the essential form and integrity of the original building would be unimpaired.

## II. CHECKLIST FOR THE APPLICATION OF THE GUIDELINES

| CONSIDER | AVOID |
|---|---|
| **The Environment** | |
| In new construction, retaining distinctive features of the neighborhood's existing architecture, such as the distinguishing size, scale, mass, color, materials, and details, including roofs, porches and stairways, that give a neighborhood its special character. | Introducing new construction into neighborhoods that is incompatible with the character of the district's architecture because of obvious differences in size, scale, color and detailing. |
| Using new plant materials, fencing, walkways, and street lights, signs, and benches that are compatible with the character of the neighborhood in size, scale, material, and color. | Introducing signs, street lighting, street furniture, new plant materials, fencing, walkways and paving materials which are out of scale or inappropriate to the neighborhood. |
| Retaining existing landscape features such as parks, gardens, street lights, signs, benches, walkways, streets, alleys, and building set-backs that have traditionally linked buildings to their environment. | Destroying the relationship of buildings and their environment by widening existing streets, changing paving material, or by introducing poorly designed and inappropriately located new streets and parking lots or introducing new construction incompatible with the character of the neighborhood. |
| **Existing Buildings: Lot** | |
| Inspecting the lot carefully to locate and identify plants, trees, fencing, walkways, outbuildings and other elements that might be an important part of the property's history and development. | |
| Retaining plants, trees, fencing, walkways, and street lights, signs, and benches that reflect the property's history and development. | Making changes to the appearance of the site by removing old plants, trees, fencing, walkways, and street lights, signs, and benches before evaluating their importance in the property's history and development. |
| Basing decisions for new work on actual knowledge of the past appearance of the property found in photographs, drawings, newspapers, and tax records. If changes are made they should be carefully evaluated in light of the past appearance of the site. | Giving the site an appearance it never had. |
| **Existing Buildings: Exterior Features** | |
| *Masonry Buildings* | |
| Retaining original masonry and mortar, whenever possible, without the application of any surface treatment. | Applying waterproof or water repellent coatings other treatments unless required to solve a specific technical problem that has been studied and identified. Coatings are frequently unnecessary, expensive, and can accelerate deterioration of the masonry. |

| CONSIDER | AVOID |
|---|---|
| Duplicating old mortar in composition, color, and textures. | Repointing with mortar of high Portland cement content which can create a bond that is often stronger than the building material. This can cause deterioration as a result of the differing coefficient of expansion and the differing porosity of the material and the mortar. |
| Duplicating old mortar in joint size, method of application, and joint profile. | Repointing with mortar joints of a differing size or joint profile, texture, or color. |
| Repairing stucco with a stucco mixture duplicating the original as closely as possible in appearance and texture. | |
| Cleaning masonry only when necessary to halt deterioration and always with the gentlest method possible, such as low pressure water and soft natural bristle brushes. | Sandblasting brick or stone surfaces; this method of cleaning erodes the surface of the material and accelerates deterioration. |
| | Using chemical cleaning products which could have an adverse chemical reaction with the masonry materials, i.e., acid on limestone or marble. |
| Repairing or replacing, where necessary, deteriorated material with new material that duplicates the old as closely as possible. | Applying new material which is inappropriate or was unavailable when the building was constructed, such as artificial brick siding, artificial cast stone or brick veneer. |
| Replacing missing architectural features, such as cornices, brackets, railings, and shutters. | Removing architectural features, such as cornices, brackets, railings, shutters, window architraves, and doorway pediments. These are usually an essential part of a building's character and appearance. |
| Retaining the original or early color and texture of masonry surfaces, wherever possible. Brick or stone surfaces may have been painted or whitewashed for practical and aesthetic reasons. | Indiscriminate removal of paint from masonry surfaces. This may be historically incorrect and may also subject the building to harmful damage. |
| *Frame Buildings* | |
| Retaining original material, whenever possible. | Removing architectural features such as siding, cornices, brackets, window architraves, and doorway pediments. These are, in most cases, an essential part of a building's character and appearance. |
| Repairing or replacing, where necessary, deteriorated material with new material that duplicates the old as closely as possible. | Resurfacing frame buildings with new material which is inappropriate or was unavailable when the building was constructed such as artificial stone, brick veneer, asbestos or asphalt shingles, plastic or aluminum siding. Such material also can contribute to the deterioration of the structure from moisture and insect attack. |

| CONSIDER | AVOID |
|---|---|
| *Roofs* | |
| Preserving the original roof shape. | Changing the original roof shape or adding features inappropriate to the essential character of the roof such as oversized dormer windows or picture windows. |
| Retaining the original roofing material, whenever possible. | Applying new roofing material that is inappropriate to the style and period of the building and neighborhood. |
| Replacing deteriorated roof coverings with new material that matches the old in composition, size, shape, color, and texture. | Replacing deteriorated roof coverings with new materials which differ to such an extent from the old in composition, size, shape, color, and texture that the appearance of the building is altered. |
| Preserving or replacing, where necessary, all architectural features which give the roof its essential character, such as dormer windows, cupolas, cornices, brackets, chimneys, cresting, and weather vanes. | Stripping the roof of architectural features important to its character. |
| Placing television antennae and mechanical equipment, such as air conditioners, in an inconspicuous location. | Placing television antennae and mechanical equipment, such as air conditioners, where they can be seen from the street. |
| *Windows and Doors* | |
| Retaining existing window and door openings including window sash, glass, lintels, sills, architraves, shutters, doors, pediments, hoods, steps, and all hardware. | Introducing new window and door openings into the principal elevations, or enlarging or reducing window or door openings to fit new stock window sash or new stock door sizes. |
| | Altering the size of window panes or sash. Such changes destroy the scale and proportion of the building. |
| | Discarding original doors and door hardware when they can be repaired and reused in place. |
| Respecting the stylistic period or periods a building represents. If replacement of window sash or doors is necessary, the replacement should duplicate the material, design, and the hardware of the older window sash or door. | Inappropriate new window or door features such as aluminum storm and screen window combinations that require the removal of original windows and doors or the installation of plastic or metal strip awnings or fake shutters that disturb the character and appearance of the building. |
| *Porches and Steps* | |
| Retaining porches and steps which are appropriate to the building and its development. Porches or additions reflecting later architectural styles are often important to the building's historical integrity and, wherever possible, should be retained. | Removing or altering porches and steps which are appropriate to the building and its development and the style it represents. |
| Repairing or replacing, where necessary, deteriorated architectural features of wood, iron, cast iron, terra-cotta, tile, and brick. | Stripping porches and steps of original material and architectural features, such as hand rails, balusters, columns, brackets, and roof decoration of wood, iron, cast iron, terra-cotta, tile, and brick. |

**CONSIDER**

Designing new work to be compatible in materials, size, scale, color, and texture with the earlier building and the neighborhood.

Using contemporary designs compatible with the character and mood of the building or the neighborhood.

**AVOID**

Designing new work that is incompatible with the earlier building and the neighborhood in materials, size, scale, and texture.

Imitating an earlier style or period of architecture in new construction, except in rare cases where a contemporary design would detract from the architectural unity of an ensemble or group. Especially avoid imitating an earlier style of architecture in new construction that has a completely contemporary function such as a drive-in bank or garage.

**Mechanical Services in Existing Buildings: Heating, Electrical, and Plumbing**

**CONSIDER**

Installing necessary building services in areas and spaces that will require the least possible alteration to the plan, materials, and appearance of the building.

Installing the vertical runs of ducts, pipes, and cables in closets, service rooms, and wall cavities.

Selecting mechanical systems that best suit the building.

Rewiring early lighting fixtures.

Having exterior electrical and telephone cables installed underground.

**AVOID**

Causing unnecessary damage to the plan, materials, and appearance of the building when installing mechanical services.

Installing vertical runs of ducts, pipes, and cables in places where they will be a visual intrusion.

Cutting holes in important architectural features, such as cornices, decorative ceilings, and paneling.

Installing "dropped" acoustical ceilings to hide inappropriate mechanical systems. This destroys the proportions and character of the rooms.

Having exterior electrical and telephone cables attached to the principal elevations of the building.

**Safety and Code Requirements**

Complying with code requirements in such a manner that the essential character of a building is preserved intact.

Investigating variances for historic properties under local codes.

Installing adequate fire prevention equipment in a manner that does minimal damage to the appearance or fabric of a property.

Providing access for the handicapped without damaging the essential character of a property.

| CONSIDER | AVOID |
|---|---|
| Repairing or replacing, where necessary, deteriorated material with new material that duplicates the old as closely as possible. | Applying new material which is inappropriate or was unavailable when the building was constructed, such as artificial cast stone, brick veneer, asbestos or asphalt shingles, or plastic or aluminum siding. |
| | Enclosing porches and steps in a manner that destroys their intended appearance. |
| **Existing Buildings: Exterior Finishes** | |
| Discovering and retaining original paint colors, or repainting with colors based on the original to illustrate the distinctive character of the property. | Repainting with colors that are not appropriate to the building and neighborhood. |
| **Existing Buildings: Interior Features** | |
| Retaining original material, architectural features, and hardware, whenever possible, such as stairs, handrails, balusters, mantelpieces, cornices, chair rails, baseboards, paneling, doors and doorways, wallpaper, lighting fixtures, locks, and door knobs. | Removing original material, architectural features, and hardware, except where essential for safety or efficiency. |
| Repairing or replacing, where necessary, deteriorated material with new material that duplicates the old as closely as possible. | Installing new decorative material which is inappropriate or was unavailable when the building was constructed, such as vinyl plastic or imitation wood wall and floor coverings, except in utility areas such as kitchens and bathrooms. |
| Retaining original plaster, whenever possible. | Destroying original plaster except where necessary for safety and efficiency. |
| Discovering and retaining original paint colors, wallpapers and other decorative motifs or, where necessary, replacing them with colors, wallpapers or decorative motifs based on the original. | |
| **Existing Buildings: Plan and Function** | |
| Using a building for its intended purposes. | |
| Finding an adaptive use, when necessary, which is compatible with the plan, structure, and appearance of the building. | Altering a building to accommodate an incompatible use requiring extensive alterations to the plan, materials, and appearance of the building. |
| Retaining the basic plan of a building, whenever possible. | Altering the basic plan of a building by demolishing principal walls, partitions, and stairways. |
| **New Construction** | |
| Making new additions and new buildings compatible in scale, building materials, and texture. | Making incompatible new additions or new construction. |

URBAN DESIGN GUIDELINES, Laclede's Landing,
prepared by HOK Associates

## INTRODUCTION -- USE OF THIS REPORT

"Urban Design Guidelines" represents a refinement and interpretation of the Laclede's Landing Development Plan as adopted by the City of St. Louis in November 1975.

"Guidelines" has been formulated for use by the following parties: (1) assisting the Planning Committee and the Board of Directors of the Laclede's Landing Redevelopment Corporation in determining policy for a wide range of environmental design issues including -- building height/scale, signage/graphics, facade color/materials, and street furniture/trees; (2) providing developers, investors, and architects with preliminary design criteria, thus avoiding duplication and lowering front-end costs; and (3) assisting the Laclede's Landing Redevelopment Corporation, the City of St. Louis, and similar bodies in developing measures for the function, maintenance, and design of capital improvements.

The choice of the title word "Guidelines" was made with particular care. It is based upon the recognition that rigid controls or predetermined rules do more harm than good when applied to complex renewal undertakings of this nature. The ultimate environmental quality must be determined by factors in addition to this document. These include encouragement of capable design professionals and application of a "design review" function. Particular scrutiny shall be necessary regarding the challenge of integrating new architectural features into a pre-established historical context. Ghirardelli Square, Society Hill and numerous other successful projects have already proven the efficacy of such efforts.

Although "Guidelines" is a semi-technical document, every effort has been made to simplify the format in order that it be as easy to read or skim as possible. It is bound in a loose-leaf notebook so that any portion can be easily removed or replaced. The use of color throughout is intended to aid readability and is not to be confused with the actual guidelines. Wherever possible, individual Goals are confined to no more than one page and include a brief discussion followed by a Specific Recommendation or Example. Goal groupings fall under common Topic headings. Topics are organized under each of the major divisions or Parts of the report, each Part containing material of primary interest to one segment of the intended audience (i.e., Part 3 is for private developers). Not only does the "Urban Design Guidelines" function as a compilation of over 100 important design issues, but it is one of the basic corporate documents to be used by the Redevelopment Corporation in decisions affecting the revitalization of a treasured urban resource -- Laclede's Landing.

