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**university of minnesota**

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**facilities report for  
school of nursing and  
college of pharmacy**

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**january 1977**

Facilities Report

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# introduction

## INTRODUCTION

Included in the University's Capital Building Request presented to the 1976 Legislature was a request for \$11,014,170 to match \$8,265,368 in federal funds and \$1,669,400 in previously appropriated State funds. The proposed Health Science building was to be located at the NE corner of Harvard Street and Washington Avenue on the East Bank of the Minneapolis campus. The new building was intended to provide facilities for the School of Nursing and the College of Pharmacy.

The request for matching funds was not approved. However, in recognition of the need for improved facilities for both schools, \$300,000 was appropriated to the University as indicated in the Laws of Minnesota for 1976, Chapter 348, Section 6, Subdivision 2 which reads as follows:

"Remodeling and Reassignment--Plans (\$300,000) to be expended for the purpose of producing plans for remodeling existing and future structures for pharmacy and nursing programs. The plans for remodeling shall be presented to the Legislature by February 1, 1977."

A Task Force was appointed by Vice President French and then Vice President Brinkerhoff to develop plans that would provide feasible alternatives to the proposed new building.

Members of the Task Force were:

Clinton N. Hewitt, Assistant Vice President,  
Physical Planning

Cherie Perlmutter, Assistant to the Vice President,  
Health Sciences

Irene G. Ramey, Dean and Professor,  
School of Nursing

Lawrence Weaver, Dean and Professor,  
College of Pharmacy

Acknowledged is the consultant architect,  
John Scott, The Architects Collaborative, (TAC).  
Professional assistance was also provided by  
Hodges, Jage of Minnesota, Construction  
Consultants.

# summary

## SUMMARY

This section of the report briefly outlines the process, findings and conclusions that are described in the Technical Report.

The conclusions resulted from a three-step evaluation of possible sites. First, all viable campus locations that could accommodate the square foot requirements of the two schools were identified. Seventeen possible combinations of space were selected for further study.

Secondly, all locations were reviewed against the criteria listed below in order to select those options which best met the objectives of the criteria.

1. Integrate the School of Nursing and the College of Pharmacy into the Health Sciences.
  - a. Promote interaction of faculty, staff and students in the interdisciplinary teaching, clinical and research programs.
  - b. Utilize shared resource and support facilities.
2. Develop facilities in compatible framework of circulation, organization and expansion in the Health Sciences.

- a. Maintain connections with staff, student, patient, visitor and service circulation patterns.
- b. Assign large undergraduate classrooms and seminar rooms to Levels 2, 3 or 4 (one level up or down from street level) to minimize requirements for vertical transportation.
- c. Develop appropriate departmental or functional adjacencies.
- d. Provide space as originally planned for pharmacy and nursing programs.

The criteria are consistent with those initially adopted by the Board of Regents for the development of the Health Sciences when facilities expansion was approved.

The chart on the following page summarizes the seventeen composite option possibilities that were initially determined to be adequate sites for the space requirements of each program. As indicated in the column headed "Satisfies Design Criteria", seven combined options meet the criteria listed above.



COMPOSITE OPTION POSSIBILITIES

OPTION	NURSING LOCATION	PHARMACY LOCATION	Satisfies Square Footage Requirements	Satisfies Design Criteria	Considered Long Term Investment	Remaining Options
1	Vacated clinic area with infilled courtyard	Unit B/C, Floors 7 & 15 & existing apartments	X			
2	Powell Hall	Unit B/C, Floors 7 & 15 & existing apartments	X			
3	Vacated clinic area with infilled courtyard	Unit B/C, Floors 7 & 15 & existing apartments	X			
4	Powell Hall	Unit B/C, Floors 7 & 15 & vacated clinic area	X			
5	Unit A Plaza	Unit B/C, Floors 7 & 15 & vacated clinic area	X			
6	Vacated clinic area	Appleby Hall & Addition	X			
7	Powell Hall	Appleby Hall & Addition	X			
8	Vacated clinic area with infilled courtyard	Appleby Hall & Addition	X			
9	Unit A Plaza	Appleby Hall & Addition	X			
10	Vacated clinic area	Unit B/C, Floor 7 & Unit A Plaza	X	X	X	X
11	Powell Hall	Unit B/C, Floor 7 & Unit A Plaza	X	X		
12	Vacated clinic area with infilled courtyard	Unit B/C, Floor 7 & Unit A Plaza	X	X	X	X
13	Powell Hall	Vacated clinic area & infilled courtyard	X	X		
14*	Unit A Plaza	Vacated clinic area & infilled courtyard	X	X	X	X
15*	Unit A Plaza	Vacated clinic area & infilled courtyard	X	X	X	X
16	Unit A Plaza	Vacated clinic area & infilled courtyard & Unit B/C Fl. 7	X	X	X	X
17	Unit A Plaza	Appleby Hall & Fraser Hall	X			

\* Option #14 is an attempt to develop at least one option for the College of Pharmacy that will consolidate the functions in one area within the Health Sciences. The impact of this option, however, requires relocation of 16,000 sq. ft. of space currently housing other functions.

Option #15 modifies the impact on other functions by adding another floor to the infilled court. This must be delayed until such time as patient rooms are relocated since the additional floor will block windows.

The third step of the process was a review of cost estimates for each of the seven remaining options that meet the design criteria, based on projected schedules related to the availability of space, construction complexities, building and energy code requirements and anticipated building life. As indicated on the summary chart on page 5, only five of the seven composite options are considered to be long term investments. Options #11 and #13 each require remodeling of Powell Hall space. Current time tables indicate that the Powell Hall site is not likely to be available beyond the mid-1980's since it has been designated as the only feasible location for replacement of in-patient hospital nursing units.

As the final column of the chart indicates, the three step process eliminates all but five options from consideration. These options and the pertinent factors related to each are provided on page 9. For easy reference, the corresponding composite option number used for reference throughout the technical report is retained.

**conclusion**

## CONCLUSION

The history of the Health Sciences development indicates that the facilities planning, which has been a basic ingredient in the orderly but rapid growth of programs within the schools, dictates the conclusion that needs of the School of Nursing and/or the College of Pharmacy cannot be considered independent of other Health Science programs and planning efforts.

First, the detailed planning and implementation of the Health Sciences development has created an interdependence on shared resources such as basic science laboratories, classrooms, learning resource material and equipment, library and student areas. Consideration of locations remote from the health science center requires duplication of some facilities.

While the original program planning for the Health Sciences development occurred nearly a decade ago, the progression of successful implementation has also stood the test of time during the same decade. Programs and priorities have shifted emphasis and some planning efforts have been modified. The basic concept of

flexibility, integrated facilities and shared resources, around which the planning was done, continues to become increasingly important.

Accordingly, the conclusion that the School of Nursing and the College of Pharmacy be integrated into the Health Sciences Center served as a key criterion for determining feasible options.

Secondly, the selected options attempt to minimize the impact on other health science programs in order to avoid, insofar as possible, recommending a solution to one problem which merely creates a different problem.

For example, a review of the pertinent factors related to the five options described on the summary chart on the next page, reveals that each option provides adequate space to accommodate the program requirements; each satisfies the design criteria and each is considered to be a long term investment.

COMPOSITE OPTION #		LOCATION	NET SQ. FT.	NEW SQ. FT.	ESTIMATED COST	PROJECT START	FINISH	SPACE REQUIRING RELOCATION	EST. NSF TO COMPLETE HEALTH SCIENCE PROGRAM
#10	Pharmacy -	Unit B/C Fl.7	70,700		\$15,204,120	Jul. '78	Jul. '79		
	Nursing -	& Unit A. Plaza Vacated Clinics	37,860	51,000	5,942,528	Jan. '79	Jul. '80		
			108,560		\$21,146,648				101,263
#12	Pharmacy -	Unit B/C Fl.7	70,700	51,000	\$15,204,120	Jul. '78	Jul. '79		
	Nursing -	& Unit A Plaza Vacated Clinics & in-filled court	40,750	15,500	10,480,248	Jul. '78	Jul. '80		
			111,450		\$25,684,368	Apr. '79	Oct. '80		
						Jan. '79	Jan. '81		85,763
#14	Pharmacy -	Vacated Clinics	65,695	15,500	\$14,920,508	Nov. '79	May. '81	16,325	
	Nursing -	& in-filled court Unit A Plaza	42,200	43,000	10,832,035	Jan. '79	May. '81		
			108,895		\$25,752,543	Jul. '78	Jul. '80		93,763
#15	Pharmacy -	Vacated Clinics	65,700	20,750	\$14,848,940	Apr. '79	Oct. '80	8,000	
	Nursing -	and in-fill court Unit A Plaza	42,200	43,000	10,832,035	Jan. '79	Jan. '81		
			108,900		\$25,680,975	Jul. '78	Jul. '80		88,513
#16	Pharmacy -	Vacated Clinics	69,100	15,500	\$13,883,898	Apr. '79	Oct. '80	900	
	Nursing -	& in-filled court & Unit B/C Fl.7 Unit A Plaza	43,200	43,000	10,832,035	Jan. '79	Jan. '81		
			112,300		\$24,715,933	Jul. '78	Jul. '79		
						Jul. '78	Jul. '80		93,763

Two options, however, (#14 and #15) which attempt to consolidate the College of Pharmacy in one site require a major relocation of an existing program. Both options are considered to be self-defeating. The Pharmacy program is simply larger than the amount of existing space at any single site within the Health Sciences without major disruption of another program.

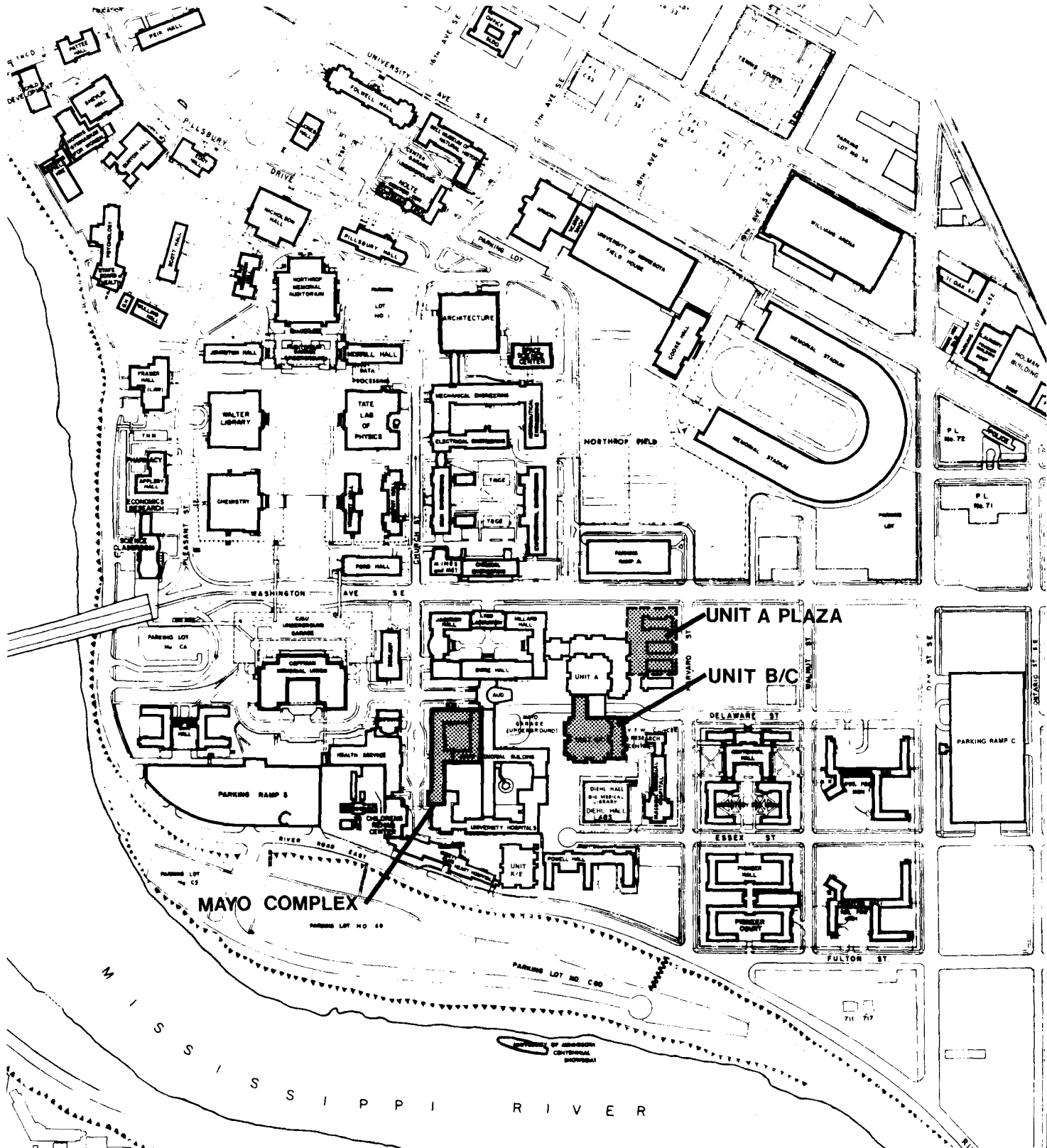
All three options are created by changing the assignment and modifying the space configuration of three areas as shown on the following page.

- remodel out-patient clinic space after completion of new clinics and/or modify the clinic space by providing an infilled area in which is now a courtyard.
- completion of selected areas of Unit B/C shell space potentially available for re-programming.
- expansion of Unit A underground.

The three remaining options, with varying advantages and disadvantages are the composite options which best satisfy program requirements, design criteria and provide long term investment for the University.

PHARMACY/NURSING SITE SELECTION

The three final alternatives that best accommodate the College of Pharmacy and the School of Nursing programs result from combinations of the three sites shaded on the campus plan below.





**history**

## HISTORY

The history of planning for Nursing and Pharmacy facilities began with planning for an expansion of space to accommodate the increased programs and enrollments in Medicine, Dentistry and other Health Sciences programs.

The first long-range Health Sciences Planning Committee was appointed in 1964 by then President Wilson to consider objectives and programs that would respond to a growing need for health manpower.

In 1966, a report entitled "Future Planning for the Health Sciences; Roles, Objectives, and Programs" was submitted. The recommendations represented the collective efforts of the twenty-member parent committee and over two hundred faculty who served on the thirteen sub-committees.

The report set out the following specific goals for the Health Sciences development.

- expansion of facilities to serve increased enrollments in Medicine, Dentistry and other health programs.
- improvement and conservation of existing facilities.

- physical arrangements that support and encourage interaction among Health Science units and among all units of the University.
- flexibility in planning to adapt to future program changes.

Authorization to proceed with planning and implementation of the programs was provided by the Board of Regents' acceptance of the development plan in 1966 and subsequent endorsement by the Legislative Building Commission. In the 1967 appropriations, \$1,150,000 was provided to the University for land acquisition and architectural planning.

The master plan which evolved included the planning and documentation of all program needs, final space allocation and the required timing of moves and space re-assignment necessary to achieve the objectives.

In general, the immediate expansion space was designed to meet additional space needs in order to accommodate increased numbers of students and faculty in the Schools of Medicine and Dentistry. The new facilities for Dentistry permitted that school to completely vacate its prior home in Owre Hall for re-assignment to the Basic Science Departments.

The out-patient clinic facilities were scheduled for complete relocation, vacating the area for re-assignment to the School of Nursing, ultimately freeing the Powell Hall site for the eventual replacement of the University Hospital in-patient nursing units.

The College of Pharmacy also represented a net expansion need in the Health Sciences area since that unit was to vacate Appleby Hall for re-assignment to non-health science collegiate programs.

Plans for the School of Public Health included an interim location in Powell Hall, followed by new construction scheduled for the early 1980's when the Powell Hall site would be required for Hospital in-patient replacement.

Implementation of the early steps of the sequential development process has occurred. The facilities development plan presented to the legislature resulted in the necessary appropriations to acquire land and to complete architectural planning for Dentistry, Medicine and Pharmacy.



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

REGION V

300 SOUTH WACKER DRIVE  
CHICAGO, ILLINOIS 60606

PUBLIC HEALTH SERVICE

September 13, 1976

Lyle A French, M.D.  
Vice President for Health Sciences Affairs  
University of Minnesota  
432 Morrill Hall  
Minneapolis, Minnesota 55455

Dear Dr. French:

This is in response to your July 2, 1976 letter to Ms. M. Ethel Payne requesting approval for an extension of your grant commitments for Construction Grants #05C000063-01 PEC05-HP and #05C000077-01 N.

The Division of Nursing has approved your request to extend the grant commitment for the School of Nursing to May 15, 1977. A copy of their memo to us, indicating their approval, is attached for your records.

The Regional Grants Management Office has also approved your request to extend the Health Professions grant commitment for the School of Pharmacy to May 15, 1977.

If our office can be of further assistance to you, please feel free to contact us.

Sincerely,

*Catherine T. Bartley*

Catherine T. Bartley  
Grants Management Officer

Attachment



UNIVERSITY OF MINNESOTA

Office of the Vice President for Health Sciences Affairs  
432 Morrill Hall  
Minneapolis, Minnesota 55455

July 2, 1976

M. Ethel Payne, Chief, Health Manpower Branch  
Department of Health, Education and Welfare  
Region V  
300 South Wacker Drive  
Chicago, Illinois 60606

RE: 05C 000063-01 PEC05-HP  
05C 000077-01 N

Dear Mrs. Payne:

This letter is intended to request your approval for an extension of the above construction grant commitments.

At the time the proposals were submitted, it was anticipated that sufficient support from the Minnesota State Legislature could be obtained during the 1976 "mini" session to provide needed matching funds. That optimism was based on the \$1.6 million that had previously been appropriated for architectural planning and land acquisition for this project as well as certain other discussions.

Members of the Health Sciences staff have continued to keep your office apprised of the details of the developments in this session. Briefly, both houses of the legislature were supportive of the need for major improvement in the educational facilities for both nursing and pharmacy schools. There was somewhat less support for the conclusion that a new building of the type designed was the best alternative, particularly in the face of potential enrollment declines in higher education generally, and the State's obligation to provide continued annual operating funds for all University facilities. Another factor which mitigated against a totally favorable conclusion included a concern regarding the contingency requirement attached to the pharmacy grant, in which the College of Pharmacy agreed to a major enrollment increase.

The conclusion of the legislature was to appropriate an additional \$300,000 to examine alternative solutions including those which had not been regarded as feasible in the context of the long-range program development as outlined in the construction grant proposals. This conclusion, we believe, represented a balanced judgment respecting the situation that nursing and pharmacy sorely need adequate facilities.

M. Ethel Payne


July 2, 1976

At the present time, these alternatives are being developed with the assistance of architects and cost analysts. It is our intent to examine each of the alternatives for its logic and for its impact on the Health Sciences; if, in fact, changes in long-range development must be made.

We cannot predict the outcome of the legislative session, but an extension of the grant commitments to May 15, 1977 will enable us to retain the joint project as a viable option for consideration.

Your consideration of this request will be appreciated.

Sincerely,

  
Lyle A. French, M.D.  
Vice President

LAF/ct

cc: Dr. Robert Hendrickson  
Region V - Health Professions Education

Elizabeth J. Federer  
Senior Nursing Consultant

**technical report**



Technical Report	Background	1.1 - 1.3
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## Introduction

The purpose of this study, requested by the University, is to determine the feasibility of remodeling various facilities to accommodate the program requirements for the College of Pharmacy and School of Nursing, as alternatives to new construction.

Programs for Pharmacy and Nursing, including Health Sciences (shared) teaching and staff facilities in addition to student, faculty, and service facilities to be shared by Pharmacy and Nursing, were originally planned to be accommodated in the redesign of a projected Unit F as a joint facility for both schools.

At present, space is assigned to the College of Pharmacy in Appleby Hall and a greenhouse remote from the Health Sciences center, and in the Fenwick apartment building at 318 Harvard Street, adjacent to Unit A. The School of Nursing occupies space in Powell Hall and in nearby dormitory buildings, Centennial and Frontier Halls.

## Scope

The scope of this study is to develop and evaluate alternatives or options based on the recent planning of Unit F, the 1968 Health Sciences Planning Report, and the revised 1970 Master Plan as modified by present conditions and subsequent inventory or planning documents. Options are evaluated for accommodation of program, compatibility with overall planning of the Health Sciences center, timeliness of phasing and project delivery schedules, economy of total project costs, and use of capital investment.

It is assumed that provision of facilities, finishes, and building services for the options developed are equivalent to the design standards of new construction in the Health Sciences center.

Listed in this report are the principal assumptions, findings and conclusions. For convenience in reading, more detailed information on program and options are included as appendices in a separate section.

## Methodology

In general, the study included two parts: a preliminary evaluation and screening of potential options, and a detailed development and analysis of options that appear to be feasible alternatives to Unit F.

The process of defining and developing options, based on program requirements, included the following steps:

1. Floor and site plans of existing and projected facilities were reviewed to determine the location(s) and the net useable (or assignable) area and gross areas of shelled space, vacated space, potential expansion space, and space currently assigned to Pharmacy or Nursing functions.

## Methodology (cont.)

2. Potential options were tentatively identified, based only on the general correlation of available area with space requirements and functional adjacencies required by the programs.
3. Potential options were reviewed and screened for general conformance to functional program requirements, construction economy, and to long-range planning programs involving space allocations for expansion of other departments, particularly in Unit B/C and Unit K/E. Options which appeared most feasible were selected for further study.
4. Schematic plans of each selected option were developed in sufficient detail to evaluate net and gross area, arrangement and accommodation of program functions, primary and secondary circulation patterns, location of stairs and elevators, and general extent of construction. The schematic plans were then used as the basis for detailed code and construction analysis.
5. Field surveys of present space assignment in the Health Sciences center and rental areas were completed in conjunction with this feasibility study. An analysis of this survey and 1970 projections for departmental expansion indicated the influence of each option on long-range programs, planned adjacencies, expansion requirements, and implementation schedules.
6. Buildings were inspected to verify present conditions of layout, finishes, structure, and services, and to determine general scope of renovation and new construction. Life safety, handicapped, and energy codes were reviewed to determine cost related provisions for special egress, protective construction, and fire extinguishing systems and improved construction for exterior walls, fenestration, or other building systems.
7. Project delivery times were derived from projections of schedules for design and contract document preparation, dates (often phased) when sites become available, and durations for renovation or construction work.
8. Estimated construction and total project costs were based on gross (or net) area and factors appropriate to the type facility, special conditions, scope and complexity of work, assumed project time schedule, and non-building costs.

## Program

The options developed in this feasibility study are based on specific program requirements for the College of Pharmacy and School of Nursing as derived from the design development plans of Unit F, dated 15 March 1976. These program requirements are detailed in the Appendix, "Unit F Program", and consist of design criteria statements, area summaries, and adjacency diagrams.

Program (cont.)

Design criteria are obtained from initial programming and planning documents, grant applications, and meeting notes of Unit F redesign during the period from September 1975 to March 1976, at which time design development was stopped due to lack of funding. Primary objectives include the integration of teaching, research, and associated facilities into the main Health Sciences center and the development of facilities in a compatible framework of circulation, organization and expansion.

The program of required spaces for the joint Pharmacy/Nursing facility in Unit F, as incorporated into the referenced drawings, is modified in the feasibility study to apportion the Pharmacy/Nursing shared facilities between the separate programs. These facilities include data processing, faculty lounge, and student lockers, study and organization spaces. With this adjustment, the net area summaries for the programs used as the basis for this study are as follows:

	Net Area Square Feet
College of Pharmacy	65,440
School of Nursing	35,375
Health Sciences (shared facilities)	<u>2,665</u>
 Total	 103,480

The program for Health Sciences shared facilities in this project includes general conference and classrooms (to be managed through central scheduling) and employee lockers, and compliments existing shared facilities such as the animal quarters, food service, educational resources, auditoria, and student study and lounge facilities as found in other Health Sciences units.

Further modifications of net area figures are required in some of the options. For example, additional classrooms are provided in options which include renovated facilities remote from the Health Sciences center, such as Pharmacy Option P50 (Appleby Hall). This particular option also includes separate (and expanded) library facilities. Where Pharmacy options are located within the Health Sciences center, the library is integrated into the Bio-Medical Library in Diehl Hall.

The adjacency diagrams graphically indicate the desired and important functional relationships of separate program elements and where divisions can appropriately be made, when necessary, to accommodate the elements on several floors or in different buildings.

## General

The following section describes the assumptions, findings, and conclusions in the process of selecting alternative sites to accommodate the programs for the College of Pharmacy and School of Nursing. Site selection is based on current and projected space assignments for Health Sciences programs, location, and general area available.

## Assumptions

A detailed review of the floor and site plans of existing and projected facilities is considered necessary to determine the location(s) and net useable (or assignable) area and gross areas of shelved space, vacated space, potential expansion space, and space currently assigned to Pharmacy or Nursing functions.

1. In accordance with the scope of the feasibility study and design criteria which promote the interchange of program and resources, potential sites are assumed to be located within or adjacent to the Health Sciences center. (Exceptions include Appleby Hall and adjacent sites or buildings for the renovation and expansion of present Pharmacy facilities.)
2. In accordance with present priorities for the development and expansion of Health Sciences programs, sites are assumed to be available for renovation by the time that current construction contracts are completed for Hospital (outpatient) clinic and support functions in Unit B/C, or approximately July, 1978.
3. The term "Mayo complex" refers to a group of buildings constructed separately which are connected at various levels and are functionally inter-related. Buildings encompassed by this heading include: the Todd, Elliot, Eustis and Mayo Hospital Buildings.
4. In evaluating the amount of space within an existing building, only the floor area within perimeter walls and exclusive of fixed elements, such as stairs, shafts and main corridors, is considered as "net assignable" or as available to accommodate program functions.
5. Programmed net area, that which can be occupied, multiplied by a factor results in net assignable area which approximates the area required for programmed spaces plus secondary circulation. Net assignable area ranges between 5 and 20 percent more than net area, depending on the number of small spaces that require direct access to corridors.

## Findings

A review of sites and buildings, to identify the location and extent of available space, produced the following results:

Findings (Continued)

1. Space can be obtained to partially accommodate the program requirements through several approaches:
  - a. Remodel present Pharmacy and Nursing facilities in Appleby and Powell Hall.
  - b. Renovate vacated outpatient space in the northwest court area of Mayo complex and in Powell Hall after outpatient clinics and other Hospital departments are relocated to Unit B/C.
  - c. Finish shell space in Unit B/C, assuming the present program assignments are modified, and displaced functions are located elsewhere in the Health Sciences center.
  - d. Develop infilled space between existing buildings, such as between Botany and Zoology, between Jackson-Owre-Millard-Lyons (JOML) and the Mayo complex (west of the Mayo auditorium), or between the Wilshire, Marlan and Fenwick apartment buildings along Harvard Street; or develop infilled space within existing courtyards of the Mayo complex.
  - e. Construct new space by vertical expansion of existing structure, such as an addition of 7 floors to Unit K/E; or by horizontal expansion with new foundations, such as an extension to the east from Unit A or to the north from Appleby Hall.
  - f. Consolidate site parcels in the Mayo complex and Powell Hall by the relocation of some existing Hospital functions.
2. The table below lists the sites or buildings considered in this study and summarizes the approximate net assigned area (in square feet) and the general planning condition for obtaining the space.

<u>Site or Building</u>	<u>Area</u>	<u>Planning Condition</u>
a. Academic Zone (Medical School and Basic Sciences):		
Unit A	---	* (1)
Unit A Plaza	51,000	New construction
Harvard Street Apts.	38,000	Renovation
Harvard Street Apts. (site)	---	* (2)
Jackson-Owre-Millard-Lyons (JOML)	---	* (1)
Zoology	---	* (1)
Botany	---	* (1)

Findings (continued)	Site or Building	Area	Planning Condition
b. Clinical Zone (Ambulatory Care/Diagnostic and Treatment):			
	Unit B/C (Floors 7 and 15)	32,000	Shell Space
	Mayo Complex (vacated space)	49,000	Renovation
	Mayo complex (northwest court)	15,500	Infill construction
	Mayo complex (link to JOML)	---	* (2)
c. Hospital Zone (In-patient Care Units):			
	Powell Hall	30,000	Remodeling
	Apartments (500 Harvard St.)	---	* (3)
	Unit K/E	---	* (4)
	Mayo complex (southeast court)	---	* (5)
	Variety Club Heart Hospital (VCHH)	---	* (6)
	Centennial Hall	---	* (7)
	Pioneer Hall	---	* (7)
d. Other Sites on University Campus:			
	Appleby Hall	35,000	Remodeling
	Fraser Hall	60,000	Renovation

\* An asterisk in the preceding summary indicates that space is not available or feasible for the following reasons:

(1) Assignable space in Unit A, JOML, Zoology, and Botany buildings is currently developed or designated for other Health Sciences programs.

(2) Infill construction between the Wilshire, Marlan, and Fenwick apartment buildings or between the Mayo complex and JOML is not considered economical, based on the physical conditions of structure, complexity of construction and low yield of net area.

(3) The apartment building at 500 Harvard St. (adjacent to Powell Hall) is not presently owned by the University, but renovation, if considered, would not be a long-term investment.

(4) The expansion floors above existing Unit K/E are designated for research laboratories and inpatient care units.

(5) Two additional floors may be constructed above the existing infill addition of the southeast court, with an approximate total of 10,300 net assignable square feet, but the location is remote from other available parcels.

(6) Space in the Variety Club Heart Hospital (VCHH) is to be retained for inpatient care units.

## Findings (Continued)

(7) Centennial and Pioneer Halls are to be retained as dormitory buildings.

