

"A NEW TOWN"

by

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Submitted in Partial Fulfillment
of the Requirements
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at the

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Dear Dean Anderson,

In partial fulfillment of the requirements for the
degree of Master in Architecture I hereby submit this
thesis entitled, "A New Town."

Respectfully,

Herbert Gerald Zeller

ACKNOWLEDGEMENT

It is with sincere gratitude that I acknowledge the guidance and criticism of Professor Jan Lubicz-Nycz who from the beginning encouraged the class as a whole in their pursuit of new ideas.

To my fellow students I express my continuing appreciation for their support, advice, and unyielding friendship.

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ABSTRACT

The inability of existing cities to adapt to the demands of a new age of urbanization is a dominant factor in their gradual destruction as the centers of our culture. The need to anticipate future needs and new social orders, to plan for the growth of urban population and for a meaningful environment has now become essential to human survival.

The demand for change is characteristic of the 20th century and has become equated with life itself. To understand its effect upon the city we must look beyond the physical aspects of environment and trace the complex latticework of relationships that join the parts, provide the choices, satisfy the needs, and stimulate the imagination. Having done this the designer must endeavour to project a vision that is not his own subjective image of tomorrow, but is something that will provide for the varied patterns of life of all people.

For architects, the media of translation from human abstraction to physical form, is space. Everything that defines and welds together social contents, technical instruments, and expressive values, must gain significance in spatial realization. For the designer of urban areas,

it is the continuity of space conditioned by growth and change. At this scale is the confrontation of the individual with mass man, of heterogeneous institutions with technological progress, of modern society with a new set of ideals, of architecture with an unprecedented need for innovation, and the city with a reshaping as the expression of human potential.

PROGRAM

Considerable time was devoted to the development of a spatial program for the city at its 30,000 population stage. Included in the material used to establish this program were the following items:

1. Summary of Trip to Germantown, Maryland and to Planning Commission, by fifteen students and Professor Myer where they met with Commissioner Hewins and Mr. John Conway, both in charge of the planning of Germantown. This information discussed the existing topographical conditions, existing industry and small towns, projected population characteristics for the area in 1985, and employment characteristics of the population to be expected.
2. Selections from the Germantown Proposal as prepared by the Maryland National Capital Park and Planning Commission. Included in this report were chapters on Land Use Inventory; Trends and Projections for the new city with reference to population, income, and employment; Lists of Goals and Objectives; Plan Proposals; and Implementation Recommendations.
3. Census Tracts 1960, for Montgomery County, Maryland.
TABLE P1--General Characteristics of the Population.

TABLE P2--Age, Color, and Marital Status of the Population by Sex.

TABLE P3--Labor Force Characteristics of the Population.

TABLE P4--Characteristics of the Nonwhite Population.

TABLE H1--Occupancy and Structure Characteristics of Housing Units.

TABLE H2--Year Moved in Unit, Automobiles Available, and Housing Value.

TABLE H3--Characteristics of Housing Units with Nonwhite Household Heads.

4. Comparative socio-economic data on other new towns collected by D. Hudson, for Reston, Va., Columbia, Md., and for Germantown, Md.

5. Comparative socio-economic data on other selected towns of different character in the Boston area, collected by D. Hudson.

6. Comparative socio-economic data for towns where government employment is unusually high, Washington, D.C.; Montgomery County, Maryland; Madison County, Ala.; Anderson County, Tenn.

7. Master Plan for Germantown by Whittlesey, Conklin, and Rossant, Planners.

8. Title X--Mortgage Insurance of Land Development of the 1965 U.S. National Housing Act. This document will constitute the base for implementation techniques of the design.

9. Other information; 1 to 24,000 U. S. Geological survey map; 1 to 12,000 aerial photograph of the site; 1" equals 200' contour maps of the site.

From this research data assumptions for the expected growth of Germantown with respect to population, dwellings required, and jobs, were made. It is believed that population would grow predominantly by immigration in the early stages and thereafter by natural growth and immigration until the new town reached an ultimate population of 85,000 to 100,000 people. The following is a summary of this growth:

<u>Year</u>	<u>Population</u>	<u>Dwellings</u>	<u>Jobs</u>
1965	--	--	--
1970	15,000	4,300	5,000
1975	30,000	8,600	10,000
1980	45,000	12,900	15,000
1985	60,000	17,200	20,000
1990	75,000	23,800	20,000
1995	87,500	28,000	27,000
2000	100,000	32,000	30,000

In order to make a design proposal for the city at stage 30,000 population, the following uses were established as the required need of such a population based upon the research.

Approximately 8,600 dwelling units (A)
 4 elementary schools, 175-300 children (B)
 1 junior high school, 1000-1500 children (B)
 1 high school, 1000-1500 children (B)
 1 community college (B)
 1 technical institute (B)
 1 library (B)
 1 museum-art gallery (D)

1 auditorium-assembly hall to seat 2000 (E)
 1 theatre (E)
 3 cinemas (E)
 5 multipurpose halls (D)
 places of worship (D)
 3 gymnasiums (D)
 2 covered swimming pools (D)
 bowling alleys (E)
 500 hotel rooms (A)
 restaurants and cafes (C)
 clubs, facilities for dancing, etc. (D)
 openair sport and recreational facilities (G)
 open spaces (G)
 parks (G)
 lakes (G)
 250,000 sq. ft. of local shopping centers (C)
 1,000,000 sq. ft. of regional shopping center (C)
 city hall (D)
 city administrative offices and courthouse (C)
 medical center with 500 bed hospital (C)
 fire station (D)
 police station (D)
 jail (D)
 750,000 sq.ft. of office space for federal and state
 government offices and private enterprise of whole-
 sale and manufacturing organizations, banking and insur-
 ance. (C)
 150,000 sq. ft. of floor space for research laboratories (C)
 1,000,000 sq.ft. of floor space for electronic and other
 light industries (F)
 2,000,000 sq.ft. of warehouse and storage space (F)
 1 post office (C)
 1 transportation center for buses, taxis, etc. (F)
 1 power plant (F)

These uses were then classified according to their space-
 volume characteristics, ceiling height, depth from exter-
 nal surface, access to natural light and view, probable
 dead load-live load structural demands, characteristic
 structural system, required spatial flexibility and en-
 vironmental control. These characteristics are grouped
 A through G, were noted after each use above and are listed
 below:

Space-Volume A:

Low space--floor to ceiling 10'
Depth not more than 30' from external surface
Access to natural light and air and view is mandatory
Small live loads
Small span structural system
Space highly fragmented both externally and internally

Space-Volume B:

Floor to ceiling 12'-15'
Depth 30' to 40' from external surface
Natural light, air and view desirable
High degree of environmental control
Medium span structural systems (30' x 30')
High degree of flexibility allowing for rearrangements

Space-Volume C:

Floor to ceiling 12' to 15'
Depth distance from external walls unlimited
Natural light and air not mandatory
High degree of environmental control
Medium span structural system (30' x 30')
Heavy live loads
High degree of flexibility allowing for rearrangement

Space-Volume D:

High space floor to ceiling, more than 30'
Some natural light desirable
Wide span, more than 60', heavy loads
High degree of environmental control

Space-Volume E:

High space, floor to ceiling more than 35'
No contact with external surface required
Wide span more than 60'
Heavy loads
Natural light and air not desirable
High degree of environmental control

Space-Volume F:

High space floor to ceiling more than 20'
Access to natural light and air not necessary
Wide span 60' x 60'
Heavy live loads
Some environmental control

Space-Volume G:

Open spaces exposed to the elements
Manipulation with grade
Exposed horizontal surfaces of structures

It must be noted that neither the use allotments nor the space-volume characteristics were meant to imply rigid adherence. As the design progressed, the designer felt free to modify or adjust these guidelines based upon the desired location of the use in the urban context, the possibilities of the use assuming a new physical organization, or architectural design, and frequently based upon his intuition as a designer and shaper environment. It is not the intention to apologize for the later but rather to support reasoned intuition as a valid decision-making tool for city design. As the conceptual ideas developed into a physical design, feedback from decisions made intuitively were reinforced or reorganized into new design objectives, and in the end, this proved to be a most valuable part of the learning process.

GOALS AND OBJECTIVES

The goals of this thesis proposal for a new town have been deliberately restricted in order to draw into focus those aspects of city design most pertinent to the role of the urban designer.

A proposal for a new town cannot ignore today's society and its values, nor can it assume the social structure of today will remain fixed in the future. It must recognize change as a dominant element in contemporary society and provide a city mechanism that can absorb new patterns of evolution, social and physical, without serious damage to its fabric. It must define those permanent parts of its structure and organize them in a neutral way so as to avoid obstacles for creative growth and intuitive change of elements. Thus allowing the disposition of uses to be based upon more fundamental interrelationships evolving from their function in a changing society.

The form of a city reflects both the physical processes as well as the immaterial forces that combine to produce it. A new town must be an expression of our expanding technology out of necessity. By carefully reviewing the promise of technical innovation, the design should employ it as the servant of mankind allowing a new form for urbaniza-

tion that emphasizes flexibility, accessibility, and a new kind of habitability that humanizes the city. It should welcome the contributions of mass production, systems engineering, pioneering structural ideas, computerization techniques, and environmental control processes, as tools in the production of new city form.

The city design must offer the diversified choiceful environment that has made cities meaningful places in which to live. It must offer as a primary objective real alternatives for its inhabitants, an open environment where all patterns of life can coexist. In addition to recognizing established housing preferences, it must offer far-sighted answers to the housing problem of the future. It must provide a mixture of primary uses that act to reinforce each other by their capacity as activity generators, need for services, urban interdependency, or contribution to city structure and urban form.

Essential to successful new town design is the incorporation into the structure of the city itself a high degree of mobility for all its inhabitants with a determined effort to establish overlapping layers of pedestrian, vehicular, and service accessibility for all uses within the city. A constant awareness of the importance of transportation as the generator of urban vitality, as patterning new forms of social interaction, as a structuring element for urban develop-

ment is paramount to city design.

Scale, spatial continuity, order, functional efficiency, have been important to architects as they try to produce beautiful and engaging buildings. These factors take on new dimensions and greater importance for the city environment. They become the indices for meaningful, imageable, useable, urban organization.

DESIGN PROPOSAL---SITE

The selection of the regional location for the site of the new town had already been made. All parts of this area are readily accessible from Washington, D.C., by automobile over Interstate 70S. Railroad service is also available to the area by the Baltimore and Ohio Railroad line running nearly parallel to Interstate 70S through the area. The proposed rapid transit line would follow either of these two right-of-ways to the region and would continue on to Clarksburg, the next new town on the northwestern corridor system.

Careful consideration was given the selection of the specific site for the new town from the varied topographical, climatic, and demographic characteristics of the area. The demand for a valley location came out of a preconceived concept of citywide spatial organization. This citywide spatial disposition was generally made up of a city center organized three-dimensionally providing multilevel access and use distribution, and the remaining city uses, made up of primarily dwelling units organized essentially two-dimensionally. In order to combine these two spatial patterns, a valley site was selected.

The valley location provided a natural physical envelop or

container that could embrace comfortably the multilevel organization of the town center, the sloping sides of the valley acting as inclined lines intersecting the horizontal platforms of the city center providing on level access, pedestrian or vehicular, from the surround of the city, to the center. The two-dimensional, ground related dwelling units could be organized on the hill sides and yet relate directly to the city center from their own topographical elevation.

Hill tops would be devoted to higher density housing, parking, and open recreational areas. The valley bottom was envisioned as providing recreational linkages to the surrounding region and in particular to the Seneca Creek and Park system. The role of the valley as container was used in the literal sense to control the growth capacity of the city to a desirable level by defining the physical limits to which it could expand. The housing on the hills surrounding the town center thus enjoys the benefits of contact with natural open land while at the same time being directed visually toward the town center emphasizing it as the focal point of a unified whole.