TOPIC: STREET WALL -- Facade Materials

## GOAL:

Facade materials along the streetwall must be appropriate to an overall design continuity of the Landing area.

## DISCUSSION:

The conceptual use of a material is distinguished by four different types: Type A - materials which are used in their natural state such as brick masonry walls, exposed concrete structural elements, wood sash windows, etc. Type B - materials in their natural state, but whose form is associated with a different material such as iron front details derive their form from cut stone, cast concrete copings, sills, etc. derive their form from cut stone. Type C - materials not indicative of any natural material such as porcelinized metal panels, expanded aluminum screens, or bronze aluminum store front sections. Type D - materials which simulate another material such as artificial stones, artificial bricks, plastic and metal clad windows which simulate wood.

These materials may be applied or integral to a building's structure, to its surface or enclosure, or as ornament upon a building.

Materials Permitted for Rehabilitation

1. Structural: Type A. Replacement and repair materials ought to be as close to original 19th century design as possible.
2. Surface or enclosure: Type A. Sandblasting, steam cleaning or waterblasting are strongly recommended.
3. Ornamental: Types A and B. Replacement and repair ought to be as close to original 19th century design as possible.

Materials Permitted for New Infill and Major New Development

1. Structural: Type A only is permitted. For example, load bearing brick masonry walls, exposed cast-in-place concrete structure, steel framing.
2. Surface or enclosure: Type A is permitted; e.g., brick masonry, wood, precast concrete panels. Type B is not permitted. Type C is not permitted. Type D is not permitted. Materials explicitly prohibited: standard precast concrete block; mirror glazing.
3. Ornamental and Detail: Type A is permitted; e.g., corbelled brick masonry. Type B is permitted; e.g., cast stone sills, coping and lintels, iron fronts (could be from another building which has been torn down). Type B materials must be closely reviewed for compatibility within the context of the district.

TOPIC: STREET WALL -- Facade Colors

GOAL:

Building facades should conform to a range of colors which are intended to give unity and a historic connotation to the Landing interior.

DISCUSSION:

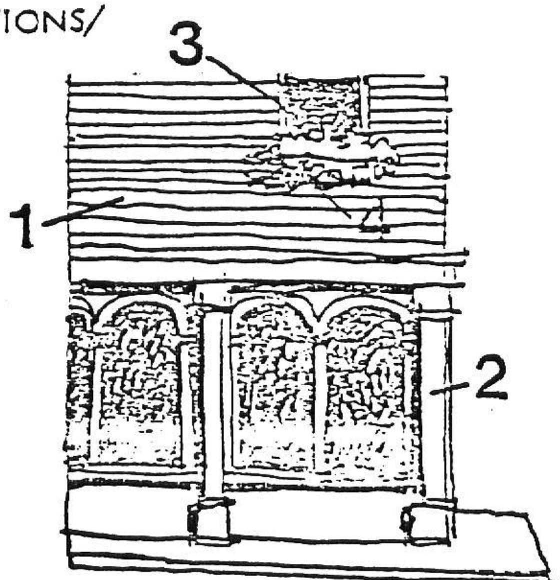
The existing warehouse district is characterized by the "inherent" colors of the building facades. Use of similar "inherent" colors is encouraged for major new construction and new infill construction as well. If paint coating is applied, either a duplicate of the "inherent" color or else a match of value and intensity is recommended.

A color applied to a broad building wall or to cast-iron members which are structurally integral to the building is called the dominant color. This color is often synonymous with the "inherent" color.

A color applied to trim, fascia boards, door panels, mullions or cornice mouldings or miscellaneous metals is called an accent color. There is no restriction for accent colors.

Accessory colors are applied to items attached to a building such as planter boxes, awnings, or signage. There is no restriction for accessory colors.

SPECIFIC RECOMMENDATIONS/ EXAMPLES:




Facade Color Elements: 1) Inherent, 2) Dominant, 3) Accent, 4) Accessory

TOPIC: STREET WALL -- Infill Construction Width

GOAL:

All new infill construction shall extend the full width of the property line frontage (i.e., from party wall to party wall).

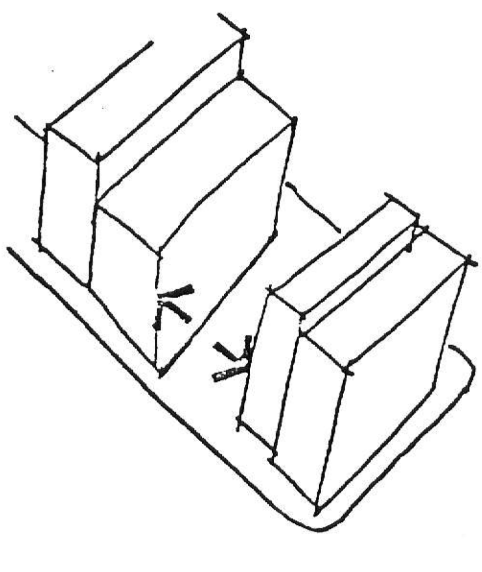
DISCUSSION:

It is important to prevent destruction of block massing within the warehouse district by the removal of buildings. It is recommended that such action be discouraged by not allowing more than 10% of the length of the block to be permanently removed.

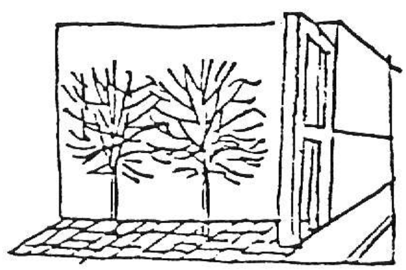
Exceptions: First floor voids are allowed for enclosed arcades or open courtyards if,

(a) occupied floors above the first floor extend the full width of the property line;
(b) a structural screen at least one floor high is built above the first floor. The screen must extend the full width of the property line frontage.

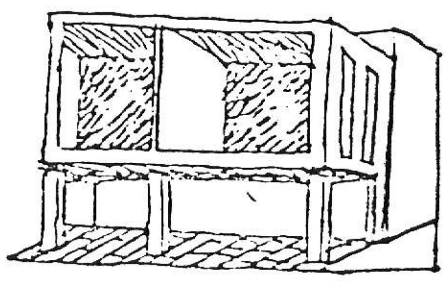
SPECIFIC RECOMMENDATIONS/EXAMPLES:



Frontage Indication (arrows)



Structural Screen



Occupied Floor Above

TOPIC: STREET WALL -- Sloping Roof Forms

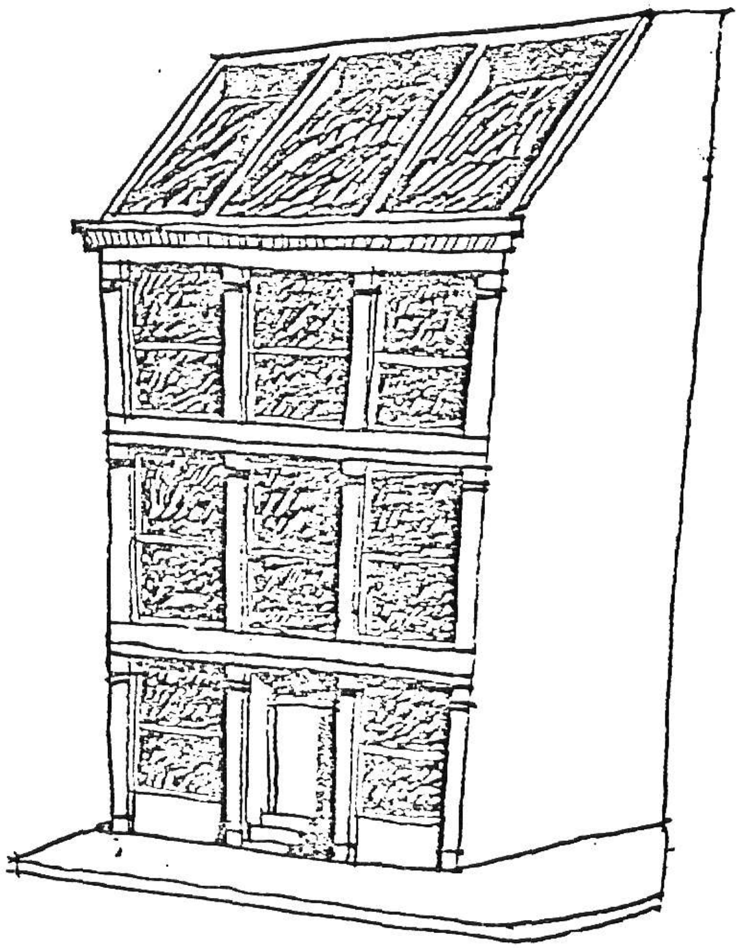
GOAL:

No sloping roof forms will be allowed on rehabilitated buildings, new infill buildings, or major new buildings.

DISCUSSION:

The Landing is made up of flat-roofed buildings. This form shall be followed for historic and visual continuity. No exceptions to flat roofs allowed.

SPECIFIC
RECOMMENDATIONS/EXAMPLES:



Inappropriate Sloping Roof

TOPIC: STREET WALL -- General Signage

GOAL:

To achieve, through the tenant identification signage, a reinforcement of the streetscape and further enhancement of the spirit of the Landing.

DISCUSSION:

Tenant signage controls are of utmost importance in the development of the character of the Landing. Signs of varying scale, location, color, materials, typography will lend excitement and establish the multiplicity of activities within the area. These signs, however, must be strongly controlled. The following provides general outlines to follow for allowable and/or prohibited signage and recommended directions but does not constitute a sign code for the Landing. Each parcel development must be approached independently. The signage solutions must come from the individual architectural concerns at and within each parcel development and the overall goals for signage as stated above. Each proposed sign must be evaluated for its individual merits and how it fits into and supports the whole.

The level of competition must be kept low.

It is not recommended that all of the available options be used in signing a single parcel development.

Scale: Sign sizes should be responsive to their architectural surroundings. New signs mounted on roofs or at the upper levels of buildings are not allowed; existing signs within the area are allowed to remain if they are responsive to their surroundings and the streetscape.

Materials: Allowable materials include paint, gold and silver leaf, fiberglass, wood, stained glass, metal, glass, cloth. Materials and methods not allowed include vacuum-formed plastic, internal illumination, neon. No temporary signage affixed to windows or building structure is allowed.

See next page.

TOPIC: STREET FURNITURE -- Regulatory Signage

GOAL:

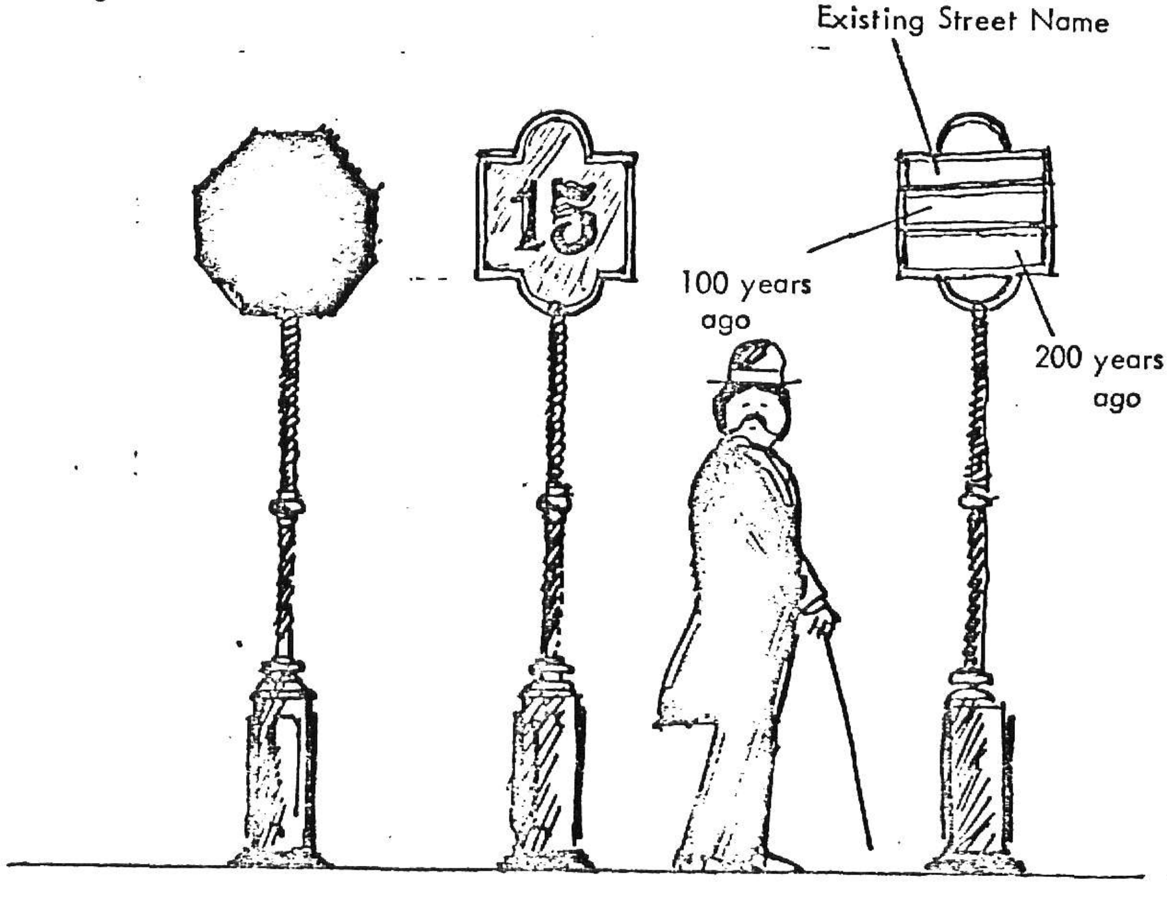
To control the movement of vehicles throughout the Landing. To enhance the spirit of the Landing through the streetscape. To identify the Landing area.

