



THE REDEVELOPMENT OF NICOLLET ISLAND

Submitted in Partial Fulfillment of  
the Requirements for the Degree of  
Master in Architecture at the  
Massachusetts Institute of Technology

August 21, 1958

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NORMAN DAY /

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ABSTRACT

THE REDEVELOPMENT OF NICOLLET ISLAND

Submitted for the Degree of Master in Architecture in the  
Department of Architecture on August 21, 1958, by Norman Day

Nicollet Island lies in the Mississippi River near the downtown core of the City of Minneapolis. The island, the site of the first bridge to span the Mississippi in 1855, was at one time a vital continuation of the commercial activity of Bridge Square, the original center of Minneapolis. However, by 1890, the inevitable and rapid shifting of the physical center of Minneapolis southward left Nicollet Island too isolated to remain a part of the commercial life of the city. By the turn of the century, the island had already begun to slip back into decay because of falling property values, a process that has been continuing virtually unchecked ever since.

Today, however, the necessity and awareness of urban renewal has focused new attention on the historic center of Minneapolis and has given rise to three separate renewal projects: The Lower Loop Renewal Program revitalizing 32 square blocks of the downtown area of Minneapolis astride Hennepin Avenue and touching the River, the East River Bank Renewal Program to extend the river drive system through the now industrialized area northeast of Nicollet Island and the redevelopment of Nicollet Island itself.

With the sympathetic handling of these three mutually complimentary projects, the pendulum of progress will have swung back to the old river front which will once again be part of the city's heart.

A critical analysis of present conditions on Nicollet Island indicates a positive justification for renewal based on low density land use and population, low floor area ratio, extremely low building and land values, the generally poor condition of the buildings, and a complete failure to realize the esthetic potentials of the setting.

The island offers a great potential for redevelopment because of its visually stimulating setting and close proximity to the downtown core of Minneapolis. After lengthy investigation into other possible redevelopment uses, the following program was devised as the most logical and most promising future use: (1) A residential community northwest of Hennepin Avenue of mixed building types and common facilities to house a population of approximately 2,100 persons in 700 dwelling units at a density of 35 units per net residential acre. (2) A motor hotel having 450 rooms and common facilities and a heliport with three landing pads and the necessary supporting elements.

The design solution of this program is based on the following principles: that the pedestrian should have continuous access to the water's edge as well as ease of interior circulation through the center of the island; that the physical form of the building program should reflect and accentuate the physical form of the island itself; that the building program should be organized around the common community facilities which should become the heart of the residential development; that the motor hotel should afford the maximum convenience to the automobile traveler as well as utilize the magnificent view to the fullest; that the heliport should provide an interesting spectacle for the hotel viewer yet remain necessarily isolated.

In accomplishing this complex program, it is hoped that the author has contributed a significant study that will be of some value to the Minneapolis City Planning Commission and to The Housing and Redevelopment Authority in and for the City of Minneapolis. The author strove to be as realistic as possible throughout and sincerely feels that this solution at least approaches a realization of the physical and esthetic potentials of Nicollet Island.

THE REDEVELOPMENT OF NICOLLET ISLAND

888 Massachusetts Avenue  
Cambridge, Massachusetts  
August 21, 1958

Dean Pietro Belluschi  
School of Architecture and Planning  
Massachusetts Institute of Technology  
Cambridge, Massachusetts

Dear Dean Belluschi:

In partial fulfillment of the requirements for the degree of  
Master in Architecture, I submit the following thesis entitled  
"The Redevelopment of Nicollet Island".

Sincerely yours,

Norman Day /

## ACKNOWLEDGEMENTS

The author wishes to express his appreciation for the abundant assistance from The Housing and Redevelopment Authority in and for the City of Minneapolis, the Minneapolis City Planning Commission, and the Office of the City Engineer, Minneapolis. Each of these agencies contributed materially to the background study of this thesis as well as assisted in programming the future use for Nicollet Island. Willard Nelson was of invaluable assistance by documenting the existing conditions of the island, as was Carol Creelman by carefully gathering information about the early founding and growth of the City of Minneapolis.

Professor Lawrence Anderson, Department of Architecture Head, Massachusetts Institute of Technology, provided a guiding hand and penetrating criticism throughout this thesis. Dean Pietro Belluschi, School of Architecture and Planning, Massachusetts Institute of Technology, Professor Caminos, Department of Architecture, North Carolina State College, Hideo Sasaki, Harvard Graduate School of Design, and other members of the faculty of the Massachusetts Institute of Technology offered an abundance of helpful criticism throughout.

Nancy, my wife, assisted in countless ways, the most important being her patient encouragement.

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SCOPE



SCOPE.

This thesis has attempted to explore the entire scope of urban renewal as applicable to a small island. This study includes a detailed analysis of the history, the populace, land use, building condition, and building and land value, an investigation of all possible redevelopment uses, selection and programming of the most logical use, and finally the realization of this program through the design solution.

All assumptions and decisions have been based on realism and practicality. At the same time, every effort has been made to achieve the full esthetic potential of Nicollet Island through the analysis of existing unchangeable conditions, the selection of design elements, and the manipulation of these basic elements. The island has been dealt with in its entirety from beginning to end as I believe it should be. Only by approaching Nicollet Island as a singular design problem can the full potential of the setting be achieved.

The amount of analysis, programming, and design desirable for this study exceeds the time allowed, but every effort has been made to make this thesis as complete as possible in every phase of the redevelopment. In accomplishing this, it is sincerely hoped that the finished product will prove of value to the City of Minneapolis agencies whose assistance made this thesis possible.

SITE

SITE.

Nicollet Island in Minneapolis, Minnesota lies in the Mississippi River opposite the commercial core of the city. The island measures 2,900 feet parallel to the river and 1,000 feet across. The main channel of the Mississippi, to the island's southwest, is approximately 600 feet in width while the secondary channel to the northeast measures 200 feet in width. The island is composed of gravel and loosely cemented rock lying above an area-wide 20 foot thick layer of dense Plattsville Limestone which forms the river bed above St. Anthony Falls. This is typical geological structure for the much glaciated Minneapolis area which has an abundance of terminal moraines and other dense gravel and rock deposits.<sup>1</sup>

The Mississippi is 795 feet above sea level opposite Nicollet Island and the Island rises to 835 feet above sea level at its highest point or 40 feet above the river level. The island has been graded almost level over most of the middle and northwestern end, forming steep and inaccessible banks around the periphery, but the island slopes rather abruptly down to a low flat area covering most of the southeastern tip which is 10 to 15 feet above the water level.

The river level surrounding the island is relatively constant, governed by historic St. Anthony Falls which begins its two stage 75 foot drop only 300 feet from the southeastern tip of the island. As the river drops into the deep gorge below the falls, the magnificent view is laced by two high arched highway bridges and the famous Stone Arch Railway Bridge constructed by James Hill in 1881, then the second railroad bridge to span the Mississippi River. Above St. Anthony Falls, the river flows

peacefully between shallower banks approximately 30 feet high.

Nicollet Island is cut into three pieces by a double track branch line of the Great Northern Railroad and by East Hennepin Avenue. This street (U.S. Highway 12) carries a daily volume of up to 20,000 vehicles in 6 lanes while the traffic volume on the Great Northern averages 12 trains daily. It should be noted that the Great Northern will soon be exclusively deisel equiped thus minimizing the distraction of this branch line traffic. East Hennepin Avenue on the Island connects two bridges spanning the two channels of the Mississippi and because of the high traffic forms a strong barrier effectively cutting off the southeastern tip of the island from the rest.

The island contains approximately 47 gross acres including streets and unused river banks. This area is divided into 17 acres northwest of the Great Northern tracks, 18 acres between these tracks and East Hennepin Avenue, and 12 acres comprising the southeastern tip. The island is served by the following utilities: natural gas, electricity, water and sewage. At present there is no need for storm sewers.

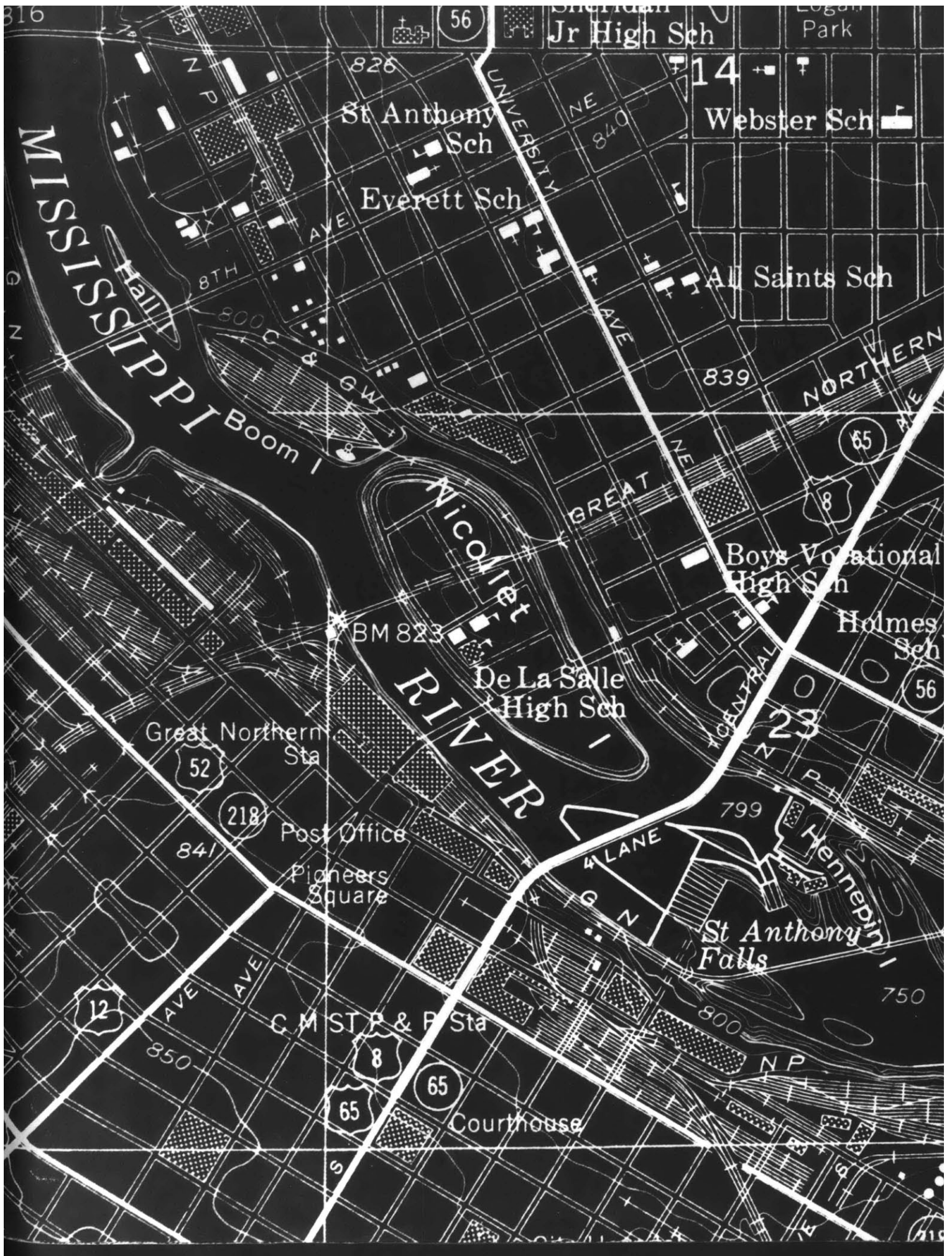
The contiguous river banks are primarily industrialized. The southwestern shore of the river opposite the island is given over to railroads and related structures. The City's Great Northern depot is located on Hennepin Avenue extending 600 feet to the northwest. The main railway express building opposes this structure across Hennepin Avenue and is adjacent to the main Minneapolis post office. From the post office southward, this river bank is dominated by flour mills and railroad tracks.

The Upper Harbor Development, when completed by the Corps of Engineers, will effect a bypass around St. Anthony Falls to enable barge traffic on

the Mississippi to proceed upstream to the new industrial area within North Minneapolis. This project, however, will not effect the configuration of the river banks or the water level near Nicollet Island. The nearer shoreline is given over to light industry and commercial developments except for one roofing factory directly north of the island.

Boom Island lies 200' upstream from Nicollet Island. It was so named in the early logging days of Minneapolis because "booms" of timber floated down the Mississippi tied up here awaiting their turn in the saw mills at the Falls. The marshalling yard on this island (belonging to the Chicago and Great Western Railroad) will be removed under future redevelopment plans, but presently extends a single track onto the northern edge of Nicollet Island which then connects with the Great Northern tracks across the secondary channel of the river.

A more detailed discussion of the history, present conditions, and the need for redevelopment of the site will be found in subsequent sections of this thesis.





NICOLLET ISLAND

SCALE: ONE INCH EQUALS 400'

HISTORICAL SKETCH



HISTORICAL SKETCH.

Nicollet Island constitutes a little world apart almost within the commercial core of the City of Minneapolis. Each day 40,000 persons pour back and forth across this bit of land along Hennepin Avenue, scarcely aware that there is an island beneath them and disinterested by that fact. Yet, within 800 feet of this traffic artery, there exists an almost rural atmosphere of trees, grass, frame houses, outdoor pumps, wood piles, and rocking chairs. Historic Nicollet Island, once only a bridge span away from the heart of Minneapolis has been virtually forgotten since the turn of the century and has remained untouched by the concentration and expansion of the city proper since that time.