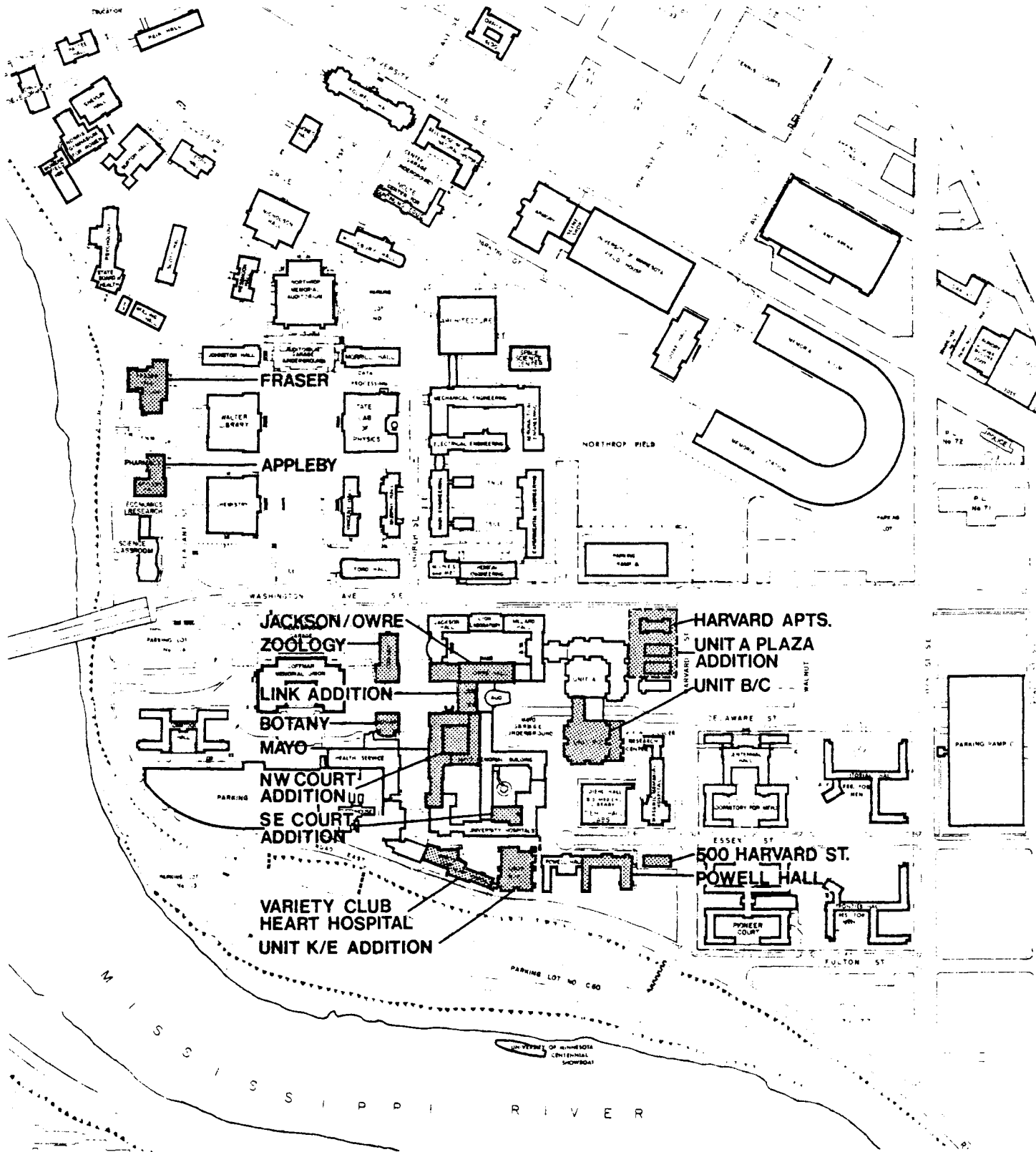
## Conclusions

Based on the preceding assumptions and findings, the following conclusions can be made:

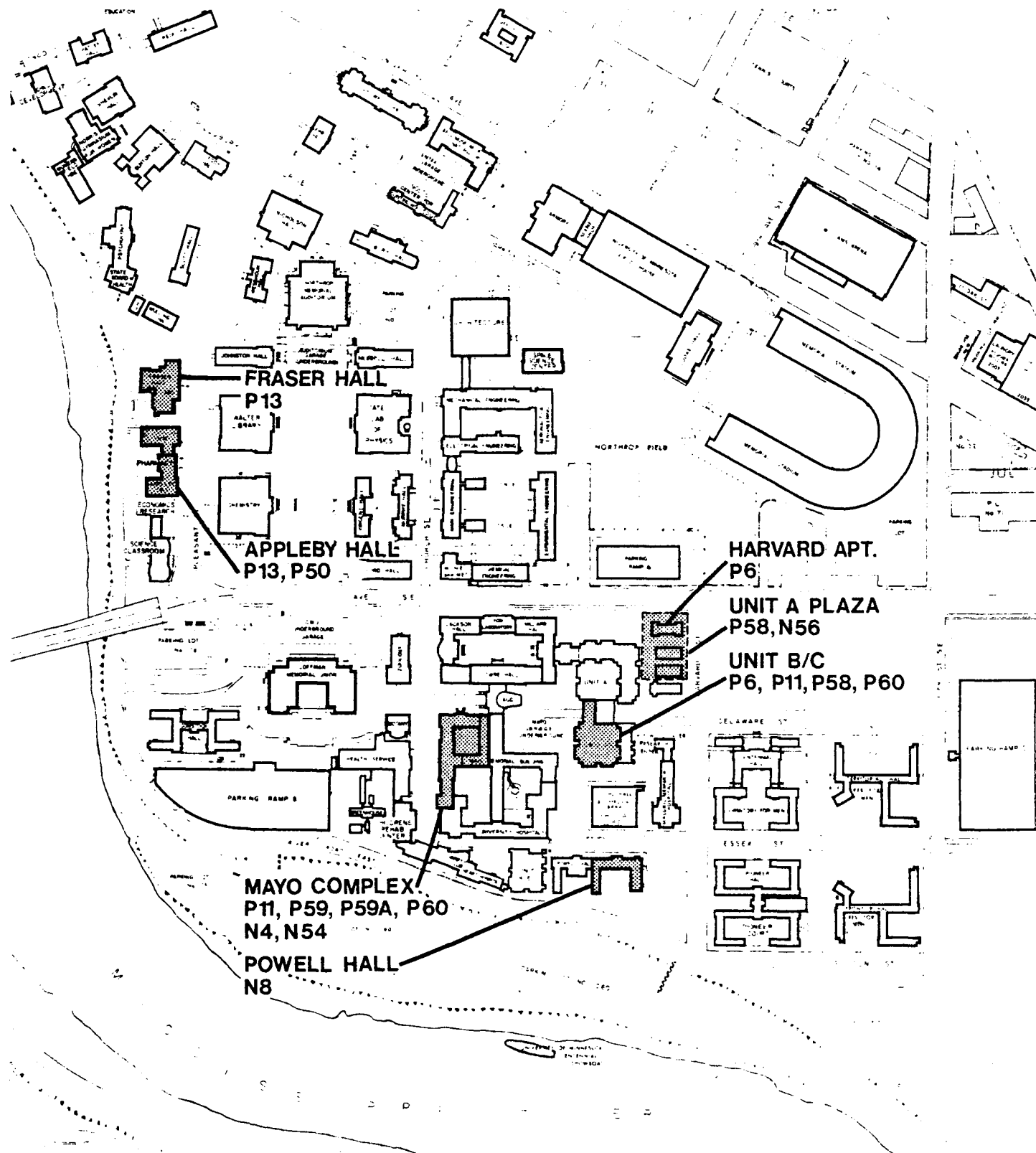
1. No single available site is sufficiently large to accommodate a combined Pharmacy and Nursing program (including the Health Sciences shared facilities ) of 103,480 net square feet, so that separate sites are required. The equivalent net assignable area required to accommodate the total program ranges from approximately 108,600 to 124,200 square feet (or an increase to 5 to 20 percent).
2. The Pharmacy program of 65, 440 net square feet is also larger than the amount of space available at any of the single sites identified; options for Pharmacy require the development of more than one site, unless other existing functions in the Mayo complex are relocated to consolidate a larger area. The equivalent net assignable area required to support the total Pharmacy program ranges from approximately 68,700 to 78,500 square feet (or an increase of 5 to 20 percent).



The campus plan below indicates the location of all sites and buildings considered in this study:



Options proposed to accommodate facilities for the College of Pharmacy and School of Nursing are based on the sites and buildings located on the campus plan below:



## General

This section briefly describes the methodology used for developing potential options and the criteria used for preliminary evaluation.

## Methodology

Potential options were tentatively proposed, based on the correlation of available area and space requirements with their functional adjacencies as required by the program.

1. To manage the number of possible combinations, Pharmacy and Nursing options for a particular site were identified separately; Pharmacy options are prefixed with "P", Nursing options are prefixed with an "N".
2. A further classification was based on the assumed scope of construction:
  - a. Options which require only the renovation of existing space are consecutively numbered, starting with "1".
  - b. Options which require major new construction of foundations, floor slabs and/or perimeter walls for all or part of the net useable space are consecutively numbered, starting with "50".
3. Sites were inspected to identify conditions which influence schematic planning, including the location of major fixed elements and existing partition layout, floor-to-floor heights, and adjacent conditions.
4. A matrix of Pharmacy and Nursing options was developed to indicate the possible combinations (composite options) based on the conclusion that only one of two programs can be located on a particular site.

## Criteria

Each potential option was reviewed and screened for general conformance to functional program requirements, construction economy, and to long-range planning programs involving space allocations of other departments, particularly in Unit B/C and Unit K/E.

1. Options were eliminated for the following reasons:
  - a. Insufficient net area available.
  - b. Dispersion of program on multiple and remote sites.
  - c. Location remote from the Health Sciences center.
  - d. Designation of site for other departments or use.
  - e. Short term capital investment.
  - f. Excessive construction required for small amount of net area gained.

## Criteria

2. Options which appeared most feasible were selected for further study, including the development of schematic plans and cost estimates.
3. Several options which were considered not to have long-term use of investment, based on site location or building condition, or which were noted as being remote from the Health Sciences center and would not have been selected otherwise, were also developed in detail to establish a range of comparative project costs:
  - a. Two options were selected which renovate present facilities and consolidate the program elements on a single site:
    - P50 Appleby Hall and Addition
    - N8 Powell Hall
  - b. An option which renovates Fraser Hall in conjunction with Appleby Hall was selected to compare advantages of renovation with new construction in accommodating a consolidated Pharmacy program at the Appleby Hall site:
    - P13 Appleby Hall/Fraser Hall
  - c. One option was selected which renovates the Wilshire, Marlan and Fenwick apartment buildings along Harvard Street and which includes enclosed connecting links between these buildings and Unit A:
    - P6 Unit B/C, Floors 7 & 15, and Harvard Apartments

General

Schematic plans of each selected option were developed in sufficient detail to evaluate net and gross area, arrangement and accommodation of program functions, primary and secondary circulation patterns, location of stairs and elevators, and general extent of construction. The schematic plans were then used as the basis for detailed code and construction analysis.

For planning purposes, the Health Sciences shared classrooms and employee lockers required by the program are incorporated into the Nursing options only, to avoid a duplication of facilities when Pharmacy and Nursing options are combined into composite options for implementation.

Summary

Options which generally accommodate the program requirements for the College of Pharmacy and School of Nursing are listed in the table below. In some options, the summary indicates that either all or part of the separate programs can be accommodated in the Mayo complex or below an expanded Unit A Plaza. However, as combined or composite options, only one of the two programs can be located at a particular site. The separate options involve the remodeling of present facilities, development of shell space, renovation of vacated space and/or construction of new space as follows:

Option Number	Remodeled Facilities	Shell Space	Vacated Space	New Construction
P6	Harvard Apts.	B/C,7&15	---	---
P11	---	B/C,7&15	Mayo 1-3	---
P13	Appleby Hall	---	Fraser Hall	---
P50	Appleby Hall	---	---	Appleby Add.
P58	---	B/C,7	---	Unit A Plaza
P59	---	---	Mayo 1-3	Mayo (infill)
P59A	---	---	Mayo 1-3	Mayo (infill)
P60	---	B/C 7	Mayo 1-3	Mayo (infill)
N4	---	---	Mayo 1-3	---
N8	Powell Hall	---	---	---
N54	---	---	Mayo 2-3	Mayo (infill)
N56	---	---	---	Unit A Plaza

P: Pharmacy Options  
 N: Nursing Options

## Pharmacy Options

Option P6 will locate graduate research offices and laboratories in completed shell space on Floors 7 and 15 in Unit B/C and the remainder of the program in the Wilshire, Marlan, and Fenwick apartment buildings adjacent to Unit A along Harvard Street. The apartment buildings will be interconnected by a ramped link addition with four enclosed levels and new elevators, and will be connected to Unit A at Floors 1, 2, and 3.

Option P11 will locate graduate research offices and laboratories in completed shell space on Floors 7 and 15 in Unit B/C and the remainder of the program on Floors 1, 2, and 3 in the northwest court area of the Mayo complex, in space vacated by the scheduled relocation of clinics to Unit B/C.

Option P13 will renovate Appleby Hall for graduate research offices and laboratories and locate the remainder of the program, including an expanded library, in nearby Fraser Hall. Fraser Hall will be renovated to correct conditions which are not in conformance with code and to accommodate other laboratory, teaching, and administrative functions.

Option P50 will locate undergraduate and research laboratories in a new facility of four levels and mechanical space as an addition to Appleby Hall. Appleby Hall will then be renovated to accommodate the remaining office and teaching spaces.

Option P58 will locate office and teaching spaces on Floor 7 in Unit B/C and undergraduate and research laboratories on Floors 1 and 2 of a facility developed below the plaza to the east of Unit A. This option requires the demolition of three apartment buildings along Harvard Street.

Option P59 will locate the entire program of spaces for teaching, research, and administration on Floors 1, 2, and 3 in the northwest court area of the Mayo complex. This option requires a three floor (infill) addition within the existing court and the relocation of some hospital pharmacy, laboratory, employee, and service functions to supplement space made available by the scheduled relocation of clinics and other departments to Unit B/C.

Option P59A is similar to Option P59 except that an additional infill floor is constructed within the court (on Floor 4) instead of relocating present laboratory medicine facilities on Floor 2. This option requires the relocation of approximately 12 nursing beds unless construction is deferred until replacement patient care facilities are completed in an expansion of Unit K/E (scheduled for completion by January 1980).

PHARMACY/NURSING

DESCRIPTION OF SELECTED OPTIONS

Pharmacy Options  
(continued)

Option P60 will locate some research functions in completed shell space on Floor 7 in Unit B/C and the remainder of the program in the northwest court area of the Mayo complex in space vacated by the scheduled relocation of clinics and other departments to Unit B/C, supplemented by a three floor (infill) addition within the court.

Nursing Options

Option N4 will locate the entire program of spaces for teaching, research, and administration on Floors 1, 2, and 3 in the northwest court area of the Mayo complex, in space vacated by the scheduled relocation of clinics and other departments to Unit B/C.

Option N8 will consolidate all teaching, research, and administrative functions in phased renovation of space on Floors 1, 2, 3, 4, and 5 in the central and east wings of Powell Hall. Additional space is made available by the scheduled relocation of the Ob/Gyn Clinic to Unit B/C.

Option N54 will locate all teaching, research, and administrative functions on Floors 2 and 3 in the northwest court area of the Mayo complex. This option requires a three floor (infill) addition within the existing court to supplement space made available by the scheduled relocation of clinics to Unit B/C.

Option N56 will locate all teaching, research, and administrative functions on Floors 1 and 2 of a facility developed below the plaza to the east of Unit A. This option requires the demolition of three apartment buildings along Harvard Street.

Composite Options

The 8 Pharmacy options and the 4 Nursing options which accommodate the program requirements can be combined into a possible 22 composite options according to the matrix below:

Pharmacy Options	Nursing Options			
	N4 Mayo	N8 Powell	N54 Mayo(infill)	N56 Plaza
P6 Unit B/C & Apts.	1	2	3	
P11 Unit B/C & Mayo		4		5
P13 Appleby & Fraser	*	*	*	17
P50 Appleby & Addition	6	7	8	9
P58 Unit A Plaza	10	11	12	
P59 Mayo (infill)		13		14
P59A Mayo(infill)		*		15
P60 Unit B/C & Mayo(infill)		*		16

\* indicates that a composite option is possible; but that its pursuit in this study would duplicate the detailed information already provided in other similar composite options.

Composite Options  
(continued)

The 17 composite options in the table below are evaluated and compared in subsequent sections of this report:

Composite Option	Pharmacy Option	Nursing Option
1	P6 Unit B/C & Apartments	N4 Mayo
2	P6 Unit B/C & Apartments	N8 Powell Hall
3	P6 Unit B/C & Apartments	N54 Mayo (infill)
4	P11 Unit B/C and Mayo	N8 Powell Hall
5	P11 Unit B/C and Mayo	N56 Unit A Plaza
6	P50 Appleby & Addition	N4 Mayo
7	P50 Appleby & Addition	N8 Powell Hall
8	P50 Appleby & Addition	N54 Mayo (infill)
9	P50 Appleby & Addition	N56 Unit A Plaza
10	P58 Unit B/C & Unit A Plaza	N4 Mayo
11	P58 Unit B/C & Unit A Plaza	N8 Powell Hall
12	P58 Unit B/C & Unit A Plaza	N54 Mayo (infill)
13	P59 Mayo (infill)	N8 Powell Hall
14	P59 Mayo (infill)	N56 Unit A Plaza
15	P59A Mayo (infill)	N56 Unit A Plaza
16	P60 Unit B/C & Mayo (infill)	N56 Unit A Plaza
17	P13 Appleby & Fraser	N56 Unit A Plaza



## PHARMACY/NURSING

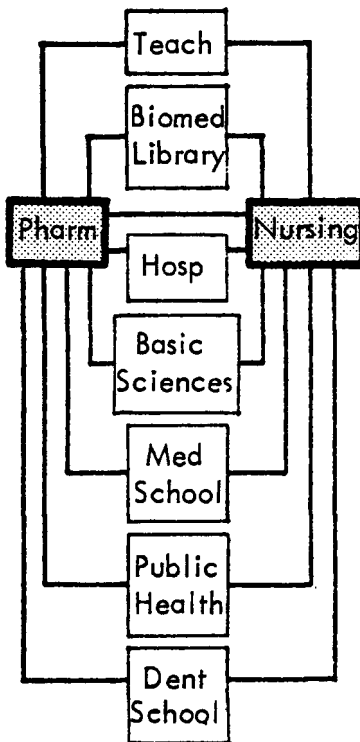
## PROGRAM ACCOMMODATION

### General

The following section describes the extent to which Pharmacy and Nursing options comply with the design criteria, net area requirements, and functional relationships established by the program. (see Appendix, pages A48 - A62)

### Criteria

Options must comply with the following criteria in order to satisfy program requirements:



Health Sciences Adjacencies

1. Master planning adjacencies specified by Pharmacy/Nursing design criteria include desired relationships with other Health Sciences divisions, which will promote integration of teaching programs, sharing of mutual resources, and interaction of faculty, staff, and students.

a. Pharmacy options P50 and P13 which use Appleby and Fraser Hall sites, do not satisfy master planning adjacencies because they are distant from the Health Sciences center. As a result, additional teaching and educational resource spaces are required in these two options to support remote teaching sites.

b. All other options comply with general master planning adjacencies.

2. Net area requirements specified by the program of required spaces for Pharmacy, Nursing, and Health Sciences functions are modified by site configuration and location as follows:

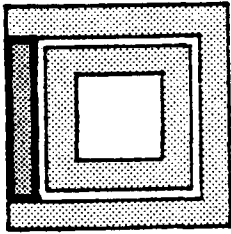
a. Pharmacy options P50 and P13, which use Appleby and Fraser Hall sites, require an additional 5,000 NSF to house library and classroom facilities because of their location remote from the Health Sciences.

b. Nursing Option N8, Powell Hall, substitutes one auditorium, 1,550 NSF, for the Health Sciences program of conference and classrooms and results in an 1,115 NSF reduction in net program area.

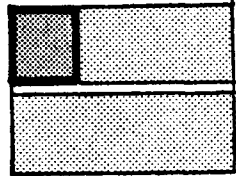
3. Functional relationships, which describe desired adjacencies between various teaching, research, and administrative functions within the Pharmacy and Nursing programs, are satisfied as follows:

a. Pharmacy options which require two sites to accommodate net area requirements do not meet all functional relationships required. Implementation of these options results in extended travel for faculty and students between distant program functions.

b. Options which consolidate the Pharmacy program on a single site and all Nursing options comply with prescribed functional relationships.



a. Linear Site



b. Clustered Site

4. Unit planning of functional elements within Pharmacy and Nursing options is affected by the configuration of their sites as follows:

a. Options developed in narrow linear sites such as Powell Hall or renovated spaces in the Mayo complex are elongated, requiring long public corridor trips between functions, and large spaces are deformed by narrow dimensions found between corridor and perimeter walls.

b. Options developed in broad blocks of space, found in Unit B/C or in additions to Unit A, Mayo or Appleby Hall, provide compact clusters of functions linked by shorter public corridors and permit large spaces to be proportioned well to serve their intended functions.

c. In all options developed in renovated space, standardization of repetitive spaces such as faculty offices cannot be achieved because of existing conditions which prevent modular planning.

The table below summarizes the extent to which each option satisfies the four criteria of program accommodation:

Option Number	Master Plan Adjacencies	Net Area Requirements	Functional Relations	Unit Planning
P6	Yes	Yes	Poor	Fair
P11	Yes	Yes	Poor	Fair
P13	No	+ 5000 NSF	Fair	Fair
P50	No	+ 5000 NSF	Good	Fair
P58	Yes	Yes	Fair	Good
P59	Yes	Yes	Good	Good
P59A	Yes	Yes	Fair	Good
P60	Yes	Yes	Poor	Good
N4	Yes	Yes	Good	Fair
N8	Yes	- 1115 NSF	Fair	Poor
N54	Yes	Yes	Good	Good
N56	Yes	Yes	Good	Good

P: Pharmacy Options

N: Nursing Options

Conclusions

Pharmacy and Nursing options which completely satisfy all program criteria require a site in the Health Sciences center and new space which permits consolidation and good unit planning of teaching, research and administrative functions. Options P59 and P59A, which consolidate Pharmacy in the Mayo complex, combine with Option N56, which locates Nursing in Unit A Plaza, to form composite options 14 and 15 that satisfy all program criteria.

Other options which do not satisfy all program criteria but can be identified as feasible include P58, P60, and N4, all of which use space in the Mayo complex.

The table on the following pages lists all composite options and describes the extent to which they satisfy program requirements.

PHARMACY/NURSING PROGRAM ACCOMMODATION

COMPOSITE OPTIONS		PROGRAM ACCOMMODATION	
		ADVANTAGES	DISADVANTAGES
1. P6 Unit B/C, Floors 7, 15 Harvard Street Apartments N4 Mayo (vacated clinics)		Locations in H.S. center satisfy design criteria. Satisfies net area requirements.	P6 Not consolidated in single site.
2. P6 Unit B/C, Floors 7, 15 Harvard Street Apartments N8 Powell Hall		Locations in H.S. center satisfy design criteria.	P6 Not consolidated in single site. N8 Modifies Health Sciences shared facilities.
3. P6 Unit B/C, Floors 7, 15 Harvard Street Apartments N54 Mayo (vacated clinics) Mayo (infilled court)		Locations in H.S. center satisfy design criteria. Satisfies net area requirements.	P6 Not consolidated in single site.
4. P11 Unit B/C, Floors 7, 15 Mayo (vacated clinics) N8 Powell Hall		Locations in H.S. center satisfy design criteria.	P6 Not consolidated in single site. N8 Modifies Health Sciences shared facilities.
5. P11 Unit B/C, Floors 7, 15 Mayo (vacated clinics) N56 Unit A Plaza		Locations in H.S. center satisfy design criteria. Satisfies net area requirements.	P11 Not consolidated in single site.
6. P50 Appleby Addition Appleby Hall N4 Mayo (vacated clinics)		P50 consolidated in single site.	P50 Location distant from H.S. center modifies design criteria; Pharmacy requires additional 5000 NSF.
7. P50 Appleby Addition Appleby Hall N8 Powell Hall		P50 consolidated in single site.	P50 Location distant from H.S. center modifies design criteria. Pharmacy requires additional 5000 NSF. N8 Modifies Health Sciences shared facilities.
8. P50 Appleby Addition Appleby Hall N54 Mayo (vacated clinics) Mayo (infilled court)		P50 consolidated in single site.	P50 Location distant from H.S. center modifies design criteria. Pharmacy requires additional 5000 NSF.
9. P50 Appleby Addition Appleby Hall N56 Unit A Plaza		P50 consolidated in single site.	P50 Location distant from H.S. center modifies design criteria. Pharmacy requires additional 5000 NSF.
10. P58 Unit B/C, Floor 7 Unit A Plaza N4 Mayo (vacated clinics)	*	Locations in H.S. center satisfy design criteria. Satisfies net area requirements.	P58 Not consolidated in single site.
11. P58 Unit B/C, Floor 7 Unit A Plaza N8 Powell Hall		Locations in H.S. center satisfy design criteria.	P58 Not consolidated in single site. N8 Modifies Health Sciences shared facilities.
12. P58 Unit B/C, Floor 7 Unit A Plaza N54 Mayo (vacated clinics) Mayo (infilled court)	*	Locations in H.S. center satisfy design criteria. Satisfies net area requirements.	P58 Not consolidated in single site.
13. P59 Mayo (vacated clinics) Mayo (infilled court) N8 Powell Hall		Locations in H.S. center satisfy design criteria. P59A consolidated in single site.	N8 Modifies Health Sciences shared facilities.
14. P59 Mayo (vacated clinics) Mayo (infilled court) N56 Unit A Plaza	*	Locations in H.S. center satisfy design criteria. P59 consolidated in single site. Satisfies net area requirements.	
15. P59A Mayo (vacated clinics) Mayo (infilled court) N56 Unit A Plaza	*	Locations in H.S. center satisfy design criteria. P59A consolidated in single site. Satisfies net area requirements.	
16. P60 Mayo (vacated clinics) Mayo (infilled court) Unit B/C, Floor 7 N56 Unit A Plaza	*	Locations in H.S. center satisfy design criteria. Satisfies net area requirements.	P60 Not consolidated in single site.
17. P13 Appleby Hall Fraser Hall N56 Unit A Plaza			P13 Location distant from H.S. center modifies design criteria. Pharmacy requires additional 5000 NSF. Not consolidated in single site.

\* Composite options which satisfy all or most program criteria.

## PHARMACY/NURSING

## HEALTH SCIENCES PLANNING

### General

The following section describes the extent to which Pharmacy and Nursing options maintain master plan objectives for the Health Sciences. An evaluation of options, in locations other than the previously designated Unit F site, must consider basic planning issues including space assigned, expansion of other departments, project phasing, and facility obsolescence.

### Assumptions

Floors 7 and 15 of Unit B/C are considered as assignable space in several options. This potential change in assignment has been posed with the understanding that the initially intended functions have been programmatically modified and would still need to be accommodated elsewhere within the Health Sciences. The master plan designated Floor 7 as the Hospital Dentistry Clinic and Floor 15 as a Self-Care Patient Unit.

The Powell Hall site has been designated as the location for the replacement facility for inpatient care units in the Mayo complex. The use of space in Powell Hall would not have long term utility. Use of the Powell Hall site for Nursing programs requires extensive relocation of existing functions to consolidate the site and phased renovation to maintain continuous operation of existing Nursing courses.

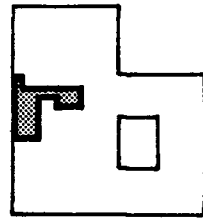
Renovation of the Harvard Street apartment buildings would not have long term use because of the physical condition of these structures. Options which use this site either for renovation or for construction of the Unit A Plaza addition require interim facilities for Pharmacy functions presently located in one of the apartment buildings.

Appleby and Fraser Hall sites are remote from the Health Sciences center and would effectively preclude integration of Pharmacy programs with other interdisciplinary programs and resources in the Health Sciences.

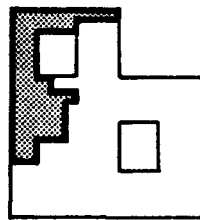
Vacated clinic space on Floors 1, 2 and 3 of the Mayo complex, originally intended for the School of Nursing, and the medical student adytum on Floor 1, supplemented by similar facilities in Unit A, are the only spaces in this building which may be used without displacement of other functions. Other functions which require space in the Mayo complex for programmed expansion and consolidation of facilities include Laboratory Medicine and other Hospital functions, and the School of Public Health.

The diagrams below indicate spaces on Floors 1, 2 and 3 of the Mayo complex vacated by the scheduled relocation of clinics and other departments to Unit B/C and display the impact of Pharmacy and Nursing options, which use space in the Mayo complex, on programmed expansion for Laboratory Medicine on Floor 2 and for Hospital service functions on Floor 1.

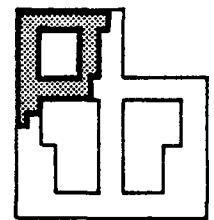
Spaces vacated by relocation of clinics and other departments



Floor 1

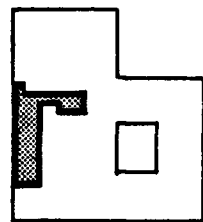


Floor 2

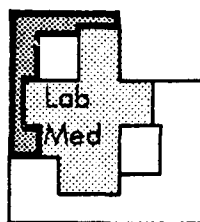


Floor 3

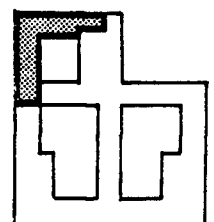
Revised Phase I Schematics (space allocated for School of Nursing)



Floor 1



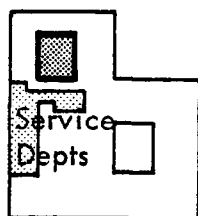
Floor 2



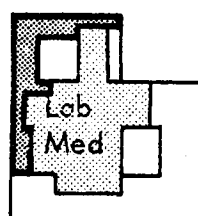
Floor 3

Nursing options N4 and N54 permit the first increment of phased expansion for Laboratory Medicine on Floor 2 and permit expansion of Hospital service departments on Floor 1. Additional expansion for Laboratory Medicine would be deferred until Radiology facilities are provided in the future replacement facility for inpatient care. No additional space remains for programmed expansion and consolidation of the School of Public Health in this building under these options.

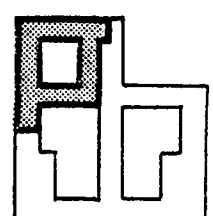
Nursing Option N4



Floor 1

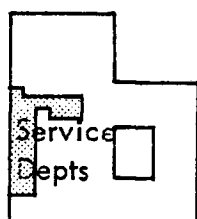


Floor 2

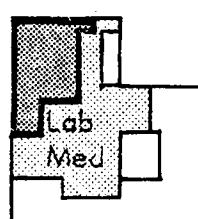


Floor 3

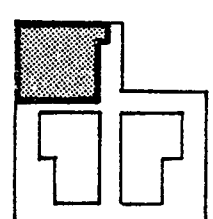
Nursing Option N54



Floor 1



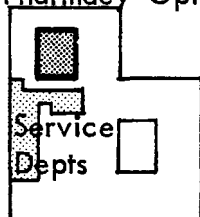
Floor 2



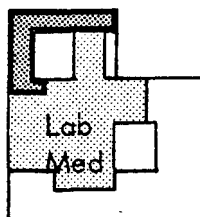
Floor 3

Pharmacy options P11 and P60, which require space in Unit B/C in addition to space in the Mayo complex, permit the first increment of phased expansion for Laboratory Medicine on Floor 2 and permit programmed expansion for Hospital service departments on Floor 1. The remainder of Laboratory Medicine expansion would be deferred until Radiology facilities are provided in the future replacement facility for inpatient care. No additional space remains for programmed expansion and consolidation of the School of Public Health in this building under these options.

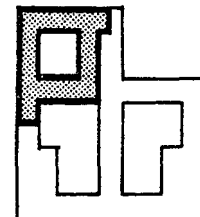
Pharmacy Option P11



Floor 1

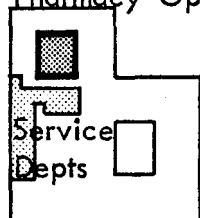


Floor 2

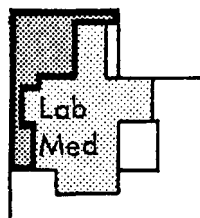


Floor 3

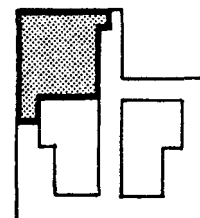
Pharmacy Option P60



Floor 1



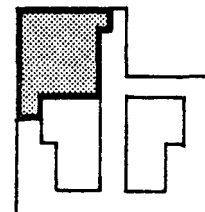
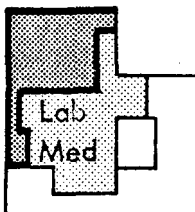
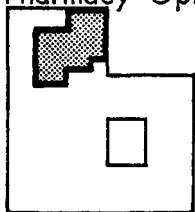
Floor 2



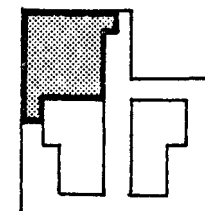
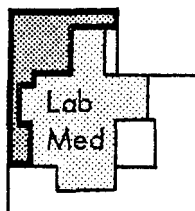
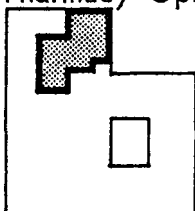
Floor 3

Pharmacy option P59, which consolidates the entire Pharmacy program in the Mayo complex does not permit any expansion for Laboratory Medicine or Hospital service departments until the completion of replacement facilities for inpatient care. An alternative option P59A, requiring additional courtyard infill construction on Floor 4, does permit the first increment of phased expansion for Laboratory Medicine on Floor 2, but would defer additional expansion for Laboratory Medicine and Hospital service departments. Both options require extensive relocation of existing functions to consolidate the site and to permit access to animal facilities from the Mayo garage. No additional space remains for programmed expansion and consolidation of the School of Public Health in this building under these options.

