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A Community Health Center which integrates "not for profit" health services with "for profit" services

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A Community Health Center

which integrates “not for profit” health services with “for profit” services

A
Community
Health
Center

WHICH INTEGRATES "NOT FOR PROFIT" HEALTH SERVICES
WITH "FOR PROFIT" SERVICES

A Satellite Facility in Mount Pleasant, S.C.
For Roper Hospital in Charleston, S.C.

JOHN BELL HINES
DECEMBER 1983

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

MASTER OF ARCHITECTURE

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Head, Department of
Architectural Studies

[Redacted Name]

Committee Member

[Redacted Name]

Committee Member

[Redacted Name]

Dean, College of Architecture

FOX RIVER

100% COTTON

100% COTTON

642124

To Kate

Acknowledgements

I would like to express my sincere appreciation to those who have contributed their knowledge and time to this project.

To the Terminal Project Committee

- Kenneth Russo for his personal interest and support
- Gayland Witherspoon for his encouragement
- Priscilla Ramsey, R.N. for her enthusiasm and professional interest
- Special thanks to Professor George C. Means, Jr., FAIA for his genius, dedication, and personal courage.

To the members of the Health Care Facilities and Design Studio for their great help in the final preparation of this project

- | | |
|-----------------|-------------------|
| -Robert Wulburn | -Molly Scanlon |
| -Harry Forehand | -Bob Salas |
| -Roy Smith | -Steve Davis |
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| -Todd Reichard | |

To Harlan E. McClure, FAIA, for his determination to provide an outstanding educational environment.

To my parents for their ever present support and encouragement.

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Abstract

This project explores the architectural potential of integrating "not for profit" health services with "for profit" services. This is an idea which is currently being experimented with and promises to have an important impact on the delivery and financing methods of health care. To demonstrate this potential such a facility was designed on a selected site in Mt. Pleasant, S. C. The proposed environment provides a built-in methodology for financing the needed eleemosynary health services and most importantly it is an environment which reinforces the practice of family health care.

Most traditional health care facilities are not appropriate for the practice of family health care because they deal only with the extreme acute levels of the health spectrum. Most people fear these acute levels of health care and for this reason the associated facilities are usually separated from the more everyday commercial activities.

The project proposes an alternative to this practice of isolation. By combining a wide range of services which provoke both fear and fun, the proposed facility creates an environment with the variety and excitement needed for the successful practice of family health care.

Introduction

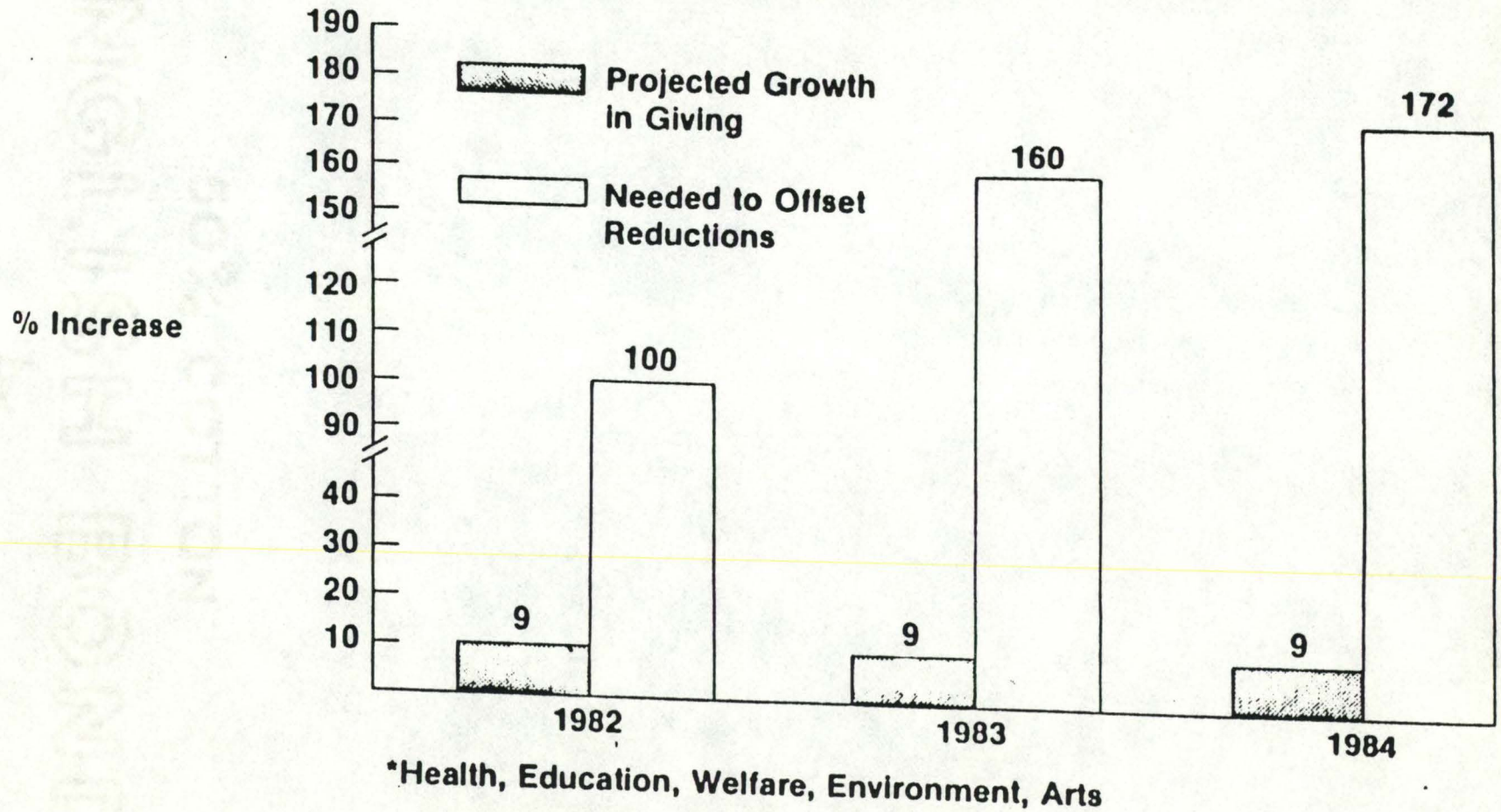
Problem

The closest emergency care to Mount Pleasant, S. C. is located in Charleston, S. C. The only way to reach this emergency care in Charleston is by way of Highway 17 across the Cooper River Bridge. This is an unpredictable emergency route because the bridge frequently becomes jammed with traffic for a variety of reasons, including rush-hour traffic, accidents, and mechanical failures.

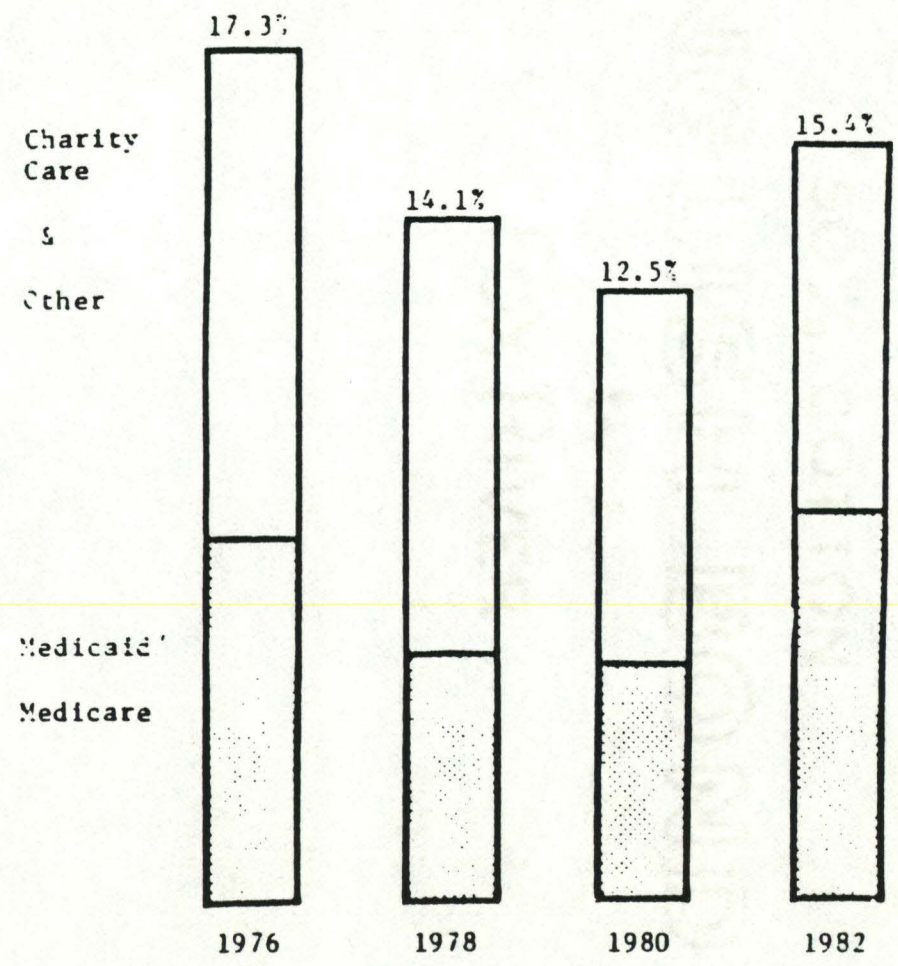
Roper Hospital in Charleston, S. C. would like to build an emergency care center in Mt. Pleasant. Eventually Roper would like to provide a broader range of health services which may include additional Diagnostic and Treatment Services and a Wellness Center which would be primarily for adult day care. Because of the rapid growth of Mt. Pleasant, Roper must also consider the possibility of eventually building a community hospital on an adjacent site.

The problem involved with providing these services is primarily an economic problem of generating enough money to pay for the proposed eleemosynary services. This is not a problem unique to Roper Hospital but a problem which most "not for profit" hospitals are having nationwide. The problem of paying for eleemosynary services is increasingly acute because of the rising cost of health care services and the challenge from large "for profit" hospital corporations.

PROJECTED INCREASE IN PRIVATE GIVING VS.⁵ INCREASE NEEDED TO OFFSET FEDERAL BUDGET REDUCTIONS IN FIVE AREAS*¹ 1982-1984



DUKE UNIVERSITY HOSPITAL
FREE WORK (REVENUE ADJUSTMENTS)
AS A PERCENTAGE OF GROSS PATIENT REVENUE²



Alternatives

If Roper Hospital does not provide these services to Mt. Pleasant then a large "for profit" hospital corporation will. The disadvantage of a "for profit" hospital chain is that they must minimize non-profitable and eleemosynary services in order to repay the invested capital and needed profit. This in turn minimizes the health care to those who cannot afford it and who frequently need it the most. This type of system threatens the tradition of equal health care and proposes a two tier health system in its place. In two tier systems, there is one level of care for those who can afford it and a different, much lower, level of care for those who cannot afford it.

This type of two tiered health care has tremendous repercussions and most health care professionals feel it is an unreasonable and dangerous alternative.

Trends

The pressures have set off a veritable revolution in the delivery and financing of health services with horizontal and vertical, the IPA's, the PCP's, the HMO's, and a variety of other forms of practice.³

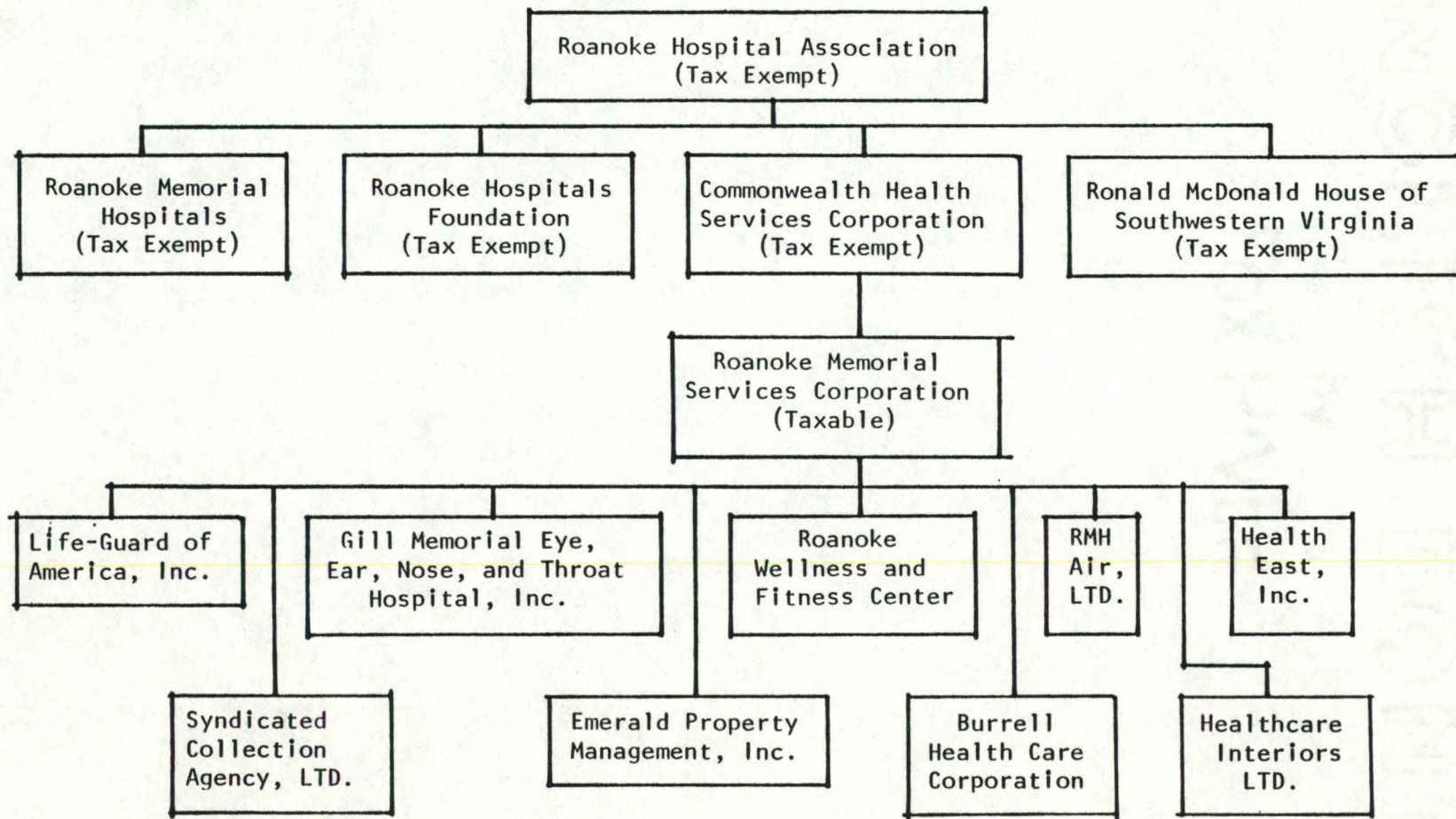
Currently a wide variety of innovative financing methods are being explored to eliminate the need for a two tiered health system. A variety of such funding methods were explored at a "Health Planning Seminar" sponsored by Duke Endowment in May 1983 in Charlotte, N. C.

The most promising method of avoiding a two tier system was presented by a delegation from Roanoke Hospital in Roanoke, Va. This funding method involved the restructuring of their corporate structure to accommodate money-making ventures. The money made from these ventures is pumped back to the parent corporation. The parent corporation is then able to use this money to provide needed health services which cannot financially support themselves.⁴

Also there is a need to make health care services more accessible and to broaden its base:

The natural trend is to utilize nearby rather than distant services or perhaps the "Doc in the Box" installed in a shopping center. Greater use of convenience practice setting is emerging. Decentralized suburban units of major health care providers. Changes in demand for care produced by public education.⁵

We need to broaden the perimeter of health because what you can prevent by genetic counseling, by environmental factors, by changing lifestyles, is going to cut down significantly on the impact of the dollars when the patient becomes sick.⁶



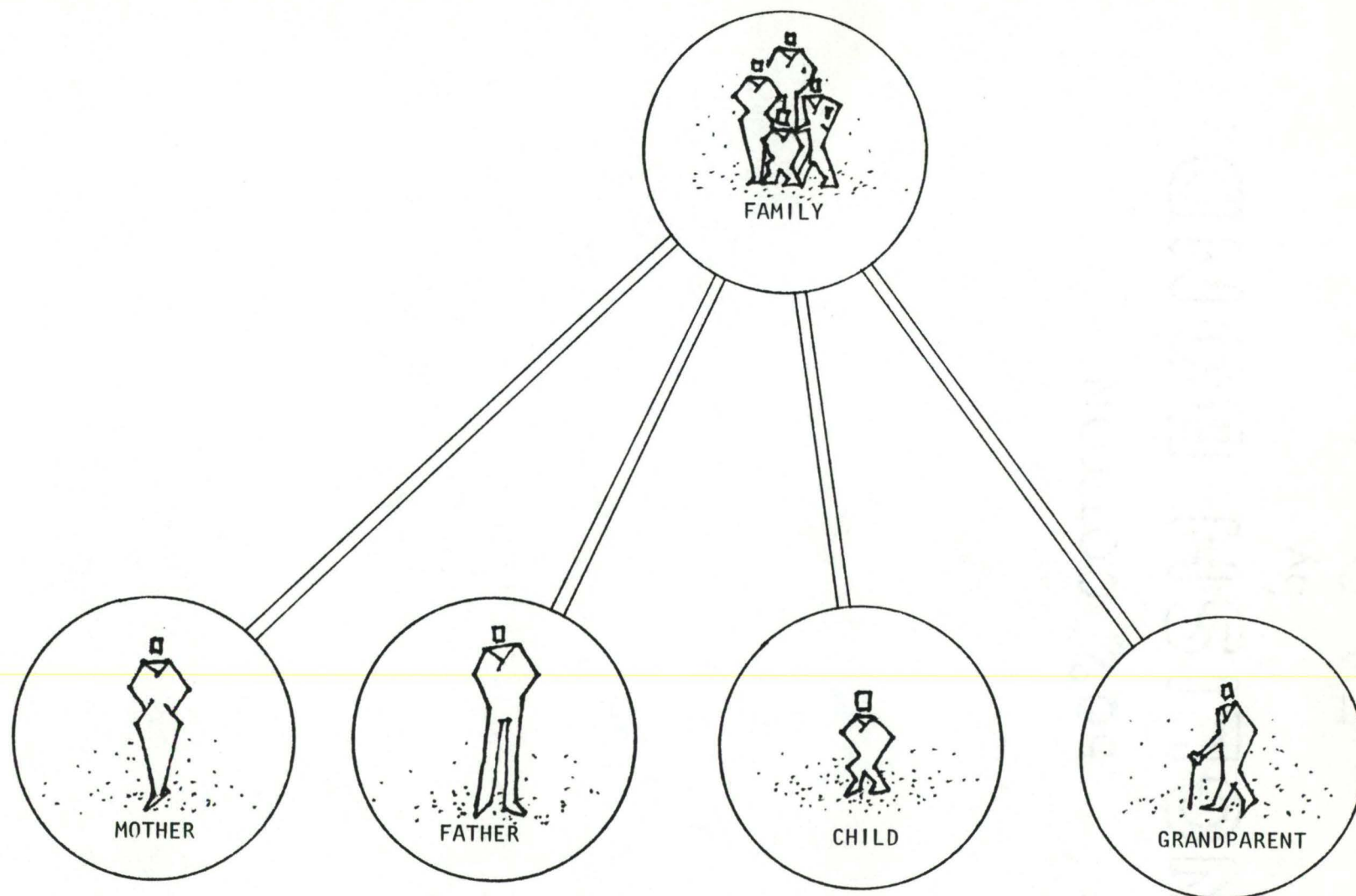
Concept

Concepts

The concept of family practice health care has been reborn in recent times across the country because of a new emphasis on accessibility and continuity of health care. These two qualities of health care are currently considered essential to increasing the quality of care available in a given community.