Nicollet Island and the contingent river banks of the Mississippi River constitute the earliest settled areas of what has become Minneapolis. The city exists today because of the presence of St. Anthony Falls, now lying across the Mississippi about 300 feet south of Nicollet Island. These waterfalls existed long before their initial discovery and naming by Father Louis Hennepin in June 1680. Their long history begins some 7,000 years before, at the confluence of the Mississippi and Minnesota Rivers. During this time span, the "Father of Waters" has rapidly eroded the 100 foot layer of soft and loosely cemented St. Peter's sandstone below a 20 foot layer of dense Plattsville limestone, thus causing the collapse of the limestone at the rate of 2.44 feet per year.<sup>1</sup>

This slow process had already cut a gorge seven miles long, 200 feet deep, and 1,000 feet wide when Father Hennepin first viewed the falls. After 1680, the falls continued to migrate upstream another 350 feet before the first mill was built in 1822. By 1870, the city, fearing the destruction

of its young milling industry, persuaded the Federal Government to construct cut-off walls and aprons to stabilize the waterfall. These first efforts were completed in 1879 and were followed up by the Corps of Engineers in later years to give the falls their present two stage configuration beginning peacefully and permanently off the southern tip of Nicollet Island.

In the early days of the 19th century, the great attraction of these falls was the tremendous free waterpower available from the 75 foot drop. The earliest application of this waterpower involved a lumber mill and a grist mill built in 1822 by Colonel Snelling for the use of the garrison at what is now named Fort Snelling. Franklin Steele built the first claim shanty on the east side of the falls in 1838 and followed it up with the first string of commercial lumber mills in 1847. The Village of St. Anthony with a population of 200 was incorporated in 1845 consisting of a three mile by 1 mile deep strip of land along the east bank of the Mississippi adjacent to St. Anthony Falls.<sup>2</sup>

In 1849, Colonel Stevens built the first frame house west of the river opposite the falls followed by the establishment of the first commercial flour mill on the west bank of the falls in 1852. This new industry attracted 200 people by 1855 and a village government was formed coining the word Minneapolis, meaning "Water City". These two villages engaged in fierce competition until their common interests precipitated their union under the name of Minneapolis in 1872 with a total population of almost 20,000 persons.<sup>2</sup>

The first bridge to span the Mississippi from its source to its mouth was constructed in 1855 connecting these two villages across

Nicollet Island. This early 600 foot wooden suspension span opened to mule teams and red river ox carts was replaced by a masonry and steel suspension structure in 1878 and again by the present steel arch bridge in 1890.<sup>3</sup> Prior to 1855, Nicollet Island served mainly as a camp ground for farmers waiting to have their grains ground at the flour mills. With the advent of the bridge along Hennepin Avenue, Nicollet Island became an important commercial and industrial link between Bridge Square, the heart of Minneapolis and the Village of St. Anthony.

The stabilizing of the falls in 1879 and the existence of the Hennepin Avenue bridge facilitated a period of rapid expansion during which Minneapolis established itself not only as the world's largest producer of flour and lumber, but as the principal industrial, commercial, financial, and educational center of the Upper Midwest. Minneapolis prided itself on Bridge Square, boasting the first opera house, built in 1867, the first public library built in 1859 and the first masonry city hall built in 1874. This was the teeming center of commerce and transportation in Minneapolis until about 1890 after which the center of activity began migrating southward.<sup>4</sup>

Up until this time, East Hennepin Avenue in former St. Anthony and on Nicollet Island were in effect a continuation of the commercial influence of Bridge Square. Almost all of Nicollet Island was built up by 1890, consisting mostly of small wood frame buildings, some of which are still standing. The business district along Hennepin Avenue strove to keep pace with downtown Minneapolis, but the inevitable and rapid shifting of the physical center southward left Nicollet Island too isolated to remain a part of the commercial life of the city. By the turn of the century, the island had begun to slip back into decay because of falling

property values, a process that has been continuing virtually unchecked ever since.

Although Minneapolis has built and rebuilt on all sides since 1890, the island has remained all but forgotten. Although some industries and commercial endeavors have come and gone, the essential characteristics are unchanged and the island still retains much of the flavor of the late 19th century.

Today, despite age, general decay, and a transient population, Nicollet Island exhibits a great deal of charm. The island is a little world apart, a physical and emotional island of relaxation within the tensions of the city. The river, the waterfall, and the quiet distances lend an air of tranquility in diffidence to the industrial surroundings. The hum of hurrying traffic crossing the island over the cobblestones of Hennepin Avenue emphasizes the seeming insignificance of this bit of land as a backwater in the affairs of the city.

Today, however, the necessity and awareness of urban renewal has focused new attention on the historic center of the city and has given rise to three separate renewal projects.<sup>5</sup>

The Lower Loop Renewal Program, eventually covering a 32 square block area that once constituted the entire commercial area of Minneapolis adjacent to the river and straddling Hennepin Avenue, is currently in the demolition stage.

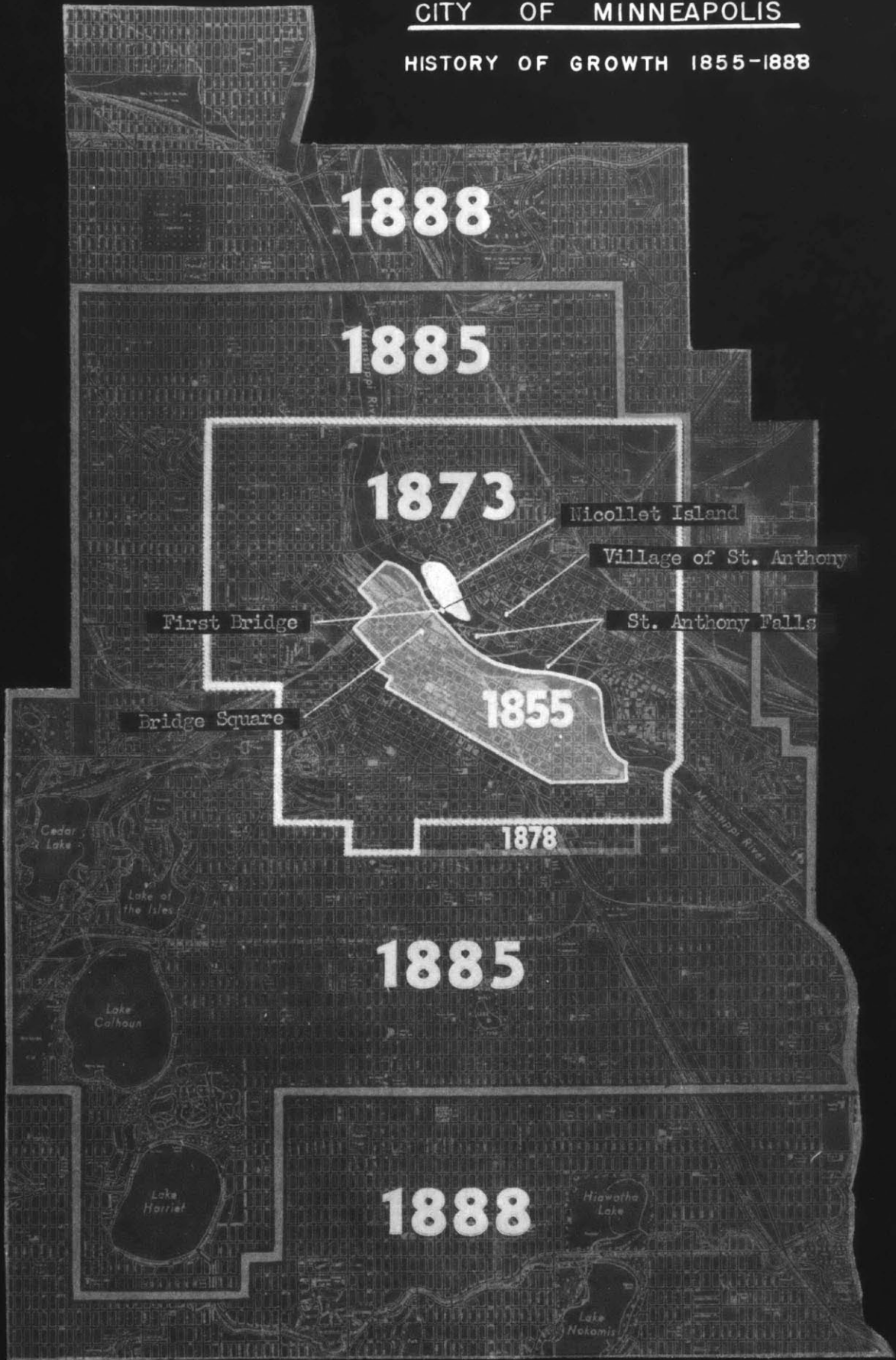
The East River Bank Renewal Program envisions the extension of the river drive system from the University of Minnesota north to Plymouth Avenue. This project, which will involve the redevelopment of a 2 to 3

block wide area along the river front is expected to become active by 1965

The Nicollet Island Renewal Program, intended to revitalize this historic land to better realize the potentials of the natural and industrial landscape, is expected to become active within several years.

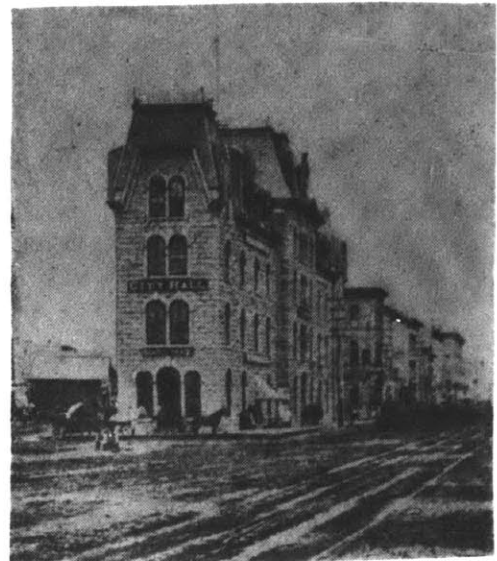
With the sympathetic handling of these three mutually complimentary projects, the pendulum of progress will have swung back to the old river front which will once again be part of the heart of the city.

CITY OF MINNEAPOLIS  
HISTORY OF GROWTH 1855-1888

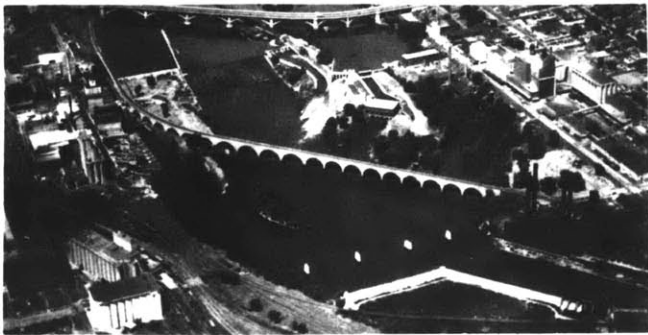




FIRST FLOUR MILL IN MINNEAPOLIS BUILT IN 1822



CITY HALL BUILT ON BRIDGE SQ. IN 1874



PRESENT MILLING DISTRICT



FIRST BRIDGE TO SPAN THE MISSISSIPPI BUILT IN 1855



STEEL SUSPENSION BRIDGE BUILT IN 1879 TO REPLACE WOODEN SPAN ABOVE

LAND USE AND POPULATION



LAND USE AND POPULATION.

The present conditions on Nicollet Island are the product of complex factors involving the growth pattern of Minneapolis, the island's limited size and limited access, "Inclusive" zoning practice, the division of the island into three distinct parts by the railroad and by East Hennepin Avenue, and the immigrant population of Northern European stock.

The city's pattern of southward expansion, leaving the island too isolated to remain a part of the commercial center of the city, tended to freeze the physical development at an early level. Many of the present buildings were built prior to 1900. Since that time the island has not attracted a significant number of new structures because of the limited space available for industrial expansion. The highly industrial setting has inhibited piecemeal residential development and the run down condition of the commercial strip along East Hennepin Avenue has placed a stigma on any new commercial adventures. Another factor tending to perpetuate the present physical status involved the desires of the populace to remain isolated from the affairs of the city. They constitute a rather clanish group of Northern European extract who enjoy the almost rural atmosphere of outdoor pumps and woodpiles and the extreme privacy of the island.

There exists more diversified land usage within the 47 acres of Nicollet Island than in any area of similar size in the City of Minneapolis. This situation has been created chiefly by the practice of "Inclusive" zoning. At one time, the southern tip of the island below East Hennepin Avenue was zoned for heavy industry and the remainder for light industry. Today the entire island is zoned light industrial though one industry,

the Durkee Atwood Island Plant, classed as heavy remains. Following the usual practice of allowing the construction of any establishment of less nuisance than the zoned use, the island has become the site of everything from heavy industry, retail stores and tank storage to tenements, a Catholic high school and single family homes.

The following is a summary of the land use on Nicollet Island:

For a detailed building by building analysis, refer to the accompanying map.

Heavy Industry. There is only one industry classed as heavy on Nicollet Island. The Durkee-Atwood Island Plant manufacturing rubber products has been classed as a nuisance industry by the City of Minneapolis. The city has the intention of eliminating this industry, housed in a collection of 13 separate buildings on the southeastern tip of the island, by due process. The city has already rezoned the land occupied by this plant as light industrial, thus making this a non-conforming land use. In a matter of a few years this industry would be removed from Nicollet Island.<sup>6</sup>

Light Industry and Warehousing. Ten light industrial concerns are located here comprising the only significant new construction within the last 30 years along with the monastery for De La Salle High School. These industries include two heating fuel contractors, a tile and marble dealer, a small paper mill, an ice cream company, a repair garage for a fleet of laundry trucks, a cold storage warehouse, two furniture storage warehouses and an auto body shop. These structures are scattered over the entire island with the only significant grouping being near the Great Northern tracks.