DISCUSSION:

Regulatory signage is required to control vehicular speeds, turns, street parking, stops, etc., throughout the area. The Landing area should be described as unique. Every part of the streetscape must be considered.

SPECIFIC
RECOMMENDATIONS/EXAMPLES:

A system of regulatory signage should be designed reflecting the detailing of other elements of the streetscape. Vehicular control signage unique to the Landing developed from historic graphic forms on cast iron posts will meet the above goals.



BLOCK 16E

OVERALL GOALS

1. Development on Block 16E shall utilize views of the railroad trestle, the levee and the river wherever possible.

2. Development on Block 16E shall be new development and be consistent with adjacent blocks in terms of materials, colors, scale and other design guidelines.

3. Maximum possible accessibility for storage of motorized vehicles shall be provided.

4. Commercial Street shall be upgraded to a one-way motor route to serve development of Block 16E.

5. Opportunities for thru-block access to Wharf Street and to CB 16W shall be exploited where possible.

6. Close Delmar between Commercial and Wharf Streets to encourage joint parking facility on Blocks 16E and 15E.

7. View corridor down Delmar shall not be significantly blocked by development in Blocks 16E and 15E.

8. Delmar shall continue to be major pedestrian entry from Wharf Street.

9. Seasonal retail functions shall be encouraged adjacent to the trestle structure.

SPECIFIC OBJECTIVES

1. Building Use Requirements
   Office - 70%; Retail - 20%; Residential - 70%; Hotel - 70%; Entertainment - 10%; Special - 90%; Wholesale - 0%; Industrial - 0%.

2. Parking/Auto Access
   Parking shall be encouraged on Block 16E. Auto access shall be from Delmar Boulevard, Commercial Street, or the new north entry drive. Auto access shall not be allowed from First Street.

3. Delivery Access/Storage
   Delivery access shall be from Wharf Street, the new north entry drive, Commercial Street or Delmar Boulevard. All storage shall be inside buildings and hidden from view.

4. Pedestrian Circulation/Open Space
   Pedestrian access to CB 16E shall be along Delmar Boulevard, Wharf Street and Commercial Street. It shall not be encouraged along the new north entry drive. Thru-block access is encouraged to Block 16W and Wharf Street. An open space node is encouraged on the southwest portion of CB 16E. Encourage promenade connecting Blocks 14E and 15E.

BLOCK 16E

SPECIFIC OBJECTIVES (continued)

5. Signage/Graphics/Lighting
   Signage on development parcels shall be consistent with overall signage guidelines. Wall-mounted light fixtures shall be same design style as streetscape pole fixtures.

6. Building Height Requirements
   (Including vacated Delmar) - 75 feet measured from Commercial Street (approximate elevation 502 feet).

7. Building Setback or Coverage Requirements
   100% coverage.

8. Building Area Requirements
   Maximum - 76,000 square feet; Minimum - 34,200 square feet.

9. Views
   Preserve view along Commercial Street and corridor view of levee down Delmar Boulevard.

BLOCK 16W
OVERALL GOALS

1. FAITHFULLY RESTORE BUILDING FACADES WHICH COMPRISE THE STREET WALL AND WHICH ARE TO REMAIN.

2. MOTORIZED TRAFFIC SHALL BE COMPLETELY EXCLUDED ON PHASED BASIS FROM FIRST STREET.

3. MAXIMIZE VARIETY OF BUILDING USES.

4. MAXIMIZE OPPORTUNITY FOR WALK-IN RETAIL FRONTAGE; MAXIMIZE VARIETY OF PEDESTRIAN CIRCULATION ROUTES.

SPECIFIC OBJECTIVES

1. Building Use Requirements
   Office - 80%; Retail - 30%; Residential - 50%; Hotel - 0%; Entertainment/Bar - 10%; Special - 60%; Wholesale - 40%; Industrial - 10%.
2. Parking/Auto Access
   Parking shall not be allowed on Block 16W. Auto access shall be from either Delmar Boulevard, Commercial Street, or the new north entry drive. Auto access shall not be allowed from First Street after its closure. Emergency access permitted only.
3. Delivery Access/Storage
   Delivery access shall be from Delmar Boulevard, the new north entry drive, or Commercial Street. All storage shall be inside buildings and hidden from view.
4. Pedestrian Circulation/Open Space
   Pedestrian access is required along Delmar Boulevard, Commercial Street and First Street. Major open space shall be First Street. Additional open space node is encouraged on southwest portion of CB 16W. Thru-block access to CB 16E is encouraged.
5. Signage/Graphics/Lighting
   Signage on development parcels shall be consistent with overall signage guidelines. Wall-mounted light fixtures shall be same design style as streetscape pole fixtures.
6. Building Height Requirements
   No structure to be erected higher than the highest existing building.
7. Building Setback or Coverage Requirements
   100% coverage.
8. Building Area Requirements
   Maximum - 57,617 square feet; Minimum - 57,617 square feet.
9. Views
   Preserve view along Commercial Street and corridor view of levee down Delmar Boulevard and new north entry drive. View along First Street may be interrupted by grade level street furniture.

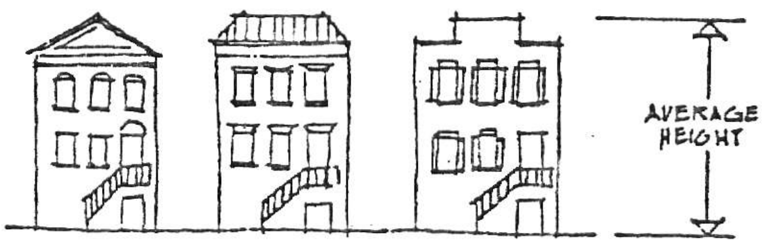
## DESIGN CRITERIA FOR NEW BUILDINGS IN HISTORIC SAVANNAH

The Housing Authority of Georgia, in order to preserve the integrity of the "Old Savannah" area, has developed 16 design elements which relate directly to the existing architectural character of the area. Any proposed new structure must incorporate at least 6 of these criteria in the design. The criteria are listed and explained as follows:

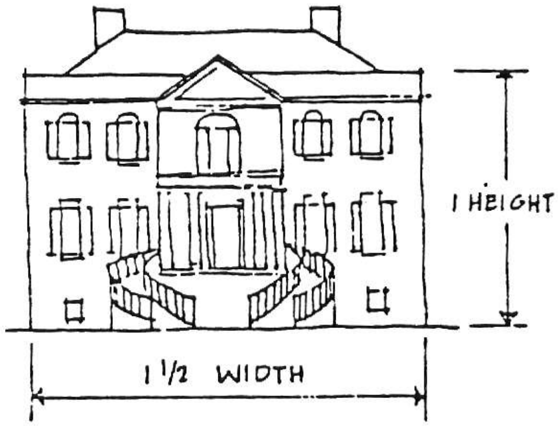
*Criteria*

Height
Proportion of buildings' front facades
Proportion of openings within the facade
Rhythm of solids to voids in front facade
Rhythm of spacing of buildings on streets
Rhythm of entrance and/or porch projections
Relationship of materials
Relationship of textures
Relationship of color
Relationship of architectural details
Relationship of roof shapes
Walls of continuity
Relationship of landscaping
Ground cover
Scale
Directional expression of front elevation

### CRITERIA

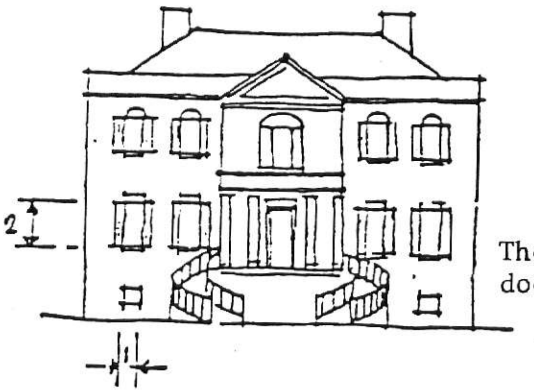



1. *Height*—This is a mandatory criteria that new buildings be constructed to a height within ten percent of the average height of existing adjacent buildings.




RATIO PROPORTION 1 - 1 1/2

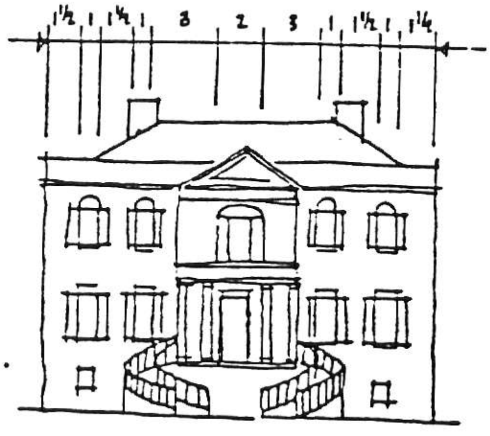
2. *Proportion of buildings' front facades*—The relationship between the width and height of the front elevation of the building.



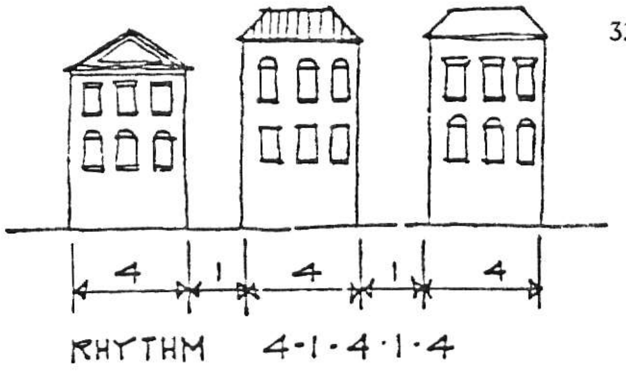

WINDOW PROPORTION 2·1

3. Proportion of openings within the facade--The relationship of width to height of windows and doors.

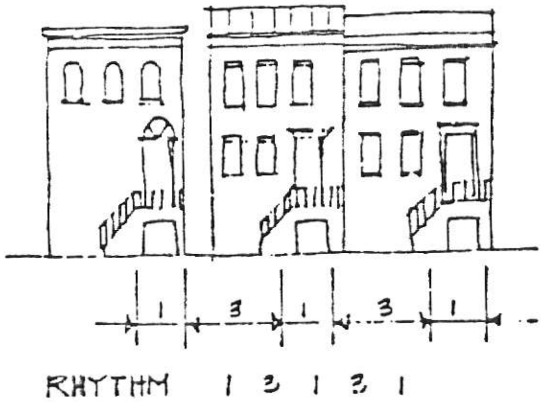
4. Rhythm of solids to voids in front facade--Rhythm being an ordered recurrent alternation of strong and weak elements. Moving by an individual building, one experiences a rhythm of masses to openings.



