WATERWAY VILLAGE
URBAN HOUSING AND RETAIL CENTER
INDIANAPOLIS, INDIANA

AN ARCHITECTURAL THESIS BY TERENCE P. SKEE
SEPTEMBER 1983 - MAY 1984
STUDIO CRITIC - STAN MENDELSOHN
PREFACE

According to Webster's Seventh New Collegiate Dictionary, a thesis is a dissertation embodying results of original research and especially substantiating a specific view.

Waterway Village is a proposed housing and retail center located on the Lower Central Canal in downtown Indianapolis. The primary users of this development will be the graduate students, faculty and staff of nearby Indiana University-Purdue University at Indianapolis (IUPUI). It is my dissertation that a center or village of this nature would be a viable development for the site.

This document is the embodiment of the original research that supports and substantiates this view. (*) The process has been illustrated in the same order as it was produced. In this way a logical order is achieved that will assist in the evaluation of the thesis. The results of the research can then be left for the reader's evaluation.

ACKNOWLEDGEMENTS

It has not been without a great deal of help from many individuals that this thesis presentation has been made possible. I wish to acknowledge and thank the following people for their contributions:

The planners in the Urban Design section of the Department of Metropolitan Development in Indianapolis for their tremendous assistance and encouragement throughout the project, from programming to the final presentation. Special thanks to John Byrnes, senior planner; Scott Truex, senior planner; Bob Wilch, principal planner; Mark Zancanaro, ASLA and the rest of the Division of Planning staff.

Thesis critic Stan Mendelsohn whose suggestions and guidance helped refine the rough spots.

Thesis critic Dan Woodfin through whom I discovered Christopher Alexander and his books The Timeless Way of Building and A Pattern Language.

Bob Meden, guest critic, for his encouragement, loan of research materials and concern that I complete the project on time.

John Hartman, Indianapolis realtor, whose interest in my proposal gave me extra enthusiasm and motivation.

My parents for their support throughout my college career. I hope they believe this book is worth $20,000.

Jerry Evans for his expertise and patience with personal computers.

Sharon Skee, my wonderful wife, for putting up with me and helping me while I devoted so much of my time and energy to this presentation.

To all my friends who have lent support and encouragement throughout the project.

* The Indianapolis Regional Center Plan 1980-2000 was used as a guide for this thesis. Facts and figures supporting the thesis are derived largely from this report. The Regional Center Plan was compiled from data collected from all available reports and studies conducted in this specially designated area of downtown Indianapolis. The plan was executed by city planners in the Urban Design section of the Department of Metropolitan Development.
PROJECT OVERVIEW

Waterway Village is a community of graduate students, faculty, artists, craftsmen, musicians, entertainers, and shoppers. The development of the village provides an urban node and cultural center that attracts all types of people. It is to be built within the existing context of Midtown, an urban renewal area several blocks northwest of the center of downtown Indianapolis (map).

Midtown is an area that is rich in black cultural history, but since the late sixties has fallen prey to urban blight as many of the houses and commercial buildings were left vacant by opportunists leaving downtown for the suburbs. In the last couple of years Midtown has seen the beginning of a renaissance with several projects already underway to accelerate the renewal of the area. The development is concentrating near the Lower Central Canal which has long been ignored and neglected. Plans for revitalizing this portion of the canal are nearing completion. Studies of the canal area indicate that it would be an excellent choice for development because of its proximity to the downtown core and because it is a logical western arc for a garden area around downtown Indianapolis. (Groves, Fernandez, Barry, Telford, Assoc., Inc. – Indianapolis Waterways Feasibility Study, 1974.)

Waterway Village is located primarily along Indiana Avenue in the 500 block where Indiana Avenue is the southwestern boundary, North Street is the northern boundary, the alley between the canal and Senate Avenue is the eastern boundary and Michigan Street is the southern boundary. The development includes the entire site with the exception of the American Paper Stock Company, Inc. which covers a good portion of the site east of the canal. This company is included only as proposed offices and rental housing.
The site west of the canal includes several fine historic commercial buildings from the late 1860's. These are to be restored and incorporated into the new development. The site east of the canal presently includes a spur of a Conrail railroad track which has been abandoned and is soon to be removed in the revitalization process.

Waterway Village will be less than one block from the main entrance to the IUPUI campus on Michigan Street. The State Office Complex is three blocks to the south, the entrance to the future White River Park is nine blocks away and Monument Circle, the heart of downtown is four blocks away.

The primary users of the village will be graduate students, faculty and staff from nearby IUPUI and Medical Center. IUPUI has an enrollment of 23,000 students which is expected to double in 15 years. The university and Medical Center employ 4000 staff members. Many of these people (roughly one-third) have expressed an interest in nearby housing. Very little acceptable housing is presently available in the area.

The village is more than an urban housing community. It will focus on the Lower Central Canal and include fine retail shops, eating establishments and nighttime entertainment centers. There will be shops where craftsmen produce goods of precious metal, leather, clay, and textiles and artists paint, sculpt, dance and play musical instruments. These activities are to be performed in a setting that includes promenades and concourses; sensitively landscaped outdoor areas from an amphitheater that seats hundreds to overlooks that seat two; and brick buildings whose scale and detailing have a touch of European influence and the playfulness of contemporary architecture.

Waterway Village is a village in the classical sense.
FACILITY PROGRAM
PROGRAM SUMMARY

Section I - Program Preamble

1. The objective of this program is to determine a set of goals that the design process will fulfill and to develop guidelines that will aid in the design process.

2. The data included assumes as many real aspects (city ordinances, planning, economics, etc.) as possible in order to create an accurate basis for design.

3. This project is a proposal for urban revitalization. Buildings and their functions are vital to the success of the village, but second in importance to the environment as a whole.

Section II - Goals

1. The primary goal of the project is urban revitalization.

2. The secondary goal is to develop the Lower Central Canal.

3. Included in the secondary goal are the following objectives in order of importance: create a housing community of various user groups integrated with retail facilities; create an environment (indoor and outdoor) that will attract users and encourage various activities; and integrate this project into the urban fabric.

Section III - Existing Organization

1. Location of site
The site selected for the project is a prime location for the proposed development. The information collected and analyzed from various studies and reports, shows that there is a strong need for the proposed uses in the area.

2. Description of site (boundaries)
The context for the proposal is supportive from a development aspect but is not aesthetically appealing at present.

3. Context of site
Existing - physical, social, economic
Proposed - physical, social, economic
The site and its context are presently included in redevelopment proposals.

Section IV - Site Analysis

1. The site analysis includes information about the site that will be important in the design process. The criteria is both objective in terms of the physical environment i.e. climatic conditions, topography, existing buildings, etc., and subjective in terms of the physiological environment i.e. social, economic and political influences.

2. This collection of information forms the basis of the initial concept of the design. The design will be based on the macro and micro scale relationships that will relate the development to the urban fabric.
Section V - Space Requirements

1. A list of criteria is established for all of the spaces included in the design. The criteria is determined primarily by the users of the space. Other factors may also have great importance i.e. environmental requirements with active or passive systems, the relationship of one space to another, etc.

2. Once the requirements for spaces are established they are grouped together logically to create an efficient floor, building, site or project.

Section VI - Building Type Analysis

1. Understanding the type of building to be designed is a necessary part of the programming phase of design. Certain elements of a building's design are mandated by code, i.e. fire exits, property setbacks, compatibility with adjacent properties, etc. Other factors are psychological such as user reaction of spaces or buildings (praises/criticisms). This analysis is a critique of similar building types done in order to save some time in establishing design criteria, avoid conflicts with programs, codes or laws, and to gain knowledge and insight for the project.

Section VII - Planning Concepts

1. Included in this section is an outline form of the approach selected in order to accomplish the goals of the project. In this way the goals will be defined and the intentions of the designer will be clarified.
PROGRAM PREAMBLE

My reasons for selecting this site for a thesis study stem from various interests and observations.

The first, and probably most decisive reason, is that the Historic Lower Central Canal is an important part of the urban fabric in West downtown Indianapolis. The canal which was completed in the late 1830's, has been neglected to the point that it now appears unsightly. I see the canal as a unique feature that will be the impetus for growth and revitalization along its banks as with the development of the Paseo del Rio (riverwalk) in San Antonio, Texas. (see Concepts for Solutions Appendix)

The scale of the canal was also an important factor in site selection. The waterway is 50 feet wide from bank to bank with a 20 foot right-of-way on either side where mules used to draw barges along the canal. This scale creates a pleasant if not inviting environment for pedestrian activity.