Commercial. East Hennepin Avenue comprises what is considered a third rate commercial district made up of 23 structures housing the following

enterprises: 4 bars, 2 lunch counters, 2 antique stores, 2 salvage stores, and roofing insulation dealer, a soft drink distributor, 2 wholesale radio and record dealers, a salvation army retail store, a fruit and vegetable store, a wholesale hardware distributor, 3 hotels and 8 vacant stores. Although there are only three legitimate hotels on the island, there are 3 or 4 small hotels and rooming houses of a questionable nature located above the commercial establishments on this street. The remaining volume of the structures facing East Hennepin is given over to storage or walk-up apartments.









Housing. Nicollet Island contains 206 dwelling units of which approximately one-fourth are vacant, divided as follows: 117 units in two 4 story walk-up tenements, 44 units over the commercial establishments on East Hennepin, 21 single family residences and 24 units in multi-family houses. The total population of the island approaches 500 persons at present.<sup>7</sup>

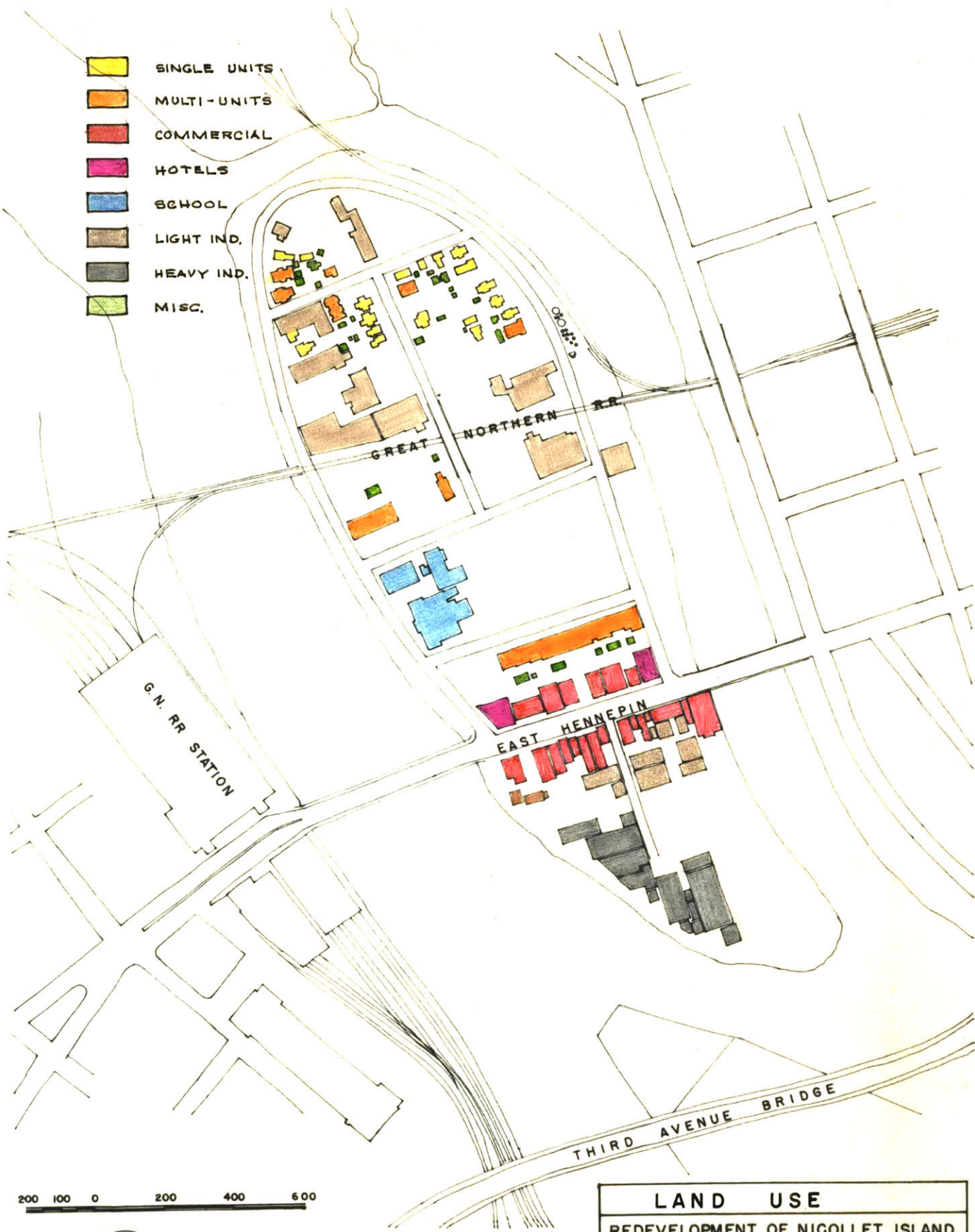
Schools. There are no public schools on the island. However, De La Salle Catholic High School housed in two buildings and supported by a monastery is located in the center of the island. The total site occupied by the high school provides them with only a minimum of practice fields and recreational area. The athletic teams of this school are forced to use their opponents' facilities to hold all their contests. The monastery is also a 3-story structure providing a residence for the instructors at the school

Miscellaneous. A great deal of the island, approximately 11 acres, is given to both commercial and private vehicle parking. About one-half of this total is in the vicinity of the Durkee-Atwood Plant while most of

the remainder is clustered about the light industrial establishments near the railway. A large number of sheds, shacks, and garages are scattered throughout the northwestern section of the island as are numerous open storage yards used by the light industry and the residences. One striking misuse of the island's potential stands out in the treatment of the river banks. The banks are all steep, inaccessible, and dirty. They are used for rubbish disposal and the rather dangerous adventures of youngsters. The placement of a road ringing the island at the crest of the bank perpetuates the misuse of the banks because of the isolation from the residents.

Nicollet Island is a complete mixing of every type of land use from institutional, residential, and commercial to light and heavy industry. The location of the streets and the placement of the buildings ignores the potentials of the river's edge and the visually stimulating view. Such is the present land use on this historic piece of land.

-  SINGLE UNITS
-  MULTI-UNITS
-  COMMERCIAL
-  HOTELS
-  SCHOOL
-  LIGHT IND.
-  HEAVY IND.
-  MISC.

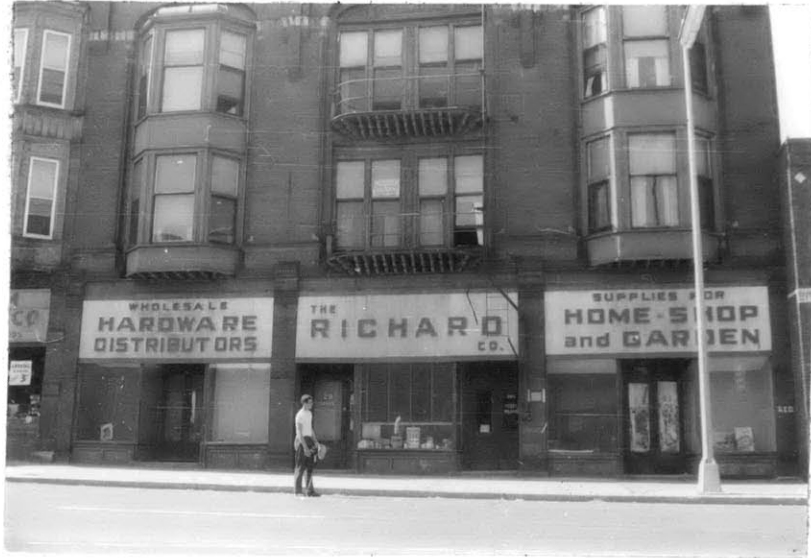


**LAND USE**

**REDEVELOPMENT OF NICOLLET ISLAND**  
MINNEAPOLIS, MINNESOTA

M. ARCH THESIS by NORMAN DAY    AUGUST 1958  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

dwelling units over  
stores on East Henn.



East Hennepin Ave.

vacant warehouse on  
East Hennepin Ave.





examples of poor land use and low density



NEED FOR REDEVELOPMENT



NEED FOR REDEVELOPMENT.

The Housing and Redevelopment Authority in and for the City of Minneapolis terms Nicollet Island ripe for renewal within the next ten years. This land deserves consideration for redevelopment on the basis of related developments refocusing the city's attention of the river front, extremely low assessed valuation of land and buildings, low density mixed land use, generally poor condition of the buildings, and a complete failure to realize the esthetic potentials of the land and the setting. A discussion of each of these interrelated points and the problems that will be encountered in a redevelopment project on Nicollet Island follows.

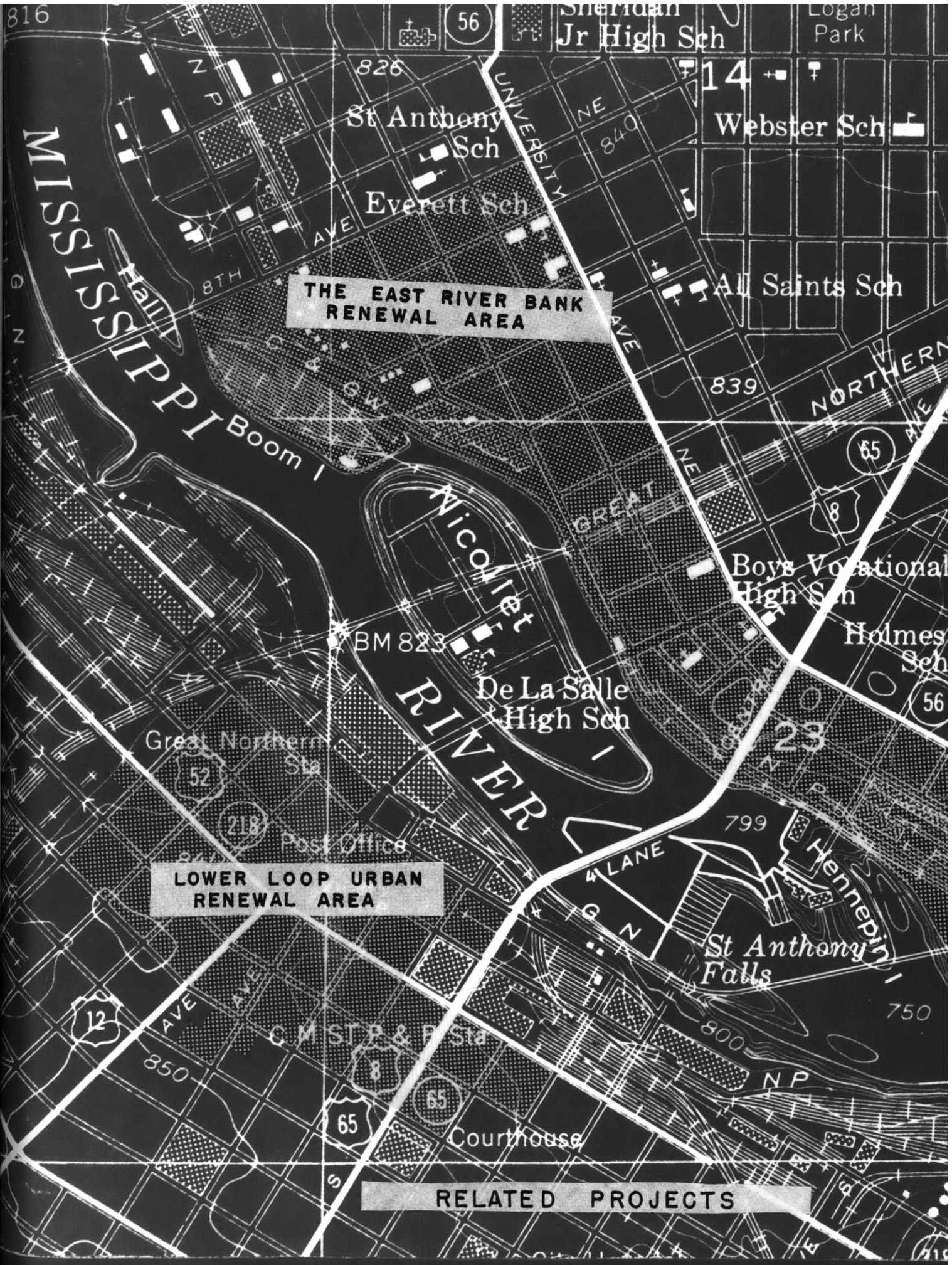
Related Developments. Following a not unusual pattern, the pendulum of progress in Minneapolis, which had swung inexorably south away from the Mississippi River since the founding of the city, is now swinging back to the older and more historic areas relating to the river front. The Lower Loop Renewal Project, designed to demolish and rebuild 19 square blocks in its initial phase and approximately 13 additional blocks when completed, comprising the entire commercial center of Minneapolis before 1880, is in the demolition stage. This redevelopment will leave only a shell of railroads and existing structures along the river bank.<sup>8</sup>

The project features the inclusion of a new civic center related to the present City Hall, new commercial and hotel establishments and possibly a convention hall, and is expected to shift the effective center of Minneapolis to 5th and Nicollet Avenue, approximately one-half mile from Nicollet Island. It is noted that a radius of one-half mile from this new city center would include about 90% of the entire downtown

commercial and light industrial areas. The land on Nicollet Island will assume much greater importance than it enjoys today as the urban center of Minneapolis begins to migrate back toward the river and comes within range of the pedestrian dwelling on the island.

The East River Bank Renewal Program will greatly increase the potentials of Nicollet Island by redeveloping the strip of land between University Avenue and the Mississippi River from Plymouth Avenue to Cedar Avenue to include a limited access roadway between these two bridge heads. This will be in effect an extension of the river drive system in Minneapolis and will also serve as one leg of a ring road circling the commercial core of the city. It is expected to completely change the visual outlook from Nicollet Island in that direction. The marshalling yard on Boom Island and the B.F. Nelson Roofing Co. will be removed along with much of the other run-down industrial and commercial establishments in this strip. It is expected that a limited access roadway allowing generous areas for schools, playgrounds, and residential developments, would strongly influence the future development of Nicollet Island and that these two complimentary projects will proceed simultaneously to achieve the greatest potential for the area.