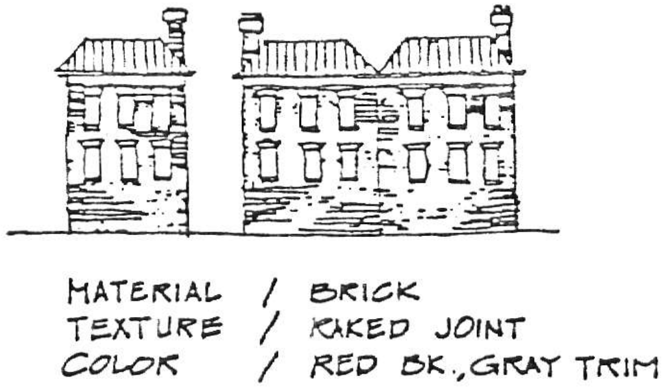
RHYTHM 1½ · 1 · 1½ 1 · 3




5. *Rhythm of spacing of buildings on streets*—Moving past a sequence of buildings, one experiences a rhythm of recurrent building masses to spaces between them.




6. Rhythm of entrance and/or proch projections. The relationships of entrances to sidewalks. Moving past a sequence of structures, one experiences a rhythm of entrances or porch projections at an intimate scale.



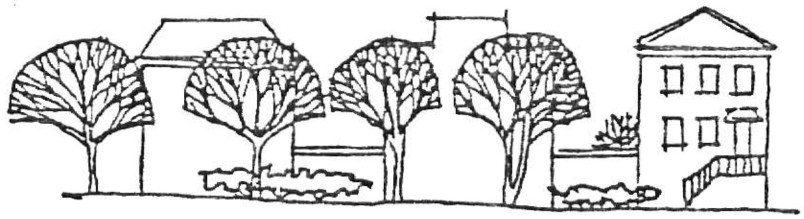

7. *Relationship of materials*—Within an area, the predominant material may be brick, stone, stucco, wood siding, or other material.

8. *Relationship of textures*—The predominant texture may be smooth (stucco) or rough (brick with tooled joints) or horizontal wood siding, or other textures.

9. *Relationship of color*—The predominant color may be that of a natural material or a painted one, or a patina colored by time. Accent or blending colors of trim is also a factor.

10. *Relationship of architectural details*—Details may include cornices, lintel, arches, quoins, balustrades, wrought iron work, chimneys, etc.

11. *Relationship of roof shapes*—The majority of buildings may have gable, mansard, hip, flat roofs, or others.

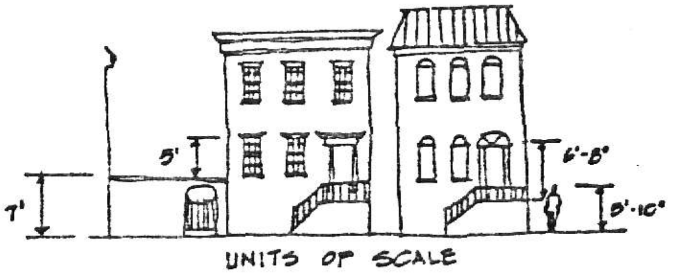


WALLS & LANDSCAPING CONTINUOUS

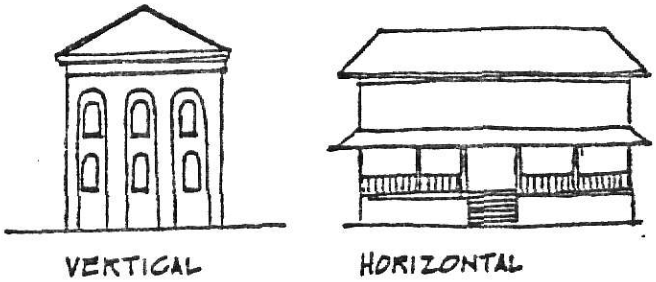
12. *Walls of continuity*—Physical ingredients such as brick walls, wrought iron fences, evergreen landscape masses, building facades, or combinations of these, form continuous, cohesive walls of enclosure along the street.

13. *Relationship of landscaping*—There may be a predominance of a particular quality and quantity of landscaping. The concern here is more with mass and continuity.


*14. Ground cover*—There may be a predominance in the use of brick pavers, cobble stones, granite blocks, tabby, or other materials.



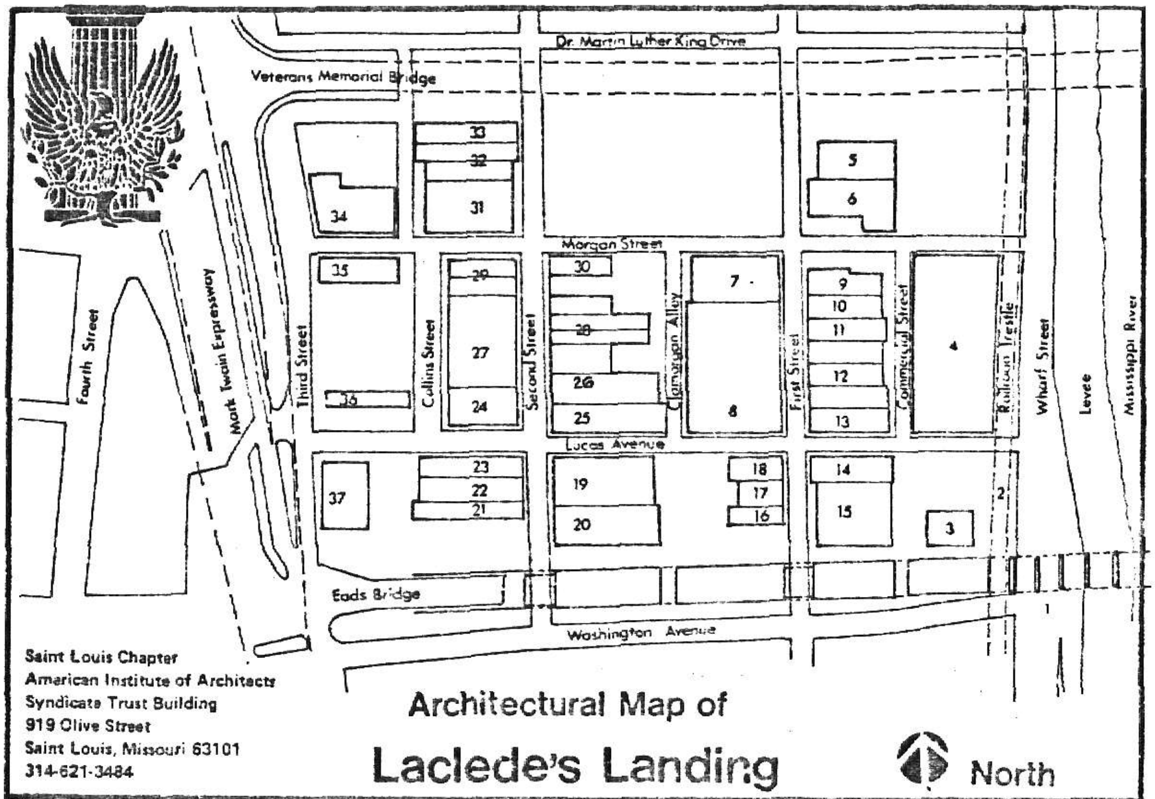

*15. Scale*—Scale is created by the size of construction and architectural detail which relate to the size of man. Scale is also determined by building mass and how it relates to open space. The predominant element of scale may be brick or stone units, windows or door openings, porches and balconies, etc.




*16. Directional expression of front elevation*—Structural shape, placement of openings, and architectural details may give a predominantly vertical, horizontal, or a non-directional character to the building's front facade.

# APPENDIX B

# APPENDIX B-1




1. EAD'S BRIDGE
   James B. Eads 1867-74
2. RAILROAD TRESTLE
   Terminal Railroad Association 1889
3. EAD'S BRIDGE STATION 512 N. Wharf St.
   Terminal Railroad Association 1910-11
   Balk, Stevens & Associates 1978
4. PARKING GARAGE & ACTIVITIES DECK
   Hellmuth, Obata & Kassabaum, Inc. 1978
5. CHERRICK DISTRIBUTING CO. WAREHOUSE
   800-804 N. First St. c. 1884
6. BRONSON HIDE CO. WAREHOUSE
   806-808 N. First St. pre-1875
7. RAEDER PLACE 721-27 N. First St.
   Frederick W. Raeder 1873-74
   Conn/Thomson Associates 1977
8. CHRISTIAN PEPER TOBACCO CO. 701-17 N. First St.
   A.M. Beinke 1896-99
   SRT Architects/Planners
9. MUDDY WATERS 724-28 N. First St.
   Pre-1875 Jim Hentschell 1978
10. 720 NORTH FIRST ST.
    Pre-1875
11. FISHER-BERRY MACHINE CO. 710-18 N. First St.
    Peters, Koblenz, Kreishman, Inc. 1978
12. BRENCO 708-10 & 704-6 N. First St.
    Pre-Civil War
13. MISSOURI BOX AND LABEL CO. 700-702 N. First St.
    Pre-Civil War
14. SWITZER LICORICE CO. OFFICES
    622-24 N. First St. Pre-1875
15. SWITZER LICORICE CO. FACTORY
    612-18 N. First St. 1874
    Hellmuth, Obata & Kassabaum, Inc. 1978

16,17,18. 615-23 N. FIRST ST.
Pre-1875 Torno & Associates 1978

19. GREELEY BUILDING 618-24 N. Second St.
    1880-81 for Carlos S. Greeley
20. RIVERFRONT DESIGN CENTER 612-16 N. Second St.
    1860 for Henry Shaw
21. 615 N. SECOND ST.
    Pre-1875
22. 617 N. SECOND ST.
    Pre-1875
23. 619-21 N. SECOND ST.
    Pre-1875
24. 701-03 N. SECOND ST.
    Lawrence Ewald 1914
25. WAMSER & FERMAN 700-2 N. Second St.
    c. 1885
26. OLD JUDGE COFFEE BLDG. 704-6 N. Second St.
    Alfred Grable & Auguste Weber 1883-84
    The Hoffmann Partnership, Inc. 1978
27. WITTE HARDWARE BLDG. 705-19 N. Second St.
    Ernst C. Janssen 1905
    Hellmuth, Obata & Kassabaum, Inc. 1978
28. 714-16 N. SECOND ST.
    c. 1870 Raymond E. Maritz & Sons, Inc. 1978
29. SCHOELLHORN-ALBRECHT MACHINE CO.
    721-23 N. Second St. Pre-Civil War
30. 720 N. SECOND ST.
    c. 1870 Thomas L. Thomson & Associates 1978
31. LEVEE BUILDING 801-5 N. Second St.
    Pre-Civil War Kenneth E. Wischmeyer & Partners
    Thomas M. Tebbetts, Project Arch. 1978
32. LAFITTE'S 807-9 N. Second St.
    Pre-1875
33. 811-13 N. SECOND ST.
    Pre-1875
34. THE OLD LEVEE HOUSE 800-8 N. Third St.
    1906 Anselevicius/Rupe Associates 1978
35. CAFE LOUIE
    718-20 N. Third St.
36. CENTRAL EGG CO.
    702 N. Third St.
37. KROEGER BLDG. 616-24 N. Third St.
    Albert B. Groves 1910-11

Prepared by Paul Tessier of
11/12/78 Kimble A. Cohn & Associates

APPENDIX B-2

# CLIMATE STUDY

| | J | F | M | A | M | J | J | A | S | O | N | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL PRECIPITATION | 2.16 | 2.21 | 3.19 | 3.58 | 3.85 | 3.92 | 3.31 | 3.62 | 2.99 | 2.77 | 2.69 | 2.17 |
| | ANNUAL 36.46 IN. | | | | | | | | | | | |
| SNOWFALL | 3.4 | 2.0 | 5.0 | .1 | 0 | 0 | 0 | 0 | .1 | .1 | 2.1 | 1.1 |
| | ANNUAL 13.9 IN. | | | | | | | | | | | |
| NORMAL TEMP | | | | | | | | | | | | |
| DAILY MAX. | 41.0 | 44.8 | 54.2 | 65.6 | 75 | 84.6 | 89.6 | 87.5 | 80.4 | 68.6 | 58.9 | 43.5 |
| DAILY MIN. | 25.6 | 28.5 | 36.4 | 47.3 | 57.3 | 66.9 | 71.6 | 69.7 | 62.4 | 61.3 | 38.0 | 28.8 |
| MONTHLY | 33.3 | 36.7 | 45.3 | 56.5 | 66.2 | 75.8 | 80.6 | 78.6 | 71.4 | 60.6 | 46.0 | 36.2 |

