

TAC

THE ARCHITECTS COLLABORATIVE INC.

JEAN B. FLETCHER
1945 1965
WALTER GROPIUS
1945 1969
NORMAN FLETCHER
JOHN C. HARKNESS
SARAH P. HARKNESS
LOUIS A. McMILLEN

RICHARD BROOKER
ALEX CVIJANOVIĆ
HERBERT GALLAGHER
WILLIAM J. GEDDIS
ROLAND KLUPER
PETER W. MORTON
H. MORSE PAYNE
ERNEST L. BIRDSALL
TREASURER

ROBERT F. CRANE
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ALLISON GOODWIN
BASIL HASSAN
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QAZI B. AHMED
ROBERT BARNES
KENDALL P. BATES
SERGIO BERIZZI
SERGE CVIJANOVIĆ
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ROBERT DE WOLFE
GREGORY DOWNES
GAIL HAVIARAS
THOMAS LARSON
RALPH MONTGOMERY
PERRY NEUBAUER
MICHAEL PRODANOU
RICHARD PUFFER
WALTER ROSENFELD
JOHN J. SCOTT
EDMUND SUMMERSBY
KENNETH TAYLOR
MALCOLM TICKNOR
ROBERT TURNER
ROBERT WILSON
LAURENCE ZUELKE

27 September 1976

Mr. Clinton Hewitt
Assistant Vice President
Physical Planning
University of Minnesota
340 Morrill Hall
Minneapolis, Minnesota 55455

Re: University of Minnesota
Health Sciences Expansion
JOML Remodeling
TAC Job No. 75026

Dear Mr. Hewitt:

As part of our continuing effort toward the remodeling of the Jackson-Owre-Millard-Lyon Complex, we are pleased to submit the finalized Schematic Design Phase II Report for the record.

As indicated in our letter of transmittal of the Phase I Planning Report, the activities undertaken to develop this report were conducted concurrently with Phase I. Although the decisions represented herein in respect to departmental allocations of space remain valid for the '75 Grant Remodeling construction project, the scope of work represented has by necessity been reduced as we have progressed into Phase III Design Development with a reduced budget.

It is our intent that the Design Development report reflect those necessary scope reductions and are prepared to submit it for the record as soon as they are resolved.

Sincerely,

THE ARCHITECTS COLLABORATIVE, INC.

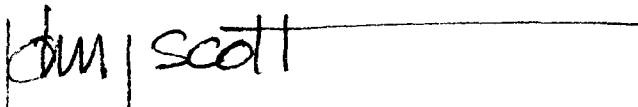
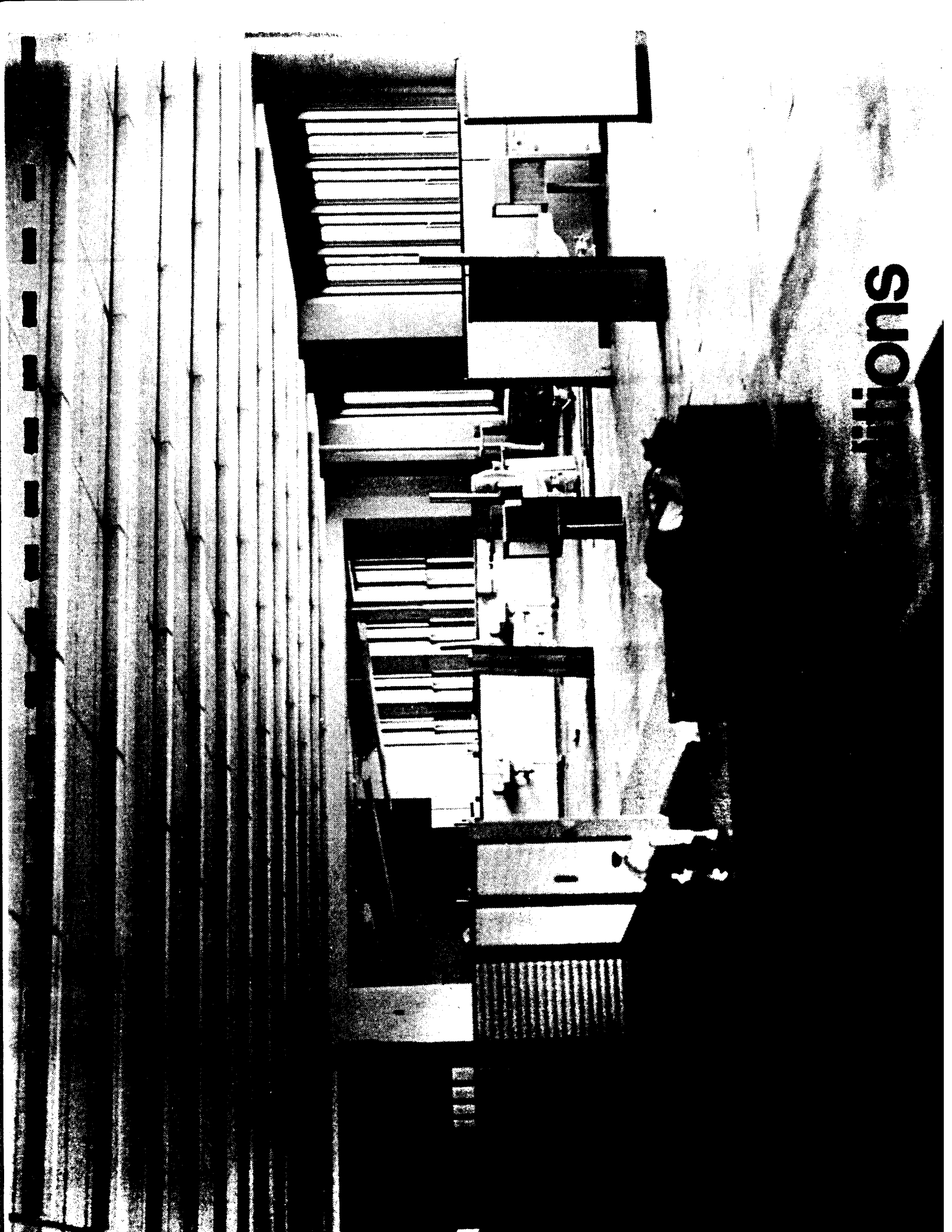

John J. Scott

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GENERAL DESCRIPTION OF COMPLEX

The Basic Sciences complex, which consists of the Jackson-Owre-Millard-Lyon Laboratory buildings (JOML), houses five of the six Basic Sciences Departments at the University of Minnesota: Anatomy, Biochemistry, Pathology, Pharmacology, and Physiology. The Medical School Administration and the Department of Mortuary Science are also housed in the complex.

The buildings constitute a complex as follows:

| <u>BUILDING</u> | <u>BUILT</u> | <u>GROSS AREA</u> | <u>NET AREA</u> | <u>HEIGHT</u> |
|--------------------|--------------|-------------------|-----------------|--|
| Jackson Hall | 1910 | 83,946 | 64,574 | 2 levels below grade 4 levels above grade |
| Jackson/Owre Addn. | 1958 | 47,736 | 40,067 | 2 levels below grade 4 levels above grade |
| Owre Hall | 1931 | 92,430 | 71,697 | 2 levels below grade 5 levels above grade |
| Millard Hall | 1910 | 94,559 | 75,221 | 2 levels below grade 4 levels above grade |
| Lyon Labs | 1952 | 47,411 | 40,996 | 2 levels below grade 4 levels above grade |
| | | <u>366,082</u> | <u>292,550</u> | |

Net assignable S.F. = 220,000

Approximately 60,000 SF of the complex was occupied by the School of Dentistry since the early 1900's with only minimal remodeling during that period. The buildings were thus obsolete before the Dental School vacated their spaces and in their present form are essentially unusable for the Basic Sciences.