The transportation plan for Minneapolis put forth in the Proposed Land Use Plan of May 1954 by the City Planning Engineer envisions a network of limited access expressways supplemented by divided lane highways. Although the plan has been revised in detail, the principle remains in that the downtown area of Minneapolis, bounded by Plymouth Avenue, Lyndale Avenue, 14 Street, Cedar Avenue, and University Avenue, will be enclosed by an expressway fed by major streets, parkways, and radial expressways. It is important to note that Nicollet Island



**THE EAST RIVER BANK  
RENEWAL AREA**

**LOWER LOOP URBAN  
RENEWAL AREA**

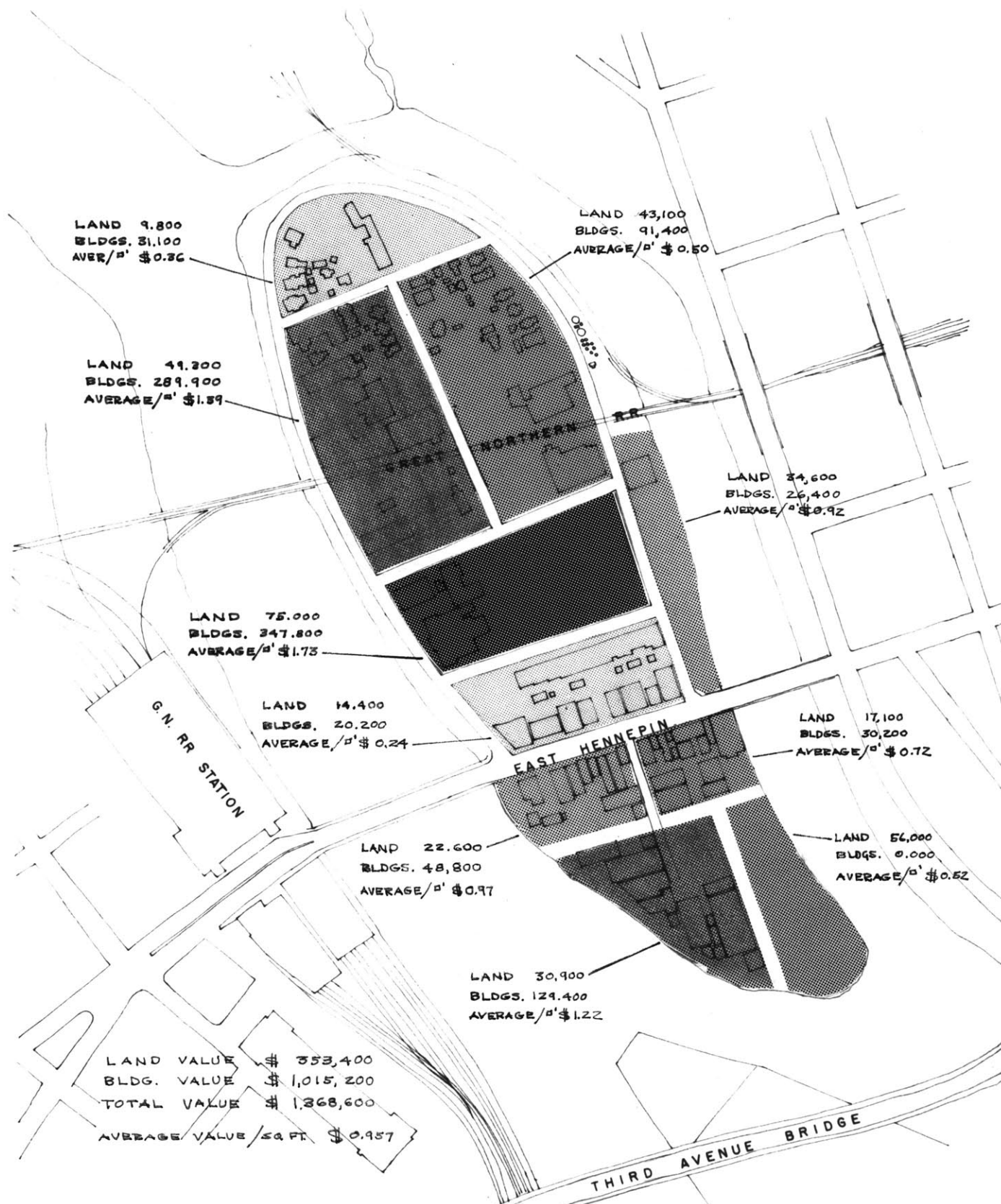
**RELATED PROJECTS**

is included within this downtown sector of the city. When adopted, this transportation net will make Nicollet Island easily accessible from any highway leading into the city.

Building and Land Values.<sup>9</sup> The values discussed in this section are all "true and full" assessed valuations which does not indicate the market value of the property, but will be helpful on a comparative basis with other areas within Minneapolis. The accompanying map indicates the block by block valuation of the land and buildings on Nicollet Island. The range of total assessed valuation by block ranges from a low of \$0.24 per sq. ft. up to \$1.73 per sq. ft. with an overall average of \$0.96 per sq. ft.

In comparing this figure of \$0.96 with the total average cost of land and buildings in the Lower Loop Renewal Program of \$1.67 per sq. ft. the justification for renewal of Nicollet Island based on low assessed valuation can readily be seen. The figure of \$1.67 per sq. ft. compares to a more typical assessed valuation of \$7.32 per sq. ft. at 6th Streets and 1st Ave. North.<sup>8</sup>

It logically follows that the cost of acquiring Nicollet Island for redevelopment purposes will be quickly absorbed by new tax revenues from new construction which will be assessed far above the present \$0.96 per sq. ft. The assessed valuation of the entire island, land and buildings together totals \$1,368,600.00. Of this total, an area valued at \$56,000.00 is presently owned by the City of Minneapolis as are all the streets and much of the embankment outside of the periferal road. The total cost of acquiring the 47 acre island for redevelopment purposes will be small compared to the cost of acquiring any other area as close to the downtown



LAND VALUE \$ 353,400  
 BLDG. VALUE \$ 1,015,200  
 TOTAL VALUE \$ 1,368,600  
 AVERAGE VALUE / SQ. FT. \$ 0.957

200 100 0 200 400 600



**ASSESSED VALUATION**  
**REDEVELOPMENT OF NICOLLET ISLAND**  
 MINNEAPOLIS, MINNESOTA  
 M. ARCH THESIS by NORMAN DAY AUGUST 1958  
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY

center. It is suggested that this project could be accomplished with a minimum of delay and restriction without Federal aid under the Urban Renewal Act entirely by the City of Minneapolis.

Land Coverage and Population Density. The total area covered by structures on Nicollet Island approaches 430,000 sq. ft. or 10 acres. This comprises 21% of the gross area of the island or a building to ground ratio of 1 to 5. The floor area ratio of the existing structures approaches 1 to 3 when adding the area of all additional floors to this total. This ratio of 1 to 3 is considered low for an area so near the commercial core. The FA ratio for the Lower Loop Renewal Program is approximately 2.5 to 1 and the FA ratio at the present center of the city approaches 6 to 1.<sup>6</sup> It is suggested that the FA ratio in any redevelopment of Nicollet Island should be at least as high as one to two so that the ratio of building cost to land cost be approximately 10 to 1. This is based on the assessed valuation of \$0.96 per sq. ft. A higher market value for the land would indicate the desirability of a higher FA ratio.

The population of Nicollet Island approaches 500 persons housed in 206 dwelling units. Of these units, about one-fourth are vacant. Since all of these 206 units are located within the 35 acres northwest of East Hennepin Avenue, the density reaches 5.9 dwelling units per acre in this area. This does not constitute a significant number of families to be displaced in any future redevelopment project. Within a one mile radius north of Nicollet Island there are over 7,000 dwelling units at present. It is assumed that the present population could be easily absorbed into this somewhat similar area with a minimum of strain on the Housing Authority and the persons involved.

NUMBERS INDICATE DWELLING UNITS



200 100 0 200 400 600



**LAND COVERAGE**  
**REDEVELOPMENT OF NICOLLET ISLAND**  
MINNEAPOLIS, MINNESOTA  
M. ARCH THESIS by NORMAN DAY AUGUST 1956  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Building Conditions. As stated in the historical sketch, Nicollet Island has been little more than maintaining its own since 1900. Two groups of buildings stand out because of their extreme age and poor condition; the commercial structures strung along East Hennepin and the residential structures, both tenements and frame houses. Almost all of these two groups were constructed prior to 1910 and several were built before 1890. The general condition of the buildings is reflected in the assessed valuation. One entire block of 2 to 5 story structures northwest of Hennepin Avenue is valued at only \$20,200.00.

The only structures of notably good condition are three single story light industrial buildings built since the war and the monastery for De La Salle High School built in 1946.<sup>7</sup> Although accurate figures are not available for Nicollet Island, if all those structures which were built prior to 1910, all non-fireproof structures, and all those structures in conspicuous disrepair were removed, approximately 75% of the total number of buildings would be removed. The accompanying map illustrates the result of a structure by structure survey conducted in May 1958 by a personal associate in Minneapolis. These results should only be taken as a general indicator, but nevertheless serve to underscore the justification for redevelopment based on the poor condition of the island's structures.

Failure to Realize the Potential. Nicollet Island has been unimaginatively developed just as any other area of the city without regard for its uniqueness as an island. The land has been graded essentially level over much of the island and a periferal road has been constructed at the edge of the resulting embankment. Within this loop northwest of East Hennepin, a sudo-grid has been imposed upon the land there ignoring the



- POOR CONDITION
- FAIR CONDITION
- GOOD CONDITION



200 100 0 200 400 600



**BUILDING CONDITIONS**  
**REDEVELOPMENT OF NICOLLET ISLAND**  
 MINNEAPOLIS, MINNESOTA  
 M. ARCH THESIS by NORMAN DAY AUGUST 1956  
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY



100 family tenement  
structure built 1894





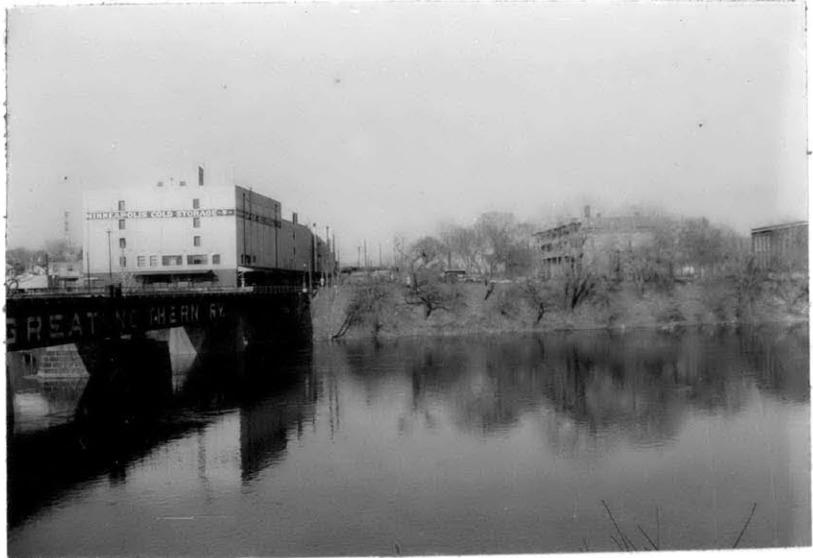
residential areas &  
typical dwellings



existence of the river and resulting in the unimaginative rectilinear placement of buildings. The wonderful view upstream and downstream are ignored as are the river banks themselves. These are given over to rubbish disposal and underbrush, thus eliminating any possible enjoyment of the water's edge.

There are no clear pedestrian paths on the island, no thought given to the visual relationship with the contiguous areas, and no common neighborhood facilities. The railroad is a visual eyesore. The island at present constitutes a desirable place to live only for those persons seeking the isolation and allowable untidyness offered here. The mixed land use and general disrepair of the island drive away all those who might be attracted by the potentials of the setting.

The correction of the esthetic failures of the island seems at least as important as raising the dwelling unit density to a level in keeping with the island's proximity to the downtown core of Minneapolis or raising the assessed valuation to a point where it can contribute to the tax revenue of the city at a rate appropriate for its location. Another important goal is the establishment of a strong community spirit assisted by a group of common neighborhood facilities. Since the boundaries of this neighborhood are sharply defined, the encouragement of a strong community sense seems imperative to perpetuate a healthy environment for the years to come. It is believed that the organization and the architecture of redevelopment can do much to help realize this important strength. It is believed, as stated previously, that the only way to fully realize the potentials of this island is to treat it as a single design problem and to form the entire island as one expression. However, this approach will bring about some special problems not encountered in the typical

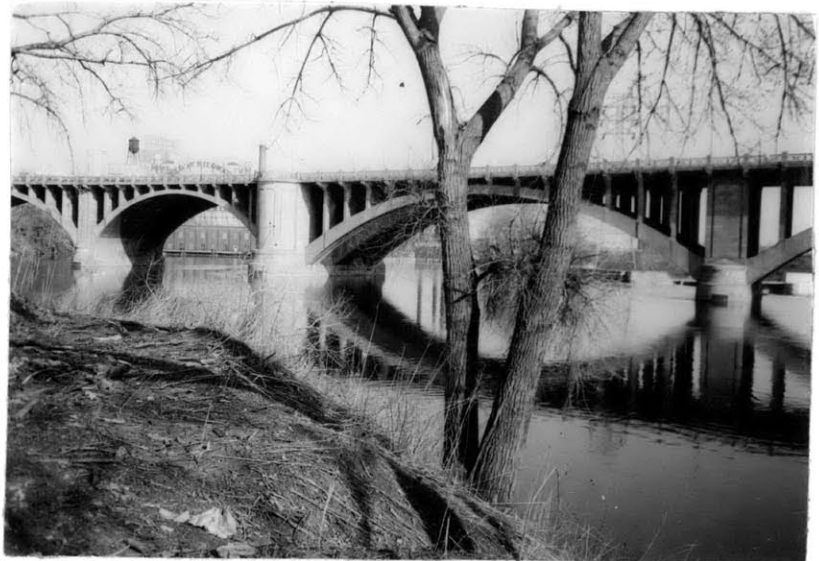
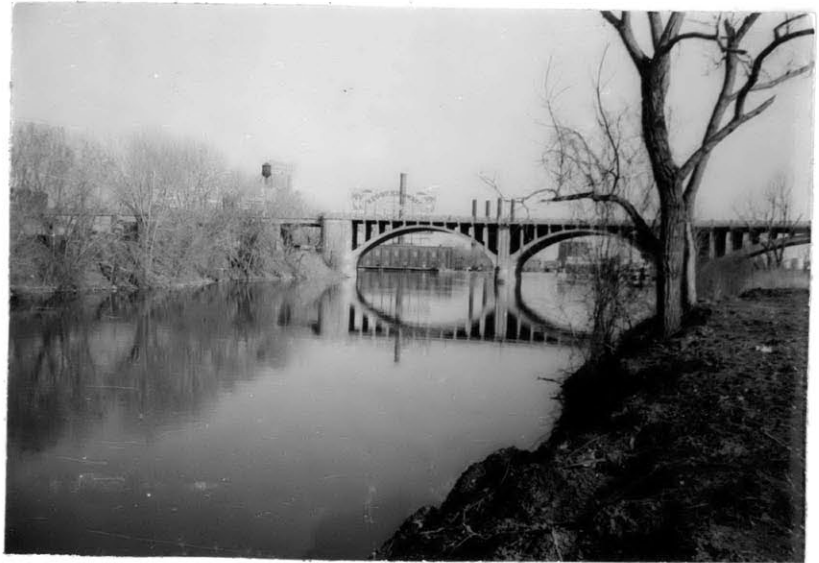


poor treatment of  
the land to water  
relationship





views upstream and  
downstream from  
Nicollet Island



piecemeal renewal project.

Problems of Redevelopment. Among the usual problems of legal procedures, economics, land acquisition, and political maneuvering, three important difficulties arise in connection with Nicollet Island. They are: removal of De La Salle High School; removal of the relatively new light industrial establishments; and the difficulty of programming the new land use.

De La Salle Catholic High School probably constitutes the greatest obstacle to the complete renewal of Nicollet Island. This is the only Catholic High School in Minneapolis. The three buildings and the land comprising the school property are valued at \$422,800.00, the single highest assessed valuation of any block on the island. However, of the two classroom buildings, the smaller is in poor condition and the larger in only fair condition. A high percentage of the valuation of the school is in the monastery which was built in 1946. The difficult decision that must be made at this time is a choice between the complete and immediate removal of the school, or the immediate expansion of their physical plant probably to include all of the center section of the island. It is believed that the decision should be made to remove the classroom facilities at once and the monastery as soon as possible by offering the school a more generous site in the redevelopment area across the secondary channel of the Mississippi where a more efficient and complete educational plant could be constructed. To retain the school on the island would only perpetuate mixed land use and increase the isolation of the northwestern one-third of the site.

Compared with the removal of the high school, the removal of the new light industrial establishments, even by eminent domain proceedings if

necessary, should be relatively easy. The total assessed valuation of all the industry constructed here since 1945 is approximately \$120,000.00. All of these structures are single story and do not represent important investments. It is strongly believed that these structures even though fairly new and in good condition should be removed to better achieve the potentials of Nicollet Island in any redevelopment design.

The difficulty of programming the future land use arises because of the position of Nicollet Island in relation to the effective center of Minneapolis. The island's isolation precludes the extension of the commercial core this far from the center, yet the island's proximity to this center dictates a fairly intense land use. The land area offers an excellent site for a variety of uses at fairly high density related to the city center but not part of it. These uses might include one or more of the following: a dense housing development, an expanded light industrial complex, a special school complex, a major city park, housing for the aged, a new city hospital, an amusement park, hotels, motels, and a heliport for Minneapolis. A detailed investigation is necessary to determine the best possible future use for the island which will be appropriate for its unique setting.

This brief summary of the important problems peculiar to Nicollet Island certainly does not solve them, but serves to illuminate a general direction toward resolution. On intense study of these and related problems would be necessary for actual redevelopment.



PROGRAM

PROGRAM.

The most important and most difficult task in a redevelopment program involves the determination of the rebuilding program. The new land use, building type and density must be resolved at an early stage. To choose the most appropriate future use, an investigation was made into all logical possibilities. After selection of the best land use, the separate parts of the island will be programmed independently.

Investigation. To determine the redevelopment land use for Nicollet Island, an investigation focusing on the following possibilities proved necessary.

A major city park

A special use school complex

A light industrial complex

A singular self contained residential community  
of 3,000 persons

A residential community north of Hennepin Avenue and  
a heliport and motor hotel to the south.

Although noting that Hennepin Avenue, crossing the island from southwest to northeast, carrying a traffic volume of 20,000 cars daily,<sup>13</sup> created an extremely strong physical and visual break, it was assumed that this problem can be resolved by split land use or by manipulation of the Hennepin Avenue roadway. In this light the above possible uses are discussed.

Although the setting of Nicollet Island would richly enhance a park development, the water separation necessitating limited access from the commercial core along with the pedestrian distance of one-half mile for

the daytime population makes the casual enjoyment of this area as a downtown park impractical. If the entire island or only a major portion was developed into a park, its size would indicate that a correspondingly large district of residential development would be necessary to support its function. However, a significant population does not exist within a reasonable radius because of the extensive contiguous areas of commercial and industrial development. The East Bank of the river opposite the island will be redeveloped in conjunction with Nicollet Island and will provide at least a fringe of park area to better serve the residents of both areas.

A special school complex to include those secondary educational institutions of a city wide nature was investigated. This grouping of an enlarged Catholic high school with both girls' and boys' vocational high schools enjoying common facilities for athletics and recreation was eliminated on the basis of adequate existing vocational facilities and the questionable validity of perpetrating the vocational system of education. Other city wide institutions were considered and rejected because of the extreme difficulty of determining the need and of programming.

A light industrial complex would be difficult to justify on the basis of present use and wasted esthetics. The island is presently zoned light industrial, but considering the proximity to the downtown area, the amount of light industry attracted by this zoning is not significant. An abundance of light industrial land east and west of the downtown area adequately serves Minneapolis without the inclusion of this more esthetically desirable area.

A singular self-contained residential development would prove unfunctional because of the difficulty of crossing Hennepin Avenue. One-third of the community would be effectively cut off from the community facilities of the island which would logically be placed within the larger northwest area. Any manipulation of the Hennepin Avenue roadway would be difficult to justify for the use of pedestrians only and would not solve the sense of isolation present when one residential section was so completely cut off from the major portion. An alternative to this, employing two distinct neighborhoods separated by Hennepin Avenue was found to be impractical. The size of the residential unit to the southeast at reasonable densities could not support the minimum necessary community facilities. The duplication of these functions seemed wasteful at this scale. The almost total break in continuity caused by Hennepin Avenue not only indicates but facilitates two different land uses.

The most logical program for redeveloping the northwestern part of Nicollet Island would seem to be some type of housing. The attractions of living in a pleasant and well organized residential area so close to the heart of the city yet insulated from the traffic and urbanization would be most appealing. There are few areas so close to the heart of any large city which offer the combinations provided by Nicollet Island, Beacon Hill in Boston being the most notable. Minneapolis has an extensive area of apartment development south of the downtown area, but too far removed for pedestrian travel to and from work. There the specific residential areas are pleasant but the apartments themselves are rather minimal and decayed. The university has several lesser areas of apartment developments nearby, mostly of a rooming house nature,

but is so situated between major highways, the river, and railroad tracks that no really significant contiguous developments are possible. Nicollet Island could provide a well located variety of dwelling units for married students with children or married students whose wives are working in downtown Minneapolis. Because of this combination of the desirable natural setting and the potential demand for housing so close to downtown and the university, it was concluded that the northwestern section of Nicollet Island could best be utilized as a relatively high density residential development.

The need for helicopter taxi service to and from Wold Chamberlain International Airport, 9 miles distant, has been recognized for many years and several proposals have been advanced in recent time. Most notable of these is the recent proposal by the Minneapolis Capital Long-range Improvements Committee to establish a heliport on Nicollet Island.<sup>11</sup> No more dramatic landing area could be found so close to the commercial center of Minneapolis, only 5/8 of a mile to the south. Because of the isolation enjoyed by the island, the landings and take-offs would be safe, easy and visually stimulating. The flight up the river gorge, over the downtown area, and down to the wonderful setting of the southern tip of the island would afford the passenger a continuing panorama of the city and a strong silhouette of the city skyline at all times. The heliport and its setting will invite the development of hotel or motel accommodations and restaurants, partly for those persons using the helicopter taxi service and partly for automobile visitors who desire close proximity to the commercial and educational centers of Minneapolis.

Through this analysis the conclusion was reached that this dual use was the best possible redevelopment program and that these two functions, the residential neighborhood and the motor hotel-heliport, were entirely compatible within the configuration of Nicollet Island. Each of these two components will be programmed separately.

The Residential Neighborhood. The first decisions necessary in programming a neighborhood development are the choice of dwelling type, the density, and the total population. These decisions hinge in turn on an analysis of the residents that could logically be attracted to the area. Nicollet Island's unique combination of visual beauty, relaxed atmosphere, and nearness to downtown Minneapolis, the University of Minnesota, and to large areas of both heavy and light industry causes it to be a highly desirable area for many classes of people. The people who would logically be attracted would likely include all of the following.

1. People working long or irregular hours such as newspaper, radio and T.V. people.
2. Academic people desiring to be close to the cultural and educational offerings of the city.
3. Transients from national companies, here because of the regional importance of Minneapolis.
4. Groups of young unmarried women or men working in the city and living together.
5. Childless couples.
6. Atypical households such as widows, divorcees, spinsters and bachelors.
7. Older couples whose children have married.
8. Married students with and without children desiring a location convenient to the university and employment opportunities downtown.

Although one particular type of dwelling unit could be designed to attract a single class of residents, it would be much more desirable if a heterogeneous community composed of at least a majority of these categories could be created. To accomplish this stimulating mixing, a wide range of dwelling unit types and sizes with appropriate densities should be planned. These should be partly elevator high rise apartments partly walk-up apartments, and partly garden apartments (row houses), each with its particular appeal. These dwelling units will be partly rental and partly owner occupied, with some degree of cooperatism available if desired. Only by attracting a variety of people and providing them with a normal range of community facilities can a cohesive and self-contained residential neighborhood be successful.

The area northwest of Hennepin Avenue contains approximately 35 acres of buildable land. Assuming that the smallest neighborhood which will properly function as such should contain 2,000 persons, this program is designed to attract a healthy mixture of family types and provide the greatest amenities for this population. It is assumed that the number of children included in the island's population will be less than the average of 1.33 per family for the city, therefore, an average family size of 3.0 persons has been selected as a starting point. This assumption eliminates the inclusion of an elementary school on the island. A better location places a new school across the secondary channel of the river where it can serve not only the child population of Nicollet Island but the surrounding neighborhood as well. The following is an analysis of dwelling unit types and densities.

Total Gross Residential Area (approximate): 35 acres

Selected average density per gross acre; 20 dwelling units

20 dwelling units per acre X 35 acres equals 700 dwelling units.

Assumed average persons per dwelling unit: 3.0 persons

700 units X 3.0 persons per unit equals 2,100 persons.

Recommended areas for community facilities based on 2,100 persons:<sup>1,2</sup>

Community playground	2.75 acres
Park development	3.00 acres
Shopping and parking	1.20 acres
General community facilities	0.75 acres
	<hr/>
TOTAL	7.70 acres

Assumed percentage of gross area devoted to streets: 21%

35 acres X 21% equals 7.3 acres.

Total acres to be deducted from gross area: 15.0 acres

Total Net Residential Area (approximate): 20.0 acres

Selected percentage of row housing	25% or 175 dwelling units
Selected percentage of walk-up apts.	34% or 238 dwelling units
Selected percentage of elevator apts.	41% or 287 dwelling units
	<hr/>
TOTAL	100% or 700 dwelling units

A density of 17 units per acre for row housing requires:	10.2 acres
A density of 40 units per acre for walk-up apts. requires:	6.0 acres
A density of 75 units per acre for elevator apts. requires	<u>3.8 acres</u>
TOTAL ACREAGE REQUIRED	20.0 acres

This breakdown will provide a density 35.0 dwelling units per net resident acre and a density of 20.0 dwelling units per gross residential acre.

The redevelopment program for Nicollet Island will therefore include the following items within the residential community northwest of Hennepin



Avenue:

175 garden apartments (row house units) at a maximum density of 17 units per acre with parking for 100% of the units. Each unit will have a private garden and provide an average of 1,200 square feet of living space per unit.

238 walk-up apartments at a maximum density of 40 units per acre with off-street parking for 70% of the units each having an average living space of 900 square feet.

287 elevator apartments in elevator towers at a maximum density of 75 units per acre with off-street parking for 90% of the units each having an average living space of 800 square feet.

A community center containing a nursery school for 60 children, a community activity building for neighborhood groups, activities and guidance, a playground space to be jointly shared by the neighborhood.

A passive park development totaling 3.0 acres to provide walks, shade, areas for quiet games, and a pleasant outlook, not necessarily in a single area.

Local shopping facilities on a 1.2 acre site providing 14,000 square feet of retail sales area, 20,000 square feet of parking and 9,000 square feet of service area. Facilities to include food market, bakery, delicatessen, drugstore, barbershop, beauty parlor laundry, dry cleaners, shoe repair, coffee and ice cream shops, restaurants, and an automobile service station.

The Motor Hotel and Heliport Development. It is believed that these two elements will be mutually supporting, each enhancing and strengthening the other. Each is strongly justified on its own grounds, but will become a member of a cooperating team with the design of the whole. A discussion of the justification of each follows:

The potentials of urban motor hotels are just being realized in the major cities of the U.S., notably Washington, D.C., (Marriott Motor Hotel); Boston, (1200 Beacon Motel); and New Orleans, (Hotel deVille). In these cities and many others, a precedent for drawing the motoring public into the heart of the city is being established with excellent results. To obtain these results, certain principles must be adopted to insure the proper establishment and prosperity of this urban newcomer.

The new motor hotels must combine the best services of both hotels and motels. That is, they must cater to the automobile, yet provide the atmosphere and facilities of a hotel.

The site must be accessible from major highways leading into the city center, preferable from all directions.

The motor hotel requires close proximity to metropolitan activities such as business and educational centers, convention halls, and shopping and recreational opportunities.

A distinctive and pleasant urban atmosphere far superior to the usual highway motel but more relaxed and inviting than the typical city hotel must be offered.

The southeastern tip of Nicollet Island offers each of these principles for a motor hotel development. The ease of access, setting and nearness

to downtown Minneapolis combine to create a superior site. Mass transportation in the form of buses, trains, auto rental, and helicopter will be close at hand for the guest. Visitors to the University of Minnesota, downtown Minneapolis, and other areas of the city would find the accommodations here extremely central and visually invigorating.

Helicopter transportation is becoming more important each year through the expansion of existing uses and the constant exploration of new possibilities. This importance will increase as air travel becomes faster and airports are shifted further away from population centers. Unless helicopter service becomes a common reality, the bottlenecks in air transportation will become increasingly irritating. These bottlenecks are:

Time spent between downtown areas and the airport.

Time spent getting from one airport to another in the same city.

Time spent getting from one city center to another using surface travel when the cities are too close to use fixed wing aircraft.

Wold Chamberlain International Airport lies 9 miles from downtown Minneapolis and requires approximately 35 minutes to reach by automobile during medium traffic conditions. Downtown St. Paul lies 10 miles from the airport and 17 miles from the center of Minneapolis. Driving between these two city centers requires an average of 60 minutes. Helicopter service between these points seems entirely feasible based on the example of several large U.S. cities. New York City, Los Angeles, and Chicago have regular scheduled helicopter service between their downtown areas and their respective airports.<sup>10</sup> (also between New York City's three major airports). Air mail service from the central post office in Los Angeles and Chicago to the airport indicates that a similar service from the

Minneapolis central post office could be performed in addition to passenger transportation.

With the advent of 30-45-60 passenger helicopters within a few years, additional service could logically be extended to outlying population centers such as Duluth, St. Cloud, Rochester, Mankato, etc. as well as local service to established residential areas like Wayzata, Minnetonka and Anoka.

Nicollet Island offers a unique site for a major heliport because of its physiography and nearness to the downtown area. Ground sites are usually considered superior to roof tops for reasons of safety, ease of fueling, and removal of damaged helicopters<sup>10</sup>. Seldom, however, can a ground site be found near enough to a city center to fully utilize the potentials of the helicopter. The southeastern tip of Nicollet Island could be utilized for the landing pads necessary for operations so that the accompanying noise will be removed as far as possible from the proposed motor hotel. (The noise problem is expected to diminish as new multi-engine helicopters come into service in the near future.)

The river will pose no particular problems. Helicopters are operating from a waterfront pier in New York City and will soon be operating from a new heliport pier in San Francisco Bay. There are no major obstructions to be removed or minimized in this area, and because of the landing and take-off characteristics of helicopters, the Third Avenue Bridge (80' high and 400' south) will not be a hazard. There is sufficient area here for the construction of a complete and well functioning heliport for the day when this becomes a well established, all weather, year round heliport serving the Twin Cities and outlying

areas in the state.

The redevelopment program for Nicollet Island will therefore include the following items within the southeast section:

A Motor Hotel with 450 rooms, parking for 300 guest cars, a variety of restaurants, lounges and coffee shops, exclusive shopping opportunities, swimming pools and other recreational facilities, service facilities and a automobile rental agency with parking for 50 cars available. Total area will be approximately 300,000 square feet with 120,000 sq. ft. denoted to the rooms averaging 250 sq. ft. each, 80,000 sq. ft. for guest parking, 15,000 sq. ft. for rental parking, and 85,000 sq. ft. for activities and service.

A heliport consisting of three landing pads 200' in diameter each and a terminal building totaling approximately 16,000 square feet for administration, control, servicing and passenger accommodations.

DESIGN PREMISE

DESIGN PREMISE.

The overriding premise of this design is a belief in the necessity of treating Nicollet Island as a single piece of architecture to be molded and shaped like a homogeneous piece of sculpture. This approach is possible and desirable because of the relatively small size and absolute definition of the island. The residential development requires strong organization and a single spirit to perpetuate the physical and psychological well being of a newly created community. The motor hotel and heliport require distinctive forms that are appropriate for their functions yet are subordinate to the whole form of the island. With this governing principle of unity in mind the following points will be discussed.

Land Use. As noted in the program investigation, E. Hennepin Avenue not only dictates but facilitates the two different land uses on either side of this major traffic artery. Each end of the island constitutes a self contained function that will be related to the other visually but not physically. The residential neighborhood will be organized along the spine of the island focusing on the community center and elevator apartments located in the direct center of the northwestern end. As an extension of both ends of this center along the spine, two passive park areas will afford their openness to the towers as well as to the walk-up apartments grouped around the periphery of these open spaces. Underground parking garages for the tenants of the elevator apartments will serve as a deck for the community center and as a wide bridge over the railroad tracks. This entire central complex containing 75% of the dwelling units and all of the major community spaces and functions will be ringed by a single road to serve the entire island.

The row housing itself will be of a linear type placed almost continually around the island at the edge of the embankment. A common play and gathering place will be developed for each integral grouping. The profile of the embankment will be changed to accommodate two level row houses and a continuous pedestrian promenade around the water's edge.

This articulation of the land use places the most dense development closest to the neighborhood's heart, the shopping and community center. From the 12 story elevator apartments clustered around this center to the 3 story walk-up apartments to the single family row houses to the leisurely promenade at the water's edge, the use density diminishes.

The limited area of the southeastern end will be devoted to a continuation of the pedestrian promenade, the three pad heliport with supporting elements and the 450 room motor hotel. The heliport will be logically located on the low tip of the island while the motor hotel, above the heliport but below East Hennepin Avenue, will be placed on an intermediate plateau.

Pedestrian Circulation. The design will establish an extensive pedestrian system, principally within the residential neighborhood. This system entails two parts, the promenade that encircles the island and the interior linear system that provides access to the common facilities from any point on the island. The promenade will be easily accessible from the interior all along its periphery. The pedestrian way will be fairly regular in width with a rhythm of trees, lights, and "eddy" spaces with benches, planting, and opportunities for quiet games to enhance the enjoyment of the water's edge.



The interior system will act as a stream following the ridge, with its focus at the point where the pedestrian is "funneled" through the community center. This stream with its many ancillary paths leading to the promenade and all dwelling units will terminate at the bus stop on E. Hennepin Avenue and will continue across the footbridge at the northwestern end of the island leading to the high school and the major city park.

The bus stop will include an underpass beneath the traffic on E. Hennepin Avenue which will be the only foot connection with the development on the opposite side. It is expected that pedestrian use of this end of the island will be minimal except for the expected intense use of the ground level court beneath the motel, but the opportunity for enjoyment of the promenade will be provided for the motel or restaurant guest who wishes access to it.

Vehicular Circulation. The road system for the residential development will be a single continuous loop between the periferal row housing and the multi-unit apartments within. It is expected that the traffic volume on this road will be low enough so that numerous driveways and pedestrian crossings will not be dangerous or interfere with traffic flow. To prevent any traffic delays because of railroad activity, this loop road will bridge over the existing railroad on both sides of the island. Each elevator apartment will be provided with a two level parking garage at its base also served by this road. The parking required by the community center will be on the surface adjacent to the center while all the necessary service areas for the center as well as service access to the elevator apartments will be provided underground.

Parking for the walk-up apartments will be provided on the ground beneath the buildings thus leaving more open areas for other uses. Parking for the row housing will be accomplished in strips of individual garages placed to provide a screened forecourt for each grouping of houses. Service to the row housing will be provided through a system of paved collecting areas for each grouping.

The vehicular system on the opposite side of East Hennepin consists of a ramp and turn arounds providing access to the guest parking within the main form of the motel itself and an access road and parking facilities for the heliport. Service for the motel as well as rental car parking will be provided beneath the courtyard off this access road. All service as well as administration and passenger facilities for the heliport will be beneath the elevated landing pads.

Physical Forms. The primary considerations effecting the materialization of the building program are two fold. They are that the view in all directions should be exploited to the fullest and that the physical forms of the buildings should accentuate the physical form of the island itself. These two considerations are compatible and complimentary. The row housing will bite into the edge of the embankment so that only one story height projects toward the interior of the island. The walk-up apartments will be placed on a level approximately only five feet higher than the row housing but because the ground level of these buildings is devoted to parking, all three levels of apartments are afforded the maximum view. The elevator apartments will be placed in a group about.

the community center which will be located on the highest level on the island. Thus the physical form of the building will heighten the land form and will be contributing to the total form of the island.

The motor hotel will not dominate the island by its bulk, but rather will be kept low to become a part of the whole. The same is true of the heliport, which could easily dominate the entire island if desired. Because of this wish for subordination the motor hotel will be only 5 stories high. The ground level will be given over to lobby, lounges, offices, shopping opportunities, display areas and restaurants while 3 of the upper floors will be devoted to guest rooms. An intermediate floor will provide guest parking for the overnight motorist. The form of the motel will be cylindrical to achieve the maximum view and to best accommodate the internal parking and circulation. This will provide an all weather courtyard for recreation and restful activities for the guests at a level approximately 10 feet below East Hennepin Avenue.

Because of the necessity of eliminating immediate obstacles from the vicinity of the helicopter operations, the three landing and take-off pads will be elevated to enable the placement of service, administration, and passenger accommodation on the ground level beneath them. This will also allow the continuation of the pedestrian promenade around the tip of the island beneath the heliport's upper projection. The flight deck will be served by one periscoping elevator centrally placed which will disappear into the deck when a helicopter lands or ascends. The flight deck will be at approximately the same level as the main court-yard of the motor hotel and restaurant. This will provide an interesting spectacle for the motel or restaurant guest adding to the general interest of the setting.

The characteristics of this site as an island will be accentuated by the strong definition of the edge by means of the promenade and by the manipulation of building form and placement to heighten the natural topography of the island and afford the maximum view to all dwelling units.

SOLUTION

SOLUTION.

The following discussion deals only with the statistics of the design solution and does not attempt to describe in detail the graphic presentation. It is suggested that the accompanying plates be examined in detail for an understanding of the design.

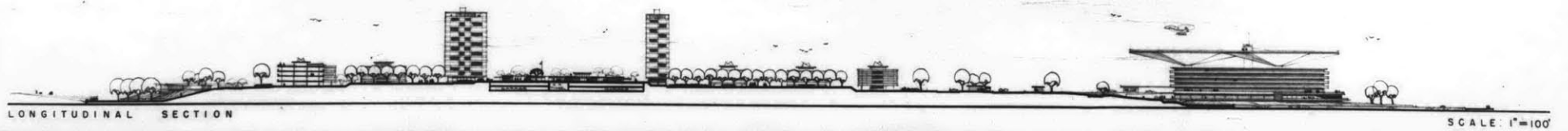
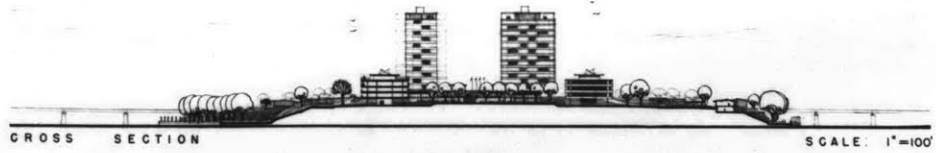
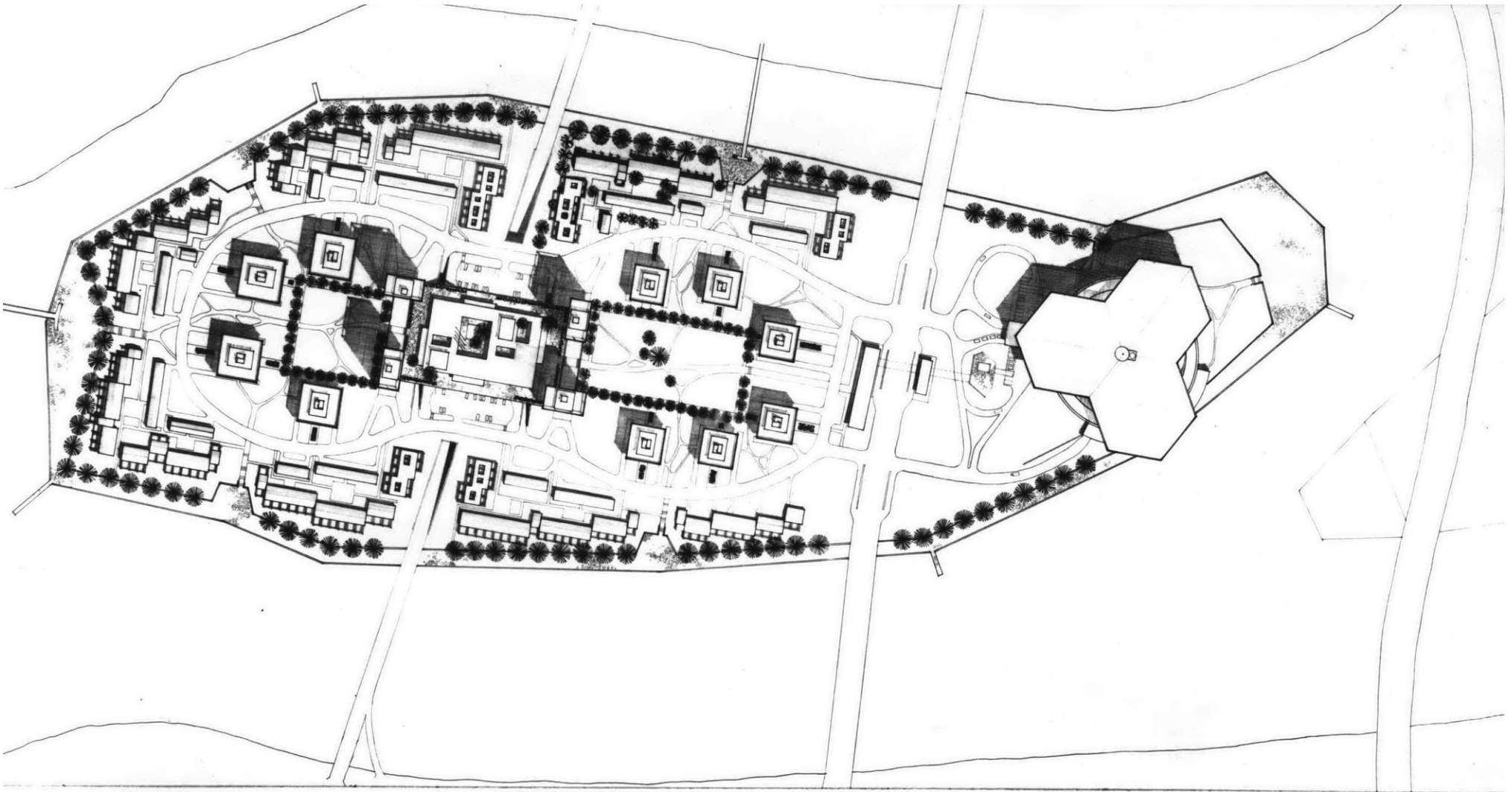
The density achieved slightly exceeds 35 families (105 persons) per net residential acre or 20 families (60 persons) per gross residential acre. A total of 706 dwelling units are included as follows: 288 units in 4 elevator towers, 240 units in 10 walk-up apartment buildings, and 178 row house units. The total population of the residential development will reach 2,100 to 2,150 persons. The motor hotel provides 420 guest rooms with integral parking for 280 guest cars.

The building to ground ratio is approximately 373,000 sq. ft. of building coverage to 2,021,000 of ground area or 18.5% coverage. The floor area ratio reaches 1,501,000 sq. ft of floor area to 2,021,000 of ground area. This gives a ratio of 1 to 1.33 or 75%. The following chart illustrates the breakdown of these figures.

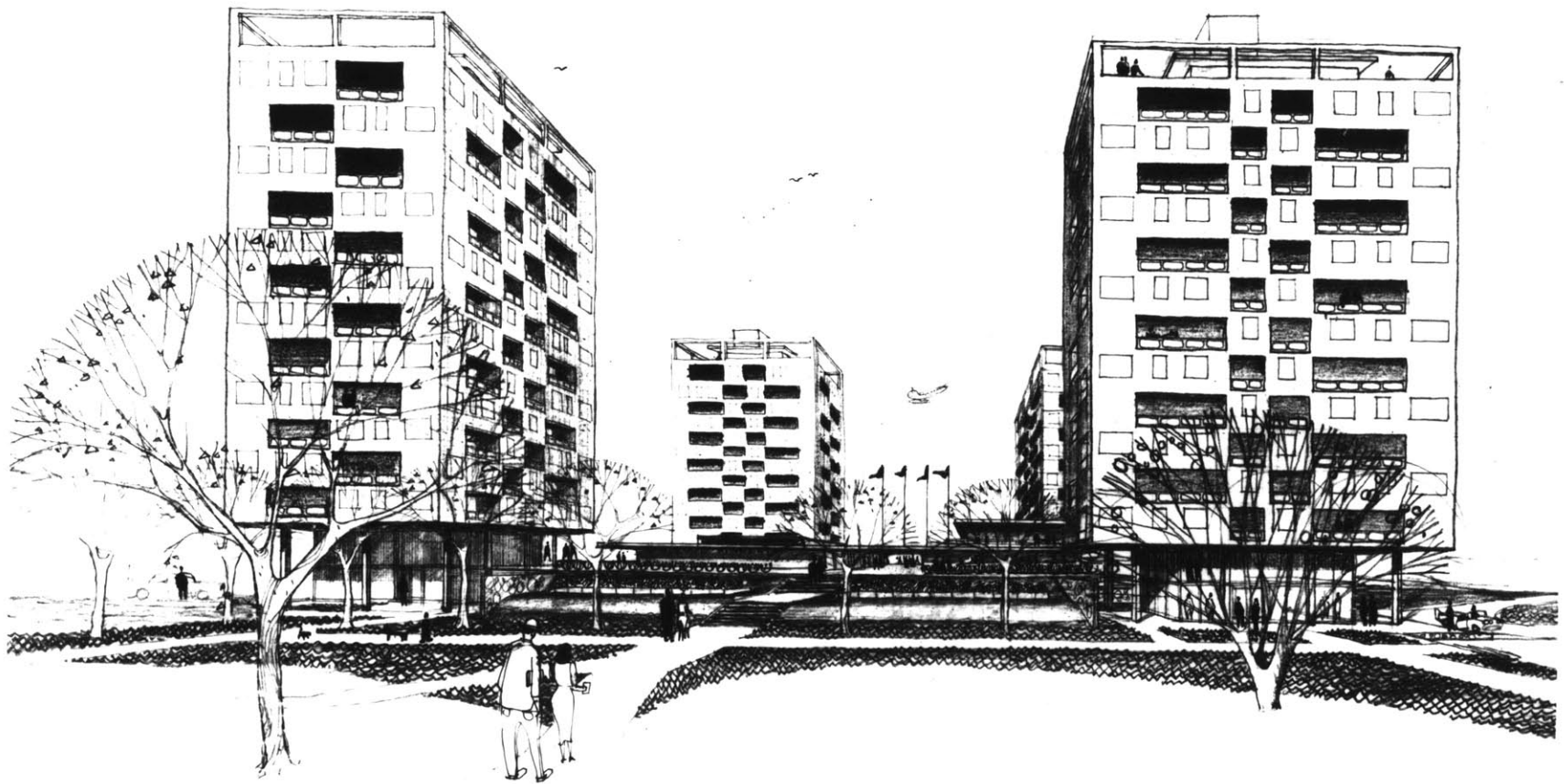
	<u>Ground Coverage</u>	<u>Floor Area</u>
Walk-up apartments	81,000 sq. ft.	324,000 sq. ft.
Elevator apartments	18,000	232,000
Row housing	105,000	210,000
Row house garages	35,000	35,000
Underground parking and community center	73,000	170,000
Bus station-rental office	8,000	8,000
Heliport	43,000	182,000
Motor hotel	100,000	340,000
	<hr/>	<hr/>
TOTALS	373,000 sq. ft.	1,501,000 sq. ft.

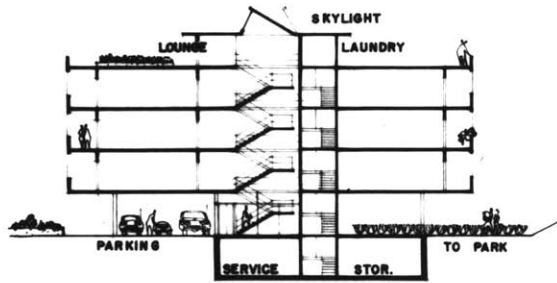
This floor area ratio would be in keeping with the cost of acquiring Nicollet Island to achieve a desirable ratio between building costs and land costs of 10 to 1. Assuming an average building cost of \$20 per square foot, this 1 to 1.33 ratio would allow for a 50% increase in land acquisition costs above assessed valuation and still be within the 10 to 1 ratio of building and land costs. It is believed, therefore, that the use density of this design solution would be appropriate for the cost of redevelopment.

The total cost of this redevelopment project would approach \$33,000,000. The expected cost of the land would be approximately \$1.50 per square foot or \$3,000,000. for 2,021,000 square feet. The expected cost of the building program would average \$20.00 per square foot or \$30,000,000. for 1,501,000 square feet of floor area. The pedestrian promenade would likely be a separate project paid for and maintained by the City of Minneapolis.

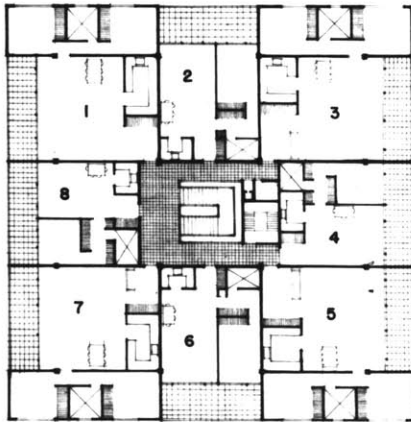








SECTION

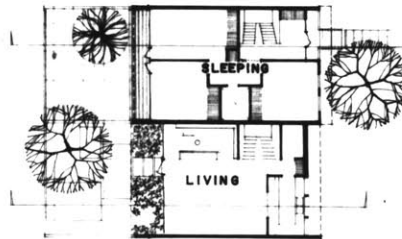


TYPICAL FLOOR

WALK-UP APARTMENT TYPE  
1" = 20'



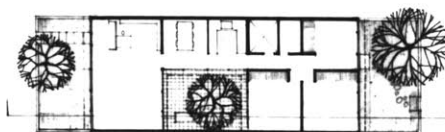
SECTION



TYPICAL PLAN

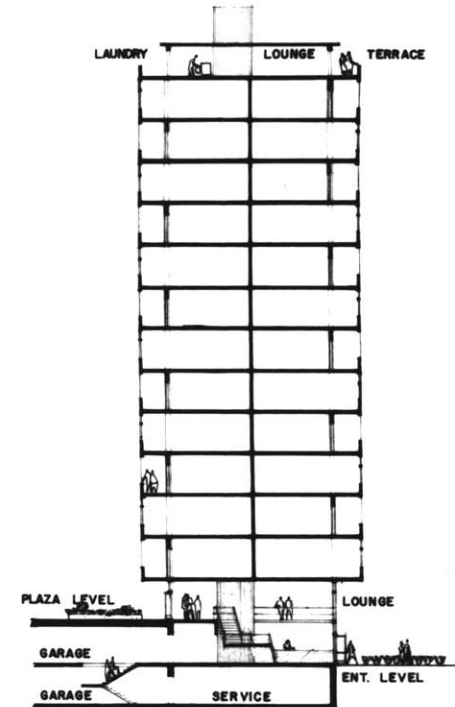


SECTION



TYPICAL PLAN

ONE & TWO STORY ROW HOUSING  
1" = 16'

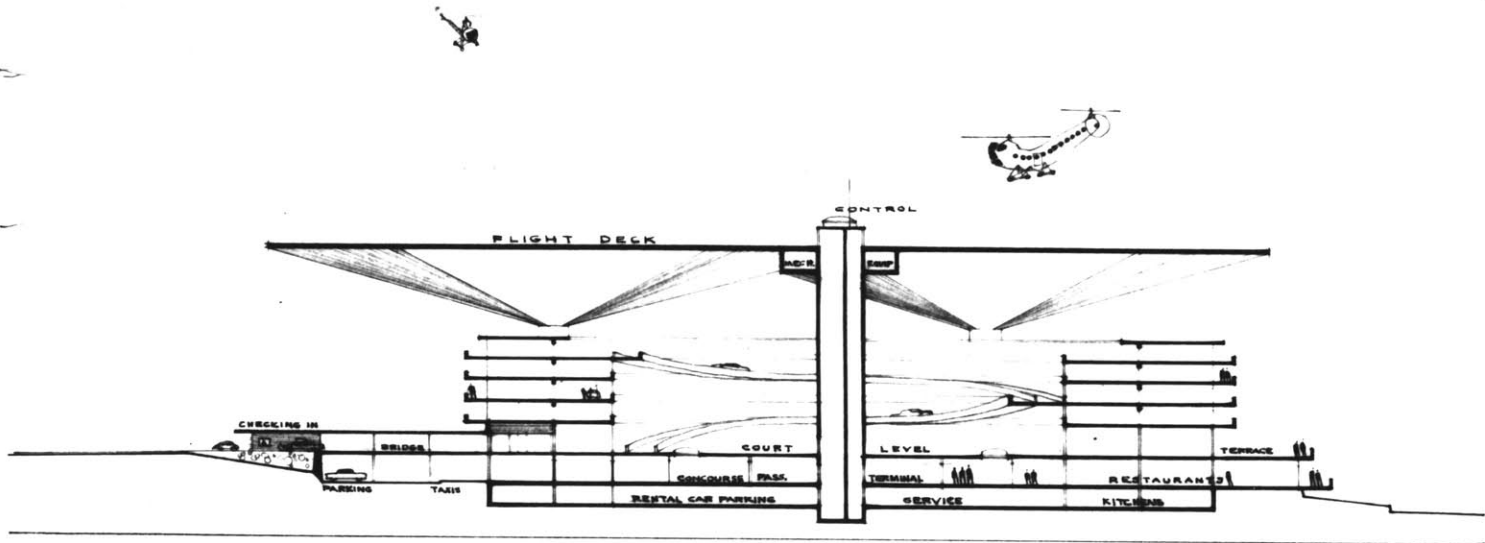


SECTION



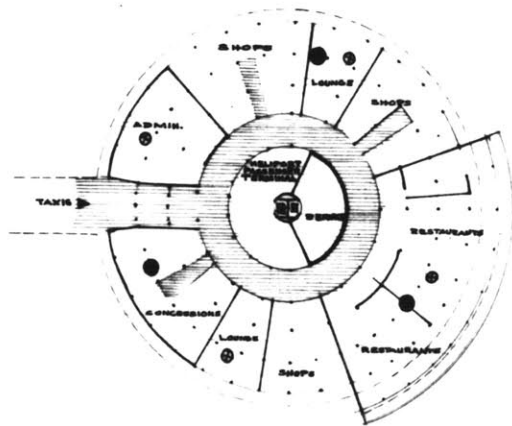
TYPICAL FLOOR

ELEVATOR APARTMENT TYPE  
1" = 20'