# CLIMATE STUDY

| | J | F | M | A | M | J | J | A | S | O | N | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RELATIVE HUMIDITY | 77 | 76 | 76 | 73 | 74 | 75 | 73 | 77 | 79 | 76 | 75 | 77 |
| CLEAR DAYS | 8 | 8 | 9 | 8 | 10 | 9 | 13 | 13 | 15 | 16 | 11 | 8 |
| PARTLY CLOUDY | 7 | 7 | 9 | 9 | 10 | 12 | 12 | 11 | 8 | 7 | 7 | 7 |
| CLOUDY | 16 | 13 | 13 | 13 | 11 | 9 | 6 | 7 | 7 | 8 | 12 | 16 |
| WIND | | | | | | | | | | | | |
| MEAN HOURLY SPEED | 12.6 | 12.8 | 13.7 | 13.2 | 11.9 | 10.9 | 9.5 | 9.3 | 12.4 | 11.2 | 12.8 | 12.3 |
| PREVAILING DIRECTION | NW | NW | S | S | S | SW | S | S | S | S | S | S |

# APPENDIX C

# ILLEGIBLE DOCUMENT

THE FOLLOWING DOCUMENT(S) IS OF POOR LEGIBILITY IN THE ORIGINAL

THIS IS THE BEST COPY AVAILABLE

# APPENDIX C-1

## A. C. Lawrence Tannery and Crowninshield Mansion

| | |
|---|---|
| Location: | 50 Warren Street, Peabody |
| Former use: | Mansion built 1814 and two major tannery buildings constructed 1894. Complex vacated 1971 |
| New use: | The Tannery Apartments, with 284 units—19 efficiency, 236 one-bedroom and 29 two-bedroom. Mansion converted to offices and community space |
| Developer: | Crowninshield Apartments Associates, Peabody |
| Architect: | Anderson Notter Associates, Boston |
| General contractor: | Taylor, Woodrow, Blitman Construction Corporation, Boston |
| Construction schedule: | Begun June 1974; first occupancy February 1975; completed July 1975 |
| Total floor area: | 259,890 square feet (gross) |
| Cost: | \$4,500,000 construction<br>\$15,845/unit<br>\$17.32/square foot<br>\$6,247,237 total development<br>\$950.000 acquisition of site and buildings<br>\$21,997/unit<br>\$24/square foot |
| Financing: | Permanent 40-year financing of \$5,662,513 from Massachusetts Housing Finance Agency. Approval of 121A tax agreement by city of Peabody |

Given the generally unappealing nature of the tanning process, it took real imagination to recognize the inherent value this site offered for housing. A pond adjacent to the former A. C. Lawrence Tannery had been used as a dumping ground for wastes from the tanning process and was so polluted that it had a noxious effect on the surrounding area. And, despite the site's location three blocks from Peabody's business district, there was little interest in residential use of the buildings when the Lawrence Leather Company vacated them in 1971—primarily because they were located in an industrial zone.

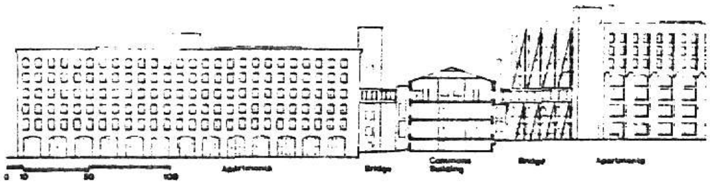
The 8.7-acre complex is dominated by two massive six and seven-story brick and masonry structures (1894). Also included is the three-story, Federal-style mansion built in 1814 by Richard Crowninshield, who established a woolen mill nearby. Varied tannery buildings, including a power plant and sheds, were razed for parking and open space; however, an old smoke tower was retained as a landmark for the project.

The conversion of The Tannery for residential use did not attempt to conceal its origins; the developers initially proposed naming the project the Crowninshield Estate, but dropped this pretentious-sounding name when it became clear that eager tenants were not discouraged by reminders of The Tannery's history. In fact, the architects ended up emphasizing the industrial processes that formerly took place in the buildings by retaining old wooden vats and tanning wheels as planters in the courtyard. Other tanning equipment, such as steam-operated pumps, has been placed in prominent locations as if it were sculpture.

Although images of the buildings' industrial past have been retained, all offensive reminders of the tannery have been eliminated. The



Source: Barbara Lee Diamonstein, Buildings Reborn: New Uses, Old Places, p. 54.



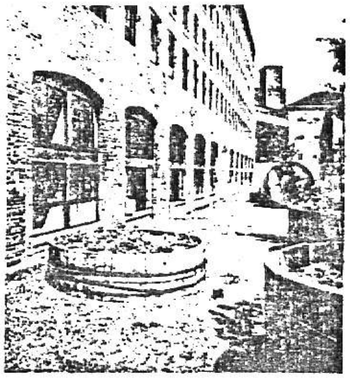

Elevation drawing of The Tannery apartment complex (right), old wooden vats and tanning wheels used as planters in the courtyard (center), and two tannery buildings and the Crowninshield Mansion during conversion (below). (right, Anderson Notter Associates, Inc.; center, Phokion Karas; below, ©Randolph Langenbach)

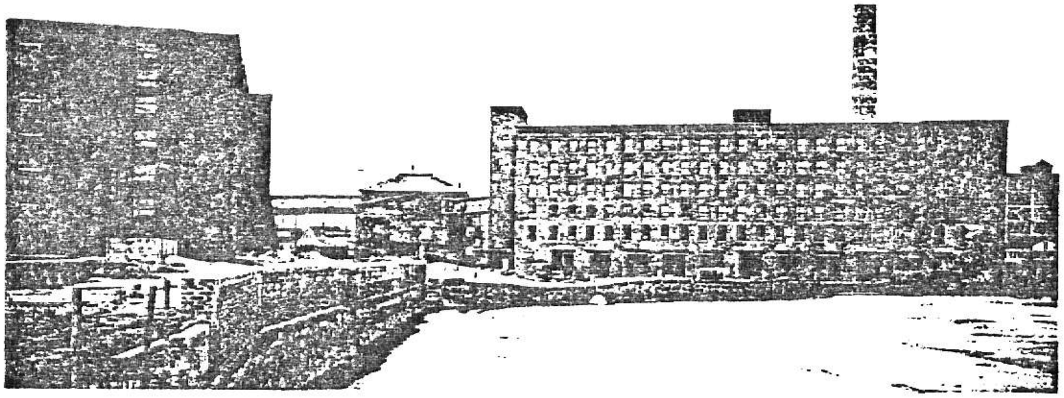
four-acre mill pond has been completely dredged, cleaned and widened to serve as a visual and recreational amenity for residents. Children from the area can now be seen fishing off walls and walkways. The large area surrounding the pond has been attractively landscaped and planted. Tile and brick floors of buildings demolished on the site provide convenient pedestrian plazas and terraces. The old catwalks became pedestrian walkways connecting the two buildings with the mansion at the third-story level.

Because the site once accommodated the comings and goings of large numbers of workers and was able to provide ample parking for employees, it was equally capable of accommodating the similar requirements for access, traffic flow and parking associated with relatively high-density housing.

Within the main tannery buildings, heavy timber beams and ceilings were sandblasted to give apartments a warm and natural appearance. Heating and electrical systems and plumbing in the recycled buildings are completely new. The Tannery also has new and recycled elevators, new insulated-glass windows and new roofing.

Apartments in The Tannery are, on the average, 33 to 50 percent larger than apartments currently being provided in conventional new multi-family housing for a comparable price. If there is a drawback to the large apartment units, which average approximately 900 square feet, it is that the windows of some apartments seem small in relation to the spaces they must illuminate. Aside from this, the units themselves are generally pleasant and functional. Fifty-four of the units were constructed as two-level duplex units, and 10 percent were specially equipped for handicapped tenants. These special features, in addition to the proximity of the project to downtown and to the city hospital, have attracted tenants. The short 13-month period it took to reach full occupancy and the 80 percent occupancy before completion indicate the feasibility and need for the complex. Demand for apartments continues to be strong proof of The Tannery's acceptance and desirability as a unique living environment.





DESCRIPTIVE DATA:

"The Tannery" is a conversion from industrial to residential use of the former A. C. Lawrence leather complex in Peabody, Massachusetts. The tannery occupied a strategic location convenient to the central business district and community facilities with the presence of a flowing water body. The vacant complex contained structurally sound, well sited, but functionally obsolete factory buildings. These qualities which are common to many older New England communities provided an excellent opportunity to rehabilitate and convert the industrial complex to residential use, improve and stabilize the surrounding residential areas and preserve and enhance a major historical and architectural feature of the community's heritage.

The adaptive reuse plan was developed around the "Crowninshield Mansion," a three-story brick federal house which served as the residence of the renowned Crowninshield family which was prominent in American maritime history. The original estate was gradually transformed to heavy industrial use around the mansion and became one of the largest tanneries in the world until its recent decline and eventual relocation to another area in 1971.

The reuse plan located the community space, mail facilities, laundries, and administrative offices for the overall project in the mansion thereby becoming the focal point of the project while preserving an important element of the community's heritage.

Dilapidated wood sheds and unusable structures were demolished to provide open space and develop a unique residential environment. Various features of the former industrial use were retained and determined the landscape and open space design throughout the project. Crowninshield Pond which was heavily polluted was dredged, cleaned, and transformed into an open space and recreational amenity for both the project and the surrounding neighborhood. Foundation walls of demolished buildings were retained to screen parking and provide varying levels of open space overlooking the pond. Floors of demolished buildings in some cases were brick and tile and were transformed into plazas and terraces.

Remnants of the former tannery including old machinery have been retained to provide historical continuity throughout the project. Old tannery vats and drying wheels were transformed into large planters and provide an integral landscape feature. The design plan retained wherever possible remnants of the former industrial use to create a unique residential environment while retaining and preserving an important element of the heritage of Peabody.

The residential reuse developed 284 units of elderly-oriented housing in four former industrial buildings which were completely rehabilitated. Apartments contain an unusually high degree of individuality due to varying structural and dimensional conditions. Interior features such as high spaces, heavy timber ceilings, exposed cast iron structural details and generous layouts provide attractive living spaces not attainable in new construction. "The Tannery" was financed through the Massachusetts Housing Finance Agency and is now completed and occupied.

Anderson Notter Finegold, Inc.

APPENDIX C-2

Reprinted from The Los Angeles Times

Los Angeles Times SECTION E

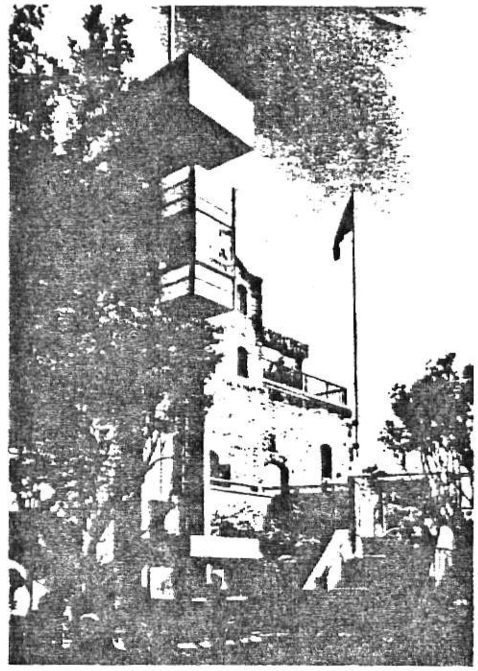
Real Estate

HOMES and INDUSTRY

SUNDAY, OCT. 11, 1970

# Architecture Social, Not Just Visual, Art, The Cannery Shows

BY JOHN PASTIER
Times Architecture Critic



DRAMATIC ELEMENT—Exterior elevator and stairs from street level to courtyard at The Cannery in San Francisco. Movement of people has been used as powerful design tool in the remodeled structure.

The general public regards architecture as the art of designing beautiful buildings. Ideally, however, a good building should not merely be handsome in itself, but should relate fittingly to its surroundings as well. Although they ought to know better, even professionals have a tendency to minimize the second requirement while overemphasizing the first. Indeed, many currently successful practitioners have made their careers in exactly this manner.

California seems to get more than its share of "star" buildings that ignore their settings. Much of this is due to the way that the state has developed since World War II — too quickly and too extensively. A swiftly and unpredictably changing environment defeats attempts at careful relationship, and loosely spread urban sprawl emphasizes separation of structures.

*This is the second of two articles on California buildings which received Honor Awards at the 1970 convention of the American Institute of Architects.*

This is a situation that must be recognized without being condoned. In granting their 1970 Honor Awards, however, the American Institute of Architects has followed the second course more often than not.