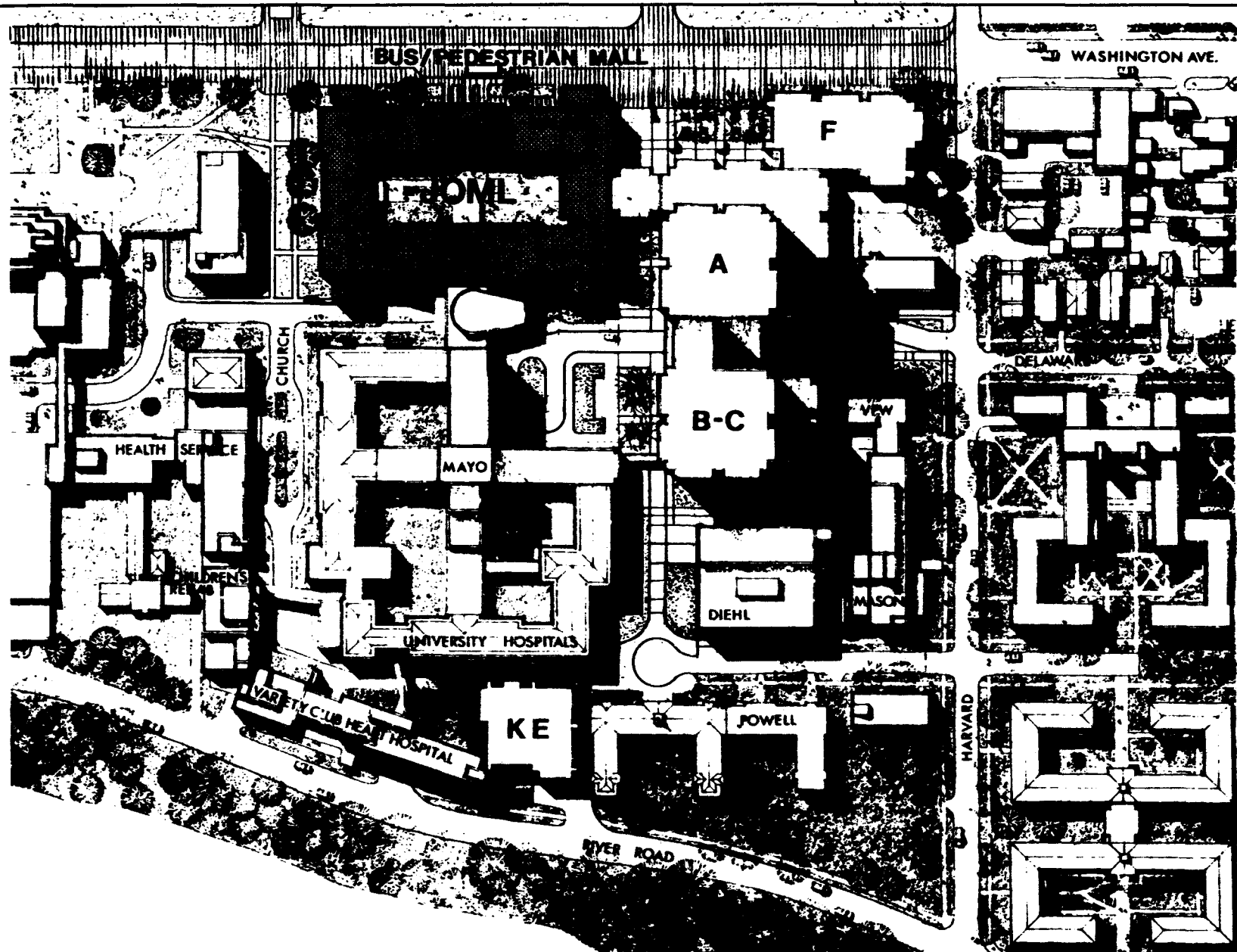
The vacated space was not only planned for the teaching of Dentistry, rather than the Basic Sciences, but also was designed to accommodate far fewer staff, students and support facilities than required today by the Basic Science Programs. The Basic Sciences presently require additional research-laboratory/office facilities with the appropriate ancillary support facilities.

All five of the buildings are concrete-frame structures with face brick exterior walls. The majority of the fenestration consists of wood double-hung windows, while a few of the windows are of extruded aluminum. Interior partitions and ceilings are generally of finished gypsum plaster, with some metal partitions and some corridor ceilings treated with adhered acoustic tiles. Most floors are surfaced with vinyl asbestos tile, while some corridors are surfaced with terrazo or quarry tile.

The buildings are heated with steam or hot water radiation, generally located below the windows at the exterior walls. There is some exhaust ventilation in selected rooms which relies on infiltration and open windows for make-up air. Individual air conditioning units have been installed in some rooms to provide local air tempering. Generally the complex is severely deficient in environmental control devices and energy consumption rates by present day requirements and standards.

Egress pathways, stairways and elevators are deficient in many respects in relationship to today's life-safety standards and codes. In addition, the complex lacks proper fire warning and fire fighting equipment.

The following plans show the present configuration of spaces within the complex and the departments to which each area is assigned.



1-3

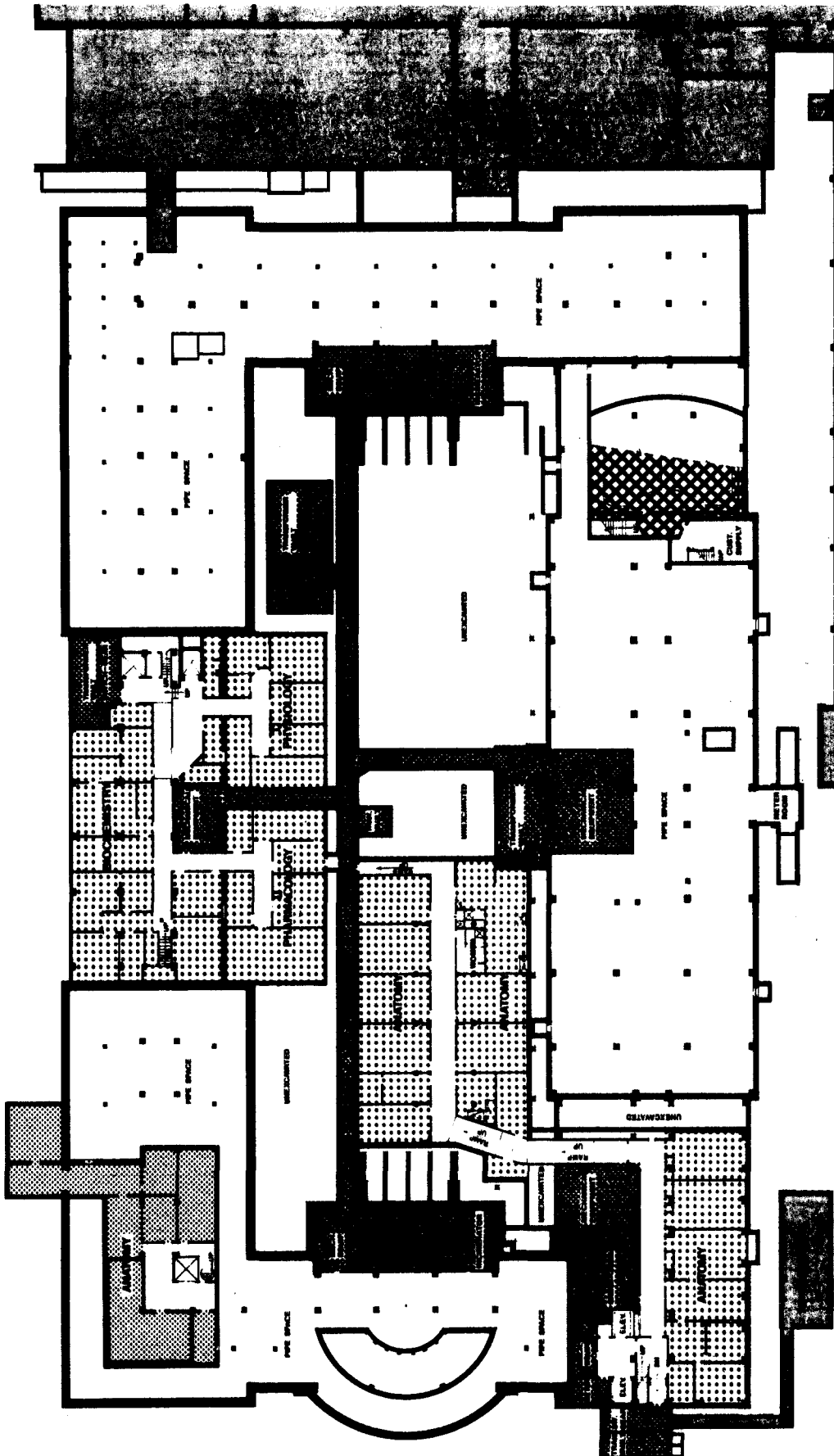


**UNIVERSITY OF MINNESOTA
HEALTH SCIENCES EXPANSION**
MINNEAPOLIS MINNESOTA

THE ARCHITECTS COLLABORATIVE, INC. CAMBRIDGE, MASS. &
THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.
ST. PAUL, MINNESOTA