The location of the valley was chosen in order to anticipate the probable growth of the city by allowing the open land necessary for expansion. It was deliberately selected at a distance from local small town development in order to

preserve their integrity and allow them to provide a needed vitality to the area surrounding the new town. To emphasize the historical and traditional heritage of these surrounding villages it is proposed they be placed under regional control and linked to the facilities provided by the new town by intraurban transit.

Of distinct importance was selection of a landscape where only a minimum disturbance would be made to existing State Parks, water courses, wooded area, and recreational land. The economic desirability of taking land neither built upon or in use for recreation seemed essential. Climatic conditions seemed to favor the location as well. The valley is a low space acting as a natural barrier for the town center from the north and northwesterly winter winds but open to pleasant southerly summer breezes.

DESIGN PROPOSAL---TRANSPORTATION

The importance of efficient transportation for the new town was of concern from the outset of the project. The selection of the site near Interstate 70S and the Baltimore and Ohio Railroad line was an important consideration.

The main source of vehicular traffic was anticipated as coming from Interstate 70S north to the new town. The interchange planned for this purpose was used and North-South Route 27 was improved to handle the flow of vehicles into the town. Along with this linkage, three other highway access points were provided, one connecting the new town directly to Gaithersburg, the next southeasterly satellite town; one connecting to the northeastern region; and one to the rapid transit and southern region.

As vehicular traffic enters the town it is separated into crosstown destined private automobiles and into automobiles seeking parking and trucks bound for service centers. An elevated oneway distribution road handles traffic destined for points across the new town while a lower twoway service road provides access to parking and service facilities located in the substructure of the town center.

Adequate parking for vehicles owned by people working or shopping in the city center is provided but on the basis

that intraurban transit will move the majority of people wishing to use the town center and who live in the new town. The facilities provide space for all outside shoppers and working people directly, allowing them to use the regional facilities without becoming involved with local intraurban transit if not desired. Provision is made for a central location for taxis, buses, helicopter, and intraurban transit connections to take place.

The location of the rapid transit had implications for the region as well as for the new town. The location of an industrial area at the Interstate 70S interchange made up of the Atomic Energy Commission facility, with 2500 employees, the Fairchild Research Plant, with 700 employees, and adjacent industrial land with an expected ratio of 23 workers per acre made it desirable to locate rapid transit connections close by.

The right-of-way for the rapid transit would be the B & O Railroad line until it reached Gaithersburg. At this point the track assumes a westerly direction away from the site of the new town. Between Gaithersburg and Clarksburg, the final stop on the rapid transit line, is Route 355, now essentially obsolete because it parallels Interstate 70S. It is proposed that the rapid transit line follow this right-of-way and that a regional transit station be established outside the new town. This station would be linked by intraurban transit to the town center and to the indus-

trial area. This site has the advantage of area-wide accessibility, eliminates noise problems, directness of connection along high speed rapid transit line, no interference with Interstate 70S, and eliminates large dead parking area requirements from vital areas in the town center.

The case for a new mode of transport for cities has been debated thoroughly. Under typical conditions of debate it is concerned with solving the strangling problems of existing cities where the automobile has dominated for so long. In proposing a design for a new town it is ludicrous not to think about ideal modes of movement when the opportunity avails itself from the beginning to establish an efficient transportation system.

What we are dealing with is a problem of scale. When the automobile is traveling on a highway, its dangers are to some extent controllable; over-all traffic organization, speed limits, and police supervision are partially effective. It is common habit today, however, to cover trivial distances in enormous cars--in spite of the maneuver difficulties and perpetual search for parking space. The car traveling on a street on which there are people, houses, shopping places, and businesses, is deadly. It is not only dangerous to life and limb, it is inherently inefficient by nature of its size, control, speed, maneuverability, storage requirements, and ownership; not including its other undesirable

characteristics; its pollutants, cost of operation, general noisiness, and ugliness in large numbers.

Our continued obsession with automobile movement is destroying the cities we are trying to create or rehabilitate. The spoiling effects of the automobile tear at the heart of urbanity, the benefits of compactness, physical and mental stress levels, and destroy true spontaneity of action by crushing accessibility lines in the city.

For this new town an idealized mode of transportation was devised. It was not the intention to prevent the use of the automobile nor was it the intention to eliminate pedestrian movement. Rather, the proposal was to establish a new mode of intraurban transportation at a scale between these extremes. In a compact urban environment the system provides compactness and efficiency making more meaningful the value of automobile ownership at its scale, and returning the humanity to walking by placing each mode in its proper context.

The criteria established for such a system are as follows. The vehicle is a computer controlled two passenger vehicle that travels along a rail from which it draws its power. The vehicle would travel continuously from its origin to its destination non-stop, and automatically, over computer calculated paths. Vehicles would be kept in constant motion on the system except when loading and discharging passengers on separate sidings off of main line movement. Perform-

ance standards comparable to those of the Starcar system would be demanded. The system would need to have an operating capacity of 20,000 people past a point in an hour, which has been considered for the Starcar system. The system could be adapted to move vertically as well as horizontally. Rails would be silent and exposed to view, light, and air where possible. Emergency vehicles, police modules, and special expandable service capsules would be designed to use the system as well. The later vehicle would become part of a city-wide goods distribution network and warehousing system to which all retail business would be linked. The passenger vehicle would be expandable or additive to carry varying numbers of passengers, or goods. Collection point (stations) would be a maximum of 600 feet apart in the city center and 1200 feet apart in the outlying surrounding housing. These dimensions were considered at a proper pedestrian scale. Provision would be made to incorporate the cost of operating the system into the tax structure of the town. Other considerations, as maintenance, vandalism, and breakdown would be handled in a manner similar to the Starcar system. Storage is reduced because each vehicle is reused several times daily and five vehicles would fit into the space required to store one conventional passenger car. Deaths and injuries would be virtually eliminated. Anyone, child through adult, could use the system, including blind and disabled people. The implications of

increased accessibility on the economy of the city, its vitality and desirability, are fantastic, as public participation in every activity would grow because of the ease of movement, the elimination of waiting, and the search for parking, and the directness of the linkages.

Any system can fail by poor design and improper control. In attempting to apply such a system to this new town a conscious effort was made to place restraints upon undesirable modes of transport with emphasis on desirable means. As suggested, the automobile has access to the town center, but primarily for regional shoppers and workers, and thus, is limited by available parking, as in the past. Emphasis is placed upon movement in personalized computer controlled vehicles. These vehicles move along guides to strategically located collection points, on a city-wide network that could extend into outlying areas to make important connections. From collection places, pedestrian and pedestrian reinforcing systems are used. Because of the limited distances to be traversed by pedestrians, these trips would be enjoyable and workable. To handle unique situations battery powered vehicles could move off pedestrian paths. A system of service roads would provide access for garbage collection, moving vans, and emergency vehicles.

In order to anticipate future growth patterns, use reorgan-

ization , and flexibility for change, the intraurban transportation system was designed as a uniform accessibility network over the city center. Rails were carried on long span tensile structures anchored into the sides of the valley surrounding the town center and making linkages to the center from the areas adjacent to it, as well as across the valley tying its sides together. Structural cores support the tensile network and house vertical circulation machinery. These joints become places of high accessibility and the growth centers for urban housing clusters and office structures.

Movement by pedestrian and pedestrian reinforcing systems are also important parts of the total transportation system. As mentioned earlier, the intraurban transportation network was not intended to replace pedestrian movement but rather to encourage it and depends upon it. People will walk along pedestrian ways to and from collection points on the intraurban system. People may walk to the center without using intraurban transit if they so desire. The entire city is designed with the pedestrian in mind. The hope is to return the city dweller the urban spatial experience by requiring him to walk when it is appropriate to walk. A spacial sequence of pedestrian walks and open spaces leads the shopper or worker or resident through the downtown development. In support of this movement is an end to end moving sidewalk elevated above pedestrian

level and linked directly to intra urban transportation and vertical circulation to parking structures.

The entire concept of movement within the city is to place each mode of personal or goods transport in its proper context and at its most desirable scale. The resulting design proposes overlapping and intersecting transport system which combine to vitalize the life of the city making it more accessible and more serviceable.

DESIGN PROPOSAL---SPATIAL ORGANIZATION

As the research material indicates, the spatial characteristics of all uses were categorized into groups. In addition to this grouping uses were classified according to their requirements for service, the load capacities they demanded of the structural system, the expenses of square footage or column-free space they required, their manipulability or growth potential, and their relative permanency. Along with these basically physical characteristics considerable time was spent preparing charts that described the interdependencies of uses. Among the relationships examined were service connections, communications linkages, the desirability of face to face contact, the possibility of multipurpose trips, mutually supporting use categories, the frequency of use, public versus private uses, the age group of the user, time of greatest activity, possible overlapping or shared spaces. It was determined what relationship particular uses had to the intraurban transportation system and the degree of accessibility to parking that was required. The level of social interaction and possibilities of promoting urban diversity and vitality were suggested.

In the first stage of the design proposal for 30,000

population, a conceptual model of these relationships was prepared and a series of plan diagrams drawn to describe the disposition of these uses and the relationship they had with the transportation matrix. The drawings and model explain these relationships most clearly. The concept places a multilevel city center in the base of the three-pronged valley. At the lowest levels of the center are located parking and service areas that support a commercial pedestrian level above. On the edges of this center but still on the flat areas of the valley bottom is industry relating to roads and service facilities and intended to strengthen the activity of the city center. At the ends of this growth and related to open land as well as the town center are the primary educational institutions; high school, junior high school, technical school, and community college. Above the commercial level is housing and office growth making an interlocking upper level matrix of residence and work places clustered around transportation nodes. The intraurban transport system connects the town center with the surrounding hill side-hill top mixed density residential areas. Parking structures at the terminus of the valley spanning tensile structure serve the housing in the town center and that located in the surround. Housing was divided into 20% in the town center and 80% on the valley sides closer to nature.

In the final development of the 30,000 stage, the major effort was put into the refinement of the linear organization of the town center. Parking facilities were located on line with intraurban vertical circulation making this machinery a major element in the three-dimensional transportation matrix of the city. These towers served as access up from the automobile entrance to the town center and access down from intraurban transit lines. Parking facilities assumed the edge position of the substructure where they were open to natural light and air, while service centers line the central section of the spine directly below commercial facilities.

Key buildings were located to stimulate a variety of types of spaces and activity centers. A transportation center provided the major link between bus, taxi, helicopter, and intraurban transit to rapid transit. City government facilities occupy an important point where future expansion of the town center is expected to occur. Educational and recreational emphasis was given the mixture of uses on the north and south ends of the spine. Office development took on the an above commercial level organization along the spine.

Housing in the town center was proposed as a growing, changing formation suspended over the office and commercial areas and clustering itself about nodal points on the intraurban

transportation lines. As proposed, this growth will take on both high density low silhouette and high density high silhouette organizational patterns. All units are independently carried free of one another structurally to facilitate manipulation or reorganization.

DESIGN PROPOSAL---STRUCTURAL CONSIDERATIONS

The long span structure proposed to carry the intraurban transportation system is a new form of tensile steel structure originally proposed by Robert Le Ricolais, structural engineer and professor of architecture at the University of Pennsylvania. The structure is made up of steel cables and rings with cables drawn in a spiral linearly around the rings in tension. The resulting tubular tensile structure is rigid and capable of immense spans at very low cost. Spans in this design reach only 600 feet, conservative by comparison with Le Ricolais' proposals for over 1000 feet. The major problem encountered in deploying this structural system is anchorage of the resultant tensile stresses into the ground. This anchorage requires very large foundations to provide adequate weight to resist the tensile force.