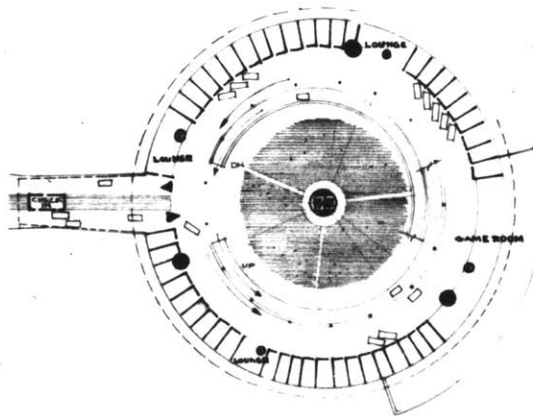


SECTION

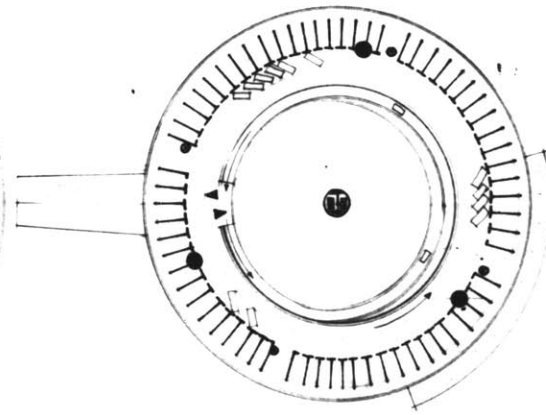
SCALE: 1"=50'



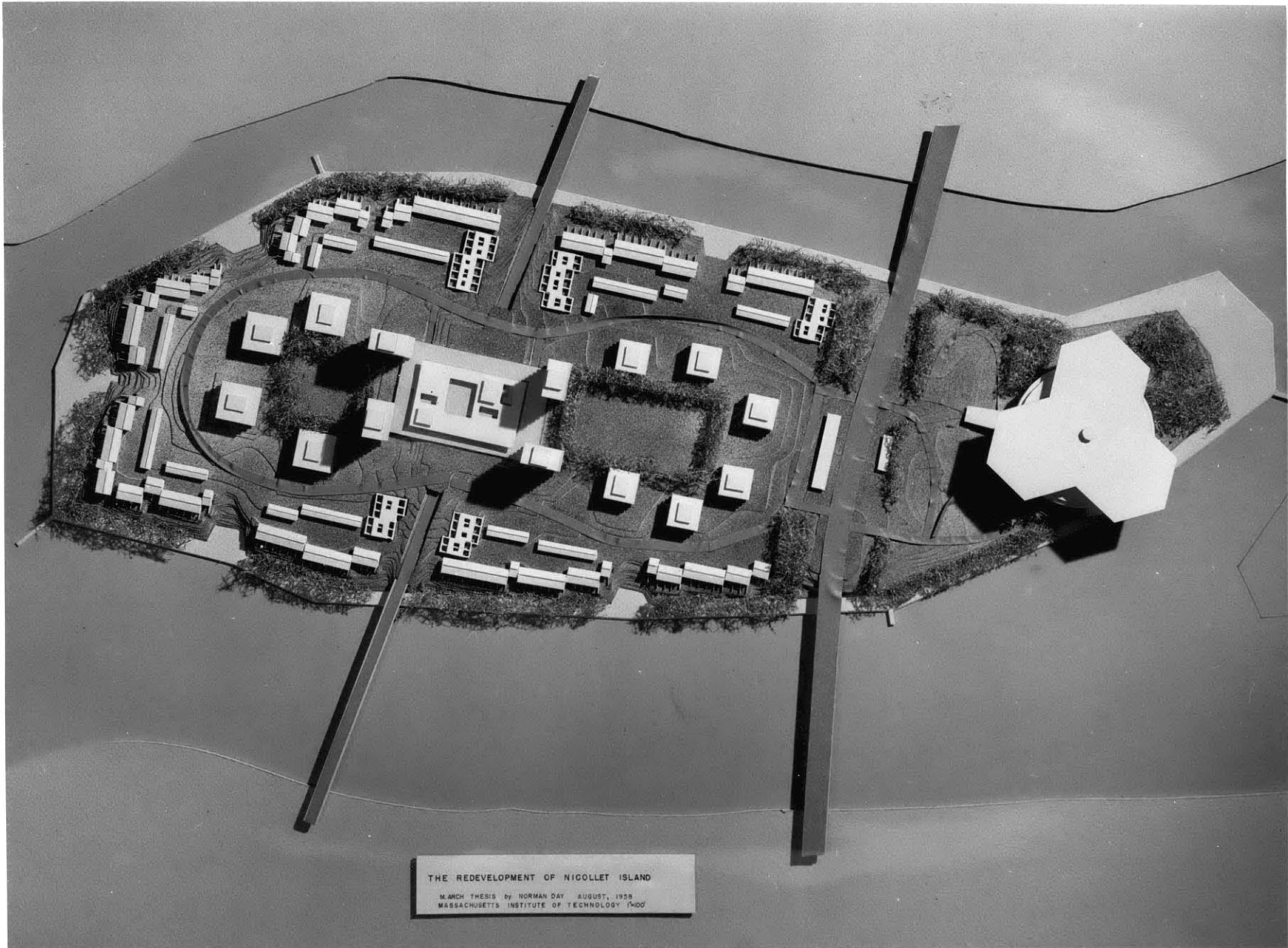
CONCOURSE LEVEL



COURT LEVEL  
SCALE: 1"=100'



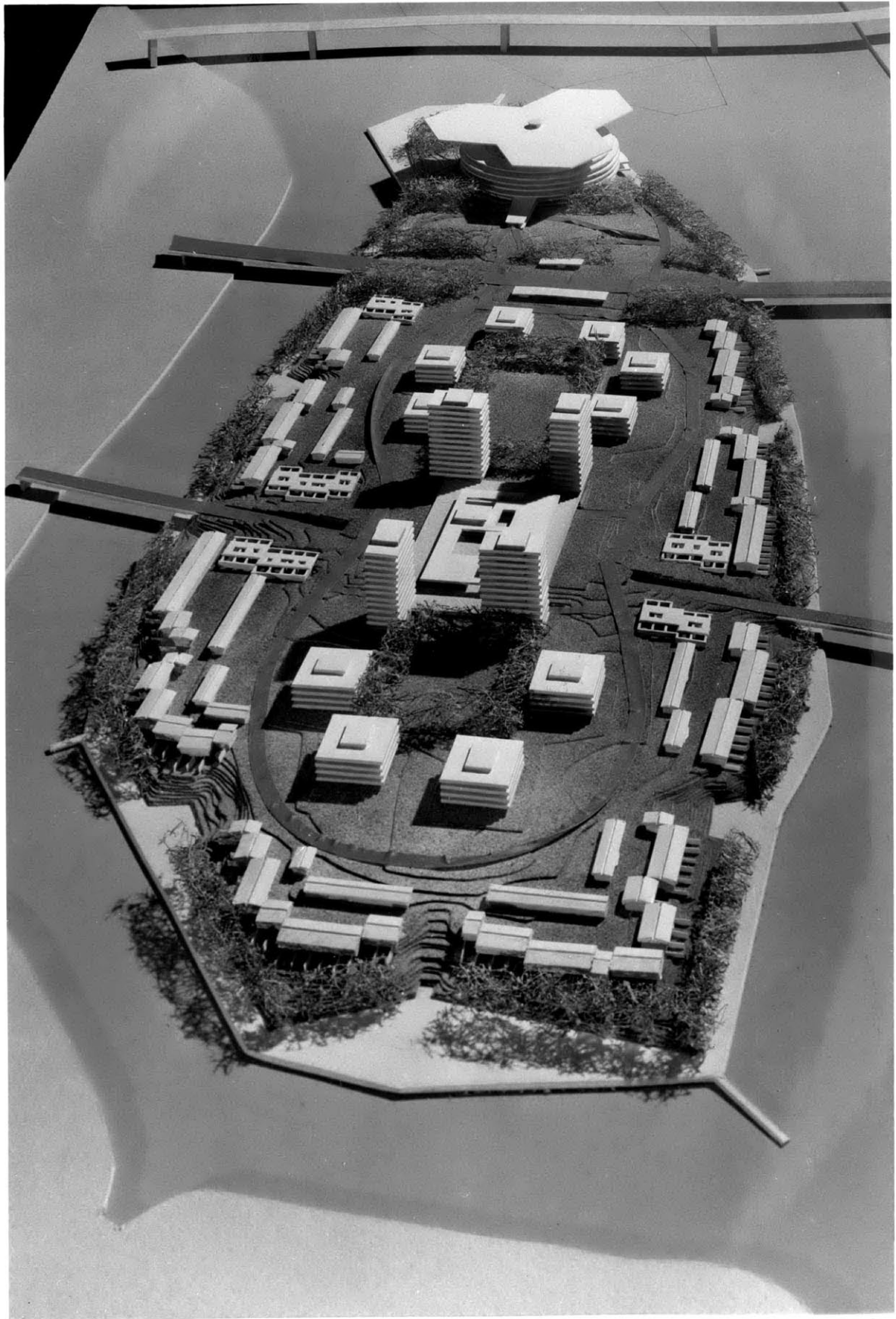
TYPICAL FLOOR



THE REDEVELOPMENT OF NICOLLET ISLAND

MARCH THESIS by NORMAN DAY AUGUST, 1958

MASSACHUSETTS INSTITUTE OF TECHNOLOGY 1900



FOOTNOTES.

1. Minnesota's Rocks and Waters, pp. 314-328. George M. Schwartz and George A. Thiel. University of Minnesota Press, 1954.
2. Annual Report of the City Planning Commission, Minneapolis, Minnesota, 1951, Historical Review.
3. Minnesota: "Description and Travel". Federal Writers' Project, New York, The Viking Press, 1938.
4. Minneapolis Sunday Tribune, Centennial Issue. January 5, 1958.
5. The Housing and Redevelopment Authority in and for the City of Minneapolis.
6. City Planning Commission, Minneapolis, Minnesota.
7. Plate 3A of the revised Minneapolis City Assessor. Copyrighted 1940 Atlas of Minneapolis.
8. Annual Report of the City Planning Commission, Minneapolis, Minnesota, 1952.
9. Minneapolis City Assessor's "true and full" assessed valuation as of November 30, 1956.
10. Helicopter Operations and Design Requirements. International Air Transport Association, 1953.
11. Minneapolis Sunday Tribune, May 11, 1958.
12. Planning the Neighborhood, American Public Health Association, Committee on the Hygiene of Housing. Public Administration Service, 1948.
13. Origin and Destination Traffic Survey of St. Paul, Minnesota and Minneapolis, Minnesota. Minnesota Department of Highways, 1950.



BIBLIOGRAPHY.

- Baker, Geoffrey Harold and Bruno Funaro. Motels. New York: Reinhold Publishing Company, 1955.
- Blegen, W. H., The Land Lies Open. Minneapolis: University of Minnesota Press, 1949.
- Encyclopedia Britannica, Volume 15, 14th Edition, "Minneapolis". New York: Encyclopedia Britannica Inc., 1929.
- Fogarty, F. "Land: the strange case of the city," Architectural Forum, 106:134-6, March 1957.
- "Halting Progress of Urban Renewal". Architectural Forum, 107:124-5, October 1956.
- International Air Transport Association. Helicopter Operation and Design Requirements. Montreal: The Montreal Air Transport Association, 1953.
- Minneapolis City Planning Commission. Annual Report of the City Planning Commission, Minneapolis, Minnesota. 1949, 1950, 1951, and 1952.
- Minnesota, "Description and Travel". Federal writers' project for the Public Administration Service. New York: The Viking Press, 1949.
- Minnesota Department of Highways. Origin and Destination Traffic Survey of St. Paul, Minnesota and Minneapolis, Minnesota. St. Paul: Minnesota Department of Highways, 1950.
- Philadelphia Redevelopment Authority. Eastwick New House Study. Philadelphia: Philadelphia Redevelopment Authority; 1957.
- Planning the Neighborhood. American Public Health Association Committee on the Hygiene of Housing. Chicago: Public Administration Service, 1948.
- "Row Houses for Cities", Architectural Forum, 106: 148-53, May 1957.
- Schwartz, George M. and Thiel, George A., Minnesota's Rocks and Waters. Minneapolis: University of Minnesota Press, 1954.
- Whyte, William H. Jr. and others. "The Exploding Metropolis". Fortune, Sept., Oct., Nov., Dec. 1957 and Jan. 1958.