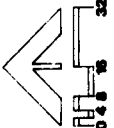
JOML
JACOBUS CORNEILLIUS OLM
COMPLEX HEADLINE

HEALTH SCIENCES



LEGEND

- ANALOGY
- CONCRETE FLOORING
- WOOD FLOORING
- PAINTED CONCRETE
- PAINTED BRICK
- PAINTED BLOCK
- PAINTED WALL
- PAINTED CEILING
- PAINTED FLOOR
- PAINTED WALL
- PAINTED CEILING
- PAINTED FLOOR



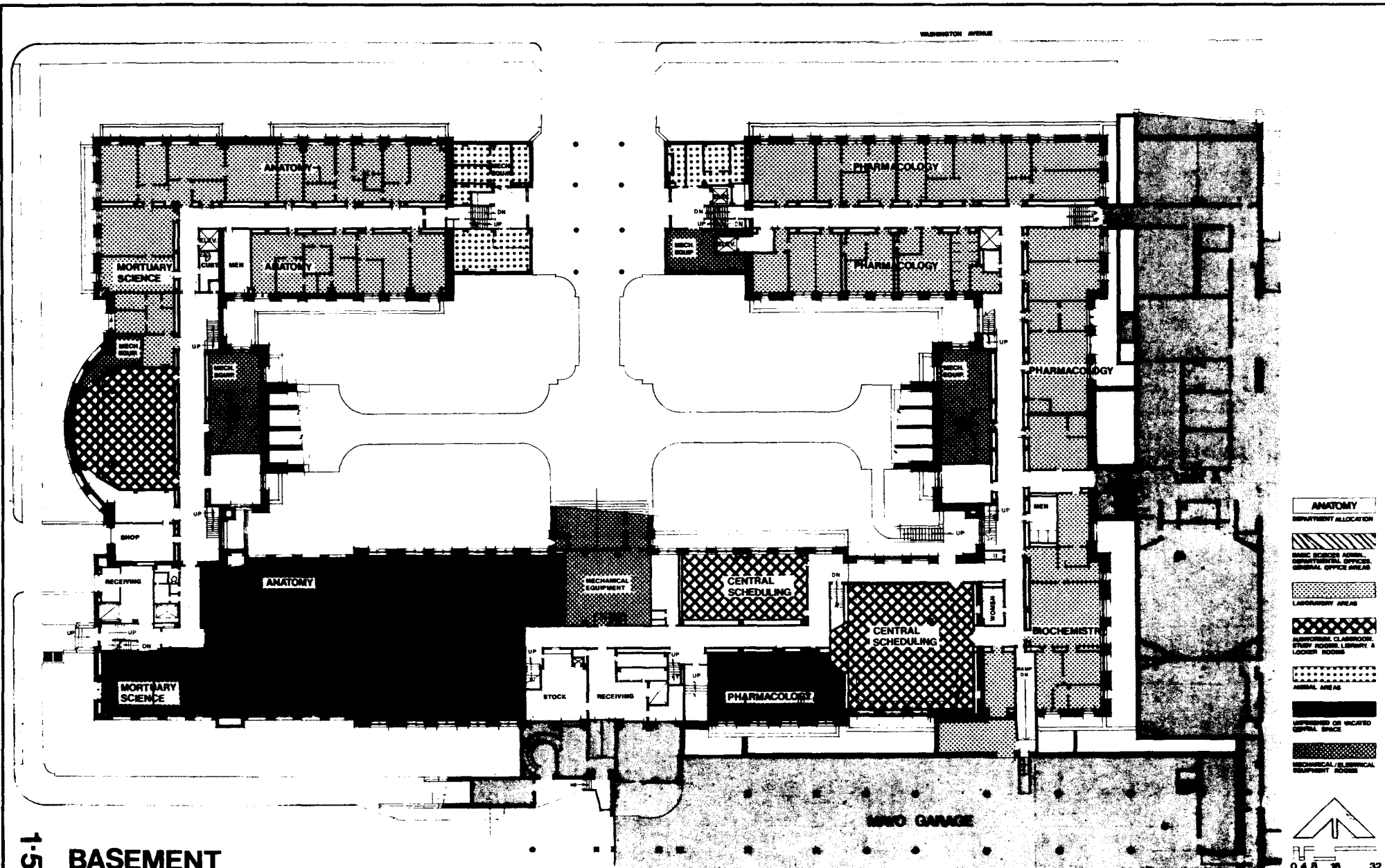
1-4 SUB-BASEMENT

**UNIVERSITY OF MINNESOTA
HEALTH SCIENCES EXPANSION**
MINNEAPOLIS, MINNESOTA

THE ARCHITECTS COLLABORATIVE, INC. CARPENTERS, MASON &
THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.
100 UNIVERSITY AVENUE, S.E. MINNEAPOLIS, MN 55455
TEL: 612-292-2200 FAX: 612-292-2201

JOML
ARCHITECTS
100 UNIVERSITY AVENUE, S.E.
MINNEAPOLIS, MN 55455
TEL: 612-292-2200 FAX: 612-292-2201

EXISTING CONDITIONS



1-5 BASEMENT

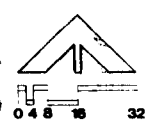
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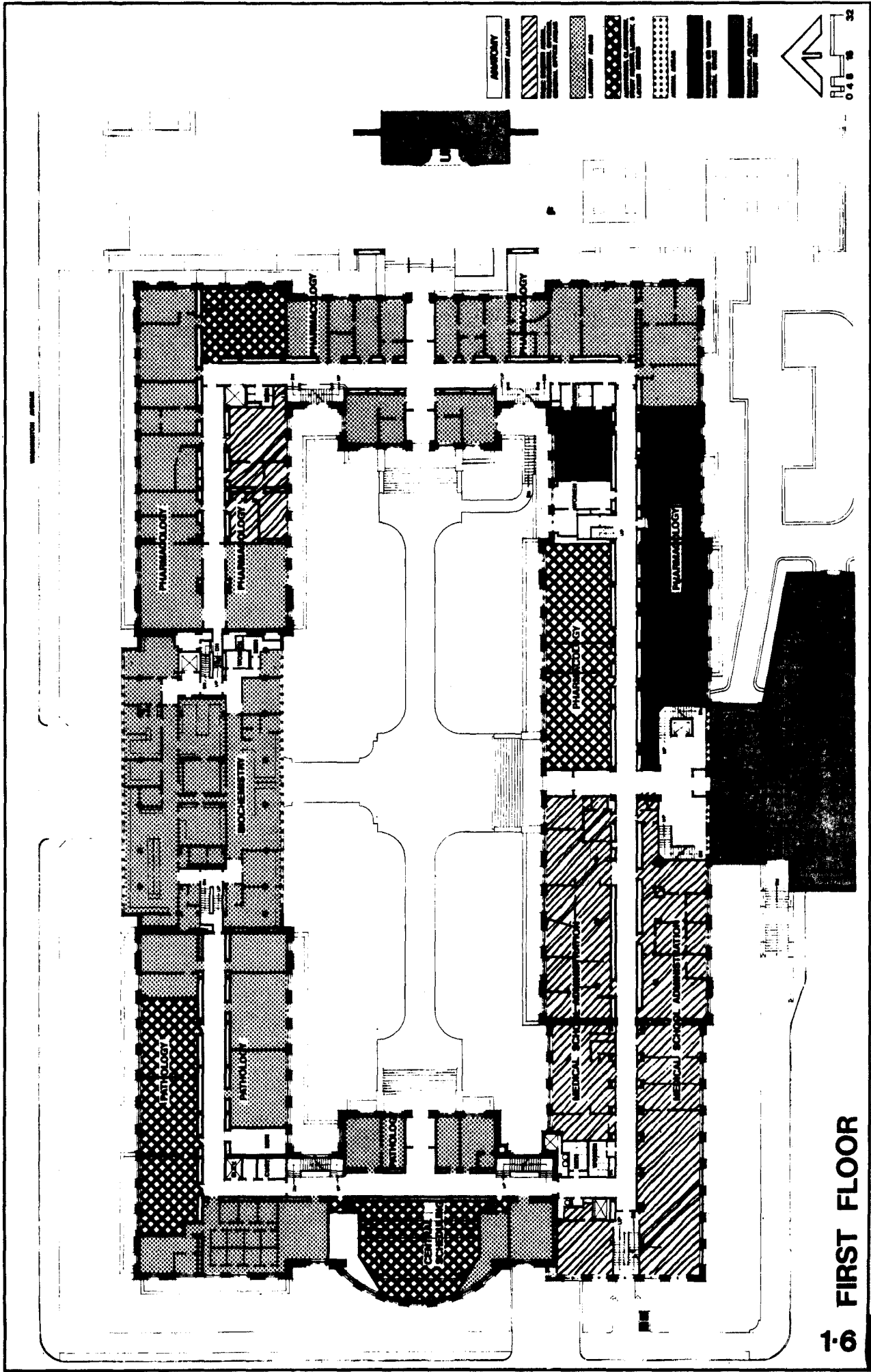
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THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.
THE CERRY ASSOCIATES, INC.
HARVEY, BOWEN & ASSOCIATES, INC.
SEITZ, LEACH & LINDSTROM INC.