In the design proposal for the new town the structure was used to connect high points on hills adjacent to valley directly, with a conscious effort to maintain a straight line tensile force from side to side. The force was resolved directly into the hill with a major amount of the foundation weight required being provided by the parking structures located at the terminus of each span.

The substructure was a simple 60' x60' bay system which worked well with parking, industry, and commercial facilities. It was envisioned as a two way system of beams and girders spaced ten feet on center allowing structural modules of 20, 30, 40, and 60 feet for semipermanent uses built upon it.

The housing system is again a tensile system. The principal compressive supports were extensions of the 60' x 60' bay system of the substructure. From these columns would be hung tensile members in a 30 foot spacing and in combination with primary supports allow the organization of a housing module of 21 feet square upon the system. Diagonal bracing was provided by crisscrossing pedestrian walkways tying primary members together. The housing units themselves would be a modular prefabricated panelized system of walls and slabs of a light weight material

REFLECTIONS

It is the belief of this designer that no single person can design a city and justly take cognizance of the multitudinous aspects of the problem. The role of the urban designer seems to lie somewhere between architect and city planner, though no one is quite sure just where. That the urban designer is a phenomena of the architectural profession is explanation enough for his concern for the visual order, spatial organization, and functional efficiency of cities. Though he is not a planner, he must understand the social, economic, and political problems of city design in addition to land use relationships, traffic movement, goods flow, city demography, and implementation technique.

It would seem that the justification for such a thesis proposal lies in the results as shown in models and in drawings. But in reality, the process of analysis, the recognition of significant criteria for decision making, the simple trial and error technique necessary to innovation and the creative act, become the valid results. Confidence and determined conviction to find better answers is the reward, and a realization of the enormity of the task ahead is the challenge it presents.