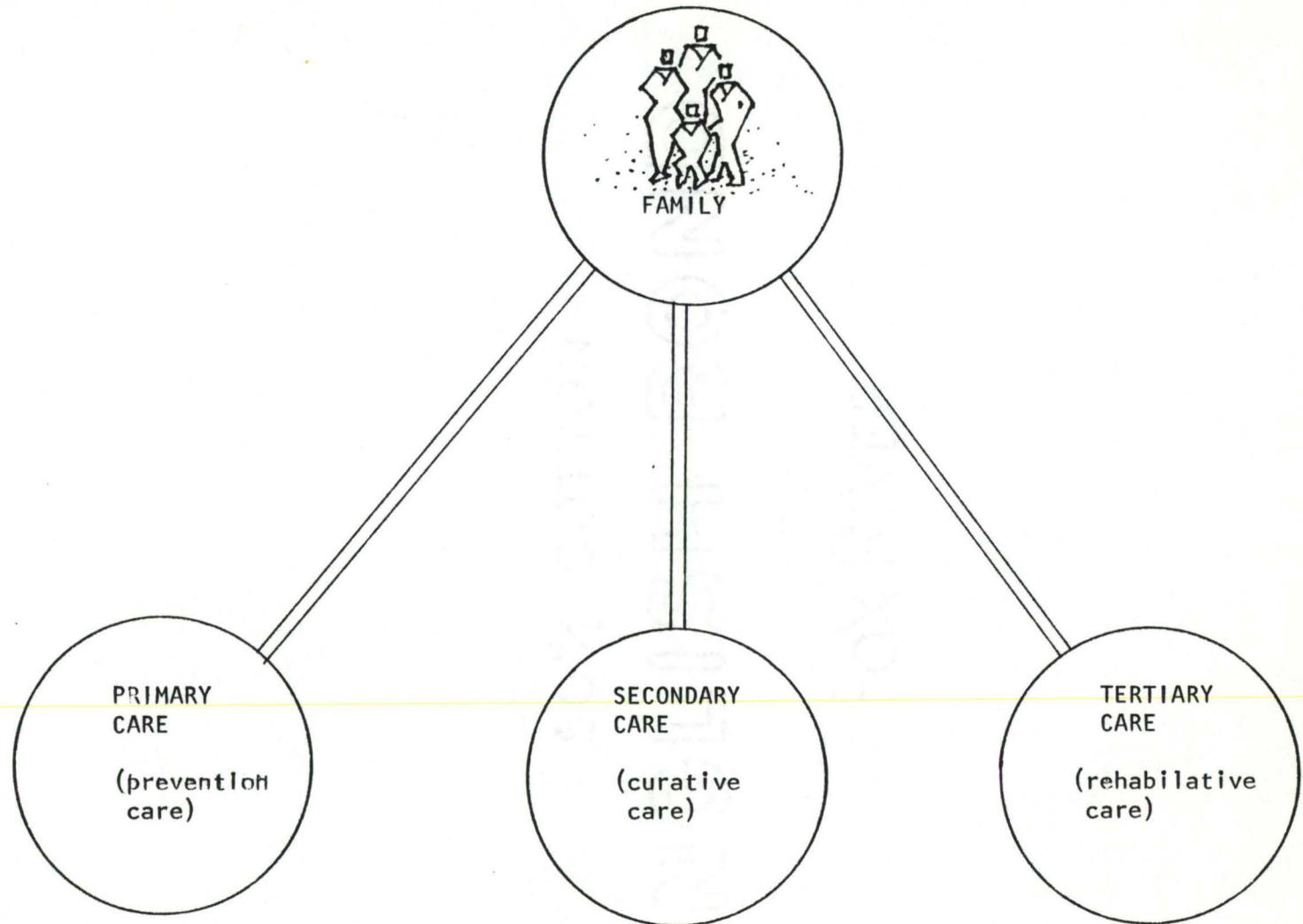
The concept of combining "not for profit" and "for profit" services into a single complex offers a great opportunity to create an environment which will reinforce the practice of family health care. This concept has the potential of satisfying both Roper Hospital's desire to provide quality health care to Mt. Pleasant and a methodology of financing many of the needed eleemosynary services.

FAMILY HEALTH CARE is the treatment of the family COLLECTIVELY and INDIVIDUALLY.



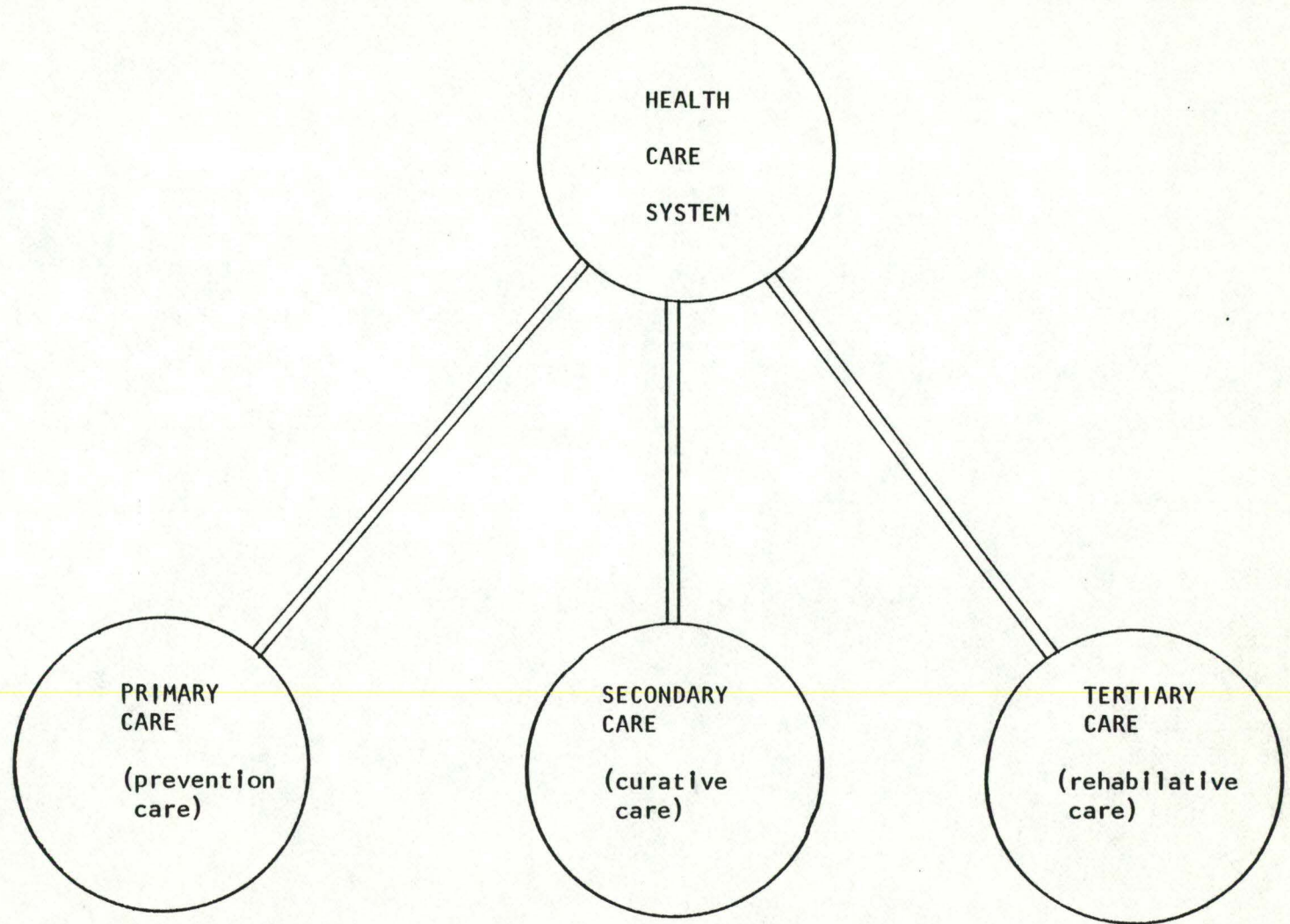
Rational - the health of ONE effects the health of the WHOLE group.

A FAMILY typically uses three types of health care in three separate locations.

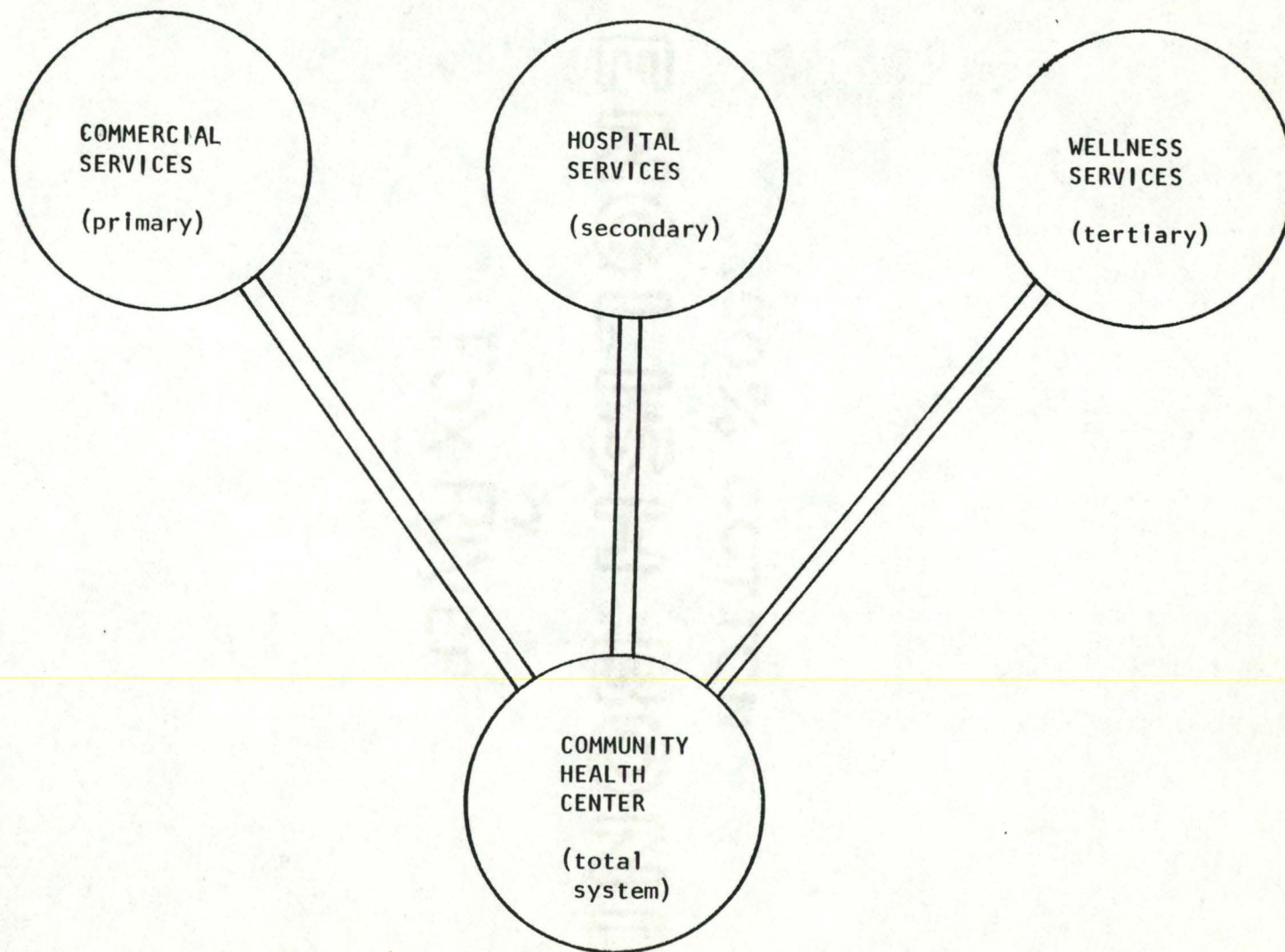


The separation of these services increases the problems of accessibility and continuity of care.

The HEALTH CARE SYSTEM may be divided into THREE types of health care.



THE COMMUNITY HEALTH CENTER combines the three major components of the total health care system.



Objective

To explore the possibilities of the stated concept is the objective of this project. To do this a facility had to be designed in Mt. Pleasant on a site owned by Roper Hospital. The need to explore the possibilities of such a concept needs to be emphasized because a facility of this nature has never been built before and therefore no case studies exist to set a precedent.

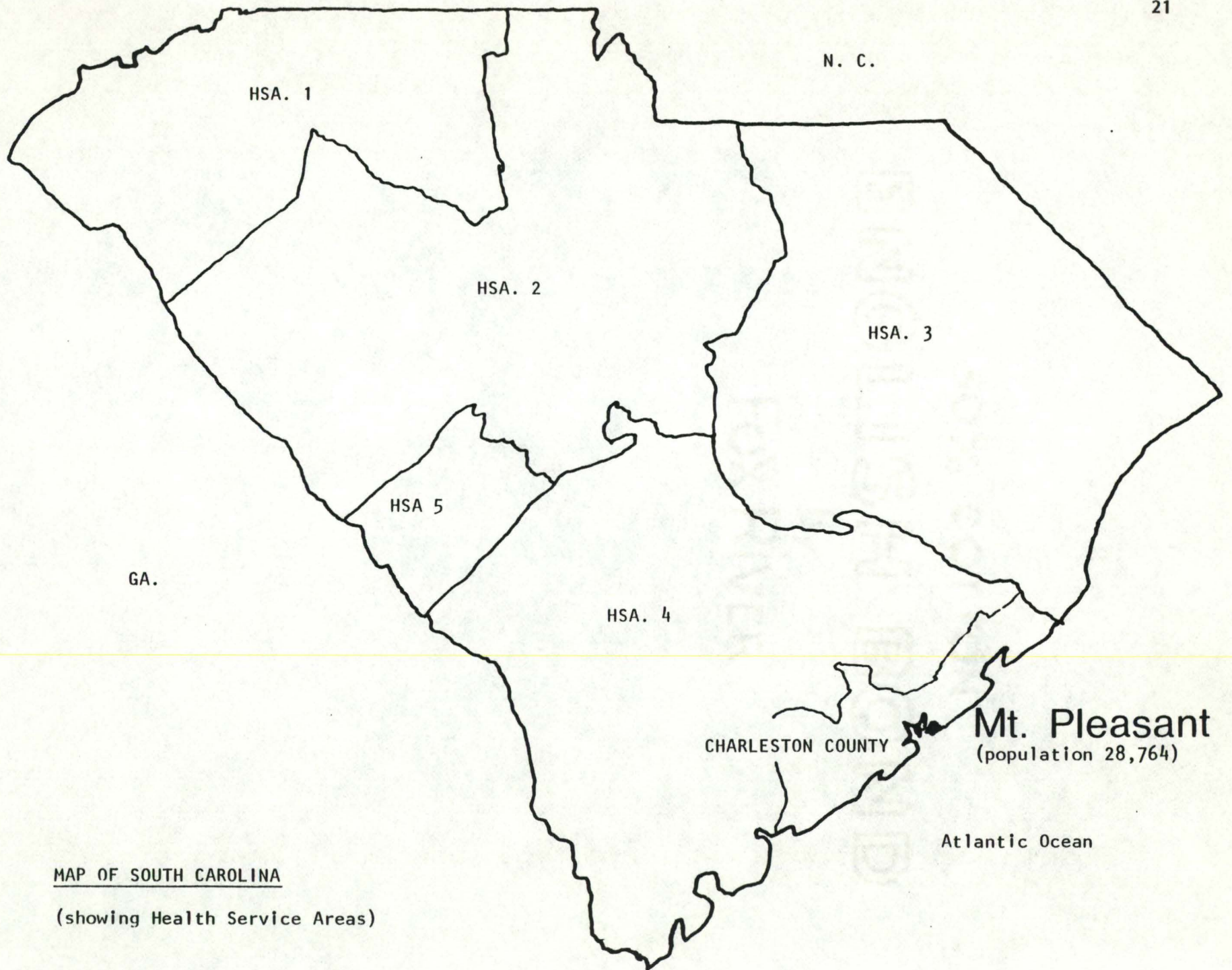
Economics

To substantiate the economic aspect of this concept, a building had to be designed on the given site. From this building the gross and net square footages could be calculated. From these square footages the cost and potential revenue could be estimated. Finally, the ability to finance the facility could be calculated. These calculations were made and can be found in the program section of this manuscript.