JOML
JACKSON OHRE HILLARD LYON
COMPLEX REMODELING
ARCHITECTS & ENGINEERS
MINNEAPOLIS, MINNESOTA

EXISTING CONDITIONS

- ANATOMY
- DEPARTMENT ALLOCATION
- HEALTH SCIENCES ADMIN.
DEPARTMENTAL OFFICES,
GENERAL OFFICE AREAS
- LABORATORY AREAS
- LECTURE HALLS, CLASSROOMS,
STUDY ROOMS, LIBRARY &
LOCKER ROOMS
- MECHANICAL/ELECTRICAL
EQUIPMENT ROOMS





1st 01 FIRST FLOOR

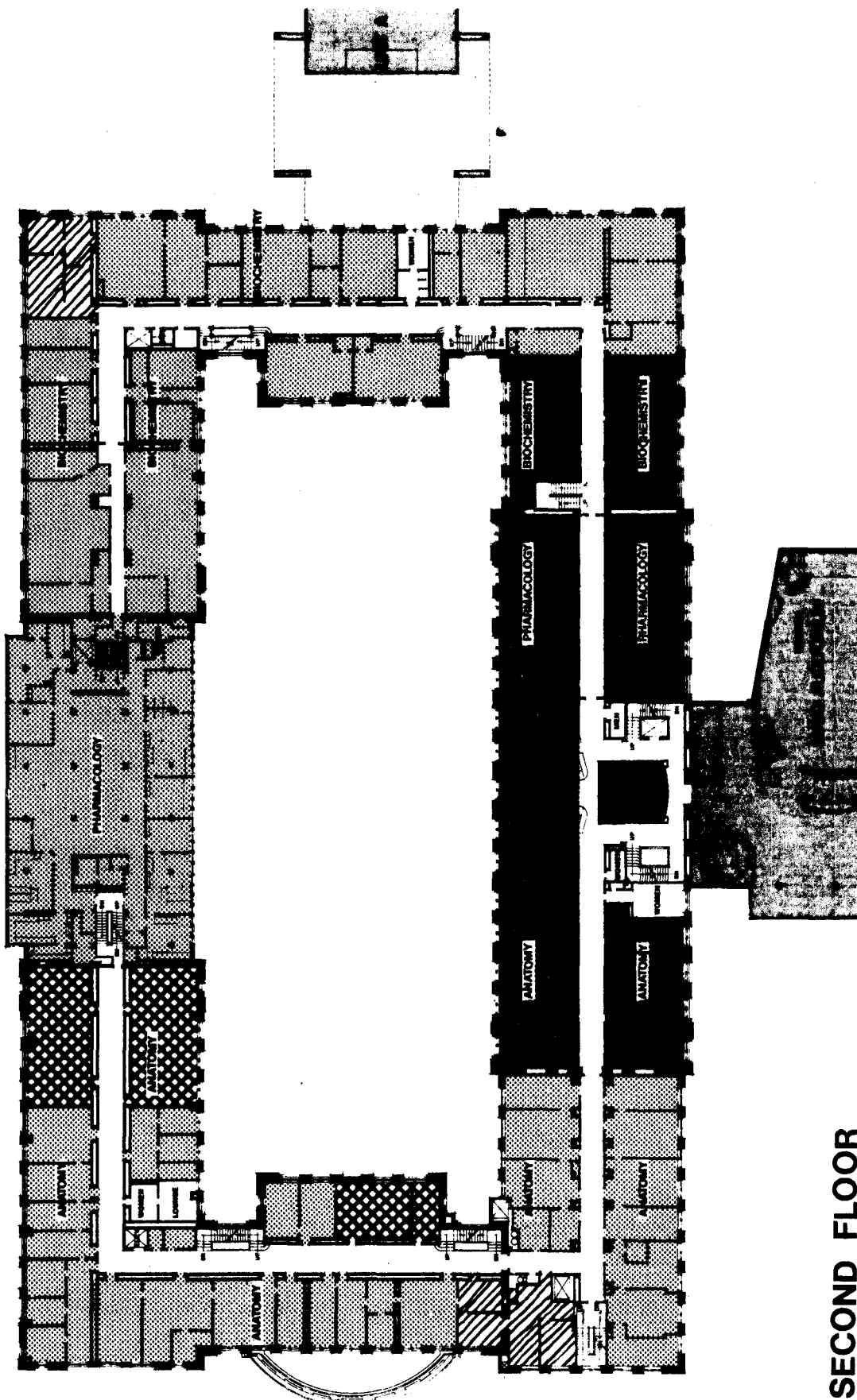
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MINNESOTA

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THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.
ST. PAUL, MINNESOTA
ARCHITECTS & ENGINEERS
1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025

JOML

JACOBUS CORSE BELLARD LYON
COMPLEX MEMORIAL

EXISTING CONDITIONS



1-7 SECOND FLOOR

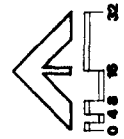
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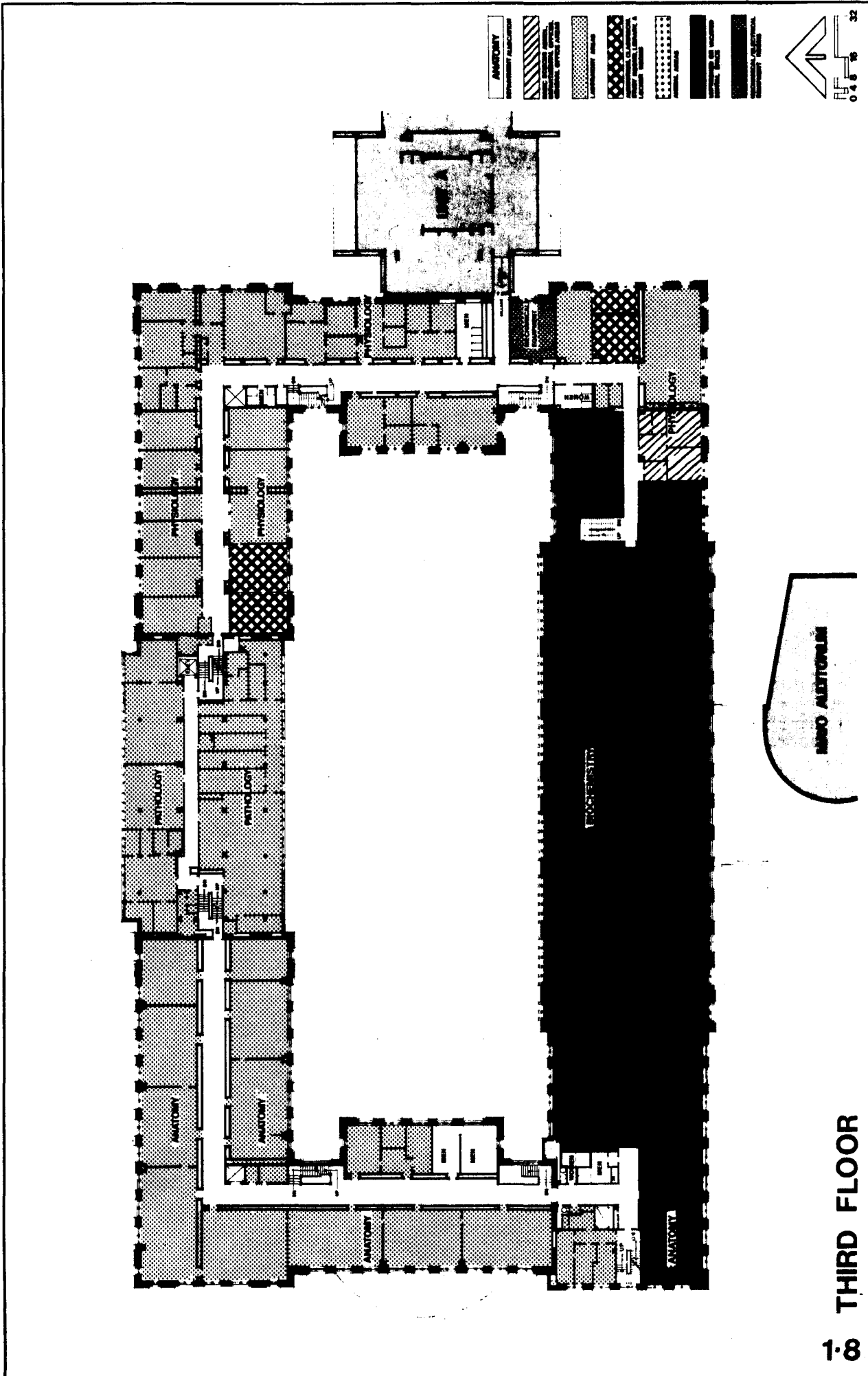
THE ARCHITECTS COLLABORATIVE, INC. CAMBRIDGE, MASS. &
THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.
MINNEAPOLIS, MINNESOTA