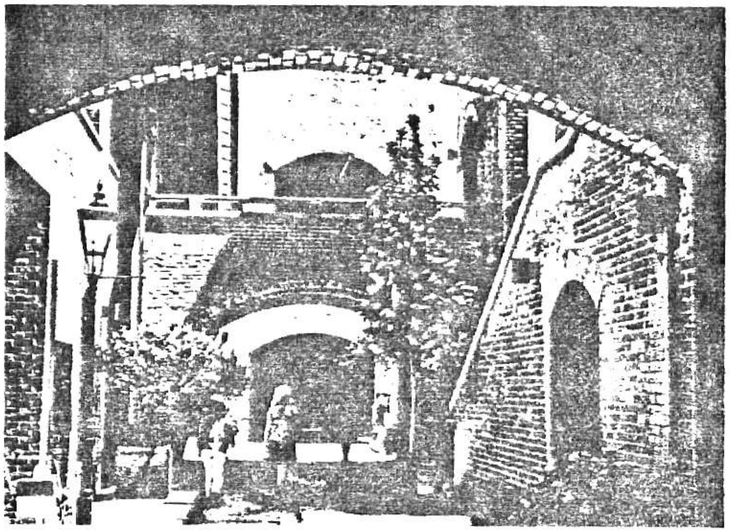
Of the four awards given to California projects, three were cases where the buildings were isolated, related poorly to their settings, or both. The best of this trio, a residence in suburban Berkeley, related well to its site, but was nonetheless isolated from adjoining houses. The worst, a vacation house at Sea Ranch, was both isolated and uncomfortably prominent on a magnificent site. The third, a cable car terminal in remote Squaw Valley, deliberately (and perhaps properly) ignored the hodgepodge of structures surrounding it.

The most significant award, however, was given to a project so attuned to its setting that it is more a place than a building. Sited between Fisherman's Wharf and Ghirardelli Square near San Francisco's Aquatic Park, it stands astride the northern end of Columbus Ave., providing a subtle termination to the street. (The other terminus, a mile away, will be anything but subtle, once the exhibitionistic Transamerica Building's construction is complete.)

Formerly Del Monte Fruit Cannery, it is now called simply The Cannery. Like Ghirardelli Square, it has been transformed from its industrial beginnings into a sophisticated collection of shops, eating and drinking places flanking a more-or-less central open space. Unlike the former chocolate factory, however, it was not originally built for beauty.

It was merely a practical, unadorned example of brick masonry, sturdy enough to survive the 1906 earthquake and fortunate enough to lie just beyond the limits of the ensuing fire. Sixty years later, it was even more fortunate to be rescued from limbo (or, more probably, eventual demolition) by someone sufficiently imaginative to envision a joyous bazaar in such an originally unpromising setting.

Good buildings are impossible to achieve without good clients, for an owner must go against the



THE CANNERY—New alleyway cuts through center of pre-1906 building awarded honor in AIA competition. Joseph Esherick & Associates were architects.

# SAN FRANCISCO'S CANNERY

grain of the adamantly conformist mentality that permeates American commerce if his project is to rise above vulgarity or mediocrity. (Southern Californians are special victims of the results of this mentality, to the point where even Los Angeles' historic birthplace is threatened with tasteless commercialism.)

The Cannery's entrepreneur, Leonard Martin, not only foresaw the old structure's potential, but was able to select designers capable of executing the project boldly and sensitively. Joseph Esherick & Associates, architects, bore principal design responsibility. Landscape architect Thomas Church and graphic designer Marget Larsen also made significant contributions.

Of the old building, only the exterior walls have been retained. A new alley has made two structures of the original 160 x 280-foot, three-story loft building. Occupying slightly less than half a block, The Cannery shares an open courtyard with another restored brick industrial building. The alley and courtyard form the nucleus of an elaborate circulation system that is really the essence of the design.

Each element of circulation has been exposed and dramatized wherever possible, partly out of necessity (so that customers could easily see and reach the upper-floor establishments) but largely for the fun of it. The movement of people has been used as a powerful design tool to define and connect the many spaces of The Cannery.

### Three Levels

This movement occurs horizontally on three levels, and vertically and diagonally between levels. An open elevator in a free-standing tower is the most dramatic structural element of the remodeling, but even more unusual is the open glass-roofed escalator running along one wall. Catwalks connect these two pieces of machinery to other portions of the building.

Outdoor stairs are another method Esherick has used to provide for the necessary foot traffic while adding visual interest to an originally simple structure.

Horizontal movement also takes many forms. The courtyard, with its outdoor stands and kiosks, is both wide and diverse enough to encourage a meandering walk through its spaces. Above, there are outdoor corridors in the form of terraces, and partly enclosed ones designed as arcades. Bridges provide a further variation to the pattern of movement and occasional balconies punctuate that pattern by acting as stopping points.

Besides these external links, there is a more conventional network of stairs, elevators and corridors inside. What is remarkable is that this complex pattern needs almost no explanation. It is diverse enough to invite exploration, but visible enough to remain clear to its users.

When put to heavy use (which seems most often to be the case) it becomes the setting for a fascinating ballet – individuals, clusters and lines of people moving in counterpoint to one another in a pattern that is both random and structured.

This is The Cannery's most vital quality. It is an intensely public space, one that elicits participation from its users. Unlike many other award-winning buildings, it reasserts architecture as a social art, and not merely a visual one. The social dimension extends through time as well, for The Cannery maintains the materials and forms of a building that has served generations other than our own.

Retention of older buildings is an act of social commitment, just as their demolition is an example of social self-destructiveness.

### Old and New

All this is not to say that The Cannery lacks any of the qualities of more conventional architectural design. Quite the contrary. The relation between old and new forms is deftly handled, and the texture, scale, and visual variety of the building are not often found in projects where the architect is given a completely free hand.

The new building elements are characterized by their consistent appropriateness to their setting and purpose. One example of many is the windbreak on the bay side of the central court. It takes the form of a glass wall, with a center section that rolls back on calm days. Without descending to mediocrity, it satisfies two opposite demands.

It is bold enough to remain in character with its industrial setting, yet elegant enough to reflect the sophistication of the new uses to which the building has been put. This dual quality in fact characterizes most elements of the architectural design. The landscape design and graphics are similarly appropriate and unobtrusive.

Planners, to show their sensitivity to the importance of "people places," will declare that they like Ghirardelli Square. In a year or two (the profession does not absorb things quickly) they will add The Cannery to their list. Meanwhile, planners and urban designers ignore the possibility of making spaces for everyday living with the qualities they admire so much in the two San Francisco projects. Every day, civic centers, shopping plazas and educational institutions are being designed in an unnecessarily dull and deadly fashion.

Hopefully, the day will come when places like The Cannery are built in the normal course of events. Unfortunately, that day seems to be a long way off for Southern Californians, who must presently travel to San Francisco to experience the humane urban spaces that should be part of their own local setting.

APPENDIX C-3

# Ghirardelli Square

## Historical Background and Present Status

### History & Description

The history of the Ghirardelli family and their establishment of the chocolate factory on the site of Ghirardelli Square in 1893 is outlined in the visitor's map and tenant directory.

The full block, approximately two miles north of downtown San Francisco, is dramatically located on the north waterfront between Fisherman's Wharf and the Golden Gate entrance to San Francisco Bay with a superb view north to the Marin hills, Mount Tamalpias and Sausalito. The Golden Gate National Recreation Area adjoins the property.

In the early 1960s, the Ghirardelli Chocolate Company decided to sell the San Francisco plant and relocate on less valuable land. In 1962 two San Franciscans, William M. Roth and his mother, Mrs. William P. Roth (members of the Matson shipping family), fearing the site might be acquired for high-rise offices or apartments, purchased the property to preserve and convert the fine old buildings to a contemporary use. After consultation with many realtors and designers, the new owners decided to redevelop the property as a complex of restaurants, theatres and small, distinctive shops. A talented group of architects, designers and landscape architects was employed to restore and transform the factory into a charming new — yet old — landmark: Wurster, Bernardi & Emmons, AIA; Ruth Asawa, Sculptor; Lawrence Halprin & Associates; John Matthias, and others participated in the transformation. All of the major buildings were preserved with the exception of the old wood frame Box Factory — the latter being replaced by an elegant new structure named the Wurster Building in honor of William Wilson Wurster, the architect in charge of the conversion. From the desire to create a leisurely, attractive atmosphere for dining, theatre, shopping, browsing — or simply people watching, developed one of the most delightful aspects of Ghirardelli Square; the interior plazas and terraces with their trees, shrubs, fountains and profusion of flowers.

Several old elevators in the multi-story buildings were retained and still provide freight service. Modern passenger elevators serve the many different levels, and stairs and ramps connect all parts of the Square. A person in a wheel chair can reach any facility in the Square. Public restrooms are located strategically around the Square.

The project officially opened on November 29, 1964 when the famous Ghirardelli rooftop sign blazed into life again for the first time since 1942. The chocolate company, which had been sold to the Golden Grain Macaroni Company, continued to operate in the west half of the property for several years while the new "Ghirardelli Square" concept flourished in the east half. In due course, the chocolate manufacturing operation completed its move to the factory in San Leandro and conversion of the entire Ghirardelli Square block to the present use was completed on June 20, 1968.

A 300-car garage beneath a portion of the Square serves customers who do not arrive by taxi, cable car or other public transportation; many visitors also arrive on foot from adjacent residential areas or other parts of the colorful north waterfront.

### Tenancies & Activities

There are 16 food establishments at Ghirardelli Square, including a soda fountain and candy store with the old Ghirardelli Chocolate manufacturing equipment operating as background. Ten are superb dinner houses, most of which have consistently received recognized dining awards; the remaining five are less specialized restaurants. There are also several delightful cocktail lounges with evening entertainment, and a cinema. Today there are 75 retail shops in the Square covering a wide variety of merchandise ranging from clothes and jewelry to furniture and gift items, fine prints, ethnic import shops and unique one-product stores found only at "the Square", but no department stores. Neither is there a general food or liquor store, a bank or post office, or a laundry or cleaning establishment. Space limitations, the uniqueness of the structures and the owners' desire to present an ambiance of an international urban complex of specialty shopping precluded such uses.

Music has traditionally been a part of the Square, most of it in the form of individual musicians licensed by the Ghirardelli management, and occasional organized musical events; there are also periodic art displays, all of which add to the character of this unique center for people of all ages. The success of Ghirardelli Square is dependent not on one or two department stores as in typical centers, but instead on the fine restaurants which draw customers to the Square and its superbly unique shops — all in a charming village setting. Perhaps no where else on earth, or certainly in the U.S., can so many fine restaurants be found in one unique setting, and offering such a unique international range of cuisines.

Ghirardelli Square is substantially fully occupied and there have been relatively few tenant changes (one or two per year) since the Square opened in 1964. The eating establishments occupy approximately one-third of the 176,000 square foot rentable area of the Square. The typical retail store is, accordingly, small, ranging in size from less than 100 square feet to several thousand square feet. Only a few of the restaurants and retail stores are part of chain operations. As a result, the typical operation is a family establishment. We, accordingly, have the close personal attention of individual proprietors whose live-

### Tenancies & Activities (continued)

lihood is dependent on the success of the operation. We have striven for distinctive shops and restaurants carrying quality merchandise and fine food and drink, and in general have been successful, although some duplication of merchandise is unavoidable.

### Leases & Rental Rates

The restaurant leases are generally for 10 years, although a few original ones were for 15-year terms. The typical retail tenancy has a lease of five years or less. All of our restaurant and shop leases have percentage clauses and substantially all of them produce percentage rental. The currently negotiated minimum rentals range from $1.25 to $1.50 per square foot per month or more in premium locations (at the main plaza level) downwards to $1.00 per square foot in less exposed locations.

Substantially all tenants were provided a shell only and were required to make all interior improvements at their own expense; the landlord's contribution was limited to strengthening the building structure where necessary, refinishing the wood floors, bringing water and electricity to the point of use and, of course, providing public facilities and the gardens. The buildings themselves were in exceptionally good condition, but required substantial structural work to meet San Francisco's very severe building code related to earthquakes. The former chocolate operation ensured generally clean walls and floors.

All of the tenants pay their share of increases in real estate taxes based on their rentable areas. Likewise garbage service and some heat and electricity are billed to the tenants, although 90% are separately metered.

### Leasing Program & Publicity

Realtors were encouraged to work on Ghirardelli Square leasing, but 95% of the leasing was done by the staff, as there was little enthusiasm by realtors working on small tenancies in a location which they felt was an unlikely site for a shopping center of any type. We were fortunate in that the uniqueness of our project brought us a great amount of favorable publicity, not only in local newspaper and magazine articles, but also nationally and even abroad. Ghirardelli Square became the "in place" for a time, and there were a sufficient number of parties and other social events at the Square for the first several years to provide us considerable free publicity in the major western papers and other media. Today, virtually all leasing is handled in-house and inquiries are generally of a magnitude and substance that vacancies exceeding 30 days are rare.