Pharmacy Option P59



Pharmacy Option P59A



Floor 1

Floor 2

Floor 3

## Conclusions

Options which generally support Health Sciences master planning objectives are ones that use combinations of new and existing space in the Health Sciences center, which do not preclude programmed expansion for other functions designated for those sites, and do not require relocation of existing functions.

Options in conflict with planning objectives are those which foreclose long range plans for the future replacement facility for inpatient care on the Powell Hall site or full use of the Unit A expansion site.

All options developed in the Mayo complex preclude programmed expansion and consolidation of the School of Public Health in existing space and would require the construction of new facilities for this program.

The table on the following pages lists composite options and describes their impact on Health Sciences planning.

COMPOSITE OPTIONS		HEALTH SCIENCES PLANNING DEFICIENCIES			
		Requires Relocation of Existing Departments (SF)	Short Term Investment	Not within Health Sciences	Space Designated for Other Use
1	P6 Unit B/C, Floors 7, 15 Harvard St. Apartments N4 Mayo (vacated clinics)	P6 Interim Facilities for Pharmacy N4 1,800	P6 Apartment buildings not for long term use.		P6 Unit B/C, Floor 15
2	P6 Unit B/C, Floors 7, 15 Harvard St. Apartments N8 Powell Hall	P6 Interim Facilities for Pharmacy N8 5,950	P6 Apartment buildings not for long term use. N8 Site of future replacement facility for in-patient care.		P6 Unit B/C, Floor 15
3	P6 Unit B/C, Floors 7, 15 Harvard St. Apartments N54 Mayo (vacated clinics) Mayo (in-filled court)	P6 Interim Facilities for Pharmacy	P6 Apartment buildings not for long term use.		P6 Unit B/C, Floor 15
4	P11 Unit B/C, Floors 7, 15 Mayo (vacated clinics) N8 Powell Hall	P11 1,500 N8 5,950 Total 7,450	N8 Site of future replacement facility for In-patient care.		P11 Unit B/C, Floor 15
5	P11 Unit B/C, Floors 7, 15 Mayo (vacated clinics) N56 Unit A Plaza	P11 1,500 N56 Interim Facilities for Pharmacy			P11 Unit B/C, Floor 15
6	P50 Appleby Addition Appleby Hall N4 Mayo (vacated clinics)	N4 1,800		P50	P50 Appleby Hall not for Health Sciences use.
7	P50 Appleby Addition Appleby Hall N8 Powell Hall		N8 Site of future replacement facility for In-patient care.	P50	P50 Appleby Hall not for Health Sciences use.
8	P50 Appleby Addition Appleby Hall N54 Mayo (vacated clinics) Mayo (in-filled court)			P50	P50 Appleby Hall not for Health Sciences use.
9	P50 Appleby Addition Appleby Hall N56 Unit A Plaza	N56 Interim Facilities for Pharmacy		P50	P50 Appleby Hall not for Health Sciences use.
10	P58 Unit B/C, Floor 7 Unit A Plaza N4 Mayo (vacated clinics) *	N4 1,800			
11	P58 Unit B/C, Floor 7 Unit A Plaza N8 Powell Hall	N8 5,950	N8 Site of future replacement facility for In-patient care.		
12	P58 Unit B/C, Floor 7 Unit A Plaza N54 Mayo (vacated clinics) Mayo (in-filled court) *	N54 1,775			
13	P59 Mayo (vacated clinics) Mayo (in-filled court) N8 Powell Hall	P59 16,350 N8 5,950 Total 22,275	N8 Site of future replacement facility for In-patient care.		P59 Lab Medicine & Hospital Support Areas
14	P59 Mayo (vacated clinics) Mayo (in-filled court) N56 Unit A Plaza	P59 16,350 N56 Interim Facilities for Pharmacy			P59 Lab Medicine & Hospital Support Areas
15	P59A Mayo (vacated clinic) Mayo (in-filled court) N56 Unit A Plaza	P59A 12,330 N56 Interim Facilities for Pharmacy			P59A Hospital Support Areas
16	P60 Mayo (vacated clinics) Mayo (in-filled court) Unit B/C, Floor 7 N56 Unit A Plaza *	P60 1,800 N56 Interim Facilities for Pharmacy			
17	P13 Appleby Hall Fraser Hall N56 Unit A Plaza	N56 Interim Facilities for Pharmacy		P13	P13 Appleby Hall and Fraser Hall not for Health Sciences use.

\* Composite options which satisfy all or most Health Sciences planning requirements.



## General

The following section describes the assumptions, findings, and conclusions in the determination of project time schedules and dates of project delivery for the composite options. Any particular composite option consists of two or more independent sites and conditions for implementation. As a result, components of a composite option will be completed at different times.

## Assumptions

Project time schedules are based on estimates of actual time required for renovation or construction, the date(s) on which sites become available, phasing requirements due to occupancy of space (with the need to provide educational facilities on an interim or continuous basis), restricted work conditions and the preparation of design and contract documents.

1. Many of the composite options use space in the Mayo complex which is vacated by the relocation of clinics and other departments to Unit B/C at the completion of Phase I and Phase II construction. It is assumed that the availability of this space for the earliest start of the renovation work is approximately July 1978, or at the completion of construction work and the first phase of occupancy for hospital functions in Unit B/C.
2. Programming and preliminary design work for any option is assumed to begin by the end of the 1977 Legislative session, or by June, 1977.
  - a. The preparation of design and contract documents for proposed work in Unit B/C is assumed to be completed by April 1978, with review, bidding and award of contract by July 1978.
  - b. The date projected for the start of construction in the Mayo complex, Powell Hall, the Harvard Street apartments, Appleby Hall and Fraser Hall is assumed to be January 1979. This is based on the time required for the preparation of design and engineering documents, including surveys of existing conditions, and not on the date(s) that sites otherwise become available.
  - c. Construction work on the Unit A Plaza site is assumed to be phased in a sequence similar to proposals for Unit F, so that the date of project delivery can be advanced. Early contracts are assumed for excavation and structure to allow the start of construction by July 1978.
3. The construction durations for each option are based on the scope and complexity of work.

## Assumptions (continued)

- a. For options in the Mayo complex and Powell Hall, some hospital functions are displaced to consolidate the site for Pharmacy or Nursing programs. Renovation work is, therefore, phased and extended in order to first remodel replacement facilities for functions which must be relocated (e.g. Laboratory Medicine).
  - b. For Options P59, P59A, P60, and N54 in the Mayo complex demolition and construction of the infill addition within the northwest court must be accomplished with limited access and under restricted work conditions.
  - c. Phasing of renovation work is required in Options P13 and P50 (Appleby Hall) and Option N8 (Powell Hall) to provide interim educational facilities on a continuous basis for present Pharmacy and Nursing courses. Renovation of Appleby Hall is assumed to begin following the completion of work in Fraser Hall (Option P13) or in the Appleby addition (Option P50).
4. The bar chart on a page which follows indicates the construction schedule of 17 composite options and Unit F, based on the start of design and document preparation in June 1977 (the contract document preparation phase for each option is not shown).

COMPOSITE OPTIONS	DURATION OF CONSTRUCTION																																																														
	Legislative Session																																																														
	77	78	79	80	81																																																										
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D			
1 P6 Unit B/C, Floors 7, 15 Harvard St. Apartments N4 Mayo (vacated clinics)																																																															
2 P6 Unit B/C, Floors 7, 15 Harvard St. Apartments N8 Powell Hall																																																															
3 P6 Unit B/C, Floors 7, 15 Harvard St. Apartments N54 Mayo (vacated clinics) Mayo (in-filled court)																																																															
4 P11 Unit B/C, Floors 7, 15 Mayo (vacated clinics) N8 Powell Hall																																																															
5 P11 Unit B/C, Floors 7, 15 Mayo (vacated clinics) N56 Unit A Plaza																																																															
6 P50 Appleby Addition Appleby Hall N4 Mayo (vacated clinics)																																																															
7 P50 Appleby Addition Appleby Hall N8 Powell Hall																																																															
8 P50 Appleby Addition Appleby Hall N54 Mayo (vacated clinics) Mayo (in-filled court)																																																															
9 P50 Appleby Addition Appleby Hall N56 Unit A Plaza																																																															
10 P58 Unit B/C, Floor 7 Unit A Plaza N4 Mayo (vacated clinics)																																																															
11 P58 Unit B/C, Floor 7 Unit A Plaza N8 Powell Hall																																																															
12 P58 Unit B/C, Floor 7 Unit A Plaza N54 Mayo (vacated clinics) Mayo (in-filled court)																																																															
13 P59 Mayo (vacated clinics) Mayo (in-filled court) N8 Powell Hall																																																															
14 P59 Mayo (vacated clinics) Mayo (in-filled court) N56 Unit A Plaza																																																															
15 P59A Mayo (vacated clinics) Mayo (in-filled court) N56 Unit A Plaza																																																															
16 P60 Mayo (vacated clinics) Mayo (in-filled court) Unit B/C, Floor 7 N56 Unit A Plaza																																																															
17 P13 Appleby Hall Fraser Hall N56 Unit A Plaza																																																															
UNIT F																																																															

PHARMACY/NURSING SUMMARY OF PROJECT TIME SCHEDULES

Findings

The dates projected for the start and completion of construction for each option are tabulated below to indicate the date of project delivery for the program elements. Phased construction is assumed to include early contracts for excavation and structure. In some options, renovation is phased to first provide replacement facilities for existing functions which are relocated to consolidate the site.

Option Number	Description of Sites	Construction		Duration	Remarks
		Start	End		
P6	Unit B/C, Floors 7, 15 Harvard St. Apartments	Jul. 78	Jul. 79	12 mos.	
		Jan. 79	Jan. 81	24 mos.	
P11	Unit B/C, Floors 7, 15 Mayo (vacated clinics)	Jul. 78	Jul. 79	12 mos.	Relocated Functions
		Jan. 79	Jul. 80	18 mos.	
P13	Appleby Hall Fraser Hall	Sep. 80	Jan. 82	16 mos.	
		Jan. 79	Sep. 80	20 mos.	
P50	Appleby Addition Appleby Hall	Jan. 79	Jan. 81	24 mos.	
		Jan. 81	Jan. 82	12 mos.	
P58	Unit B/C, Floor 7 Unit A Plaza	Jul. 78	Jul. 79	12 mos.	Phased Construction
		Jul. 78	Jul. 80	24 mos.	
P59	Mayo (vacated clinics) Mayo (infilled court)	Nov. 79	May 81	18 mos.	Relocated Functions
		Jan. 79	May 81	28 mos.	Relocated Functions
P59A	Mayo (vacated clinics) Mayo (infilled court)	Apr. 79	Oct. 80	18 mos.	Relocated Functions
		Jan. 79	Jan. 81	24 mos.	Relocated Functions
P60	Unit B/C, Floor 7 Mayo (vacated clinics) Mayo (infilled court)	Jul. 78	Jul. 79	12 mos.	Relocated Functions Relocated Functions
		Apr. 79	Oct. 80	18 mos.	
		Jan. 79	Jan. 81	24 mos.	
N4	Mayo (vacated clinics)	Jan. 79	Jul. 80	18 mos.	Relocated Functions
N8	Powell Hall	Jan. 79	Jan. 81	24 mos.	Relocated Functions
N54	Mayo (vacated clinics) Mayo (infilled court)	Apr. 79	Oct. 80	18 mos.	Relocated Functions
		Jan. 79	Jan. 81	24 mos.	Relocated Functions
N56	Unit A Plaza	Jul. 78	Jul. 80	24 mos.	Phased Construction
Unit F		Nov. 77	Mar. 80	28 mos.	Phased Construction

P: Pharmacy Options  
N: Nursing Options

PHARMACY/NURSING SUMMARY OF PROJECT TIME SCHEDULES

Conclusions

Based on the preceding assumptions and findings, the following conclusions can be made regarding the dates of project delivery:

1. Nursing Option N4, which includes renovation of existing space in the Mayo complex without infill construction, and Option N56, which develops new space below an expanded plaza to the east of Unit A through advanced contracts and phased construction, are estimated to have project delivery dates in July 1980, well before the start of classes in the Fall Term and 6 months ahead of the project delivery dates of Nursing Options N8 and N54.
2. Pharmacy options consist of two sites with different project delivery dates, which results in phased occupancy. For most options, facilities are completed from 12 to 18 months apart.
  - a. Facilities in completed shell space in Unit B/C, are estimated to have a project delivery date of July 1979.
  - b. Renovation work in the Mayo complex which does not require appreciable relocation of existing functions (Option P11), and new construction of the Unit A Plaza (Option P58), are estimated to be complete in July 1980.
  - c. Other options which involve more complete renovation and new construction have project delivery dates which range from January 1981 to January 1982.
3. The following composite options are estimated to have earliest dates of project delivery:

10	P58	Unit B/C, Floor 7	July 1979
		Unit A Plaza	July 1980
	N4	Mayo (vacated clinics)	July 1980
5	P11	Unit B/C, Floors 7 & 15	July 1979
		Mayo (vacated clinics)	July 1980
	N56	Unit A Plaza	July 1980

## General

The following section presents the assumptions, methodology, findings, and conclusions in the determination of project costs for the Pharmacy and Nursing options. The development of comparative project costs for multiple options is complicated by the number and variability of planning conditions:

1. Both programs consist of laboratory, teaching, and office spaces with different unit area costs.
2. The plans for any particular options on a given site are based on either the completion of shell space, renovation of vacated space in buildings of various types and construction, or development of new space through expansion or infill.
3. Some options within the Mayo complex require both phased renovation and new (infill) construction under restricted work conditions.
4. To consolidate sites for the Pharmacy or Nursing program for some options in the Mayo complex and in Powell Hall, several existing hospital functions must be relocated, which requires phased renovation of replacement facilities at additional cost.
5. Most of the Pharmacy options require two sites.

## Assumptions

Estimated project costs are based on approximate gross (or net) areas and factors appropriate to the type facility, special conditions, scope and complexity of work, assumed project time schedules, and non-building costs. Specific assumptions and methodology are described as follows:

1. Gross and net areas of each option are derived from schematic plans (which are included with detailed descriptions in a separate section).
  - a. Estimated costs for new construction are based on gross area which includes perimeter walls; costs for renovation are based on net area of work within perimeter or boundary walls. After computing the total gross (or net) area, a further distinction is made between assignable and non-assignable area in each option to identify separately the space which is equivalent to shell space as found in Unit B/C on Floors 7 and 15. Assignable area is used for programmed functions and secondary circulation.

Assumptions  
(continued)

1. (continued)
  - b. The costs to complete assignable space include architectural finishes such as ceilings, partitions, doors, flooring, miscellaneous specialties and installed equipment, and building services such as plumbing, fire protection, mechanical and electrical branch distribution systems. Different unit cost factors are used to obtain construction costs of laboratory, teaching and office type spaces.
  - c. The category of non-assignable space includes some finished areas such as main lobbies, corridors, public toilets and housekeeping facilities, and fixed elements such as stairs, elevators, service shafts, mechanical equipment rooms, structure and perimeter walls (when applicable).
  - d. Appropriate unit cost factors are used to obtain construction costs of non-assignable finished spaces, including stairs and elevators. Unit cost factors for building services are applied to the total area of a particular option and are assumed to include primary equipment and distribution throughout, and branch distribution systems within non-assignable spaces. For completion of shell space in Unit B/C, elevator costs are pro-rated, and modifications to primary systems are included in the cost estimates.
2. In most renovation work, new partitions are provided to accommodate the net area requirements of the program in accordance with design standards for new construction, instead of adapting the program to conform with existing layouts. However, where a percentage of the existing partitions and building systems are assumed to be retained, adjustments are made in the cost estimates.
3. Estimates of the project costs for new construction are assumed to include provisions of the energy code. Where more than 50 percent of an existing building is renovated, such as in Option P6 (Harvard Street apartments), Option P13 (Appleby and Fraser Halls), and Option P50 (Appleby Hall), cost estimates include treatment of all exposed perimeter surfaces. In Option N8 (Powell Hall), where 25 to 50 percent of the building is renovated, only the renovated area is assumed to comply with code requirements. Renovated (and new) work in the Mayo complex for any of the options considered includes an allowance to satisfy energy code criteria. The full extent of these corrections in the Mayo complex will be determined in detailed planning.

Assumptions (continued)

4. Estimated building costs are escalated to an approximate midpoint of the construction schedule(s) assumed for each option. Project time schedules are discussed in a preceding section.
  
5. Non-building costs, which include architectural and engineering fees, miscellaneous site engineering, loose equipment, and construction contingencies as well as supervision and administrative costs incurred by the University, are assumed to range between 38 and 42 percent of the total escalated building costs.



## Findings

The estimated project costs below include assumed building costs, contractors' direct and indirect expenses, and estimating contingency based on the scope and complexity of work; remodeling and relocation costs to consolidate the site; non-building costs based on a percentage of the building cost, and escalation costs derived from the assumed project schedules:

Option	Description	Total Project Cost
P6 *	Unit B/C, Floors 7, 15 Harvard Street Apartments	\$ 13,990,440
P11	Unit B/C, Floors 7, 15 Mayo (vacated clinics)	9,935,724
P13	Appleby Hall Fraser Hall	14,758,997
P50	Appleby Addition Appleby Hall	15,144,920
P58	Unit B/C, Floor 7 Unit A Plaza	15,204,120
P59	Mayo (vacated clinics) Mayo (infilled court)	14,920,508
P59A	Mayo (vacated clinics) Mayo (infilled court)	14,848,940
P60	Unit B/C, Floor 7 Mayo (infilled court)	13,883,898
N4	Mayo (vacated clinics)	5,942,528
N8 *	Powell Hall	7,877,660
N54	Mayo (vacated clinics) Mayo (infilled court)	10,480,248
N56	Unit A Plaza	10,832,035

Of the 12 options analyzed, 10 are considered to have a long-term investment. Options noted with an asterisk (\*) have short-term utility. The project cost for Option P13 does not include additional costs to complete space not required for the Pharmacy program in Fraser Hall.

## Findings (continued)

1. Options which accommodate the Pharmacy or Nursing program by completion of shell space and/or moderate to extensive renovation of vacated space, such as Options P11, N4, and N8, are estimated to have lower project costs.
2. As expected, options which require new (or infill) construction with renovation are of higher cost:
  - a. In Option P6, to develop facilities in the Harvard Street apartments comparable to other options, it is necessary to provide enclosed connecting links between buildings, elevators, air conditioning, code conforming egress and fire protection systems, increased structural capacity, insulation for extensive perimeter surfaces, and new interior finishes.
  - b. In Option P13, Fraser Hall will be renovated to correct conditions which are not in conformance with code, including replacement of existing structure in the multi-floor bookstack space, and to accommodate laboratory, teaching, and administrative functions. Appleby Hall will be renovated for all of the graduate research program.
  - c. In Options P59, P59A, P60, and N54, the demolition of existing structure followed by infill construction within the northwest court of the Mayo complex must be accomplished with limited access and under restricted work conditions, to minimize the impact on nearby patient care or diagnostic facilities.
  - d. In Options P50, P58, and N56, new construction includes demolition of existing building(s), excavation, foundations, superstructure, exterior walls and fenestration, and primary mechanical and electrical systems.
3. Extensive renovation and conversion of the Harvard Street apartments from residential to office occupancy represents a short term investment for the following reasons:
  - a. The existing wood and masonry structures, with minimal floor-to-floor heights, short spans and fixed bearing walls, do not have the long-term utility and flexibility to accommodate the range of functional programs and mechanical services characteristic of other buildings in the Health Sciences center.
  - b. The assumed investment to renovate three buildings, for a total of approximately 38,000 net square feet of assignable space, precludes expansion of new construction to the east of Unit A in the near future. By comparison, development of facilities below an expanded plaza, such as Options N56 and P58, provide approximately 44,000 to 50,000 net square feet of assignable space; and plans developed during the redesign of Unit F provide approximately 117,000 net assignable square feet for programmed functions.

## Findings (continued)

4. Powell Hall (Option N8) is designated as the site of the future replacement facility for inpatient care units of the Mayo complex. Capital investments required to renovate space in Powell Hall are not considered to have a long-term utility.
5. Summaries of net and gross area, project costs and construction schedules for 17 composite options and Unit F are shown on the following page.
  - a. Estimated project costs range from approximately \$17.81 million to \$25.9 million.
  - b. The estimated project cost for Unit F, based on Option E as described in the Unit F Interim Report, dated 19 January 1976, escalated to the comparable time period shown on the schedule is approximately \$22.9 million.
  - c. \$1,669,400 in previous appropriations has been expended for land acquisition and design development of Unit F. Cost estimates of composite Options 1, 2, 3, 5, 9, 10, 11, 12, 14, 15, 16, and 17 which require the use of the same parcel of land do not include the cost of the land. For the purpose of comparison, the previous appropriation is excluded from the Unit F project cost estimate, shown in the table on the following page.

PHARMACY/NURSING SUMMARY OF PROJECT COSTS

COMPOSITE OPTIONS			AREA/COST/DURATION				
			Net SF	Gross SF	Estimated Project Cost (\$)	Project Start	Project Finish
1	P6 Unit B/C, Floors 7, 15 Harvard St. Apartments N4 Mayo (vacated clinics)	69,750	112,372	13,990,440	Jul.'78	Jul.'79	12
		37,860	52,600	5,942,528	Jan.'79	Jan.'81	24
		107,610	164,972	19,932,968	Jan.'79	Jul.'80	18
2	P6 Unit B/C, Floors 7, 15 Harvard St. Apartments N8 Powell Hall	69,750	112,372	13,990,440	Jul.'78	Jul.'79	12
		37,050	63,655	7,877,660	Jan.'79	Jan.'81	24
		106,800	176,027	21,868,100	Jan.'79	Jan.'81	24
3	P6 Unit B/C, Floors 7, 15 Harvard St. Apartments N54 Mayo (vacated clinics) Mayo (in-filled court)	69,750	112,372	13,990,440	Jul.'78	Jul.'81	12
		40,750	57,630	10,480,248	Apr.'79	Oct.'80	18
		110,500	170,002	24,470,688	Jan.'79	Jan.'81	24
4	P11 Unit B/C, Floors 7, 15 Mayo (vacated clinics) N8 Powell Hall	68,250	100,827	9,935,724	Jul.'78	Jul.'79	12
		37,050	63,655	7,877,660	Jan.'79	Jul.'80	18
		105,300	164,482	17,813,384	Jan.'79	Jan.'81	24
5	P11 Unit B/C, Floors 7, 15 Mayo (vacated clinics) N56 Unit A Plaza	68,250	100,827	9,935,724	Jul.'78	Jul.'79	12
		43,200	88,950	10,832,035	Jan.'79	Jul.'80	18
		111,450	189,777	20,767,759	Jul.'78	Jul.'80	24
6	P50 Appleby Addition Appleby Hall N4 Mayo (vacated clinics)	72,020	113,942	15,144,920	Jan.'79	Jan.'81	24
		37,860	52,600	5,942,528	Jan.'81	Jan.'82	12
		109,880	166,542	21,087,448	Jan.'79	Jul.'80	18
7	P50 Appleby Addition Appleby Hall N8 Powell Hall	72,020	113,942	15,144,920	Jan.'79	Jan.'81	24
		37,050	63,644	7,877,660	Jan.'81	Jan.'82	12
		109,070	177,597	23,022,580	Jan.'79	Jan.'81	24
8	P50 Appleby Addition Appleby Hall N54 Mayo (vacated clinics) Mayo (in-filled court)	72,020	113,942	15,144,920	Jan.'79	Jan.'81	24
		40,750	57,630	10,480,248	Jan.'81	Jan.'82	12
		112,770	171,572	25,625,168	Apr.'79	Oct.'80	18
9	P50 Appleby Addition Appleby Hall N56 Unit A Plaza	72,020	113,942	15,144,920	Jan.'79	Jan.'81	24
		43,200	88,950	10,832,035	Jan.'81	Jan.'82	12
		115,220	202,892	25,976,955	Jul.'78	Jul.'80	24
10	P58 Unit B/C, Floor 7 Unit A Plaza N4 Mayo (vacated clinics)	70,700	131,050	15,204,120	Jul.'78	Jul.'79	12
		37,860	52,600	5,942,528	Jul.'78	Jul.'80	24
		108,560	183,650	21,146,648	Jan.'79	Jul.'80	18
11	P58 Unit B/C, Floor 7 Unit A Plaza N8 Powell Hall	70,700	131,050	15,204,120	Jul.'78	Jul.'79	12
		37,050	63,655	7,877,660	Jul.'78	Jul.'80	24
		107,750	194,705	23,081,780	Jan.'79	Jan.'81	24
12	P58 Unit B/C, Floor 7 Unit A Plaza N54 Mayo (vacated clinics) Mayo (in-filled court)	70,700	131,050	15,204,120	Jul.'78	Jul.'79	12
		40,750	57,630	10,480,248	Jul.'78	Jul.'80	12
		111,450	188,680	25,684,368	Apr.'79	Oct.'80	18
13	P59 Mayo (vacated clinics) Mayo (in-filled court) N8 Powell Hall	65,695	99,825	14,920,508	Nov.'79	May '81	18
		37,050	63,655	7,877,660	Jan.'79	May '81	28
		102,745	163,480	22,798,168	Jan.'79	Jan.'81	24
14	P59 Mayo (vacated clinics) Mayo (in-filled court) N56 Unit A Plaza	65,695	99,825	14,920,508	Nov.'79	May '81	18
		43,200	88,950	10,832,035	Jan.'79	May '81	28
		108,895	188,775	25,752,543	Jul.'78	Jul.'80	24
15	P59A Mayo (vacated clinic) Mayo (in-filled court) N56 Unit A Plaza	65,700	101,100	14,848,940	Apr.'79	Oct.'80	18
		43,200	88,950	10,832,035	Jan.'79	Jan.'81	24
		108,900	190,050	25,680,975	Jul.'78	Jul.'80	24
16	P60 Mayo (vacated clinics) Mayo (in-filled court) Unit B/C, Floor 7 N56 Unit A Plaza	69,100	108,250	13,883,898	Apr.'79	Oct.'80	18
		43,200	88,950	10,832,035	Jan.'79	Jan.'81	24
		112,300	197,200	24,715,933	Jul.'78	Jul.'80	24
17	P13 Appleby Hall Fraser Hall N56 Unit A Plaza	72,700	112,000	14,758,997	Sep.'80	Jan.'82	16
		43,200	88,950	10,832,035	Jan.'79	Sept.'80	20
		115,900	200,950	25,591,032	Jul.'78	Jul.'80	24
UNIT F		65,440			Nov.'77	March '80	28
		2,665					
		35,375					
		103,480	186,500	21,230,600*			

\* \$1,669,400 in previously expended appropriations is not included in this cost estimate.

Findings (continued)

In the table below, the estimated project costs for the composite options and Unit F are arranged in order from the lowest to highest cost. Of the 17 composite options analyzed, the 10 which are considered to have long-term investment are outlined.

COMPOSITE OPTION	PROJECT COST	DIFFERENCE (%)
4 P11 Unit B/C & Mayo N8 Powell Hall	\$ 17,813,384	\$ - 3,417,216 (-16.1%)
1 P6 Unit B/C & Apts. N4 Mayo	19,932,968	- 1,297,632 (- 6.1%)
6 P50 Appleby & Addition N4 Mayo	21,087,448	- 143,152 (- 0.7%)
10 P58 Unit B/C & Unit A Plaza N4 Mayo	21,146,648	- 83,952 (- 0.4%)
5 P11 Unit B/C & Mayo N56 Unit A Plaza	21,180,792	- 49,808 (- 0.2%)
<b>UNIT F</b>		21,230,600
2 P6 Unit B/C & Apts. N8 Powell Hall	21,868,100	+ 637,500 (+ 3.0%)
13 P59 Mayo (infill) N8 Powell Hall	22,798,168	+ 1,567,568 (+ 7.4%)
7 P50 Appleby & Addition N8 Powell Hall	23,022,580	+ 1,791,980 (+ 8.4%)
11 P58 Unit B/C & Unit A Plaza N8 Powell Hall	23,081,780	+ 1,851,180 (+ 8.7%)
3 P6 Unit B/C and Apartments N54 Mayo (infill)	24,470,688	+ 3,240,088 (+15.3%)
16 P60 Unit B/C & Mayo N56 Unit A Plaza	24,715,933	+ 3,485,333 (+16.4%)
17 P13 Appleby/Fraser N56 Unit A Plaza	25,591,032	+ 4,360,432 (+20.5%)
8 P50 Appleby & Addition N54 Mayo (infill)	25,625,168	+ 4,394,568 (+20.7%)
15 P59A Mayo (infill) N56 Unit A Plaza	25,680,975	+ 4,450,375 (+21.0%)
12 P58 Unit B/C & Unit A Plaza N54 Mayo (infill)	25,684,368	+ 4,453,768 (+21.0%)
14 P59 Mayo (infill) N56 Unit A Plaza	25,752,543	+ 4,521,943 (+21.3%)
9 P50 Appleby & Addition N56 Unit A Plaza	25,976,955	+ 4,746,355 (+22.4%)

Conclusions

Based on the preceding assumptions, findings, and tables of estimated project costs, the following can be concluded:

1. Three composite options of long term investment, requiring moderate to extensive renovation and new construction on two or three sites, are estimated to have projected costs which are approximately equal to that estimated for Unit F as a shared facility.

6	P60	Appleby Hall/Addition	- 0.7%
	N4	Mayo (vacated clinics)	

10	P58	Unit B/C7/Unit A Plaza	- 0.4%
	N4	Mayo (vacated clinics)	

5	P11	Unit B/C 7 and 15/Mayo (Clinics)	- 0.2%
	N56	Unit A Plaza	

2. Seven composite options of long term investment, requiring mostly new (or infill) construction and some renovation on two or three sites, are estimated to have project costs which are approximately 16 to 22 percent more than estimated for Unit F as a shared facility:

16	P60	Unit B/C and Mayo	+ 16.4%
	N56	Unit A Plaza	

17	P13	Appleby/Fraser	+ 20.5%
	N56	Unit A Plaza	

8	P50	Appleby Hall/Addition	+ 20.7%
	N54	Mayo (infilled court)	

12	P58	Unit B/C 7/Unit A Plaza	+ 21.0%
	N54	Mayo (infilled court)	

14	P59	Mayo (infilled court)	+ 21.3%
	N56	Unit A Plaza	

9	P50	Appleby Hall/Addition	+ 22.4%
	N56	Unit A Plaza	

3. When considering new construction only, according to estimates above, it is more economical to construct a single shared facility to accommodate the Pharmacy and Nursing programs than build separate facilities on multiple sites.

4. For the composite options considered, moderate to extensive renovation in the Mayo complex appears economical if it does not require the construction of an infill addition, remodeling of large areas for laboratory space, or major relocation of existing functions.

## General

This report is not involved with investigation or analysis of the methods, sources, or qualifications of funding or with priorities of implementation for the various programs of the Health Sciences.

This section summarizes the conclusions found in preceding sections regarding the composite options which are most feasible for program accommodation, Health Sciences planning, early project delivery, and project cost.

## Availability of Sites

The following conclusions can be made regarding general program requirements for space when compared to an inventory of available space, either existing (vacated or vacatable) or developed by new construction within the Health Sciences.