JOML
ANDREW OWEN HILLARD LOR
COMPLEX REPRESENTATIVE

EXISTING CONDITIONS

- ANATOMY
- PHARMACOLOGY
- BIOCHEMISTRY
- OFFICE
- LABORATORY
- STAIR
- ELEVATOR
- MECHANICAL
- ELECTRICAL
- PLUMBING
- AC
- HEATING
- COOLING
- VENTILATION
- EXHAUST
- WATER
- SEWER
- TELEPHONE
- DATA
- VIDEO
- OTHER





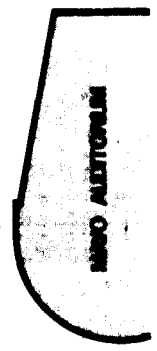
1-03 THIRD FLOOR

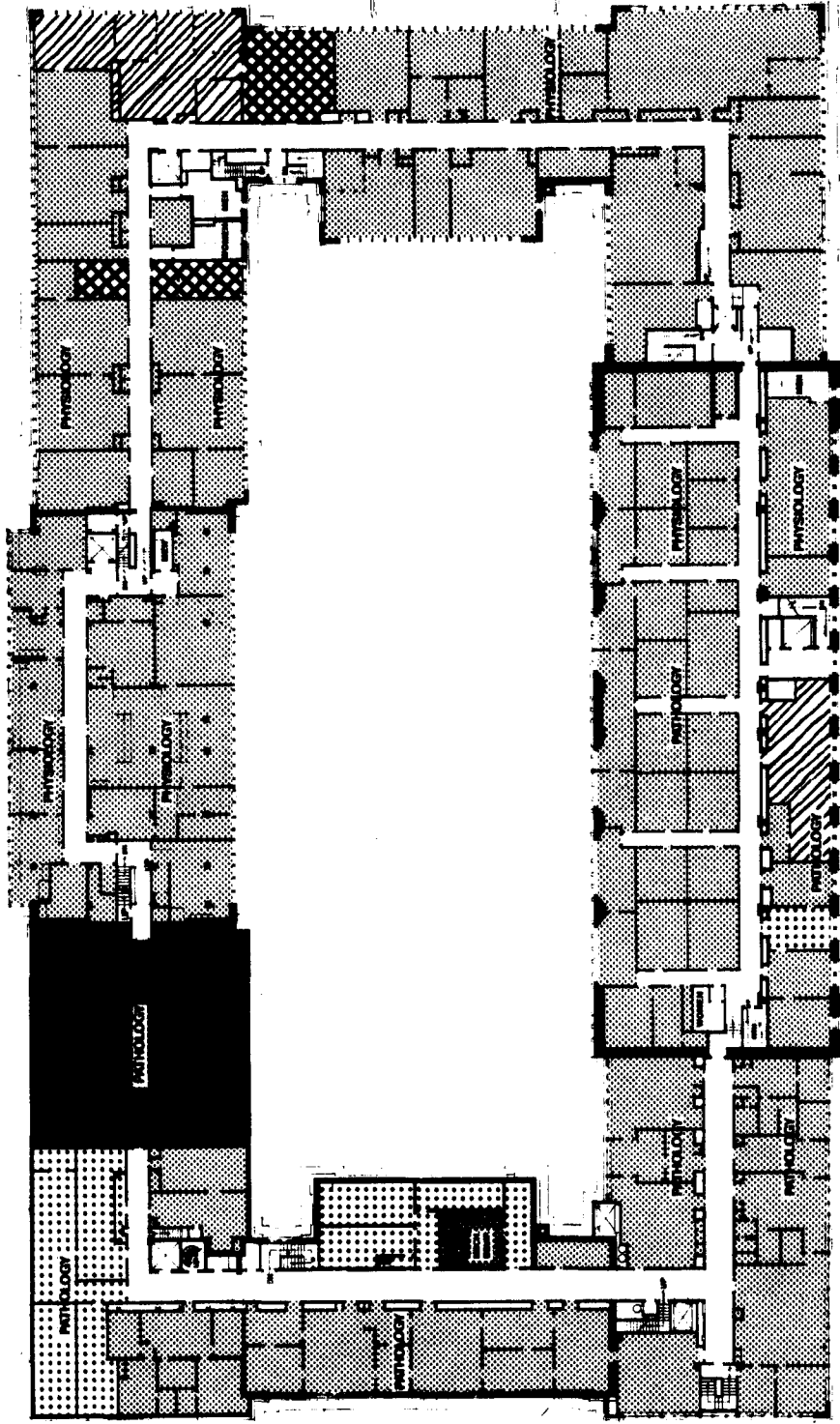
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MINNEAPOLIS, MINNESOTA

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THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.
MINNEAPOLIS, MINNESOTA