Site

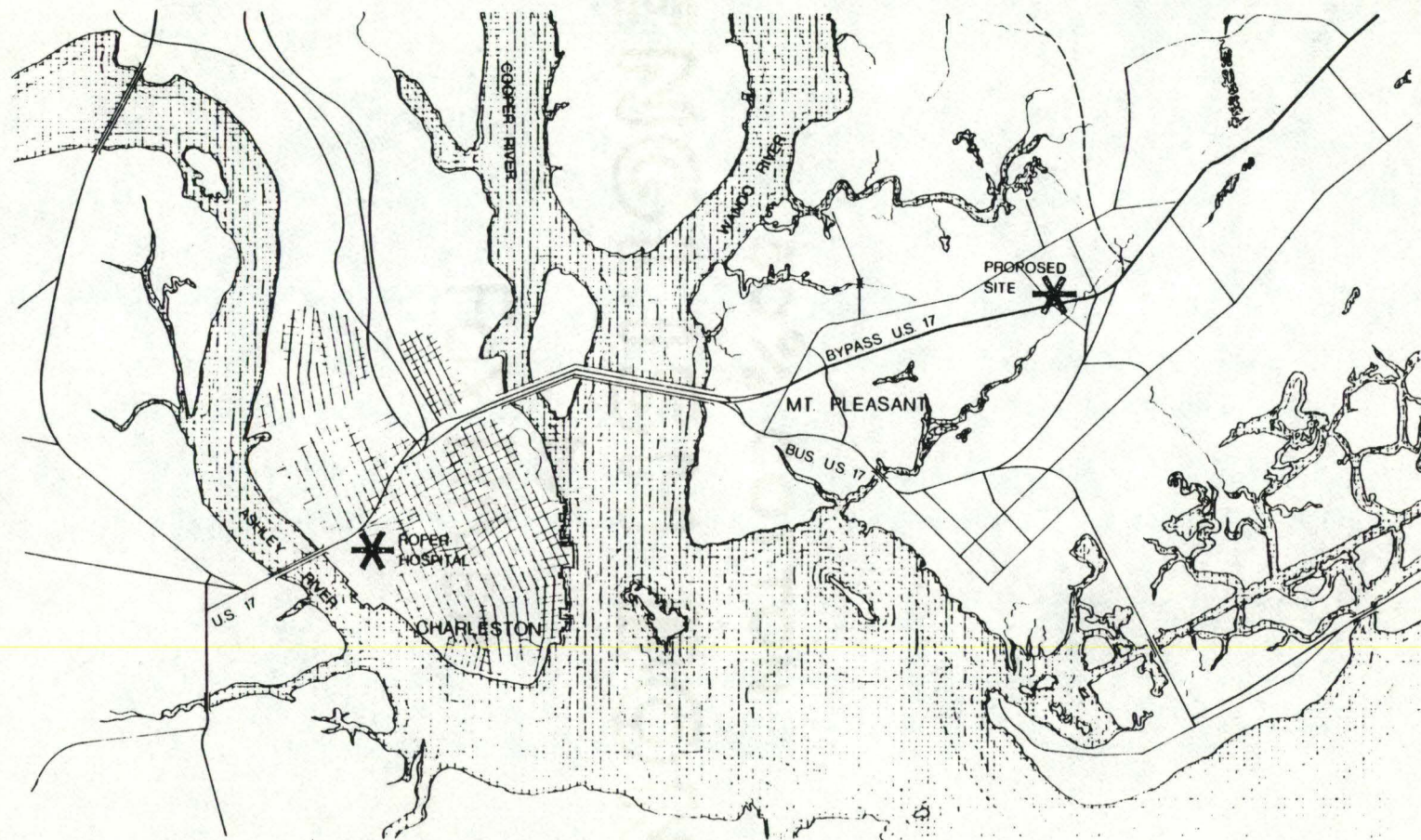
Location

The site chosen for the facility is located in Mt. Pleasant and is presently owned by Roper Hospital. It is a 17.8 acre site on the corner of Highway 17 By-pass and Bowman Road. This particular site was chosen because of its access to: 1) existing physician offices across Bowman Road, 2) growing residential areas to the northeast along Highway 17, and 3) Roper Hospital in Charleston by way of Highway 17.

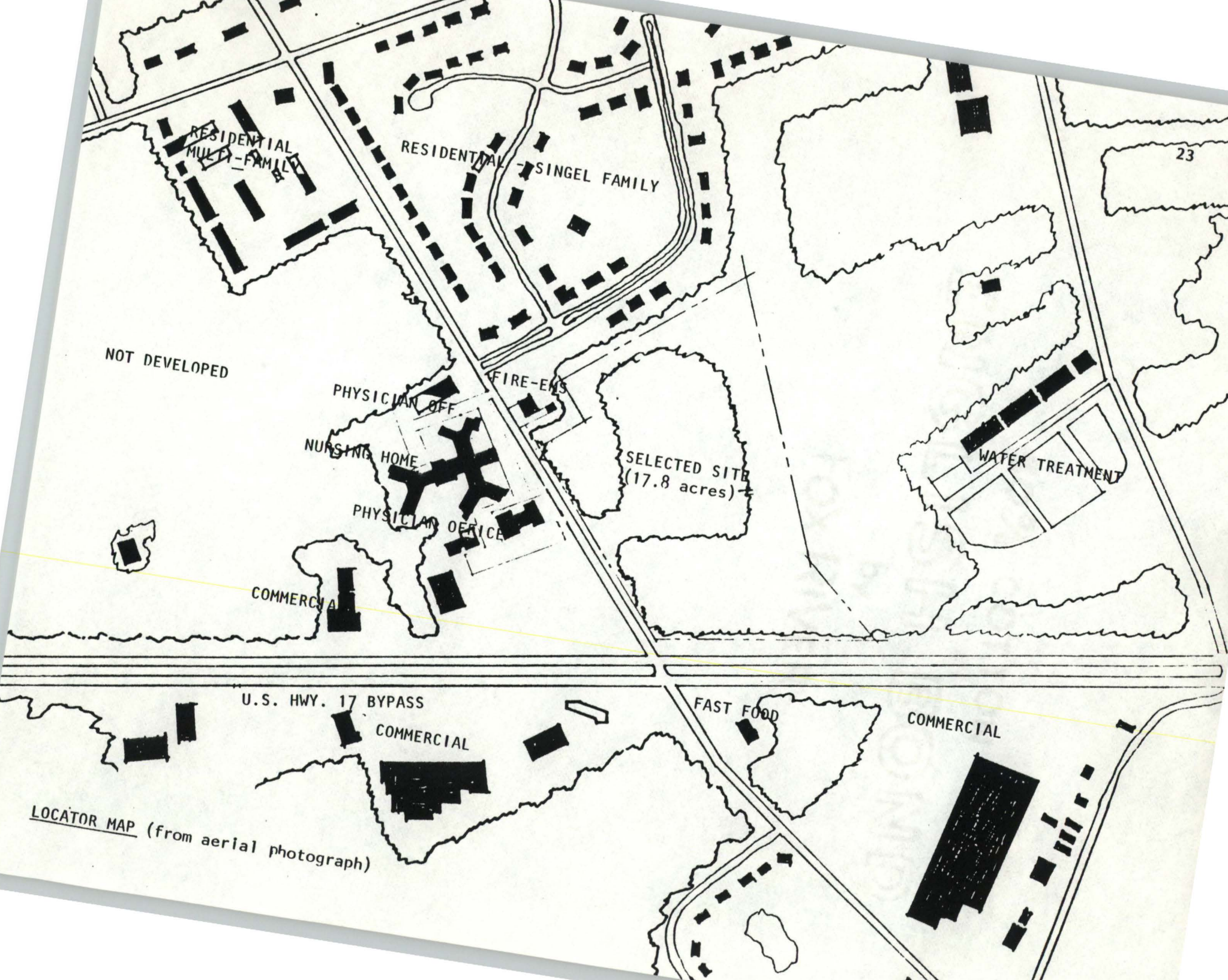


MAP OF SOUTH CAROLINA

(showing Health Service Areas)



MAP OF CHARLESTON AND MOUNT PLEASANT



RESIDENTIAL
MULTY-FAMILY

RESIDENTIAL SINGEL FAMILY

23

NOT DEVELOPED

PHYSICIAN OFF
NURSING HOME
PHYSICIAN OFFICE

FIRE-EMS

SELECTED SITE
(17.8 acres)

WATER TREATMENT

COMMERCIAL

U.S. HWY. 17 BYPASS

COMMERCIAL

FAST FOOD

COMMERCIAL

LOCATOR MAP (from aerial photograph)

Access

1) The approach to the site from the Cooper River Bridge (Charleston) is about three miles along Highway 17 By-pass. Highway 17 By-pass is a four-lane divided highway with a frontage road on either side. The route from Cooper River Bridge is growing into a familiar commercial strip type of development. The businesses along this route are presently small clusters of stores facing Highway 17 with parking in front. (As yet there is no large shopping mall in the area.) The site may be seen from Highway 17, but the only natural access is from Bowman Road. Presently only a stoplight and a McDonald's marks the intersection of Highway 17 and Bowman Road.

2) The approach to the site from the northeast along Highway 17 is very similar as the approach from the south except it is presently less developed. Again the site may be seen from Highway 17, but the only natural entrance is off of Bowman Road.





3) The site may also be approached from the north on Bowman Road. Bowman Road is presently a small two-lane road that serves a wide variety of land uses including: 1) single family residences, 2) multi-family residences, 3) commercial, 4) institutional (nursing homes), 5) physician offices, and 6) public (fire station).

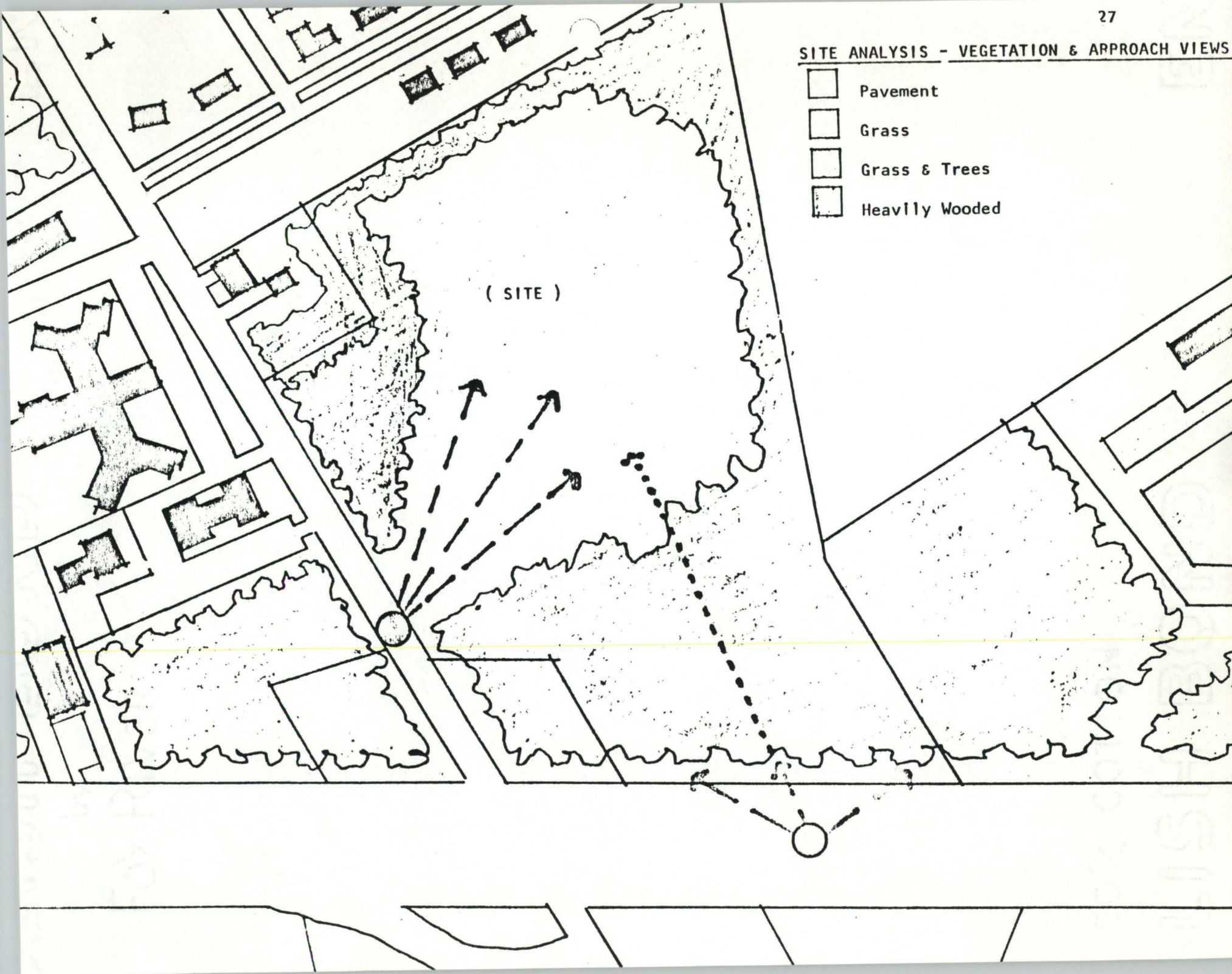
There are plans to add an additional lane onto Bowman to accommodate the additional traffic generated by its strategic location between Highway 17 and Mathis Ferry Road and its continued development.

Analysis




Vegetation and Approach Views	27
Public	
Emergency	
Service	
Topography and Drainage	28
Height Restrictions	
Flood Zones	
Drainage	
Surrounding Land Use/Circulation	29
Fire EMS	
Offices	
Future Expansion	

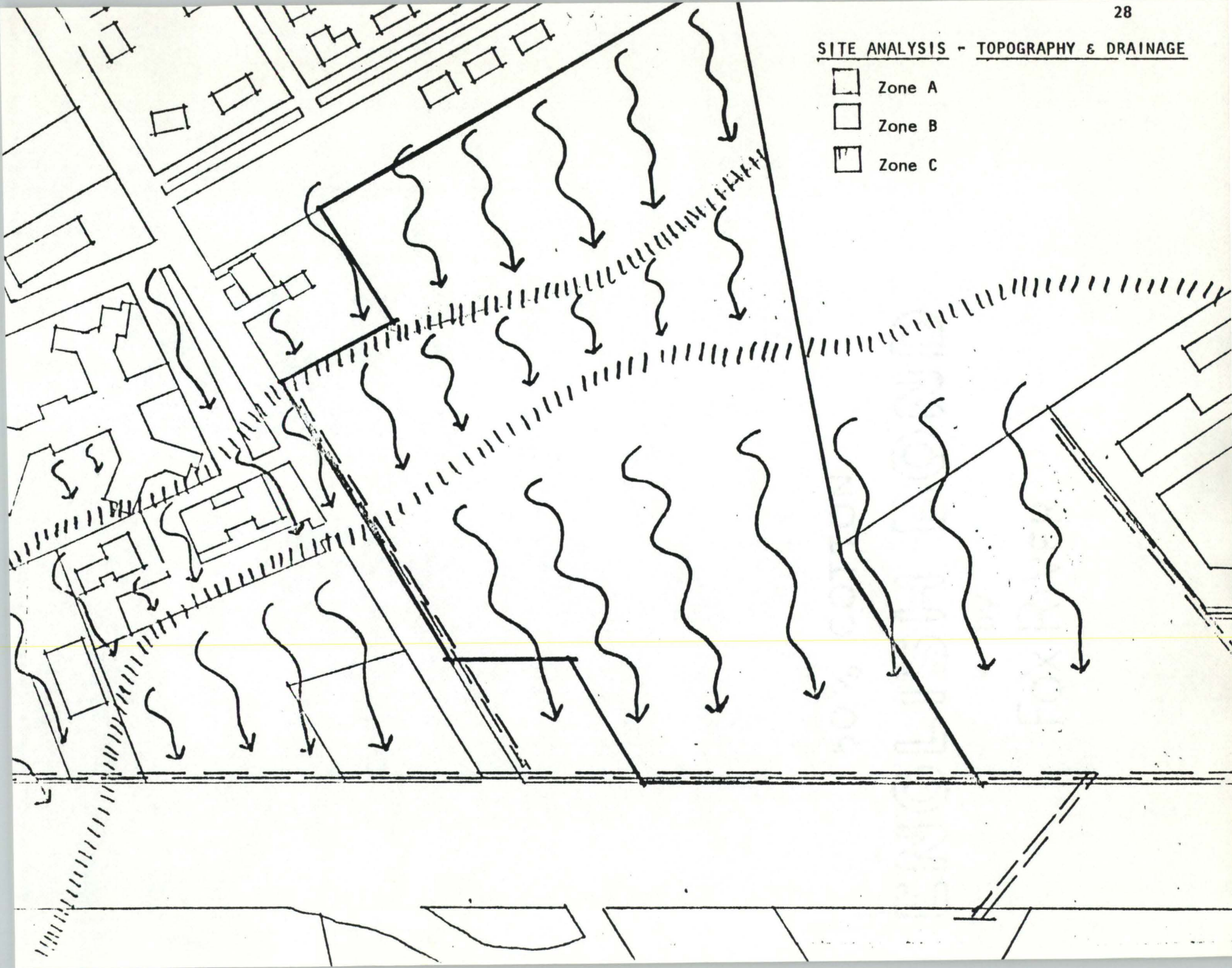
SITE ANALYSIS - VEGETATION & APPROACH VIEWS

-  Pavement
-  Grass
-  Grass & Trees
-  Heavily Wooded








SITE ANALYSIS - TOPOGRAPHY & DRAINAGE

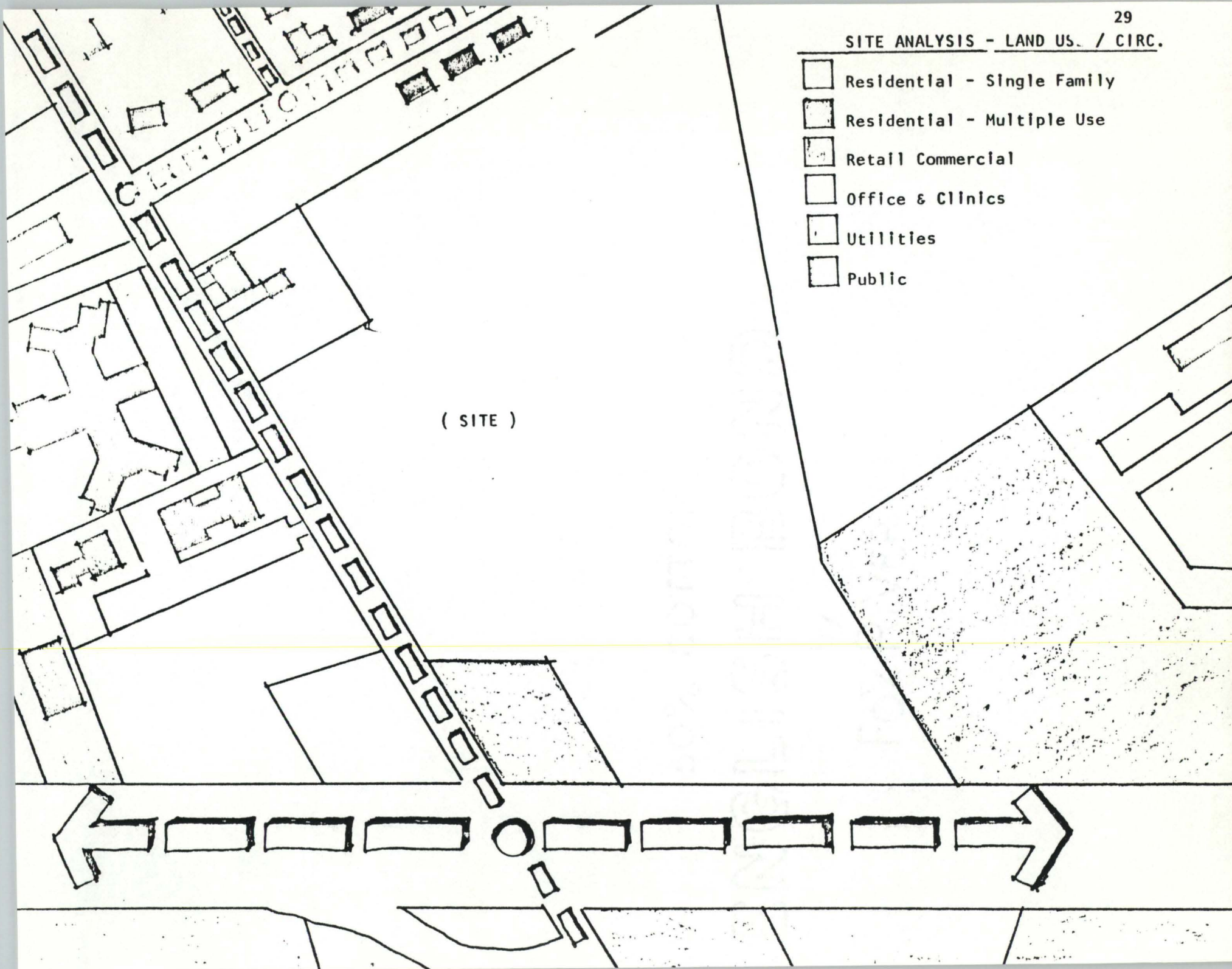
-  Zone A
-  Zone B
-  Zone C



SITE ANALYSIS - LAND US. / CIRC.

-  Residential - Single Family
-  Residential - Multiple Use
-  Retail Commercial
-  Office & Clinics
-  Utilities
-  Public

(SITE)



Program

Space Program

The Community Health Center accommodates three basic types of services in seven different identifiable buildings.

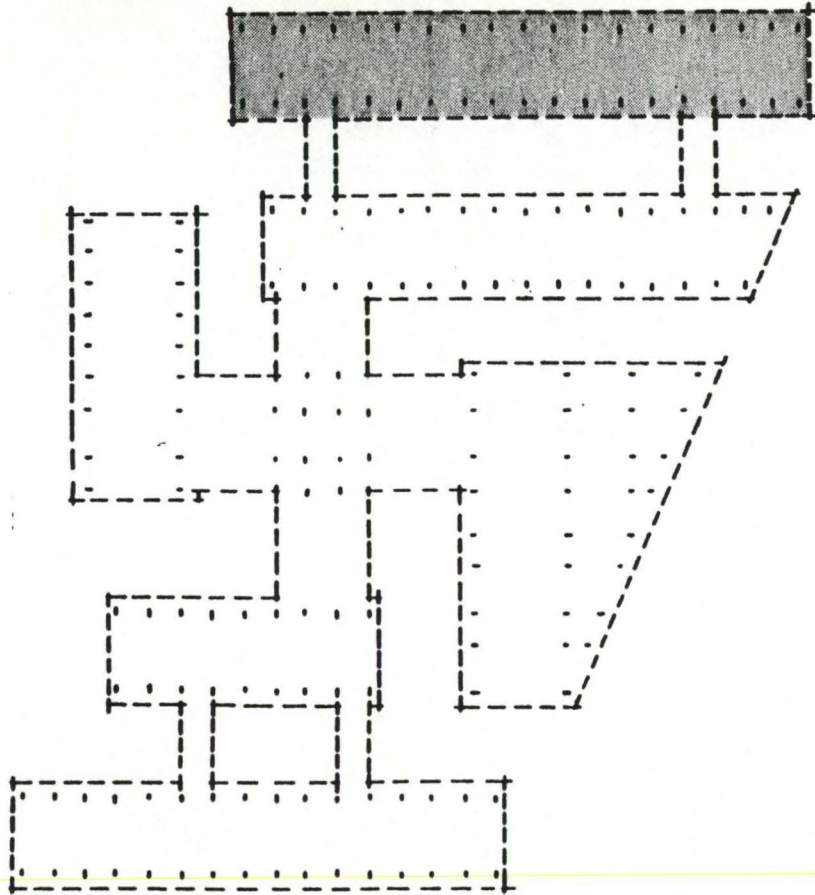
- I. Hospital Services (all eleemosynary) are in the northernmost building "A".
- II. Commercial Services (all "for profit") are in the five most central buildings: B, C, D, E, & F.
 - "B" Physician Offices
 - "C" Large Commercial
 - "D" Central Commercial
 - "E" Physical Fitness
 - "F" Small Commercial
- III. Wellness Services (half eleemosynary and half "for profit") are in the southernmost building "G".

$$A + B + C + D + E + F + G = 225,500 \text{ SF}$$

Cost / Revenue Program

COMMERCIAL BANK
NEW YORK

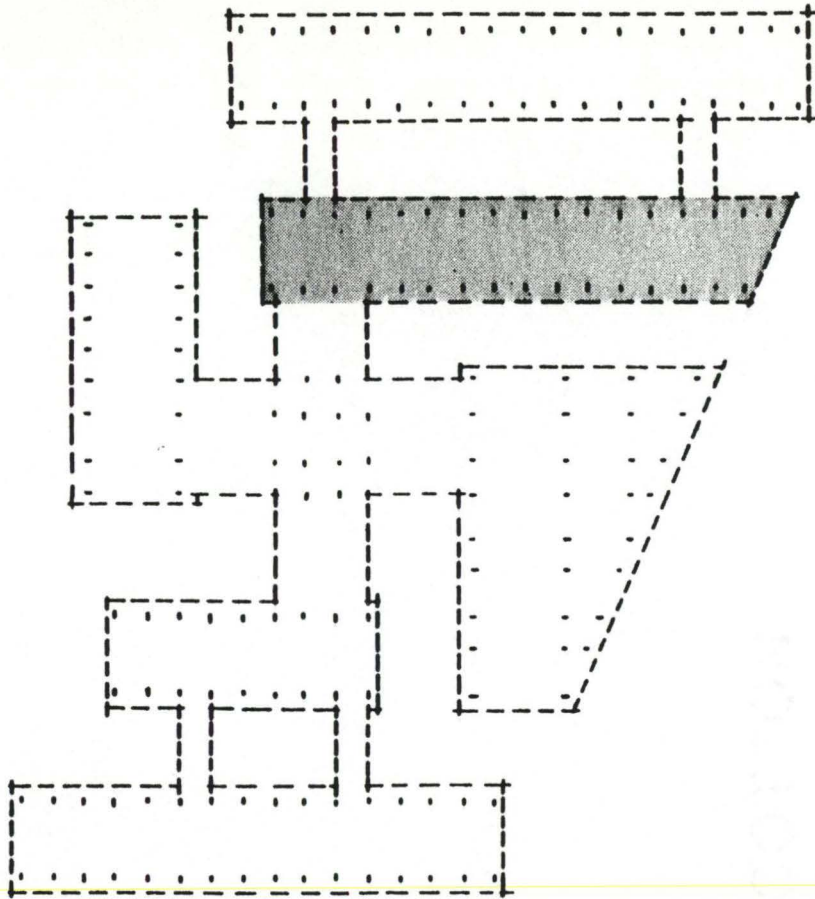
A - HOSPITAL BUILDING



(Cost & Revenue estimated in '82 dollars)

<u>LEVEL DESCRIPTION</u>	<u>Gross SF</u>	<u>Cost/SF</u>	<u>COST</u>	<u>Net SF</u>	<u>Revenue/SF</u>	<u>REVENUE</u>
1 - Diagnostic & Treatment	24,000	\$75.00	\$1,800,000			(no revenue calculated)
2 - Mechanical	24,000	25.00	600,000			
Equipment	24,000	50.00	1,200,000			

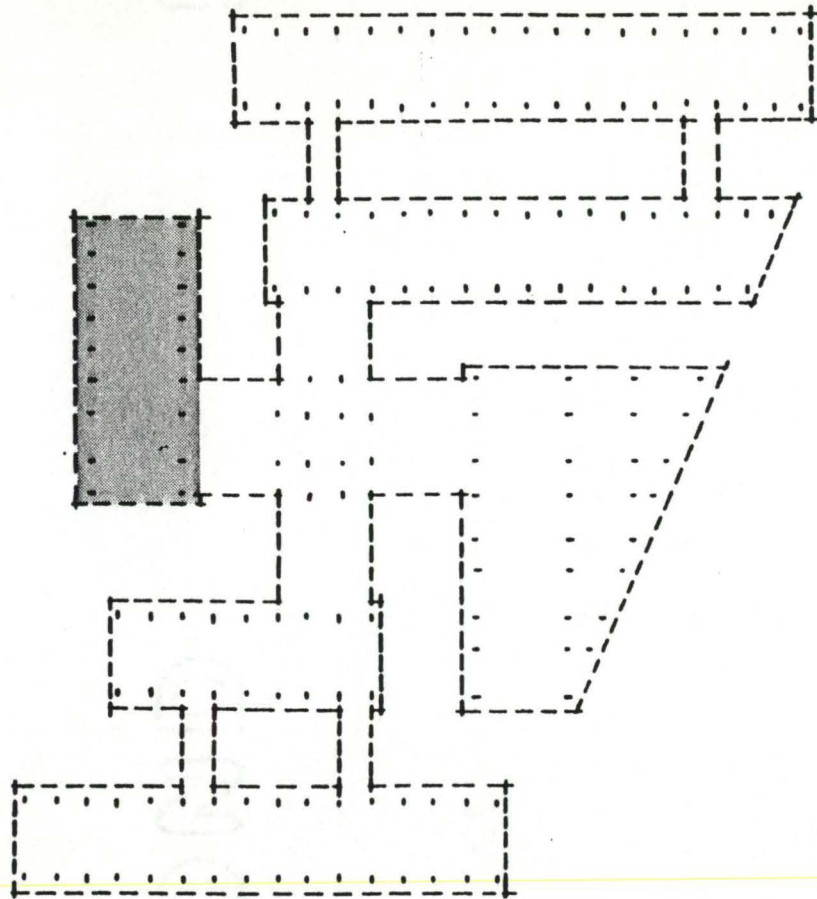
B - OFFICE BUILDING



(Cost & Revenue estimated in '82 dollars)

LEVEL DESCRIPTION	Gross SF	Cost/SF	COST	Net SF	Revenue/SF	REVENUE
1 - Commercial	13,000	\$50.00"	\$ 650,000	9,000	\$12.00	\$108,000
2-3 - Physician Office	40,000	50.00	2,000,000	30,000	10.00	300,000

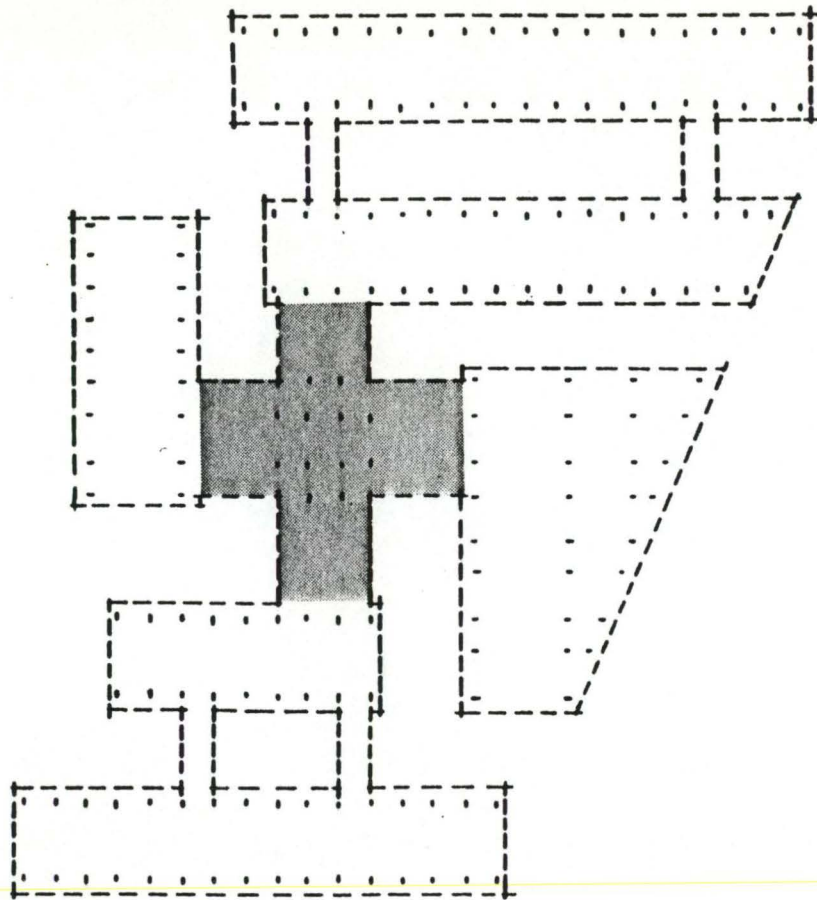
C - LARGE COMMERCIAL



(Cost & Revenue estimated in '82 dollars)

<u>LEVEL DESCRIPTION</u>	<u>Gross SF</u>	<u>Cost/SF</u>	<u>COST</u>	<u>Net SF</u>	<u>Revenue/SF</u>	<u>REVENUE</u>
1-2-3 - Commercial	38,000	\$50.00	\$1,885,000	38,000	\$15.00	\$565,000

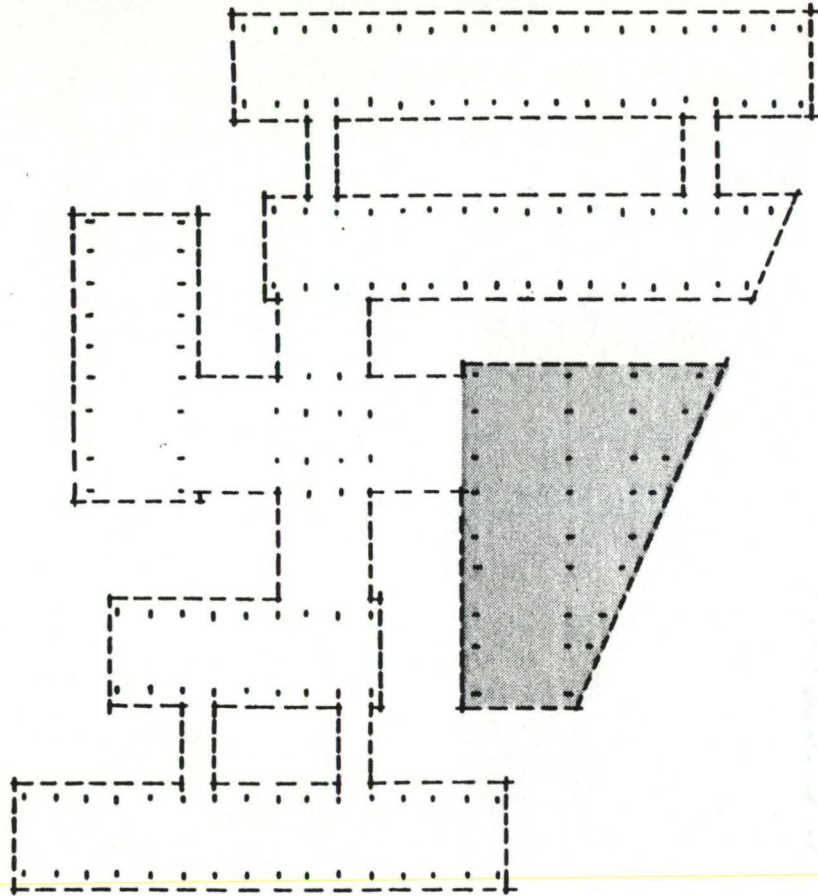
D - CENTER COMMERCIAL



(Cost & Revenue estimated in '82 dollars)

LEVEL DESCRIPTION	Gross SF	Cost/SF	COST	Net SF	Revenue/SF	REVENUE
2-3 - Commercial	33,000	\$50.00'	\$1,650,000	12,000	\$20.00	\$240,000

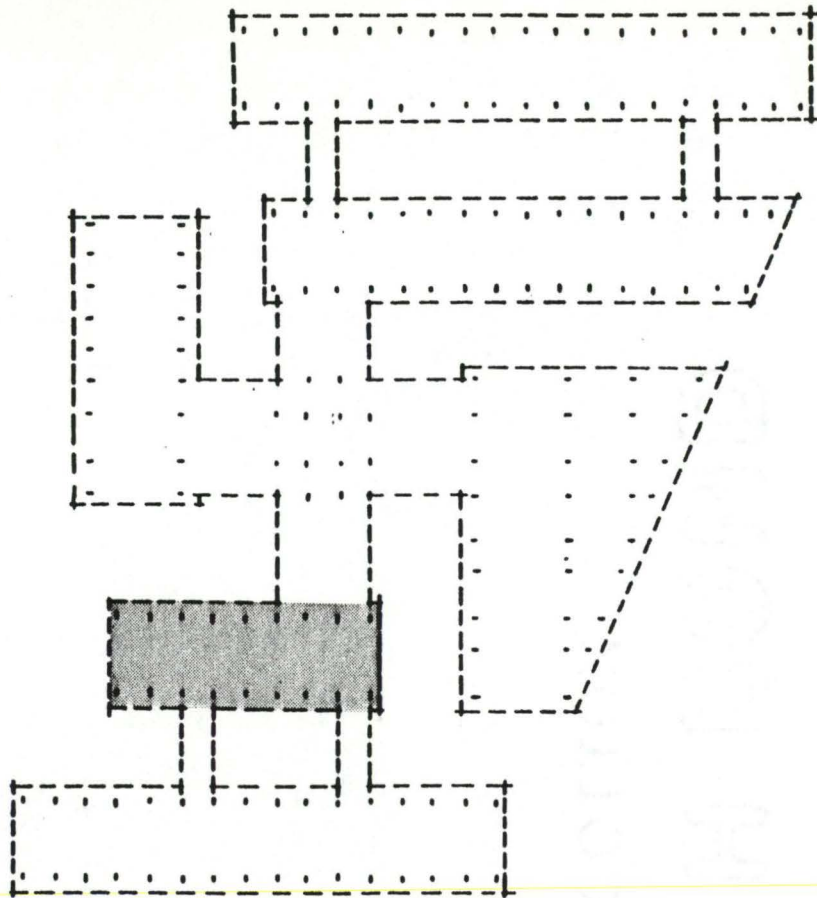
E - PHYSICAL FITNESS CENTER



(Cost & Revenue estimated in '82 dollars)