There is not a Ghirardelli Square tenant association, although there is an informal committee appointed by the Ghirardelli management which serves in an advisory capacity primarily related to advertising and promotional activities. Leases have a provision requiring tenant participation in an advertising and promotional program, in parking validation and in sharing the costs of common area charges. Our advertising and promotional activities had been limited until a majority of leases contained such a provision, which has been the case since early 1976. Advertising and promotional activities increase annually on a percentage basis.

### Hours of Operation

The present wording related to our requirements in part are as follows:

"(c) **Business Hours.** Tenant's business hours shall be posted on the main door of the Leased Premises. Such business hours shall be regular and reasonable. The following hours shall be the minimum permissible business hours:"

October 1st through May 31st:

| | |
|---|---|
| Mon. thru Thurs. | 10:30 AM — 6:30 PM |
| Fri. & Sat. | 10:30 AM — 9:00 PM |
| Sunday | 11:00 AM — 6:00 PM |

June 1st to and including Sept. 30th and Thanksgiving through Christmas:

| | |
|---|---|
| Sunday | 11:00 AM — 6:00 PM |
| Mon. thru Sat. | 10:00 AM — 9:00 PM |

Closed Thanksgiving and Christmas Days

### Ghirardelli Square Staff

We employ our own engineering, janitorial, garage, gardening and security staff in addition to administrative personnel. We employ off-duty policemen, due to their training and efficiency, and have found them preferable to guard services in providing security for the Square. Security men are in plain clothes, but are armed and professionally trained men who know how to perform intelligently and quickly when the occasion warrants. They are on duty at night as well as days.

### Type of Customer

Our primary objective was to provide San Franciscans and Bay Area residents with a uniquely attractive shopping, dining and entertainment center which they could visit frequently. However, we encourage tourists as they are an important factor, not only during the summer months but throughout the year. It should be noted, however, that our greatest volume of business is done in the fourth quarter of the year — the Christmas quarter — evidence of extensive local patronage.

### Economics & Financing of Ghirardelli Square

The Ghirardelli Square block including the old factory buildings was purchased for $2,500,000. The cost of the completed project, including the initial investment, is in excess of $10,000,000. The cost of redevelopment was high — with particularly high costs related to shoring up the old buildings during construction of a costly underground garage, and strengthening them structurally to meet the code requirements. The new owners were prepared to accept initially a less than normal return on their real estate investment in order to demonstrate that old buildings could be preserved and open areas left intact if suitably converted to a contemporary use. The investment is now fully seasoned and profitable; the anticipated increase in numbers of visitors as the Square's international reputation continues to grow should ensure its continued success.

Initial financing was provided by Connecticut General Life Insurance Company under an imaginative, complex formula related to performance.

Further inquiries may be directed to:

Ghirardelli Square Management Office
900 North Point St.
San Francisco 94109
(415) 775-5500

APPENDIX D

## DEFINITION OF CONDOMINIUM DEVELOPMENT

Condominium is a Latin word meaning joint ownership control. Condominium ownership is a system in which an individual or organization owns a parcel of real estate--a unit, an apartment, office, etc., which is part of a multi-unit structure, with the land and all other parts of the project held in common with owners of the other units. The word therefore defines a legal form of ownership and not a type of building or residence. The condominium has flexibility in its application. It may be residential, office, commercial, industrial, or a mixture of each. The following features are common to any form of condominium development. The condominium owner has fee simple title to his unit or home. The unit is the portion intended for private use. In construction the unit consists of an "air space cubicle." The legal description consists of a three dimensional air lot. The condominium descriptions are based on a diagramatic floor plan, which illustrates the location of individual units and the common areas in relation to the lot lines.

The Declaration of Condominium--or Master Deed--is the instrument by which the property is submitted to condominium ownership. It establishes the fee simple interest in the individual units and the undivided interest in the common elements. An owners' association is formed to manage or administer the management of the property and govern the condominium according to the bylaws. The common elements may include the components of development minus the individually owned units. The components may include hallways, central heating and plumbing facilities, land, walls, lobbies, roof, basements, stairways, elevators, recreational facilities, parking areas, utilities, and any legal restrictions pertaining to the common elements. A monthly maintenance charge is assessed each condominium owner to cover the cost of administration and maintenance of the common property. Limited elements are those which are designated to serve a single or limited number of units but are located outside the boundaries of the unit(s) (e.g. private entry or elevator). There are two typical formulas for determining the allocation of common charges to the participants in the condominium development. One formula is a fixed pro rata method based on the relationship of the sale price of the unit referred to as the original value relationship. The second formula depends on the amount of floor space per unit as the determining factor in the allocation of responsibility for common charges. State statutes may limit the derivation of cost formulas (Refer to Appendix D-1 for maintenance responsibilities).

All types of condominiums have condo-owner associations. Initial management of a condominium is often handled by the developer or his agents who function as trustees on the management board. At an established point, normally when unit sales near completion, members of the management board are elected from the condominium owners' association. This board replaces the developer and becomes the governing body for the condominium development. A series of regulations, included as part of the bylaws, maintains the reputation, image and condition of the condominium development. These regulations can be changed by action of the members of the condominium owners' association in accordance with the bylaws.

Beginning in 1970 the condominium was introduced as an alternative to the traditional single family home. Growth particularly occurred between 1970 and 1973 during the boom in condominium construction and conversion

**Figure 5-3.**
**General Maintenance Responsibilities—Watergate at Landmark (Watergate Declaration Exhibit J)**

| Item | General Common Elements Under Association Responsibility | Limited Common Elements Under Association Responsibility | Unit Elements Under Association Responsibility | Certain Other Elements Under Unit Owner's Responsibility Without Respect to Ownership |
|---|---|---|---|---|
| Grounds, including all landscape and paving areas and other improvements thereon lying outside the main walls of the buildings. | All | Paving, privacy fences, gates as a general common expense. | — | Landscape and general housekeeping of areas inside patio privacy screening structures. |
| Building, exterior roof, vertical walls, foundations. | All in all regards with certain exceptions expressed elsewhere herein regarding routine cleaning. | — | — | — |
| Windows. | All which are not a part of any unit, in all regards. | — | In all regards except routine cleaning. | Routine cleaning. |
| Doors, main entry to units. | — | — | All surfaces exposed to corridor including door panel, buck, trim and sill. | Interior of door panel interior trim. Hardware set including lock and door chime assembly and hinges/closure. |
| Doors, patios and balconies. | — | — | In all regards except routine cleaning. | Routine cleaning. |
| Balconies. | — | In all regards except routine cleaning. | — | Routine cleaning. |
| Screens, balcony doors, windows. | — | — | — | All, in all respects. Replacements to be of same color, grade and style. |
| Plumbing and related systems and components thereof. | All maintenance, repair and replacement of portions of plumbing constituting service to more than one unit. Water damage to common elements or other units than the one which is the primary source of the problem through negligence of the occupants of such unit. | If any, same as in Column II, Plumbing, etc. | Only to the extent that a malfunction or threat of same has originated outside the unit in which the malfunction occurs or may occur. | All portions, including fixtures and appliances attached thereto. Water damage to a unit, when the primary source of such problem is through negligence of the occupants of that unit. |
| Electrical and related systems and components thereof excluding appliances, fixtures and lights serving only one unit. | All, in all regards. | All, in all regards. | All; especially note that switches, wall sockets, circuit breakers and any other items which serve one unit but lie outside its legally defined boundaries are the association's responsibility. | — |
| Heating and cooling systems and components thereof which serve the separate units. | — | — | — | Repairs and replacements including filters to be at unit owner's expense. |
| Parking units. | — | — | All, in all regards. | — |

The original also includes footnotes which further define the column headings given in the table.

Figure D-1

from apartments. The rapid growth of condominium developments is partially due to the combination of housing characteristics they offer. They offer many renters with a product which combines the preferred rental characteristic (e.g. convenience of low maintenance) and preferred ownership characteristic (e.g. tax deductions). Also by sharing the benefits of higher density development and sharing the cost of the common elements, the owners can afford the shared luxuries that few developers include in rental property.

Condominiums compare favorably with single family homes of equal value in the following areas. If for no other reason than higher density, the condominium potentially offers greater convenience to facilities such as shopping, entertainment and often proximity to the working place if located within the city. The increased total income of many young couples (particularly professionals) has increased their preference for ownership. This also increased the household's preference for accessibility to both mates' places of work. Another attractive factor is reduced maintenance by the owner, especially the burden of maintenance and yard work associated with traditional single family ownership. Recent social trends including smaller families, more leisure and working spouses are changing the way families choose to live. One of the most significant changes is this desire for reduced maintenance which allows the pursuit of personal interests rather than maintenance burdens. Greater amenities are available in the shared facilities such as security systems, parking, lobbies, recreational facilities and other common elements.

The rapid growth of condominium housing may be seen in the combination of the following attributes. Condominiums can provide traditional single family homeowners with the convenience and ease of maintenance characteristics of rental property without foregoing tax benefits. The income tax savings for a condominium owner are the same as for the owner of a single-family house or other forms of real estate investment. The condominium owner is allowed to deduct real estate taxes and the interest on his mortgage payments on his federal income taxes. The amount of such savings depends on the owner's income tax bracket.

Equity growth and value appreciation are also important assets of condominium ownership. The price of the condominium unit is typically less than individual buildings/residences (single family) because of common walls, operational equipment, land cost, recreational facilities, parking, maintenance and other facilities and services. The condominium owner's equity grows as he gradually reduces his mortgage through monthly payments. His first payments will pay off the mortgage interest and slowly begin paying his principal. As the principal payments increase his equity increases. Eventually the owner owns the unit when he completes his mortgage commitment. The remaining payments are for real estate taxes and maintenance of common elements to the condominium owners' association.

The potential for value appreciation need not always occur; however, it is normally considered highly probable. Assuming one's condominium property appreciates at five percent per year, the return on initial investment may be considerable. If the unit is resold the owner may realize a significant profit. The rapidly increasing land values have influenced property ownership in two manners. One is that it has encouraged ownership to take advantage of property appreciation. And the other is that it has encouraged higher density construction on expensive land. Also sharply increased property taxes in most metropolitan areas have reinforced the rising land values, and have increased the relative cost of larger homes.

In addition to the financial and convenience advantages there are other advantages. These advantages include the psychology of ownership--pride of ownership, independence, greater freedom from maintenance problems, security and the benefit of a new, modern facility. Owning property is satisfying to many people. Independence both in decorating and designing their interior space and in arranging financing and insurance is one aspect of this. There is less personal maintenance with a condominium because the owners' association is responsible for exterior maintenance, landscaping, common buildings and area facilities. Maintenance and replacement cost is usually less than an individual owner because the cost is shared by all the owners and reduced because of multiple ownership of common facilities. Condominiums in comparison to single family homes have the major disadvantages of less square footage, greater density with resulting constraints on individual behavior, and the responsibilities of joint ownership. The condominium disadvantages compared to rental include the commitment of capital, increased monthly cash outlays, much higher degree of interaction with the affairs of condominium management and less mobility.

Significant problems for consumers include the following. Long term recreation leases and the implications have not been understood by the condominium owners, especially true of resort area condominium developments. Another problem is low quality construction. Some developers have lessened the unit quality in favor of a higher quality of the more visible common element. The most important factor which owners are insisting on is sound proofing between units and common areas.

The operating problems of condominium owner associations are in the form of unworkable bylaws, lack of management responsibilities and lack of established reserves for repairs and replacement; a developer who is not paying assessments on unsold units commonly referred to as nonpayment of association dues, may further complicate the association's problems. One of the most widespread problems in the multi-family ownership development is the difficult transition of owners to the problems of a multi-unit environment. Often single family homeowners are unprepared for high density living, while renters are used to the landlord taking care of problems and disagreements. This is often aggravated by an owner mix of widely varying lifestyles (elderly and young singles). The owners' association is also unable or unwilling to respond to owner complaints.

Another problem is the misuse of consumer deposits, the developer may go bankrupt, the monies may be combined with other funds or not properly invested by the owners' association. Condominium developments are much more difficult to evaluate by consumers than the single family home in terms of the quality and adequacy of the structure and its components. For example, the purchaser has difficulty evaluating the heating and air conditioning system, the electrical system and recreation facilities such as a swimming pool. Many consumers believe the unit purchaser should be provided with an engineering report and warranties of key components. The final major problem has been the underestimating of operating and maintenance expenses. However, the nationwide study by HUD in 1975 reported 95 percent of the purchasers interviewed were basically satisfied.