The point on the canal that I chose to develop was selected primarily because of its unique shape. The canal passes through the middle of the property which is bounded on the north by North Street, on the south by Michigan Street, diagonally northwest/southeast on the west side by Indiana Avenue and on the east by an alley adjacent to the east facade of the American Paper Stock Company, Inc. building.

The site is also within the Mile Square of downtown Indianapolis giving it easy access to the central business district and making it a future target for development.

In short, site selection was determined by: interest in the canal, development potential, scale and proximity to downtown.
PROJECT SUMMARY

Proposal: Development of a University Village near IUPUI which includes housing, retail, art and entertainment.

Location: In the 500 block of Indiana Avenue along the Lower Central Canal between Michigan and North Streets; in downtown Indianapolis.

Building Size: Retail/Commercial 44,000 square feet; Housing 136,000 square feet (209 units)

Land Size: 116,200 square feet

Parking: 313 spaces; 223 garage, 64 metered, 26 parking lot.

Mass Transit: Metro Bus Lines along Indiana Avenue traveling to points north, west, and southeast; West Street traveling to points north

Development Costs: $14,000,000

Financing: Private investment, city and possible federal assistance; 25 year mortgage commitment from institutions

Program: An urban community that includes leased housing with leasable commercial, retail and services space

Structure: Parking - pre-cast concrete, 22 foot structural bay, 66 foot parking bay. Retail - concrete block bearing walls, steel joist ceiling. Residences - wood frame construction, red brick exterior, all electric or best system.

Mechanical Systems: Retail - individual mechanical systems for each retail space. Residential - individual mechanical systems for each residential space.
BACKGROUND

Construction of the Central Canal began in 1835 to connect central Indiana and the Great Lakes to Toledo, Ohio through the Wabash and Erie Canal. The canal's official name is the Indiana Central Canal and the small portion of it that was completed runs north to south roughly paralleling the White River in Indianapolis. It took 750 men 3 years to complete the existing 9 miles of the canal because the work was strenuous. Picks and shovels were used for excavating while carts drawn by man or mule hauled the earth to fill sites. Early accounts indicate that strain and fever killed a great number of the canal workmen. Specifications called for the canal channel to be forty feet wide at the top and 26 feet wide at the bottom. The banks were four feet deep and built up two feet past the proposed waterline. The canal bed was lined with clay and the towpaths along the sides of the canal were covered with gravel. Missouri Street was the path chosen for the canal in downtown Indianapolis which completes its southernmost portion from Interstate 65 to the State Capitol Complex. The construction cost for the project is estimated to have exceeded 800 thousand dollars. Because of the success of the railroads the canal was never used as a transportation route and saw marginal use as a millrace for the industries that were located along its banks. More recently, the canal supplied drinking water for downtown Indianapolis. The canal is presently owned by the Department of Economic and Housing Development and extensive improvement proposals are underway.

The site for Waterway Village is located along the Lower Central Canal between North Street and Michigan Street, three blocks north of the State Capitol Complex. The western boundary is Indiana Avenue which runs diagonally northwest from Monument Circle in the heart of downtown four blocks away. The site is in an area called Midtown. Indiana Avenue is the spine of what was once a nationally known cultural center for blacks in Indianapolis and was referred to as "The Avenue". Madame C.J. Walker, the first black woman to become a millionaire located the headquarters for her cosmetics company on Indiana Avenue at West Street. The Walker Theatre, built in 1926, is presently being restored as offices and a cultural center.

During the late 1960's civil rights movements allowed greater freedom for blacks and middle income black families moved from Midtown to the suburbs. With these families also went the vitality of the area. The people who remained were too poor to leave and for lack of capital the properties began to deteriorate. Many of the vacant houses and commercial buildings became breeding grounds for dogs and rats. The area characterized by vacant lots from demolition, debris, litter and poverty, created an irreversible trend toward urban blight.

In 1983, the Northwest Redevelopment Project and Urban Renewal Plan found the area to be "blighted, deteriorated or deteriorating in which normal development and occupancy are undesirable or impossible because of lack of development, cessation of growth, faulty land use, deterioration of improvements, character of occupancy, age, obsolescence, substandard buildings, or other factors that impair values, or prevent a normal use or development of property." This plan officially declared Midtown an urban renewal area.

Many investors, developers and speculators have already begun planning new facilities, the rehabilitation of old ones and the improvement of the properties adjacent to the canal between North Street and the State Office Complex. This is largely due to the support given by the city of Indianapolis, but also to the great development potential the area offers.
GOALS

Goals are designated as primary and secondary.

The primary or general goal of this project is urban revitalization. The site is in an urban renewal area, meaning it is blighted and will not be regenerated on its own. The site has many advantages for development due to its location. These include nearby development proposals, historic value and supportive edge conditions.

The revitalization is to be achieved through secondary goals that are listed from general to specific.

Develop Lower Central Canal. The canal which is currently misused and unattractive can be developed into a strong and successful urban linking element. Funds are currently being obtained for lowering and improving the waterway.

Create a housing community for various user groups that would be integrated with retail facilities. The community will combine students and university professionals (see drawings). The retail shops and housing will be mutually supportive as well as draw in outside shoppers and visitors. Included in the village will be an area devoted to local craftsmen, artists and musicians to increase the cultural variety.

Create an environment that will attract users and encourage various activities. The environment will be supportive of activity such as walking, eating, bicycling, jogging, canoeing, shopping, sitting and watching, etc. Indoor, as well as outdoor spaces, will be carefully designed to permit activity in public, semi-public, and private spaces.

Integrate village design into its urban context - existing and proposed. Appropriateness and contextual setting are essential in the vitality of an urban environment. The village is to become a vital part of the urban fabric in the redevelopment area.

Maintain feasible aspect to proposal in a social, political, and economic sense. Data will be collected to create a realistic proposal that could be developed with few changes.

Preserve historic buildings and character of the site and context. The historic quality of an environment can add a great deal of excitement, nostalgia, and vitality.

Create a barrier-free community. Barriers of all types that restrict the free movement of pedestrians, especially the elderly and handicapped, will be avoided or eliminated. It is important to create accessibility and ease of motion. Spaces will give ample room to perform programmed activities.
ASSUMPTIONS AND SCOPE OF PROJECT

The development of Waterway Village will include assumptions based on what is expected to happen throughout the completion of the project. This development will be a joint venture among a private developer, the city and the university (IUPUI). The developer will provide the financial backing for the project through a lending institution. The city will help in land acquisition, special funding and consideration of potential setbacks, such as parking or problems and costs associated with the redevelopment of the canal. The city will also be responsible for outlining agreeable solutions to the displacement of residents and property owners in an approved resettlement policy. Within the twelve block study area, there are approximately sixteen single family dwellings whose occupants must be provided for and around fifteen businesses or property owners that would require compensatory procedures.

In the Northwest Redevelopment Project and Urban Renewal Plan, the following provisions are included: "the commission has given consideration to transitional and permanent provisions for adequate housing for any residents of the Project Area who will be displaced by the redevelopment within the Project Area;" and "Relocation and assistance will be made to individuals and firms in accordance with appropriate legislation." "Under the urban renewal process, it is possible for the city to exercise the city's powers of eminent domain to acquire properties for redevelopment." (Hammer, Siler, George, Assoc. - Midtown Neighborhood Development Potentials).

The role of IUPUI officials will be to provide information regarding housing policies, user demands and requirements and the advertisement /endorsement of the project as approved housing for targeted users.

This partnership will help to assure the success of the project and the fulfillment of each of the partner's wishes before, during and after the development of Waterway Village.
EXISTING ORGANIZATION

The information in this section gives general information of the physical characteristics of the site such as: location, zoning, and edges.
EXISTING ORGANIZATION CONCLUSIONS

1. Immediate area surrounding site is deteriorated

2. Edges of the 12 block study area have great potential for development

3. Site is accessible and conveniently located
   * Close to Central Business District
   * Nearby IUPUI medical facilities
   * Cultural facilities and nodes
   * Many Metro bus routes pass near site
   * Five blocks from I-65 access
   * Fifteen minutes from airport

4. Development potential is encouraging as indicated in studies done by both public and private agencies
SITE ANALYSIS

The site analysis is a study of external influences that affect the site such as: climate, public transportation, and vehicular and pedestrian traffic. The analysis includes information regarding the infrastructure of the site such as utilities, condition of surrounding area, visual analysis and a general master plan for proposed development.
1 Looking Southeast down Indiana Avenue

2 Looking South from Michigan Street Bridge

3 Commercial Buildings at Indiana and Michigan

4 Commercial Buildings Southside Indiana Avenue
5 Looking Northwest from Michigan Street Bridge

6 501 Indiana Avenue

7 523 & 525 Indiana Avenue

8 Looking Northwest on Indiana Avenue
1. Walker Theatre Parking Lot
2. Walker Theatre Urban Life Center
3. Garden Apartments
4. Housing and Retail
5. Neighborhood Park (tennis, basketball)
6. Garden Apartments
7. Parking Garage
8. Office Building
9. Waterway Village

10. Midrise Apartments
11. Parking Garage
12. Formal Entrance to IUPUI
13. Housing and Retail
14. College of Sports Medicine
15. Office Tower and Parking Garage
16. Office Building
17. Office Building
18. Classroom Building for IUPUI

- Major corridors are to be landscaped with trees, new sidewalks and general improvement.

- Pedestrians will be encouraged to use paths (as shown by dots) that pass through the middle of the block where desirable. These areas are to be improved and landscaped. The canal will be the primary pedestrian corridor.
SITE ANALYSIS CONCLUSIONS

1. Views within the site area are mostly negative

2. Many buildings are vacant and in poor condition

3. Current development proposals in the vicinity are encouraging for revitalization

4. Strong potential exists in the redevelopment of the canal
   * As an element that links White River Park with the neighborhood to the north
   * As a major pedestrian corridor
   * As a linear park
USER GROUPS

User groups of Waterway Village are identified in two categories: Residents and Non-residents.

The residents are the community that will create the neighborhood or village character. They are the property owners whose pride will help to maintain a good image throughout the neighborhood. Villagers will be graduate students, faculty and staff from nearby IUPUI and Medical Center staff.

This user group is in the middle income range, consisting of professionals, soon to be professionals and technicians. They will be single or married. IUPUI has a present enrollment of 23,000 students which is expected to double by the year 2000. There are currently 6000 graduate students and professionals and 4000 university-medical center staff. A sample from these groups was surveyed with 30 to 45 percent expressing interest in nearby housing. (Hammer, Siler, George, Assoc.; 1977.)

The non-residents are the people who will come to Waterway Village to shop and dine, to participate in indoor and outdoor activities, and to take advantage of outdoor spaces for jogging, bicycling, walking, skating, canoeing, or just sitting and watching.

Indoor and outdoor spaces must be carefully planned to attain privacy where needed and gathering spaces where desired. The design of the residences will promote a village character and public spaces will encourage desired activity causing minimum interference with residents.
<table>
<thead>
<tr>
<th>PEOPLE</th>
<th>RESIDENTIAL REQUIREMENTS</th>
<th>CULTURAL REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENTS</td>
<td>* Efficiency, 1 &amp; 2 bedroom units</td>
<td>* Access to churches</td>
</tr>
<tr>
<td></td>
<td>* 400 to 800 square feet</td>
<td>* Part-time work</td>
</tr>
<tr>
<td></td>
<td>* Limited privacy required</td>
<td>* Retail center access</td>
</tr>
<tr>
<td></td>
<td>* Laundry facilities</td>
<td>* Public transportation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Fast food restaurants</td>
</tr>
<tr>
<td>UNIVERSITY PERSONNEL</td>
<td>* One and two bedroom units</td>
<td>* Access to churches</td>
</tr>
<tr>
<td>Faculty</td>
<td>* 640 to 740 square feet</td>
<td>* Cultural and art events</td>
</tr>
<tr>
<td>Medical Center Personnel</td>
<td>* Great deal of privacy required</td>
<td>* Access to shopping</td>
</tr>
<tr>
<td></td>
<td>* Relatively quiet late evening hours</td>
<td>* Schools</td>
</tr>
<tr>
<td></td>
<td>* Parking garage</td>
<td>* Transportation</td>
</tr>
<tr>
<td></td>
<td>* Extra storage</td>
<td>* Restaurants</td>
</tr>
<tr>
<td></td>
<td>* Laundry facilities</td>
<td></td>
</tr>
<tr>
<td>VISITORS</td>
<td>* Ample parking on site or adjacent</td>
<td>* Access to shopping</td>
</tr>
<tr>
<td>Any Non-residents</td>
<td></td>
<td>* Restaurants</td>
</tr>
<tr>
<td></td>
<td>* Entertainment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Recreation</td>
<td></td>
</tr>
<tr>
<td>LEISURE</td>
<td>RECREATION</td>
<td>NOTES/CONCLUSIONS</td>
</tr>
<tr>
<td>---------</td>
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</tr>
</tbody>
</table>
| * Places to read  
* People watching  
* Learning or practicing hobbies | * Pubs, bars, fast food  
* Athletic facilities (tennis, basketball)  
* Provide open grassy areas  
* Recreation facilities (social activity, billiards, bowling). | * Students are transient and typically do not have a sense of community, neighborhood, or home. They are less concerned with their effect on the community.  
* Student housing should be developed to create a sense of community. |
| * Places to read  
* Interest or hobby facilities  
* Sitting spaces  
* Outdoor spaces  
* Clubhouse | * Spas  
* Jogging trails  
* Pubs, bars, etc.  
* Outdoor recreation spaces  
* Swimming, canoeing | * These people generally require research or reading time. They have a need for mental stimulation  
* Cultural richness is a requirement for this group. This activity would be arts, dining, and the "finer things in life". |
| * Seminars  
* Involvement in leisure activities | * Participation in recreation and facilities | * The visitors should be encouraged to be a part of the community. The visitor's business is vital to the success of the community. |
SPACE SUMMARY

Waterway Village is a mixed use development so the spaces will be described and defined in separate categories. These categories include: housing, retail spaces, craft workshops, artists' studios, exterior spaces and parking.

Housing

Of all the spaces, housing is the most important. The concept of the village naturally centers around its inhabitants. People living in this cultural center will add to the activity and excitement. The need for housing for students and faculty near IUPUI is the main concern of the development.

A study done by Hammer, Siler, George, Associates in 1981 clearly indicates a demand by students, faculty, and Medical Center staff for at least 300 apartment units per year. Since IUPUI is a commuter college, it does not provide dormitory or apartment housing for students or faculty. The university is surrounded by deteriorating neighborhoods and housing that is in poor condition which is undesirable to most.

The survey conducted by Hammer, Siler, George, Associates covered a variety of user groups that included undergraduate and graduate students, faculty and Medical Center Staff. The results showed the greatest demand for townhouses, followed by two bedroom garden units, one bedroom garden units and efficiency apartments, respectively.

The housing units in Waterway Village have been designed with these figures in mind. New townhouses would not be easily affordable unless quality is sacrificed. To make the project economically appealing to a developer the maximum number of units is attempted. A compromise was achieved in the design of walk-up apartments that look like townhouses. This has a two-fold purpose in both fulfilling the program needs and possible conversion to townhouses in the future. The village also offers midrise walk-ups and a limited number of loft apartments. All housing on the site is at second level and above, accessed by concourses to afford privacy.

Townhouse Walk-ups

The townhouse walk-ups are accessed via a second level concourse that parallels the public promenades to give residents a private walkway.

The townhouse has three or four levels with separate units on each floor. A well defined stair tower affords access to each unit from the concourse and each stairway serves six to eight units. The units range from 750 square feet for the two bedroom units, to 640 square feet for the one bedroom units and 400 square feet for the efficiency apartment. The efficiency apartments occupy the uppermost level of each townhouse under the gables of the roof. This uses virtually all enclosed space.

The individual units are somewhat smaller than typical apartments but this is due to several factors. Students, who will comprise the bulk of the population, are transient and typically require less living space. The smaller size also saves money and makes the unit more reasonably sized if it is to be converted to a townhouse.

The proposed design shows the maximum number of units by two levels of a townhouse could be used as a duplex for more spacious living. Flexibility is programmed into the design to meet changing demands.
Mid-rise Apartments

The mid-rise apartments in the village are located on the east of the canal roughly in the middle of the site. The structure consists of 45 two bedroom units that include a balcony and/or roof terrace. The roof terrace is available because of the design of the building. It is composed of two wings at a 90 degree angle with lobby and vertical circulation where the wings join. Each wing steps back starting at three stories to end at a sixth story adjacent to the central core. At each step-back the roof of the apartment below is a landscaped terrace that is available to the tenants on the floor in that wing via an exterior balcony walkway.

The stepping back of the building not only provides terraced roof gardens but also decreases the overall massing of the building which is important in mid-rise residential design.

Loft Apartments

Loft apartments will occupy the second level of the existing commercial buildings along Indiana Avenue. The American Paper Stock building could be converted to loft apartments as well. Lofts are an increasingly popular form of rental housing characterized by spaciousness, location in an older building with lots of character and windows and relatively low rental rates depending on the area and development. The lofts on Indiana Avenue range in size from 800 to 1000 square feet and are accessed by either a second level concourse or an exterior stairwell.

Space Requirements

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Special Requirements</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>* 47 Townhouses: 152 Individual Units with Stairway Access</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47 efficiency apartments</td>
<td>400 - 500 sq. ft.</td>
<td>stairway access through ventilation</td>
<td>occupying space under gables of townhouses</td>
</tr>
<tr>
<td>40 one bedroom apartments</td>
<td>650 sq. ft.</td>
<td>stairway access, through ventilation, acoustical isolation</td>
<td>occupying first, second, or third level of townhouses</td>
</tr>
<tr>
<td>65 two bedroom apartments</td>
<td>750 sq. ft.</td>
<td>stairway access, through ventilation, acoustical isolation, both bedrooms have windows</td>
<td>occupying first, second, or third level of townhouses</td>
</tr>
</tbody>
</table>
* 45 midrise Apartments

48 two bedroom units 750 sq. ft.  
lobby with vertical circulation all units have balconies balcony access to individual units; fire stairs at end of each wing 

2 penthouse suites 850 sq. ft.  
lobby with vertical circulation all units have balconies balcony access to individual units; fire stairs at end of each wing 

* 12 Loft Apartments

12 loft apartments 800 - 1000 sq. ft.  exterior access located at second level of existing commercial buildings

Retail Spaces

The primary purposes of retail in Waterway Village is to support the villagers and nearby residents. A market feasibility study would need to be conducted before deciding the actual goods and services to be marketed here but the list provided is compiled from general knowledge and general market studies. These retail outlets include goods which would be bought on a daily basis such as items from a drugstore, a quick-stop grocerette, a number of fast food establishments and a liquor store. Retail outlets providing services would include a bank, a dry cleaner, a hair salon and a health spa. These are just some of the stores that could be supported by users in this development and vicinity.

The Regional Center Plan projects a demand for 250,000 square feet of new retail development by the year 2000 along the Lower Central Canal Corridor. This new retail would be located along 5 blocks of the canal. The 250,000 square feet was divided by 5 blocks to arrive at 50,000 square feet of retail for Waterway Village. As a precautionary measure, roughly 80 percent of this number was used to arrive at the proposed 38,000 square feet of retail that includes existing buildings at street level. The craft shops, though related, are listed as separate from retail.
### Space Requirements

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Special Requirements</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Convenience Shops</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>grocerette</td>
<td>1600 sq. ft.</td>
<td>adjacent parking, security visibility</td>
<td>open until 1 a.m.</td>
</tr>
<tr>
<td>laundromat</td>
<td>1300 sq. ft.</td>
<td>adjacent parking</td>
<td>open until 9 p.m.</td>
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<tr>
<td>pharmacy</td>
<td>1600 sq. ft.</td>
<td>security</td>
<td></td>
</tr>
<tr>
<td>liquor store</td>
<td>1200 sq. ft.</td>
<td>parking, security</td>
<td></td>
</tr>
<tr>
<td>branch bank</td>
<td>1150 sq. ft.</td>
<td>24 hour bank machine</td>
<td></td>
</tr>
<tr>
<td>hair salon</td>
<td>1020 sq. ft.</td>
<td>parking accessibility</td>
<td></td>
</tr>
</tbody>
</table>

### Table 57. EVALUATION OF LATENT DOWNTOWN HOUSING DEMAND POTENTIALS, IUPUI STUDENTS AND DOWNTOWN EMPLOYER'S

<table>
<thead>
<tr>
<th>IUPUI</th>
<th>Undergraduate Students</th>
<th>Faculty &amp; Staff</th>
<th>Graduate Students</th>
<th>Downtown Employees</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number</td>
<td>12,000</td>
<td>4,000</td>
<td>6,000</td>
<td>79,000</td>
<td>101,000</td>
</tr>
<tr>
<td>Percent Interested in close-in housing (from surveys)</td>
<td>39%</td>
<td>45%</td>
<td>39%</td>
<td>25%</td>
<td>28.3%</td>
</tr>
<tr>
<td>Number Interested in close-in housing</td>
<td>4,680</td>
<td>1,800</td>
<td>2,340</td>
<td>19,750</td>
<td>28,570</td>
</tr>
<tr>
<td>Number Qualified by Income 1/ (%)</td>
<td>1,400 (30%)</td>
<td>800 (45%)</td>
<td>1,050 (45%)</td>
<td>13,600 (69%)</td>
<td>16,850 (59%)</td>
</tr>
<tr>
<td>Housing Preference:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rental townhouse</td>
<td>490</td>
<td>280</td>
<td>460</td>
<td>1,140</td>
<td>2,370</td>
</tr>
<tr>
<td>rental low-rise</td>
<td>120</td>
<td>90</td>
<td>100</td>
<td>1,800</td>
<td>2,110</td>
</tr>
<tr>
<td>rental mid-high-rise</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1,580</td>
<td>1,580</td>
</tr>
<tr>
<td>Owner townhouse</td>
<td>--</td>
<td>80</td>
<td>30</td>
<td>1,220</td>
<td>1,330</td>
</tr>
<tr>
<td>Owner single family</td>
<td>400</td>
<td>350</td>
<td>400</td>
<td>6,900</td>
<td>8,050</td>
</tr>
<tr>
<td>Other 2/</td>
<td>390</td>
<td>--</td>
<td>60</td>
<td>960</td>
<td>1,410</td>
</tr>
</tbody>
</table>

Notes: 1/ For students -- $12,000 or more; for employees -- $15,000 or more. 2/ Includes dormitories or other. 

Source: Hammer, Siler, George Associates field survey.
<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Special Requirements</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Dining, Drinking and Entertainment Establishments</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>restaurant/bar/lounge</td>
<td>4000 sq. ft.</td>
<td>night entertainment quality food and atmosphere</td>
<td>beer garden in courtyard</td>
</tr>
<tr>
<td>pizza parlor</td>
<td>1600 sq. ft.</td>
<td>serving beer and wine</td>
<td>open until 12 a.m.</td>
</tr>
<tr>
<td>pub</td>
<td>1600 sq. ft.</td>
<td>informal, &quot;billiards, darts, bands&quot;</td>
<td>open until 3 a.m.</td>
</tr>
<tr>
<td>delicatessen</td>
<td>2400 sq. ft.</td>
<td>cafeteria style with inside and outside tables</td>
<td>open until 8 p.m.</td>
</tr>
<tr>
<td>cafe</td>
<td>1800 sq. ft.</td>
<td>expresso and desserts, sandwiches, atmosphere, entertainers, outside tables</td>
<td>open until 1 a.m.</td>
</tr>
<tr>
<td>fast food - hamburgers</td>
<td>850 sq. ft.</td>
<td>franchise</td>
<td>open until 11 p.m.</td>
</tr>
<tr>
<td>fast food - chicken or mexican</td>
<td>850 sq. ft.</td>
<td>franchise</td>
<td>open until 11 p.m.</td>
</tr>
<tr>
<td>ice cream shoppe</td>
<td>850 sq. ft.</td>
<td>like old time malt shoppe serving hot and cold food</td>
<td>open until 11 p.m.</td>
</tr>
<tr>
<td>breakfast shop</td>
<td>1200 sq. ft.</td>
<td>pancake house</td>
<td>open 24 hours</td>
</tr>
<tr>
<td><em>General Retail</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>market place</td>
<td>2500 sq. ft.</td>
<td>open feeling, easy access near parking</td>
<td>set up as booths</td>
</tr>
<tr>
<td>bakery</td>
<td>850 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bicycle and camping store</td>
<td>850 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>book store</td>
<td>850 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gift/card shop</td>
<td>850 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 shoe stores</td>
<td>1400 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>jewelry store</td>
<td>640 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dance studio</td>
<td>1200 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>health spa</td>
<td>2000 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>men's shop</td>
<td>850 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>women's boutique</td>
<td>850 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>music store</td>
<td>1020 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>photo store</td>
<td>640 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>computer store</td>
<td>850 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sporting goods store</td>
<td>1200 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>import shop</td>
<td>1200 sq. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dry cleaner</td>
<td>850 sq. ft.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Craft Shops

Craft shops will occupy the street level along the west side of the canal. These shops will feature local craftsmen who will make goods of leather, jewelry, woven fabrics, and wood. These shops may also include artists whose sculpting, painting or dancing could be observed in progress. The craftsmen and artists typically pay low rent and occupy prime rental space. They would be a large drawing attraction bringing people to the Village. They would also add to the cultural variety of Waterway Village. They would also provide a reason, because of their distinctions, to cross the canal. This would create more effective circulation of shoppers and visitors which retail establishments rely on.

Space Requirements

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Craft Shops / Artists Studios</td>
<td></td>
</tr>
<tr>
<td>craft shops</td>
<td>4000 sq. ft.</td>
</tr>
<tr>
<td>artist studios</td>
<td>2000 sq. ft.</td>
</tr>
</tbody>
</table>

Exterior Spaces

Exterior spaces comprise one of the most vital aspects of Waterway Village. The exterior environment will help to attract people to the area. Among the programmed outdoor activities will be: festivals, bazaars, "sidewalk sales", amphitheater entertainment, canal crafts (canoes, paddleboats), walking, jogging, bicycling, and sitting to observe activity. The amphitheater will feature scheduled events from drama and music to mime and magic. One of the main goals of Waterway Village is to become a cultural center that will attract large numbers of people on a regular basis.

The visual impact of the exterior environment is important to the overall character and appeal as perceived by a visitor. The landscaping has been carefully designed to provide a variety of seating areas that are built into the environment. This seating occurs on low walls, cascading stairs and around planters. Plenty of spaces are provided for users to perform a favorite activity, people watching.

Trees were a major consideration and selected to provide various effects. These effects include enclosing the canal with a canopy, filtering light in the interior courtyards, shading from the sun, providing decoration with flowering trees and screening views.

Lighting for night time use was also a major consideration. It is expected that many people will use the late night entertainment centers and it would be necessary to provide a sense of security through lighting. The light fixtures are single globe fixtures (see lighting detail in design section) that recall historic ones used earlier in downtown Indianapolis. Lighting is important in creating atmosphere and can be used to highlight desirable areas and hide undesirable features.

In general, the exterior environment will be festive and full of activity. These qualities will attract visitors and encourage their participation in the environs of Waterway Village.
**PRELIMINARY COST ESTIMATE - 1984**

**Initial Development Costs:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Calculation</th>
<th>Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Building Cost</strong></td>
<td>* from Means Cost Estimate - 1984</td>
<td></td>
</tr>
<tr>
<td>- Retail</td>
<td>32,000 gsf at $37.90/sf</td>
<td>1,210,000</td>
</tr>
<tr>
<td>- Restaurant</td>
<td>12,000 gsf at $77.80/sf</td>
<td>933,600</td>
</tr>
<tr>
<td>- Housing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowrise</td>
<td>96,000 gsf at $38.88/sf</td>
<td>3,725,000</td>
</tr>
<tr>
<td>Midrise</td>
<td>38,000 gsf at $48.30/sf</td>
<td>1,835,000</td>
</tr>
<tr>
<td>- Parking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garage</td>
<td>223 spaces x $7,500/space</td>
<td>1,672,500</td>
</tr>
<tr>
<td>Lot</td>
<td>26 spaces x $500/space</td>
<td>13,000</td>
</tr>
<tr>
<td><strong>Building Cost Total</strong></td>
<td></td>
<td>9,389,000</td>
</tr>
<tr>
<td><strong>Site Development Cost</strong></td>
<td>at 5% Building Cost</td>
<td>470,000</td>
</tr>
<tr>
<td><strong>Fixed Equipment</strong></td>
<td>estimate</td>
<td>300,000</td>
</tr>
<tr>
<td><strong>Construction Cost Totals</strong></td>
<td></td>
<td>10,358,000</td>
</tr>
<tr>
<td><strong>Land Acquisition</strong></td>
<td>estimate</td>
<td>1,100,000</td>
</tr>
<tr>
<td><strong>Professional Fees</strong></td>
<td>at 5% Construction Cost</td>
<td>520,000</td>
</tr>
<tr>
<td>and administration fees</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Contingencies</strong></td>
<td>at 10% Construction Cost</td>
<td>1,036,000</td>
</tr>
<tr>
<td><strong>ESTIMATED TOTAL BUDGET</strong></td>
<td></td>
<td>$13,000,000</td>
</tr>
</tbody>
</table>
DETACHED HOUSING

* Single family
* Individuality
* 1200 - 1400 square feet
* Inefficient land use
* Incompatible with urban site

TERRACE APARTMENT

* Private entrance
* At least two exposed walls
* Some individuality
* 600 - 800 square feet
* Small private outdoor space

SLAB UNITS

* Balcony or corridor access
* Units arranged linearly for minimum circulation requirements
TOWNHOUSES

* High degree of individuality
* 800 - 1200 square feet
* Large market appeal

TOWER APARTMENTS

* Maximum housing on minimum land
* Very little individuality
* Parking structures

CLUSTER UNITS

* Similar to garden or terrace apartments
* Some individuality / unit differentiation
* Encourages amorphic layout
CONCEPTS FOR SOLUTIONS

Paseo Del Rio (Riverwalk)
San Antonio, Texas

The small river that winds its way through San Antonio at one level below street level has become the major attraction of the downtown area. The river was nearly lost to those who wanted a portion of it filled in to prevent flooding of the commercial area of downtown. Citizen interest, along with some government involvement, turned the potential problem into a beautiful linear parkway that has actually revitalized businesses along its banks.

The river is hardly noticed at street level; once on the pathways adjacent to the river, the hustle and bustle of the city is all but forgotten. Small ferries and pleasure-craft travel the waterway regularly.

The vitality and atmosphere of San Antonio's Paseo Del Rio are the goals of the development of the Lower Central Canal.
Chesapeake and Ohio (C&O) Canal
Georgetown, Washington D.C.

The C&O Canal is similar in scale to the Lower Central Canal that passes through Waterway Village. In Georgetown, the canal has been redeveloped. Industrial buildings have been converted into fine retail shops; new hotels and offices have been built; and extensive landscaping has been done along the banks of the C&O.

This concept for solution was used as the primary source of consultation for design development regarding the canal. The redeveloped C&O is very successful as a shopping and entertainment district and attracts many visitors.

The scale of the development is pleasant and the character unmistakable. The large hardwood trees that grow along the canal seem to lend an air of permanence. The historic industrial structures that once used the C&O canal as transport are not unlike the structures along the canal in Indianapolis.

One advantage the Lower Central Canal has over the C&O is the fact that it runs north and south so it gets sunlight at some time during the day. The C&O runs west to east and during winter months, the buildings on the south side of the canal cast a shadow over the water for the whole day.
Penn's Landing Square
Philadelphia, Pennsylvania

(Urban Housing / Village Concept)
This development was used as a concept for solution because of its scale, unit type and the fact that it is in an historical part of Philadelphia.

The site is a one block area and the program is a mixture of townhouses and garden apartments. The residents of Penn's Square Landing have their own private balcony or courtyard. One of the most appealing aspects of the housing development, according to tenants, is the security. The buildings enclose the site and only three gates are provided as access points to the interior and then into the units. Though security is important, this solution seems to be overly introverted.

Parking is provided in garage space at grade level and the housing is built above it.
Golden Gateway Commons
San Francisco, California
Fisher-Friedman, Architects

(Mixed Use Development)
This development of condominiums and retail shops is well designed to fit into a "sensitive" area below Telegraph Hill in San Francisco. The retail shops of the Commons are located on the first two levels and enclosed by an arcade. The use of brick throughout the project gives a feeling of scale, texture and relationship with historic buildings of the area.

Parking occupies two levels above street level behind the retail shops. The condominiums on the uppermost floor open onto the roof of the complex and have their own landscaped outdoor space. Some of these planning concepts were used in designing Waterway Village.
Ghirardelli Square  
San Francisco, California  
Wurster, Barnard and Emmons, Architects  
Lawrence Halprin, Landscape Architect

(Mixed Use Development)  
This development of restaurants, shops and outdoor plazas was built around a rehabilitated chocolate factory and overlooks San Francisco Bay. The outdoor plazas with trees, seating, and fountains, were designed by Lawrence Halprin. The plazas also serve as transitional spaces between buildings of the retail center.

Ghirardelli Square was used as a concept for solution for several reasons. One reason is that it is highly successful, attributable to the trendy retail climate of the area. This development was probably the first rehabilitation of an industrial building into a retail center and visitor attraction. Arcaded walkways were used in some instances and parking is provided in garage space beneath the retail area. These two concepts were used in the proposal for Waterway Village.
PROJECT PLANNING

Planning for Waterway Village was conducted through an investigative analysis of existing policies and programs. Research data was collected, analyzed and applied in the design process. Below is listed a synopsis of concepts used in this process.

A. Site location is in an urban renewal area where existing policies for new development must be respected.

B. The site is zoned as Central Business District (CBD) 2. This zoning permits support uses for activities of all types and unlimited building heights (subject to sky exposure plane controls). In the case of the canal corridor the sky plane must not be obstructed within an area that is greater than a 38 degree angle defined by a line extending from the center of the canal surface to the sky on either side where the surface of the canal is the horizontal origin (0 degrees) of the angle.

This is to allow penetration of sunlight to both sides of the canal throughout the course of each day during each day of the year.

C. The Lower Central Canal is historic dating from 1839. With respect to historicity, the scale of development remained relatively small and compatible.

D. Regional Center Plan figures indicate a potential demand for 50,000 square feet of retail on the site. A figure of 44,000 square feet is actually proposed.

E. Regional Center Plan indicates housing development along the canal.

F. Land acquisition cost roughly determined the number of units to be built on the site. Using the figure of 2000 dollars per unit, cost of acquiring the site being in the neighborhood of 450 to 500 thousand dollars. So 225-250 units is slightly higher than the actual 209 units in the project.

G. Studies indicate a definite demand for housing by IUPUI students and faculty.

H. The canal waterway is being lowered and improved by the Department of Economic and Housing Development, making it into an urban linear park.

I. Christopher Alexander's book, A Pattern Language, was used as a guideline in the actual design.
**Circulation / Land Use (Central)**

- Major auto artery (2-way)
- Pedestrian / Bicycle

**EXISTING PARK**

**PROPOSED PARK**

**OPEN SPACE / PARKING**

---

**Climatic Factors**

- Temperate Zone: Just south of snow belt
- Traveling winter winds
  - Prevailing Summer breezes
- Temperatures can stay below freezing from end of December to the middle of February, or above 90°F from middle of June through the end of August.

---

**Noise**

- Fast moving traffic

**Perry maintained / narrow sidewalks**

- No lighting or landscape amenities

**Central Canal**

- Weed covered gravel roads
  - Inviting path for pedestrians

- Scrubby overgrowth
  - Murky, weedy, stagnant water

---

**North**
ZONING AND CIRCULATION

- Who passes through site?
- Take advantage of preexs-thru. "Patenture"

- What should happen along caual?
  - what "wants" to happen
- How should it relate to the rest of the site?
  - Surrounding buildings

- Allow points of entry
- "Open spaces to occur where they should"
DESIGN PROCESS

The design process begins with the first idea regarding the programming of the project. It is not until the process of programming is nearly complete that salient design decisions are made. The inventory analysis, data collection, planning, and building criteria are instrumental in synthesizing the final design. Through this synthesis, the design decisions are self-supporting.

At this point in the process, decisions need to be made regarding location, size, shape, character, texture, and color of the programmed elements. In this thesis, many of these decisions were based on concepts from A Pattern Language, a book by Christopher Alexander. The book was invaluable in supporting many of my own ideas and, seemingly, in the design of the site itself. Alexander, along with planners, sociologists, and psychologists, deals with design issues from the macro scale of a city to the micro scale of a window. For example, he discusses "the shopping street" that is described as being near main arteries of the city but separate from automobile traffic. This concept has been implemented in the design of Waterway Village with the arcades and promenades that parallel the canal and pass by retail shops. Another example is what he calls "high places." People have an instinct to climb and look down on where they have been. This concept is embodied in the clocktower that serves as a "centerpiece" for the development, another Alexander concept.

Around 75 of the more than 180 concepts were directly applied in this design and many others were indirectly related. From this point, design issues are based on research of the site and largely on "a Pattern Language". The following preliminary design sketches illustrate these influences.
Massing Studies (East Side of Canal)
Massing Studies (West Side of Canal)

Townhouses with balconies over retail with arcade

Balconies may have different depths for variety - break up continuous arcade
Although students typically require a lesser degree of privacy than adults, the architects should consider the need for various levels of privacy and the relationship between students and visitors. Careful planning is necessary to ensure that the design is appropriate for the school's needs.

In the interior of the school, the block like Sharron Park] has been used to provide a sense of enclosure and to help separate the various levels of the building.
Greatest Emphasis

The most important aspect of the Village is the circulation. Access from one point to another should be clear. In other words, the Village should be organized so that circulation underlies.

This drawing indicates maximum massing with the inclusion of some design issues. (Not representative of final solution)

Density of shops and landscaping elements along canal path way.

The end of this structure should contain access to residential scale on opposite side of canal.

This drawing indicates maximum massing with the inclusion of some design issues. (Not representative of final solution)

Concept for clock tower for civic and focal point based on human proportions.

OFFICE abstract of time.

PRELIMINARY MASSING ANALYSIS
EARLY MASSING ON NORTH STREET (LOOKING WEST)
MICRO CLIMATE CONSIDERATIONS

Waterway Village will depend on year round use (attracting visitors) for its success. Since much of the user environment is exterior, special climatic considerations were made. These considerations are planned but some are more active while others are passive. The arcades are an example of active micro-climate consideration. They will afford a degree of protection from sun, wind, rain, snow and cold. Incandescent heaters could be added overhead to make it even more active and encourage more people to brave the cold.

Awnings are slightly less active in terms of their function and offer greater flexibility. They can be in place, folded up or removed entirely with little effort. They will be used along Indiana Avenue and North Street and possibly over the pedestrian bridge in poor weather or during festivals.

A third type of micro climatic control is the use of the landscaping elements, especially the vegetation. Vegetation is a passive form of climate control. Rows of trees along sidewalks and pedestrian corridors provide shade from the hot sun and, if they are deciduous trees, allow the warming sun to penetrate their branches in cold weather. Trees help to retain humidity for localized pockets of cooler air. They also provide visual barriers for privacy, screen undesirable views, and act as a buffer between pedestrian and automobile.

Throughout the site different trees are used for desired effects. In the courtyard on the west side, Honey Locust trees are used because they are hearty, do not grow too large and especially for the quality of light that filters through the open "finger-like leaves". Linden trees are used along the sidewalks adjacent to streets primarily for their heartiness and popularity. Along the canal,

Londonplane trees are used for their branch spread to canopy over the canal and for their heartiness in urban environments. Also desired, but unresearched, would be various species of flowering trees along the canal that are hearty enough to survive in these conditions.
WATERWAY VILLAGE
URBAN HOUSING AND RETAIL CENTER
INDIANAPOLIS, INDIANA

SPECIALTY SHOPS • RESTAURANTS • CRAFT SHOPS
ARTIST STUDIOS • MARKET • FESTIVALS • RENTAL
HOUSING FOR INPU STAFF AND STUDENTS

TERENCE P. SKIEE THESIS 1983-84
CANAL LEVEL - I

(A) Deli/Restaurant
(B) Formal Entrance
(C) Pizza Parlor
(D) Public Plaza/Amphitheater
(E) Clock Tower/Vertical Circulation
(F) Small Retail Shops
RESIDENTIAL LEVEL 1

Number of Floors
Review and analysis of the design is an important phase in evaluation of the thesis. At this point, many aspects of the design require thought and a better solution. Some of these aspects include: the organization of the apartments on the east side of the canal, the underground parking can be better resolved, the detailing of the clock tower should be re-thought and the townhouse design (layout, location and exterior treatment) should be improved.

Structural systems and energy efficiency require better solutions than those presented. There is a multitude of details that are unresolved. The overall concepts for the project are supported by research and reactions from experts.

REACTIONS BY EXPERTS

Throughout the course of the thesis development, I have worked in liaison with city planners in Indianapolis. I have consulted them on most design issues and have interacted with them in informal critiques of my proposal. The result is a thesis that has met with favorable comments regarding the overall design. Some of the positive comments include: "Nicely scaled development that fits well into existing context."; "Use of arcades is a good idea."; and "Land use and program show close conformity to plans for the area" and "treatment of canal is logical and sensitive to future development".

Negative comments by city planners include: "underground parking could not be feasibly developed as indicated in plans; needs more thought or an alternative solution."; "Square footage for apartments requires more thought"; "Apartment units on east site of canal are too close together and not very well resolved for views and privacy".

This proposal was presented before a group of realtors and a potential developer and met with a favorable reaction. Some of the positive comments included "Very well presented and thorough"; "a lot of work and careful analysis"; "Design concepts seem to be generally feasible". "This is the type of development that would take place here".

Negative comments from this group include: "Townhouse design might not work"; "Will this much retail be supported?"; "Student village would be noisy, territorialized and unappealing to the public"; "A more careful market analysis should be completed to support program".

These comments, positive and negative, are well taken and have become a part of the design process. I do feel confident that my research and analysis led me to a more thorough and realistic proposal than could have been achieved without the extra effort. I am also confident that with some changes in the basic design (not concept) this proposal for Waterway Village could be developed.
CONCLUSION

Waterway Village has been presented as my dissertation. The view has been substantiated by all available materials. My feelings are those of satisfaction and a sense of accomplishment, for it was not without a great deal of trial, confusion and effort, as with any thesis, that this presentation was possible. As I mentioned in the beginning of the project, I will leave the evaluation to the reader, as I have a biased opinion. I believe that in completing this thesis I have gained confidence and a sense of direction in design much greater than I could have imagined. I would like to thank once again all the people who have made it possible.
APPENDIX
ENSHRINE THE SPINE

Canal Park Placed On Should-Do List

Using the Indianapolis Water Co. canal "as a spine for a long, park-like district" throughout the city was proposed yesterday by one of the country's leading historic preservationists.

"I think the canal presents Indianapolis with a really golden opportunity," said Russell Wright, a Maryland architect who is a field consultant for the National Trust for Historic Preservation.

"There isn't much you could have to undo," he said in a day-and-a-half exploration of Indianapolis.

Wright was in town to speak at night to the Historic Landmarks Foundation of Indiana at the Athenaeum.

"You have true historic districts in such areas as Lockerbie Square and Woodruff Place," Wright said. "But the canal area is possibly more historic. They are not started the city, the reason why the city is here. It is the canal that attracted the industry and the railroads and what made the town.

Wright said a park proposal for the canal is in keeping with the new "environmental awareness" of historic preservation in which districts are preserved, instead of turning individual houses into museums.

"Indianapolis is past the beginning stage in historic preservation," he said, "and that is the most difficult stage. Lockerbie Square is somewhat run down, but it has great potential and it certainly is no worse than comparable aged areas of Savannah, Ga., or Charles town, S.C., that have been completely renovated."

Wright said he believes the historic preservation emphasis should be put on Lockerbie Square. "If Lockerbie had not been started," he added, "I would have said work on the canal area."

He also said Indianapolis has "some really fine early 20th century commercial buildings in the downtown area."

Russell Wright

What It Is... What It Could Be

It could be done, San Antonio has shown that. The Indianapolis Water Company Canal may some day look as agreeable as its books, interspersed with a diverse theater or nec tory shop. But looking at the canal today speaks for itself.

By Norm Shuretaille

The area along the downtown canal right-of-way from Washington Street to 10th is an excuse for a larger community.

Green areas, ideally faced with box cars and checker boards, covers portions of the water's surface. Aging warehouses stand deserted, and the windows above, and braced up, stare blankly at the canal observer.

All this is within view of the State Capitol complex as well as within a short walking distance of Monument Circle and much of the commercial center city on one hand and the expanding IUPUI campus on the other.

Although not officially designated as such yet, the canal is an historic site. The Water Company Canal as we know it today originally was a part of a proposed "Central Indiana" canal which was to extend from Peru in the north to Washington on the south.

The canal was intended to link the central part of the state to both sides of the Wabash River and Erie Canal.

The entire canal system was sponsored by the Hoosier state of Indiana in 1858 as a transportation system for the new and still sparsely populated area.

People felt that the canal system and resultant water transportation would be the solution to the lack of

decisions tomorrow.

Looking at the lower stretch of the canal now, one can see the impact of the recent efforts. There is a sense that everyone in this right-minded area would work hard to improve this area again.

But there were two things that were very important in the restoration process, the first being the restoration of the western promenade, which is being taken place on the western side of the downtown area, including the Alamo Plaza, the Alamo Plaza, and the beginning the University campus.

The city plans have had their admirers over the years, and even now that the western promenade is underway, we consider the canal not as a waterway, but as a linear park, leading to another area.

The project is in San Antonio and its downtown area and the San Antonio River Walk. While there are similarities between the canal and the Riverwalk, there are differences, too. The San Antonio River is a natural asset, while the canal is a man-made feature created as a result of the need for water to travel through the city.

But for so many years, the canal has remained largely a pastoral amenity, and today, a great place to get away.

In 1982, the River Walk Commission was established by the San Antonio City Council and dedicated some political zoning control over the entire length of the canal.

The commission joined with the San Antonio Riverwalk Association to promote the development of the riverwalk and to increase its public accessibility.

The new development, the San Antonio Riverwalk, is a pedestrian-friendly walkway that connects the city's historic sites and cultural attractions.

In 1982, the City of San Antonio added a new park to the riverwalk, the Alamo Plaza, which has become a popular destination for tourists and locals alike.

Not only has the riverwalk been restored, but it has also been improved to make it more accessible and enjoyable for visitors.

The riverwalk is a popular destination for tourists and locals alike, offering a variety of attractions, including the Alamo Plaza, the Riverwalk Center, and other cultural sites.

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Biking Along The Canal

Both bicycle enthusiasts and those who hold dreams of park-like use of the Indianapolis Water Company Canal will get a lift from announcement of plans to build a 'bicycle path' along the canal. Those miles along the canal will be part of a total path of 93 miles from Broad Ripple Park to the campus of Indiana-Purdue University, Indianapolis.

We can't see, though, why this path should be built with Federal highway tax funds, as it will be. The Federal Highway Administration has only approved a grant of $229,320 for Indianapolis for the project.

The kind of funding onto the Federal taxpayers' backs of projects of strictly local interest and value goes on all over the country and is one of the practices that has built up a Frankenstein monster at central government that absorbs a tremendous portion of the nation's tax resources and gives proportionately little debt benefit.

The plan for the bicycle path is a good and constructive one devised by local civic leaders and officials. But the question whether or not to build it was made by Indianapolis people but by Federal bureaucrats.

That's a nasty way to run a country. It's also an expensive way.

The above criticism is not aimed at the bicycle path project itself. It could be useful bike riding for exercise and recreation is being enjoyed by ever-growing numbers and more places to ride are needed.

The project could be a small step toward fulfillment of long-held visions of taking advantage of the waterway.


WORK TO BEGIN IN SPRING

Indianapolis Awarded Grant To Build 9.3-Mile Bike Path

The federal Highway Administration recently granted Indianapolis $229,320 to build a 9.3-mile bike path from White River south of 21st Street to the University of Indianapolis. The plan is to build the path along the canal, which is located between the University of Indianapolis and the central Indiana Bicycle Association, and to work with the Department of Parks and Recreation.

The project was initiated by the Indianapolis Bicycle Path Association and the Central Indiana Bicycle Association, which is working with the Department of Parks and Recreation.

THE INDIANA CENTRAL CANAL

For anyone who didn’t grow up in the Rosewater Inter-State Drain Canal, described in the previous issues of ACS Patrick Karl von Hippel’s little magazine, the name of the Indiana Central Canal might be unfamiliar. Although not quite as familiar as the Rosewater, it includes both excellent material for an entire canal pack, and some 70 miles of relatively simple, unisonial canal work, attended to by the grand old man of construction, Professor Paul Fenol, in Indiana Canals, dated last day in the last summer of 1893: “Cutting the soil ahead thrust into the banks of an unbroken ditch, the wheelbarrow on the plank, bathrobe tending yellow, red and blue, pile in kegs, fences torn down, the season closed with the final completion of construction dams, as if tomorrow were another world.” Hopefully this brief note will interest someone in making or retrieving a complete description of the Indiana Canal to discover what remains today of the canal workings, and what this can tell us of the process of canal construction during the canal era.

The Indiana Central Canal was part of Indiana’s “Reasonable improvement” of 1835-1836, and was intended to satisfy the central part of the state, linking the Wabash and Erie Canal at both ends. From Peru in its northern end, there was to be a summit level canal through Milton, Sullivanville, and Alexandria, to meet the Wabash Canal at the Indian Creek return, and from there it was to fall to the North Fork Point of the White River at Wabash, Indiana, and return, to join the Wabash and Erie Canal at the Indian Creek cut at Wabash. There was also to be a branch from Alexandria to Muncie.

Unfortunately for the canal, however, the state went bankrupt in 1837, as a direct result of its bondissure and banking programs, and although the Wabash and Erie Canal was completed by 1842, or less, the Central Canal was abandoned until 1860, when the state put the Illinois-Erie Canal in progress for 80 miles from Anderson in the state’s northwestern corner. The local idea was that the Central Canal would be the natural successor to its neighbor, and it went. Most of the 80 miles was at least started, and some was even finished and watered. It was the main part of the state’s improved water supply in 1871. In 1871, on the centennial anniversary of the canal, the Indiana Central Canal was declared the American Water Landmark, with a plaque unveiled by Charles L. Fox, the Indiana Historical Society for Art, the American Water Works Association, and the Indiana Central Canal Company.

The Indianapolis Water Company, which took over the canal since 1881, has added part of the canal to the city for use as a catch basin for the trunk sewer, which has been used by Kyte since the beginning of the century, and the streets, as streets and not undiscovered anywhere. Other works are as accessible as they should be, where space ample is a plus. But, of course, the Broad Ripple Dam system is still present. Other works are as accessible as they should be. At times, this work is used as a small course. The canal dam at the city line is used to help in the system of water supply in the Indiana Central Canal. A section of the canal below Indianapolis was 80 feet wide at its mouth, and 124 feet wide at 1,200 feet. The canal is used for water power. Otherwise the canal workings have been destroyed since 1855, although the Indiana Canal Company planned to develop the canal. This was the canal that was left as it was used as a small course. The canal dam at the city line is used to help in the system of water supply in the Indiana Central Canal.

I have looked at all of the route below Indianapolis, but those only between Alexandria and Anderson. Below Alexandria there is in fact a 9-mile gap along the route 9 on the east for about 1 mile along the approach canal (east). The canal is used for water power. Otherwise the canal workings have been destroyed since 1855, although the Indiana Canal Company planned to develop the canal. This was the canal that was left as it was used as a small course. The canal dam at the city line is used to help in the system of water supply in the Indiana Central Canal.

Below Indianapolis there are some new developments and some old. The water supply in the canal is still used. The canal is used for water power. Otherwise the canal workings have been destroyed since 1855, although the Indiana Canal Company planned to develop the canal. This was the canal that was left as it was used as a small course. The canal dam at the city line is used to help in the system of water supply in the Indiana Central Canal.
**Canal Still Flows by Pastoral Scene Hit By Changes**

The Indianapolis Water Company canal still flows gently toward downtown Indianapolis, but its surroundings have changed through the years. In 1869, Indiana artist Richard Bucquoy Ceruelle (1856-1944) painted the pastoral scene (left) with the Statehouse silhouetted in the background. lush green trees and vegetation complement the canal's placid waters in Ceruelle's painting, which he titled "The Canal, Morning Indianapolis." Last week a photographer visited the approximate location from where Ceruelle painted his picture - the north side of Military Park looking east - and snapped a picture of the same scene (right).

There are times when the serene water and buildings line one shore and the Statehouse is almost hidden by the State Office Building, Ceruelle's dense foliage, and many others dating back two centuries by trees - or vice versa, will be exhibited in a special show, "Images of Memory: 175 Years of Indiana Art," opening Nov. 4 in Foster Members' Room, north entrance, Pavilion, at the Indianapolis Museum of Art. The exhibit is sponsored by a grant from the National Endowment for the Arts and the Indiana Arts Commission (Star Press).

**Indianapolis Star, October 24, 1976, Section 4, p.1.**

**Indianapolis Star, November 28, 1974, p.46.**
City regains title to area property

Downtown canal beautification moves ahead

By ROB SCHNEIDER
And BRUCE C. SMITH

A section of the mighty Indianapolis Water Co. Canal is expected to become an idyllic centerpiece in the city’s downtown revitalization efforts.

Proposed plans under discussion include lowering the water level to 12 feet.

A new lower level next to the canal banks would create paths for walking, jogging and bicycle riding along a landscaped corridor. It would be below street level and under bridges.

FOR AT LEAST 13 years, city planners and real estate developers had wished that something attractive and useful could be made of the 144-year-old canal downtown.

Because of the downtown’s new image, coupled with the possibility of a federal grant, a new effort is under way to turn the area bounded by New York, North, West and Illinois streets into a residential, commercial and business development.

“We’ve seen the barrier cracked in downtown housing,” said David E. Carley, director of the Department of Metropolitan Development.

Because of its location near the Indiana University-Purdue University at Indianapolis, the Indiana University medical complex, the state office complex and the American United Life Building, “it is in a perfect spot from a marketing aspect,” Carley said.

THE DEVELOPMENT would be a public-private partnership and include other funding sources, Carley predicted. Those funding sources could extend to local philanthropic foundations.

Lilly Endowment Inc. funded an earlier study on the development possibilities of the lower canal area.

The canal would become the central amenity of the development, which would be primarily residential in nature, Carley explained. He said the city was “fairly certain” more than one developer would be involved in the project.

At the city’s request, the White River State Park Development Commission agreed Wednesday to give canal property lying north and west of West Street back to the city for development.

THE WHITE RIVER commission received ownership of the canal property from the city, but is giving it back because the city wants to simplify planning.

The action was necessary for the city to apply for a $4 million federal grant for the canal renovation, Deputy Mayor John L. Krauss said.

Renovation of the canal is in the city’s regional center plan, which suggests development for the downtown area through the year 2000.

The $20 million rebuilding of West Street downtown by the city’s Department of Transportation is making allowances for a much-improved canal. The West Street bridge over the water is designed to be high enough for boats to pass under.

And the city Department of Metropolitan Development 1984 budget, now getting City County Council study, envisions a substantial investment in the canal.

OUT OF THE $33.1 million proposal of the Department of Metropolitan Development’s Division of Economic and Housing Development, $4 million of federal money is earmarked for the canal renovation.

The only bigger budget item for next year are the downtown mall, with a $12 million phase, and the renovation of Union Station for $9.5 million.

Money in 1984 for the canal would be for design, engineering and some construction on at least two blocks of the route, according to Charles R. Caggan, the administrator of the Division of Economic and Housing Development.

The federal grant proposal will be drawn up later this year and plans for the project should be completed by the end of 1984.

See CANAL Page 8

Canal may be centerpiece of downtown revitalization

* Continued From Page 1

by the end of the year, Carley said.

“The GENERAL idea is to develop (business and housing) back from the canal, with landscaping with furniture to give it an angled perspective down to the water,” Caggan said.

He said investors are waiting for the city to begin work on the canal before beginning new construction and renovation of buildings in the area.

Many of the buildings would be constructed on remodelled to take advantage of the view or frontage on the canal, he said.

“The canal has potential to be the important link for pedestrians and recreational use to the northwestern side of downtown,” he said. “It can be the focal point of new development.”

BUT HE SAID there has been a “chicken and egg” struggle as both the city and property developers wait for the other to take the first action.

“Who goes first? It will have to be a city project because the benefits could come back many fold in employment and redevelopment in Center Township,” he said.

The first developers “out of the gate” with an announced renovation project, Caggan said, are architect Gordon E. Clark and Kenneth A. Puller, president of Puller Mortgage Associates Inc.

They announced in April plans to spend $3.5 million to transform a vacant six-story warehouse in the 300 block of West New York Street into apartments, shops and a restaurant overlooking the canal. They also propose 245 more apartments in the same area.

THE CANAL here opened in June 1839. It was only one section of a much longer route that was planned through central Indiana.

The original plan was to link the Wabash River in southern Indiana with the Erie Canal to the north via the canal 60 feet wide and six feet deep.

However, the state ran out of money to complete the project and sold the section here to private investors in 1851. Later, it was sold to the Water Works Co. of Indianapolis and, eventually to the Indianapolis Water Co. in 1881.

It starts at White River in Broad Ripple on the north, to the State Office Building, where it turns underground and empties into White River.
Hopes bright for money to beautify canal in downtown

By ROB SCHNEIDER

City officials expressed confidence Wednesday in acquiring $9.9 million in federal and local money so the long-planned renovation of part of the Indianapolis Water Co. Canal downtown can begin next spring.

The project will be part of about $1 million worth of public improvements planned for the northwest portion of downtown Indianapolis, a step that city officials believe will attract more than $200 million in private investment to the area.

Because of recent development downtown, officials have pushed ahead with long-standing plans to turn the canal into a centerpiece that will attract more development and help renew interest in the Northwest Redevelopment Project, which includes Indiana Avenue.

THE REDEVELOPMENT project is bounded roughly by New York Street, Indiana Avenue, Senate Avenue, 11th Street and 165. Redevelopment plans call for multi-story buildings to flank Indiana Avenue from the new American United Life Building north to Lockefield Gardens.

The canal project will be between West and 11th streets and will take about five years to complete. The canal will be lowered about 12 feet to allow construction of paths for walking, biking and jogging along each side.

The city will apply for a $7.9 million grant from the Urban Mass Transit Authority, and $4 million of that amount will be made available next year. The grant application is believed to be the first submitted to the authority involving a historic waterway.

Under the terms of the grant, the city must also provide money for a share of the project. Officials will use $250,000 in community development block grant money, and they hope to receive $1,136,000 from foundations and an additional $392,000 from other sources.

LILLY ENDOWMENT has expressed interest in the project and provided money to pay for an earlier study connected with it.

During its next meeting, the Metropolitan Development Commission will be asked to approve the hiring of See CANAL Page 9
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