1. The feasibility of accommodating the program requirements for the College of Pharmacy and School of Nursing in remodeled existing or future facilities depends on the availability of approximately 103,480 net square feet of space, not including area for assignable circulation or non-assignable building elements such as stairs and shafts. The equivalent net assignable area required to accommodate the total program ranges from approximately 108,600 to 124,200 square feet.
  - a. With Powell Hall designated as the site for the future replacement facility for inpatient care units of the Mayo complex, permanent new facilities are required for the School of Nursing (and other occupants of Powell Hall) elsewhere within the Health Sciences.
  - b. According the design criteria of the program, the College of Pharmacy is to be incorporated into the Health Sciences center to promote the integration and sharing of related facilities and resources.
2. A detailed review of sites and floor plans indicates that the only existing space, vacated and available for renovation, is found in the northwest court area of the Mayo complex on Floors 1, 2, and 3. This space is scheduled to be available in July 1978, when Hospital (outpatient) clinics and departments are relocated to Unit B/C following the completion of current construction.
  - a. According to current planning documents and projections for expansion, a substantial portion of this vacated space is allocated for Hospital and Medical School departments. Approximately 29,300 net assignable square feet of area was initially assigned to the School of Nursing.
  - b. The master planning logic which located the School of Nursing in space vacated by the outpatient clinics assumed construction of new facilities for the School of Public Health.

Availability of Sites  
(continued)

3. In developing options to accommodate both Pharmacy and Nursing programs in the Health Sciences center, this study assumes that additional (existing) net assignable area may be obtained by:
  - o The renovation and conversion of three apartment buildings along Harvard Street (38,000 square feet).
  - o Reassignment of Floor 7 in Unit B/C (20,000 square feet).
  - o Reassignment of Floor 15 in Unit B/C (12,000 square feet).
  - o Reassignment of the medical student adytum on Floor 1 (4,800 square feet).
  - o Reassignment of the space vacated by Pediatrics on Floor 2 in the Mayo complex (1,500 square feet).
  - a. However, based on physical conditions of structure, extensive renovation of the apartment buildings is not considered to have long term utility.
  - b. Floor 7 in Unit B/C is presently designated as the Hospital Dentistry Clinic and Floor 15 is presently designated as a Self-Care Patient Unit. An assumption is made that these functions would be reprogrammed and relocated elsewhere in the Health Sciences center.
  - c. The Medical School student adytum is presently used in conjunction with clinical teaching facilities in the Todd-Eustis amphitheater and would have to be eliminated.
4. For some of the options which renovate vacated outpatient clinic space in the Mayo complex, this study assumes to provide additional area by new construction which infills the northwest court on three (or four) floors and/or by pre-empting space allocated for Laboratory Medicine and other Hospital functions. For other options, additional area is developed below an expanded plaza to the east of Unit A or by expanding Appleby Hall.
  - a. The scope of new construction in the northwest court is limited by existing inpatient care units on Floors, 4, 5, and 6 which require natural lighting. Construction of the infill addition within the court must be accomplished under restricted work conditions to minimize the impact on nearby patient care facilities, including the post-anesthesia recovery unit, an intensive care unit, and bedrooms in several nursing units.
  - b. Pre-empting space allocated for other departments or functions has long-term planning implications which indicate that construction inevitably is required to accommodate the consolidation of other programs in the Health Sciences.
  - c. The Unit A Plaza development will allow future vertical expansion on the site, if needed.



## Availability of Sites

5. In conclusion, no single available site is large enough to accommodate a combined Pharmacy and Nursing program so that separate sites are required. The Pharmacy program is also larger than the amount of space available at any of the single sites identified in the Health Sciences center; options for Pharmacy require the development of more than one site, unless other existing functions in the Mayo complex are relocated to consolidate a larger area.

## Assignment to Sites

The following conclusions can be made regarding general assignments of the various program functions to existing space:

1. For advancement, the more technical and specialized functions within the Health Sciences depend on facilities which are designed to readily accommodate the new developments in procedures, techniques, equipment, or systems and the consequent modification or replacement of building services. The technology-intensive functions include diagnostic and treatment facilities, inpatient care units, and service or research laboratories.
  - a. Approximately 66 percent of the Pharmacy program comprises undergraduate and graduate laboratories and support functions which require extensive piped services and special air supply, exhaust, and waste systems.
  - b. By comparison, individual faculty offices comprise approximately 52 percent and research laboratories comprise approximately 3 percent of the Nursing program. Teaching spaces comprise the remaining 45 percent.
2. In this study, separate options are developed which alternatively locate all or most of the Pharmacy or Nursing program on the same site, such as the Unit A Plaza (Options P58 and N56) or the Mayo complex (Options P11, P59, P59A, P60, and N4, N54).
  - a. In general, the Pharmacy program is not as readily accommodated in the Mayo complex as is the Nursing program because the existing conditions for distribution of mechanical and electrical services do not favor installation of extensive laboratory facilities.
  - b. Based only on the above discussion regarding program requirements and building systems, it can be concluded that of the two options to develop the Unit A Plaza site, the consolidation of laboratory functions in Pharmacy Option P58, rather than office and teaching spaces in Nursing Option N56 uses more effectively the technical advantages of new construction.

## Pharmacy Options

Seven (7) options of long-term investment are outlined in this study to accommodate the Pharmacy program:

- o Expand present facilities by constructing a new addition to Appleby Hall and then renovating Appleby Hall (Option P50).
- o Renovate both Appleby Hall and Fraser Hall without new construction, except as required by the State building code (Option P13).
- o Renovate only space vacated by outpatient clinics and the adytum in the Mayo complex and complete shell space on Floors 7 and 15 in Unit B/C (Option P11).
- o Construct an infill addition in the northwest court and renovate space vacated by clinics and the adytum in the Mayo complex, and complete shell space on Floor 7 in Unit B/C (Option P60).
- o Construct an infill addition in the northwest court and renovate all space vacated in the Mayo complex, pre-empting allocated space and relocating existing hospital functions as required to consolidate the site (Options P59 and P59A).
- o Develop new facilities below an expanded plaza to the east of Unit A and complete shell space on Floor 7 in Unit B/C (Option P58).

The following conclusions can be made regarding the evaluation and selection of Pharmacy options which best satisfy the program requirements of functional adjacencies and master plan objectives for the Health Sciences:

1. The renovation of Pharmacy facilities on the Appleby Hall site would not provide the intended integration of that program with other interdisciplinary programs and resources in the Health Sciences center. In Options P13 and P59, renovation work is estimated to be complete one year after the dates of project delivery for all other options considered.
2. In evaluating the above options which require space in the Mayo complex, the following comments can be made:
  - a. In Option P11, laboratory functions in the program are located in Unit B/C. However, both Floors 7 and 15 are required to satisfy net area requirements.
  - b. In Options P59 and P59A, the only options which would accommodate the entire Pharmacy program in one location, space allocated for other assignments must be pre-empted and existing functions relocated which effect present operations and seriously modify present Health Sciences planning.

Pharmacy Options  
(continued)

- c. In Option P60, the Laboratory Medicine program is not pre-empted and existing laboratory functions remain in present locations. However, some Hospital service functions need to be relocated, and the Pharmacy program is split between two sites.
3. It can be concluded that Floor 7 in Unit B/C (or the equivalent in net assignable area and building systems) will have to be reassigned to Pharmacy if the program is to be integrated into the Health Sciences center. Remaining program elements can either be located in the Mayo complex (Option P60) or in space developed below an expanded Unit A Plaza (Option P58). Both Options P58 and P60 require that program elements are separated on two sites.
- a. In Option P58, all teaching and administrative functions are located on Floor 7 in Unit B/C, and research laboratory functions are located on Floors 1 and 2 of the Unit A Plaza, convenient to animal quarters. In this option the most essential functional adjacencies are accommodated as programmed.
  - b. In Option P60, some research laboratory functions are located on Floor 7 in Unit B/C, where access to animal quarters is still convenient, and the remaining laboratory, teaching, and administrative functions are located in the Mayo complex.
  - c. According to estimates of project costs, Option P60 is approximately \$830,000 less than Option P58. However, when combined with Nursing options, the results are as follows:

Composite Option			Project Cost
16	P60	Unit B/C 7 and Mayo (infilled) N56 Unit A Plaza	\$ 25,204,253
10	P58	Unit B/C 7 and Unit A Plaza N4 Mayo (vacated clinics)	21,146,648
Difference			\$ 4,057,605

Summary

Only three composite options of long term investment integrate the Pharmacy and Nursing programs in the Health Sciences center without requiring the major relocation of an existing program or the reassignment of more than one floor of shell space in Unit B/C. The composite options which follow require the renovation of space vacated by outpatient clinics in the Mayo complex, completion of shell space on Floor 7 in Unit B/C, and the development of new space below an expanded plaza to the east of Unit A. Two of the options require the construction of an infill addition within the northwest court of the Mayo complex:

- 10 P58 Unit B/C 7 and Unit A Plaza  
N4 Mayo (vacated clinics)
- 12 P58 Unit B/C 7 and Unit A Plaza  
N54 Mayo (infilled court)
- 16 P60 Unit B/C 7 and Mayo (infilled court)  
N56 Unit A Plaza

Selected Composite Option

This report is not involved with investigation or analysis of the methods, sources, or qualifications of funding or with priorities of implementation for the various programs of the Health Sciences. However, based on the findings listed in preceding sections and from the previous discussion, it can be concluded that one composite option best satisfies the technical requirements of program, planning criteria, project delivery, and cost:

- 10 P58 Unit B/C 7 and Unit A Plaza  
N4 Mayo (vacated clinics)

1. If the above option is implemented, additional new construction will still be required to consolidate the program of the School of Public Health within the Health Sciences.
2. If Nursing Option N4 (as the option estimated to have the lowest project cost) is implemented by renovating designated space in the Mayo complex, the total project costs to implement either of the following composite options are approximately equal:
  - 6 P50 Appleby Hall and Addition \$21,087,448  
N4 Mayo (vacated clinics)
  - 10 P58 Unit B/C 7 and Unit A Plaza \$21,146,648  
N4 Mayo (vacated clinics)
3. The total project cost to integrate the Pharmacy program into the Health Sciences center (as Option P58) would be essentially the same as remodeling and expanding existing facilities.

Nursing Options in Mayo The following conclusions can be made regarding new (infill) construction in the Mayo complex and the selection of a Nursing option:

1. Either Nursing Option N4 (Mayo, vacated clinics) or N54 (Mayo, infilled court) can be implemented with Pharmacy Option P58. However, the cost difference is as follows:

Composite Option		Project Cost
12	P58 Unit B/C 7 and Unit A Plaza N54 Mayo (infilled court)	\$ 25,684,368
10	P58 Unit B/C 7 and Unit A Plaza N4 Mayo (vacated clinics)	21,146,648
		\$ 4,501,720

a. The particular advantages from infilling the court to minimize relocation of existing hospital functions (while consolidating the Nursing program) are as follows:

- 1) Allows consolidation of Nursing program on two floors.
- 2) Reduces the amount of through-traffic within the space allocated to Nursing.
- 3) Provides additional space on Floor 2 for the programmed expansion of Laboratory Medicine functions.
- 4) Allows additional options for planning larger teaching spaces such as the nursing skills laboratory, or suites of typical spaces such as faculty offices.

b. The disadvantages are as follows:

- 1) Increases the total project costs.
  - 2) Requires construction adjacent to post-anesthesia recovery, intensive care, and other nursing beds.
2. For the composite options considered, moderate to extensive renovation in the Mayo complex appears economical if it does not require the construction of an infill addition, remodeling of large areas for laboratory space, or major relocation of existing functions.
  3. When considering new construction only, according to estimates above, it is more economical to construct a single shared facility to accommodate the Pharmacy and Nursing programs than build separate facilities on multiple sites.

**appendix**

APPENDIX CONTENTS

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PHARMACY/NURSING

COMPOSITE OPTION 10

Description

Composite Option 10	Site Location	Site Condition
Pharmacy	Unit B/C, Floor 7 Unit A Plaza	Shell Space New construction
Nursing	Mayo Complex (vacated clinics)	Renovation

Area Summary

Composite Option 10	Net Assignable (square feet)	Gross (square feet)
Pharmacy	70,700	131,050
Nursing	37,860	52,600
TOTAL	108,560	183,650

Project Schedule

Composite Option 10	Project Schedule		Duration months
	start	finish	
Pharmacy	July 78	July 80	24
Nursing	Jan 79	July 80	18

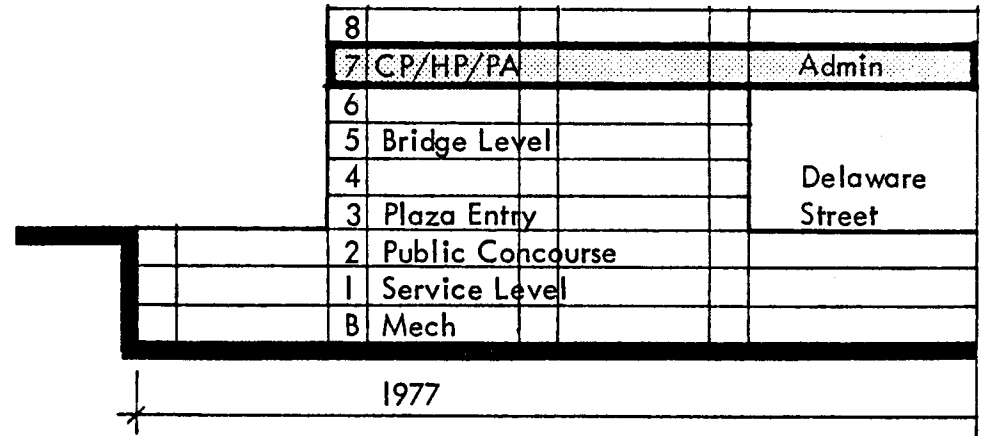
Estimated Project Cost

Composite Option 10	Estimated Cost
Pharmacy	\$ 15,204,120
Nursing	\$ 5,942,528
TOTAL	\$ 21,146,648



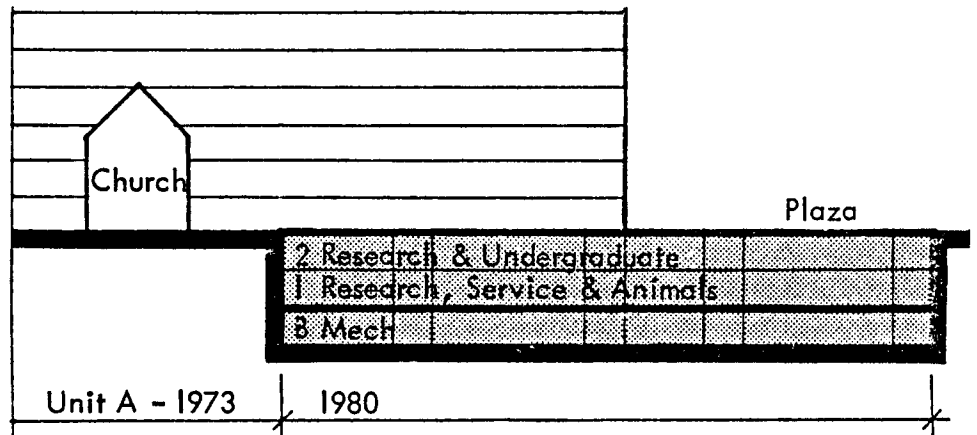
Description of Option

Option P58 will locate teaching and administrative spaces on Floor 7 of Unit B/C and will place undergraduate and research laboratories in an addition developed below the plaza to the east of Unit A.



UNIT B/C  
SECTION LOOKING WEST

Unfinished space on the seventh floor of Unit B/C will be completed to contain administrative offices and facilities for clinical pharmacy, hospital pharmacy, and pharmacy administration programs. The staff/student elevators will connect these functions with the plaza level entrance and the Health Sciences pedestrian concourse on Floor 2.



UNIT A PLAZA  
SECTION LOOKING WEST

The two-level plaza addition will place research laboratories, student spaces, service facilities and animal quarters on Floor 1. Service and animal circulation will be accessible to Health Sciences supply routes on this level.

Description (continued)

Floor 2 will contain undergraduate and research laboratories and will be adjacent to the auditoria in Unit A. This floor will extend the Health Sciences pedestrian concourse, which will provide a direct indoor link to Pharmacy spaces in Unit B/C, and will create a new entrance.

Greenhouse facilities will be located on Floor 10 of Unit B/C.

Possible expansion for future growth of Pharmacy or other Health Sciences programs may be accommodated by construction of additional floors above the Unit A Plaza addition, if necessary.

Site Description

Presently under construction, Floor 7 of Unit B/C is the first level above grade which provides connection with Unit A and is served by both staff/student and public elevators.

The site for the new addition to Unit A is occupied by three four-story apartment buildings and provides service access to the Unit A loading dock.

Program Accommodation

Option P58 will place the entire Pharmacy program in two locations on the Health Sciences center, with convenient access to the Basic Sciences, shared teaching facilities, the Biomedical Library, clinical departments of the Hospital and Medical School, and to the Schools of Public Health, Dentistry, and Nursing.

The division of Pharmacy into two locations will not maintain internal functional criteria established by the program.

1. Clinical Pharmacy, Hospital Pharmacy, and Pharmacy Administration will be remote from Research facilities.
2. Administration will be remote from Research facilities.
3. Educational Development will be remote from Undergraduate facilities.

This separation of facilities will require extended trips between locations for students and teaching staff.

Area requirements for the Pharmacy program will be satisfied in Option P58 as follows:

Option	Program	Program Area	Assigned Area
P58	Pharmacy	65,440	70,700

## PHARMACY/NURSING

## PHARMACY OPTION P58

For combined Options #10 and 12

### Health Sciences Planning

Implementation of this option will permit scheduled expansion of Hospital and Medical School departments to proceed as planned in the Health Sciences center.

Prior to the construction of the Unit A plaza addition, tenants in the Wilshire and Marlan Apartments will be relocated. Pharmacy occupants presently located in the Fenwick building will be temporarily housed in interim facilities on the third floor of Powell Hall in space vacated by the scheduled replacement of the Obstetrics and Gynecology clinic in Unit B/C. Additional spaces required for interim facilities will be located elsewhere in Powell Hall.

### Building Systems

Option P58 will include the completion of unfinished space in Unit B/C and the construction of an addition to Unit A. Work in Unit B/C will include installation of additional elevators and mechanical systems to support the development of Floor 7 for Pharmacy office spaces. New space constructed to house laboratory facilities on the Unit A plaza site will include a full basement for mechanical equipment and two elevators, and will be designed to accommodate future expansion.

No additional work will be required in Unit B/C to conform with life safety and building codes. The sprinkler system serving the shell space will be extended to protect the finished space. The Unit A plaza addition will require a sprinkler system because of its configuration and location below the plaza.

No additional work will be required in Unit B/C to conform with energy code criteria, and the Unit A plaza addition will be designed to meet the requirements of this code.

### Schedule

The construction of Option P58 will involve two sites:

1. Completion of shell space on Floor 7 in Unit B/C.
2. Construction of new facilities on Floors B, 1 and 2 below an expanded plaza to the east of Unit A.

The dates projected for the start of construction are based on the time required to prepare separate design and contract documents for each site.

For Unit B/C, it is assumed that documents will be completed by April 1978, with review, bidding and award of contracts by July 1978, at the completion of early Phase II construction and occupancy by hospital clinics on other floors.

Schedule  
(Continued)

Floor 7 in Unit B/C is scheduled for occupancy in July 1979, one year before the completion of Unit A Plaza.

The projected schedule for Option P58, assuming phased construction for completion of Unit A Plaza is as follows:

Item	Start	End	Duration
Design and contract documents	Jun 77	Apr 78	10 months
Review, bid and award	Apr 78	Jul 78	3 months
Complete shell space in Unit B/C, Floor 7	Jul 78	Jul 79	12 months
Occupancy	Jul 79	Aug 79	1 month
Contract documents, excavation	Jan 78	May 78	4 months
Review, bid and award	May 78	Jul 78	2 months
Excavation and foundations	Jul 78	Mar 79	8 months
Contract documents, structure	Mar 78	Aug 78	6 months
Review, bid and award	Aug 78	Sep 78	2 months
Construction, structure	Sep 78	Jul 79	10 months
Design and contract documents	Jun 77	Dec 78	18 months
Review, bid and award	Dec 78	Mar 79	3 months
Construction, Unit A Plaza	Mar 79	Jul 80	16 months
Occupancy	Jul 80	Aug 80	1 month

Project Cost

The estimated project cost includes assumed building costs and contingency based on the scope and complexity of work, non-building costs based on a percentage of the building costs and escalation costs derived from the assumed project schedule.

The total project cost to house only the College of Pharmacy in Option P58 is estimated to be as follows:

\$15,204,120.00

Summary

The advantages and disadvantages of Option P58 are summarized as follows:

Advantages

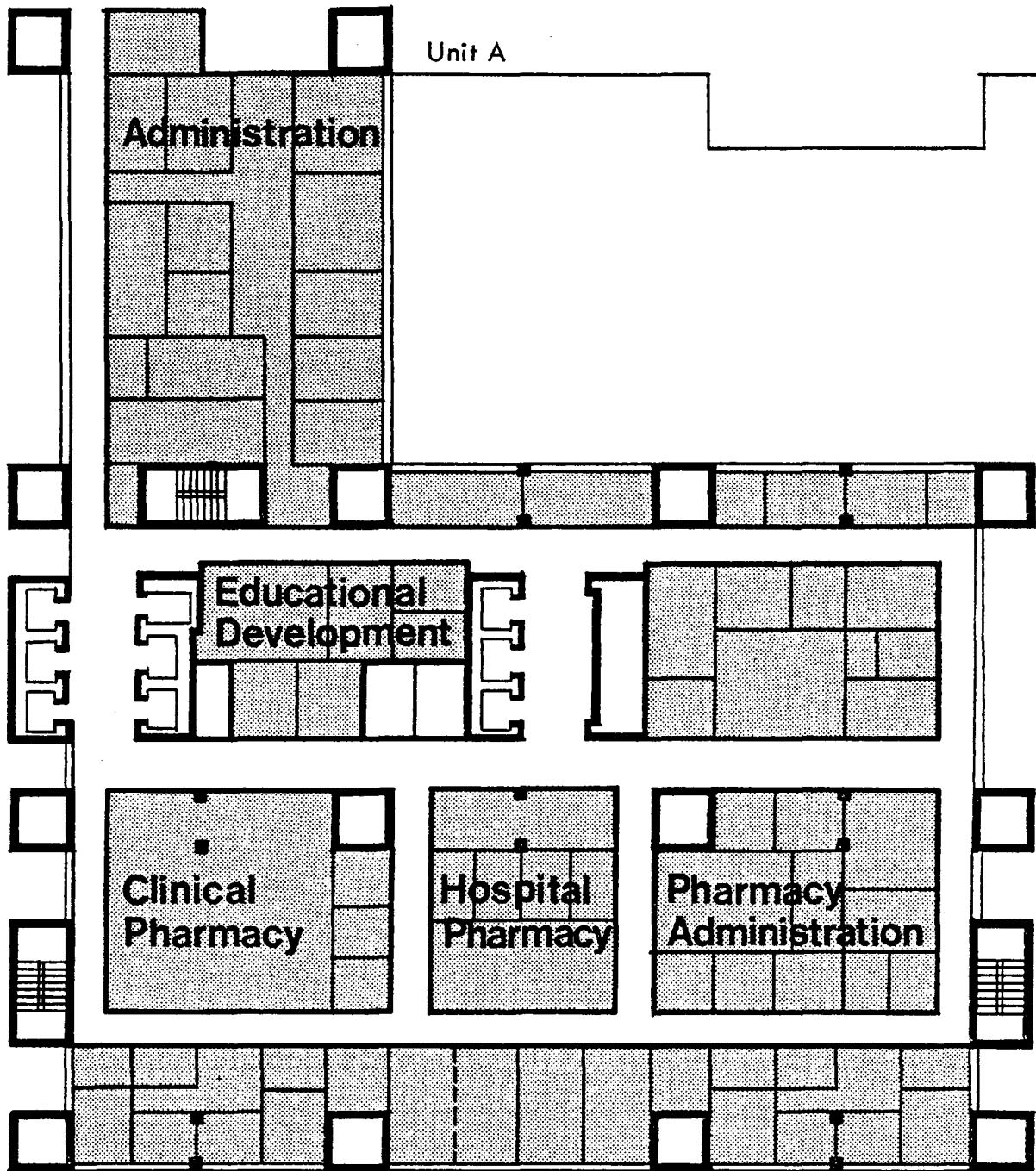
1. The Pharmacy program is integrated into the Health Sciences center.
2. Scheduled expansion of Hospital and Medical School departments can be implemented in accordance with previous planning for the Health Sciences center.

Summary  
(Continued)

3. Development of option as described will allow future vertical expansion on the site east of Unit A.

Disadvantages

1. Certain internal functional adjacencies established by the program are not maintained because of the separation of program elements on two sites.
2. The allowance for future vertical expansion of the Unit A plaza addition results in a higher cost for this option.

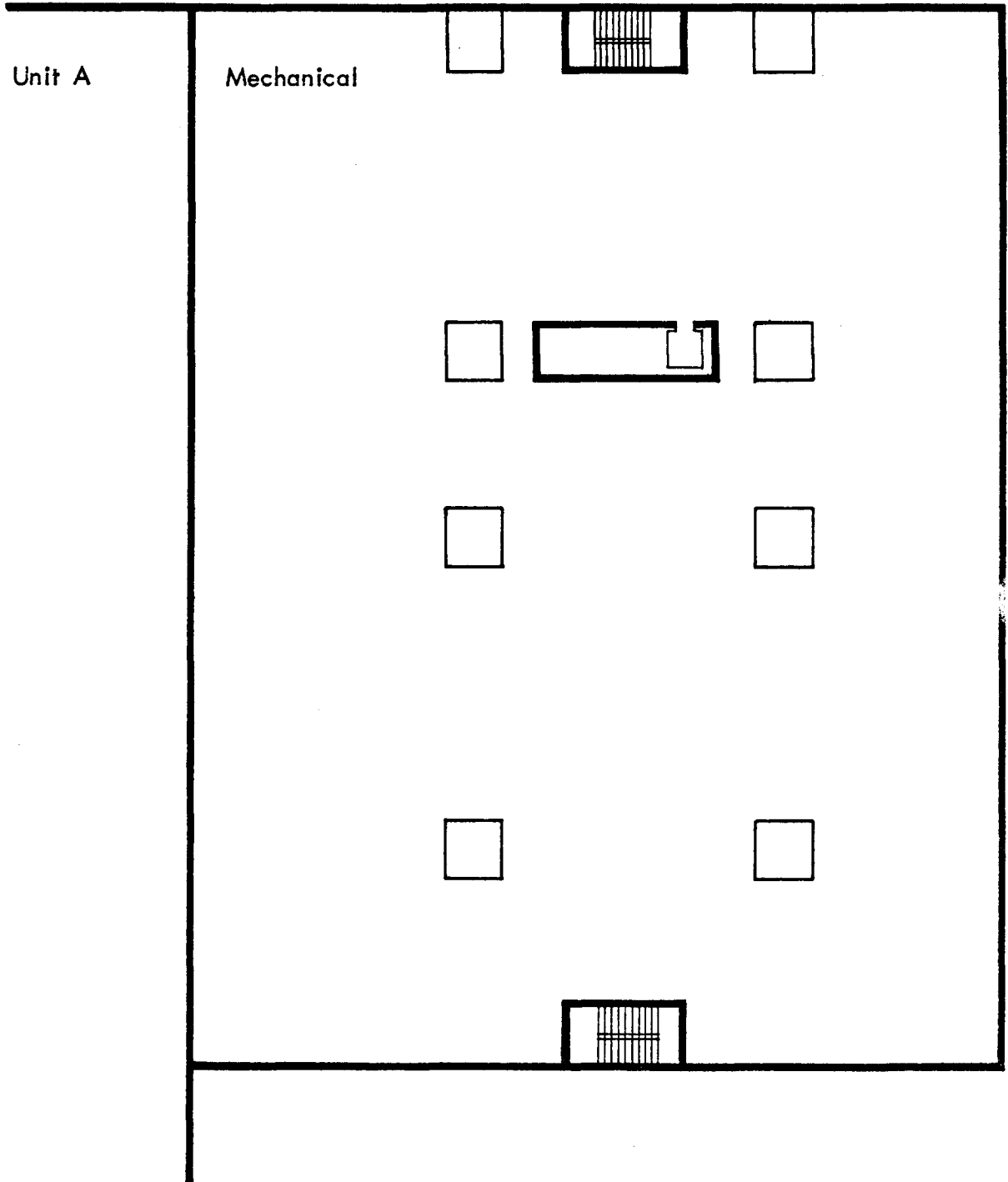


UNIT B/C  
SHELL SPACE  
FLOOR 7

1/32" = 1'-0"



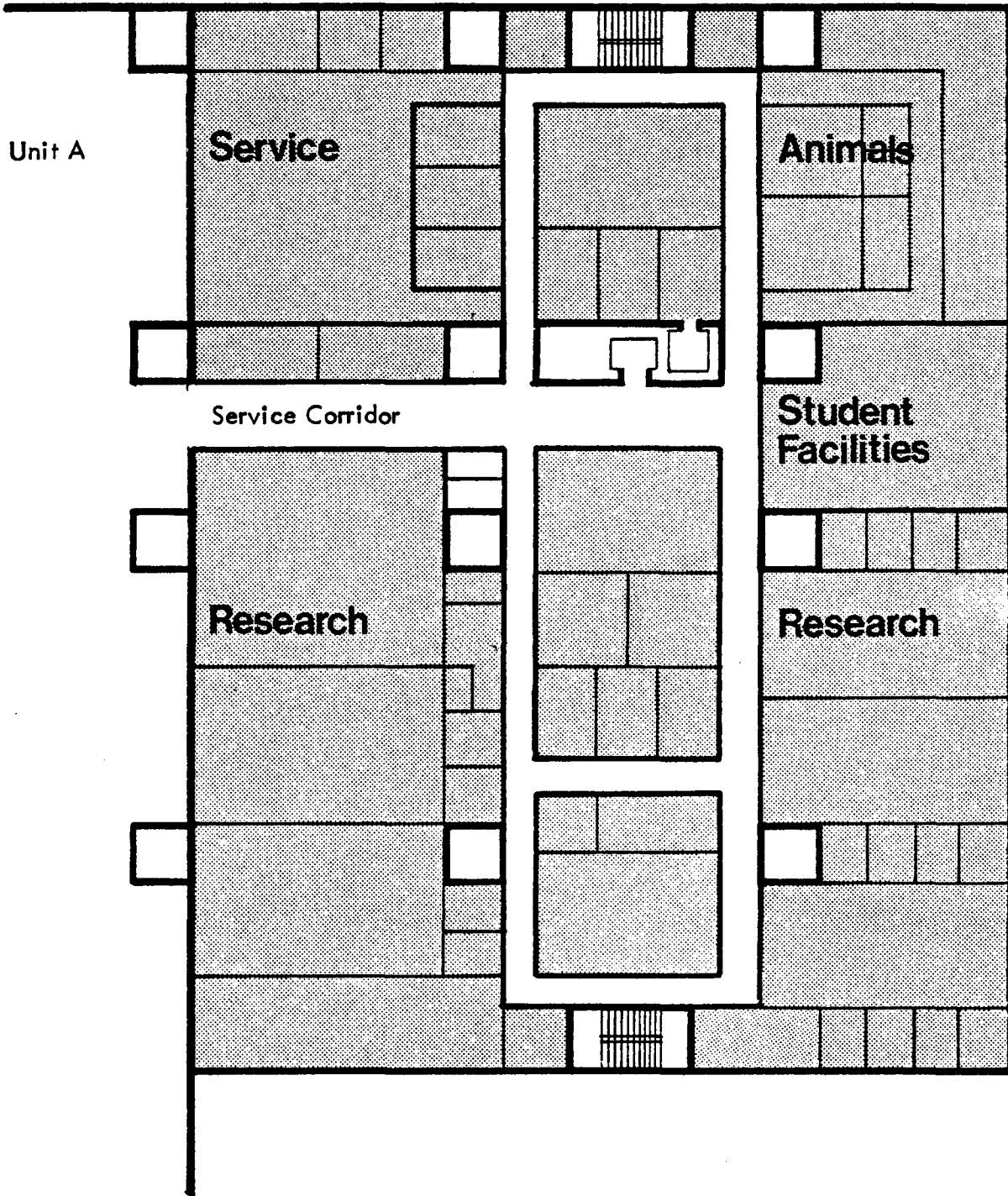
NORTH  
A7



UNIT A PLAZA  
ADDITION  
BASEMENT

1/32" = 1'-0"