<u>LEVEL DESCRIPTION</u>	<u>Gross SF</u>	<u>Cost/SF</u>	<u>COST</u>	<u>Net SF</u>	<u>Revenue/SF</u>	<u>REVENUE</u>
1-2-3 - Physical Fitness	33,000	\$50.00"	\$1,650,000	12,000	\$20.00	\$240,000

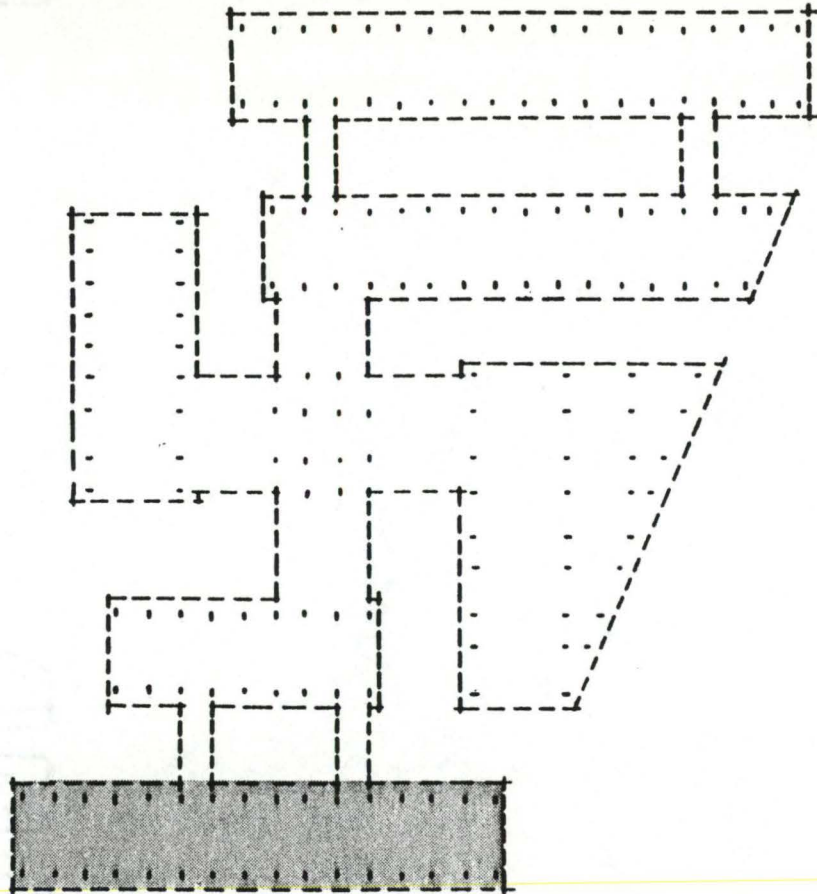
F - SMALL COMMERCIAL



(Cost & Revenue estimated in '82 dollars)

LEVEL DESCRIPTION	Gross SF	Cost/SF	COST	Net SF	Revenue/SF	REVENUE
1-2-3 - Commercial	31,900	\$50.00"	\$1,595,000	21,000	\$12.00	\$252,000

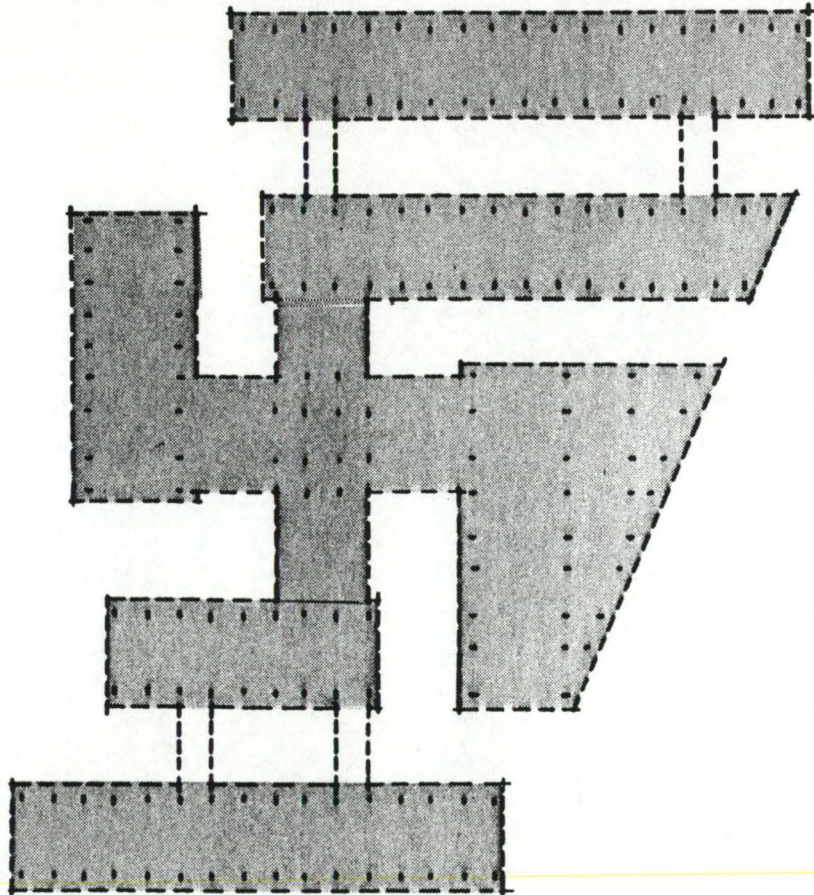
G - WELLNESS CENTER



(Cost & Revenue estimated in '82 dollars)

LEVEL DESCRIPTION	Gross SF	Cost/SF	COST	Net SF	Revenue/SF	REVENUE
1 & 2 - Wellness Services	31,000	\$50.00	\$1,540,000	15,000	\$12.00	\$185,800
Equipment	31,000	10.00	308,000			

TOTAL FACILITY



(Cost & Revenue estimated in '82 dollars)

LEVEL DESCRIPTION	Gross SF	Cost/SF	COST	Net SF	Revenue/SF	REVENUE
A+B+C+D+E+F+G		"	\$15,628,000			\$2,181,000
Parking (274)	82,200	\$25.00	2,055,000			
Land	17.8 acres	\$10,000/ac	178,000			
Circulation/Mechanical	28,000	\$12.50	350,000			

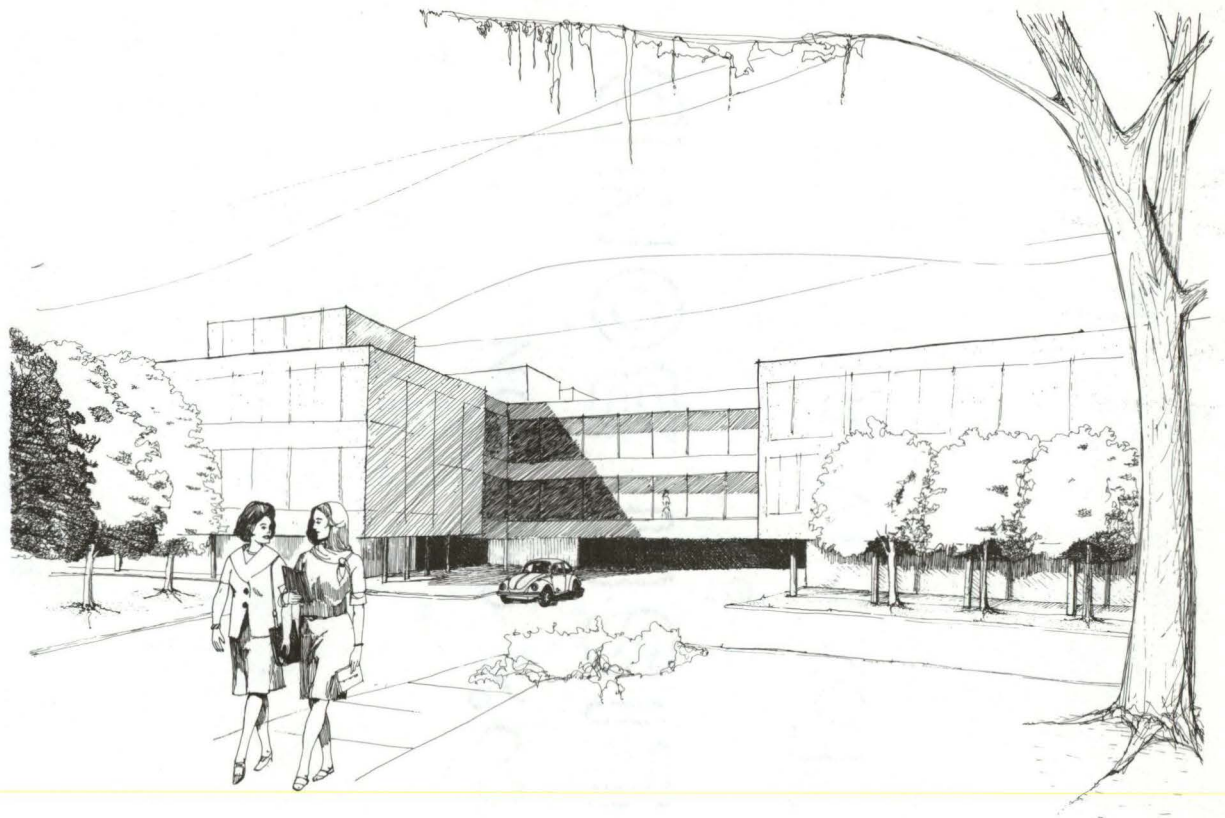
Estimated Revenue/Month @ 75% Occupancy		\$1,636,000
Loan Payments (90% initial cost + 14% interest over 12 years)	\$ 260,000	
Maintenance Fee (15% of monthly revenue 75%)	245,000	
Return on Investment (downpayment (10%) plus 12% interest over 12 years)	26,000	
Operation Cost and Contingency Fee (10% of revenue)	164,000	
Operation Cost for Eleemosynary Services (12% of revenue)	196,000	
Energy Cost (10% of cost of	169,000	
Estimated Cost/Month		<u>1,060,000</u>
Estimated Income for Hospital/Month		\$ 576,000

Economic Conclusion

The "for profit" areas will generate enough revenue/month to pay for all the costs/month plus an income for Roper Hospital/month.

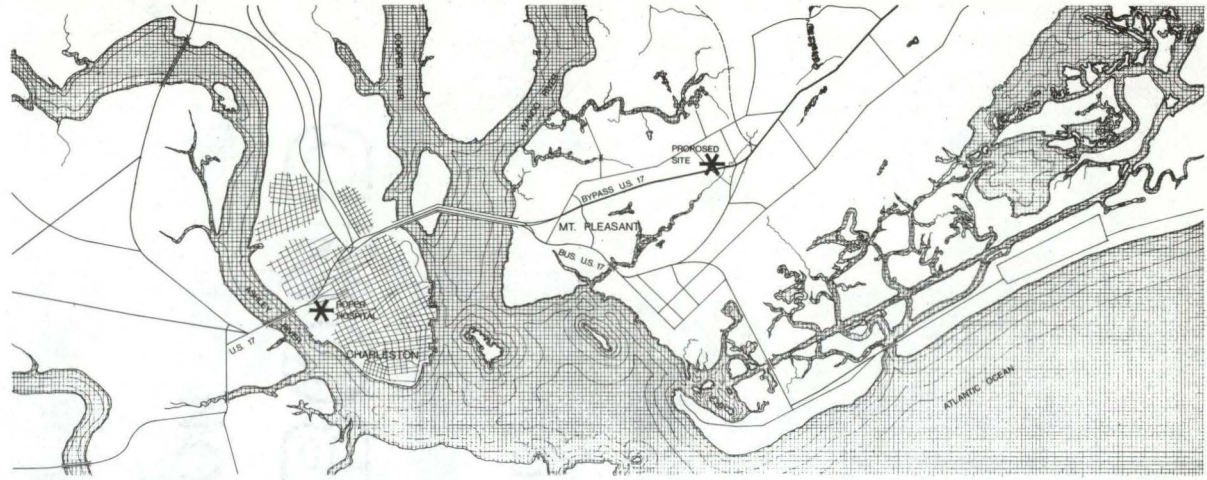
Revenue/month = Costs/month + Income for Roper Hospital/month.

Proposal

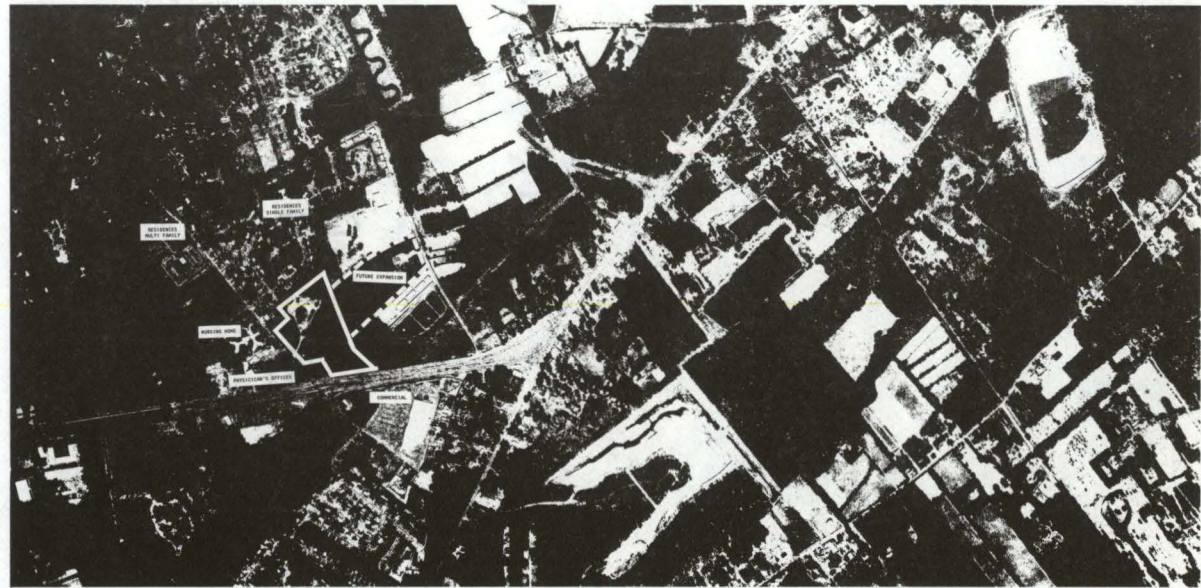


**A COMMUNITY HEALTH CENTER
WHICH INTEGRATES NOT-FOR PROFIT HEALTH
SERVICES WITH FOR PROFIT SERVICES**

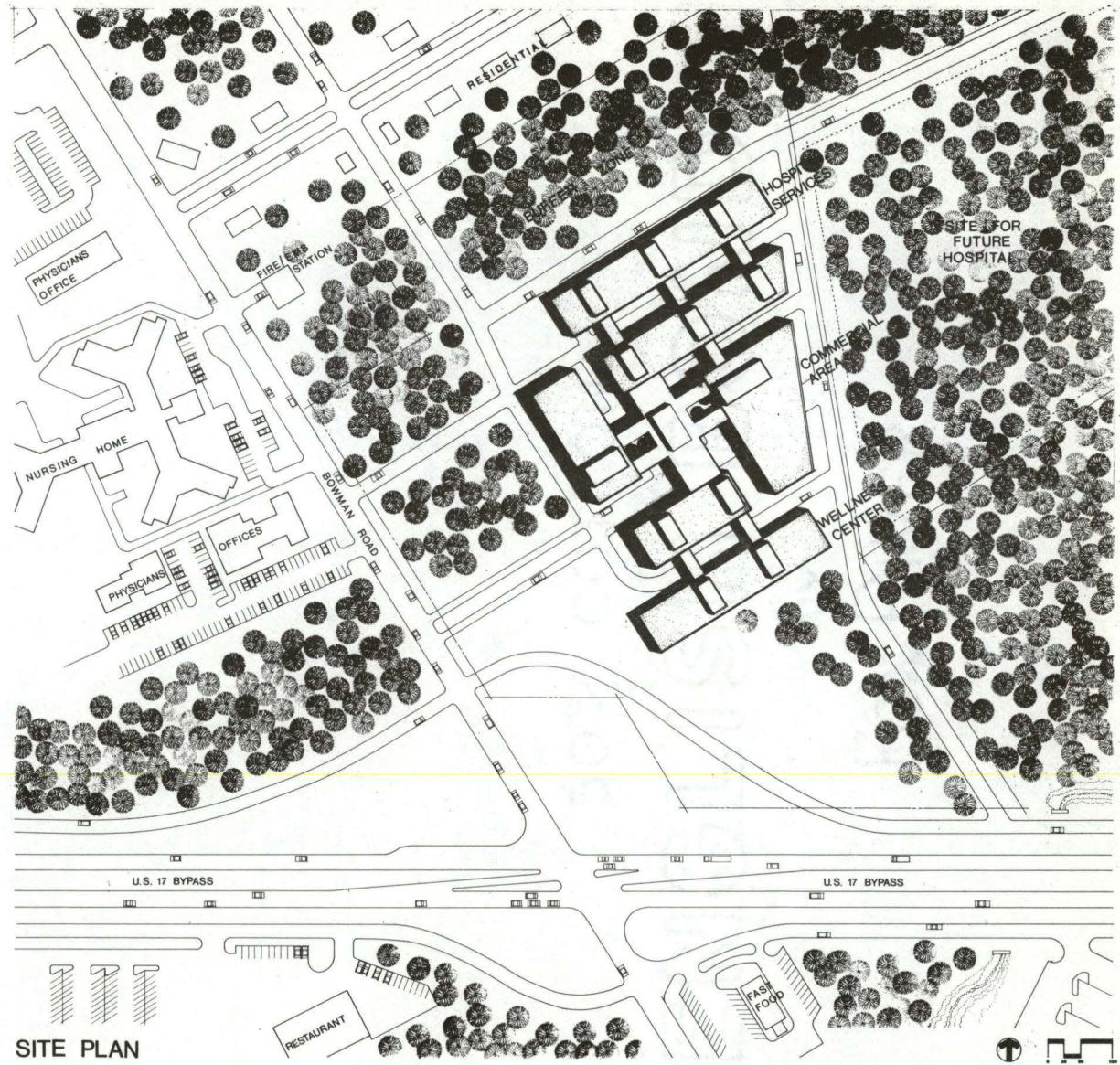
A TERMINAL PROJECT SUBMITTED TO THE FACULTY OF THE COLLEGE
OF ARCHITECTURE, CLEMSON UNIVERSITY IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARCHITECTURE
FALL SEMESTER, 1983

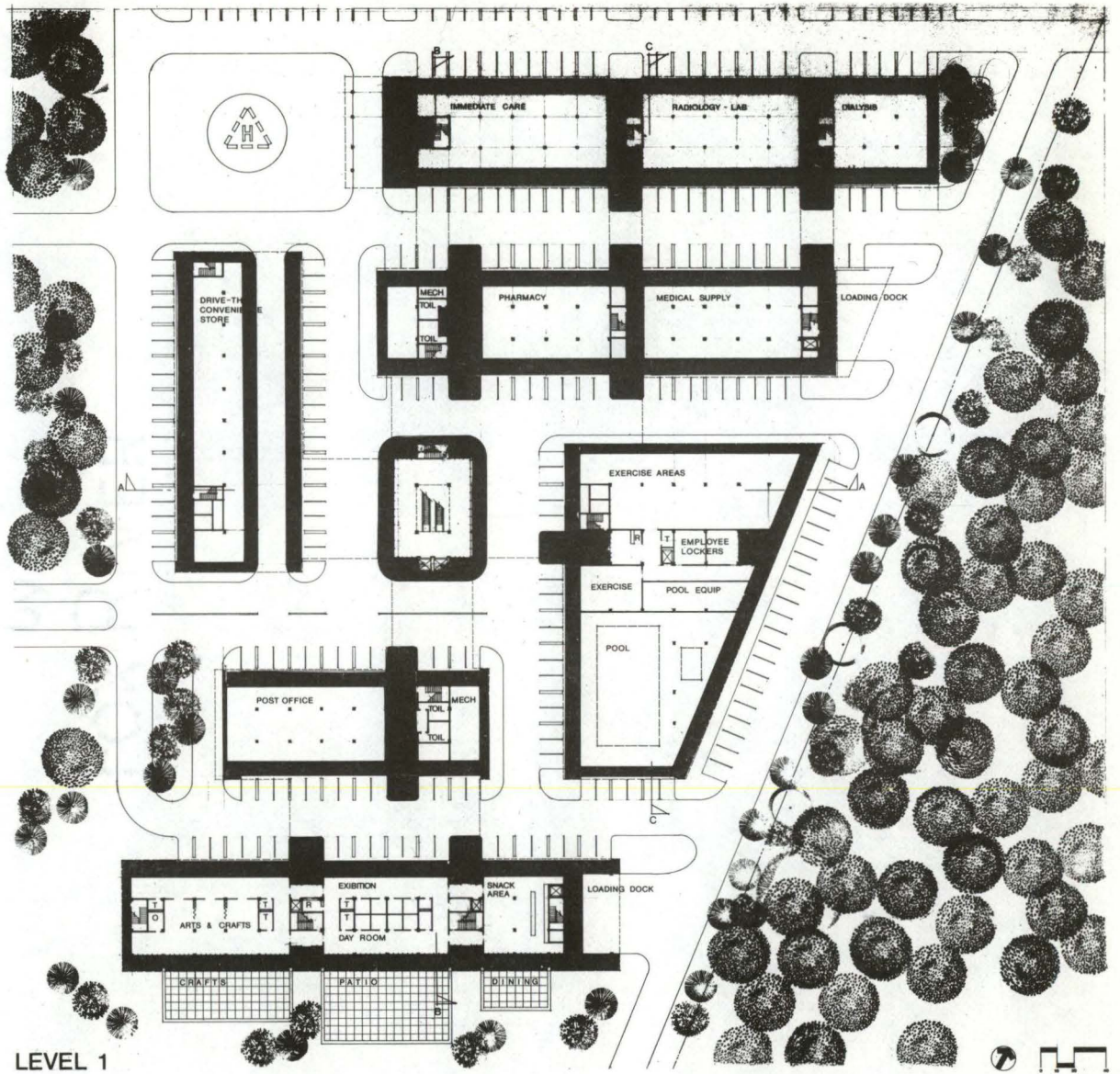


LOCATOR MAP

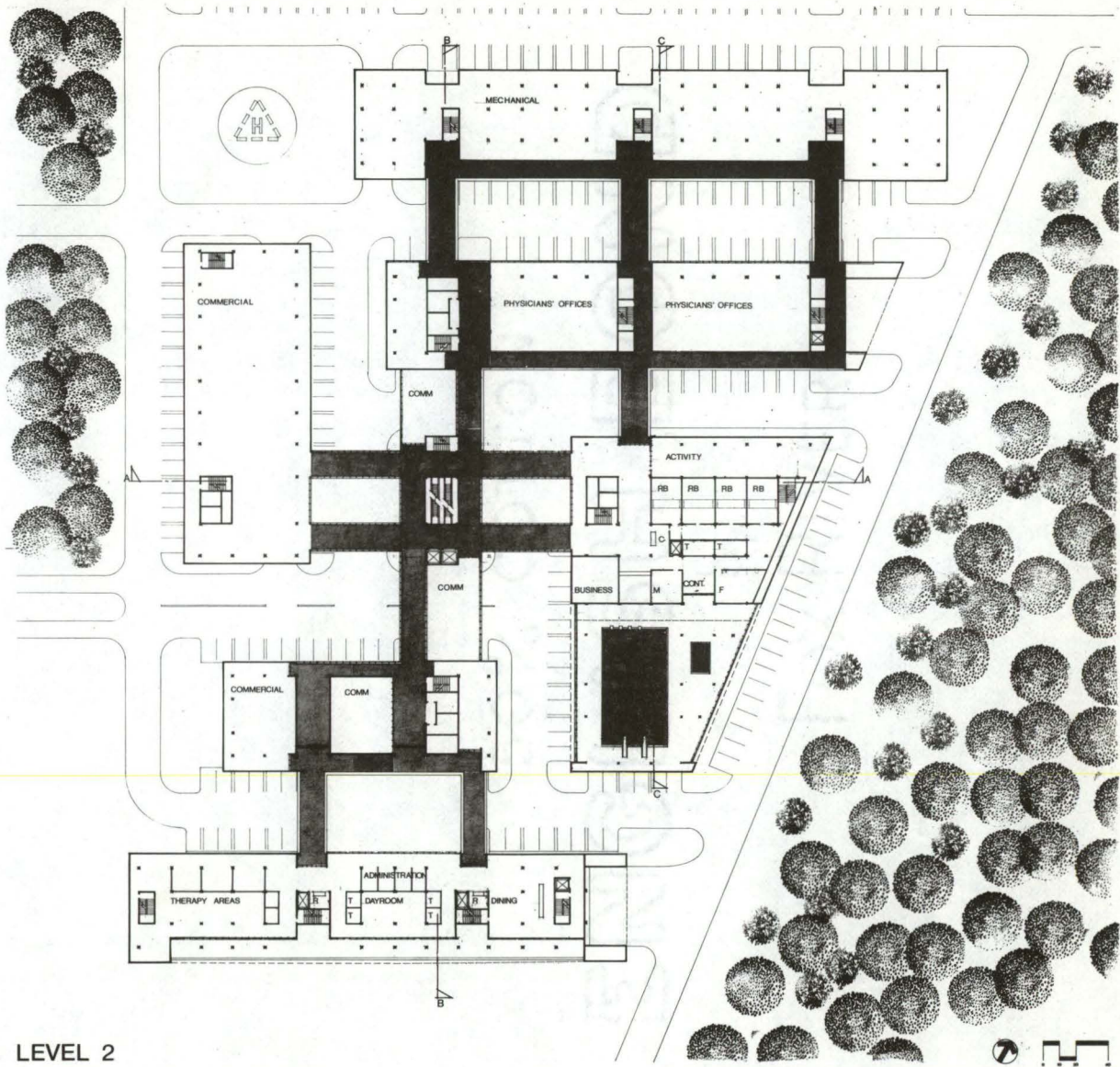


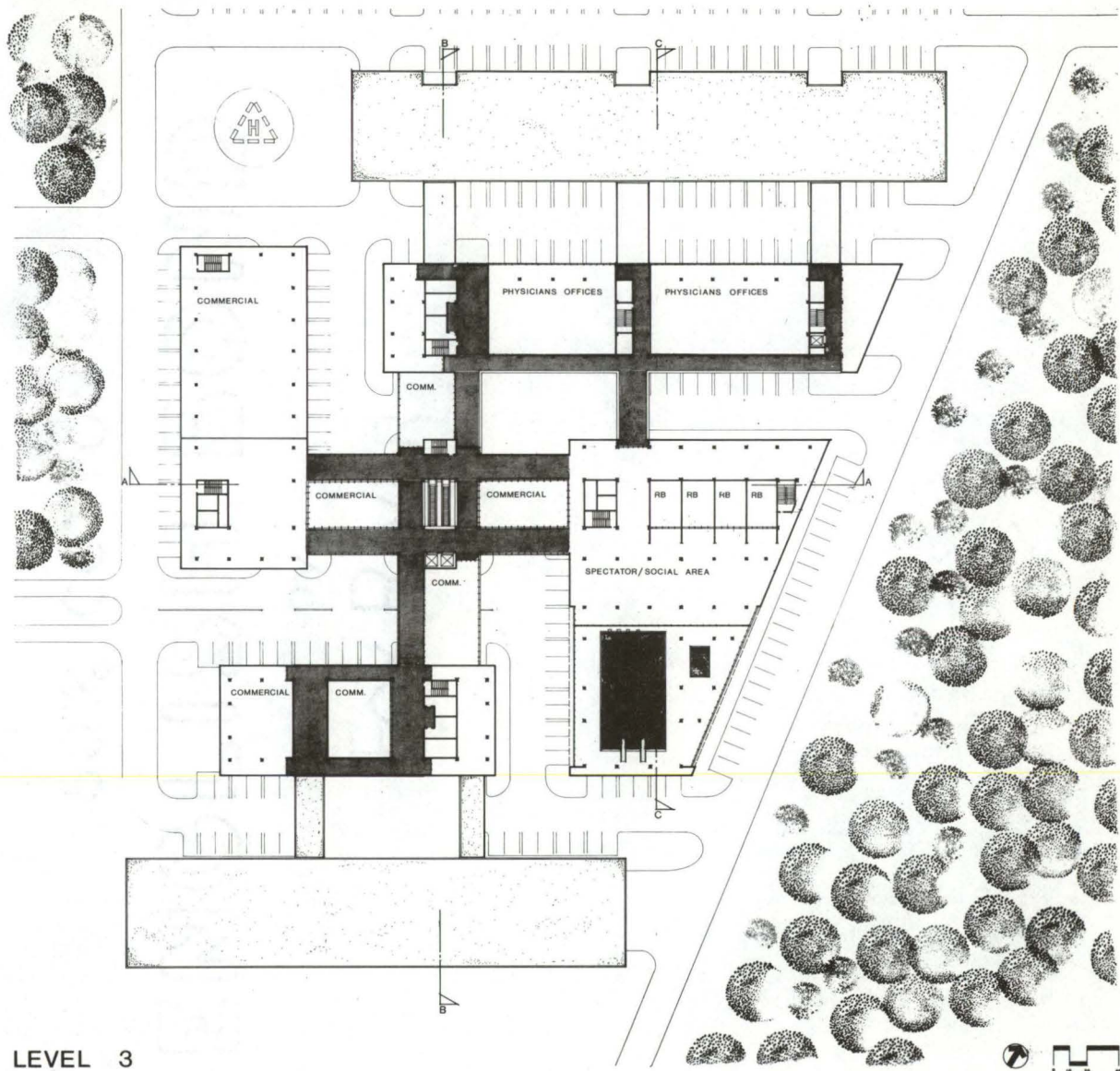
AERIAL PHOTOGRAPH



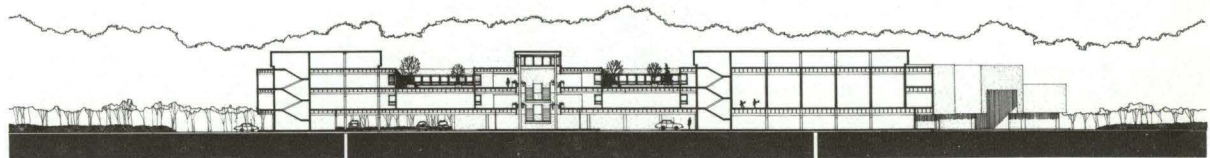


LEVEL 1





LEVEL 3

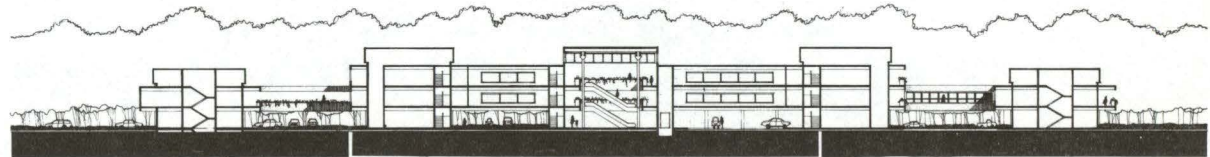


A-A

LARGE COMMERCIAL

CENTRAL PAVILION

PHYSICAL FITNESS



B-B

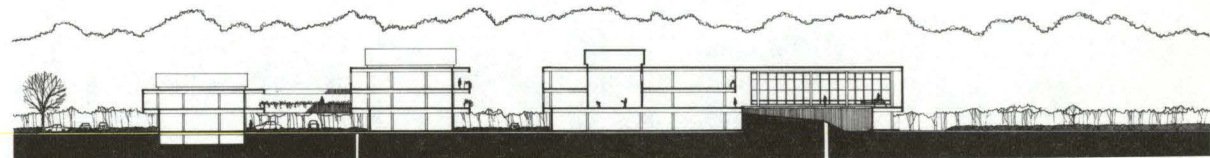
HOSPITAL SERVICES

PHYSICIANS OFFICES

CENTRAL PAVILION

MISC. COMMERCIAL

ADULT DAYCARE



C-C

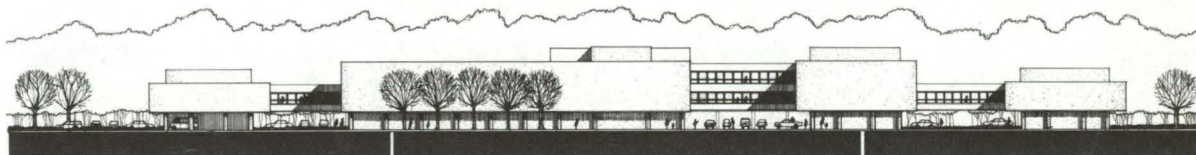
HOSPITAL SERVICES

PHYSICIANS OFFICES

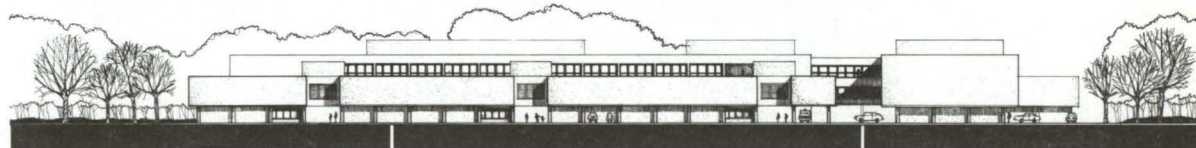
PHYSICAL FITNESS

SECTIONS

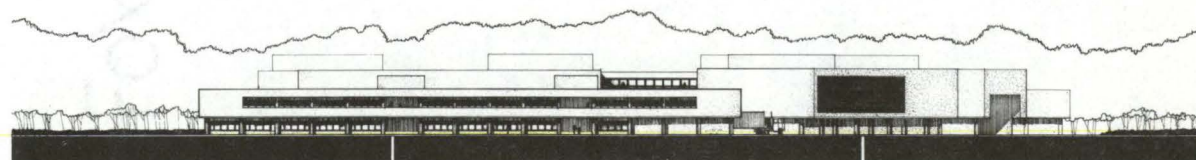




WEST ELEVATION



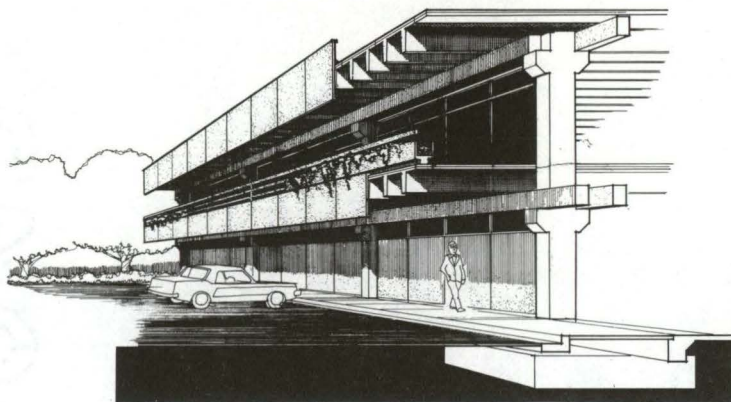
NORTH ELEVATION



SOUTH ELEVATION

ELEVATIONS



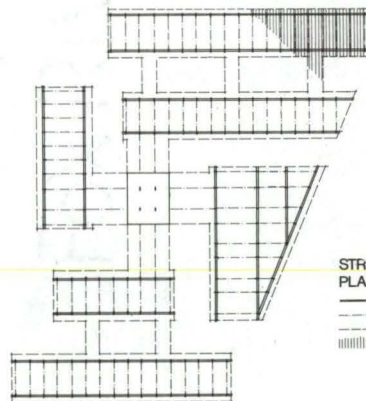


STRUCTURAL CONCEPT

- ALL PRECAST CONCRETE CONSTRUCTION SYSTEM, COMPRISED OF:
 - 5 FT DOUBLE TEE BEAMS (PRESTRESSED)
 - TEXTURED FACIA AND WALL PANELS
 - PRECAST COLUMNS TYPICALLY FORM 21'-6" x 52'-0" BAYS
 - DOUBLE PRECAST GIRDER SYSTEM
 - ON GRADE SLAB
 - GRADE BEAM BETWEEN COLUMNS
 - SPREAD COLUMN FOUNDATION USING PILING WHERE NEEDED

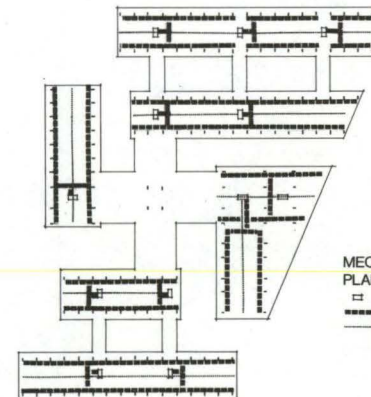
MECHANICAL CONCEPT

AN ALL AIR ALL ELECTRIC HEAT PUMP SYSTEM. HEATING, COOLING, AND AIRHANDLER UNITS ARE COMBINED IN MECHANICAL PENTHOUSES LOCATED ON TOP OF VERTICAL CIRCULATION AND MECHANICAL CORES.



STRUCTURAL PLAN

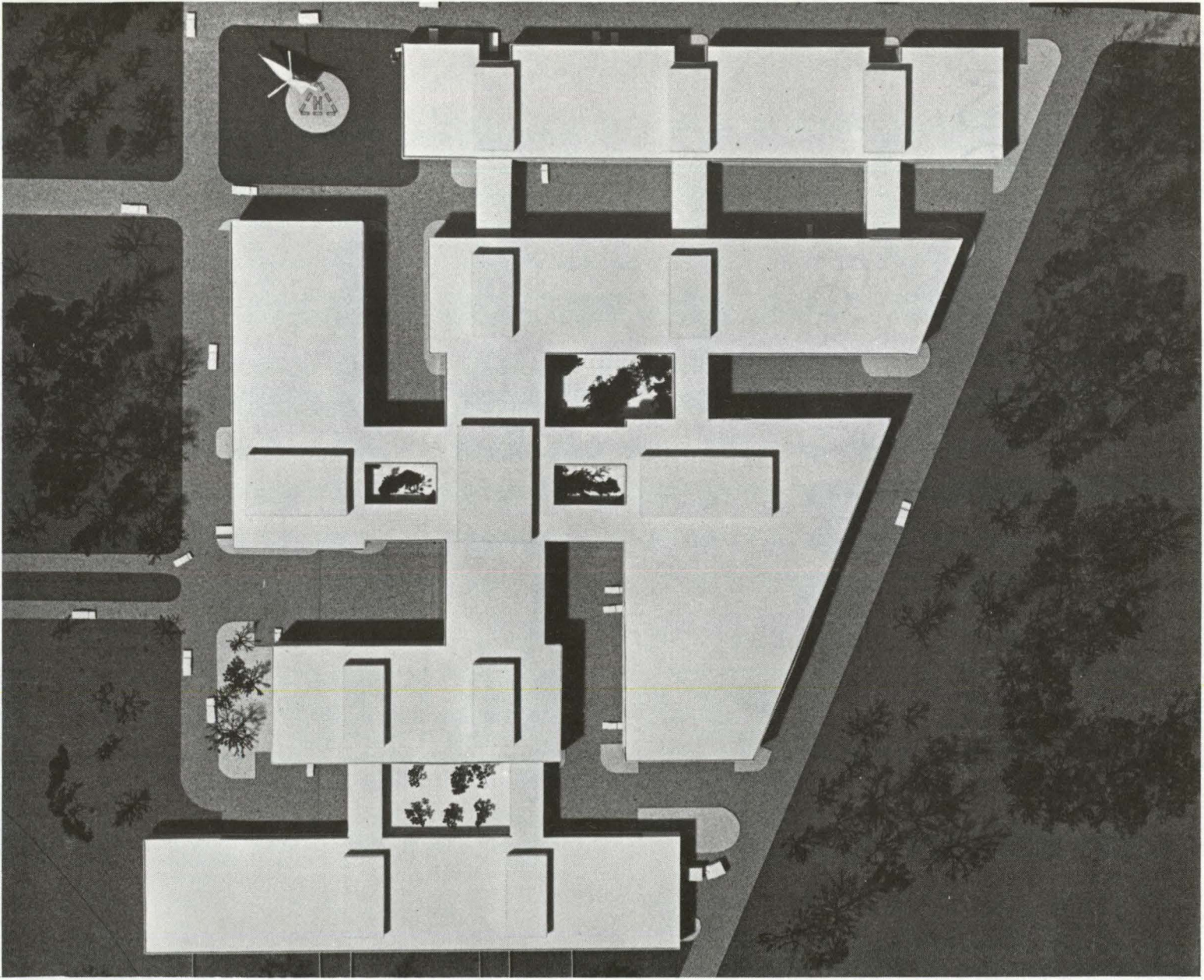
- PRECAST DOUBLE I GIRDERS
- - - TIE BEAMS
- ▨ PRECAST SPANREL PANELS
- ||||| PRECAST DOUBLE TEE BEAMS

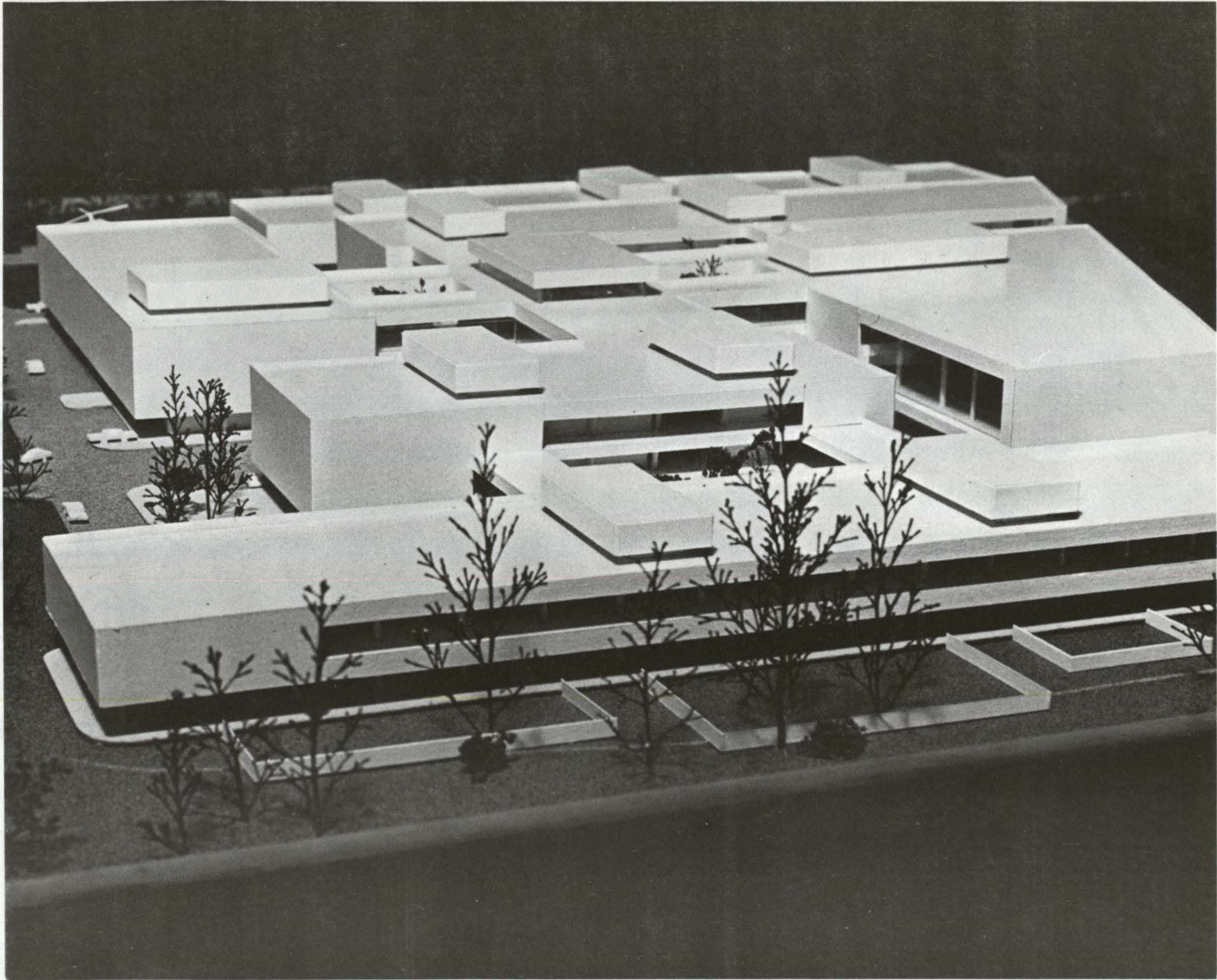


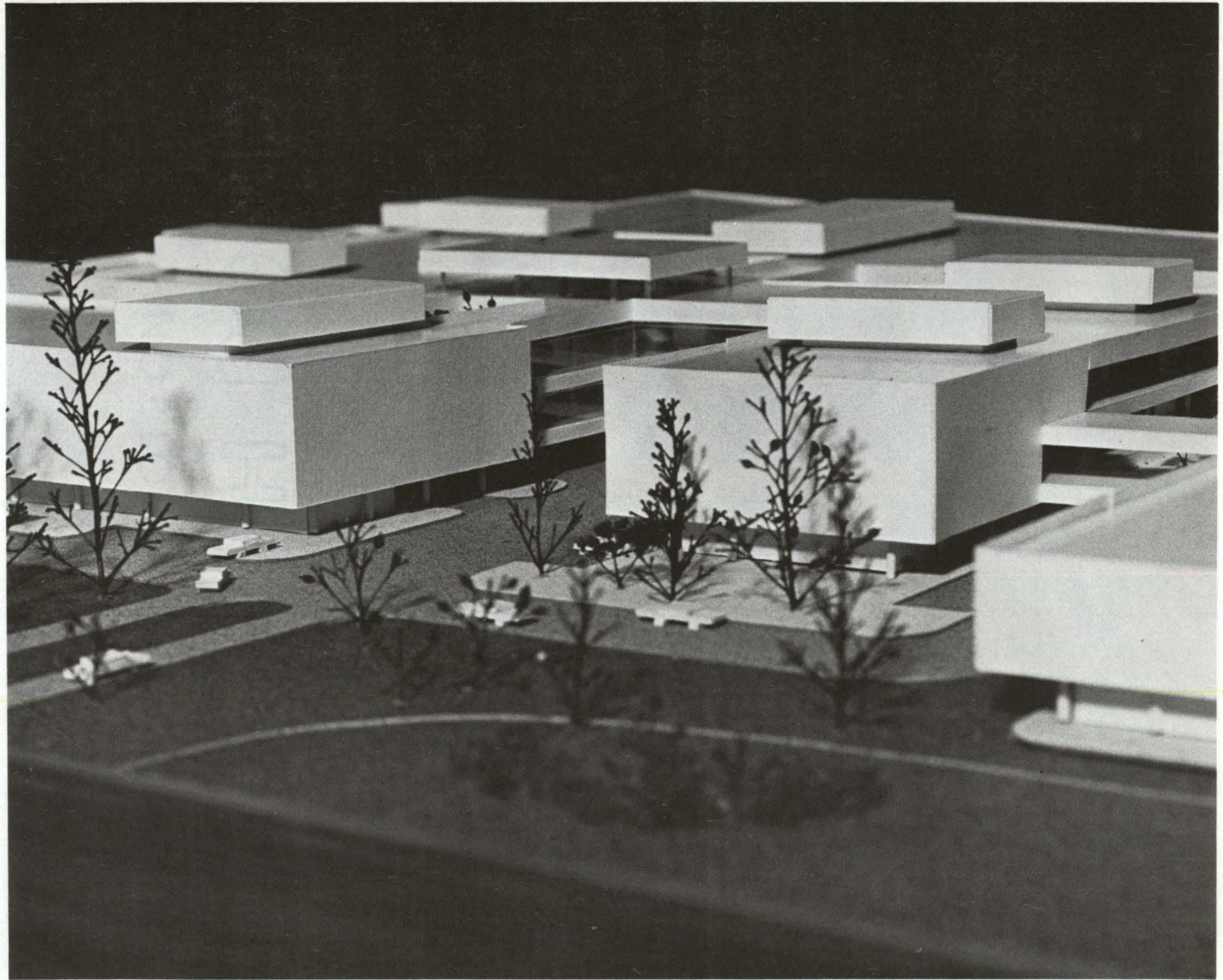
MECHANICAL PLAN

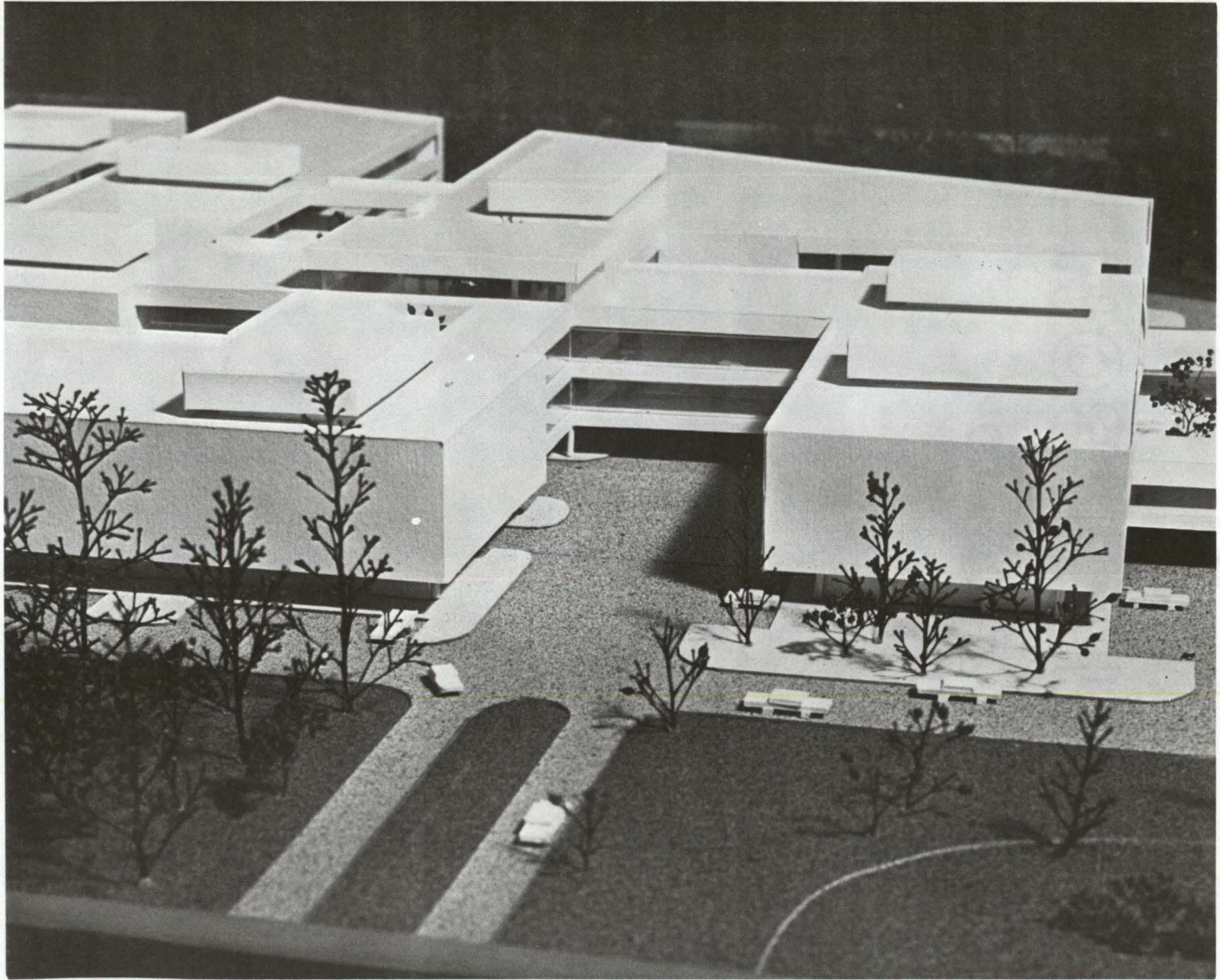
- AIR HANDLER
- ▨ SUPPLY DUCTS
- RETURN DUCTS