JOML
ARCHITECTS
MINNEAPOLIS, MINNESOTA

EXISTING CONDITIONS





1-9 FOURTH FLOOR

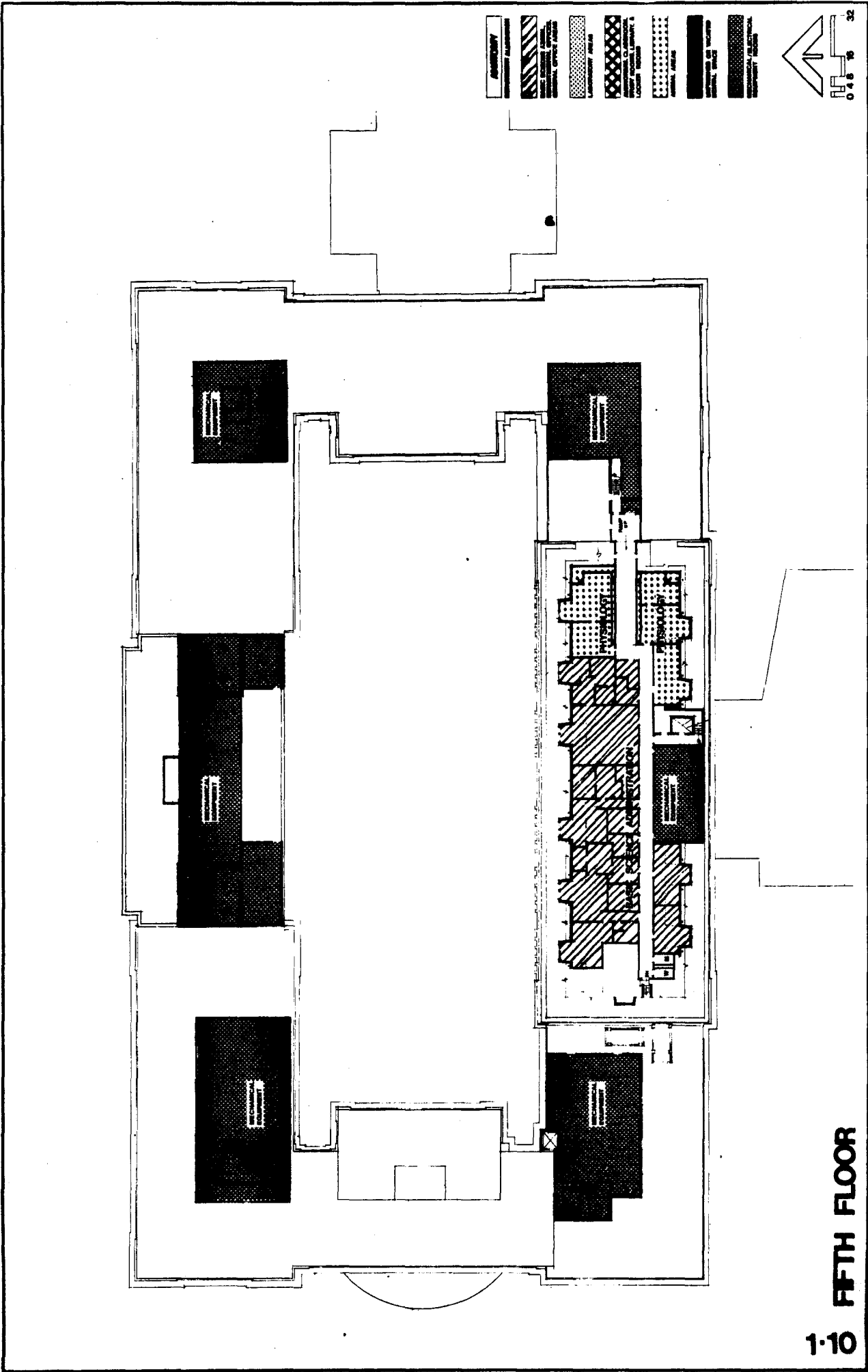
**UNIVERSITY OF MINNESOTA
HEALTH SCIENCES EXPANSION**
MINNEAPOLIS, MINNESOTA

THE ARCHITECTS COLLABORATIVE, INC. CAMBRIDGE, MASS. &
THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.
THE ARCHITECTS COLLABORATIVE, INC.
100 SOUTH WASHINGTON STREET, SUITE 1000
MINNEAPOLIS, MINNESOTA 55402

JOML

ANDREW OWEN HILLARD LORR
COMPLEX REPRESENTING

EXISTING CONDITIONS



EXISTING CONDITIONS

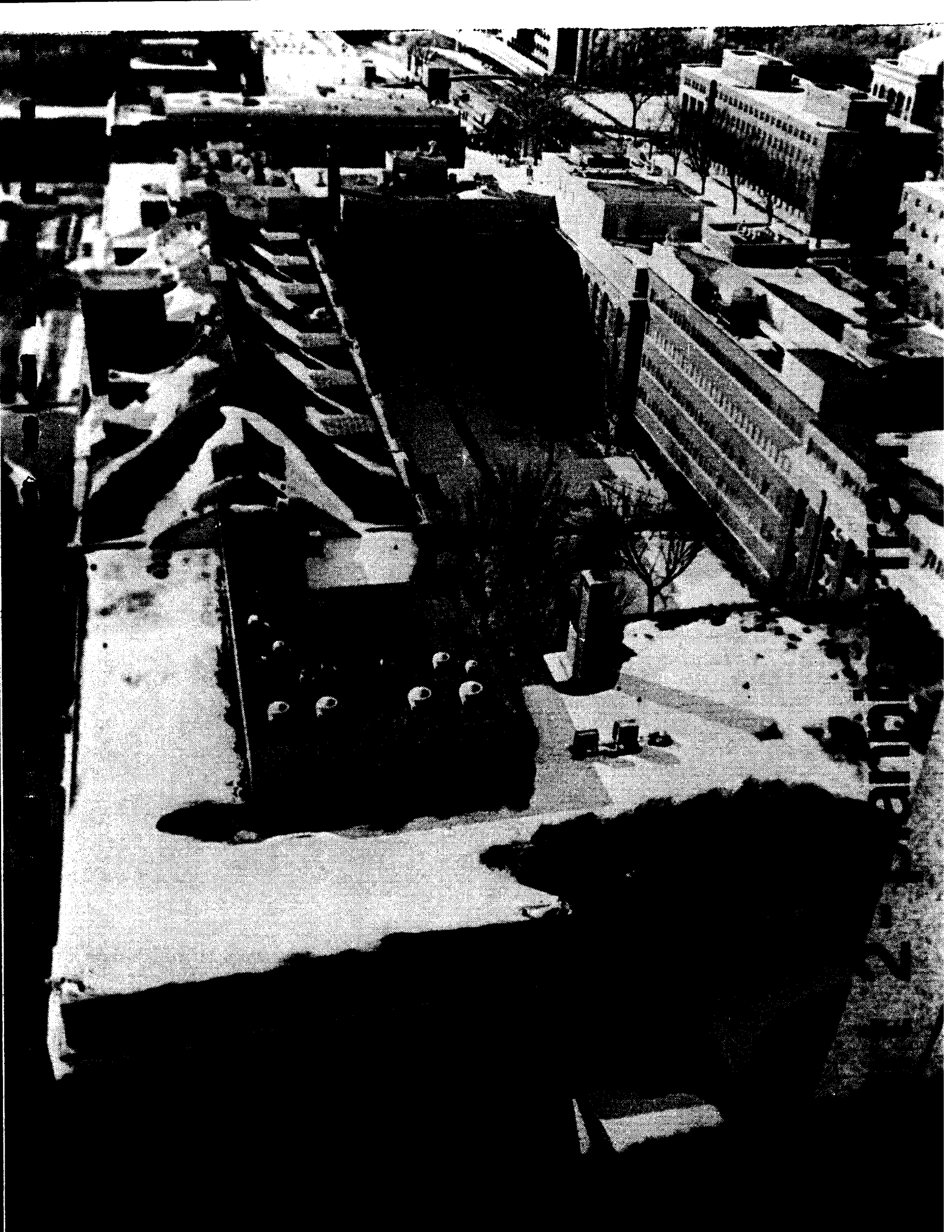
ARCHITECT'S OFFICE: JOML
 ARCHITECT: JOHN O. MURPHY, INC.
 1000 W. WASHINGTON ST., MINNEAPOLIS, MN 55401

JOML
 1000 W. WASHINGTON ST., MINNEAPOLIS, MN 55401

THE ARCHITECT'S COLLABORATIVE, INC. (A COMMITTEE OF THE UNIVERSITY OF MINNESOTA)
 THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.
 1000 W. WASHINGTON ST., MINNEAPOLIS, MN 55401

UNIVERSITY OF MINNESOTA
 HEALTH SCIENCES EXPANSION
 MINNEAPOLIS, MINNESOTA

1-10 FIFTH FLOOR



DESCRIPTION OF SCHEMATIC PLAN

Working within the parameters of the Phase I JOML Remodeling Planning Report, Schematic Design of the 1975 Grant Construction Project was undertaken. Since the 81,000 square feet of assignable space to be remodeled was defined and allocated by department in the Planning Report, this Phase commenced with the determination of the specific needs of the users that are to occupy this space. Much of the area previously occupied by the School of Dentistry was planned for new laboratories, instrument rooms, glass washing rooms and offices and thus called for major new construction. Other areas already devoted to the Basic Sciences required only minimal reconditioning. The replanning that resulted from this further analysis is illustrated in the following drawings entitled Schematic Design - Architectural. (Accompanying 24" x 36" drawings)

As stated in the 1975 Construction Grant, the spaces within the 81,000 square feet of remodeled area are to be air conditioned. This will be accomplished primarily by the construction of two of the four mechanical equipment towers proposed in the Planning Report. Selected areas, however, will be served by alternate means until more extensive remodeling occurs within their quadrant of the Complex and the other two mechanical towers are constructed.