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OFFICE		INDUSTRY	
COMMERCIAL		SERV-PRKG	
EDUCATION		ROADS	

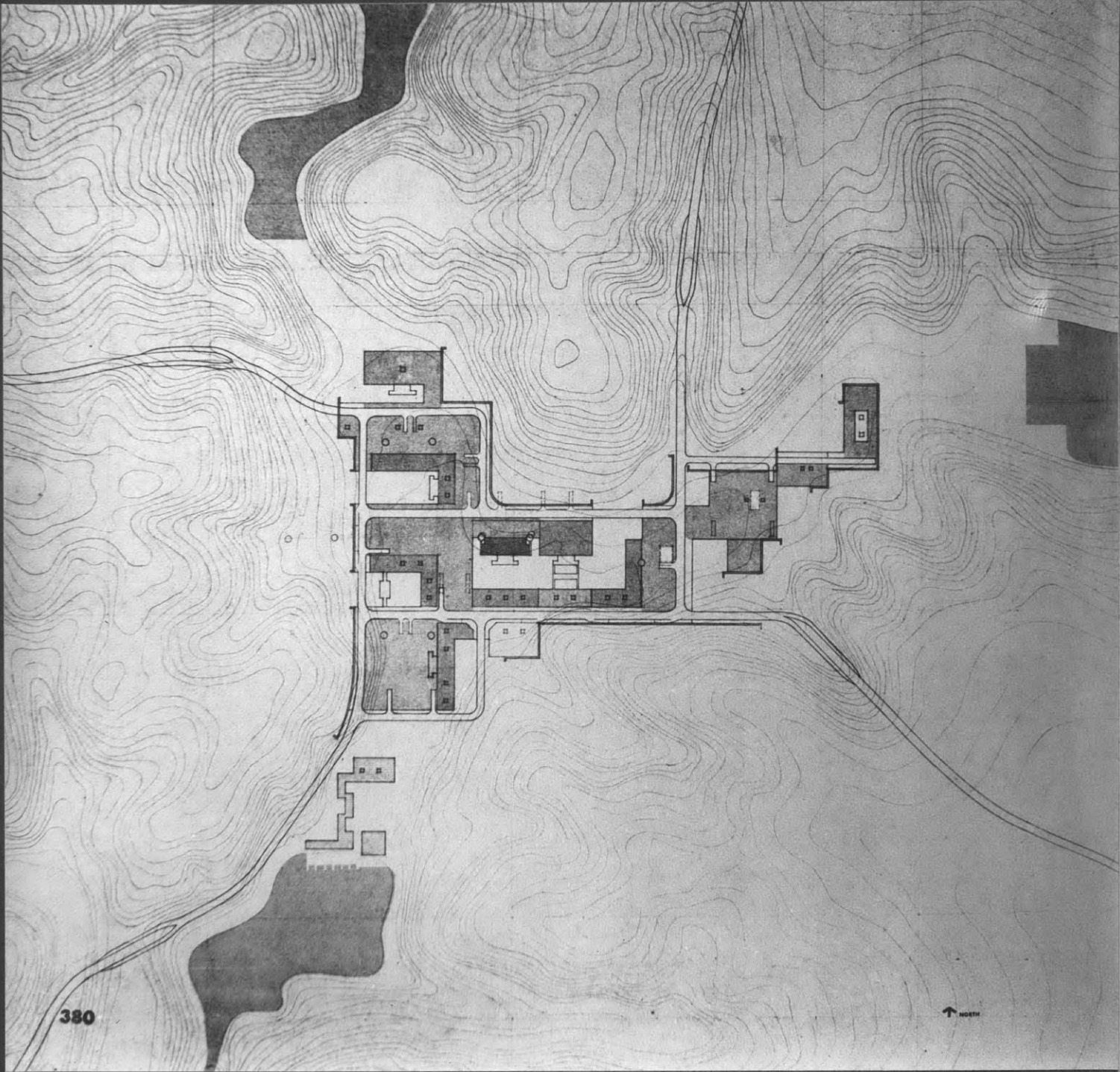
A NEW TOWN

HERBERT GERALD ZELLER
 MASTER IN ARCHITECTURE
 CRITIC: JAN LUBICZ-NYCZ
 JUNE, 1967



360

↑ NORTH



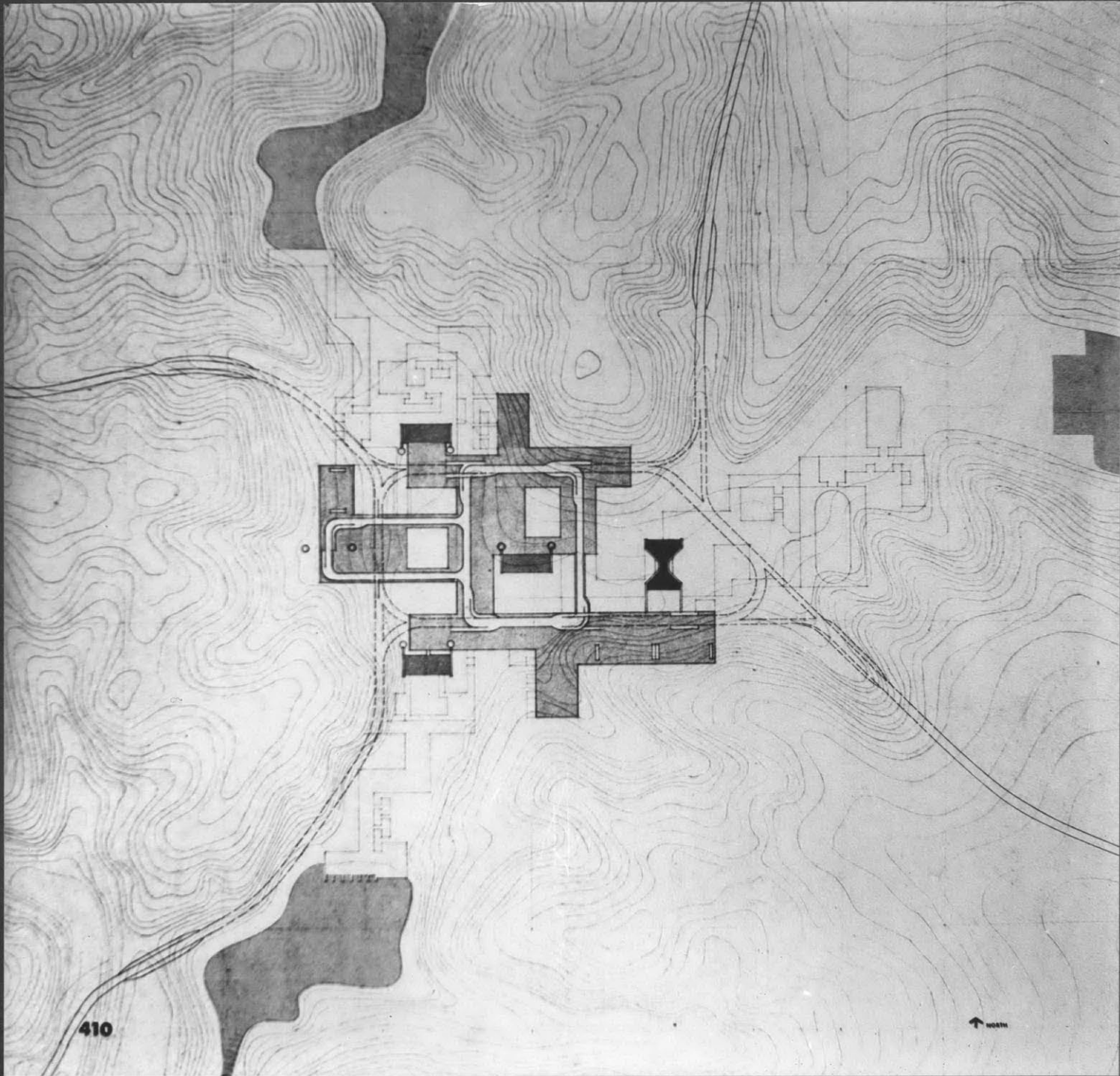
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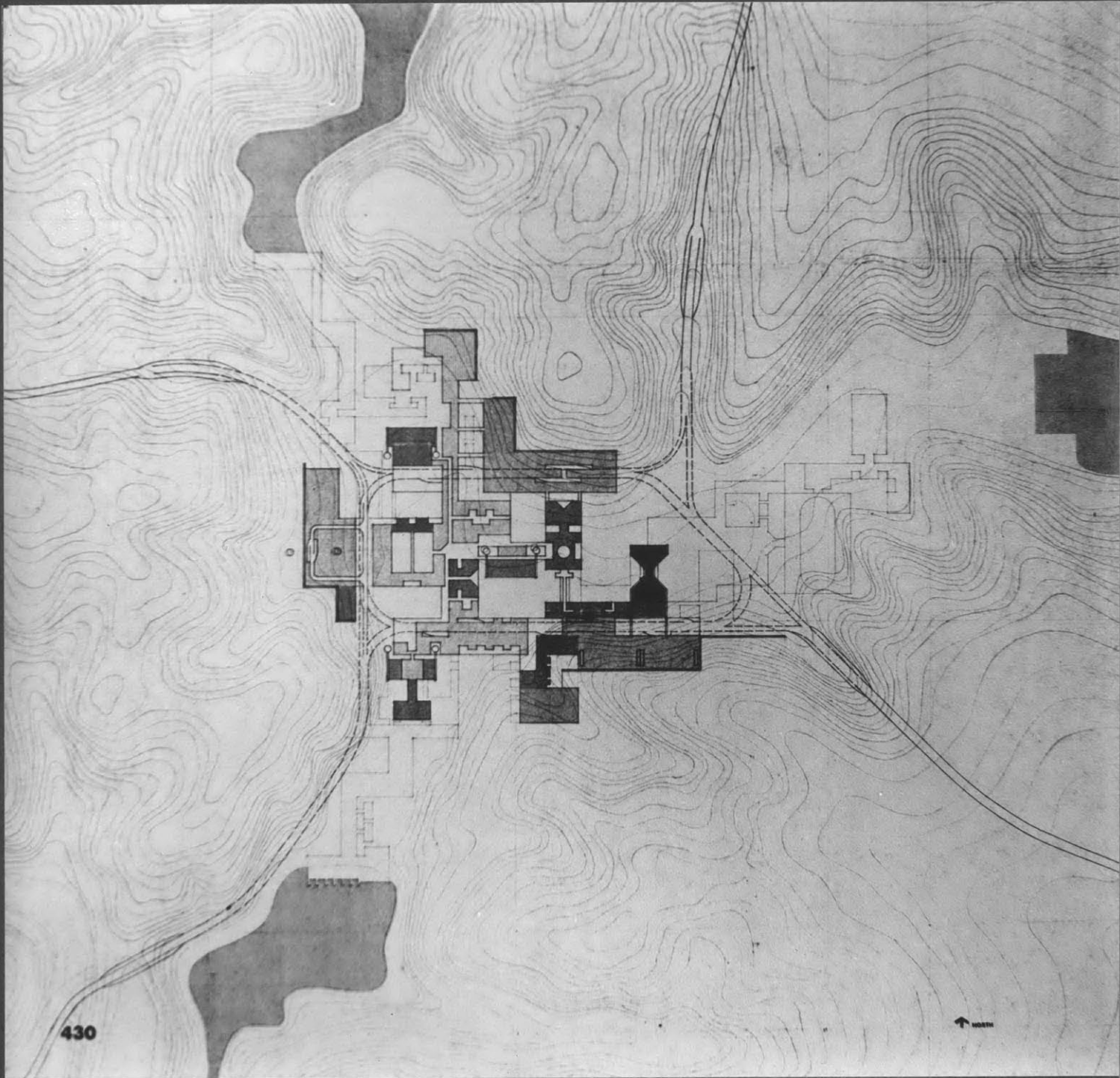