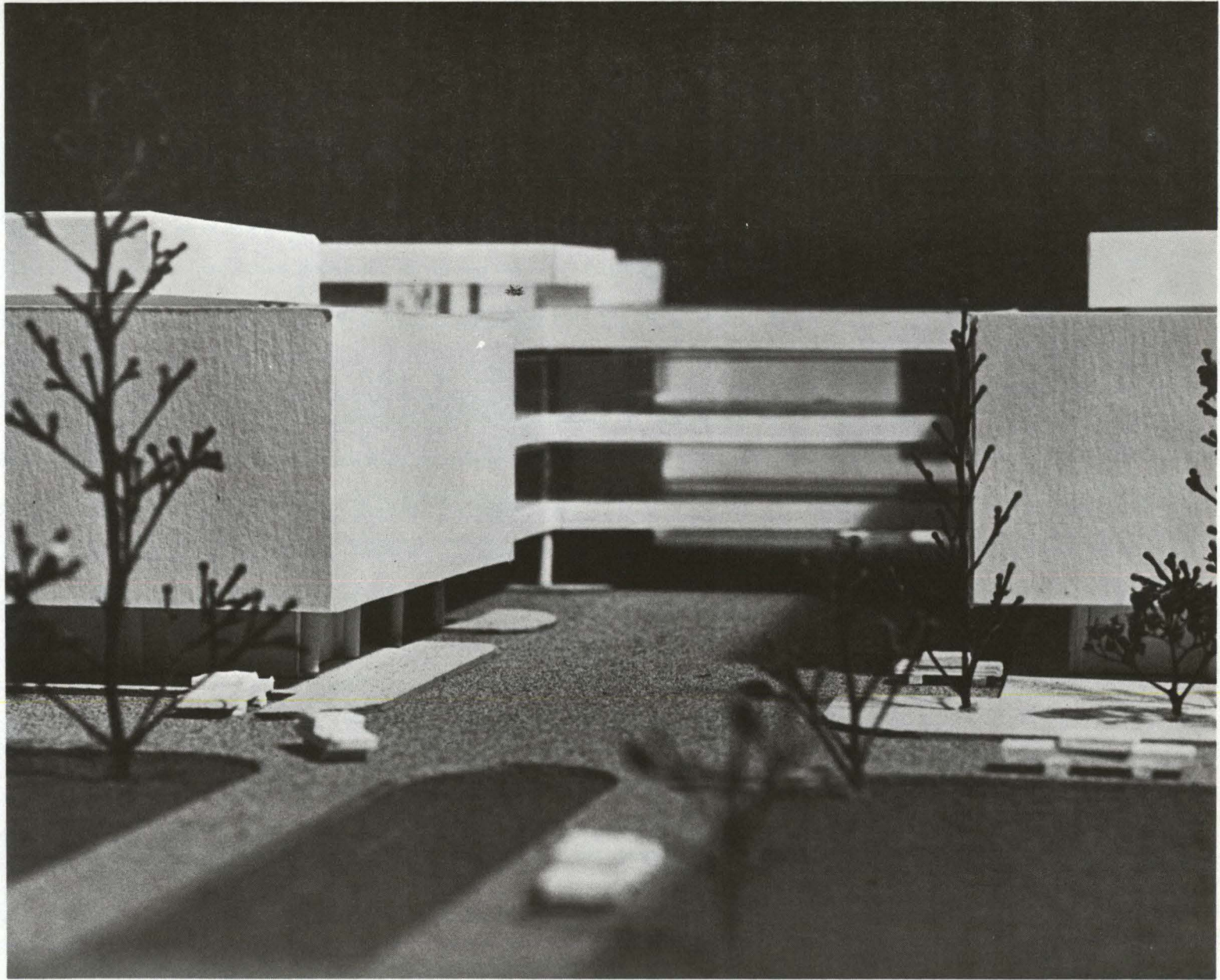
STRUCTURE & MECHANICAL

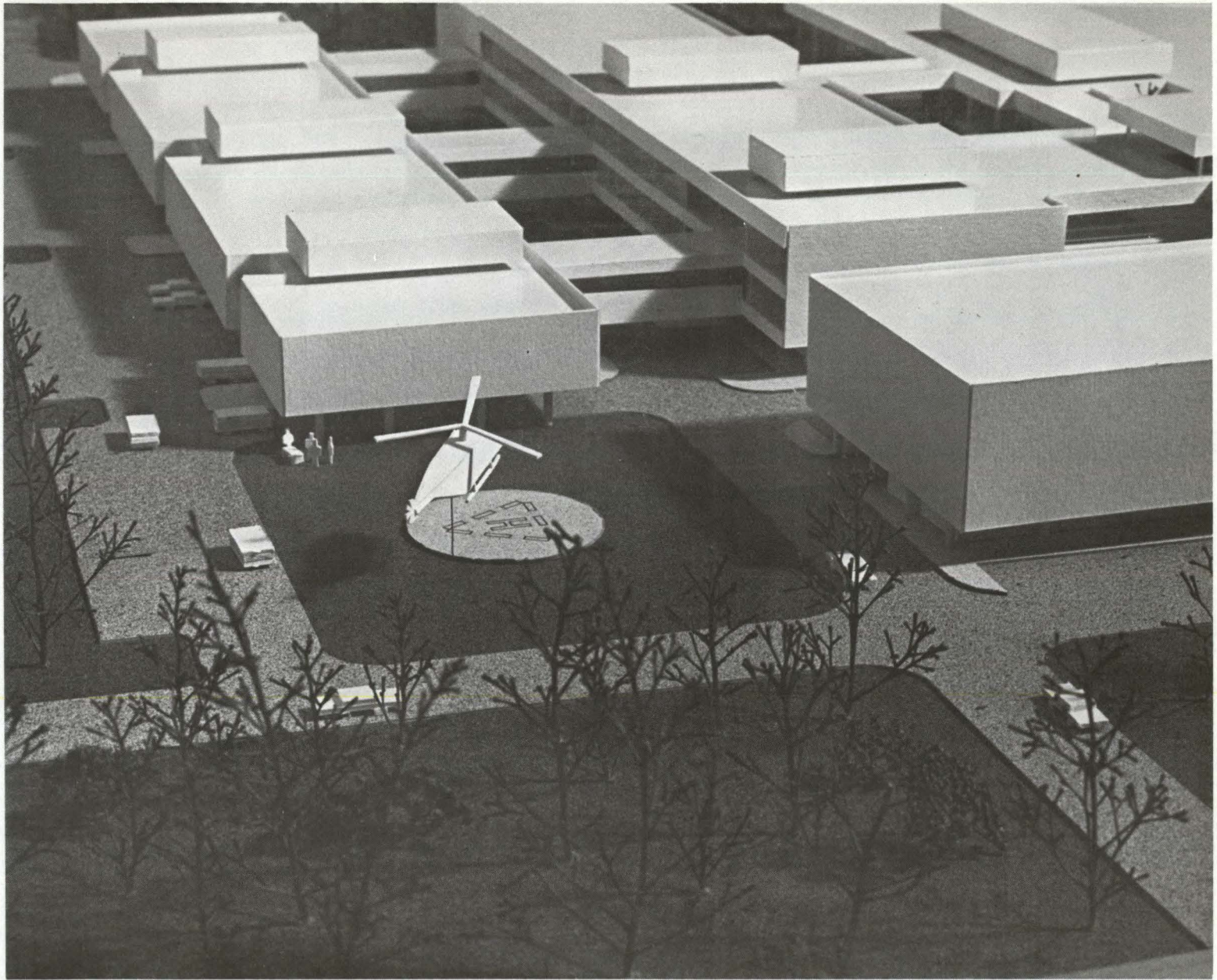


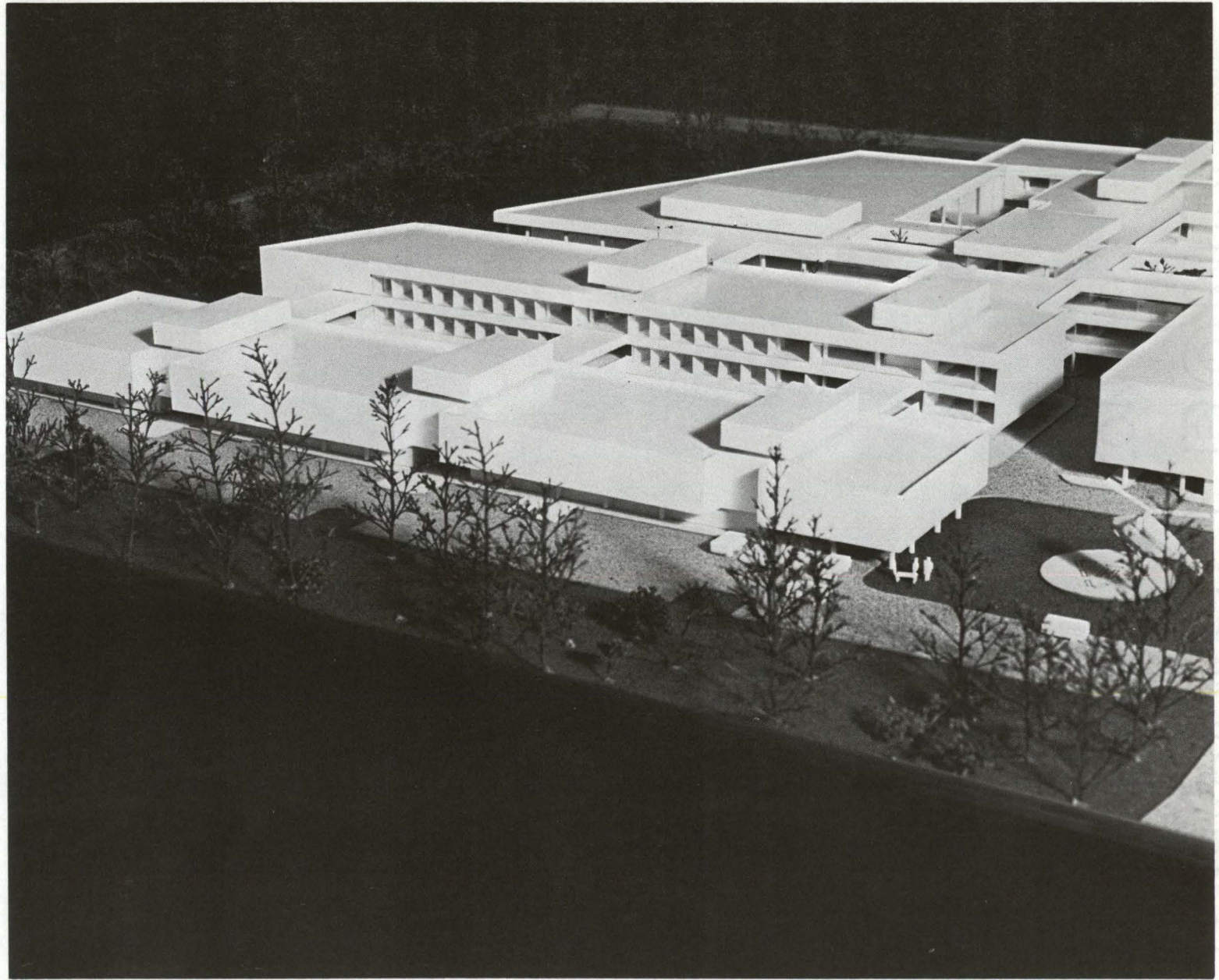


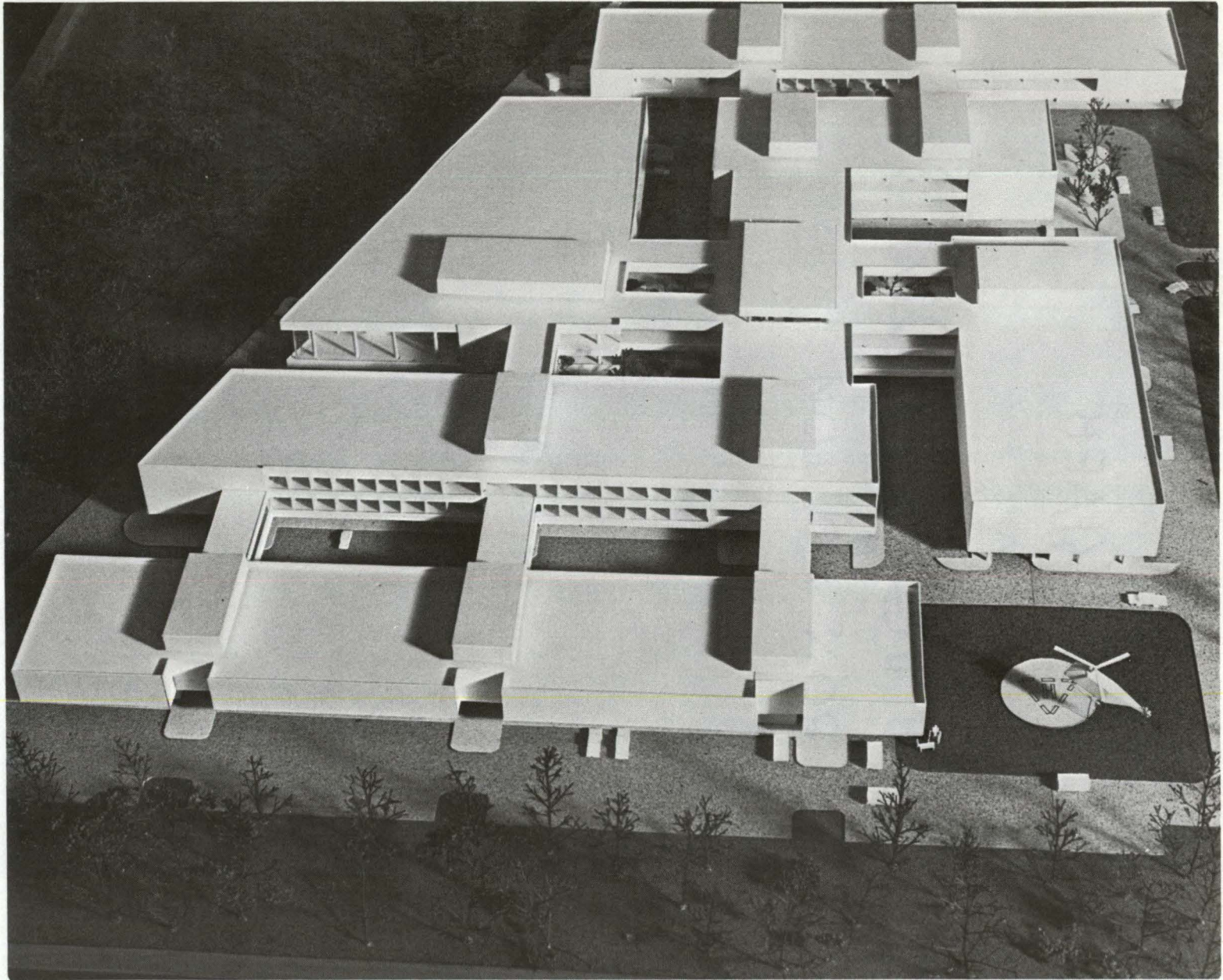


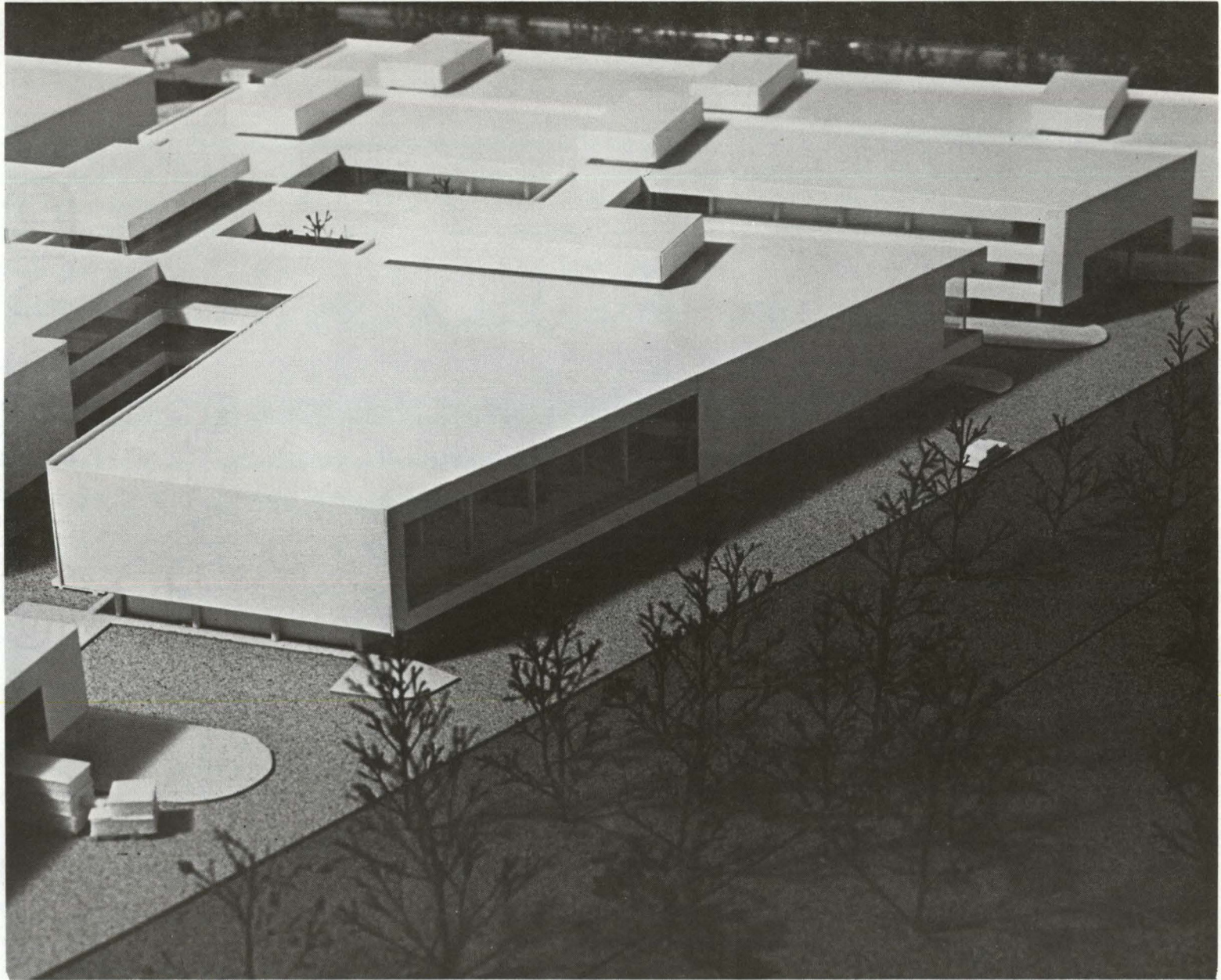












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Resources

Footnotes

¹William G. Anlyan, M.D., "Critical Changes That Need To Be Made In The Health Care Delivery Systems," Tenth Annual Health Planning Seminar. May 18-19, 1983, Charlotte, N.C.

²Ibid.

³Ibid.

⁴Paul Bridges, Paul Byington, and Lucas Snipes, "Selecting A New Venture," Tenth Annual Health Planning Seminar. May 18-19, 1983, Charlotte, N.C.

⁵William G. Anlyan, M.D., "Critical Changes That Need To Be Made In The Health Care Delivery Systems," Tenth Annual Health Planning Seminar. May 18-19, 1983, Charlotte, N.C.

⁶Ibid.

⁷Paul Bridges, Paul Byington, and Lucas Snipes, "Selecting A New Venture," Tenth Annual Health Planning Seminar. May 18-19, 1983, Charlotte, N.C.

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