Unit A

Service

Animals

Service Corridor

Student  
Facilities

Research

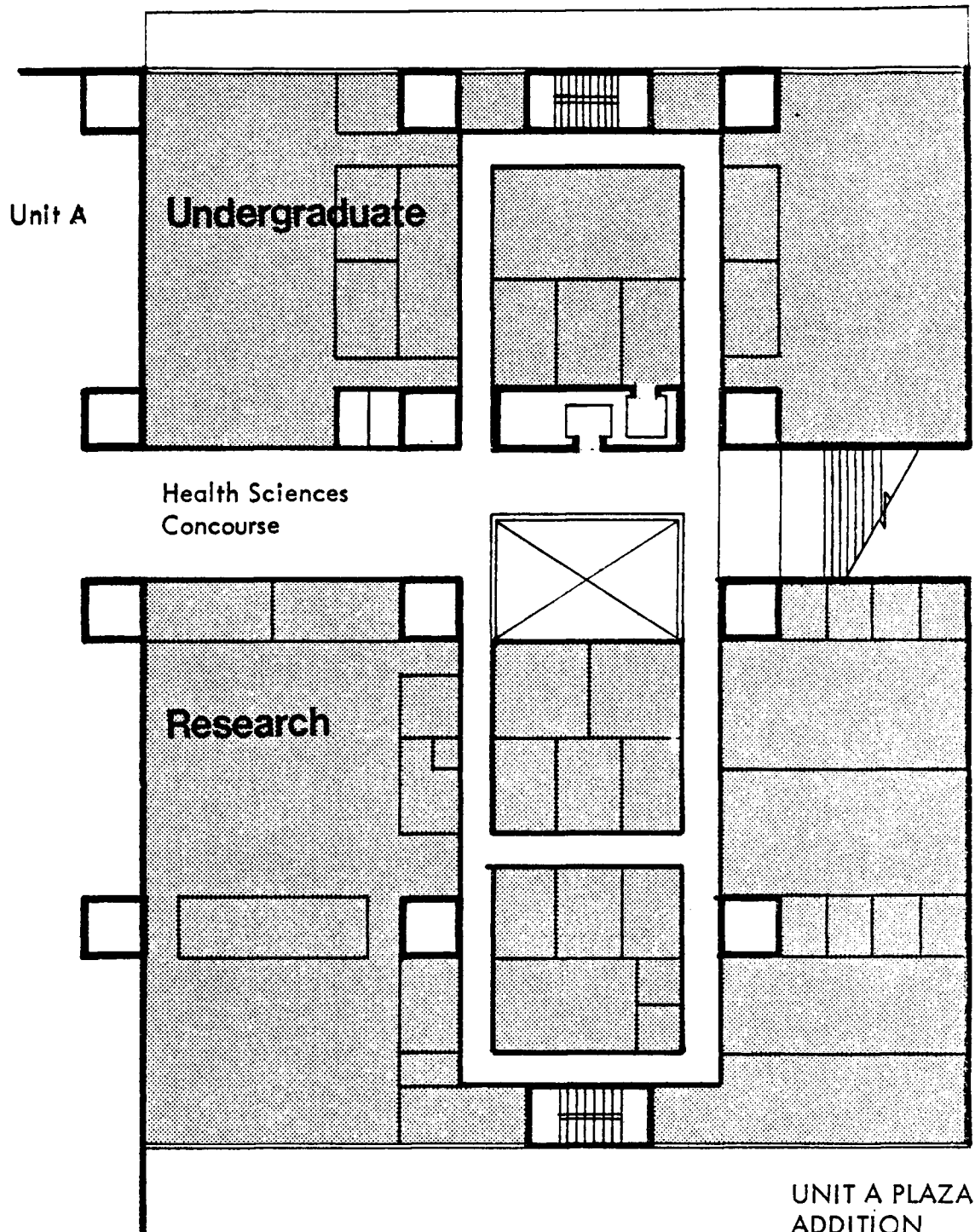
Research

UNIT A PLAZA  
ADDITION  
FLOOR 1

1/32" = 1'-0"



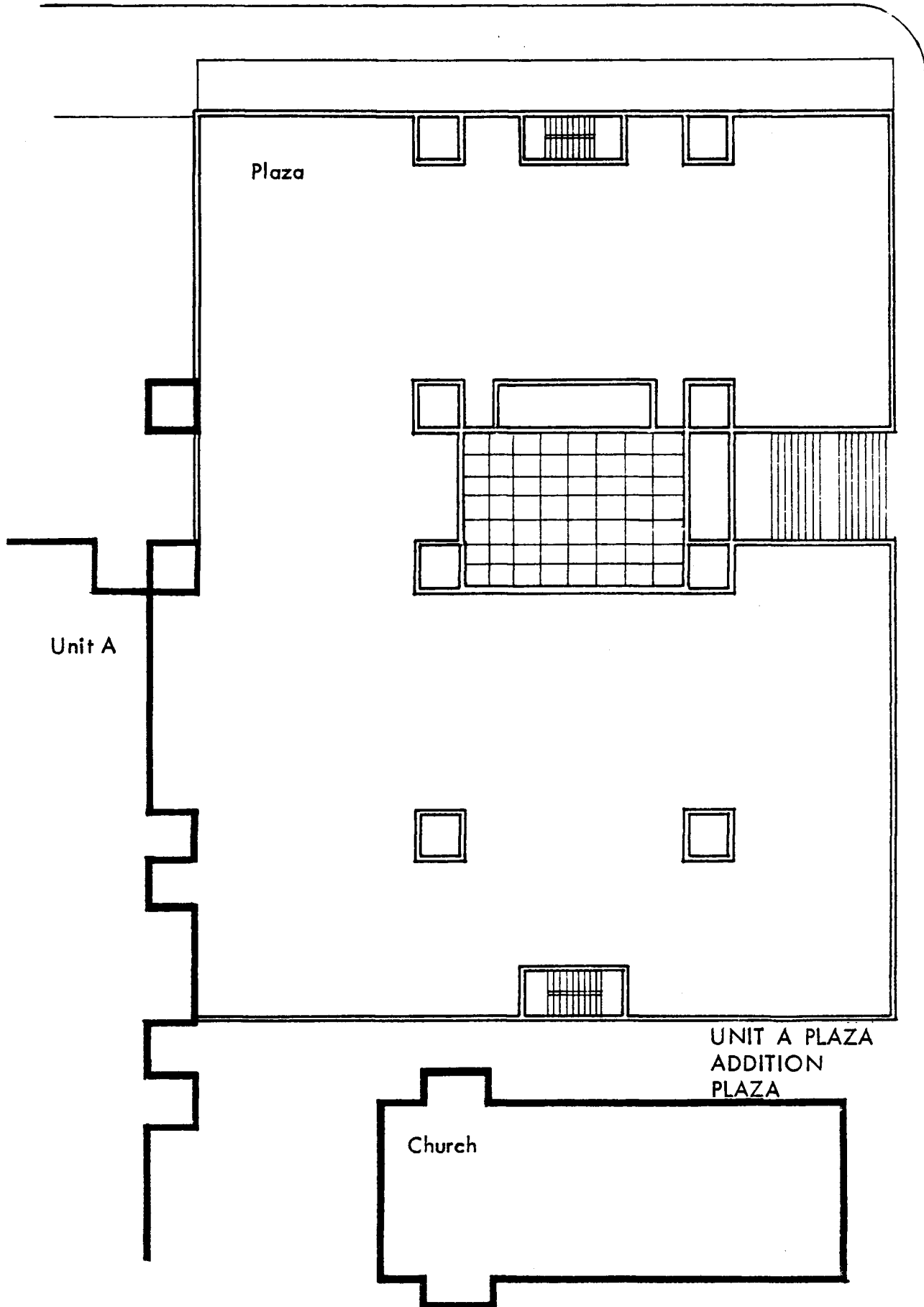




UNIT A PLAZA  
ADDITION  
FLOOR 2

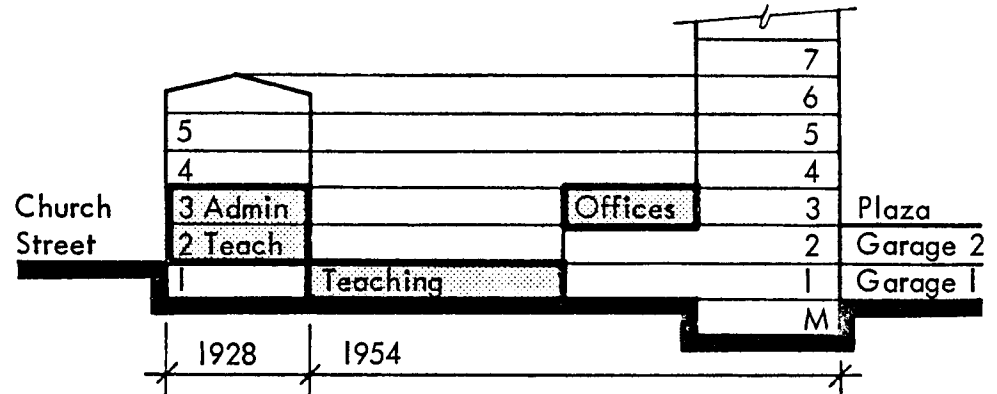
1/32" = 1'-0"





Description of Option

Option N4 will locate the entire program of teaching, research, and administrative spaces on Floors 1, 2, and 3 in the northwest court area of the Mayo complex, in areas vacated by the scheduled relocation of outpatient clinics and other departments to Unit B/C.



MAYO COMPLEX NORTHWEST COURT SECTION LOOKING NORTH

Floor 1 will contain laboratories, offices, and teaching spaces for nursing research.

Floor 2 will contain student spaces and teaching facilities for nursing skills, helping relationships and health assessment. Shared classrooms for the Health Sciences will also be located on this level, connected to the auditoria in Unit A and to library facilities in Diehl Hall by the Health Sciences pedestrian concourse.

Floor 3 will contain administration and faculty offices associated with the entrance from the plaza at this level.

Expansion for future Nursing programs may be accommodated by renovation of Floors 4 and 5 in the northwest court of the Mayo complex after hospital nursing units have been relocated to replacement facilities on the Powell Hall site.

Site Description

The site in the Mayo complex includes Floors 2 and 3 of the Eustis Building, constructed in 1928, and Floors 1, 2, and 3 of the Mayo Building, constructed in 1954. The present floor and roof structure within the court at Floor 1 are not aligned with adjoining floor levels in the Mayo complex and are not designed to support additional floors.

Program Accommodation

This option will consolidate the Nursing program on a single site within the Health Sciences center adjacent to the Basic Sciences and to Hospital facilities for inpatient and ambulatory care, with convenient access to the Biomedical Library, the Schools of Medicine, Public Health, and Dentistry and to the College of Pharmacy (see options). The program for Health Sciences shared classrooms will be adjacent to existing auditorium facilities and convenient to similar facilities in Unit A.

Program Accommodation  
(continued)

Relationships between functional elements within Nursing generally will maintain design criteria established by the program. In general, Option N4 will satisfy net area requirements for Health Sciences and Nursing programs. However, the number of Nursing faculty offices containing two desks will be increased from 10 to 18 and the number of offices containing one desk will be reduced from 72 to 56, so that all faculty offices and administrative spaces can be located on Floor 3. This modification to the Nursing program will result in an equal number of faculty work stations, but will reduce the number of single offices. Net area requirements will be altered as follows:

Option	Program	Program Area	Assigned Area
N4	Nursing	35,375 NSF	35,160 NSF
	Health Sciences (shared facilities)	2,665 NSF	2,700 NSF
Total		38,040 NSF	37,860 NSF

Health Sciences Planning

Accommodation of the Nursing and Health Sciences programs in the Mayo complex will require the use of all the space made available of Floors 2 and 3 by the scheduled relocation of the clinics to Unit B/C. This option will permit programmed expansion of hospital departments on Floors 1 and 2, but will defer programmed expansion of clinical departments on Floor 3 until the completion of replacement facilities for other hospital departments in an expanded Unit K or on the Powell Hall site. Other hospital departments scheduled for relocation to Unit B/C will provide the first increment of expansion area required for Laboratory Medicine on Floor 2,

After the scheduled relocation of clinics and other departments to Unit B/C, the following relocations will be made in Mayo to consolidate the site for Option N4:

Floor	Function to be Relocated	Area
1	Central Pharmacy Offices	900 SF
2	Lab. Medicine Offices	275 SF
3	Dentistry Clinic	625 SF
TOTAL		1,800 SF

The use of the Medical School student adytum on Floor 1 will be terminated if this option is implemented.

Interim facilities for Nursing will not be required in the implementation of this option.

Building Systems

Option N4 will include extensive renovation on three floors in the Mayo complex to accommodate the Nursing program. Extensive relocation of partitions and replacement of floor and ceiling finishes will be required to provide large teaching spaces on Floor 2 and to accommodate the number of office spaces required on Floor 3. Existing mechanical systems will be retained and supplemented by the addition of a mechanical tower at the northwest corner of the building. The new tower will house mechanical equipment for portions of the existing building which are not serviced by air conditioning or ventilation system.

Additional work required to conform with life safety and building codes will include the addition of sprinklers to Floor 1, the construction of protected exitways on Floor 2, the installation of fire alarm systems on Floors 2 and 3 of the Eustis wing, and the completion of fire divisions on all three floors.

Estimated project costs include an allowance to satisfy energy code criteria for this project. The full extent of these corrections will be determined in detailed planning if this option is implemented.

Schedule

The construction of Option N4 will consist of the renovation of vacated space on three floors in the Mayo complex, including remodeled facilities for functions that are relocated to consolidate the site.

The date projected for the start of construction is based on the time required to complete design and contract documents, including surveys of field conditions (particularly of mechanical and electrical services and distribution).

The duration of work is based on the scope and complexity of renovation.

The projected schedule for Option N4 is as follows:

Item	Start	End	Duration
Design and contract documents	Jun 77	Oct 78	16 months
Review, bid and award	Oct 78	Jan 79	3 months
Renovation of vacated space	Jan 79	Jul 80	18 months
Occupancy	Jul 80	Aug 80	1 month

Project Cost

The estimated cost includes assumed building costs and contingency based on the scope and complexity of the work (including a small amount of additional renovation and relocation of facilities to consolidate the site), non-building costs based on a percentage of the building costs and escalation costs derived from the assumed project schedule.

The total project cost to house only the School of Nursing in Option N4 is estimated to be as follows:

\$5,942,528.00

## Summary

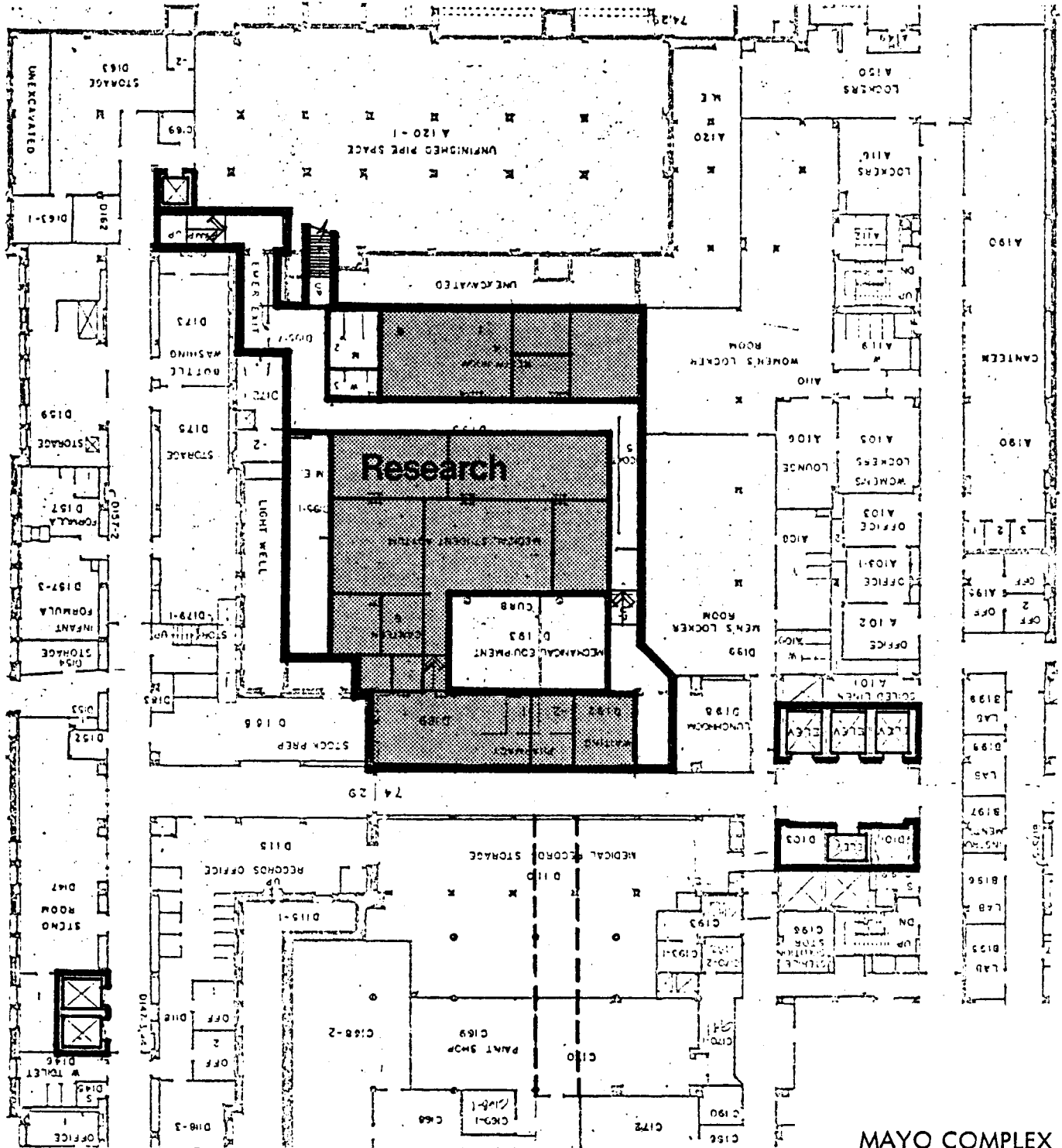
The advantages and disadvantages of Option N4 are summarized as follows:

## Advantages

1. The Nursing program is generally consolidated in a single location.
2. Existing space is reused in the Mayo complex (Eustis wing) to accommodate Nursing program, generally, in accordance with previous planning.
3. The allocation of space for the Nursing program allows programmed expansion of hospital services on Floor 1 and for some laboratory medicine functions on Floor 2.

## Disadvantages

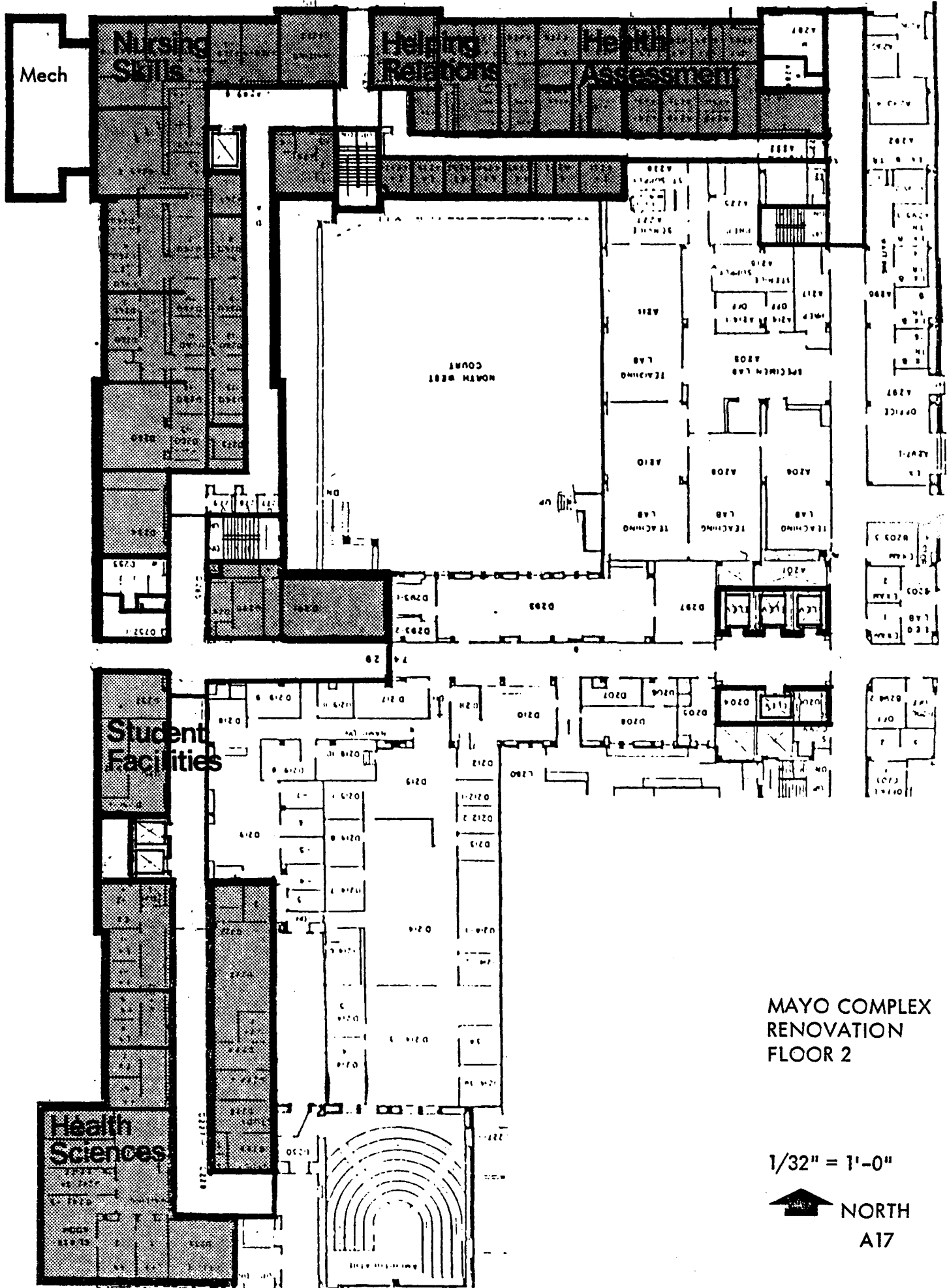
1. More space is required on Floor 3 than previously allocated, and the accommodation of this option defers programmed expansion for Orthopedic Surgery and Anesthesiology departmental offices until the completion of other facilities.
2. Based on existing building and corridor configurations, the number of offices containing single desks will be reduced from 72 to 56 and the number of offices containing two desks will be increased from 10 to 18. Configurations of offices will be irregular.
3. Expansion for future Nursing programs in additional renovated space in the Mayo complex would be deferred until the completion of replacement facilities for some Hospital functions in an expanded Unit K or on the Powell Hall site.



MAYO COMPLEX  
RENOVATION  
FLOOR 1

1/32" = 1'-0"



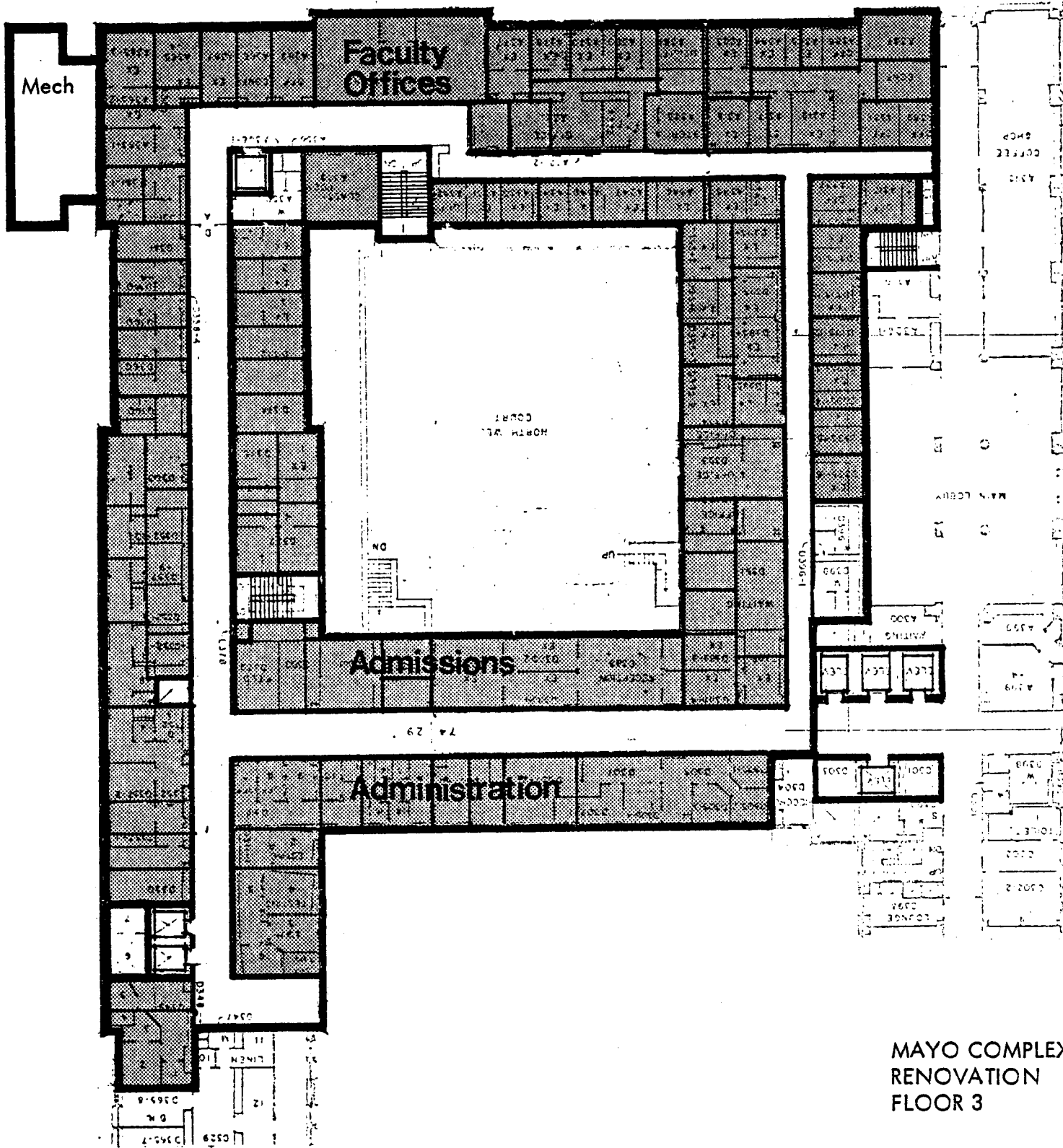


MAYO COMPLEX  
RENOVATION  
FLOOR 2

1/32" = 1'-0"







MAYO COMPLEX  
RENOVATION  
FLOOR 3

1/32" = 1'-0"



Description

Composite Option 12	Site Location	Site Condition
Pharmacy	Unit B/C, Floor 7 Unit A Plaza	Shell Space New construction
Nursing	Mayo Complex (vacated clinics & infilled court)	Renovation and new construction

Area Summary

Composite Option 12	Net Assignable (square feet)	Gross (square feet)
Pharmacy	70,700	131,050
Nursing	40,750	57,630
TOTAL	111,450	188,680

Project Schedule

Composite Option 12	Project Schedule		Duration months
	start	finish	
Pharmacy	July 78	July 80	24
Nursing	Jan 79	Jan 81	24

Estimated Project Cost

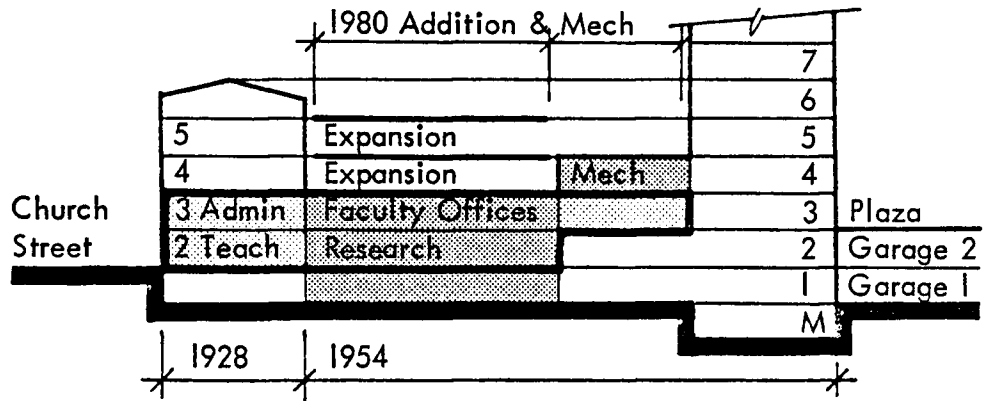
Composite Option 12	Estimated Cost
Pharmacy	\$ 15,204,120
Nursing	\$ 10,480,248
TOTAL	\$ 25,684,368

NOTE:

\* Description of Pharmacy Option P58 is contained in Composite Option 10. See Page A-2. Description of Nursing space for this combined option begins on the following page.

Description of Option

Option N54 will locate the entire program of teaching, research and administrative spaces on Floors 2 and 3 in the northwest court area of the Mayo complex. This option requires a three story addition within the existing courtyard and the relocation of some hospital functions to supplement space made available by the scheduled relocation of clinics and other departments to Unit B/C.



MAYO COMPLEX NORTHWEST COURT SECTION LOOKING NORTH

Floor 2 will contain student spaces, research laboratories and teaching spaces for nursing skills, helping relationships and health assessment. Health Sciences shared classrooms will be located on this level connected to the auditoria in Unit A and to library facilities in Diehl Hall by the Health Sciences pedestrian concourse.

Floor 3 will contain administration and faculty offices associated with the entrance from the plaza at this level.

Expansion for future Nursing programs may be accommodated by renovation of Floors 4 and 5 and by additional infill construction in the northwest court of Mayo after hospital nursing units have been relocated to the replacement facility on the Powell Hall site.

Site Description

The site in the Mayo complex includes Floors 2 and 3 of Eustis Building, constructed in 1928, and Floors 2 and 3 of the Mayo Building, constructed in 1954. The present floor and roof structure within the court at Floor 1 are not aligned with adjoining floor levels in the Mayo complex and are not designed to support additional floors.

Program Accommodation

This option will consolidate the Nursing program on a single site within the Health Sciences center adjacent to the Basic Sciences and to Hospital facilities for inpatient and ambulatory care, with convenient access to the Biomedical Library, the Schools of Medicine, Public Health and Dentistry, and the College of Pharmacy (see options). The program for Health Sciences shared classrooms will be adjacent to existing auditorium facilities in Mayo and convenient to similar facilities in Unit A.

For combined Option #12

Program Accommodation  
(continued)

In this option, relationships between functional elements within Nursing will satisfy design criteria established by the program. Net area requirements for the Nursing and Health Sciences programs will be satisfied as follows:

Option	Program	Program Area	Assigned Area
N54	Nursing	35,375 NSF	38,050 NSF
	Health Sciences (shared facilities)	2,665 NSF	2,700 NSF
Total		38,040 NSF	40,750 NSF

Health Sciences  
Planning

Accommodation of the Nursing and Health Sciences programs will require most of the space made available on Floors 2 and 3 by the scheduled relocation of clinics to Unit B/C. This option will permit programmed expansion of hospital departments on Floors 1 and 2 but will defer programmed expansion of clinical departments and Hospital administration of Floor 3 until the completion of replacement facilities for other hospital departments in an expanded Unit K or on the Powell Hall site. Other hospital departments scheduled for relocation to Unit B/C will provide the first increment of expansion area required for Laboratory Medicine on Floor 2, the remainder of which will be deferred until the completion of replacement facilities for other Hospital departments.

Construction of the courtyard addition will provide 4,000 net square feet on Floor 1, not assigned to Nursing, which may be used as a site for a portion of Laboratory Medicine's deferred expansion or for consolidation of the School of Public Health within the Health Sciences center.

After the scheduled relocation of clinics and other departments to Unit B/C, the following relocations will be made in Mayo to consolidate the site for Option N54.

Floor	Function	Area
2	Blood Bank Lab	1,500 SF
	Lab Medicine Offices	275 SF
TOTAL		1,775 SF

The use of the Medical School student adytum will be terminated if this option is implemented.

Interim facilities for Nursing will not be required in the implementation of this option.

## Building Systems

Option N54 will include extensive renovation of two floors in Mayo and the construction of a three story addition with the northwest court. Extensive relocation of partitions and replacement of floor and ceiling finishes will be required to accommodate the nursing program on this site. Existing mechanical systems will be retained and supplemented by the addition of a mechanical tower at the northwest corner of the building. The new tower will house mechanical equipment for portions of the existing building, which are not served by air conditioning or ventilation systems.

The courtyard addition will require demolition of the roof slab of the existing one story building so that the new floor slabs will align with floor levels in the rest of the Mayo complex. The addition will contain two elevators and will be designed to provide two additional floors for vertical expansion. The addition will be air conditioned with mechanical equipment space located on the roof of the Mayo building on Floor 4.

Additional work required to conform with life safety and building codes will include the addition of sprinklers to the new construction at Floors 1, 2, and 3, the construction of protected exitways on Floor 2, the completion of fire divisions on all three floors, and the installation of fire alarm systems on Floors 2 and 3 of the Eustis wing.

Estimated project costs include an allowance to satisfy energy code criteria for this project. The full extent of these corrections will be determined in detailed planning if this option is implemented.

## Schedule

The construction of Option N54 will consist of two parts:

1. Renovation of vacated space on two floors, including remodeled facilities for functions that are relocated to consolidate the site.
2. Construction of an infill addition within the court, following the demolition of existing structure.

The dates projected for the start of construction are based on the time required to complete design and contract documents, including surveys of field conditions (particularly of mechanical and electrical services and distribution), and to remodel replacement facilities in preparation for relocating the hospital functions described in a previous section. The durations of work are based on the scope and complexity of renovation or construction.

In this option, demolition and construction of the infill addition within the court must be accomplished under restricted work conditions to minimize the impact on nearby patient care facilities on Floors 4, 5, and 6, including post-anesthesia recovery unit, an intensive care unit, and bedrooms in several nursing units.

## Schedule (continued)

The projected schedule for Option 54 is as follows:

Item	Start	End	Duration
Design and contract documents	Jun 77	Oct 78	16 months
Review, bid and award	Oct 78	Jan 79	3 months
Construction of infilled court	Jan 79	Jan 81	24 months
Renovation of vacated space	Apr 79	Oct 80	18 months
Occupancy	Jan 81	Feb 81	1 month

## Project Cost

The estimated project cost includes assumed building costs and contingency based on the scope and complexity of work (including a small amount of renovation and relocation of facilities to consolidate the site), non-building costs based on a percentage of the building costs and escalation costs derived from the assumed project schedule.

The total project cost to house only the School of Nursing in Option N54 is estimated to be as follows:

\$10,480,248.00

## Summary

The advantages and disadvantages of Option N54 are summarized as follows:

## Advantages

1. The Nursing program is consolidated in a single location.
2. Existing space is reused in the Mayo complex to accommodate facilities.
3. The particular advantages from infilling the court are as follows:
  - a. Allows consolidation of Nursing program on two floors.
  - b. Reduces the amount of through-traffic within the space allocated to Nursing.
  - c. Provides additional space of Floor 2 for the programmed expansion of Laboratory Medicine functions.
  - d. Allows additional options for planning larger teaching spaces such as the nursing skills laboratory, or suites of typical spaces such as faculty offices.

## Disadvantages

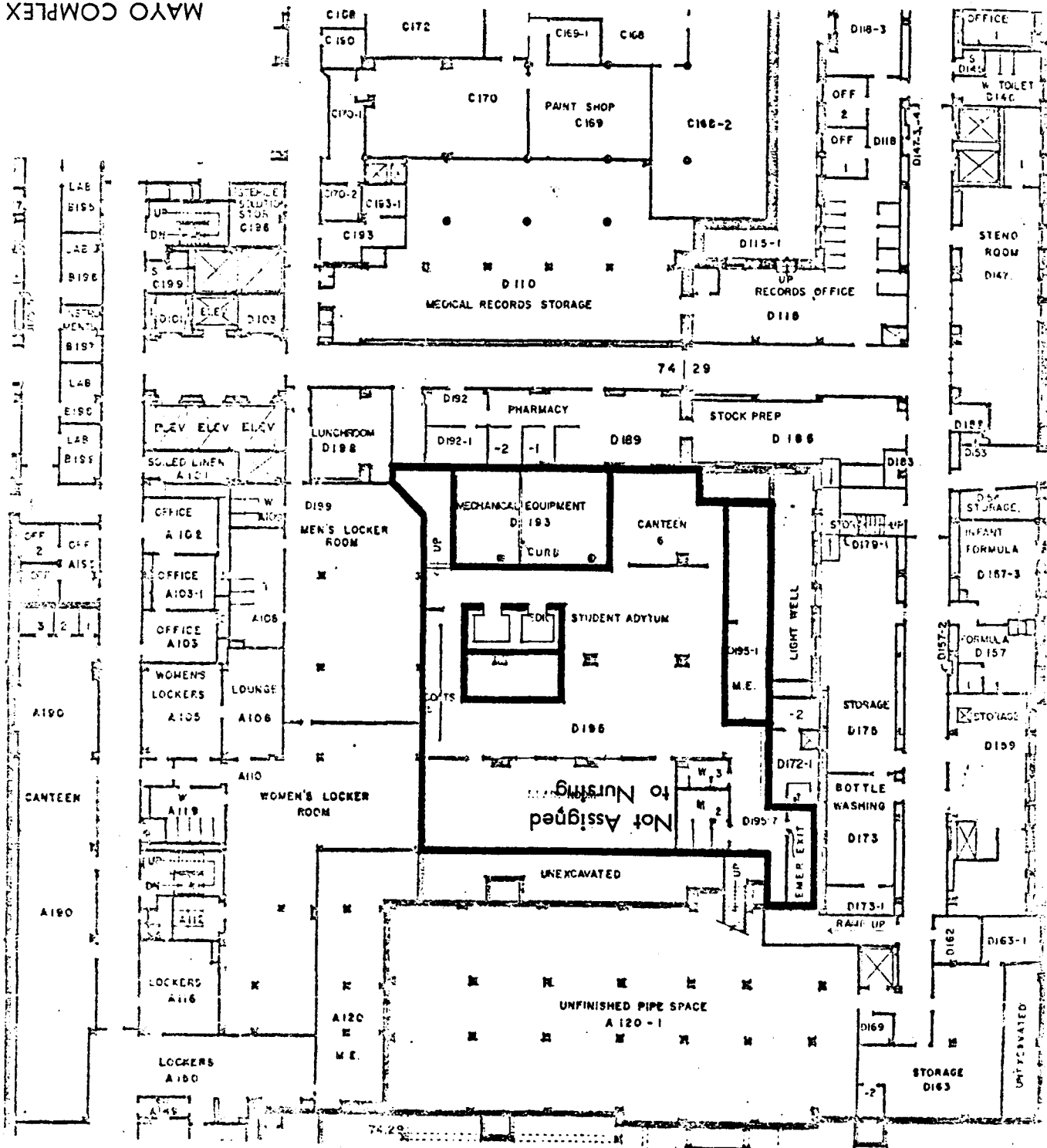
1. To minimize relocation of existing hospital function while consolidating the Nursing program on two floors, new infill construction is required adjacent to post-anesthesia recovery, intensive care and other nursing beds.
2. Construction of space on Floor 1 for functions not related to Nursing increases project costs.

NORTH



1/32" = 1'-0"

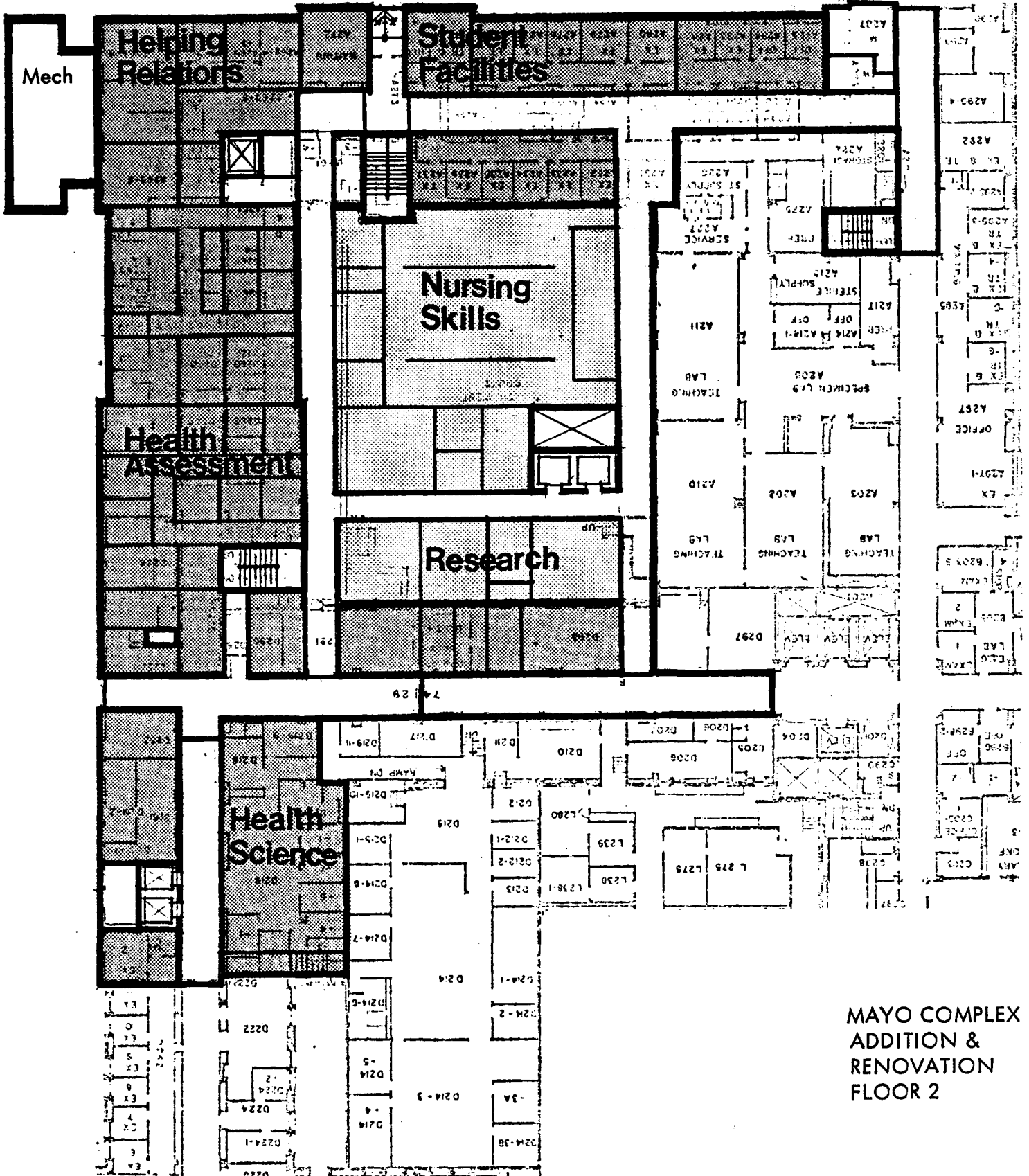
MAYO COMPLEX  
ADDITION &  
RENOVATION  
FLOOR 1



For combined Option #12

NURSING OPTION N54

PHARMACY/NURSING

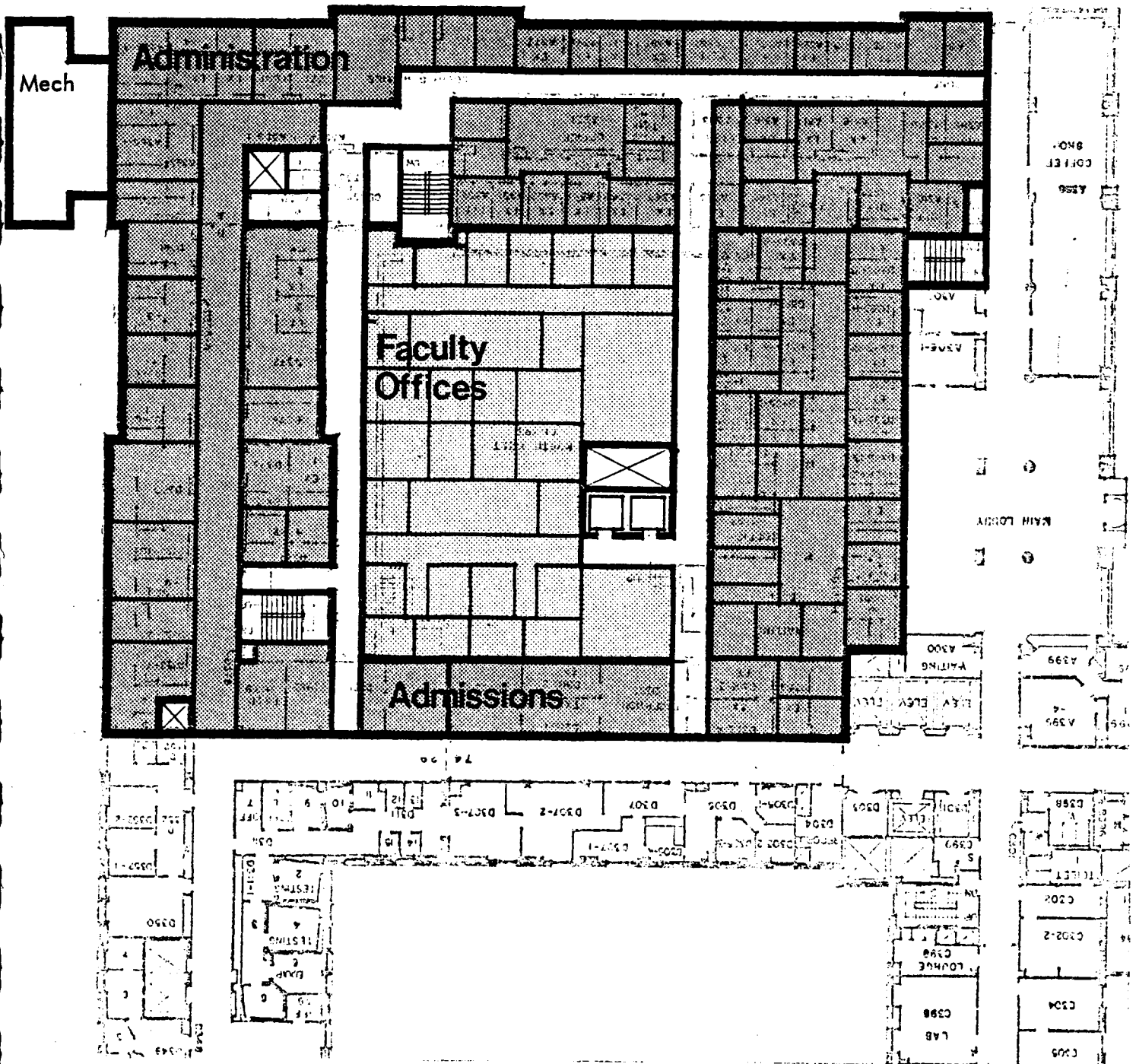


MAYO COMPLEX  
ADDITION &  
RENOVATION  
FLOOR 2

1/32" = 1'-0"

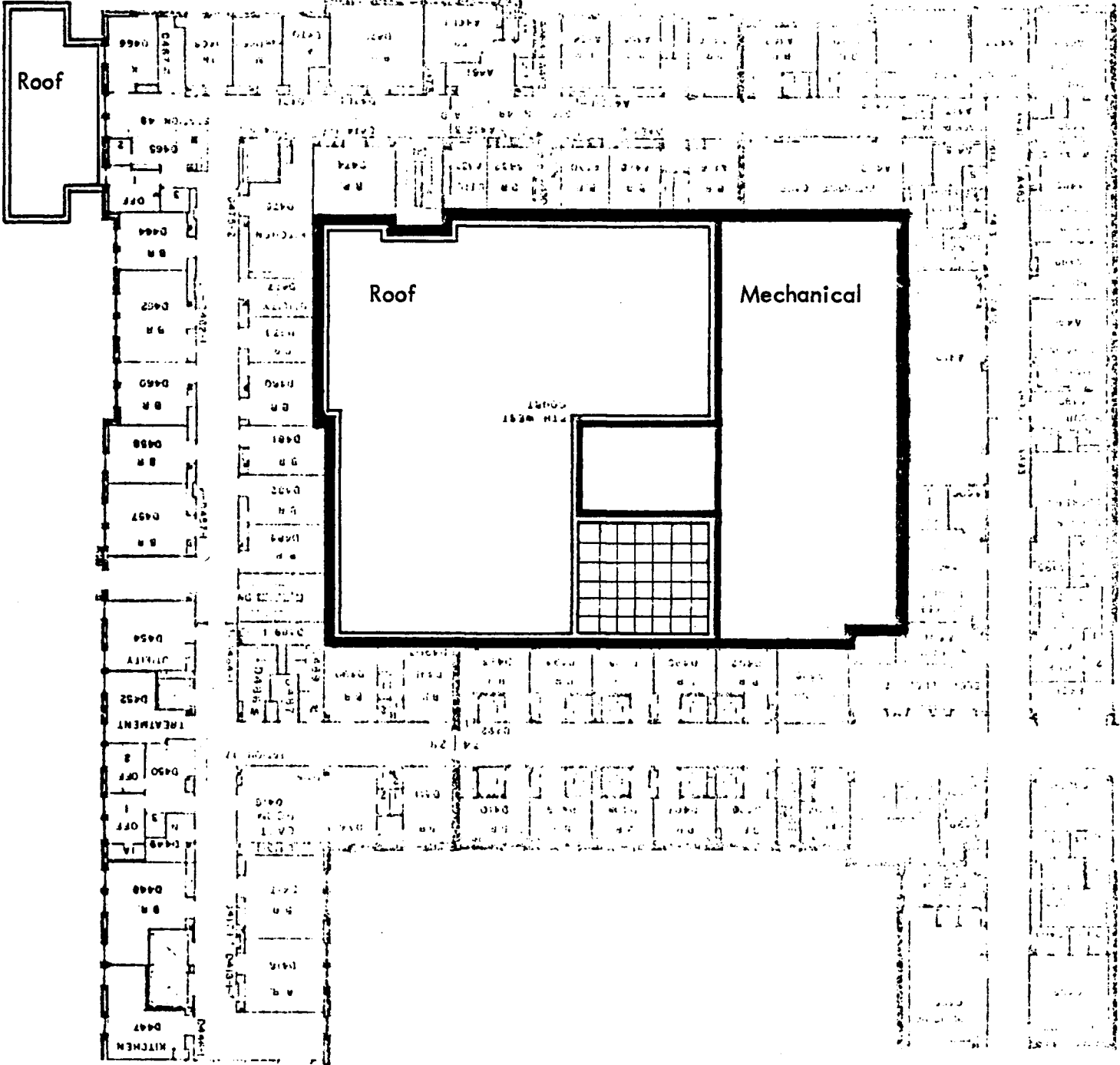






MAYO COMPLEX  
ADDITION &  
RENOVATION  
FLOOR 3

1/32" = 1'-0"  
▲ NORTH



MAYO COMPLEX  
ADDITION &  
RENOVATION  
ROOF

1/32" = 1'-0"



PHARMACY/NURSING

COMPOSITE OPTION 16

Description

Composite Option 16	Site Location	Site Condition
Pharmacy	Unit B/C, Floor 7 Mayo complex (vacated clinics and infilled court)	Shell Space Renovation and new construction
Nursing	Unit A Plaza	New construction

Area Summary

Composite Option 16	Net Assignable (square feet)	Gross (square feet)
Pharmacy	69,100	108,250
Nursing	43,200	88,950
TOTAL	112,300	197,200

Project Schedule

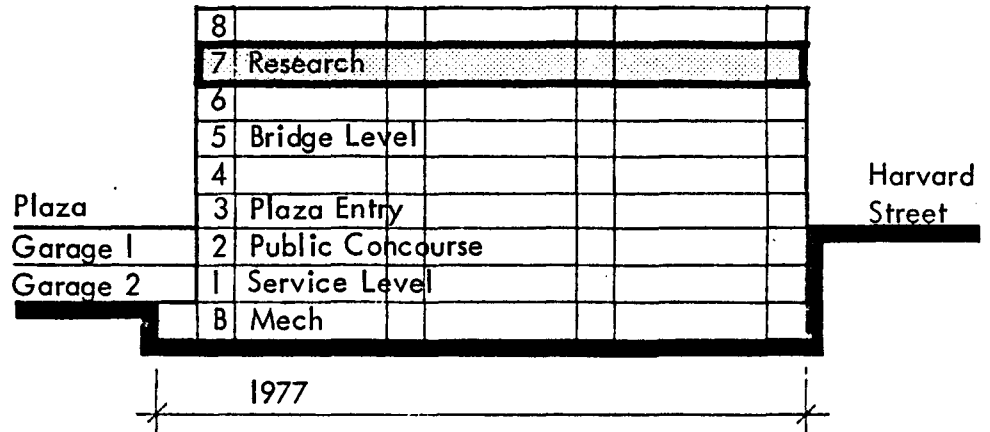
Composite Option 16	Project Schedule		Duration months
	start	finish	
Pharmacy	July 78	Jan 81	30
Nursing	July 78	July 80	24

Estimated Project Cost

Composite Option 16	Estimated Cost
Pharmacy	\$ 13,883,898
Nursing	\$ 10,832,035
TOTAL	\$ 24,715,933

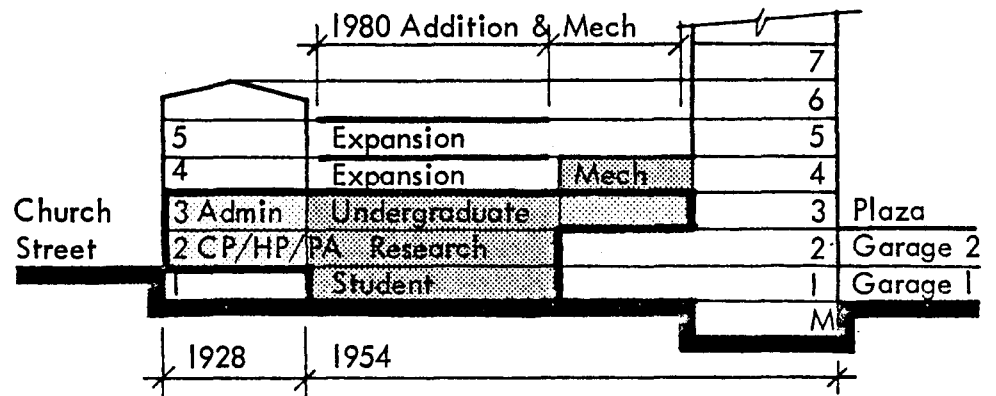
Description of Option

Option P60 will locate some research functions on Floor 7 of Unit B/C and the remainder of the program of research, teaching, and administrative spaces on Floors 1, 2 and 3 in the northwest court area of the Mayo complex, in areas made available by the scheduled relocation of outpatient clinics and other departments to Unit B/C, supplemented by an adjoining infill addition within the courts.



UNIT B/C  
SECTION LOOKING NORTH

Unfinished space on Floor 7 of Unit B/C will be completed to contain most research laboratories and associated service and animal facilities. The student/staff elevators will connect these functions with the plaza level entrance and with the Health Sciences pedestrian concourse on Floor 2. Service facilities will be accessible to major Health Sciences supply routes on Floor 1, using the dedicated service elevator associated with the student/staff elevators. Animal facilities will have direct access to the animal elevator in Unit A and to established animal circulation routes.



MAYO COMPLEX NORTHWEST COURT  
SECTION LOOKING NORTH

Description of Option  
(continued)

Floor 1 in the Mayo complex will contain student facilities, which include lockers, lounge, and meeting spaces.

Floor 2 will contain research and teaching departments. The Health Sciences pedestrian concourse at this level provides access to the auditoria in Unit A and library facilities in Diehl Hall.

Floor 3 will contain undergraduate and administrative spaces associated with the entrance from the plaza at this level.

Greenhouse facilities will be located on Floor 10 of Unit B/C.

Expansion for future Pharmacy programs may be accommodated by renovation of Floors 4 and 5 and additional infill construction in the northwest court of Mayo after hospital nursing units have been relocated to the replacement facility on the Powell Hall site.

## Site Description

Presently under construction as shell space, Floor 7 of Unit B/C is the first level above grade which provides connection with Unit A and is served by separate staff/student and public elevator banks.

This floor is also served by a service elevator and has direct access to the animal elevator in Unit A.

The site in the Mayo complex includes Floors 2 and 3 of Eustis Building, constructed in 1928, and Floors 1, 2, and 3 of the Mayo Building, constructed in 1954. The present floor and roof structure within the court at Floor 1 are not aligned with adjoining floor levels in the Mayo complex and are not designed to support additional floors.

## Program Accommodation

Option P60 will place the entire Pharmacy program in two locations in the Health Sciences center, with convenient access to the Basic Sciences, shared teaching facilities, the Biomedical Library, clinical departments of the Hospital and Medical School, and to the Schools of Public Health, Dentistry, and Nursing.

The separation of Pharmacy into two locations will not maintain internal functional criteria established by the program.

The division of Graduate Research Laboratories into two sites, with most functions along with all service and animal facilities located in Unit B/C, remote from the remainder of graduate and undergraduate laboratories in the Mayo complex, will preclude integration of research and teaching programs and will require extended trips between these facilities for faculty and students.

Program Accommodation  
(continued)

Net area requirements for the Pharmacy program will be satisfied in Option P60 as follows:

Option	Program	Program Area	Assigned Area
P60	Pharmacy	65,440 NSF	69,100 NSF

Health Sciences Planning

Accommodation of the Pharmacy program in the Mayo complex, in space made available by the scheduled relocation of outpatient clinics to Unit B/C, and in Floor 7 of Unit B/C, will permit programmed expansion of hospital departments in the Mayo complex on Floors 1 and 2, but will defer programmed expansion of clinical departments on Floor 3 until the completion of replacement facilities for other hospital departments in an expanded Unit K or on the Powell Hall site. Other hospital departments scheduled for relocation to Unit B/C will provide the first increment of expansion area required for Laboratory Medicine on Floor 2, the remainder of which will be deferred until the completion of replacement facilities for other hospital departments.

The use of Floor 7 in Unit B/C for Pharmacy functions would require another location elsewhere in the Health Sciences for the Hospital Dentistry clinic, originally planned for this space under the master plan.

After the scheduled relocation of clinics and other departments to Unit B/C, the following relocations would be made in the Mayo complex to consolidate the site for Option P60:

Floor	Function to be Relocated	Area
1	Central Pharmacy Offices	900 SF
2	Lab. Medicine Offices	275 SF
3	Dentistry Clinic	625 SF
TOTAL		1,800 SF

The use of the Medical School student adytum on Floor 1 will be terminated if this option is implemented.

Interim facilities for Pharmacy will not be required in the implementation of this option.

## Building Systems

Option P60 will include the completion of one floor of unfinished space in Unit B/C, extensive renovation on three floors in the Mayo complex, and the construction of an adjoining infill addition within the northwest court. In general, laboratory spaces will be developed in Unit B/C, the infill addition, and the newer portion of Mayo, and office spaces in the older Eustis wing. In renovation, extensive relocation of partitions and replacement of floor and ceiling finishes will be required to accommodate the Pharmacy program. Existing mechanical systems in the Mayo complex will be retained and supplemented by the addition of a mechanical tower at the northwest corner of the building. The new tower will house mechanical equipment for portions of the existing building, which are not served by air conditioning or ventilation systems.

The courtyard addition will require demolition of the roof slab of the existing one story building so that the new floor slabs will align with floor levels in the rest of the Mayo complex. The addition will contain three elevators and will be designed to provide two additional floors for vertical expansion. The addition will be air conditioned with mechanical equipment space located on the roof of the Mayo building on Floor 4.

Work in Unit B/C will include installation of additional elevators and mechanical systems to support the development of Floor 7 for Pharmacy laboratories.

Additional work required to conform with life safety and building codes in the Mayo complex will include the addition of sprinklers to Floor 1 and to the new construction at Floors 2 and 3, the construction of protected exitways on Floor 2, the completion of fire divisions on all three floors, and the installation of fire alarm systems on Floors 2 and 3 of the Eustis wing.

No corrective work will be required in Unit B/C to conform with life safety and building codes. The sprinkler system serving the shell space will be extended to protect the finished space.

Estimated project costs for work in the Mayo complex include an allowance to satisfy energy code criteria for this project. The full extent of these corrections will be determined in detailed planning if this option is implemented.

No additional work will be required in Unit B/C to conform with energy code criteria.

Schedule

The construction of Option P60 consists of three parts:

1. Completion of shell space on Floor 7 in Unit B/C.
2. Renovation of vacated space on three floors, including remodeled facilities for functions that are relocated to consolidate the site.
3. Construction of an infill addition within the court, following the demolition of existing structure.

The dates projected for the start of construction are based on the time required to complete design and contract documents for each site, including surveys of field conditions (particularly of mechanical and electrical services and distribution), and to remodel replacement facilities in preparation for relocating the hospital functions described in a previous section. The durations of work are based on the scope and complexity of renovation or construction.

In this option, demolition and construction of the infill addition within the court must be accomplished under restricted work conditions to minimize the impact on nearby patient care facilities on Floors 4, 5, and 6, including the post-anesthesia recovery unit, an intensive care unit, and bedrooms in several nursing units.

For Unit B/C, it is assumed that documents will be completed by April 1978, with review, bidding, and award of contracts by July 1978, at the completion of early Phase II construction and occupancy by hospital clinics on other floors.

Floor 7 in Unit B/C is scheduled for occupancy in July 1979, 18 months before the completion of work in the Mayo Complex.

The projected schedule, including float time as required for phasing of work, is as follows:

Item	Start	End	Duration
Design and contract documents	Jul 77	Apr 78	10 months
Review, bid, and award	Apr 78	Jul 78	3 months
Complete shell space in Unit B/C, Floor 7	Jul 78	Jul 79	12 months
Occupancy	Jul 79	Aug 79	1 month
Design and contract documents	Jun 77	Oct 78	16 months
Review, bid, and award	Oct 78	Jan 79	3 months
Construction of infilled court	Jan 79	Jan 81	24 months
Renovation in space vacated by clinics	Apr 79	Oct 80	18 months
Occupancy	Jan 81	Feb 81	1 month



## Project Cost

The estimated project cost includes assumed building costs and contingency based on the scope and complexity of work (including a small amount of additional renovation and relocation work to consolidate the site in the Mayo complex), non-building costs based on a percentage of the building costs and escalation based on the assumed project schedule.

The total project cost to house only the College of Pharmacy in Option P60 is estimated to be as follows:

\$13,883,898.00

## Summary

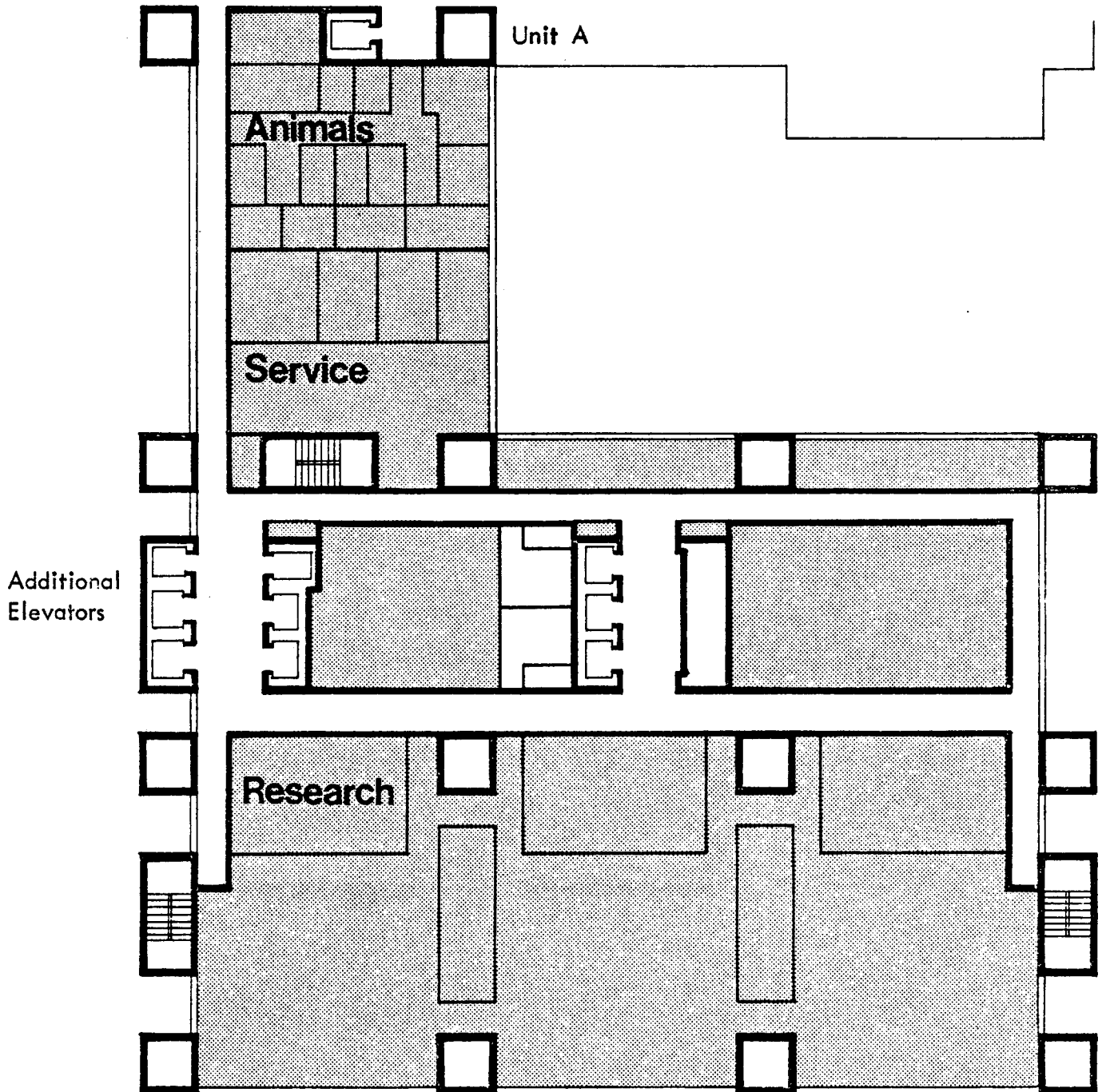
The table below summarizes the advantages and disadvantages of Option P60.

## Advantages

1. The Pharmacy program is integrated into the Health Sciences center.
2. Existing space is reused in the Mayo complex to accommodate facilities.
3. The allocation of space in the Mayo complex for the Pharmacy program allows programmed expansion of hospital services on Floor 1 and for some laboratory medicine functions on Floor 2.

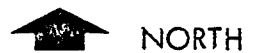
## Disadvantages

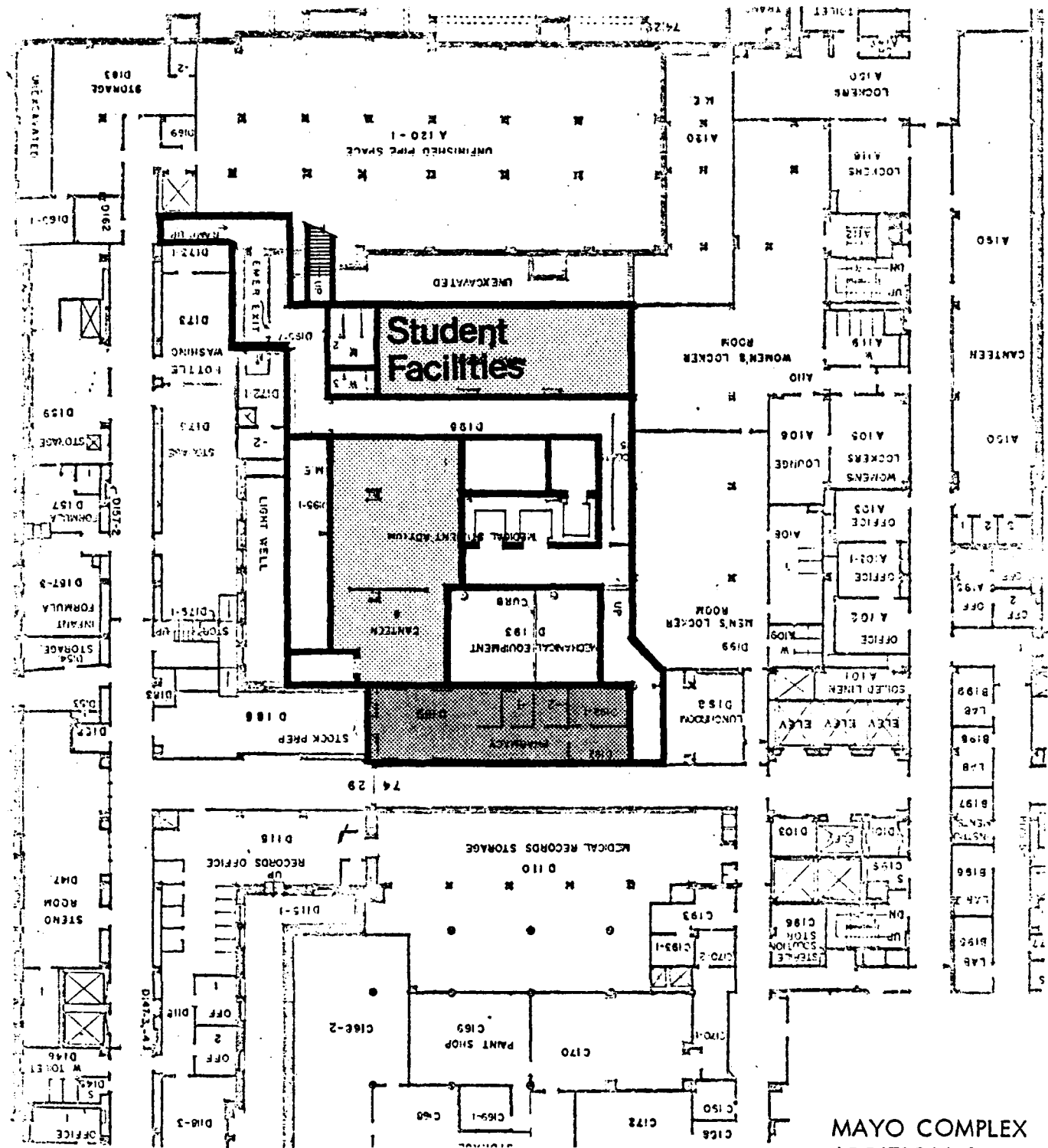
1. Certain internal functional adjacencies established by the program are not maintained because of the separation of program elements on two sites.
2. More space is required on Floor 3 than previously allocated, and the accommodation of this option defers programmed expansion for Orthopedic Surgery and Anesthesiology departmental offices until the completion of other facilities.
3. Requires construction of infill additions within court, adjacent to recovery, intensive care, and nursing beds.



UNIT B/C  
SHELL SPACE  
FLOOR 7

1/32" = 1'-0"

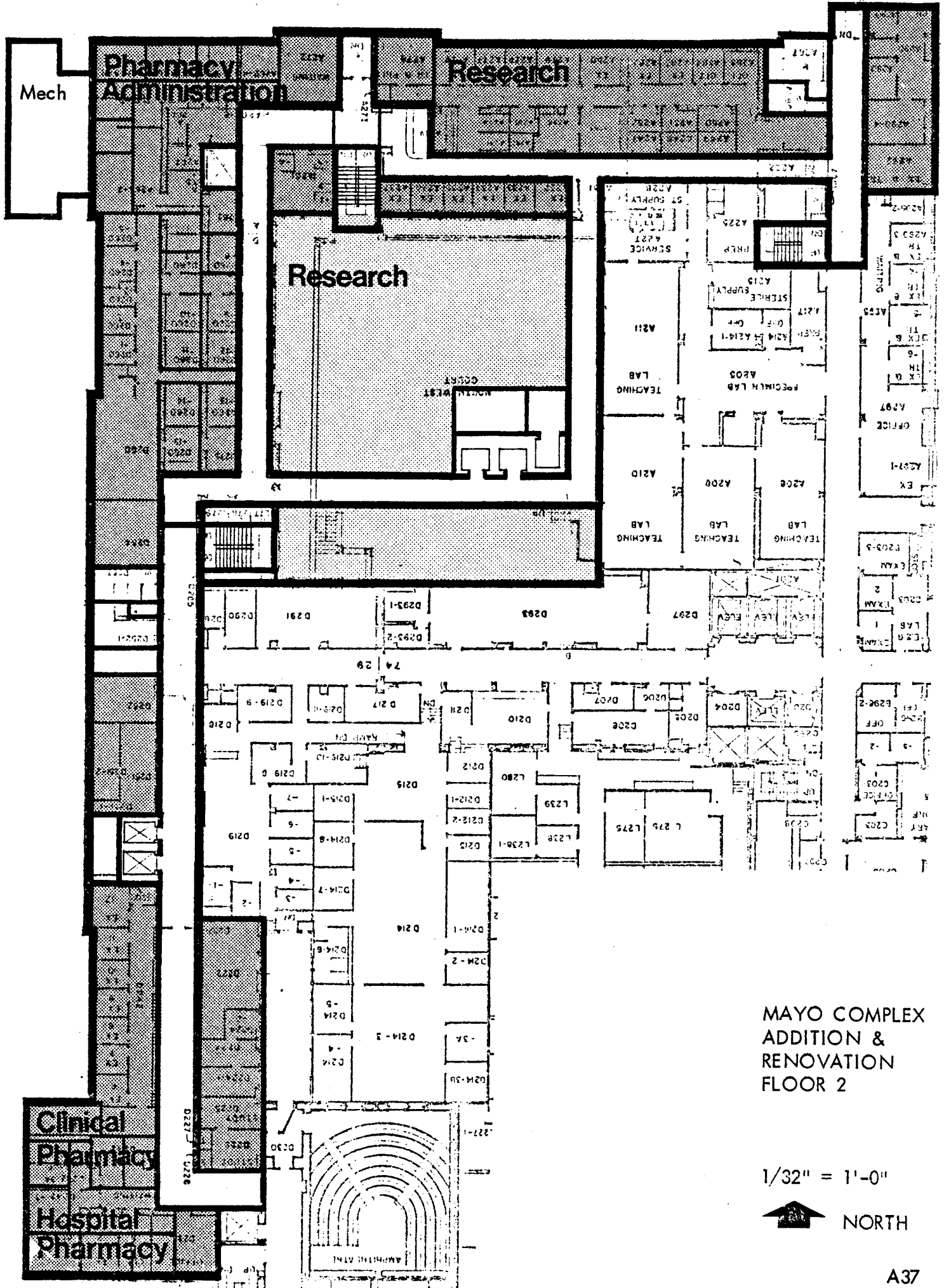




MAYO COMPLEX  
ADDITION &  
RENOVATION  
FLOOR 1

1/32" = 1'-0"

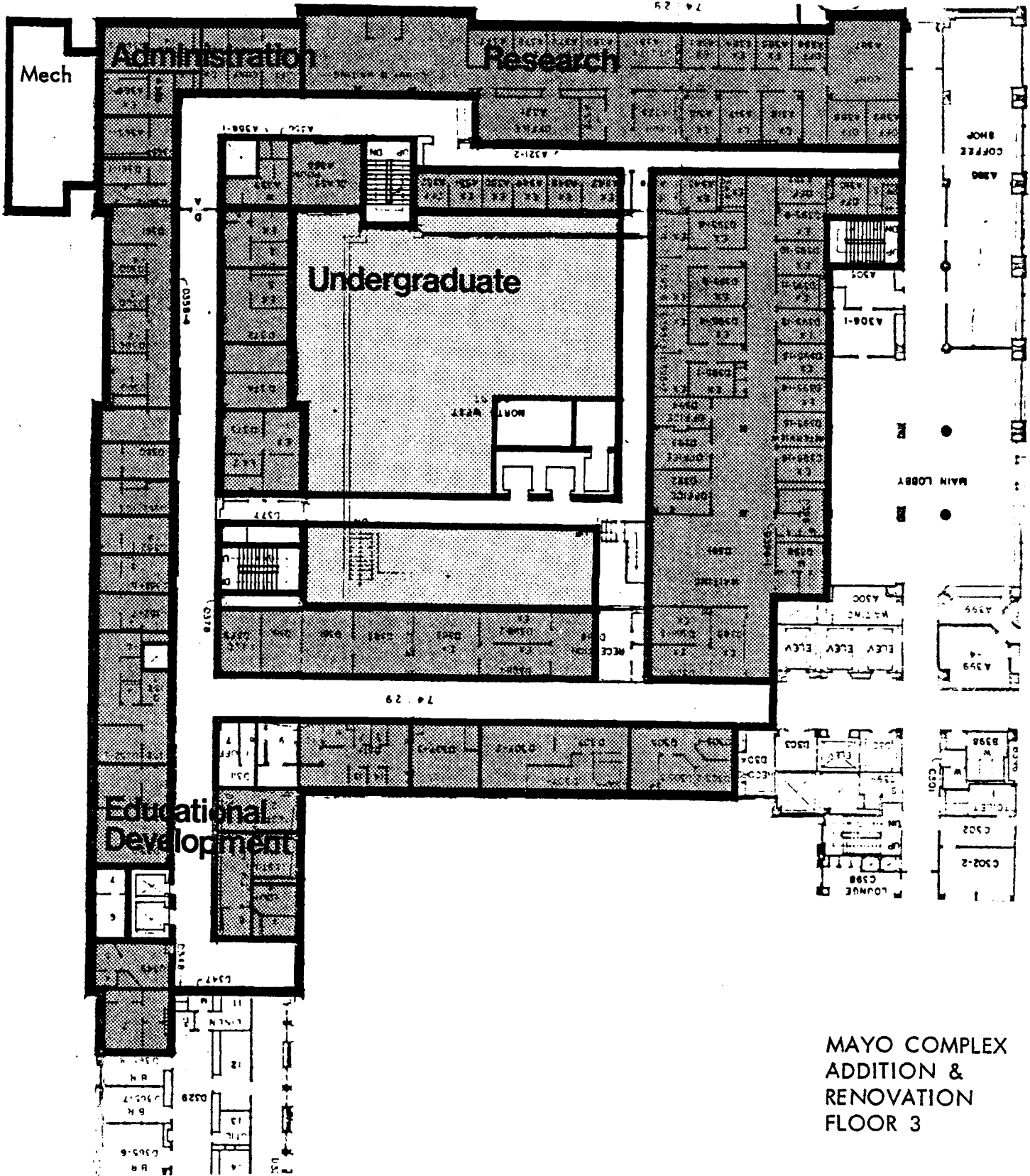




MAYO COMPLEX  
 ADDITION &  
 RENOVATION  
 FLOOR 2

1/32" = 1'-0"

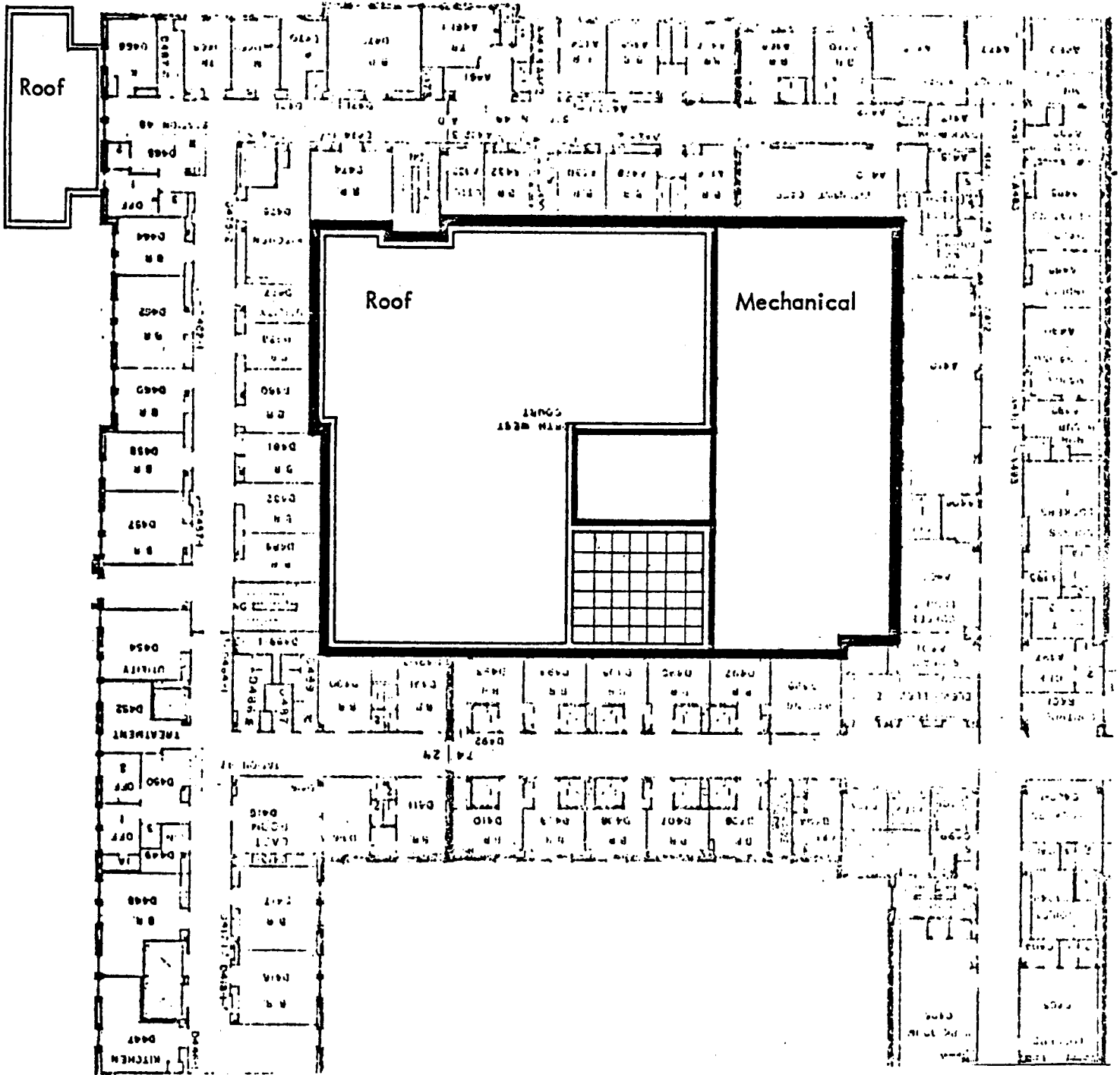




MAYO COMPLEX  
ADDITION &  
RENOVATION  
FLOOR 3

1/32" = 1'-0"





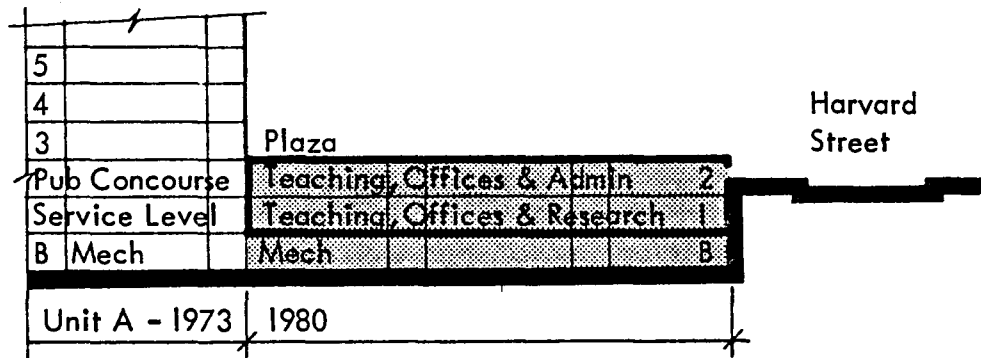
MAYO COMPLEX  
ADDITION &  
RENOVATION  
ROOF

1/32" = 1'-0"



Description of Option

Option N56 will locate all teaching, research and administrative functions on two floors in a new facility developed below the plaza to the east of Unit A.



UNIT A PLAZA  
SECTION LOOKING NORTH

Floor 1 will contain teaching facilities for nursing skills, helping relationships and health assessment, faculty offices, research laboratories and student spaces. This floor will include an extension of the Health Sciences supply route which will provide service access to this site.

Floor 2 will contain Nursing faculty offices and administrative facilities and shared facilities for the Health Sciences. This floor will include an extension of the Health Sciences pedestrian concourse and will form a new entrance.

Possible expansion for future growth of Nursing or other Health Sciences programs may be accommodated by construction of additional floors above the Unit A Plaza addition, if necessary.

Site Description

The site for the new addition to Unit A is occupied by three four-story apartment buildings and provides service access to the Unit A loading dock.

Program Accommodation

This option will consolidate the Nursing program on a single site within the Health Sciences center with convenient access to the Basic Sciences, Hospital facilities for inpatient and ambulatory care, the Biomedical Library, the School of Medicine, Public Health, and Dentistry and to the College of Pharmacy (see options). The program for Health Sciences shared classrooms will be adjacent to the auditoria in Unit A.

In general, relationships between functional elements within Nursing will satisfy design criteria established by the program. However, faculty offices will be located on both levels so that all teaching, research and student facilities may be grouped together on Floor 1.

Program Accommodation  
(Continued)

Net area requirements for the Nursing and Health Sciences programs will be satisfied in this option as follows:

Option	Program	Program Area	Assigned Area
N56	Nursing	35,375 NSF	40,160 NSF
	Health Sciences (shared facilities)	2,665 NSF	3,040 NSF
Total		38,040 NSF	43,200 NSF

Useable area in the space included under assigned area in excess of program area is required to provide additional circulation within "tenant" areas necessary for access to many small spaces required by the Nursing program.

Health Sciences Planning

Implementation of this option will permit scheduled expansion of Hospital and Medical School departments to proceed as planned in the Health Sciences center.

Prior to construction of the Unit A plaza addition, tenants in the Wilshire and Marlan Apartments will be relocated. Pharmacy occupants presently located in the Fenwick building will be temporarily housed in interim facilities on the third floor of Powell Hall in space vacated by the scheduled replacement of the Obstetrics and Gynecology clinic in Unit B/C. Additional spaces required for interim facilities will be temporarily located in other portions of Powell Hall.

Building Systems

Option N56 will include demolition of the apartment buildings which occupy the site and construction of a three level addition to Unit A below the plaza level. The new space will include a full basement for mechanical equipment and two elevators and will be designed to accommodate future expansion.

The Unit A plaza addition will comply with life safety and building codes. The building will require sprinkler systems because of its configuration and location below the plaza.

The Unit A plaza addition will be designed to satisfy the requirements of the energy code.



Schedule

The construction of Option N56 will consist of work at one site to provide new facilities on Floors B, 1 and 2 below an expanded plaza to the east of Unit A.

Dates projected for the start of construction are based on the time required to prepare phased design and contract documents for early excavation and structure in advance of the contract for general construction.

The projected schedule for Option N56, assuming phased construction for completion of Unit A Plaza, is as follows:

Item	Start	End	Duration
Contract documents, excavation	Jan 78	May 78	4 months
Review, bid and award	May 78	Jul 78	2 months
Excavation and foundations	Jul 78	Mar 79	8 months
Contract documents, structure	Mar 78	Aug 78	6 months
Review, bid and award	Aug 78	Sept 78	2 months
Construction, structure	Sept 78	Jul 79	10 months
Design and contract documents	Jun 77	Dec 78	18 months
Review, bid and award	Dec 78	Mar 79	3 months
Construction, Unit A Plaza	Mar 79	Jul 80	16 months
Occupancy	Jul 80	Aug 80	1 month

Project Cost

The estimated project cost includes assumed building costs and contingency based on the scope and complexity of work, non-building costs based on a percentage of the building costs and escalation costs derived from the assumed project schedule.

The total project cost to house only the School of Nursing in Option N56 is estimated to be as follows:

\$10,832,035.00

Summary

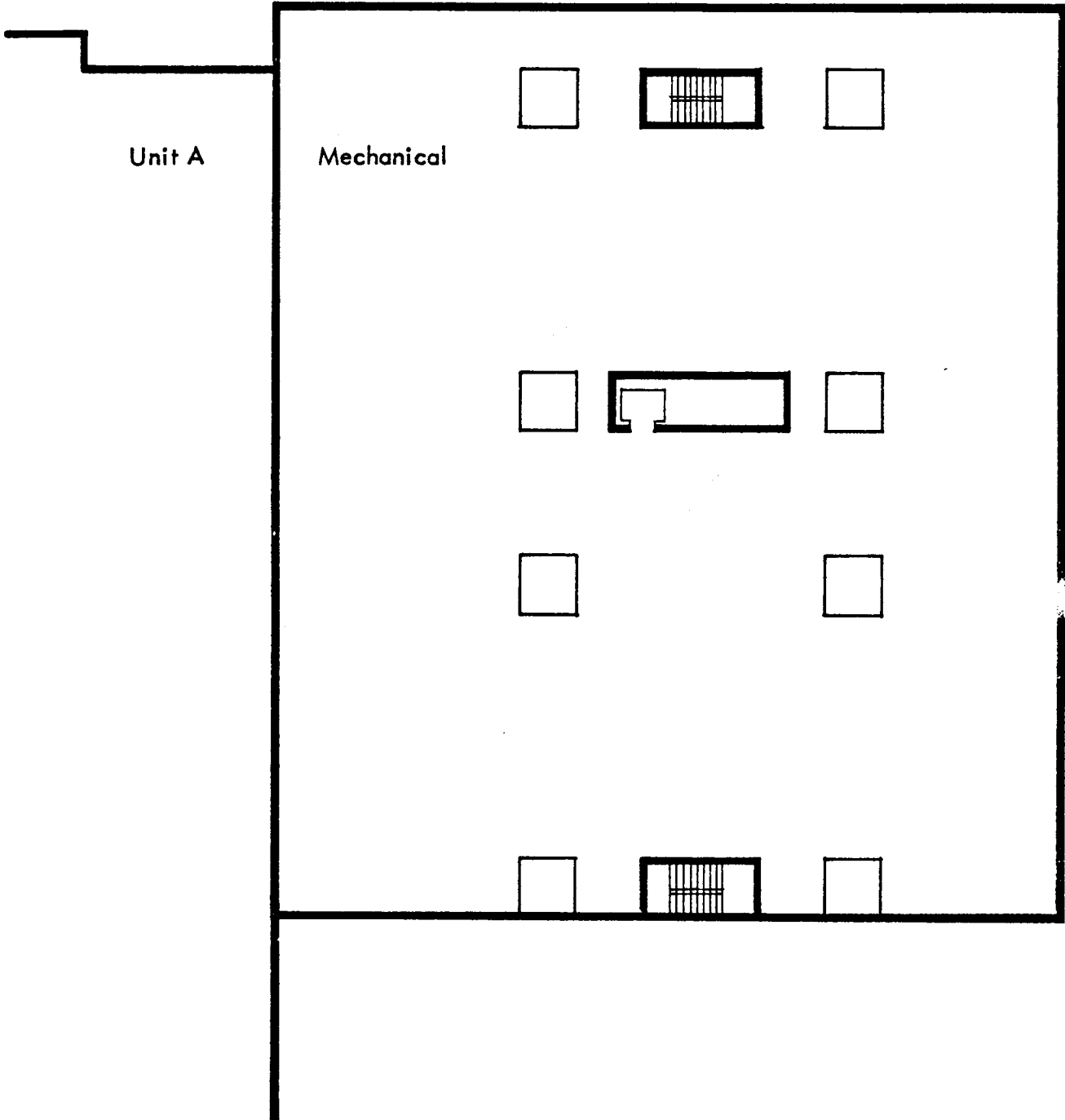
The advantages and disadvantages of Option N56 are summarized as follows:

Advantages:

1. The Nursing program is consolidated in a single location.
2. Development of option as described will allow vertical expansion on the site east of Unit A.
3. Implementation of option will permit scheduled expansion of Hospital and Medical School departments to proceed as planned in the Health Sciences center.

Disadvantages:

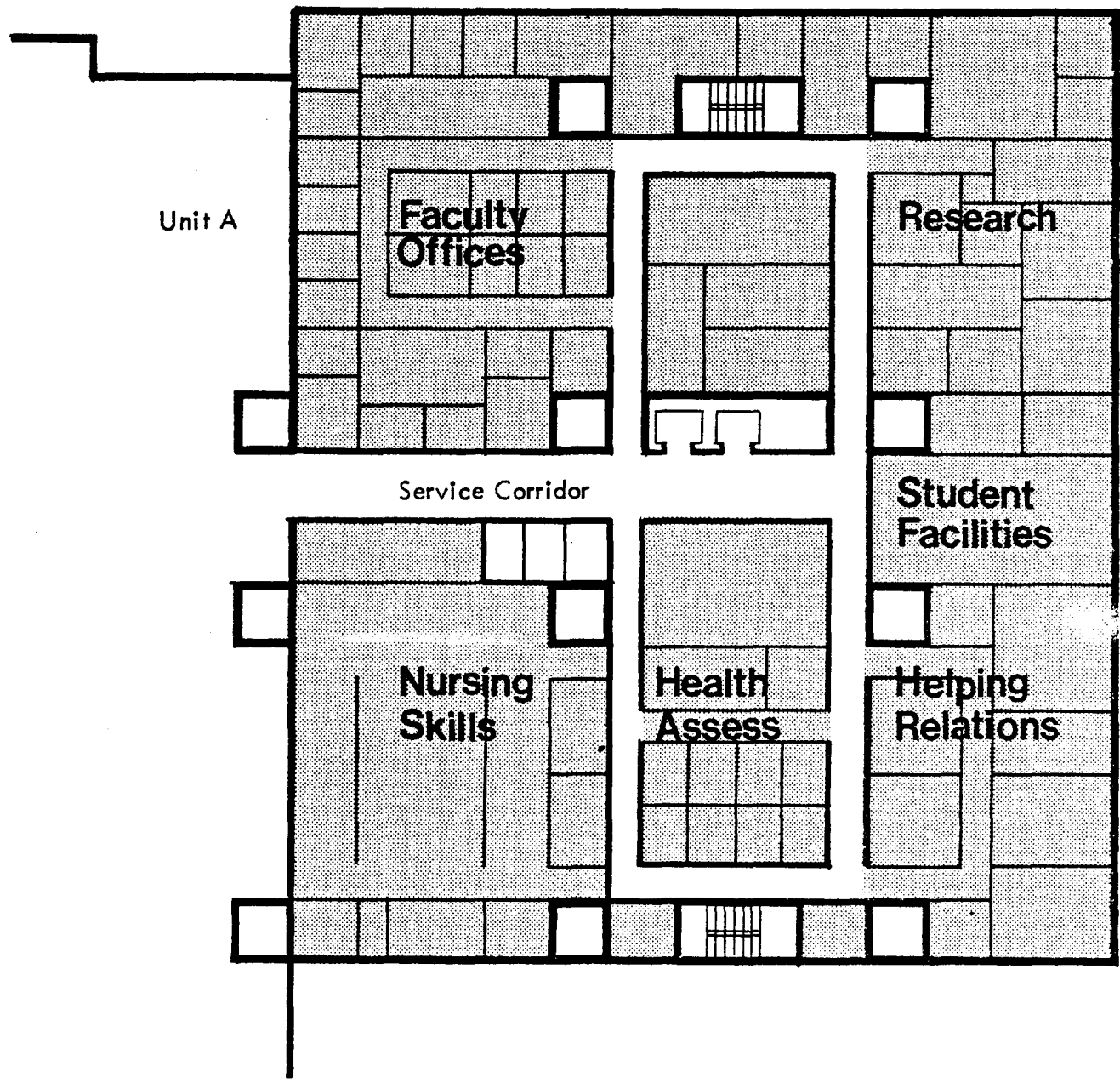
1. The allowance for future vertical expansion of the Unit A plaza addition results in a higher cost for this option.