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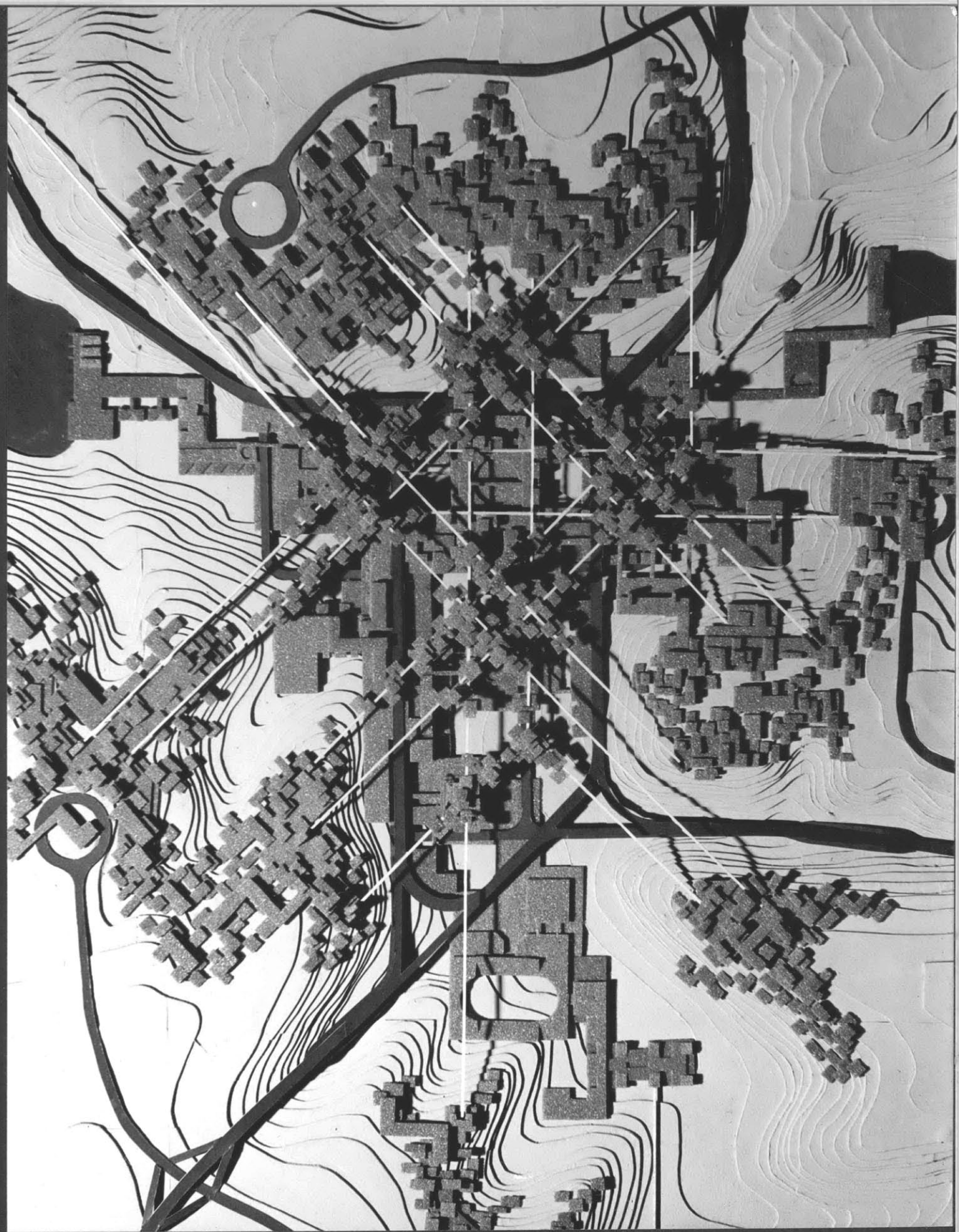
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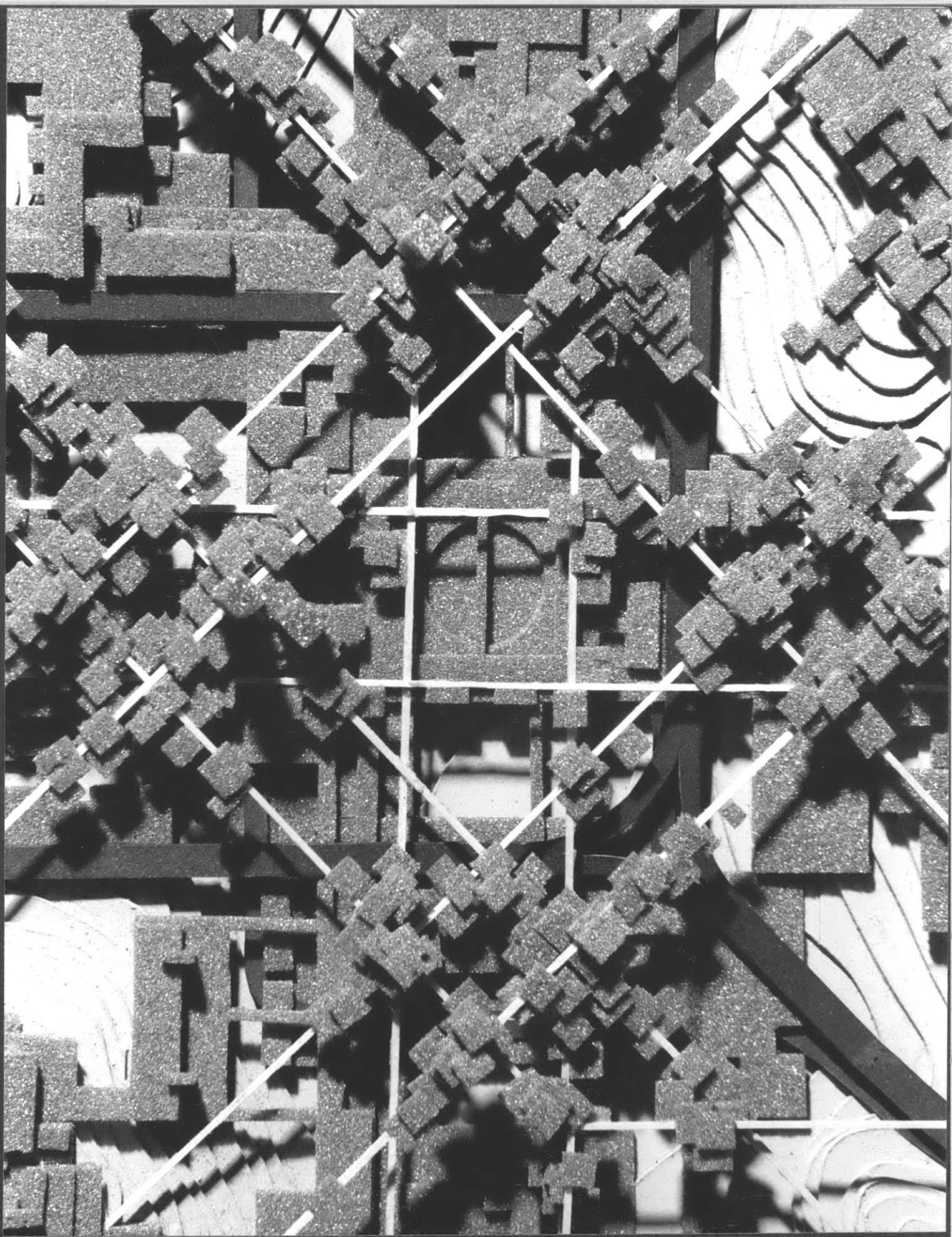
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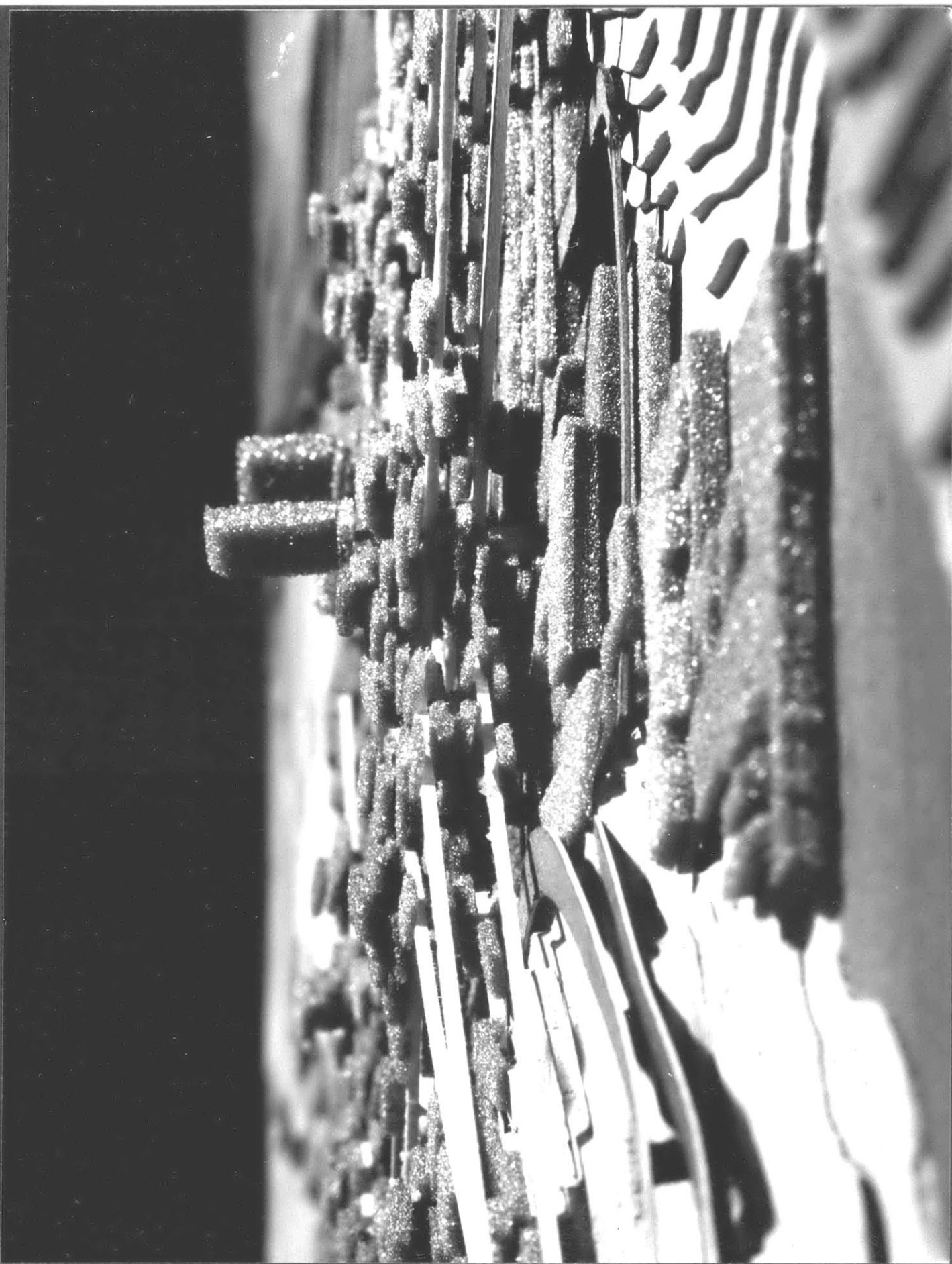
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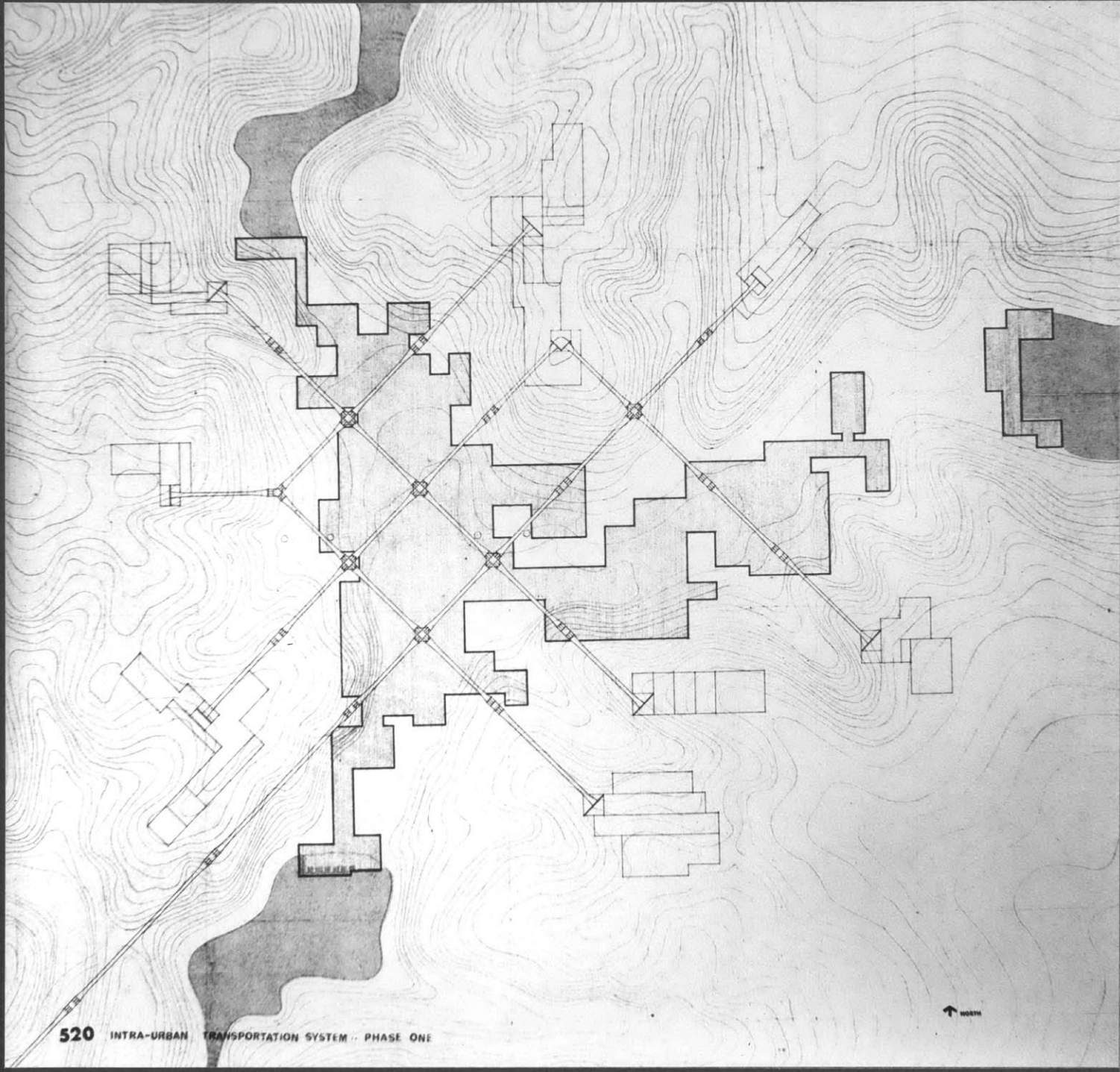