APPENDIX E

## MASONRY: CLEANING AND REPAIR

To clean the masonry of the building use a low-pressure water wash (less than 200 psi) with a diluted chemical soap solution. Scrub the remaining, more persistent dirt with a natural bristle (never metal) brush to prepare the surface for painting. Care should be taken so that the porous masonry will not absorb an excessive amount of water during the cleaning process. Excessive water penetration will cause damage within the wall. Several test areas should be conducted on various non-observable areas of the building (refer to the demolition elevations) to test the cleaning method and to allow for an evaluation of the effect of weathering on the test patch following an extended period of time (preferably one year). The gentlest cleaning method should always be used even if it requires repetition instead of using stronger chemicals, higher pressure or other abrasive cleaning methods.

The brick walls illustrate considerable spalling and structural settlement. The broken, cracked or spalled bricks should be replaced to match the existing brick units. The walls should be repointed as necessary to match the existing pointing style. Repointing,or tuck pointing, is the process of removing deteriorated mortar from the joints of a masonry wall and replacing it with new mortar. Careful attention must be given to the tuck pointing process and specifications because it can visually alter the character of the historic building. Structural repairs, and all water penetration problems including drainage systems should be corrected prior to tuck pointing. Attention should also be given to the proper phasing so that scaffolding may be used in cleaning and painting.

A mortar analysis should be conducted to match the physical composition of the mortar, the original color (if unpainted), the texture, and other properties.[1] Examine both of the horizontal and vertical joints to determine which was struck first and determine the pointing style. The pointing style may vary in different locations on the building.[2]

Some of the spalling and cracks may be due to an incorrect original or replacement mortar. The mortar joints are designed to relieve the stresses in a wall caused by expansion and contraction or by changing stress due to loads. If the mortar joint is harder than the bricks, then stress creates spalling or cracking of the bricks rather than movement within the joint. Also, mortar allows the building wall cavity to release condensation through the joints rather than through the brick face. Cracking and spalling allow water penetration. Mortars with a high percentage of Portland cement create a strong, hard, inflexible joint. A mortar mix with a high percentage of Portland cement, unlike a porous mortar, does not allow the migration of water. This water is then trapped in the wall with the potential exposure to freeze-thaw cycles which can cause spalling. The new mortar mix needs to have good water retention because following the mortar application, the bricks and old mortar will absorb the water in the new mortar. Preservation Brief 2 recommends that a high lime mortar is normally the best mix for historic structures even if the original mix was a cement mix. A high lime mortar mix is porous, flexible, and has the least expansion and contraction under climatic conditions. A high lime mix is also self-sealing, due to its water solubility. It is able to self-seal small cracks and voids through precipitation. Preservation Brief 2 recommends the following mortar mix as a starting point for obtaining an acceptable composition:

1 bag hydrated lime

1/4 bag white Portland cement

3 cubic feet of sand to match the original

If the weather exposure is extreme or if the original mortar mix was cement, the Preservation Brief 2 recommends starting from the following composition:

1 to 1 1/2 bags hydrated lime

1 bag Portland cement

5 to 6 1/2 cubic feet of sand

A mortar analysis will also allow the original mortar color and composition to be determined. Often the original sand may be located, which allows the mortar mix to be matched through natural materials. Some mortars contained pigments which are available as a separate ingredient. Thus, test samples are recommended to insure an appropriate composition and color after the mortar has dried.

To prepare a masonry surface for tuck pointing, the old mortar should be removed to a minimum of one inch depth with all loose and deteriorated mortar being removed from the joint. The joints may be cut out by hand or power tool. However, power tools are very difficult to handle so as to insure a consistent and high quality removal. It is very easy to damage the edges of the brick using power tools. The damaged brick edges affect the visual character and allow additional water penetration through the exposed soft brick which was originally protected by its hard outer surface. A test patch should be done to evaluate the use of power tools. If damage occurs, hand methods should be utilized. The masonry and old mortar should be wetted at the time of repointing to prevent absorption of water from the new mortar mix by surrounding dry materials.

Properly filling the joints is important to the visual quality and the prevention of water penetration in the joint. In locations where the existing mortar has been removed to a greater depth than one inch, these locations should be filled first in successive compacted layers. Following this procedure the entire joint may be filled with successive layers of mortar, allowing each layer to reach thumb print hardness prior to application of the next layer. When the final layer of mortar is thumb print hard, the joint is tooled to match the old mortar joint. Tooling the joint at the correct stage of hardness affects the uniformity of joint coloration.

Care needs to be taken in repointing older structures in which the bricks have rounded, worn corners. It is necessary to recess the mortar joint from the edge of the worn bricks to prevent a wider joint than the original joint thickness. Incorrect joint thicknesses are very visible and greatly detract from the appearance of the structure.

[1] A method for performing mortar analysis is presented by E. Blaine Cliver in "Test for the Analysis of Mortar Samples" in The Bulletin of the Association for Preservation Technology, Volume VI, Number 1, 1974.

[2] Refer to Preservation Brief 2, Repointing Mortar Joints in Historic Brick Buildings.

List of Sources and Reference for More Information

*Preservation Briefs.* #1. The Cleaning and Waterproof Coating of Masonry Buildings.

*Preservation Briefs.* #2. Repointing Mortar Joints in Historic Brick Buildings.

*Preservation Briefs.* #6. Dangers of Abrasive Cleaning to Historic Buildings.

# APPENDIX F

# CLEANING WOOD AND PAINT REMOVAL

There are several methods of cleaning which may be used to remove the paint from these wood framing members. In cleaning historic buildings the gentlest means should always be used to preserve the existing materials. Three cleaning methods are proposed here with the first being the gentlest. Several inconspicuous locations should be chosen and these methods tested by the workmen who will be cleaning the building. Recommended locations for testing are first level in the location of the kitchen cleaning, second, third, and fourth level in the cut-out location of the atrium. The first involves using a chemical paint stripper (remover) which, following its application, will soften and dissolve the paint so that it can be scraped and sanded. There are two basic types of chemical strippers: organic and alkaline. The organic strippers have a tendency to evaporate before the paint is completely softened. The alkaline strippers will raise the grain on wood. The organic chemical stripper is recommended as being the least damaging to the wood. Care should be taken not to get the chemical stripper on surrounding materials.

A hot plate will soften layers of paint which are very thick and difficult to remove. Once softened, the paint can easily be scraped off. Care should be taken when using a hot plate because too much heat may burn the wood and excessive hot air may start fires within the wall cavity. Both the use of the hot plate and the chemical strippers require adequate ventilation from toxic fumes. Direct flame or torches should never be used because of fire danger and the possibility of burning the material being cleaned.

The second method involves low pressure (20 to 100 psi) dry sand-blasting with a very fine 00-0 mesh grit forced through a nozzle with a 1/4" opening at a range of 3 to 12 inches.[1] Sandblasting is not a recommended cleaning procedure for historic structures because it raises the grain of the wood which results in a rough surface, frayed or fuzzy in appearance. Once the wood has been sandblasted, it is nearly impossible to achieve a smooth surface. Sandblasted wood collects dust unless it has received extensive sanding. Sandblasted wood will also weather faster due to its exposure. Sandblasted wood should be painted or given a clear surface coating of varnish for the protection of the wood and for maintenance.

Sandblasting is being suggested as a cleaning method because of the cost difference between the chemical stripper method and sandblasting. The cost of chemically removing the paint from the framing members and repainting with a primer and two coats of paint is $2.44 a square foot. The cost of sandblasting the framing members and repainting them with a primer and two coats of paint is $1.63 a square foot. (These costs include additional coats of paint when a clear sealer will be used. The extra cost is used in number of individual wood members and their size.) The total cost difference of $22,500 ¢ of the Bronson Hide Building and $32,995 ¢ of the Cherrick Building is $44,950; $135,407 for the chemical paint stripper method and $90,457 for the sandblasting method. The sandblasting method is being considered not only because of its economic advantages, but also because the method has been successfully used on other buildings in the Laclede's Landing District. It is also being considered because the wood framing members are those selected for use in a warehouse, and they were never highly detailed or finished.

[1] Preservation Brief #6. Dangers of Abrasive Cleaning to Historic Buildings, p. 4.

Refer to Epoxies for Wood Repairs in Historic Buildings by Morgan W. Phillips, and Dr. Judith E. Selwyn for detailed information concerning the use of wood consolidation and patching compounds.

# APPENDIX G

THIS BOOK CONTAINS NUMEROUS PAGES THAT CONTAIN SWATCHES OF FABRIC THAT ARE ILLEGIBLE DUE TO INABILITY TO SCAN THE TEXTURE OF THE FABRIC.

THIS IS AS RECEIVED FROM THE CUSTOMER.

## PAINT SAMPLES

The following paint samples are manufactured by Cook Paint and Varnish Company General Office in Kansas City, Missouri. These color should be used to match the selection of paint from alternative manufacturers.

### CHERRICK BUILDING

EXTERIOR BRICK - (Use a Masonry Latex Paint)
(Infill Tile to Match This Color)

Coromax Group 25D
841 Platinum White

EXTERIOR SIGN PAINTED ON BRICK

Background - Red
Coromax Group Accent Colors 1A
004 British Red

WINDOWS - Existing Building and Infill Addition

Prime Wood with Oil Paint

Window Frame
Coromax Group 25D
844 Chapel Grey

Window Sash
Coromax Group 25D
846 Great Smokies

## BRONSON HIDE

EXISTING BRICK COLOR (Not Painted)

Similar in Color to
Coromax Group 1A
Accent Colors
003 Maroon

INFILL BRICK COLOR (Not Painted)

Similar in Color to
Coromax Group 1A
Accent Colors
005 Ruby Red

CAST IRON EXTERIOR COLUMNS

Armorcote
Gloss Enamels

Cape Cod Green

BALCONY RAILING

Type of Paint Depends on
Material Selected

Coromax Group 25D
843 Mortar Gray

ALL EXTERIOR TRIM, WINDOW FRAMES & SASHES

Ex. Rope Window Molding
Coromax Group 25D
841 Platinum White

# LACLEDE'S LANDING: INVESTIGATION OF ADAPTIVE USE AND INFILL DESIGN IN AN URBAN AREA

by

CHERI SPENER FAVIER

B. Arch., Kansas State University, 1980

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Laclede's Landing is a historic commercial district which retains the physical character and the nineteenth century history of the city's riverfront. Laclede's Landing is located adjacent to the St. Louis central business district and the Jefferson Expansion Memorial Arch. The district contains thirty brick buildings, several of which are the best surviving examples of nineteenth century commercial architecture in St. Louis. In addition, Laclede's Landing retains its natural slope to the riverfront and the original street pattern.

The Bronson Hide Building and the Cherrick Building are clearly contributors to the nineteenth century commercial fabric of the district. Both warehouse buildings have their own spatial and architectural restrictions as well as design opportunities. Design challenges exist in the revitalization methodology and the design of a new infill building to relate both to the two existing buildings chosen for study and to the historic district.

The existing conditions of the Bronson Hide and Cherrick Buildings are analyzed for their architectural quality and structural stability. Appropriate cleaning methods, repair and replacement procedures are discussed and recommended on the basis of design methodology and economic feasibility.

Throughout the development of the design, emphasis is placed on the investigation of the design issues of adaptive use and infill design. The resulting design of the three buildings creates several exciting interior spaces which contain visual interaction between spaces and emphasize continuity between the buildings. The infill additions to the existing buildings and the new infill building respect and reflect the physical characteristics of the Laclede's Landing District such as: rectangular building massing, the slope and the building materials of the District.

The proposed adaptive uses and the new building include a combination of retail, special uses and residential development. The proposed uses follow the Laclede's Landing Redevelopment Plan's designated building use percentages per block. The combination of Laclede's Landing locational, environmental, economic and usage factors restricts the types of residential development within the district. The district is surrounded by highways, tourist traffic and industrial uses along the riverfront. The development is designed for middle to upper income users. The luxury condominiums not only satisfy a market need adjacent to the central business district, but they also provide economic security for the district's redevelopment.

Development of the three parcels as one development package is advantageous economically. The combined development of existing buildings and new infill buildings designed for mixed use allows for new spatial and equipment requirements to be constructed in the new building without making major adjustments in the existing buildings.

The proposed design and development of the three buildings is a visual and economic asset to the redevelopment of Laclede's Landing District. It is a development designed to retain and enhance the physical qualities and characteristics of the historic district.