UNIT A PLAZA  
ADDITION  
BASEMENT

1/32" = 1'-0"

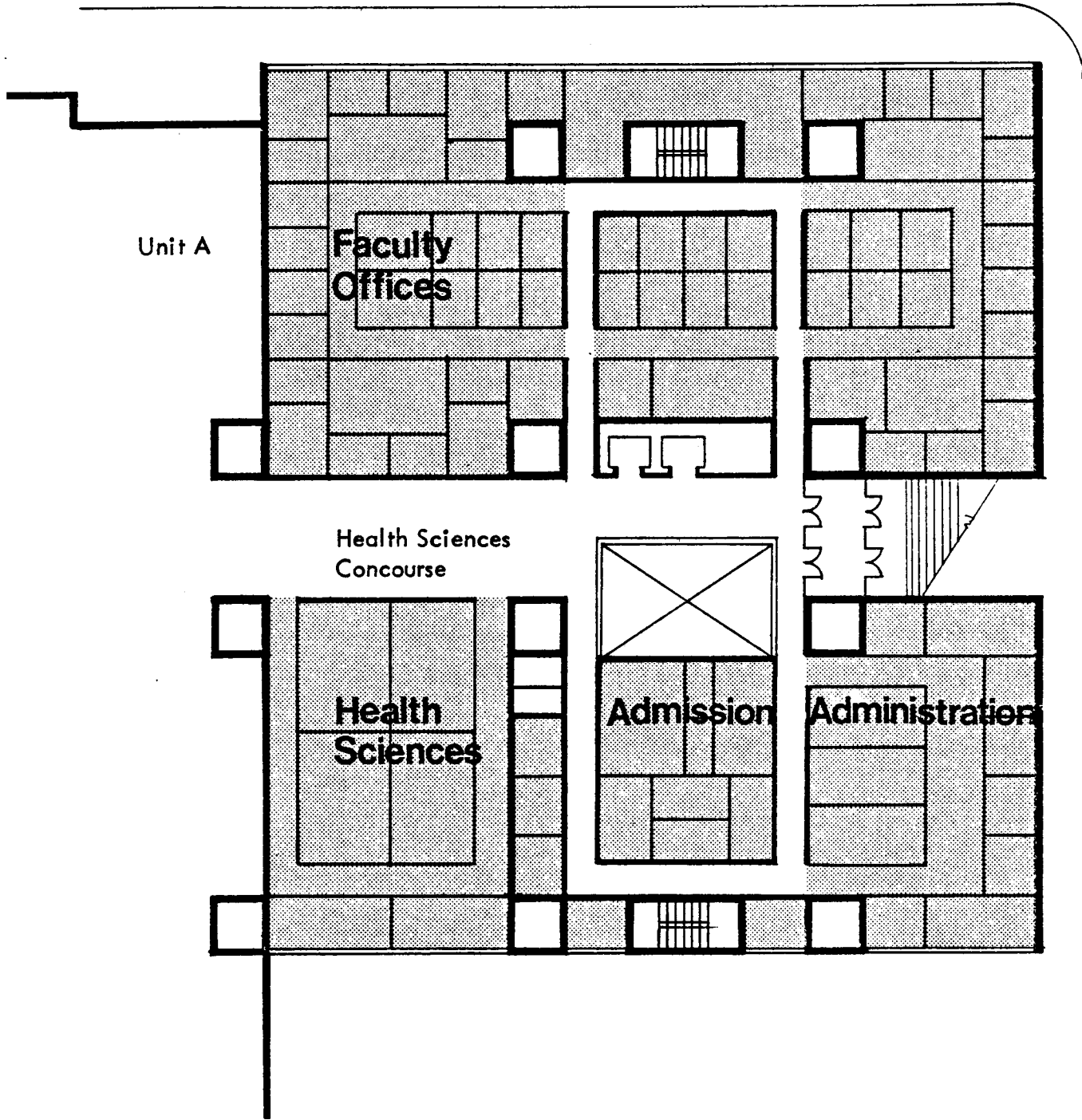




UNIT A PLAZA  
ADDITION  
FLOOR 1

1/32" = 1'-0"

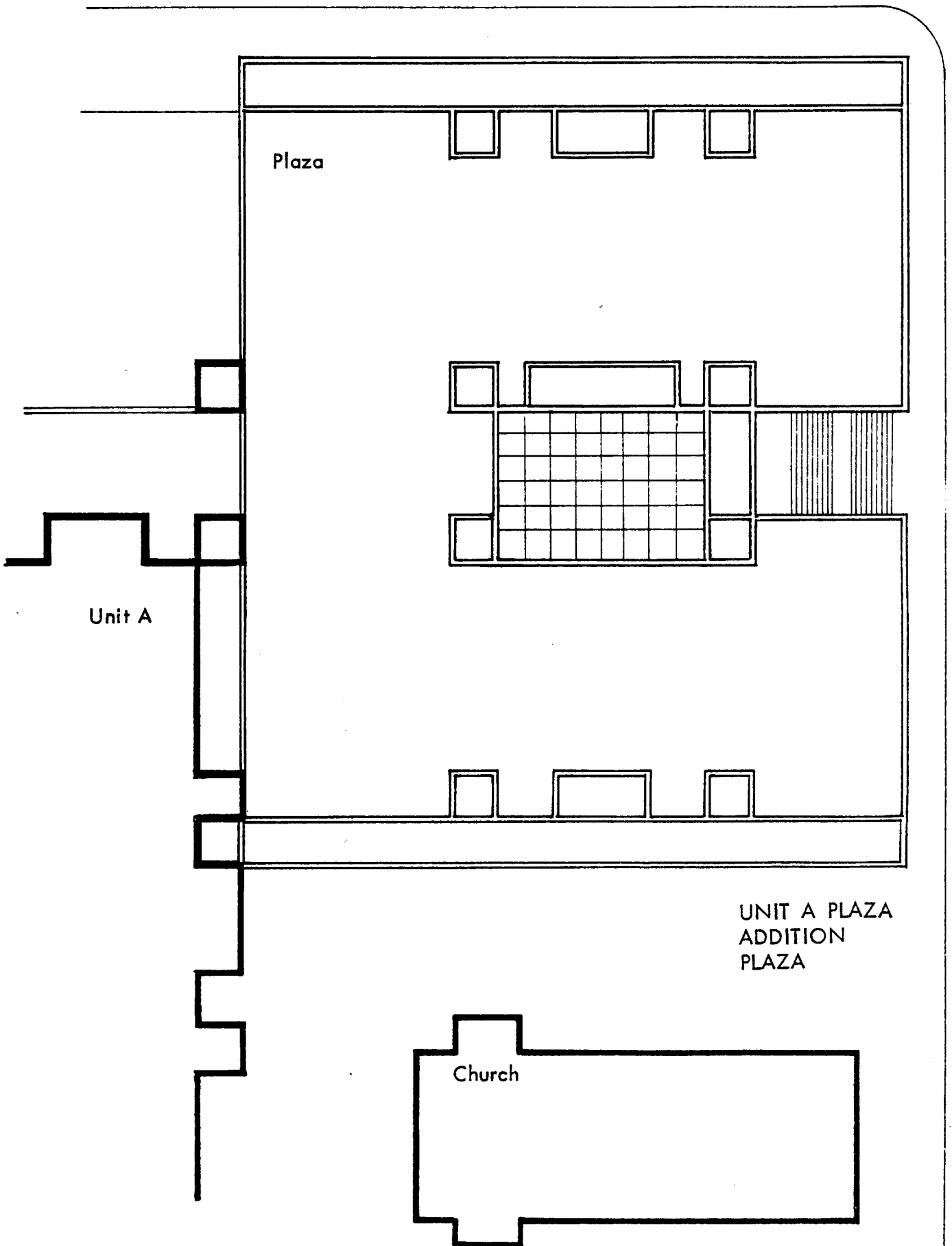




UNIT A PLAZA  
ADDITION  
FLOOR 2

1/32" = 1'-0"





# PHARMACY/NURSING

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PHARMACY/NURSING

PROGRAM

Introduction

The summary of required spaces is derived from plans of Unit F for the College of Pharmacy and School of Nursing, dated 15 March 1976. This tabulation lists the net area of all programmed spaces by departments and by functional groupings within departments. Net area multiplied by a factor results in unit area which approximates the area required for programmed spaces plus secondary circulation.

All spaces are measured from center lines of their enclosing partitions. Fixed building elements including structure, mechanical shafts, stairs, elevators, and perimeter walls are excluded. In addition, spaces not directly assignable to any specific department, such as lobbies, primary circulation, public toilets, and janitors' closets, are considered to be part of the building's gross area and are not listed.

The program of required spaces for Unit F, as incorporated into the referenced drawings, is modified in the Feasibility Study to apportion the Pharmacy/Nursing shared facilities between the separate programs. These facilities include data processing, faculty lounge, and student lockers, study and organization spaces. With this adjustment, the net area summaries for the programs used as the basis for the Feasibility Study are as follows:

Area Summary

College of Pharmacy

Program Division		Net Area Square Ft.	Unit Factor	Unit Area Square Ft.
18.1	Service	2,935	1.25	3,600
18.2	Undergraduate	11,300	1.25	14,100
18.3	Administration	6,360	1.25	8,000
18.4	CP/HP/PA	11,695	1.25	14,600
18.5	Research	28,230	1.25	35,300
	Animal Quarters	1,970	1.25	2,500
18.6	Support	2,950	1.25	3,700
Subtotal		65,440		81,800
<hr/>				
School of Nursing				
13.1	Reserach	3,065	1.25	3,800
13.2	Teaching	8,740	1.25	10,900
13.3	Faculty Offices	14,545	1.25	18,200
13.4	Administration	6,075	1.25	7,600
13.5	Support	2,950	1.25	3,700
Subtotal		35,375		44,200
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Shared Facilities				
17.0	Health Sciences	2,665	1.25	3,300
TOTAL		103,480		129,300



## Design Criteria

The following design criteria are derived from initial programming and master plan documents, grant applications and meeting notes of Unit F redesign and form the basis for evaluation of other options that accommodate facilities for the College of Pharmacy and School of Nursing:

1. Integrate the College of Pharmacy and School of Nursing into the main Health Sciences campus.
  - a. Promote interaction of faculty, staff, and students in the interdisciplinary teaching, clinical, and research programs.
  - b. Utilize shared classroom, resource, and support facilities.
2. Develop facilities in a compatible framework of circulation, organization, and expansion in the Health Sciences campus.
  - a. Maintain connections with staff, student, patient, visitor, and service circulation patterns.
  - b. Assign large undergraduate classrooms and seminar rooms to Levels 2, 3, or 4 (one level up or down from main level) to minimize requirements for vertical transportation.
  - c. Develop appropriate departmental or facility adjacencies with capabilities for expansion as projected.
  - d. Provide space as programmed for Unit F.
3. Consolidate administrative, faculty, teaching, research, and support facilities for each school.

## Pharmacy

Specific requirements for the College of Pharmacy are as follows:

1. Locate the teaching and faculty facilities for convenient access to the Basic Sciences of Anatomy, Pharmacology, Microbiology, Physiology and Pathology, to the clinical departments of the Hospital and Medical School and to the Schools of Public Health, Dentistry, and Nursing.
2. Locate undergraduate teaching facilities for convenient access to the Bio-Medical Library in Diehl Hall.
3. Provide greenhouse and animal facilities with convenient and discreet access to laboratories.
4. Locate the Drug Information Center near the Bio-Medical Library in Diehl Hall.
5. Integrate the Pharmacy library into the Bio-Medical Library in Diehl Hall.

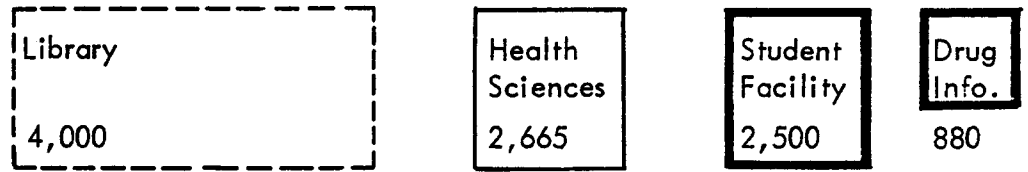
## Nursing

Specific requirements for the School of Nursing are as follows:

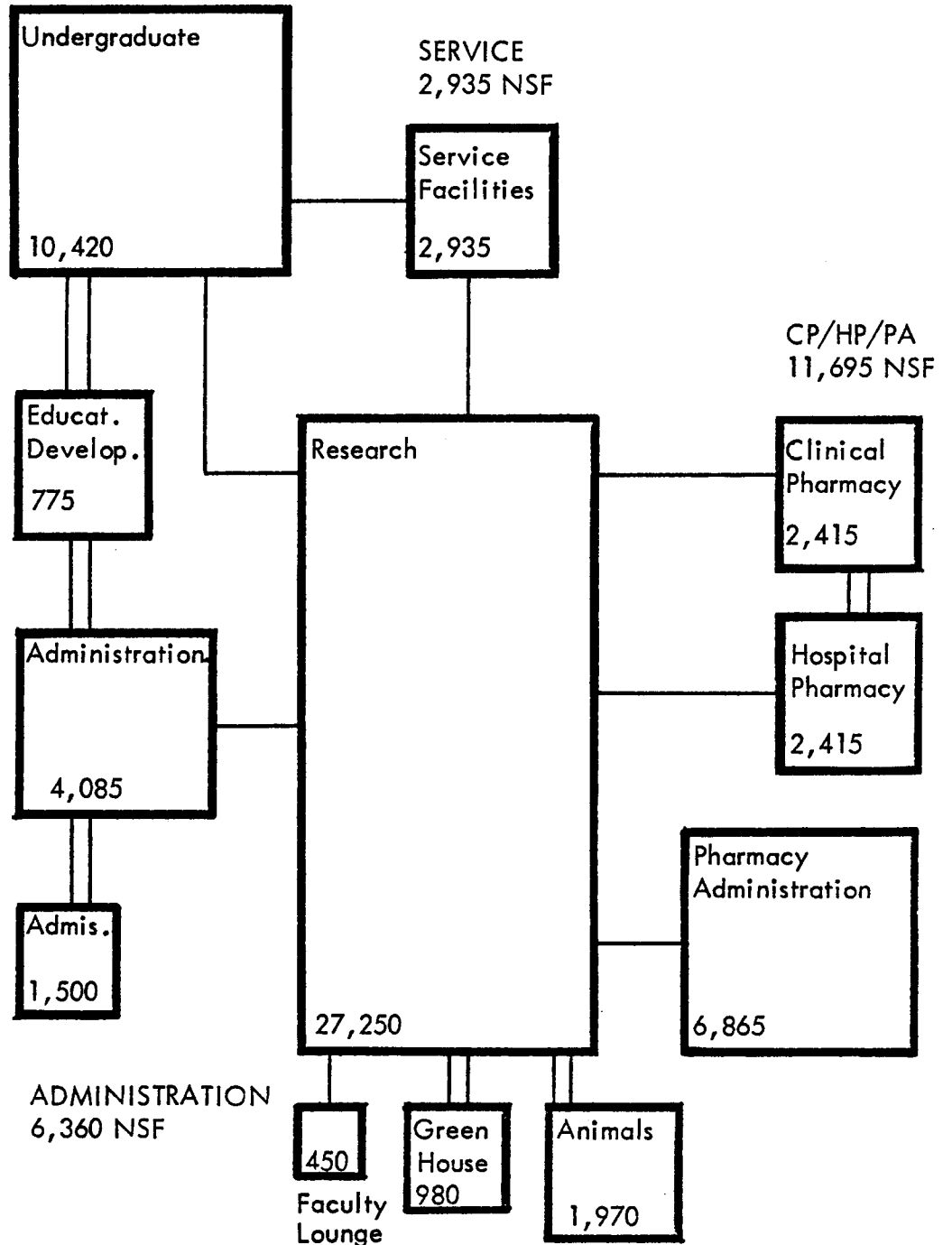
1. Locate teaching, research, and faculty spaces with convenient access to facilities for inpatient and ambulatory care, the Basic Sciences, the College of Pharmacy, and the Schools of Medicine, Public Health, and Dentistry.
2. Locate undergraduate facilities with convenient access to the Bio-Medical Library in Diehl Hall.
3. Design the spaces for maximum:
  - a. Access between Administration and faculty.
  - b. Access between Administration and support staff.
  - c. Access between faculty and support staff.
  - d. Supervision of support staff.

Adjacency Diagram

The diagram below indicates functional relationships between elements of the Pharmacy program. A single line represents a desired link; two lines represent an important connection



UNDERGRADUATE  
10,420 NSF



ADMINISTRATION  
6,360 NSF

450  
Faculty Lounge

Green House  
980

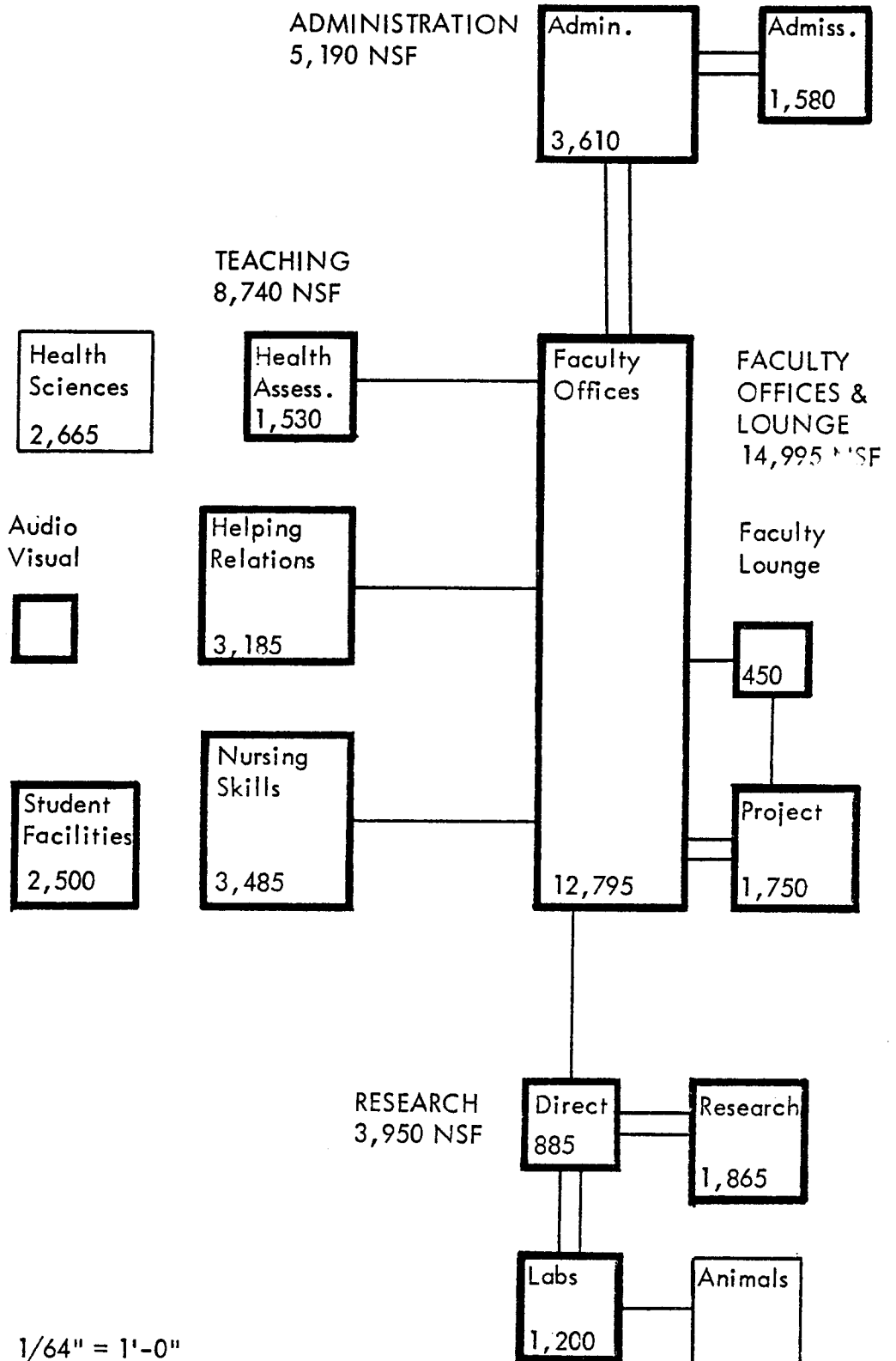
Animals  
1,970

1/64" = 1'-0"

RESEARCH, LOUNGE & ANIMAL FACILITIES  
30,650 NSF

Adjacency Diagram

The diagram below indicates functional relationships between elements of the Nursing program. A single line represents a desired link; two lines represent an important connection.



1/64" = 1'-0"

PHARMACY/NURSING

PROGRAM

18.1 SERVICE FACILITIES	Space	Area	Number	Total
	Central Supply	1520	1	1520
	Glass Wash	300	1	300
	Solvent Storage	225	1	225
	Mechanical Shop	225	1	225
	Instrument Shop	215	1	215
	Storage	190	1	190
	Parenteral Prod. Lab	135	1	135
	Sterile Room	125	1	125
	TOTAL NSF			2,935
18.2 UNDERGRADUATE	Dispensing Lab	1740	1	1740
	Stock Room	145	1	145
	Prep Room	135	1	135
				<u>2020</u>
	Drug Information	880	1	880
				<u>880</u>
	Undergraduate Labs	2430	2	4860
	Fume Hood Room	275	2	550
	Conference Room	275	2	550
				<u>5960</u>
	Pharmacokinetics	450	1	450
				<u>450</u>
	Instrument Lab	1140	1	1140
	Preparation Room	300	1	300
	Stock Room	225	1	225
	Storage	25	1	25
	Balance	225	1	225
	Fire Control	75	1	75
				<u>1990</u>
	TOTAL NSF			11,300
18.3 ADMINISTRATION	Wait, Reception	225	1	225
	Office, Secretary	450	1	450
	Office, Dean	275	1	275
	Office, Assist. Dean	185	2	370
	Office, Alumni Rel.	175	1	175
	Office, Secretary	325	1	325
	Conference	420	1	420
	Kitchen, Conf.	40	1	40
	Toilet, Dean	40	1	40
	Office, Admin.	185	1	185
	Office, Business Staff	210	1	210

PHARMACY/NURSING

PROGRAM

	Space	Area	Number	Total
18.3 ADMINISTRATION (continued)	Office	125	2	250
	Copy/Work	225	1	225
	Records	225	1	225
	Kitchen, Staff	40	1	40
	Toilet, Staff	40	1	40
Continuing Education	Office, Director	150	1	150
	Office, Asst. Director	140	1	140
	Office, Staff	300	1	300
				<u>590</u>
Admissions	Office/Wait	450	1	450
	Office, Director	140	1	140
	Conference	185	1	185
				<u>775</u>
Educational Development	Office	150	2	300
	Secretary	150	1	150
	Conference	300	1	300
	Multipurpose	450	1	450
	Media Storage	150	1	150
	A/V Storage	150	1	150
				<u>1500</u>
TOTAL NSF				6360
18.4 CLINICAL PHARMACY HOSPITAL PHARMACY	Office, Faculty	140	6	840
	Office, Faculty	175	2	350
	Office, Faculty	150	1	150
	Office, Faculty	125	2	250
	Secretarial	140	1	140
	Clin. Pharm. Stud.	1900	1	1900
	Hosp. Pharm. Stud.	600	1	600
	Office	150	4	600
				<u>4830</u>
Pharmacy Administration	Seminar	600	1	600
	Conference	300	2	600
	Office	150	1	150
	Data Process	225	1	225
	Calc. Lab	375	1	375
	Storage	25	1	25
	Group Interaction	225	2	450
	Observation	75	1	75
	Student Space	150	8	1200
	Reading	380	1	380

PHARMACY/NURSING

PROGRAM

Pharmacy Administration (continued)	Space	Area	Number	Total
	Pharmacy Systems	225	1	225
	Pharmacy Systems	115	2	230
	Project Work	190	3	570
	Office, Project	115	3	345
	Project, Secretary	300	1	300
	Office, Faculty	125	5	625
	Office, Faculty	175	2	350
	Secretary	140	1	140
				<u>6865</u>
	TOTAL NSF			11,695

18.5 RESEARCH

Secretary	215	1	215
Office	140	2	280
Lab	225	1	225
Lab	290	1	290
Storage	40	1	40
Kitchen	40	1	40
Graduate Lab	2430	1	2430
Faculty Lab	600	2	1200
Office	265	2	530
Conference	450	1	450
Instrument Room	1140	1	1140
Office	150	1	150
Cold Room	150	1	150
Graduate Lab	600	1	600
Radiation Syn.	220	1	220
Counting	150	1	150
Dark Room	80	1	80
Graduate Lab	1200	1	1200
Faculty Lab	600	2	1200
Faculty Lab	300	2	600
Instrument Lab	300	2	600
Office	150	2	300
Office	135	4	540
Graduate Lab	900	1	900
Chromatization	375	1	375
Instruments	240	1	240
Multipurpose Lab	530	1	530
Sterilizer	50	1	50
Cold Room	95	1	95
Fermentation	300	1	300
Constant Temperature	240	1	240
Environment Rooms	35	5	175
Clean	100	1	100
Transfer	135	1	135
Gowning/Shower	75	1	75
			<u>15,845</u>

PHARMACY/NURSING

PROGRAM

18.5 RESEARCH  
(continued)

Space	Area	Number	Total
Secretary	215	1	215
Office	140	2	280
Lab. Dept. Head	290	1	290
Lab	225	1	225
Storage	40	1	40
Kitchen	40	1	40
Grad Lab	1975	1	1975
Instrument Lab	320	1	320
Faculty Lab	450	4	1800
Office	125	8	1000
Grad Lab	810	1	810
Cold Room	100	1	100
CP Off/Lab	300	1	300
Spec Proj Lab	600	1	600
Test Lab	300	1	300
Conference	450	1	450
Dry/Mill	250	1	250
Dust Room	65	1	65
Extract Lab	250	1	250
Drug Storage	190	1	190
Post Doc. Lab	375	1	375
Cold Room	90	2	180
Grad Lab	900	1	900
Instrument Lab	225	1	225
Freezer	75	1	75
Cold Room	150	1	150
			<u>11405</u>

Animal Quarters

Animal Room	100	4	400
Animal Room	125	2	250
Animal Room	200	1	200
Inject	100	1	100
Dog Room	220	1	220
Cage Wash	300	1	300
Bedding	75	1	75
Cooler	30	1	30
Prep	75	1	75
Animal O.R.	260	1	260
Recovery	60	1	60
			<u>1970</u>

Greenhouse

Greenhouse	675	1	675
Potting Room	305	1	305
			<u>980</u>

TOTAL NSF

30,200



PHARMACY/NURSING

PROGRAM

18.6 Support Facilities	Space	Area	Number	Total
	Student Conference	225	1	225
	Student Lounge	450	1	450
	Student Organization	225	1	225
	Student Lockers	1200	1	1200
	Student Study	225	1	225
	Faculty Lounge	450	1	450
	Data Processing	175	1	175
	TOTAL NSF			2,950
18.0 Pharmacy	TOTAL NSF			65,440

PHARMACY/NURSING

PROGRAM

13.1 RESEARCH

Space	Area	Number	Total
Behavioral Study Lab	370	1	370
Environmental Lab	315	1	315
ECR	150	1	150
Observation	150	1	150
Observation	115	1	115
Waiting	190	1	190
Toilet	40	1	40
Kitchen	40	1	40
Work	225	1	225
Data	135	2	270
			<u>1865</u>
Nursing Lab	600	1	600
Nursing Lab	300	1	300
Office	150	2	300
			<u>1200</u>
TOTAL NSF			3065

13.2 TEACHING

Waiting	420	1	420
Study	120	1	120
			<u>540</u>

Nursing Skills

Skills Lab (20 beds)	2430	1	2430
Nurses Station	525	1	525
Tub Room	150	1	150
Storage	190	1	190
Linen	65	1	65
Classroom	125	1	125
			<u>3485</u>

Health Assessment

Exam Room, Single	115	8	920
Exam Room, Double	230	2	460
Observ/Conf	150	1	150
			<u>1530</u>

Helping Relationships

Seminar	585	1	585
Seminar	450	2	900
Conference	300	2	600
Conference	245	1	245
Interview	115	4	460
Carrel	40	2	80
A/V Work	315	1	315
			<u>3185</u>

TOTAL NSF

8740

PHARMACY/NURSING

PROGRAM

13.3 FACULTY OFFICES	Space	Area	Number	Total
	Office, 1 Desk	115	72	8280
	Office, 2 Desks	175	10	1750
	Office, Clinical Appts.	350	1	350
	Project Work Room	350	2	700
	Educational Development	350	2	700
				<u>11780</u>
	Reception	250	1	250
	Interview	100	2	200
	Conference	265	1	265
	Conference	300	1	300
	Seminar	570	1	570
	Office, Typing Supv.	100	2	200
	Supply/Work	100	1	100
	Sec. & Supply/Work	350	1	350
	Secretary	530	1	530
				<u>2765</u>
	TOTAL NSF			14545
13.4 ADMINISTRATION	Recept/Wait	335	1	335
	Office, Dean's Sec	120	1	120
	Office, Sec.	560	1	560
	Office, Dean	300	1	300
	Office, Assoc. Dean	150	1	150
	Office, Assist. Dean	150	3	450
	Conference	305	1	305
	Kitchen	45	1	45
	Toilet, Dean	45	1	45
	Office, Admin. Off.	125	1	125
	Office, Bus. Staff	300	1	300
	Work Room	290	1	290
	School Records	150	1	150
				<u>3175</u>
Continuing Education	Office, Director	150	1	150
	Office, Staff	135	1	135
				<u>285</u>
Shared Facilities	Copy Room	150	1	150
				<u>150</u>
Admissions & Records	Office, Stud. Admissions	625	1	625
	Office, Director	120	1	120
	Office, Staff	300	1	300
	Student Records	140	1	140

PHARMACY/NURSING

PROGRAM

Admissions & Records (cont)	Space	Area	Number	Total
	Interview	62.5	2	125
	Conference	200	1	200
	Kitchen	35	1	35
	Toilet, Staff	35	1	35
				<u>1580</u>
Research	Office, Director	135	1	135
	Office, Sec.	150	1	150
	Conf./Read.	150	1	150
	Research Support	450	1	450
				<u>885</u>
	TOTAL NSF			6,075
13.5 Support Facilities	Space	Area	Number	Total
	Student Conference	225	1	225
	Student Lounge	450	1	450
	Student Organization	225	1	225
	Student Lockers	1200	1	1200
	Student Study	225	1	225
	Faculty Lounge	450	1	450
	Data Processing	175	1	175
	TOTAL NSF			2,950
13.0 NURSING	TOTAL NSF			35,375

PHARMACY/NURSING

PROGRAM

17.0 HEALTH SCIENCES	Space	Area	Number	Total
	Employee Locker	200	2	400
	Vending	150	1	150
	Conference	260	2	520
	Classroom	1595	1	1595
	TOTAL NSF			2665