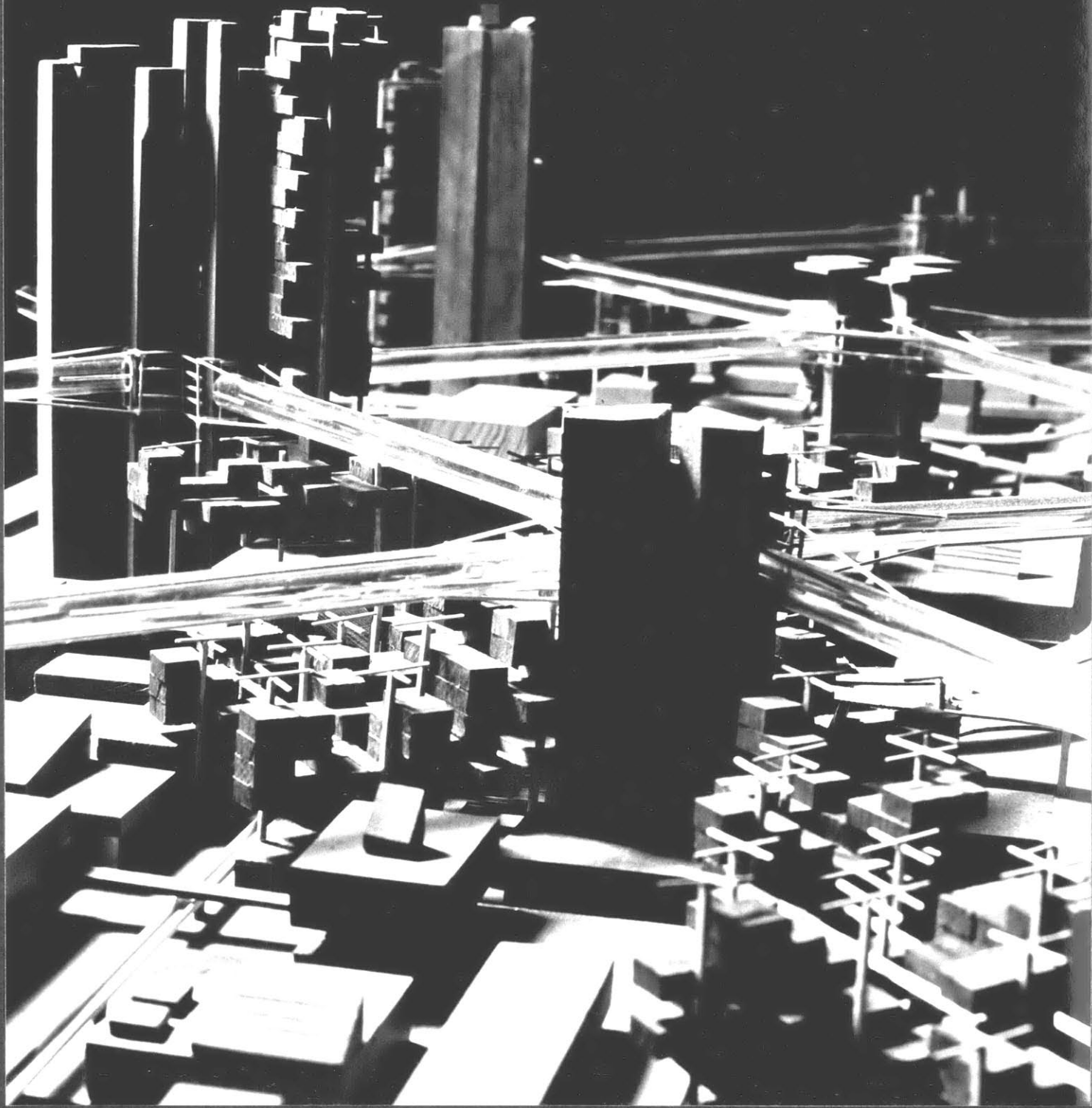


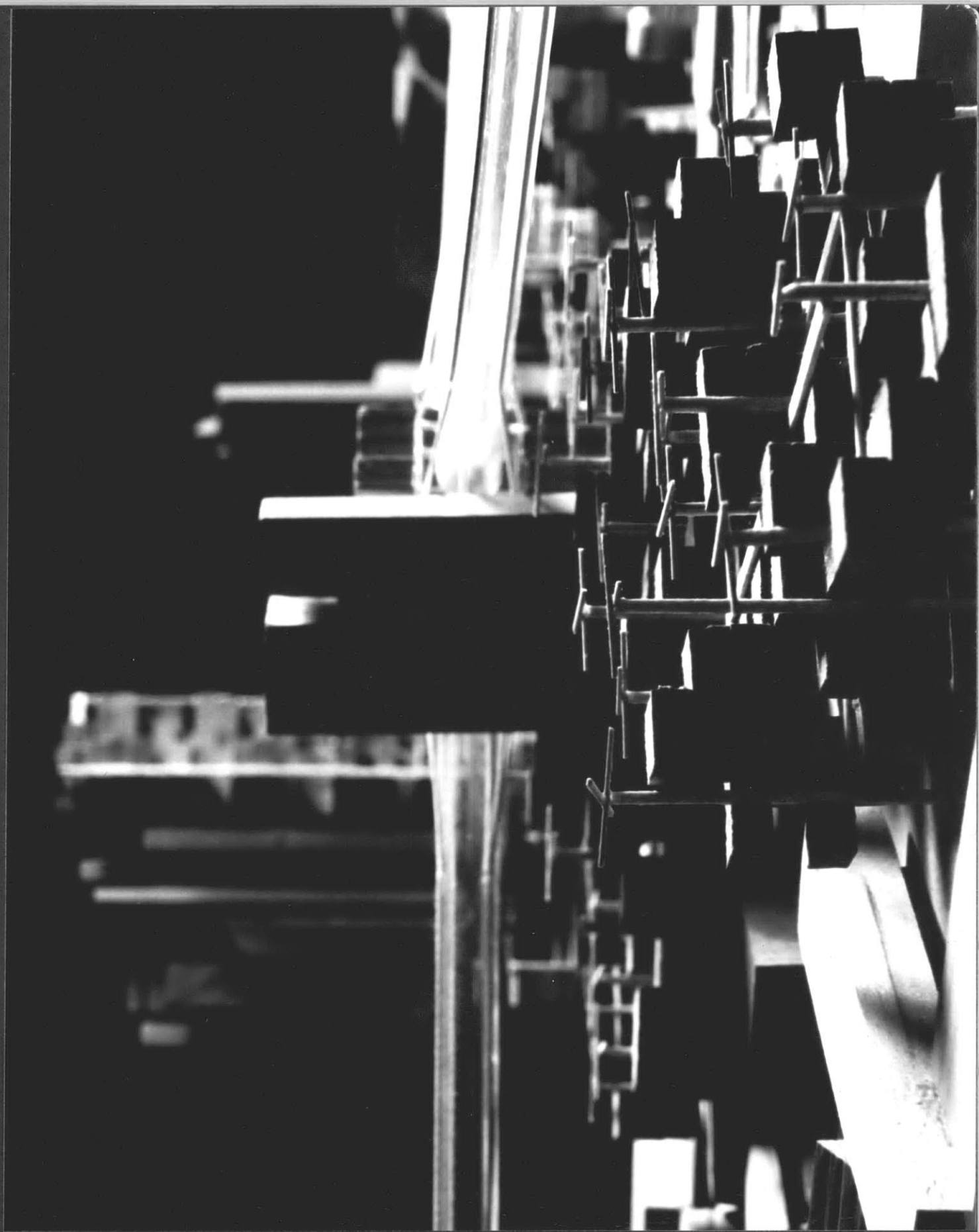


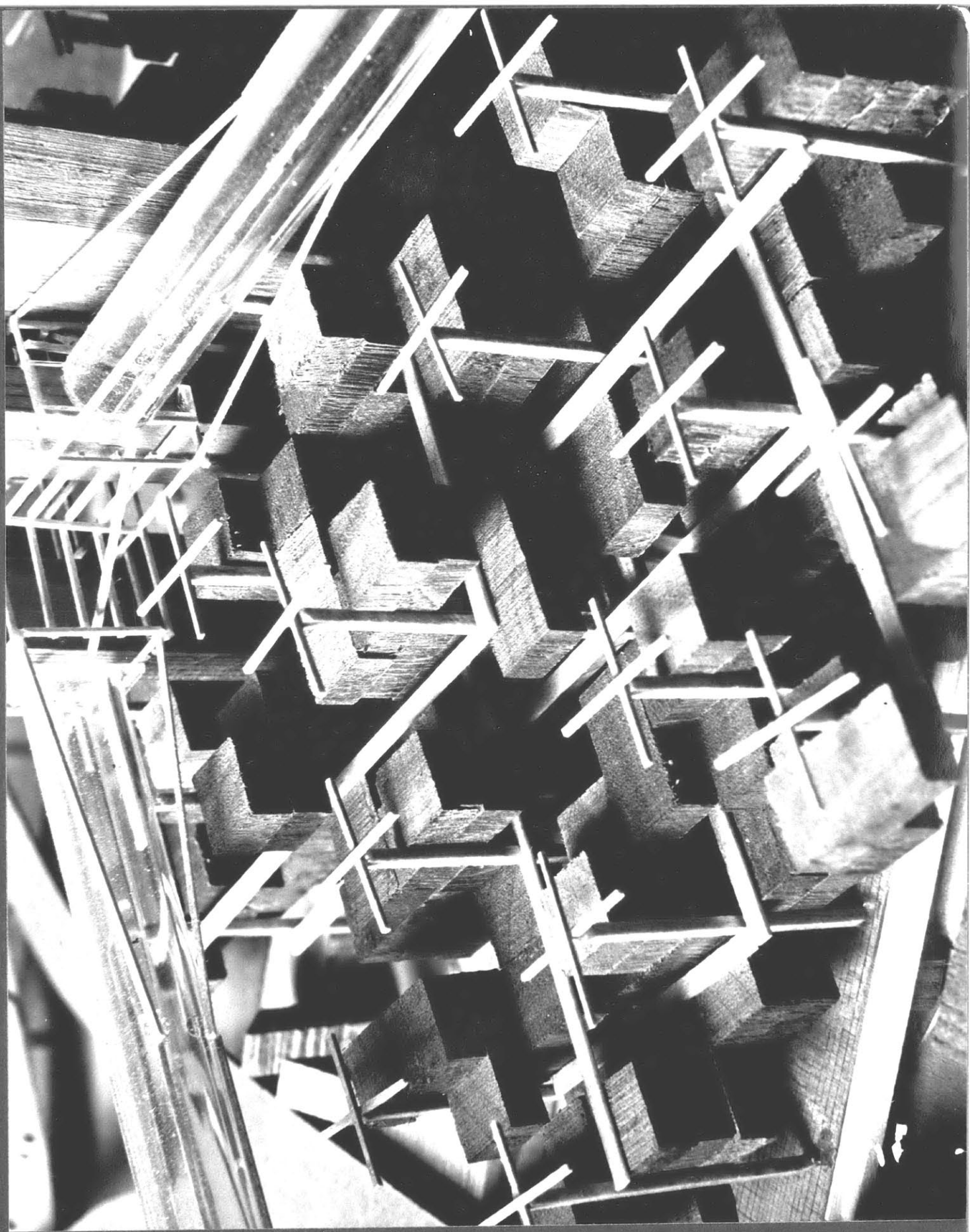


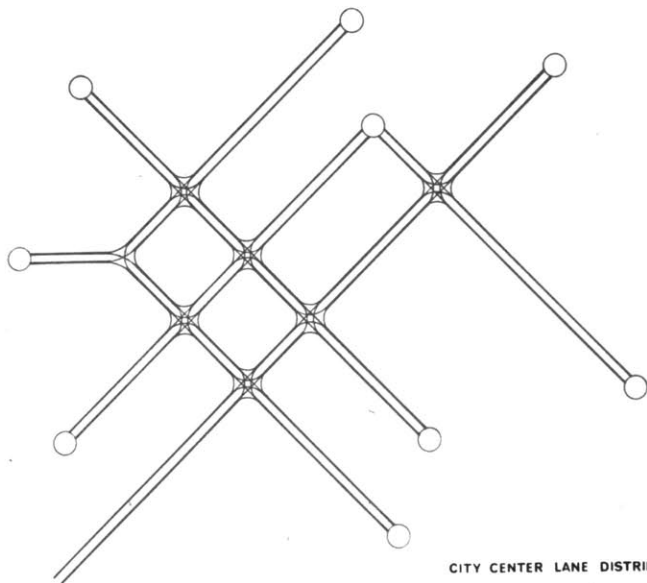
520 INTRA-URBAN TRANSPORTATION SYSTEM - PHASE ONE

↑ NORTH

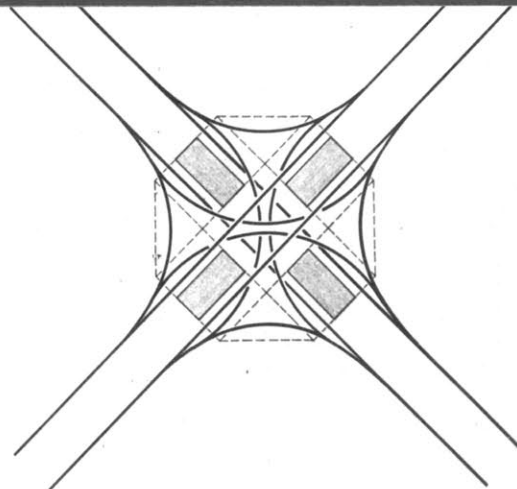




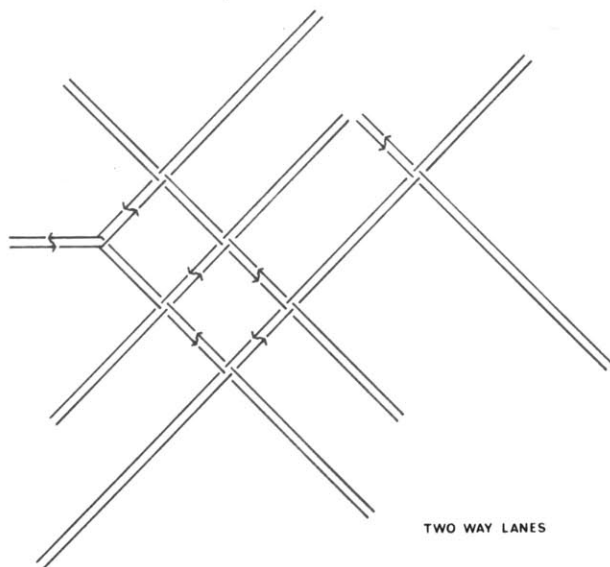




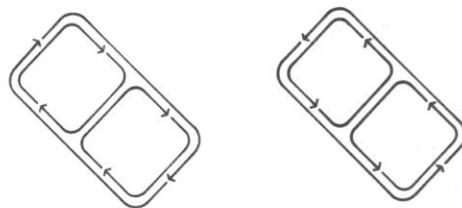
CITY CENTER LANE DISTRIBUTION



TYPICAL TURNING AND THRU LANES
AT JOINT

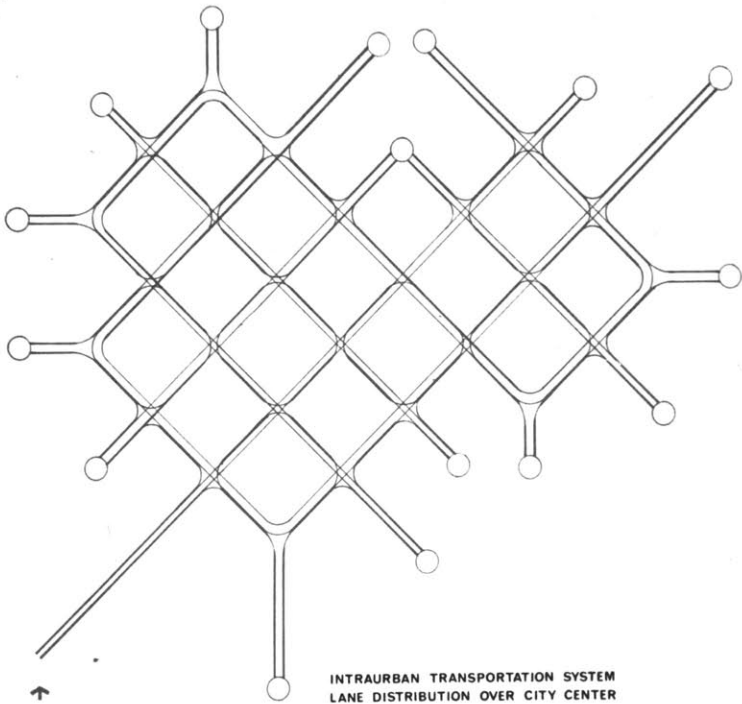


TWO WAY LANES

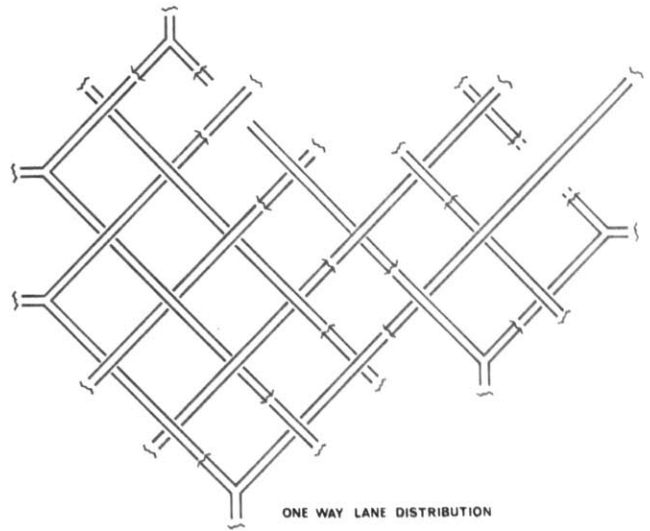


OVERLAPPING REVERSE LOOPS

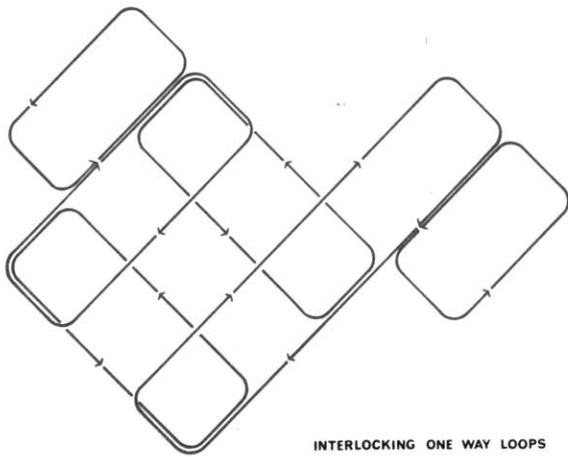
I.T.S. STAGE 1



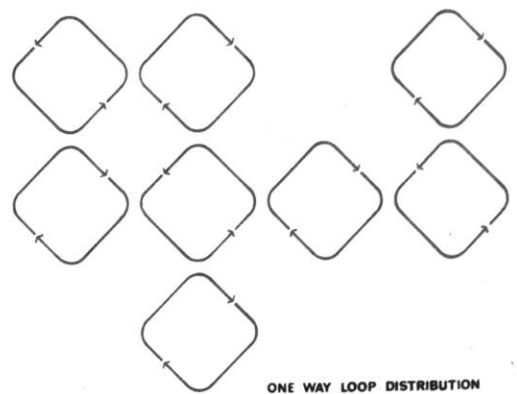
INTRAURBAN TRANSPORTATION SYSTEM
LANE DISTRIBUTION OVER CITY CENTER



ONE WAY LANE DISTRIBUTION

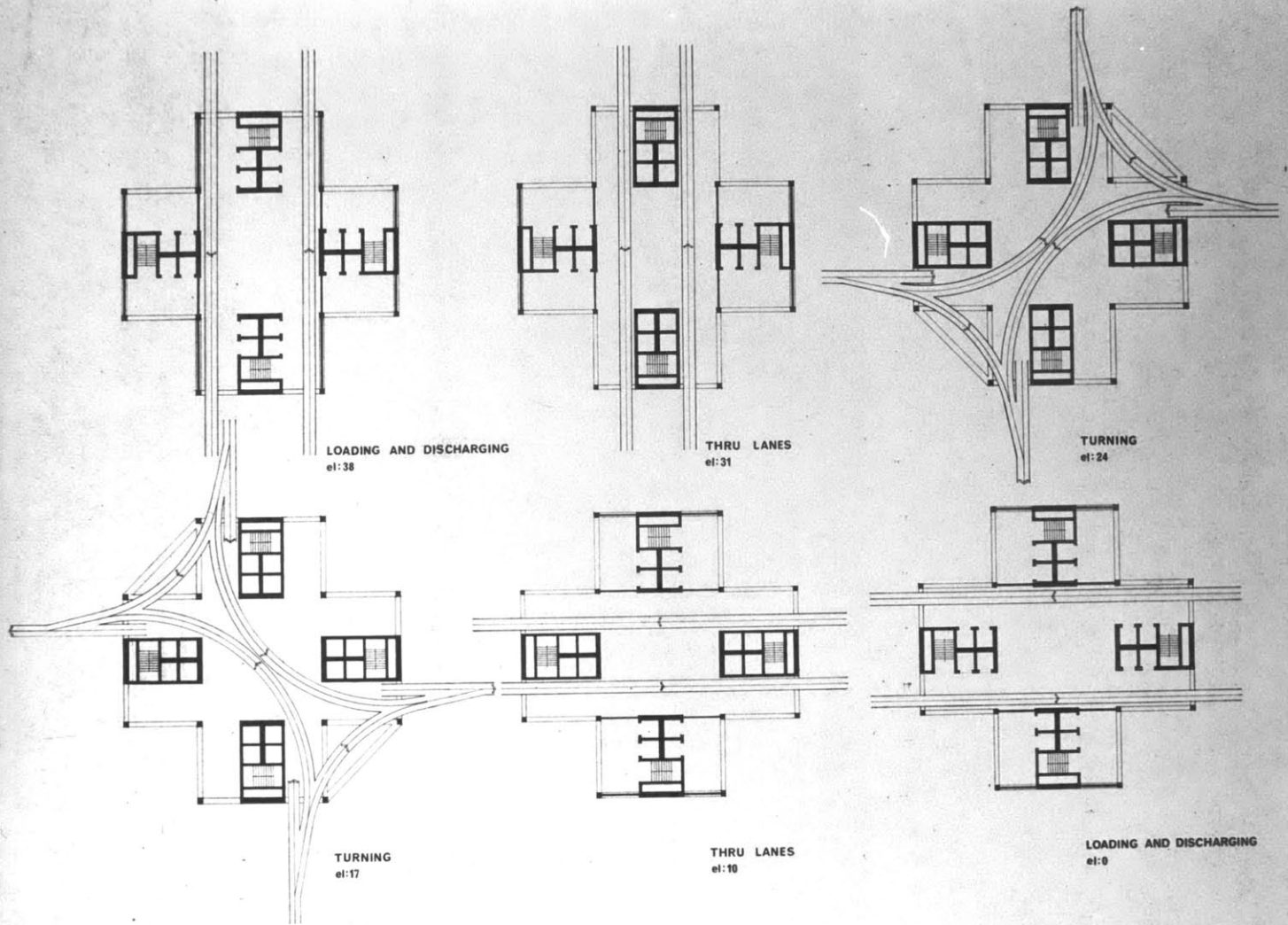


INTERLOCKING ONE WAY LOOPS

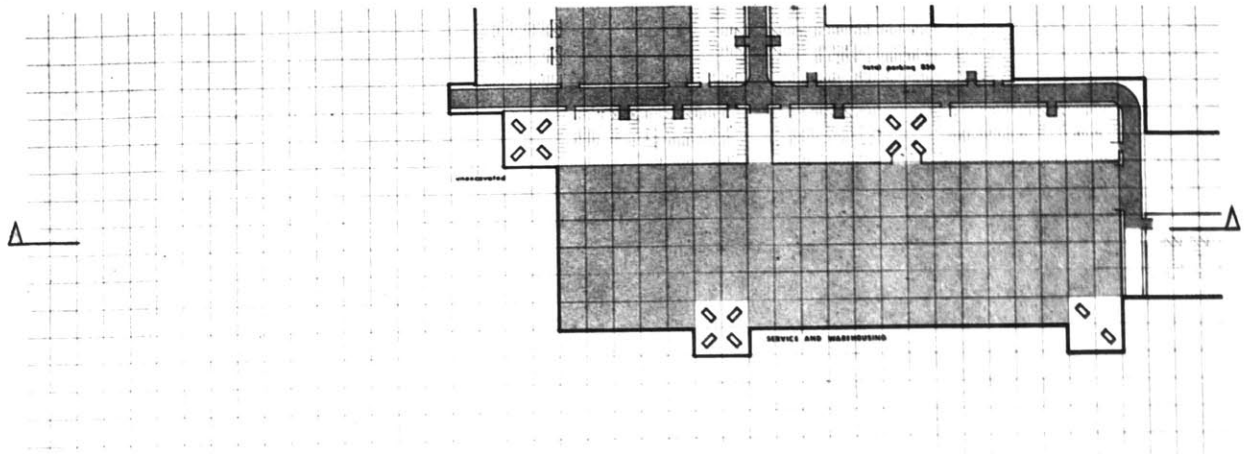


ONE WAY LOOP DISTRIBUTION

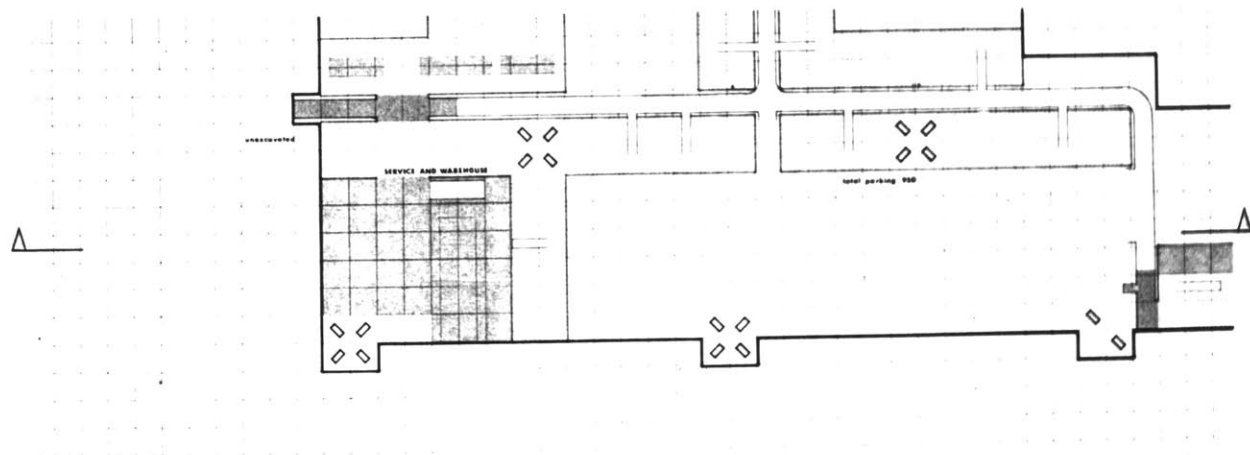
I.T.S. STAGE 2



INTRAUROBAN TRANSPORTATION NODE

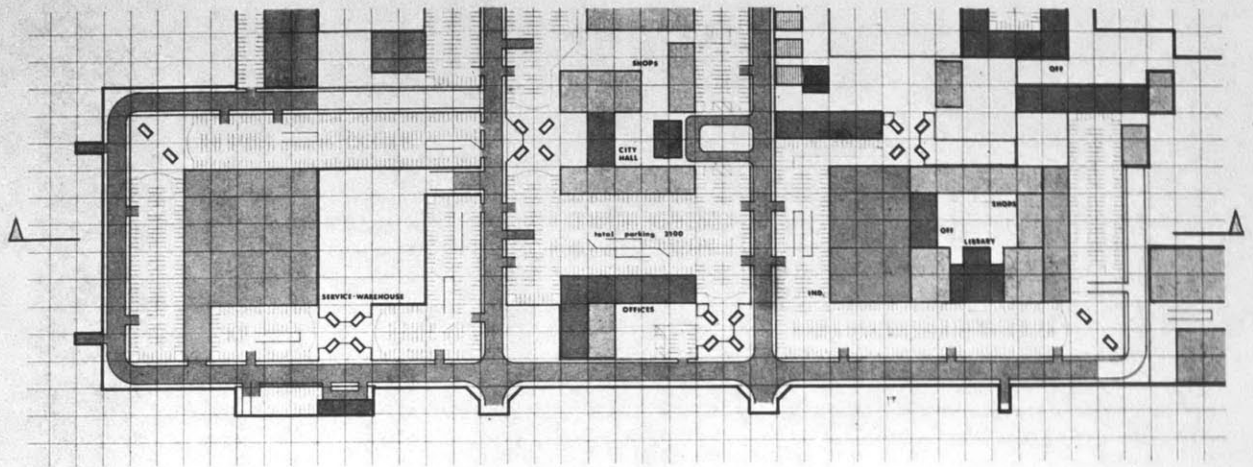


360 SERVICE AND PARKING

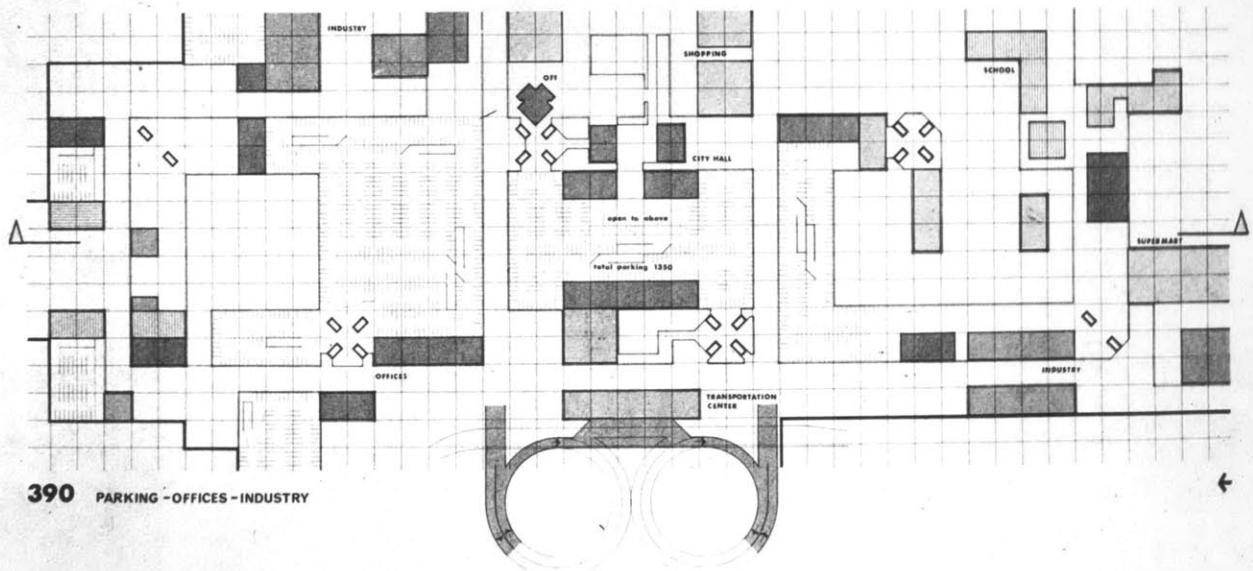


370 SERVICE AND PARKING

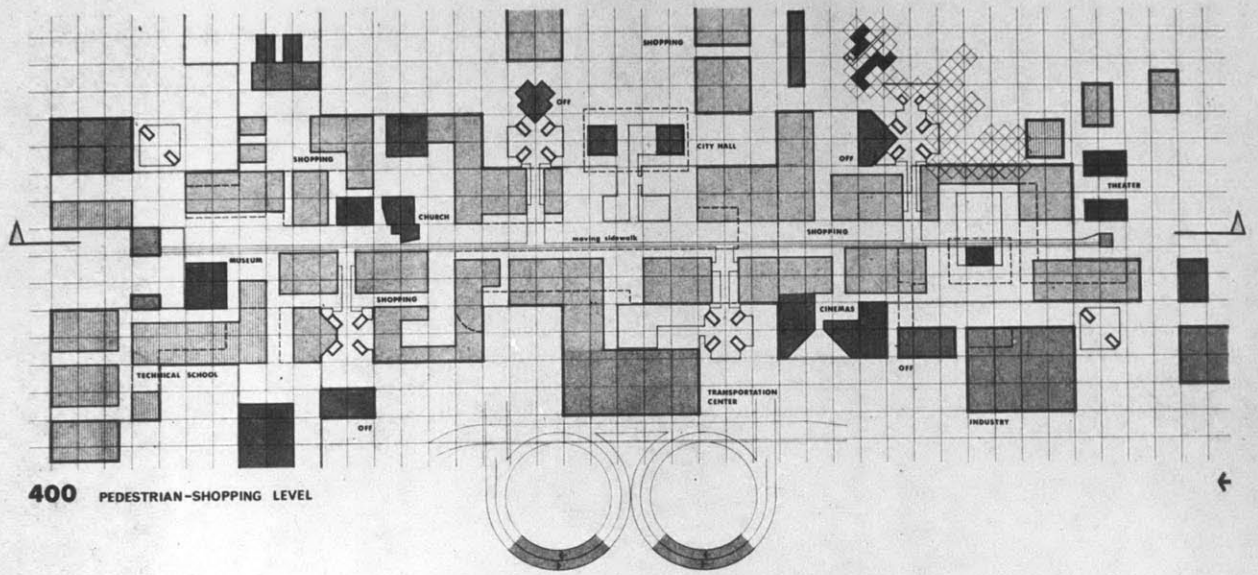




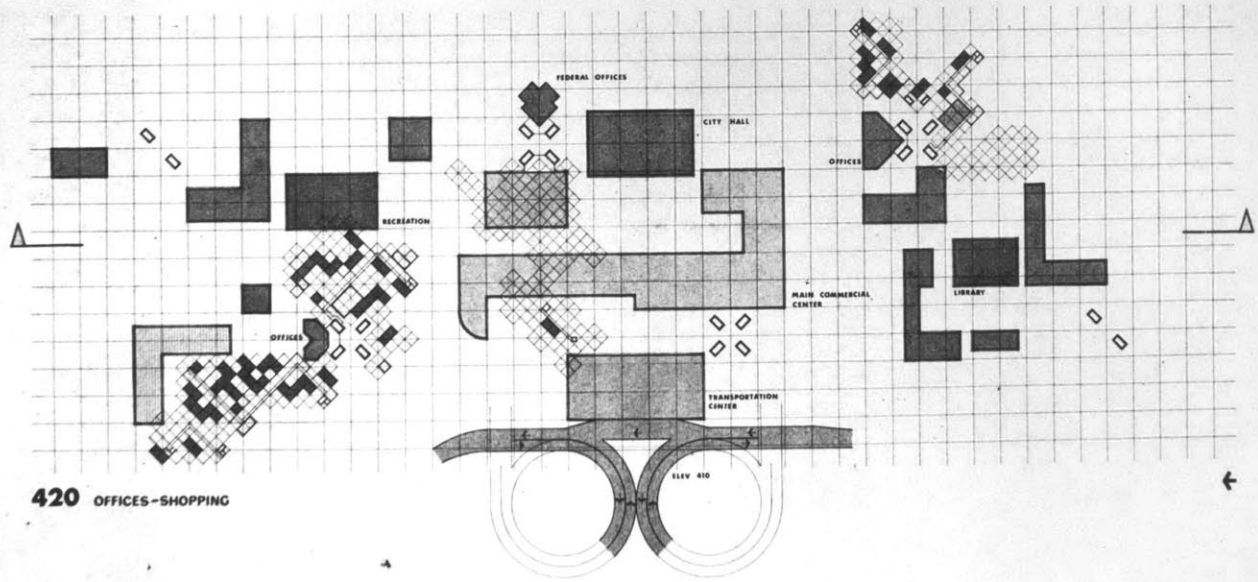
380 PARKING AND SERVICE ROAD



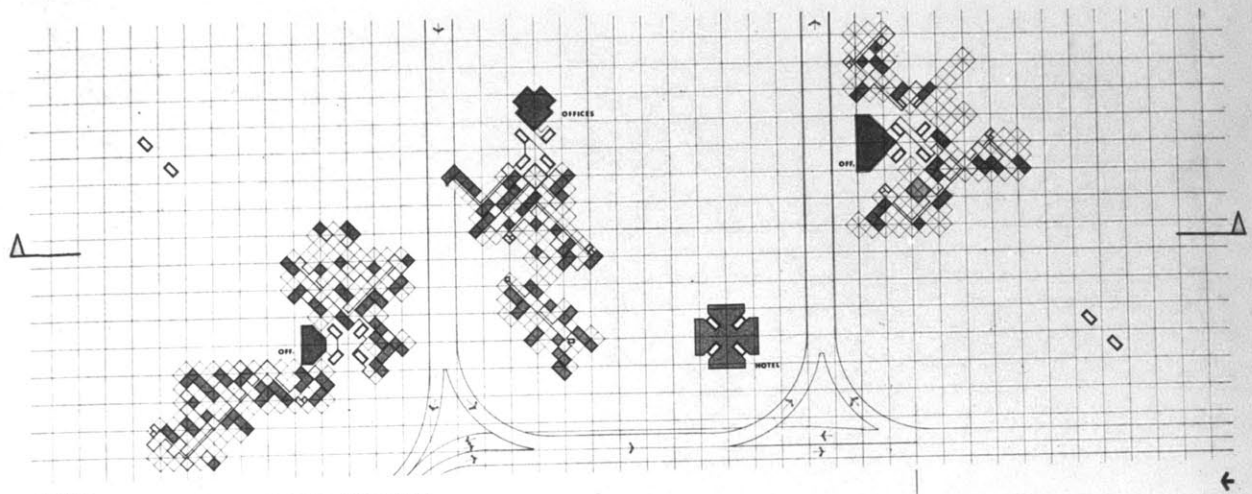
390 PARKING - OFFICES - INDUSTRY



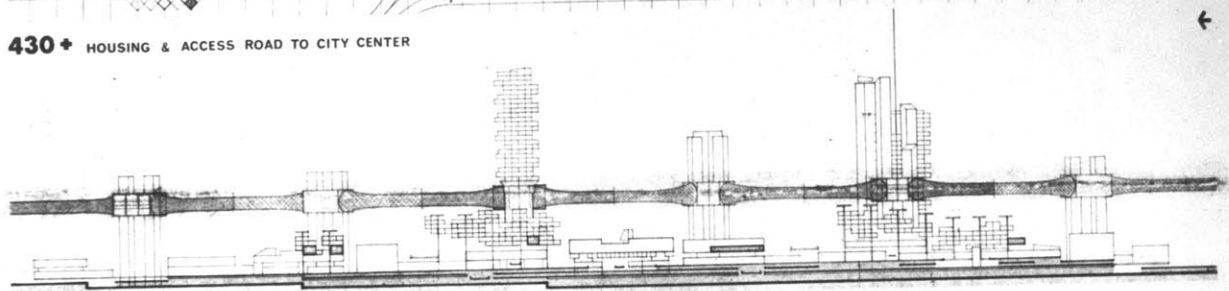
400 PEDESTRIAN-SHOPPING LEVEL



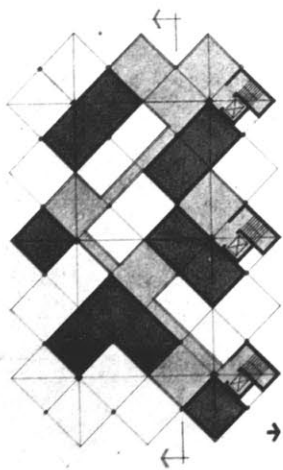
420 OFFICES-SHOPPING



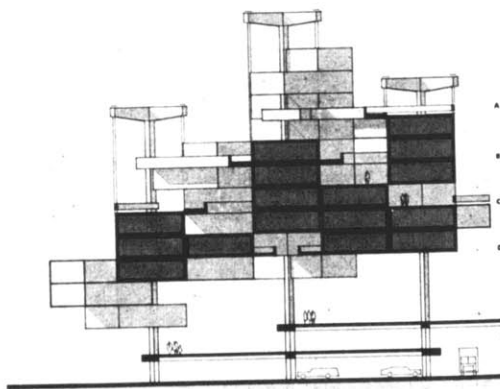
430+ HOUSING & ACCESS ROAD TO CITY CENTER



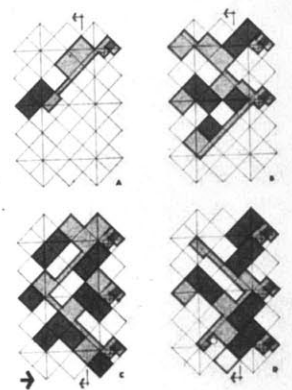
SECTION LONGITUDINAL THROUGH CITY CENTER



PLAN TYPICAL HOUSING ACCESS PATTERN



SECTION TYPICAL HOUSING GROUP



PLANS TYPICAL HOUSING GROUP