Non-assignable spaces such as toilets, stairs and corridors are to be remodeled where indicated on the Schematic Design Plans. New ceilings and lighting will be provided in corridors where major trunk ducts are installed for the air conditioning of the remodeled assignable spaces.

Another directive of the 1975 Grant was to remodel the total building complex to comply with the new State Building Code. A study of all code deficiencies was prepared under the Planning Report and twenty-three architectural and several mechanical and electrical deficiencies were found. The major items will be corrected at this time with the remaining to be remodeled under future projects.

The following list indicates those deficiencies found, the corrections under this Schematic Design Plan and those under future projects:

ARCHITECTURAL

1. Fireproofing non-bearing exterior wall at Fourth Floor. (Future Project)
2. Fireproofing of Stairs and Mechanical Shafts: All stairs to be fireproofed now except 2 stairs in Lyon Lab. Mechanical Shafts. (Future Project)
3. Fire rated stair enclosures as required.
- 4-5. Fireproofing of exposed steel columns and roof construction.
6. Various corridor walls to be upgraded to a 1 hour fire rating. (Future Project)

7. Add guardrails on roof near parapet and mechanical penthouses. (Future Project)
8. In attic space on 5th Floor build fire separation walls. (Future Project)
9. Various room walls to be upgraded to a 1 hour occupancy separation wall. (Future Project)
10. Toilet fixtures must meet handicapped requirements. New toilets in SE quadrant to provide partial correction at this time.
11. Exit travel distances will be corrected with the new stair remodelings, except in Sub-basement level.
- 12- Continuous stairs from top level to the ground level with exits to the
13. exterior at grade will be provided with the addition of new Stair 'D'.
14. Illegal dead end corridors will be corrected except in the Sub-basement level.
15. Exit widths will be made sufficient on all levels except in the northeast quadrant of the 2nd Floor of Millard Hall.
16. Adequate number of exits from remodeled large rooms will be provided in this project except for the classroom on the 3rd Floor of Millard Hall.
17. Stairs in corridors will be replaced by ramps in most areas to accommodate handicapped persons.
18. All exit stair widths will meet Code except for the two non-required stairs in Owre Hall between the Fourth Floor and Fifth Floor.
- 19- Door encroachments into landing widths, and rooms opening into stair
20. enclosures will be corrected except at the stairs in Lyon Lab.
21. Non-rated doors must be replaced in the stairs of Lyon Lab. (Future Work)
22. Corridor doors not meeting the required 20 minute rating will be replaced in the rooms where remodeling work is to be completed.
23. Elevators: Elevator No. 7 will be removed; only these priority items will be corrected at this time by adding to the existing elevators: hoistway access, pit stop switch, pit access ladders, cab emergency exits, cab emergency lighting, car top controls and hoistway door filler panels. No elevators are to be remodeled for handicapped at this time.

MECHANICAL

- 15.1 Radiation units on the same zones of control will be corrected in all remodeled areas. Either new radiation will be installed or self-contained control valves will be added to the existing units to create additional zones of control.
- 15.2 All areas where new central ventilation is installed will be ventilated to comply with the Code.
- 15.3 Fire dampers will be installed where required in all remodeled areas.
- 15.4 Standpipes and hose cabinets will be provided where required.
- 15.5 Sprinklers will not be installed during this remodeling as no remodeled space required such.
- 15.6 Building Envelope improvements will be made at some future time as part of an over-all Health Sciences improvement program for energy savings. Insulation will be added to selected exterior walls within the remodeled areas to facilitate the implementation of the future savings program.
- 15.7 Ventilation systems and controls will be improved on central systems which continue to serve remodeled areas.

ELECTRICAL

- 16.1 A complete audible alarm and manual turn in station system will be provided throughout the Complex as required by Code. Automatic smoke and heat sensing devices will be installed in remodeled areas as required.
- 16.2 Heat and smoke detection systems with manual pull devices will be provided at mechanical rooms and stairs.
- 16.3 An emergency generator will be installed in the Mayo Garage to provide power for exit signs, elevators, and illumination.
- 16.4 Power factors will be corrected for energy conservation on new motors with the installation of capacitors at this time. Existing motors will be corrected in future work.

CONSTRUCTION OUTLINE

GENERAL CONSTRUCTION

- | | |
|-------------------------------|--|
| Site Work | <ul style="list-style-type: none">- Grading to be a part of the Contract Documents. Topsoil, sod and planting by the Owner.- Sidewalks, building entrance approaches of exposed aggregate concrete and/or brick pavers to match with the existing Plaza Construction. |
| Footings | <ul style="list-style-type: none">- Reinforced concrete spread footings. |
| Foundation Walls | <ul style="list-style-type: none">- Reinforced concrete foundation walls below grade. Dampproofing on exterior face. (For new construction) |
| Main Structure | <ul style="list-style-type: none">- Steel columns and beams. Concrete floor slabs. All exposed steel to be fire-proofed. (For new construction) |
| Roof Structure | <ul style="list-style-type: none">- Reinforced concrete roof slab. (For new construction) |
| Exterior Surfaces | <ul style="list-style-type: none">- Mechanical Equipment Room Towers to be face brick matching existing brickwork, and insulated metal panel to match existing. |
| Roofing and Roof Insulation | <ul style="list-style-type: none">- Pitch and gravel built-up roofing over cellular glass insulation and lightweight concrete. |
| Wall Coping and Roof Flashing | <ul style="list-style-type: none">- Galvanized sheet metal, painted. |
| Entrances and Vestibules | <ul style="list-style-type: none">- Insulating glass and hollow metal frames. (For new construction) |
| Stairs | <ul style="list-style-type: none">- Steel stair, painted. (For new construction) |
| Ceilings (Corridors) | <ul style="list-style-type: none">- Accessible metal ceiling. Continuous fluorescent strip fixtures in light coves. |
| Ceiling (General) | <ul style="list-style-type: none">- Assignable spaces to have existing gypsum plaster ceilings with exposed ductwork and pendant mounted fluorescent lighting or suspended acoustic ceilings with fluorescent lighting. |
| Partitions | <ul style="list-style-type: none">- Metal studs, painted dry wall, masonry blocks or plaster. |
| Toilet Compartments | <ul style="list-style-type: none">- Ceiling mounted, metal or plastic laminate. |
| Urinal Screens | <ul style="list-style-type: none">- Wall mounted, metal or plastic laminate. |
| Interior Door Frames | <ul style="list-style-type: none">- Hollow metal. |

- Interior Doors - Solid core wood veneer to match existing.
- Exterior Door Frames - Hollow metal.
- Exterior Doors - Hollow metal.
- Floor (Corridor) - Existing to be repaired.
- Floor (General) - Vinyl asbestos tiles, carpeting, concrete, ceramic tile, or seamless floor.
- Windows - Existing to remain, correct infiltration and paint. (For remodeling space)
- Louvers and Vents - Anodized aluminum.
- Fume Hoods - Automatic air bypass type. Isotope hoods to be stainless steel. Face velocities to be 150 FPM isotope hoods; 100 FPM for all others.
- Painting - Paint remodeled and new construction with flat enamel finish.
- Deluge (Safety) Showers - Ceiling Type deluge showers.

MECHANICAL CONSTRUCTION

- Ventilation Supply System - Central built-up, variable-volume air supply units with low velocity ductwork distributing to ceiling located air diffusing devices. Hot water reheat or variable-air-volume space temperature control. Separate systems for Animal Areas.
- Toilet Exhaust System - Fan and duct system with negative pressure in ductwork.
- Fume Hood Exhaust System - Fan and duct system with negative pressure in ductwork. One fan per hood (or in some cases per room). Fume hood fans to operate continuously.
- General Exhaust System - Fan and duct system. System to serve primarily laboratories.
- Supply Air Units - Built-up, walk-in type of concrete block or double-wall metal panel.
- Animal Exhaust Units - Built-up housing with automatic roof filter and space for future odor removal equipment.
- Supply Fans - Single or double inlet as required with air foil blades. Outlet velocities and tip speeds in accordance with most recent ASHRAE guide recommendations.

- Return/Relief Fans - Similar in characteristics to supply fans.
- General Exhaust Fans - Similar in characteristics to supply fans.
- Cooling Coils - Copper tubes with aluminum fins arranged for counter flow of air and water. Face velocity not more than 500 FPM. Provided with 16 gauge coldered drip pans.
- Preheat Coils - Steam distributing type with 1" diameter copper tubes and aluminum fins.
- Humidifiers - Steam manifold type.
- Air Filters - Two stage providing 90% dust spot efficiency.
- Ductwork - Material, bracing and hangers to be in accordance with the most recent ASHRAE guide. Galbestos or Type 316 stainless steel for fume hood exhaust.
- Acoustic Duct Insulation - Fireproof glass fiber with protective coating.
- Reheat Coils - Hot water type with copper tubes and aluminum fins.
- Variable Air Volume Units - Automatic thermostatically controlled boxes providing air volume modulation sound attenuation.
- Heating Media - High pressure steam from the central University heating plant. Steam-to-water convertors to provide hot water for radiation and reheat systems.
- Radiation Systems - Forced hot water system supplying finnedtube perimeter radiation. Two-pipe, reverse-return system. Vestible unit heaters to be served by radiation system.
- Reheat System - Forced hot water system, separate form radiationsystem, supplying reheat coils. Two-pipe reverse-return system.
- Chilled Water System - Forced cold water system. Chilled water generated by absorption chillers in the Unit A-B/C plant. Distribution through a direct return primary loop in the sub-basement. Coils fed by secondary loop pumps.
- Temperature Control - Pneumatic/Electronic automatic temperature control system. Provisions to be made to accommodate future central control and surveillance system.
- Plumbing System - To conform with State and Municipal Codes plus requirements of governing agencies.

ELECTRICAL CONSTRUCTION

Primary Electrical Work

- Primary disconnection and reconnection for transformer additions to Jackson Owre Vault. Secondary feeder disconnection and reconnections for the addition of a transformer in the Millard Vault and possibly the primary switch gear also.

Transformer Additions

- Three new single phase distribution transformers will replace the existing 3 single phase transformers in the Jackson Owre Vault. A new 3 phase distribution transformer will be added to the Millard Vault.

Main Service

- The existing main service switchgear in the Millard Switch Board Room will be replaced with a 120/208 volt 3 phase 4 wire fused switchboard. The existing Jackson switchboard will be replaced with a new 120/208 volt 3 phase 4 wire fused switchboard. The existing Millard switchboard #2 will be replaced with a 120/208 volt 3 phase 4 wire fused switchboard.

CONTRACTS, PHASING, AND SCHEDULE

CONTRACTS

The work of the 75 GRANT CONSTRUCTION project will occur in two major construction contracts as follows, to expedite the construction schedule:

CONTRACT A

Construction of the General Construction portion of the Southeast, and Southwest Mechanical Equipment Towers will constitute the scope of Contract A. The Towers will house air handling units provided as part of Contract B. It is noted that construction of the Northwest and Northeast Mechanical Equipment Tower will occur as part of future construction projects.

CONTRACT B

Construction of the interior remodeling work and the equipping of the Mechanical Equipment Towers, provided under Contract A described above, will constitute the work of Contract B. Construction under Contract B will be accomplished under 4 major phases to allow for the creation of finished space in the presently unoccupied portions of the building thereby allowing present tenants to move into those areas which then free other areas for renovation.

PHASE B1

Phase B1 is the non-assignable areas of the project and includes the work described in the following paragraphs.

Stairways C thru J which do not meet the requirements of the Code are to be upgraded. Stairs D, E and F are removed and a new stair added at Stair D. Stairway A and B will be upgraded with future work.

Elevator 7 will be removed. Elevators 2-8 in the building will be upgraded to correct these deficiencies judged "very important" priorities by the Elevator Consulting Engineers in Appendix B of the Planning Report. Also the walls of the elevator shafts will receive additional fireproofing where appropriate in order to provide the required two-hour shaft enclosure.

Corridors will be renovated only in the areas shown on the floor plans entitled Schematic Design - Architectural. Renovation of the remaining corridors of the Complex will occur as part of future construction projects.

A new core of toilets will be added to the S.E. quadrant of the building. Other toilets will be removed when they occur within the area of major project work. Renovation of toilets outside this area will occur as parts of future construction contracts.

New and remodeled mechanical and electrical equipment rooms will be provided under this phase of the General Construction Contract.

Phase B1 will also include the major Mechanical and Electrical Distribution work of the project.

The remaining 3 phases include the work to be done in the assignable areas of the project and are broken into these phases for the accommodation of the Users.

PHASE B2

The majority of this work is the renovation of the 60,000 S.F. of assignable area vacated by the School of Dentistry. A certain portion of this work will be near completion in June of 1977 thereby allowing movement of occupants from the spaces scheduled for renovation under Phase B3.

PHASE B3

Construction of nearly 18,000 S.F. of assignable area will be started in June 1977. Much of this area, not being used during the summer of 1977, must be completed by fall of 1977 for scheduled teaching use.

PHASE B4

Construction of nearly 2,500 S.F. of assignable area will start in September of 1977 and will account for the final portion of work done under Contract B.

As the following construction schedule indicates, certain areas of work will be overlapping under the four phases of Contract B as well as overlapping the work of Contract A. The final determination of scope and schedule is of course subject to further consideration as the problems of construction and User needs becomes further defined.

COST ASSUMPTIONS

Preparing a cost estimate in the early stages of the planning process requires that the assumptions upon which an estimate is based be defined so that consistent interpretation occurs. The following assumptions have been made in revising the statement of Probable Costs.

SITE ACCESS. Contractors will have access to the site and various portions of the building, which may cause occupants to endure certain hardships.

SCHEDULE. All costs were based on the Construction Schedule incorporated herein and any deviations from this schedule may alter the cost.

CONTRACTS AND PHASING. All costs were based on the construction contracts indicated and their corresponding phasing sequence. Additions to the contracts may alter the scope of work and cost.

BUILDING CODES. Code correction work will be done only as indicated during this 75 GRANT CONSTRUCTION phase. Other correction work will be done at some future time. Code interpretations by Building Officials may alter the scope of work and cost.

AIR CONDITIONING. Will be accomplished as per the schematic drawings.

ASSIGNABLE AREA RENOVATION. Previously all areas within the 81,000 square foot 75 GRANT CONSTRUCTION were put into one of five categories or types of reconstruction. Cost consultants then provided a cost figure for each category as follows:

CATEGORY 1

Indicates same use; resurface countertops - refinish casework, paint walls and ceilings, no new services.

CATEGORY 2

Indicates same use; resurface countertops - refinish casework, paint walls and ceilings, install few new services and sinks.

CATEGORY 3

Indicates same use; remove and/or install countertops and casework, paint walls and ceilings, install additional new services and sinks, no special features.

CATEGORY 4

Indicates similar use; minor wall removal and installation, floor or ceiling changes, remove and/or install major amount casework, paint walls and ceilings, install whole new services and sinks, few special features.

CATEGORY 5

Indicates change in use; major wall removal and installation, major floor or ceiling changes, remove and/or install major amount casework, paint walls and ceilings, install whole new services and sinks, many special features, extensive mechanical - electrical demolition and installation.

NON BUILDING COST DATA. Data for the non building costs was taken and/or interpolated from data supplied by the University of Minnesota personnel.

ENERGY CONSERVATION. No corrective work on the exterior fenestration or insulation of walls will be done at this time.

FUTURE ESTIMATES. The Probable Costs estimate will again be revised and updated as the design development and construction document phases are completed and increasing detail is incorporated into these plans.

Using these assumptions and the Schematic Plans, the following statement of PROBABLE COSTS was prepared.

PROBABLE COSTS

I. CONSTRUCTION

| | | |
|--|-------------|--------------------|
| a. Unassignable Spaces (Related to Assignable) | | |
| 1. Stairways | | 90,860 |
| 2. Elevators | | 41,500 |
| 3. Corridors | | 384,000 |
| 4. Toilets | | 85,430 |
| 5. Fan Room Towers (2 Towers) | | 449,230 |
| 6. Interior Equipment Rooms | | 123,300 |
| | | <u>\$1,174,320</u> |
| b. Distribution Systems (Related to Assignable) | | |
| 1. Corridor Ductwork | | 180,000 |
| 2. Fire Protection | | 40,500 |
| 3. Chilled Water Piping | | 252,280 |
| 4. Steam Piping | | 78,400 |
| 5. Signal Systems | | 67,500 |
| 6. