

5-1981

# Reedy Bend Terrace Office Complex

Stephen Thomas Lineberger  
*Clemson University*

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REEDY BEND TERRACE OFFICE COMPLEX

Stephen Thomas Lineberger

Spring 1981

This terminal project is submitted to the faculty of the College of Architecture, Clemson University, in partial fulfillment of the requirements for the degree of Master of Architecture.

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DEDICATION

To Dorothy, Mom and Dad

for their constant love, understanding and support.

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ACKNOWLEDGEMENTS

I would like to express my sincerest appreciation to the following people for their time, encouragement and labor.

Special thanks are due to Committee Members Alumni Professor Peter R. Lee, Professor Jose R. Caban, and Professor Yuji Kishimoto and Committee Chairman Professor Frederick G. Roth.

Thanks also go to Professor Martin Davis, Professor M. David Egan, and Professor Hugh Webb.

I would also like to thank my entire Sixth Year classmates, especially Jonathon Booth, Michael Murray and Gregory Lewis for their timely help. Special thanks are also extended to a number of undergraduate students for their help:

Kent Lineberger

Jeff Bulla

Richard Tepp

Bo Sellers

Shannon McGee

Sherri Rushton

QAM

FACIB-A

ASBESTOS/CSL

50% COTTON/100% USA

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**INTRODUCTORY STATEMENT**

INTRODUCTORY  
STATEMENT

Recently, the potential for high quality development around Greenville's city core has been recognized. The need for this development in housing and mixed-use activities has been identified, and emphasis has been placed on the "livability" of downtown Greenville. It has been noted that within the Greenville area there is a market for an alternative lifestyle which is more urban and pedestrian.

This recent study prepared by Dalton Morgan Architects Planners of Charlotte, N.C. resulted in a printed document titled "Greenville--Back to the City." Their charrette approach included a host of Greenville planners, economists and advisors from all professions, who outlined several housing, commercial and cultural projects. These projects were all linked around the central business district by a pedestrian greenway.

As a result, various goals and objectives have been outlined to help establish the criteria to achieve this alternative lifestyle. The first objective deals with the potential relationship between business, recreation, housing and pedestrian movements which have been noted along the core edge of downtown Greenville.



Secondly, a number of sites around downtown Greenville have been pinpointed as having potential "livability." Thirdly, the availability of the Reedy River as a stimulant to various activities is a valid and recommended approach. The river and the close proximity to the historical textile mills offer unusual features to the development of the project site. Unique characteristics like these will certainly serve as catalysts in escalating public interest and financial support.

Physically, the Reedy Bend Terrace project is the middle link in a chain of potential developments. This chain ranges from the proposed housing of the Hampton-Pinckney and Textile Hall neighborhoods to the housing of Bell Tower Terrace and the culturally-rich River Mill Square area adjacent to the river. Thus, through its location and relationship to surrounding activities the Reedy Bend Terrace site seems suited for a wide variety of activities and building functions.

The primary intention of this study is to illuminate the potential of this critical site. The careful development of pedestrian movements through the site on the proposed greenway and

along the Reedy River is a major objective. Further site development will include making suggested land uses for neighboring property and designing an office building with appropriate supporting commercial spaces and parking facilities. The total development should eventually serve as a multi-use, urban center providing office workers, visitors and nearby residents with a sense of pride as well as a source of activity and entertainment.

**BACKGROUND**

HISTORICAL DEVELOPMENT

HISTORICAL  
DEVELOPMENT

Greenville County, prior to 1776, was part of the vast Cherokee Nation. During the American Revolution, present-day Greenville County was purchased by the State of South Carolina from the Cherokee Indians.

The present city of Greenville was first permanently established in 1776 by Richard Pearis. Pearis, an Indian trader, built a grist and saw mill at the Reedy River Falls and laid the foundations of downtown Greenville.

Twelve years later, Lemuel Alston laid out an eight-square block area adjacent to the falls as the village boundaries. The small village extended from the banks of the Reedy River to what is now Washington Street and was named "Pleasantburg" in 1797.<sup>1</sup>

Before Alston left Pleasantburg, he sold his land to the man now considered to be Greenville's founding father, Vardry McBee. McBee built a grist mill in the early 1800's on Pearis' former mill site at the Reedy River Falls and set the tone for Greenville's industrial future.

Thus, with consistent growth, the village of Pleasantburg was incorporated into a town in 1831. The 24-block town was renamed "Greenville" after Nathanel Greene, a Revolutionary War hero.<sup>2</sup>

In 1835, the newly renamed town became the site of the Greenville Coach Factory. Eben Gower and Thomas Cox, the factory owners, dammed the Reedy to run the water wheel and began erecting buildings for their factory. The two partners originally made wagons and other vehicles in this factory, but it was converted to Confederate production of gun carriages during the early part of the Civil War. Unfortunately, this conversion caused severe monetary losses for the factory. Following the war, Gower, Cox, and their new partner, H. C. Markley, began making a line of sports buggies to increase profits.

The important industry of Gower, Cox, and Markley helped Greenville rise to second in manufacturing in the State of South Carolina in the 1880's. Their factory was noted for product durability across the country and claimed the establishment was the South's largest. The present carriage factory building was

built between 1901 and 1910, but the firm was put out of business by 1917 with the advent of the automobile. This signalled the end of the pioneer period in the development of Greenville.

The arrival of the Greenville and Columbia Railroad in 1853 hastened this end and heralded a new age. The emergence of the "New South" was seen in the development of cotton mills in the Piedmont after the Civil War. This occurred because of abundant water power, cotton-filled fields, cotton-manufacturing experience, and Northern capital seeking employees and investment opportunities.<sup>3</sup>

The first textile mill in the city was built in 1875. Camper-down Mill, built along the banks of the Reedy opposite the site of Pearis' original mill, started the great surge of textile development in that decade. The second textile mill in the city, the Huguenot Mill, was built just above the Greenville Coach Factory. Thus, at the end of the century, the growth and development of Greenville paralleled that of any number of industrial cities in the South. Greenville had been witness to a destruction of the old but now awaited a period of continued building of the new.

In addition to physical changes on the structural horizon, textiles clearly surpassed agriculture as the primary means of commercial support by 1930. Therefore, the city of Greenville became known as the Textile Center of the South. Non-textile related industries emerged, but they employed less than 10% of those employed in textiles.

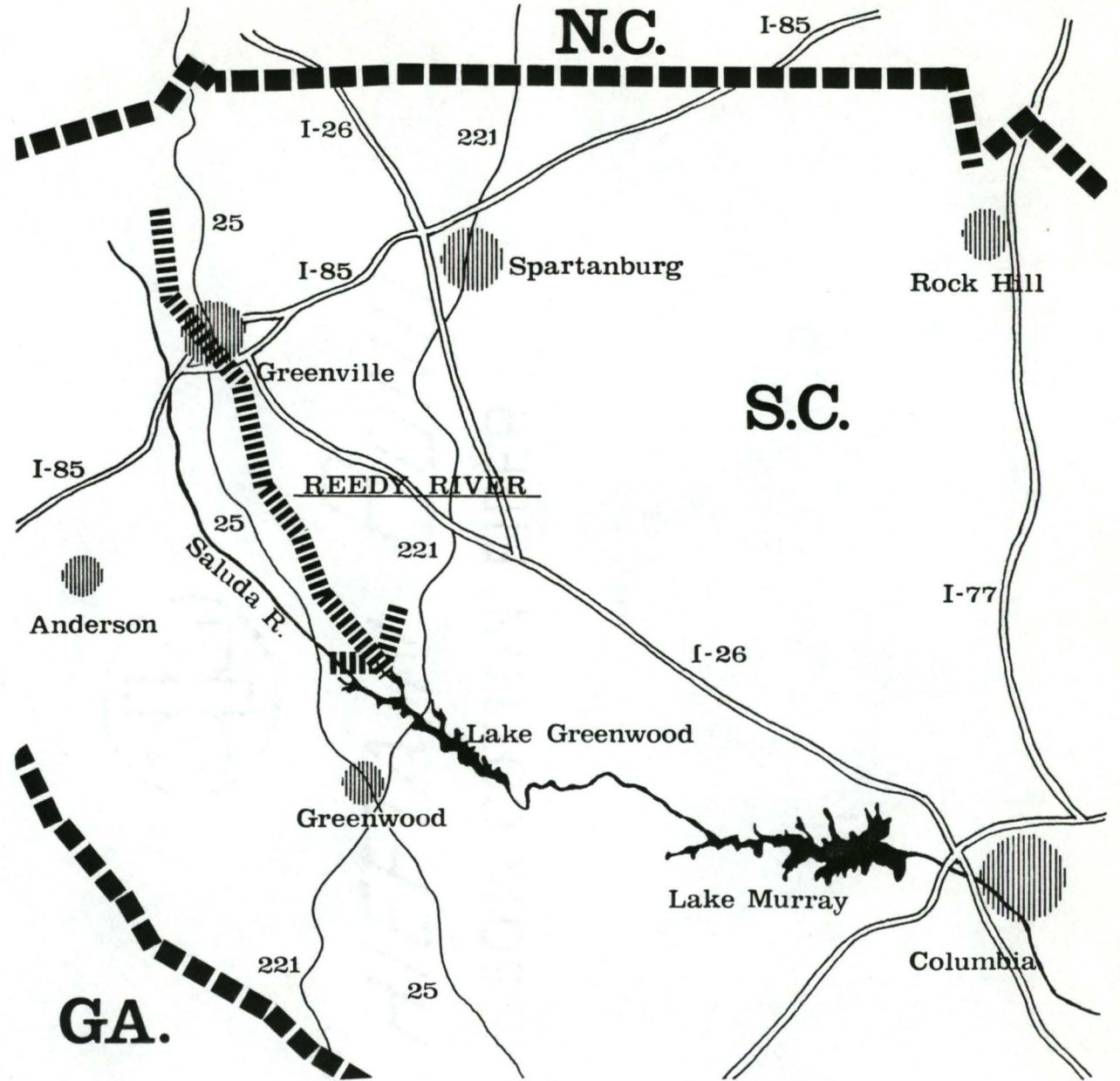
However, Greenville experienced more diversification of industry after World War II. The mills near or at the Reedy Falls area ceased to exist and were sublimated by the scattered warehouses and commercial buildings that remain today.



THE REEDY RIVER  
MAY 18 1894  
MAY 18 1894  
MAY 18 1894

THE REEDY RIVER

Diagram 1  
Map of REEDY RIVER



## THE REEDY RIVER

Historically, the Reedy River has had significance as the location of Greenville's first permanent structure, a grist mill and as a backbone for the city's textile development and expansion. Acknowledging this aspect is important when future river development is considered. The use of the river has always been and should continue to be a vital part of Greenville's history.

According to the Orion Magazine of November 1842, the Reedy River was noted for its usefulness, beauty, and romantic appeal. In fact, as soon as a visitor registered at the old Mansion House, he was "escorted down Main Street and introduced to the river and shown the falls which were then noted, bragged about, and thought of by the natives as a veritable Niagara."<sup>4</sup>

The source of the Reedy River is above Travelers Rest, South Carolina, and turns into the town near "John B. Marshalls' ice mill (near the present Academy Street bridge)." Commonly referred to as the "ten foot hole," this area of the river was enjoyed by the youngsters of the community as they used it for swimming and diving.<sup>5</sup>

Downstream on Sunday afternoons, worship services were conducted on the site which would later be the Huguenot Mill. Large trees on

the shady banks were the spectators' natural cathedral as they witnessed the baptisms by Dr. Furman in the waters of the Reedy River.

Continuing down the river, one would note the Greenville Coach factory on the left. If it was a wintry afternoon, townspeople would be skating on the frozen pond created by the factory dam. On sunny days, the people of the town would walk along the Main Street foot bridge below the dam and watch the water wheel "just to cool off." A local custom respected by the feminine gender in summer and winter was turning their heads sharply away from the pool beneath the foot bridge. Thus, they averted their eyes from the nude young men who frolicked below.<sup>6</sup>

After passing the bridge, however, one would note that aversion towards the opposite sex was not a universal reaction. At the head of the falls, a huge rock bluff called "Lovers Leap Rock" stood witness to most of the town courting.<sup>9</sup> Unfortunately, the Camper-down Mill, built in 1875 on the bluff, hampered the romantic atmosphere and diverted the townspeople from this recreational spot.

The Reedy River, having played such a vital role in Greenville's past, now has the opportunity to be an exciting cultural and physical

design element in Greenville's future. The potential use of the Reedy River as an integral factor in Greenville's development is heightened by an escalated "back to the city" movement.<sup>8</sup>

Reconstructing the river, its banks, and activities to its mid-1800's appearance would certainly draw public attention. It would also restore the Reedy River to a period when it was respected and utilized to its fullest. For today and the future, it is most important to conserve the natural resources of the river, provide a broad public riverside for recreational use, and also to design an aesthetically pleasing waterfront with economic benefits. Thus, incorporating the concepts of respect and proper utilization of the Reedy River from the town's history could be instrumental in Greenville's overall development without completely imitating a previous era.

**CURRENT TRENDS**

(157)

FADLETA

AGIBIPWANGHE (BO XD)

50% COTTON FIBRE USA

POPULATION

## POPULATION

The population of Greenville County has been growing at a rate of approximately 2.5% per year which is twice the national rate. The County's current population is estimated at 286,000 persons. Interestingly enough, all the growth in population within the County has taken place outside the City of Greenville. The population within the City has remained near 60,000 over the last quarter century.<sup>9</sup>

The Greenville metropolitan area has a current population of about 650,000 which includes three counties--Greenville, Spartanburg, and Pickens. This Standard Metropolitan Statistical Area (SMSA) is the 73rd largest in the United States and the fourth largest in the Carolinas and Georgia.<sup>10</sup>

In addition, Greenville County is the center of economic activity for a larger eleven county area, the Greenville Economic Area. This area, defined by the U.S. Department of Commerce, stretches from the Georgia border almost to the Charlotte area and southward towards Columbia. The current estimated population of the area is 950,000.

In future years, the population of Greenville County is expected to continue to grow at a rate of 2.5% per year, increasing 64% in the 1976-2000 period. This is comparable to only 21% growth nationwide.<sup>11</sup>



The in-migration to the area will be the major factor in population growth because large numbers of people will be drawn to Greenville County in response to growing numbers of employment opportunities.

Diagram 2

POPULATION GROWTH

<u>Year</u>	<u>City</u>	<u>County</u>	<u>SMSA*</u>
1977	62,000	272,000	537,000
1976	61,000	271,900	535,000
1975	60,000	265,700	526,300
1974	64,600	263,000	519,700
1973	58,603	256,700	508,900
1972	58,900	254,000	501,500
1971	59,400	240,100	483,800
1970	61,208	240,774	473,454
1960	66,188	209,776	
1950	58,161	168,152	
1940	34,734	136,580	
1930	29,154	117,009	
1920	23,127	88,498	
1910	15,741	68,377	
1900	11,860	53,490	

\* SMSA includes Greenville, Spartanburg and Pickens Counties

SOURCE: Greenville Market Data, Greater Greenville Chamber of Commerce, Greenville, S.C., 1980.

WATERLOO LAMMERS BROTHERS  
51% COTTON FIBER - USA

ECONOMY

## ECONOMY

Greenville County is the largest county in the Greenville metropolitan area. It serves as an urbanized shopping, financial, and regional headquarters center for the eleven county Greenville Economic Area. In Greenville County, there is a regional concentration of employment in the trade and financial sectors although factories are the major employers.

Greenville is one of the Southeast's leading manufacturing centers with more than 400 industrial plants. Approximately 42% of the non-agricultural work force is employed in manufacturing.<sup>12</sup> Traditionally a textile stronghold, Greenville is widely recognized as the Textile Center of the World though it takes pride in producing additional varieties of products.

Manufacturing should continue to be the major source of employment in the Greenville economy with total manufacturing employment expected to grow moderately at approximately 1% per year. Increased productivity will lead to lower employment levels in the textile and apparel industries with rapid growth occurring in other industries. In the future, Greenville County should experience a healthy industrial growth rate in terms of both new industry and expansion of existing facilities.

USA

BA01E-A

AUG 13 1971

BOY'S COUNTRY FIELD USA

OFFICE SPACE NEEDS

OFFICE SPACE  
NEEDS

Before designing an office structure for downtown Greenville, it is reasonable to establish the need for such office space. The most recent survey of available office space in the Greenville area was conducted in July 1980 by the Greater Greenville Chamber of Commerce. Twenty-one major office buildings in both downtown and suburban locations were included in the survey which excluded owner-occupied buildings such as the Daniel Building.

As seen in Chart 3 Greenville boasts a total leasable area of 1,135,676 square feet with an occupancy rate of 93.3%. Chart 4 reveals a sizable increase of 33.3 percentage points in occupancy rate, as charted over the past four years by the Greater Greenville Chamber of Commerce. Chart 5 emphasizes the strong and growing market that exists in downtown Greenville as well as in its suburbs. The growth pattern of demand as well as occupancy over the past 10 years has risen tremendously and promises a future of increased demand for leasable office space.

As the economy of the Greenville area expands, thriving on the influx of industrial, retail and manufacturing plants, the physical structure of the Greenville CBD will undergo changes as well. The need for more office space to accommodate the administrative and financial institutions will certainly follow, reshaping Greenville's CBD into a financial center with a more urban and pedestrian character. Undoubtedly, attractive office centers in an urban context will be in demand.

Diagram 3  
OFFICE SPACE AREAS

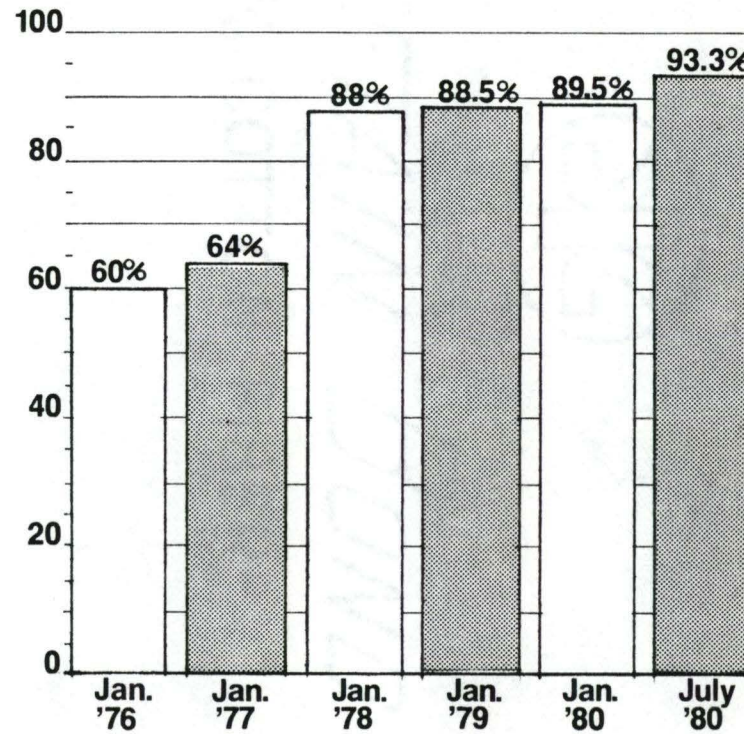
	Leasable Area (Square Feet)	Available Area (Square Feet)	Occupancy Rate
Downtown	487,268	38,628	92.1%
Suburban	648,408	38,000	94.2%
TOTAL	1,135,676	76,628	93.3%

SOURCE: Greenville Market Data, Greater Greenville Chamber  
of Commerce, Greenville, S.C., 1980.



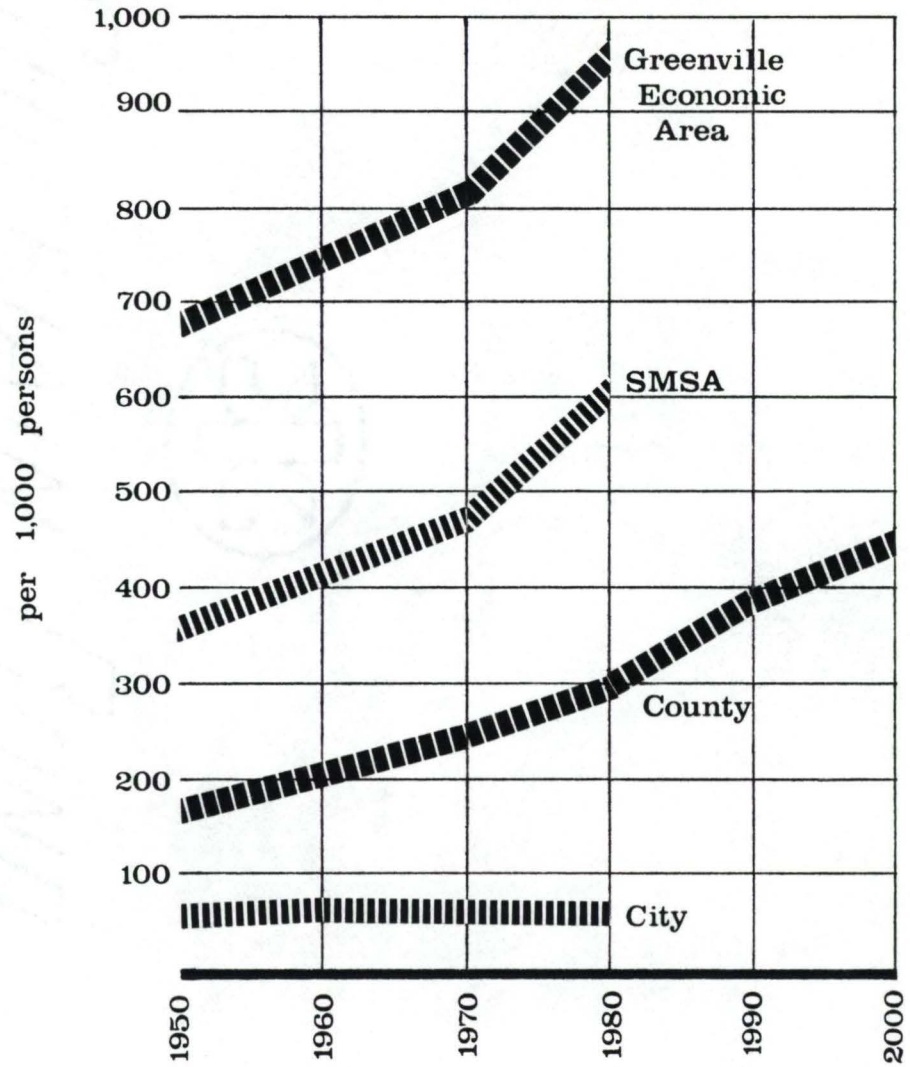
Diagram 4

OFFICE SPACE GROWTH



SOURCE: Available Office Space Survey, Greater Greenville Chamber of Commerce, July 1980.

Diagram 5  
GROWTH TRENDS



CBD or SUBURBAN LOCATION

CBD OR SUBURBAN  
LOCATION

After establishing the need for office space in the Greenville area, the decision of location must be made between the downtown area or a suburban locale. The purpose of diagram (6) is to show the advantages and disadvantages of the various locations.

Diagrams (7) and (8) have been prepared with names of the various buildings to give guidelines for existing location patterns. Once again, owner-occupied buildings have been excluded from the survey.

The proposed growth patterns outlined by Dalton Morgan Architects Planners and the results of the diagram (7) show a location in the downtown CBD would be most advantageous. Locating among a concentration of other professional office spaces in a commercial activity center will allow investors and occupants to take full advantage of what the city has to offer. This will be a positive step and will promote the "back to the city movement."<sup>13</sup>

Diagram 6

LOCATION ANALYSIS

<u>Characteristics</u>	<u>Downtown Location</u>	<u>Suburban Location</u>
city activity	●	
central location in city/ county area	●	
parking area		●
convenience to residences		●
lease price		●
proximity to other professional offices	●	
close to municipal offices	●	
pedestrian access to parking, shopping and recreation	●	
proximity to historical and cultural activities	●	

Diagram 7  
CBD OFFICES

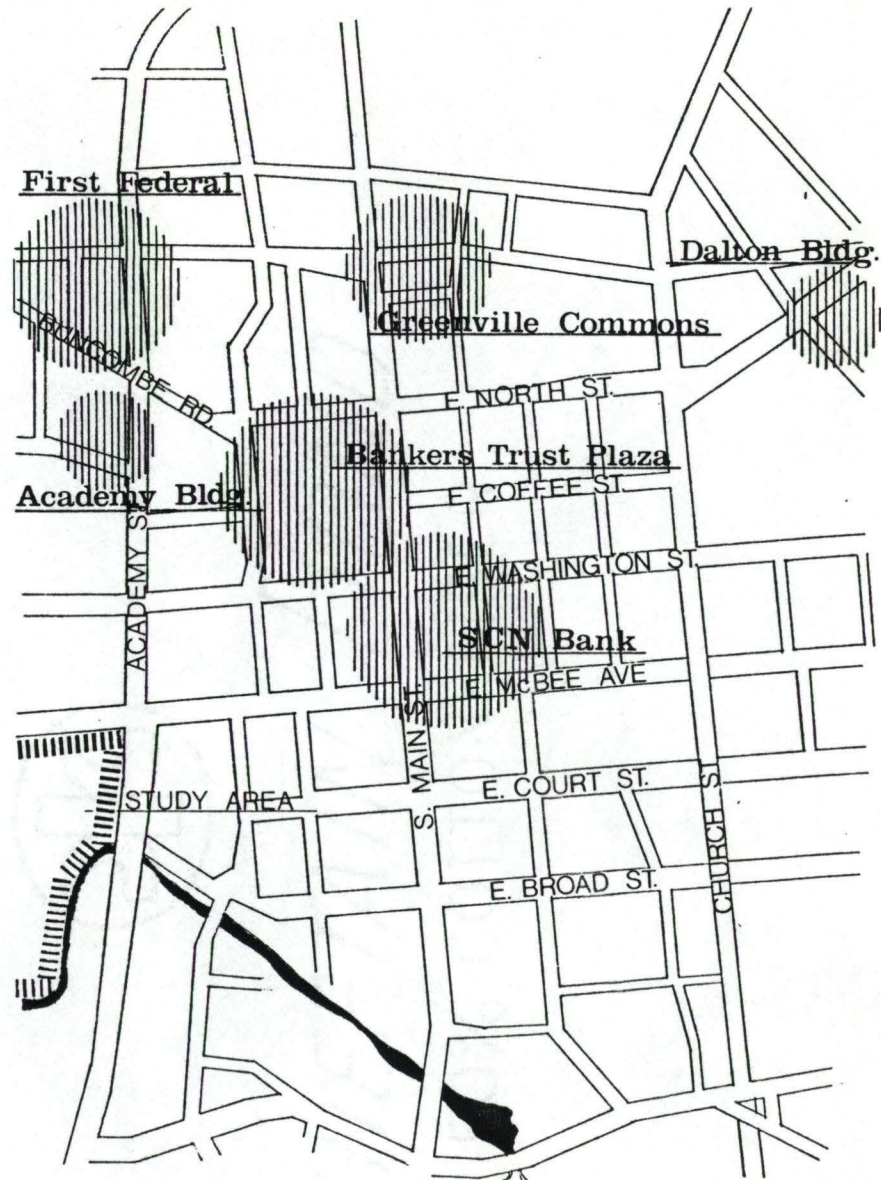


Diagram 8  
SUBURBAN OFFICES



**SETTING**



AGGREGATED

CONTINUED



REGIONAL LOCATION

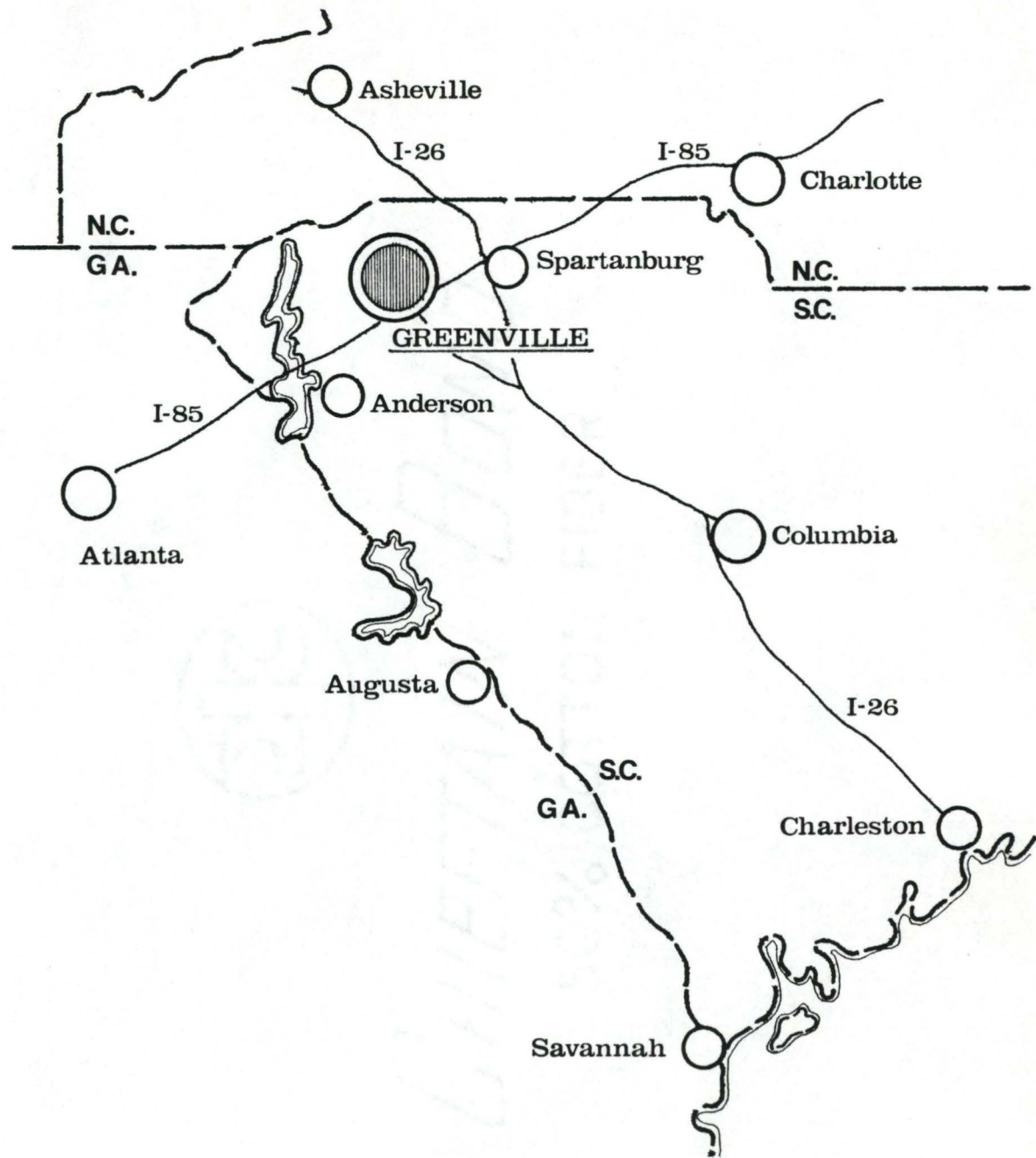
## REGIONAL LOCATION

Greenville County is located in the extreme northwest section of South Carolina. Approximately 250 miles inland, the county is almost equidistant from Charlotte, N.C., and Atlanta, Ga.

Greenville County lies in the southern portion of the Piedmont Plateau which extends from Virginia into northern Georgia. The northern section of the County is crossed by the Blue Ridge Mountains, with altitudes to 3,500 feet.<sup>14</sup>

Since settlers came to the Greenville area, it has been noted for a pleasant climate with mild temperatures, gentle breezes and an average amount of yearly rainfall. The advantageous combination of a pleasant climate, beautiful scenery, a strong economy, and low tax rates help to make Greenville a desirable location for industrial corporations as well as retirees.

Diagram 9  
REGIONAL LOCATION



WY  
FACILE  
ASSEMBLING DONOR  
COUNTRY USA

LOCATION ANALYSIS

## LOCATION ANALYSIS

The Reedy Bend Terrace site was chosen for this intensive study because of its potential for various activities and its extremely critical location within the city.

The actual site is bordered on the north by West McBee Avenue, on the east by Academy Street, on the west by Westfield Avenue and on the south by the Reedy River. The southern area, sloping towards the Reedy, contains a number of small, dilapidated mill houses. Westfield Avenue maintains a minor commercial spine with a variety of seemingly well-established businesses. The northeast portion of the study area is basically open, flat land containing a number of unused railroad lines and a large industrial warehouse of no architectural value.

Probably, the most crucial factor in the location of this site is its relationship to the existing Central Business District.

As mentioned in the historical background of Greenville, the town's first commercial and industrial developments occurred along the Reedy River. Further developments spread north, establishing Main Street as the commercial center of the town. Today, North Main Street remains the commercial spine for a city that is gradually becoming an urbanized shopping, financial and regional headquarters.

As in other cities, suburban shopping and office centers have taken a tremendous amount of business from the Central Business District. But, a recent revitalization plan helped give North Main Street a cleaner and more consistent approach. The purpose of this endeavor was to keep respectable businesses alive in the downtown area.

Plans for housing opportunities along the CBD edge should help in sustaining the commercial downtown. This will be due to shopping demands of new area residents who will strengthen businesses in the CBD. Furthermore, the addition of an office complex and its minimal commercial support facilities, will help solidify a weak corner of the existing CBD as seen in diagram (10). In contrast to the strong, well-defined northern edge of the CBD, the southern edge is presently poorly distinguished by a polluted Reedy River and an array of unsightly structures.

As mentioned earlier, ready access to the Reedy River from the site is an important highlight of its location. A major objective of this study will be conserving this natural resource while using it to the maximum commercial benefit possible. Consequently, the

addition of the Reedy Bend Terrace project should enhance the Reedy River in the eyes of the public.

Another influential factor is the existing West Washington neighborhood which lies to the west of the site. This is a low income, high crime neighborhood, desperately in need of public housing facilities as well as a sense of community pride. The present Reedy Bend Terrace site is commonly used by these residents for pedestrian access into town. Thus, the development of the site should take this means of access into account as well as participation on the community-level in plaza activities.

Diagram 10  
LOCATION ANALYSIS (CBD)

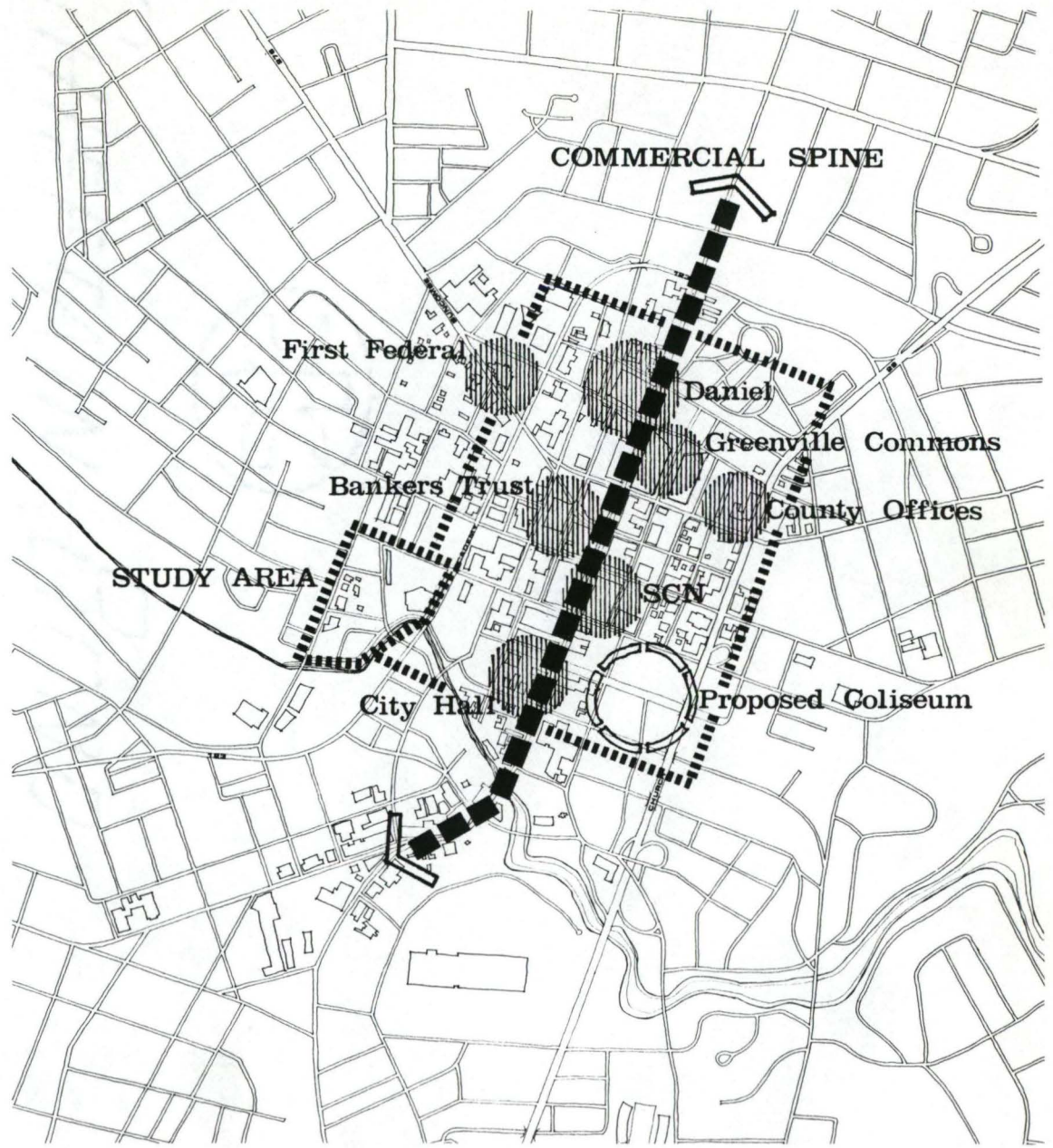
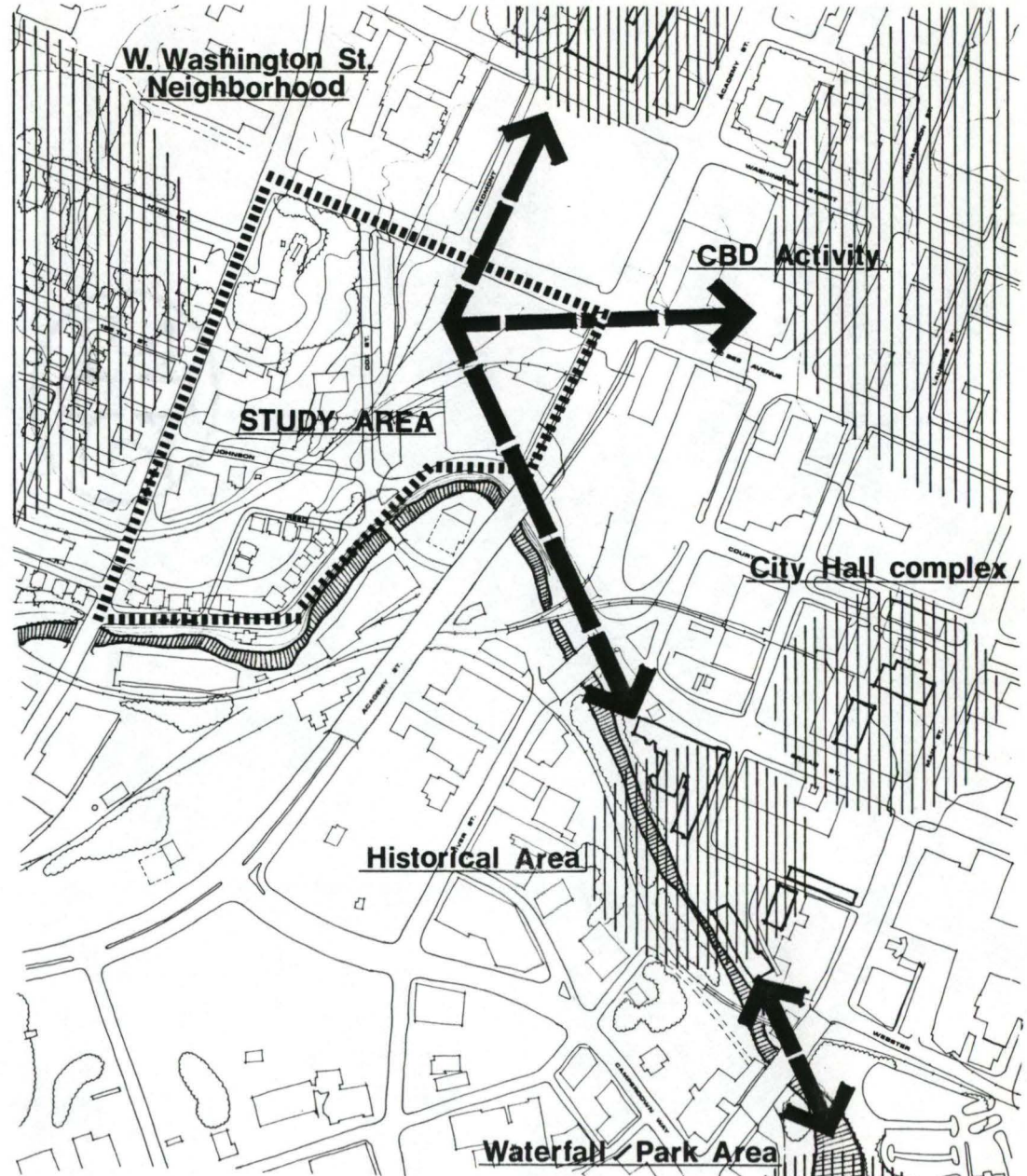




Diagram 11  
LOCATION ANALYSIS



Q12

ALICIA  
SUBSTITUTION FIBER (S)

SITE ANALYSIS

Diagram 12  
LAND USE (CBD)

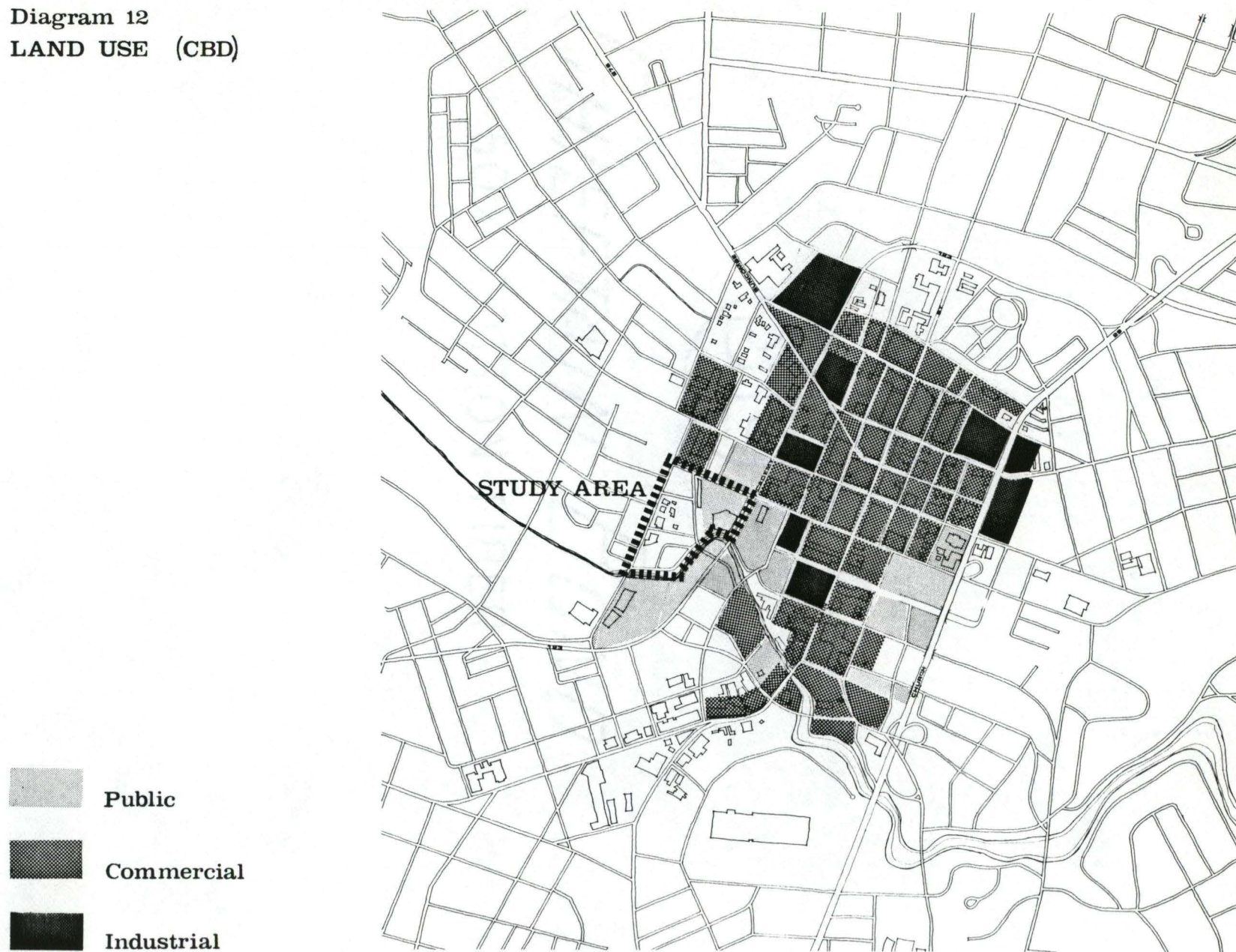


Diagram 13  
CRITICAL VIEWS and BARRIERS.

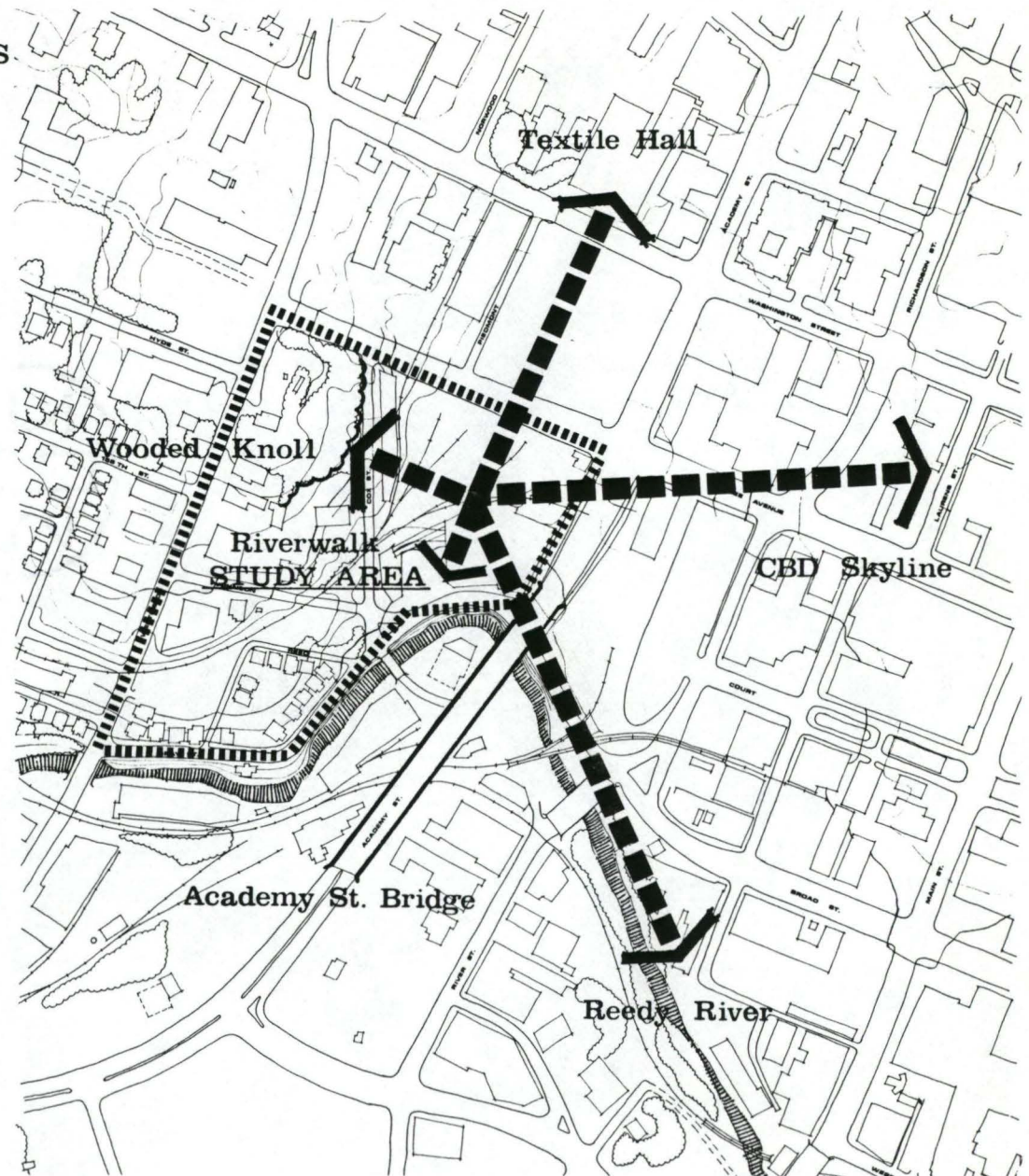


Diagram 14  
CIRCULATION

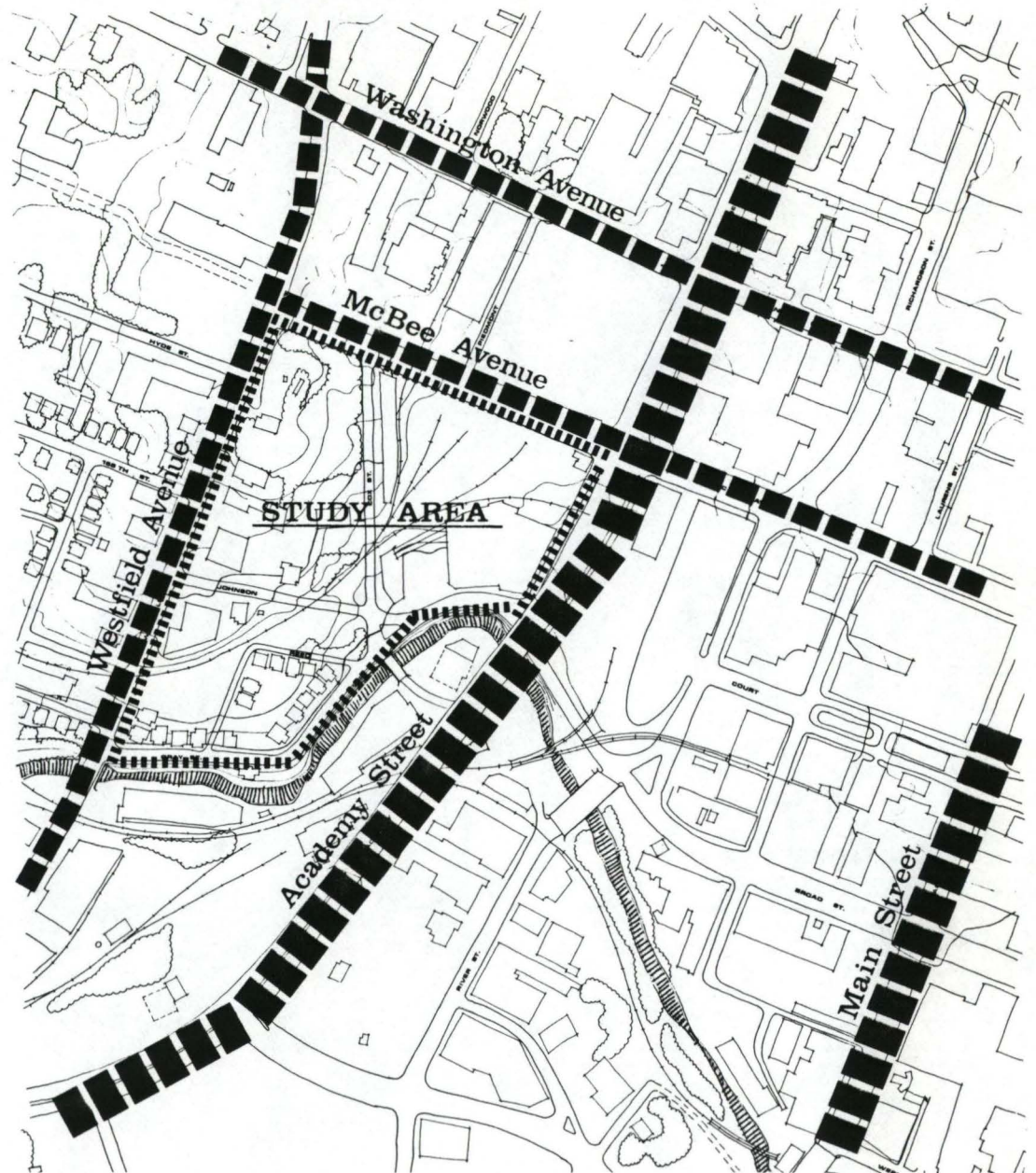
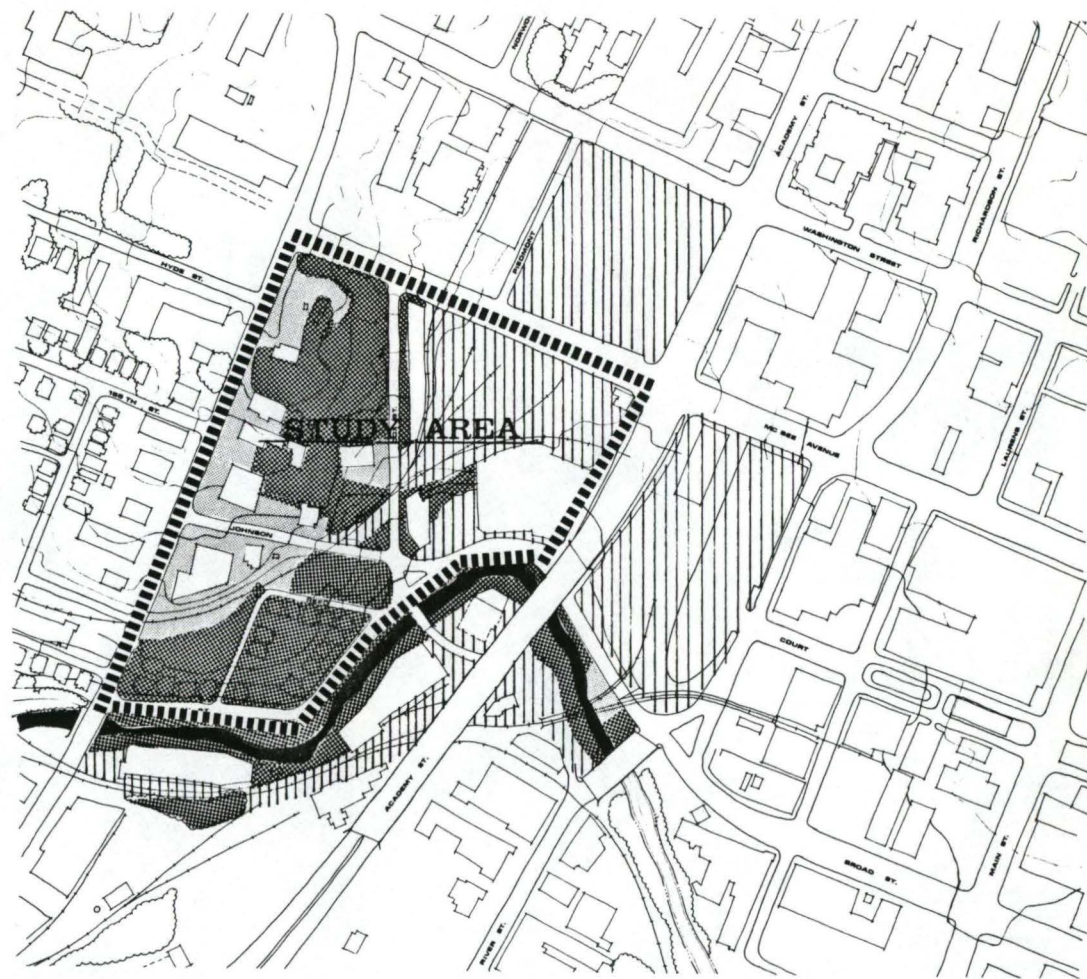


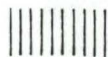
Diagram 15  
VEGETATION



Trees

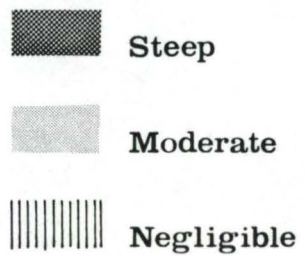
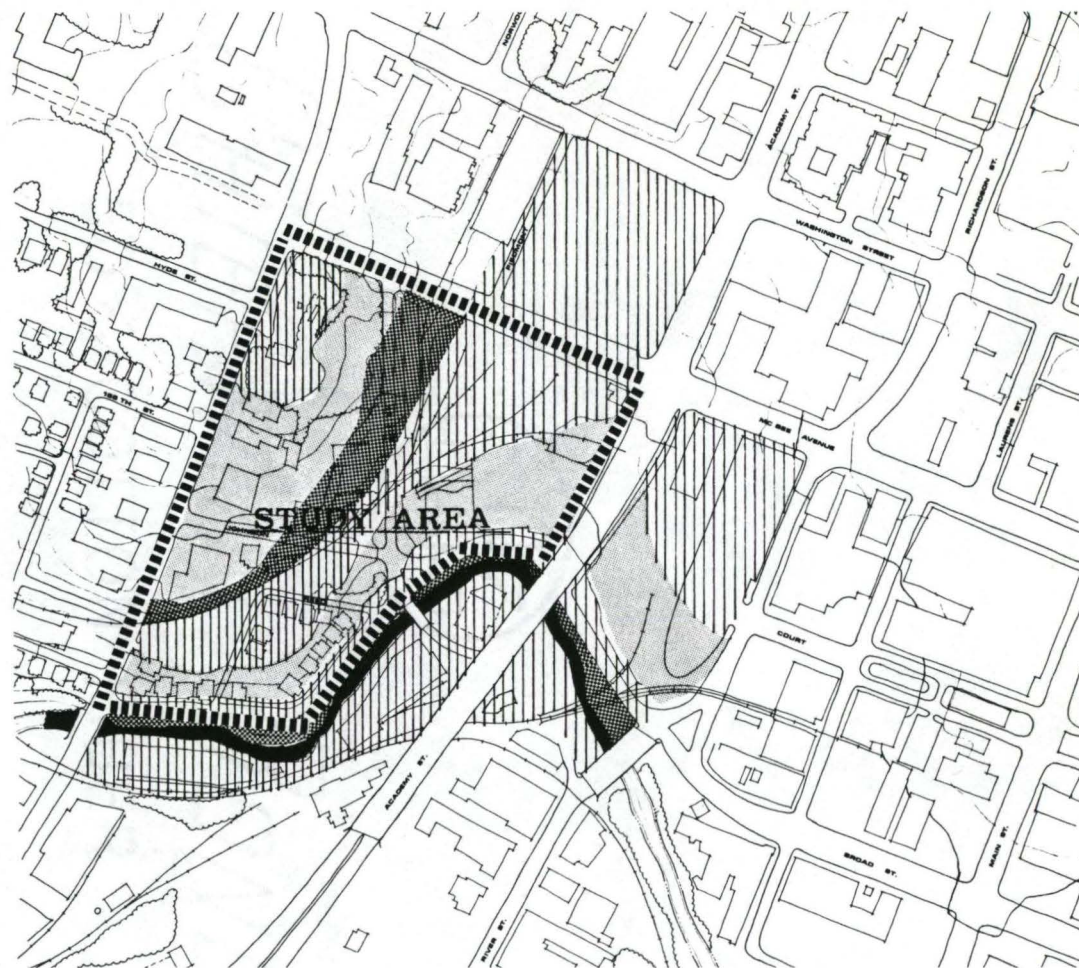


Low Brush / Sparse Trees



Grassy

Diagram 16  
SLOPES



REEDY RIVER ALTERNATIVES



REEDY RIVER  
ALTERNATIVES

"The most intensively used and most often abused resource on earth--the river of the urban region."<sup>15</sup>

The Reedy River, with a total drainage area of 352 square miles, is a major tributary of the Saluda River and flows in a southeasterly direction to its union with the Saluda at Lake Greenwood. From its source in the foothills of the Blue Ridge Mountains, the Reedy flows for 77 miles draining the western part of Greenville County and the northwestern portion of Laurens County. Sloping steeply at its outset the Reedy falls 110 feet in the upper 5 miles and then travels through low banks in a narrow alluvial valley with an average slope of 6.7' per mile for about 6 miles. After reaching this point in the City of Greenville, it flows for about 1.9 miles sloping 10.5' per mile climaxing in the city's center in a waterfall which drops about 50 feet.

Below the falls, the stream slopes from 3 to 9 feet per mile. The stream's normal width increases from about 20 feet at its headwaters to approximately 40 feet in Greenville and to 60 feet near the mouth.<sup>16</sup>

### Flood Plain vs Development

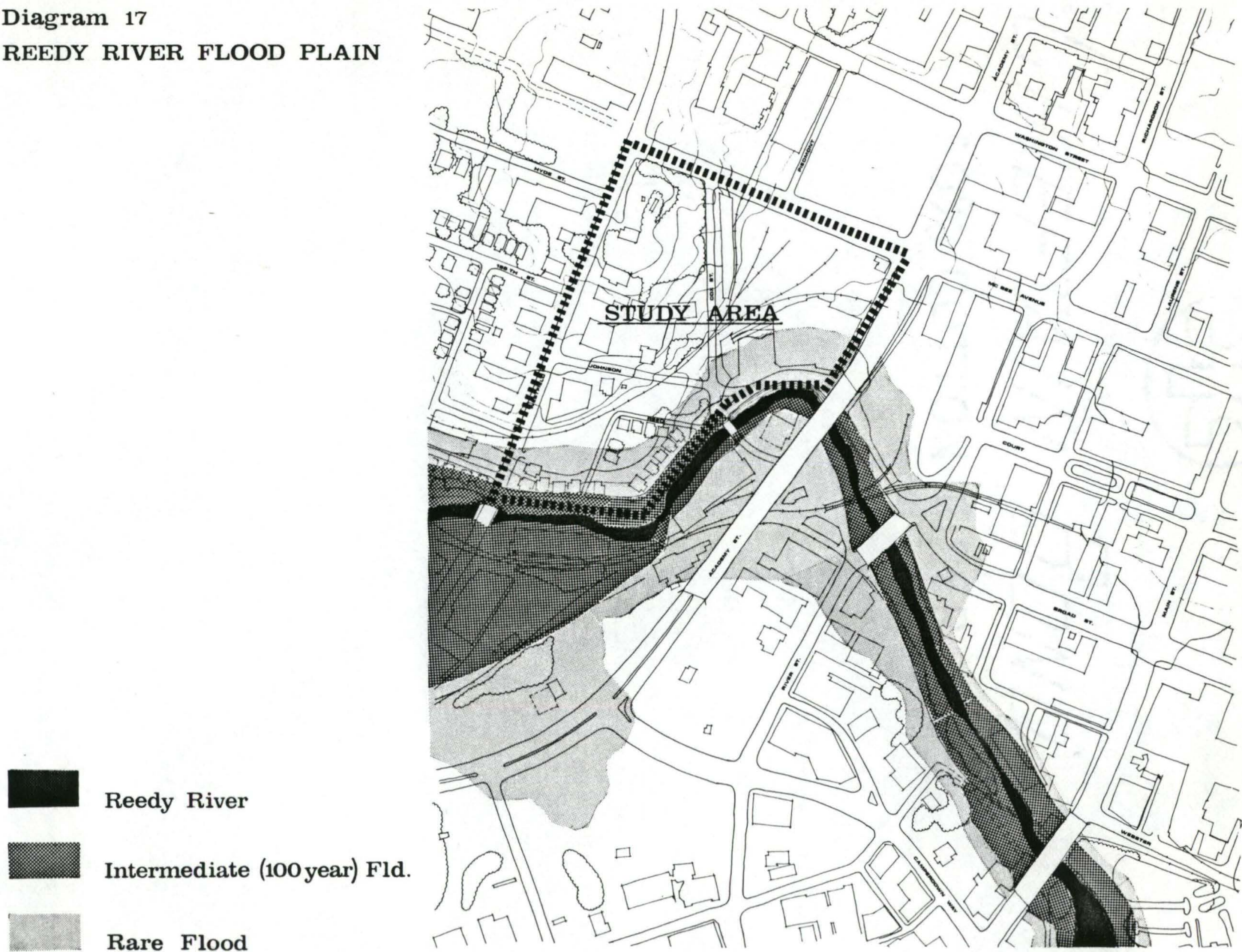
Land along the Reedy ranges from urban development in downtown Greenville, to woodland and pastureland in areas north and south of town. It is likely that this land will come under pressure for future urban development--commercial, industrial and residential.

The flood plains in the Greenville area presently include residential, commercial, and industrial development. In downtown Greenville, the flood plains of the Reedy are almost completely developed leaving no room for further flood plain encroachment. However, there are some depressed areas north and south of Greenville, within the flood plains, which are likely to be redeveloped in the near future.

The purpose of flood plains and wetlands is absorption and retention of flood waters to protect man's developments in downstream areas.

However, historically, man has settled on the riversides and watershed areas. In fact, on these banks man's "historical works and architectural legacies" can be found as well as the landscapes man uses "to marry his own creations to those of nature."<sup>17</sup>

Diagram 17  
REEDY RIVER FLOOD PLAIN



Riverside resource value directly conflicts with man's present careless attitude. This attitude has not always prevailed and in fact, in earlier eras, the rate of technological change was slow enough to allow most problems to be grasped and suitable answers drawn. Present damage to riversides of urban regions is not solved by the new environmental awareness of today's public. Actually, "economic and social demands that cause wasteful consumption of the water's edge are accelerating exponentially."<sup>18</sup>

The future outlook of the riverside looks bleakly towards "structures with detrimental impacts on the ecological, functional and visual values of our fast-disappearing riverside."<sup>19</sup> A practical solution with economic bonuses is one that conserves the greatest amount of natural resources but supplies enough necessary materials for essential growth.

For this reason, the two factors of aesthetics and economics must be taken into account. Riverside interests must combine ecological and aesthetic protection, with "legitimate and compatibly designed waterfront economic uses."<sup>22</sup> The latter would include exposure to the greatest view of the river landscape for those who live and work along the river's slopes and ridges.

**RESOURCES**

50% (G) (C) (B) (P) (U) (A)

TABLE-A

ANALYSIS OF BUILDING TYPE

ANALYSIS of BUILDING TYPE

HISTORICAL ANALYSIS  
OF BUILDING TYPE

Office buildings are the largest and most complex structures ever built solely for human beings and to answer human needs--the human factor must be predominant in office buildings.<sup>1</sup>

The actual history of the office building as a standard building type is not a long one. Prior to the industrial revolution, administrative and clerical work was accomplished within the establishment of the small businesses. As the industrial revolution began to have its effect, especially in America, it became necessary for the corporations which evolved to have large office forces to handle the clerical chores of the increasing number of professionals.<sup>2</sup> The office building emerged at this time, largely in response to the needs of a growing and increasingly bureaucratic society and the era of the organization of man.

It took until 1930 for the United States to accumulate a billion square feet of office space, while during the following three decades that number nearly doubled. So far, in the seventies, many million square feet of office space has been started, and according to the New York Regional Plan Association, the country

will double its total office space again by the year 2000.<sup>3</sup>

Traditionally office structures fall in one of three basic categories: tenant-owned office buildings, investment-type (speculative) office buildings, and municipal, or federal government office buildings. Since 1946, about one-third or more of all new office buildings have been erected for owner occupancy rather than for speculative rental.<sup>4</sup> Owner-occupied buildings assure the owner a degree of continuity in design and management of a structure.

The speculative office building is most often planned for obtaining a maximum income with a minimum original investment. The speculative structure must be designed to accommodate an ever-changing tenant, unlike the attention given to the owner-occupied building. Therefore to be a financial success, the building must be as efficient as possible within the limitations imposed by its being intended to meet the needs of different tenants equally well.

As a building type, the office building has always been of special interest to the architect, first because its scope is well within the capabilities of any design office, large or small, and



second, because of the challenge of finding the particular expression which, if corporate, best represents the client, or, if speculative, will best attract tenants.<sup>5</sup> Most often it is this expression of character, whether progressive, eclectic or monumental that stimulates the success of a speculative office building.

Since Louis Sullivan's introduction of the tall, monumental office building in the early 1900's, this building type has assumed its role in architectural history as an innovative and valid expression; one that "embodies a fundamental articulation of space, structure, material, and utilities in a manner true to contemporary industrialized technology."<sup>6</sup> Economically speaking, it is well known that expensive property dictates a tall building for adequate rental return. The added expense of building a taller structure is offset by the premium rentals the upper floors bring, such space is quieter, cleaner and offers daylight, privacy, prestige and a view. The principal difficulty with the common packing together of skyscrapers is on the plaza level below, where confusion, congestion and aesthetic chaos prevail. "In the city, an open space with a touch of green is a blessing."<sup>7</sup>

Office buildings typically only occupy a small area in the city, yet their height and concentration render them the most distinctive visual feature of the modern urban landscape. Offices are regarded by many as visible proof of a city's growth and prosperity. Their recent rapid development in cities the world over has brought the location of office activity very much into the public eye.<sup>8</sup>

But it remains for architects and planners to relate the office building to the total community and the human scale--that is the challenge for future designs.

1992

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CASE STUDIES

Paseo del Rio Redevelopment

San Antonio, Texas

Primary Development Plans:

1930 Works Project Administration

1939 Conservation Society

O'Neil Ford, A.I.A.

Reference: "San Antonio's Linear Paradise," Sinclair Black,  
A.I.A., A.I.A. Journal, July, 1979.

Program

The Paseo del Rio Redevelopment is unique when compared to other revitalization plans because of its lengthy 50-year period of development. The chronologically-ordered program objectives that follow illustrate various goals set forth by local and government forces throughout those years:

- adopting a plan to eliminate the flood potential of the Paseo del Rio.
- promoting San Antonio's regional characteristics, while producing a sense of place with an architecture of humanism.
- developing the entertainment potential along the river in hopes of stimulating tourism.

Concept

From the beginning stages of San Antonio's revitalization, local architects and conservationist recognized that their initial task was identifying existing opportunities and resources. By pin-pointing the unique characteristics of San Antonio and the

immediate study area in particular, several concepts were developed.

These were:

- constructing a canal through the downtown historic district to relieve potential flood waters of the Paseo del Rio.
- preserving and promoting the natural beauty and distinct character of a new river walk.
- maintaining the charm and atmosphere of old San Antonio along the river walk.
- initiating an integrated shopping, entertainment, and recreation area for visitors and the people of the city.

#### Building Response

Presently, the heart of the revitalization area is a U-shaped, 1.2-mile loop along the natural river bed. This is where the central core of San Antonio first developed. Today, a 10-mile long river corridor contains most of the city's major open spaces, cultural facilities and important historic areas.

A stroll or boat trip along the river corridor today will reveal a shaded paradise of color, texture and lush plant materials. Restaurants, shops, cultural activities and open space follow the river walk past historic areas, under bridges and among the new structures.

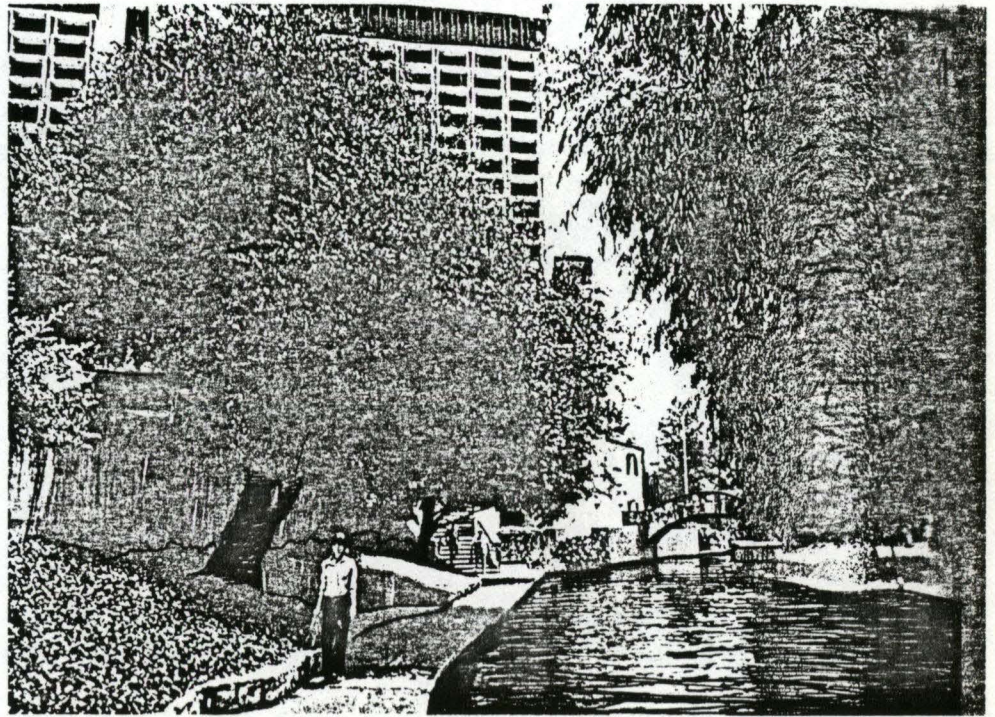
The first major restoration activity was the La Villita neighborhood which dated back to the 1720's. These small, brick, stone and adobe houses were retrofitted into a variety of the present-day commercial functions.

The mid-1960's saw the busy planning and building of Hemisfair '68. It brought increased activity and sparked the construction of more restaurants, shops and two major hotels. More recently, several of the older buildings have been renovated for housing purposes which is a healthy sign for any urban environment.

#### Analysis

The Paseo del Rio redevelopment has proved to be an incredible commercial success and source of community pride. Its lengthy development period expresses the patience and genuine concern that San Antonio's leadership groups and interested developers felt for the Paseo del Rio area. These qualities, important to any revitalization effort, make San Antonio a successful prototype for any future redevelopment nationwide.

Diagram 18  
SAN ANTONIO  
RIVERWALK



North Carolina National Bank Plaza Complex  
Charlotte, N.C.

Odell Associates, Inc./Thompson, Ventulette and Stainback, Inc.  
Source: Promotions Dept., Odell Associates, Inc.

Program

North Carolina National Bank, one of the Southeast's largest banking systems, analyzed their long-range space needs and decided space requirements for a home office far exceeded their existing building area. Therefore, the clientele of NCNB and retail developers set out to accomplish two major objectives:

- to design a forty-story, steel frame office tower which would serve as the anchor for the city's financial district.
- to develop a first-class hotel, retail shopping mall, and a downtown business club.

Concept

The developers visualized the project in two phases: phase one involved the office tower, and phase two encompassed the Radisson Hotel, shopping mall and business club. By using a series of overstreet pedestrian bridges, the NCNB Plaza Complex could be linked to the Civic Center and other existing commercial and retail properties.

Throughout the conceptual stages, the two key words of efficiency and aesthetics were emphasized. From its inception, the



NCNB Plaza was planned to be energy-efficient. In addition, the developers hoped to meld the plaza into the progressive attitude of the Central Business District. Theoretically, the total development would serve as a core for the CBD and become a focal point of revitalized urban activity.

#### Building Response

Phase one dealt with the function of the office tower and bank. It enclosed 875,000 gross square feet in a sleek, hexagonal steel frame tower faced with insulative, reflective glass. Sixty perimeter steel columns gave the appearance of a column-free interior, and the six-sided shape permitted natural lighted offices. Ground level development included a landscaped pedestrian entryway which invited year-round activity.

Phase two involved the 18-story, trapezoidal-shaped Radisson Hotel and its supporting lobbies, ballrooms, restaurants, meeting rooms, and lounges. The 53,000 square feet of retail shops adjoined the indoor mall which extended over several city blocks. Below the mall and hotel, 400 parking spaces remain available on three levels.

The entire NCNB Plaza Complex, initially aided by computer testing for structural and wind stability, is now environmentally controlled by a central computer.

#### Analysis

The NCNB Plaza Complex, completed in 1978, has far surpassed planners' expectations. It functions as the focal point in Charlotte's CBD and is a vital anchor in a revitalized commercial district. The unique hexagonal form is a refreshing part of the progressive city skyline and its mirrored glass facade reflects the activity and bustle of the pedestrian level.

Diagram 19  
NCNB PLAZA



**PROGRAM**

SPATIAL RELATIONSHIPS

## SPATIAL RELATIONSHIPS

Through the decades certain types of floor plans have emerged in office architecture. The same can be said of functional compositions in the vertical sense. As long ago as the end of the nineteenth century, Louis Sullivan was making important contributions in formulating a correct functional solution to the problem. Eventually he developed a three-fold division in the vertical arrangement of multi-level office buildings.

On the ground floor he proposed a zone with large rooms or halls for public purposes; above this, several floors of offices with more closely spaced columns; and finally, at the top of the building, a floor accommodating the mechanical installation. The idea underlying this scheme, even though it has since undergone modification, has proved to be very sound, based as it was on an accurate analysis of the actual conditions.<sup>29</sup>

The subdividing of a typical office building floor in plan may be based on either of two principles: the various rooms are accessible from corridors (in which case, single, double, and triple layouts may be distinguished) or, alternatively, access

to the various parts of the layout is gained directly from the utility core and corridors are dispersed with.

Single-zone layouts are relatively expensive, and since the corridor has rooms on one side only, it is primarily suitable for institutional buildings such as schools. The double-zone layout is sometimes regarded as the optimum solution for a medium-sized office building. It is extremely economical and functional. Both double and triple layouts should be oriented so that the offices have eastern and western exposure.

In higher multi-level buildings the space requirements for utility cores increase so considerably that the double-zone layout with utility cores located in the office zone becomes a questionable arrangement. The vertical circulation facilities take up valuable office space, and their location within the office zone complicates both the structure and the internal planning of the building. For these reasons the triple-zone layout has been evolved and may be regarded as the typical solution for very tall office buildings.

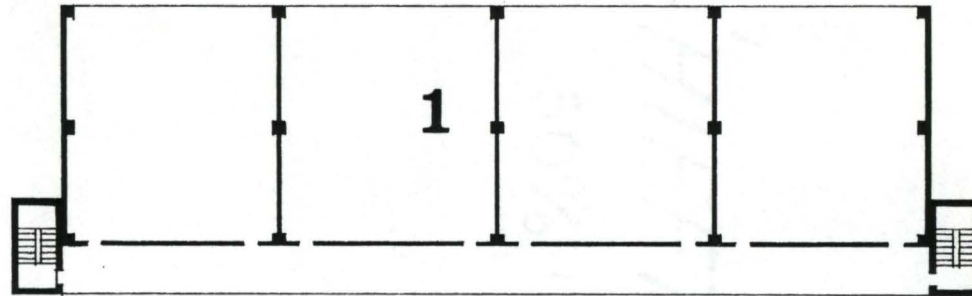
All circulation facilities and sanitary accommodations are placed in the third or central zone, in the interior of the building.

The offices are arranged without interruption along the external walls. The triple-zone layout is not only extremely economical, but also offers many advantages from the viewpoint of aesthetic and structural design. Triple-zone layouts are generally employed in high multi-level buildings which are predominately administrative in character, which have a limited pedestrian traffic to and from the street, but which do have a considerable volume of internal circulation between floors.

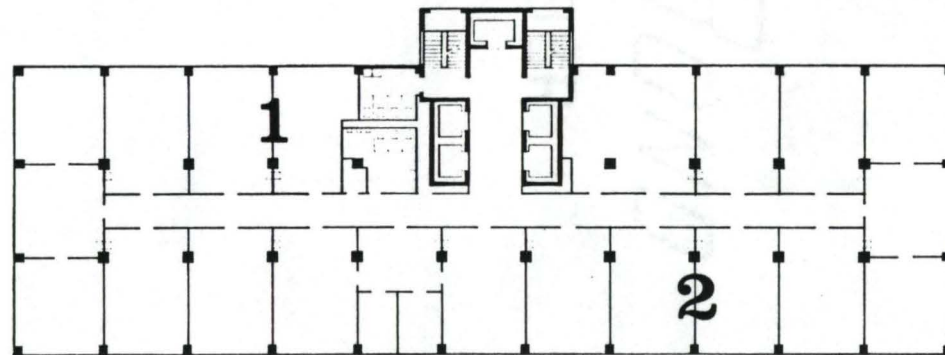
When designing the desired zone layout for an office building, it is important to simultaneously choose the appropriate room units. Three basic room unit systems are the open layout, the moveable partition layout, and the individual room system. Each system has its share of advantages and disadvantages.



Diagram 20  
ZONE LAYOUTS

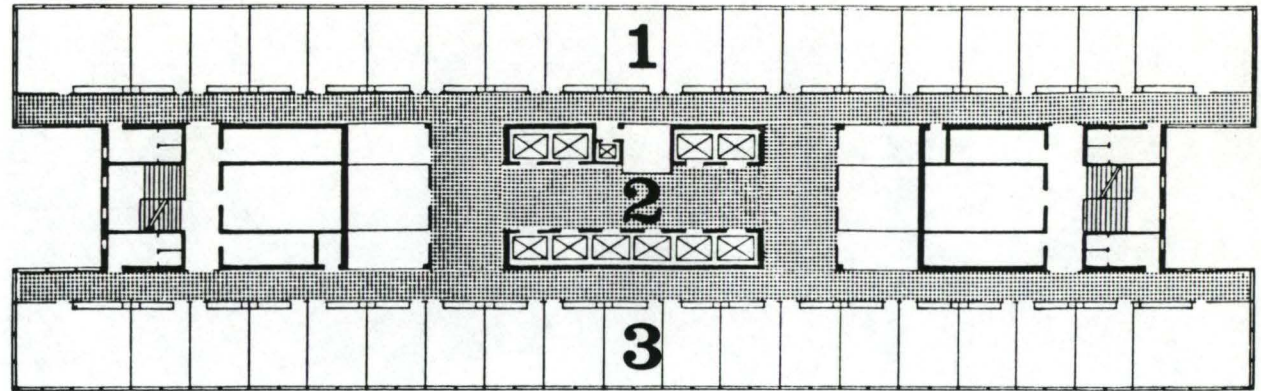


SINGLE ZONE LAYOUT

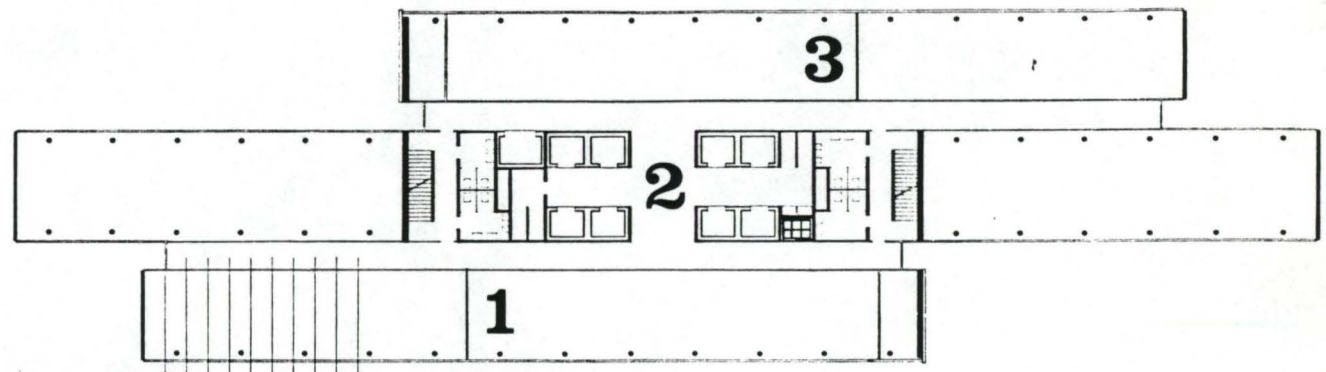


DOUBLE ZONE LAYOUT

Diagram 21  
ZONE LAYOUTS



TRIPLE ZONE LAYOUT



Staggered TRIPLE ZONE LAYOUT

SPATIAL REQUIREMENTS

PROGRAM  
REQUIREMENTS

In every office building design, there are certain necessary spatial requirements. The speculative office building is unique in that its primary goal is to provide the maximum amount of leasable space possible to benefit its owner, or developer to the fullest. The Reedy Bend Terrace Office Complex maintains this tradition by carefully grouping the vital service functions to a minimum and allowing the optimum amount of area for rental.

As presented in the following architectural solution, rental space can be leased in a number of ways, from complete floors of open plan layouts to a few hundred square feet of fixed walls. The following square footage figures are certainly subject to change as the needs of a major (or minor) tenant demand.

Office Building

Net leasable office space	216,000 sq. ft.
Plaza level display	20,000 sq. ft.
Mechanical/Service	37,500 sq. ft.
Riverwalk level Cafe/Restaurant	12,000 sq. ft.
Gross office building area - Total	285,500 sq. ft.

Parking Facility

Parking 825 spaces

(The facility accommodates 825 cars @ 1 space per 300 square feet of office space, plus provides spaces for off-hour activities.)

**CONCLUSIONS**

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DESIGN CONCEPTS

## THE REEDY RIVER

As the opportunity for a riverside development becomes more realistic, the need to provide certain environmental and functional goals and guidelines for the river edge becomes imperative. To insure the most successful development possible, these suggested goals should be carried out simultaneously with the proposed structure.

## ENVIRONMENTAL GOALS

- maintain and reestablish all areas with significant riverside landscape.
- maintain any significant views.
- establish a policy whereby all development in the floodplain can experience a flood without sustaining any significant damage.
- install a system of storm sewer filters at major storm drains to limit the amount of debris in the river.
- toughen and enforce environmental standards to insure that no harmful materials are discharged into the river.<sup>20</sup>



#### FUNCTIONAL GOALS

- maintain the social composition of the area by respecting the needs of the existing residents.
- improve contact between pedestrians and the river by strengthening sidewalks and bridges.
- establish a system of riverside graphics to strengthen the relationship between river, people and buildings.
- provide a suitable parking area for visitors within easy access of the riverwalk.

#### RELATIONSHIP TO CITY

Any design approach involving the Reedy Bend Terrace site is greatly influenced by its proximity to Greenville's Central Business District. The following concepts are aimed at preserving and enhancing the total urban fabric.

- by designing a major office building on the site, provide an anchor to an under-utilized corner of Greenville's CBD.
- let the proposed Greenway and building serve as visual end to McBee Avenue.
- develop a scheme which strengthens the importance of the proposed Greenway and addresses the Reedy River with similar respect.
- allow the Greenway to divide the office building and the proposed housing in order to serve as a buffer for the West Washington neighborhood residents.

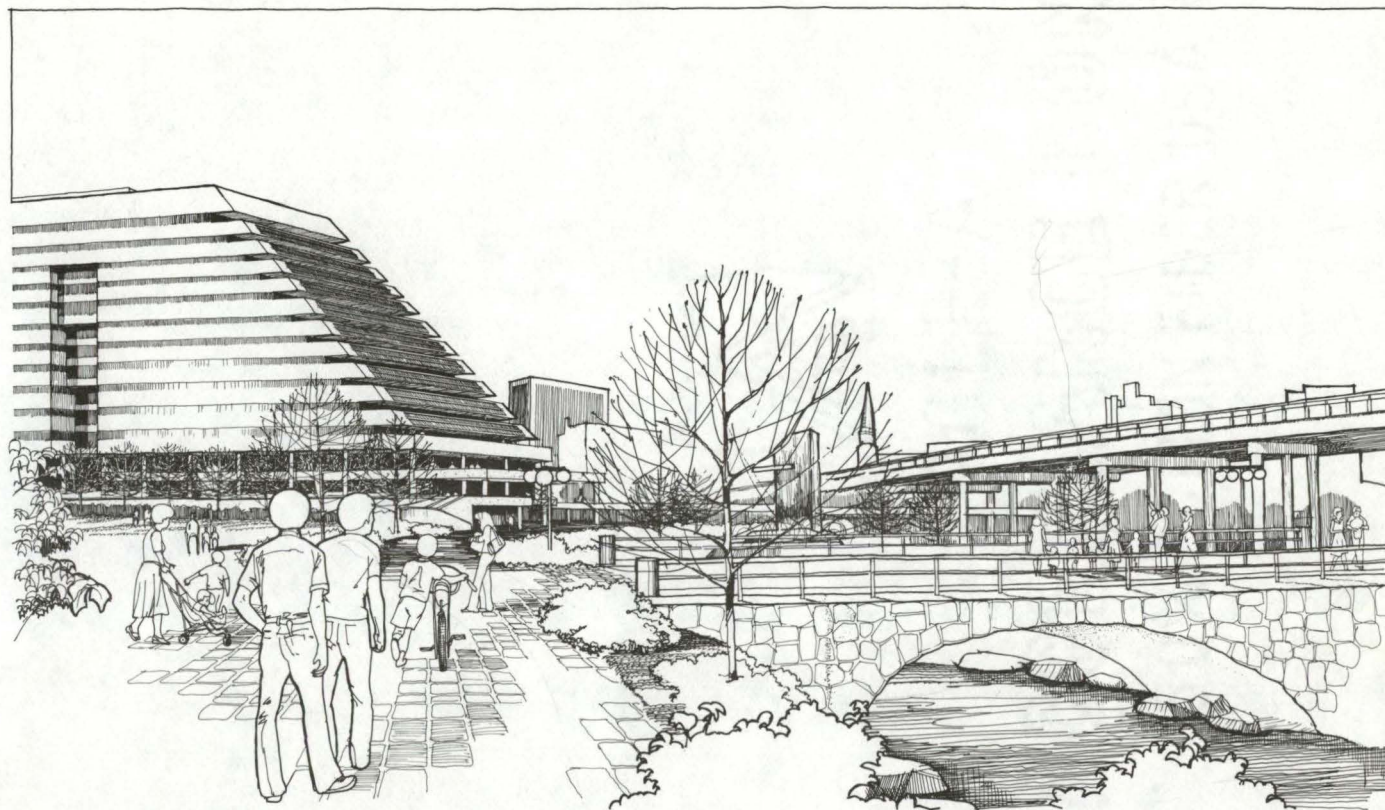
by restricting the building height to 14 floors, keep within the scale of similar office buildings on the outside edge of the CBD.

#### BUILDING CONCEPTS

The prime aim in the design of a speculative office building concerns its image in the client's eyes and its ability to attract tenants. Secondary concerns are centered around pedestrian and vehicular circulation, energy requirements and the actual rental space layouts. The following concepts were instrumental in determining the finished design of the Reedy Bend Terrace Office Complex.

- design a building that presents an urban high-rise image from McBee Avenue.
- create a building form that visually "terraces" itself down to the Reedy River.
- use a reflective, tinted glass to produce a light, sculptural form.
- provide a space on the northeast side of the building to serve as an urban entrance plaza.
- take advantage of the southern exposure by incorporating an extensive solar collection system.

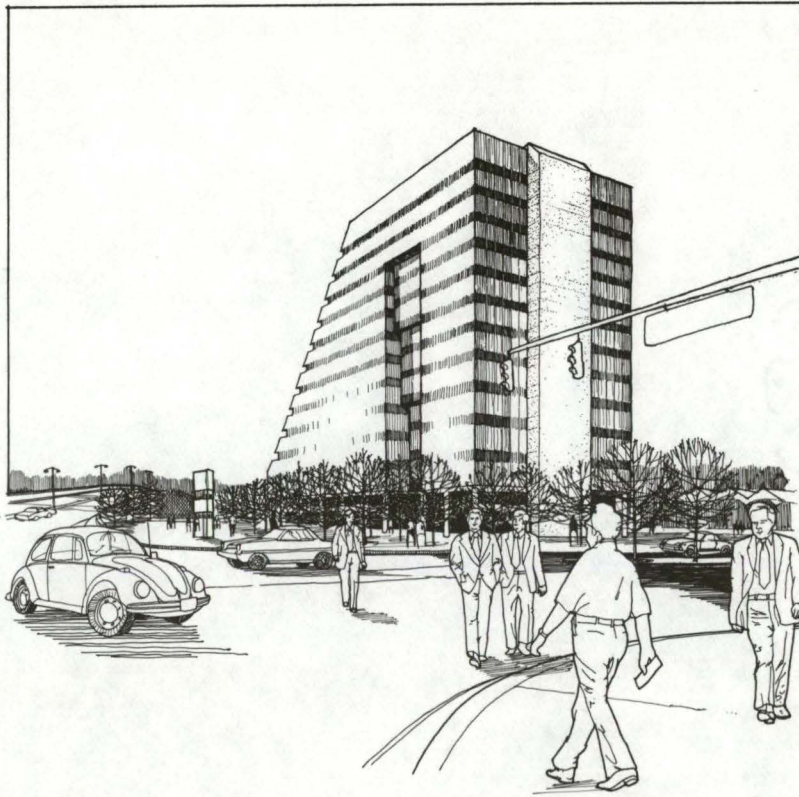
ARCHITECTURAL SOLUTION



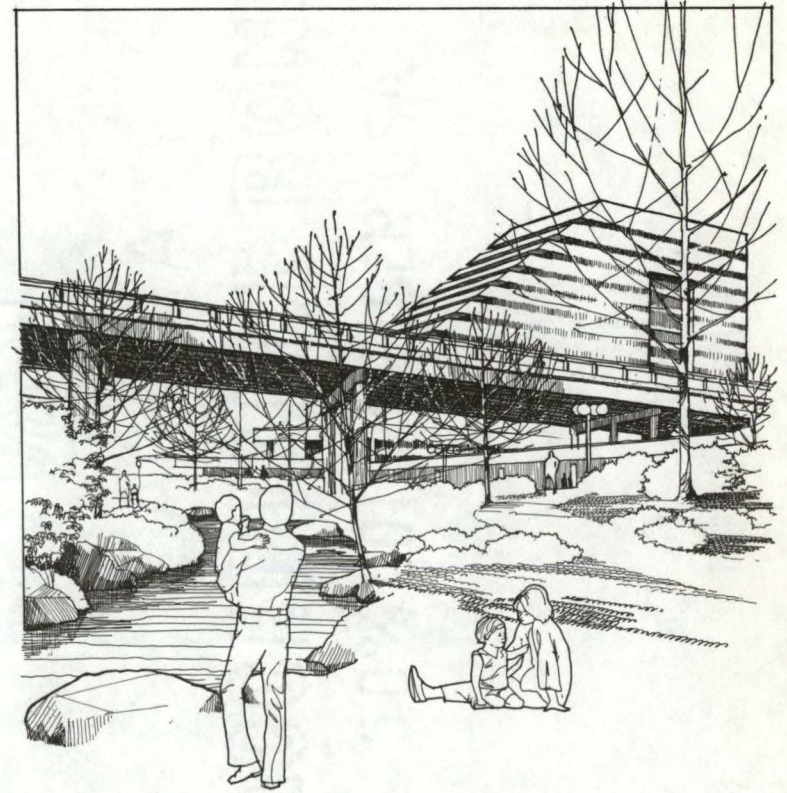
A terminal project submitted to the faculty of the College of Architecture, Clemson University in partial fulfillment of the requirements for the degree of Master of Architecture.

*Stephen T. Lindberg*

# REEDY BEND TERRACE OFFICE COMPLEX



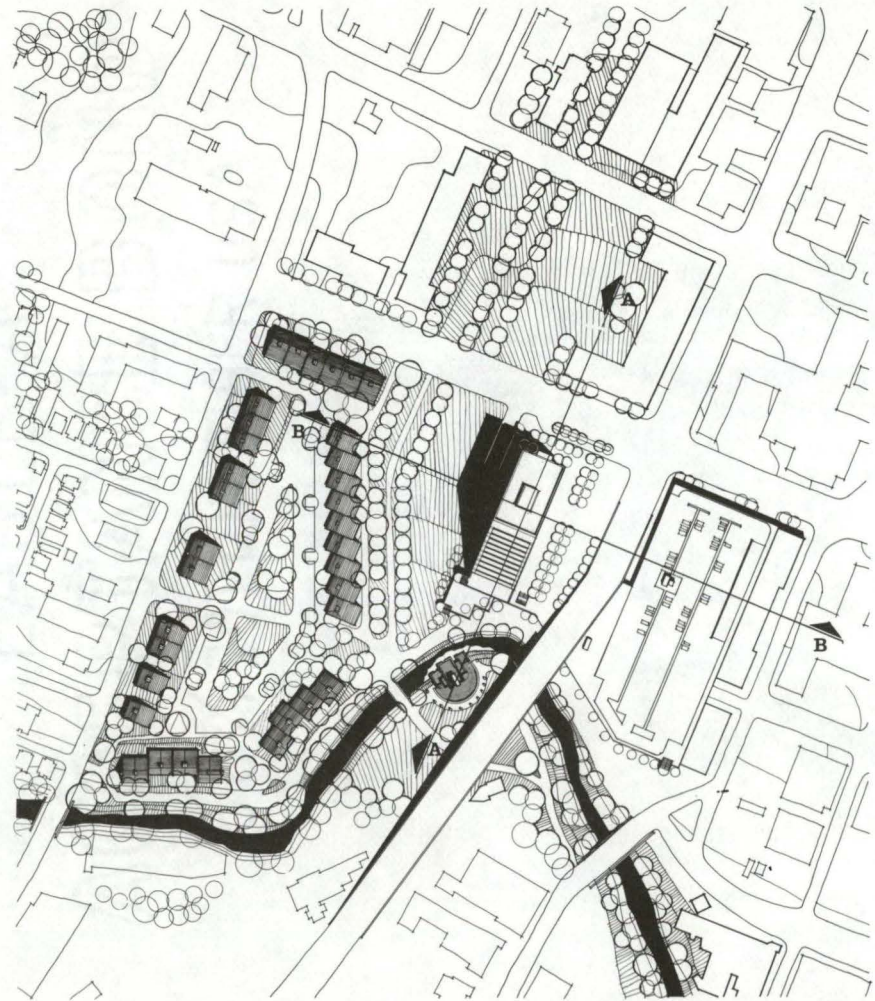
**Academy Street Approach**



**Riverwalk**

# CHARACTER

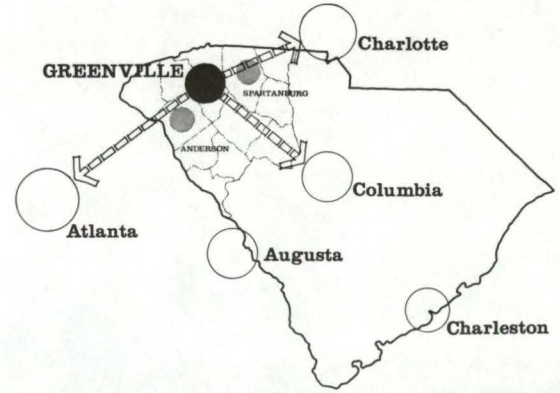
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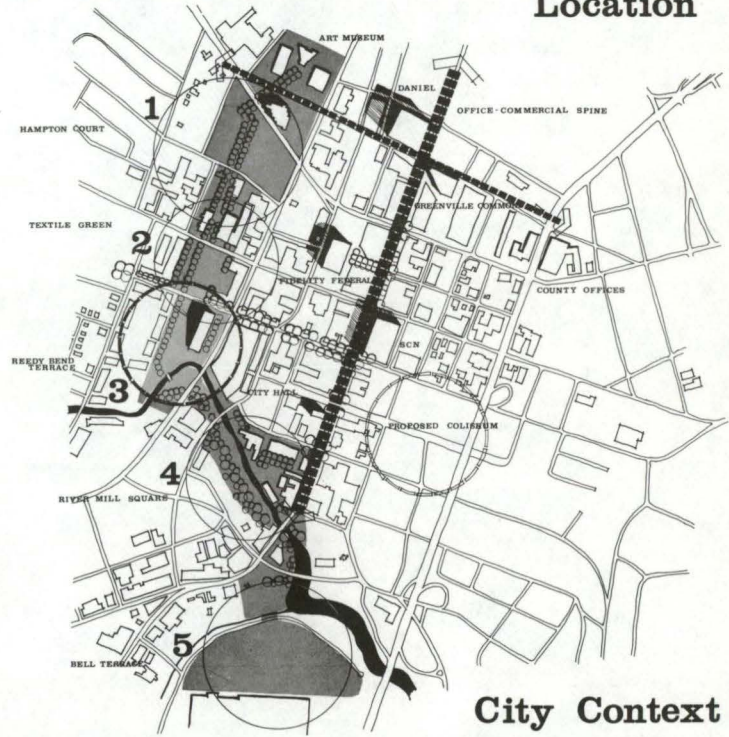
Site Plan



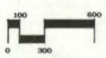
SITE

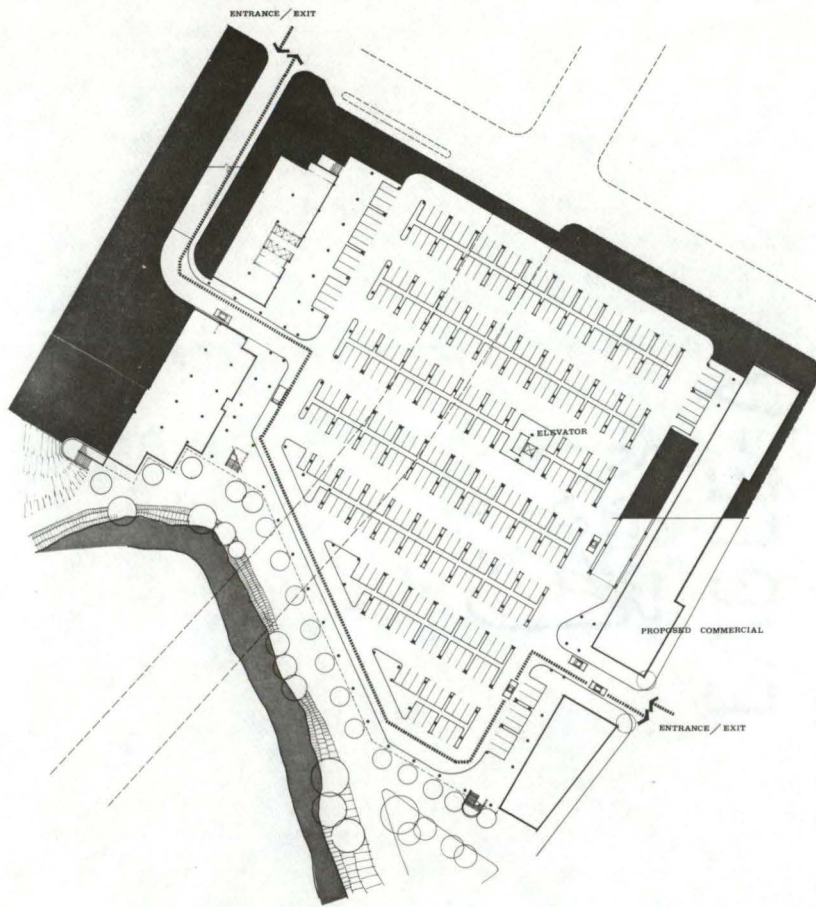


Location



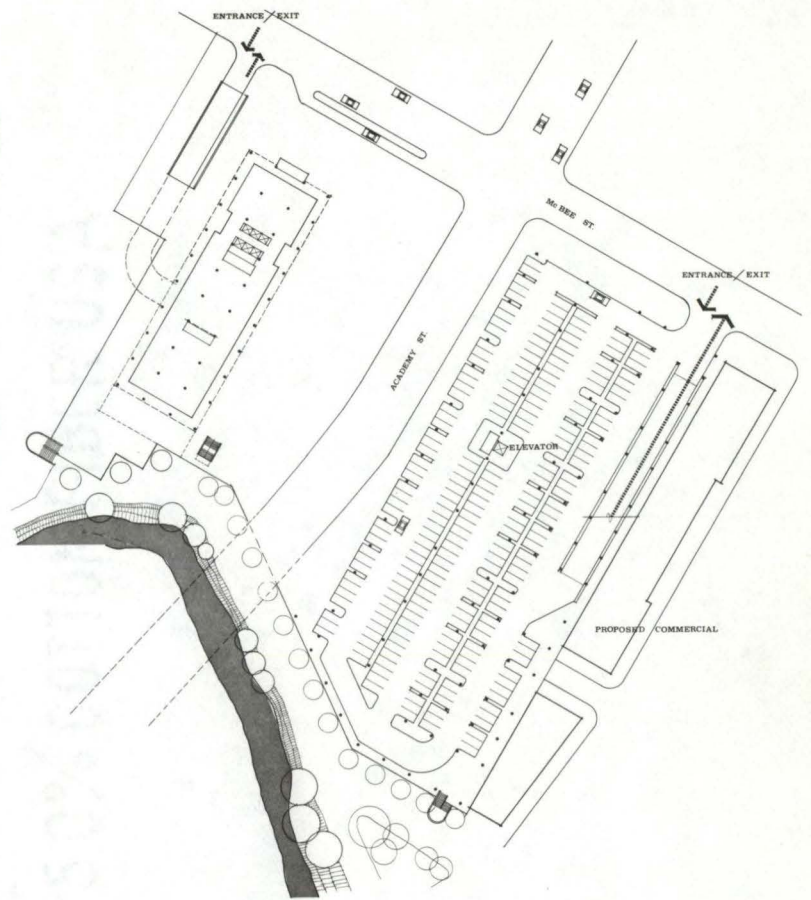
City Context





**Riverwalk Level**

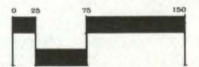
elev. +914 (165 Spaces)

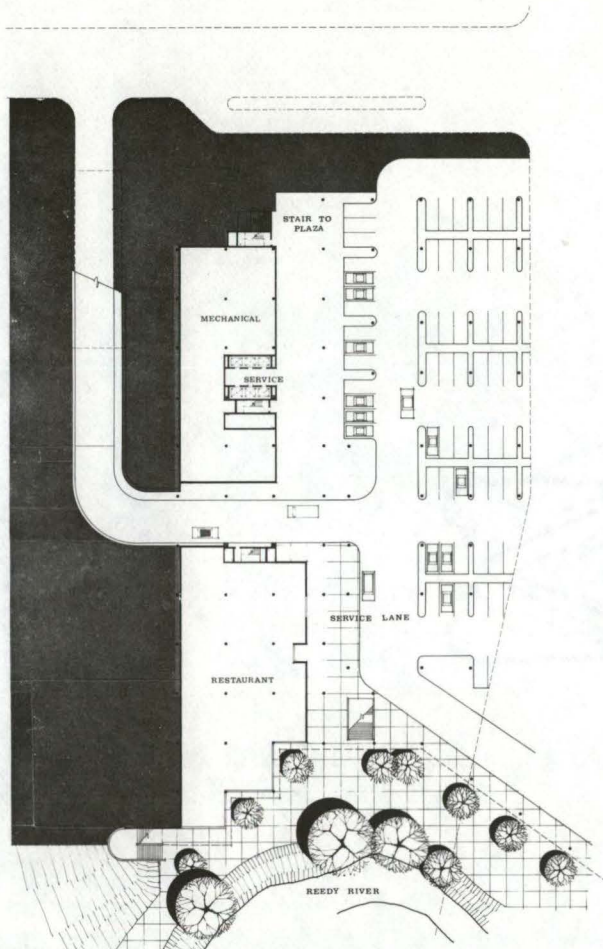


**Plaza Level**

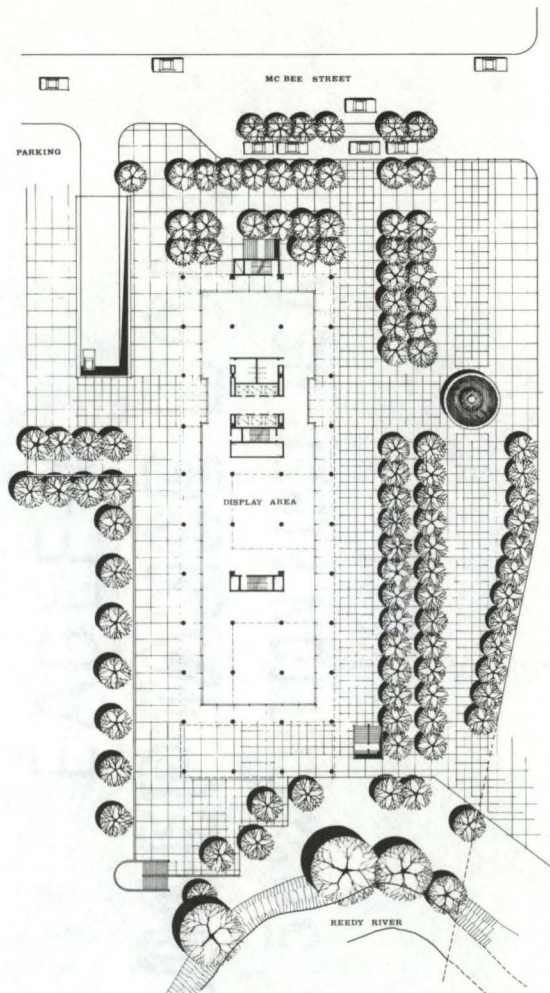
elev. +928 (204 Spaces)

# PARKING

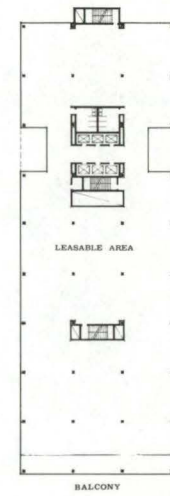




**Ground Level**  
elev. +914

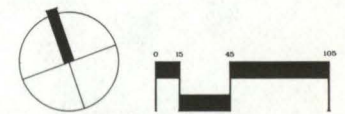


**Plaza Level**  
elev. +928

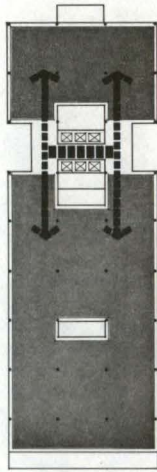


**Typical Floor**  
Levels 4-13

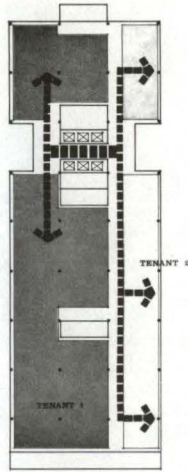
# PLANS



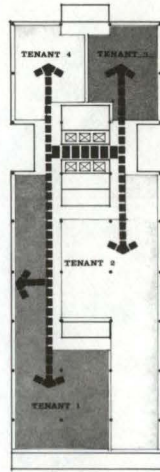




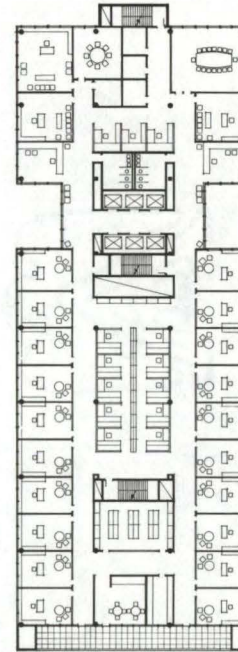
Single Tenant Usage



Double Tenant Usage



Multiple Tenant Usage



Fixed Wall

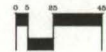


Open Plan / Moveable Partition

Tenant Leasing Variations

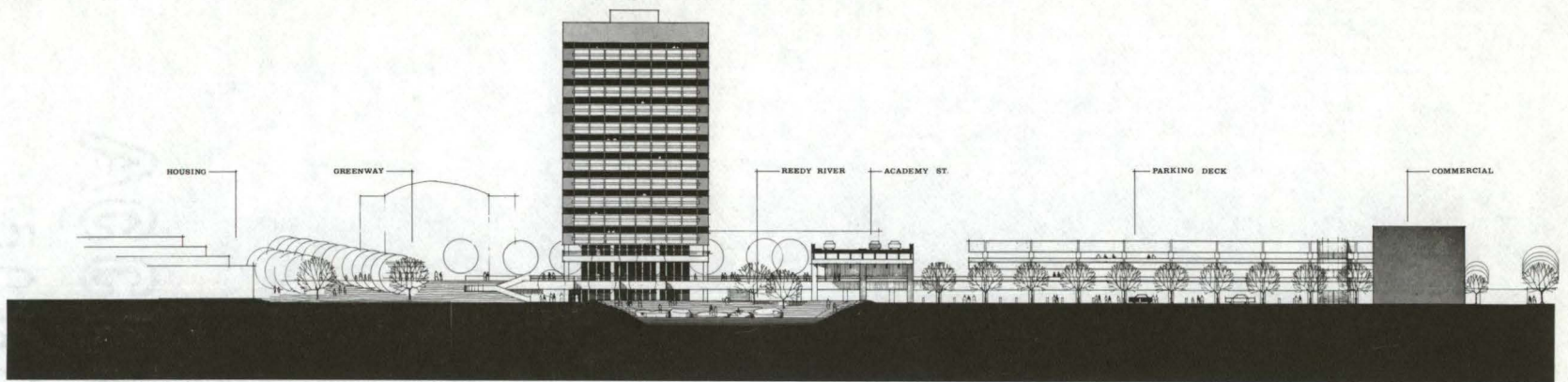


Floor Layout Schemes

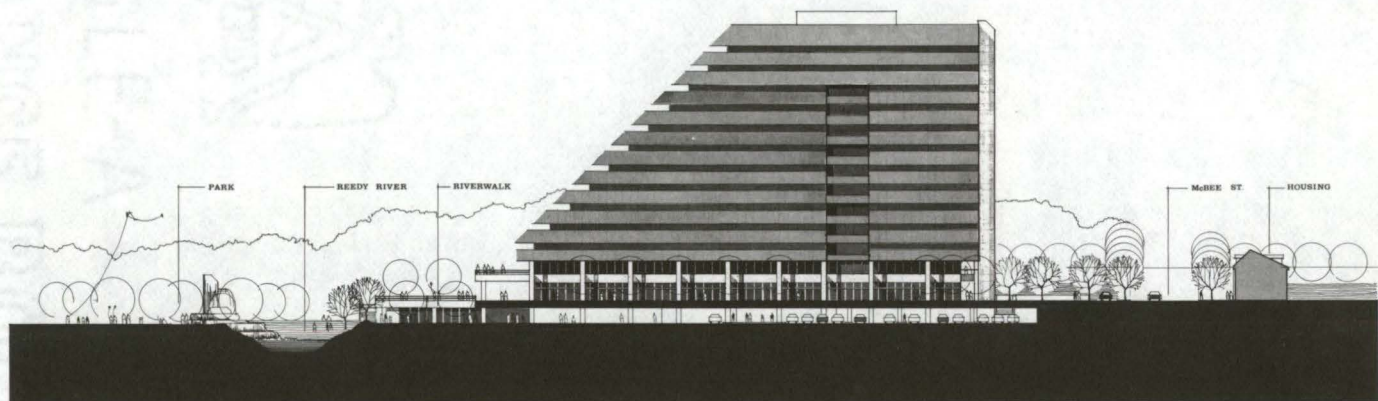


PLANS



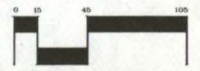


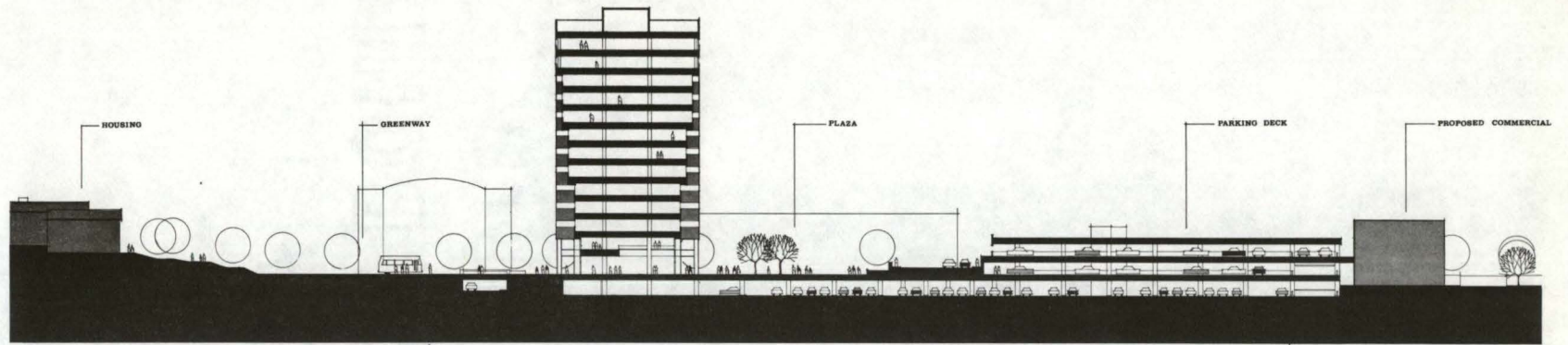
**South Elevation**



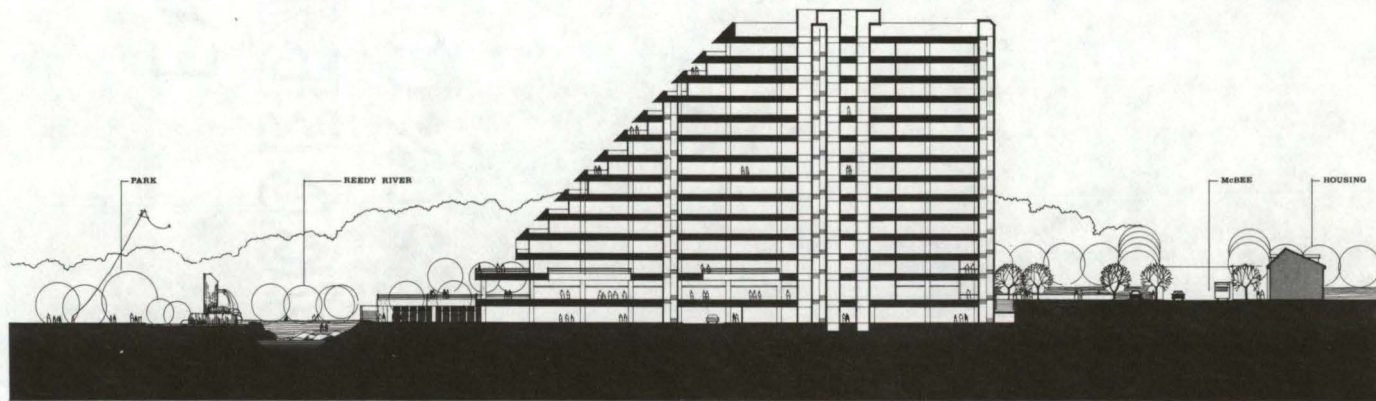
**East Elevation**

# ELEVATIONS



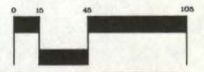


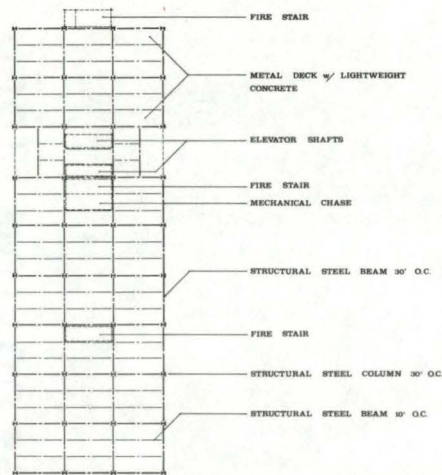
**Section BB**



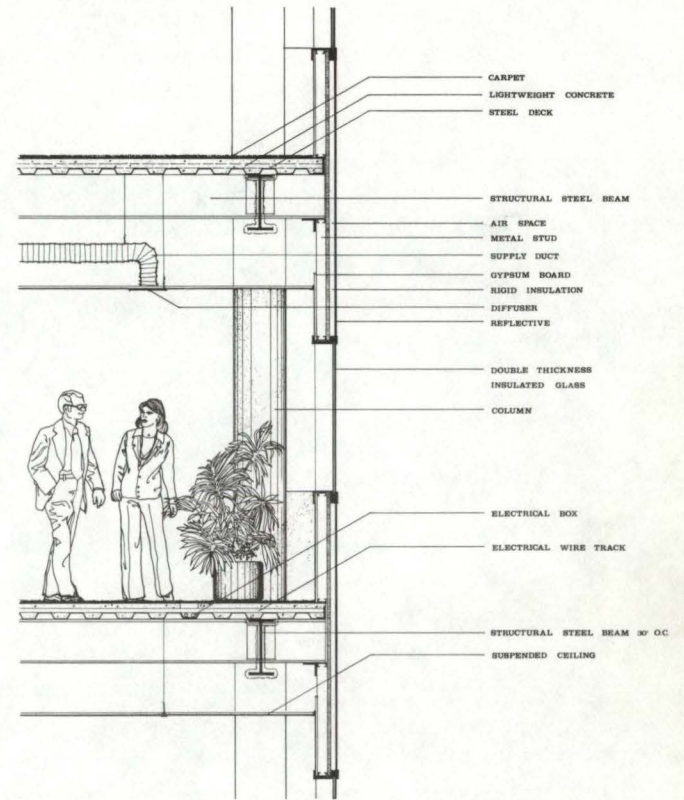
**Section AA**

# SECTIONS





Framing Diagram

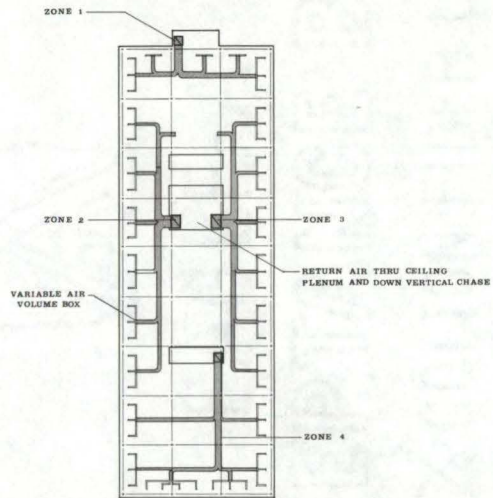


Wall Section CC

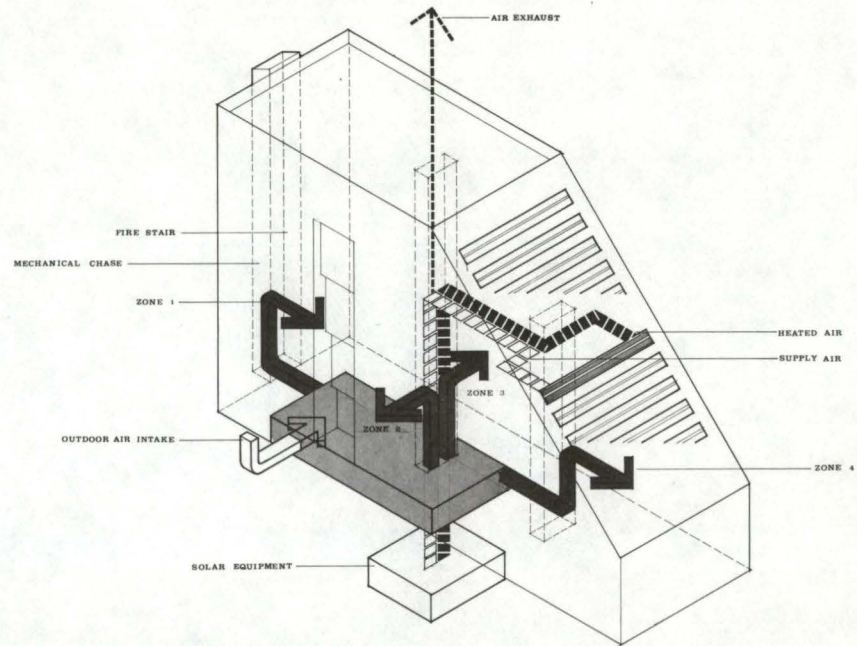


# STRUCTURAL



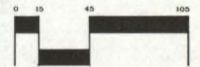


**Mechanical Plan**



**Solar Diagram**

**MECHANICAL**



VIA

CABLE AIR

REGISTERED MAIL

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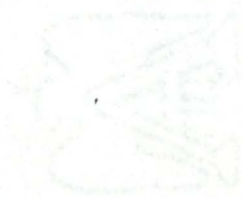
FOOTNOTES

FOOTNOTES

1. William Daniel Shelley, "Coaches and Four," A City Market Development on the Reedy River, p. 8.
2. Shelley, p. 9.
3. Report from Greenville, South Carolina, Greater Greenville Chamber of Commerce, p. 1.1.
4. Shelley, p. 12.
5. Ibid., p. 12.
6. Ibid., p. 12.
7. Ibid., p. 13
8. Greenville -- "Back to the City," Dalton Morgan Architecture Planning Design, p. 1.
9. Report from Greenville, South Carolina, p. 2.1.
10. Ibid., p. 1.2.
11. Ibid., p. 2.1.
12. Ibid., p. 2.3.
13. Greenville -- "Back to the City," p. 1.
14. Report from Greenville, South Carolina, p. 1.1.
15. Roy Mann, Rivers in the City, p. 13.
16. Flood Plain Information: Reedy River/Richland Creek. U.S. Army Corps of Engineers, p. 1.
17. Mann, p. 14.

18. Ibid., p. 15.
19. Ibid., p. 15.
20. Ibid., p. 20.
21. Kenneth Ripnen, Office Building and Office Layout Planning, p. 1.
22. Robert A. Engler, A Commercial Redevelopment Through Urban Renewal, p. 33.
23. Charles King Hoyt, Buildings for Commerce and Industry, p. 102
24. Robert M. Fisher, The Boom in Office Buildings, p. 2.
25. Hoyt, p. 102.
26. Architectural Record, Office Buildings, p. 2.
27. Ibid., p. 3.
28. Ian Alexander, Office Location and Public Policy, p. 1.
29. Jürgen Joedicke, Office Buildings, p. 25.
30. Steven Allan Sandburg. A Redevelopment Design Concept with Consideration to a Critical Portion of the Reedy River in Greenville, p. 56-8.





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BIBLIOGRAPHY

BIBLIOGRAPHY

- Alexander, Ian. Office Location and Public Policy. Longman Group Limited, London, 1979.
- Architectural Record, Office Buildings, McGraw-Hill Book Company, Company, Inc., New York, 1961.
- Black, Sinclair, A.I.A., "San Antonio's Linear Paradise," A.I.A. Journal, July 1979.
- Building the Future -- Greenville, South Carolina, City of Greenville, S.C./Greenville County Planning Commission. 1976.
- Choices -- A General Development Plan for Greenville County, S.C., Greenville County Planning Commission, July 1978.
- Darlow, Clive, Enclosed Shopping Centres, Architectural Press, London, 1972.
- Engler, Robert A., A Commerical Redevelopment Through Urban Renewal
- Fisher, Robert Moore, The Boom in Office Buildings, Urban Land Institute, Washington, D.C., 1967.
- Flood Plain Information: Reedy River/Richland Creek, Greenville County, S.C., U.S. Army Corps of Engineers, Charleston, S.C., April 1972.
- Greenville -- "Back to the City," Dalton Morgan Architecture Planning Design, Greenville Housing Charrette, Spring 1980.
- Greenville Market Data, Greater Greenville Chamber of Commerce, Greenville, S.C., 1980.

- GRIP -- Greenville Improvement Program, Greenville County Planning Commission, Greenville, S.C., June 1973.
- Gruen, Victor, Centers for the Urban Environment, Van Nostrand Reinhold Company, New York, 1973.
- Hoyt, Charles King, Buildings for Commerce and Industry, Architectural Record Book, McGraw-Hill Book Company, New York, 1978.
- "James River Park Integrated with Downtown," Landscape Architecture, September 1978.
- Joedicke, Jürgen, Office Buildings, Frederick A. Praeger, Inc., New York, 1959.
- Knetsch, Jack L., Outdoor Recreation and Water Resources Planning, American Geophysical Union, Washington, D.C., 1974.
- Mann, Roy, Rivers in the City, Praeger Publishers, Inc., New York, 1973.
- Report from Greenville, South Carolina, Greater Greenville Chamber of Commerce/Greenville County Development Board, Greenville, S.C., 1979.
- Rippen, Kenneth H., Office Building and Office Layout Planning, McGraw-Hill Book Company, Inc., New York, 1960.
- Sandberg, Steven Allan, A Redevelopment Design Concept with Consideration to a Critical Portion of the Reedy River in Greenville, May 1973.
- Shelley, William Daniel, "Coaches and Four," A City Market Development on the Reedy River, Greenville, South Carolina, April 1971.
- Schmertz, Mildred F., Open Space for People, American Institute of Architects Publishers, Washington, D.C., 1970.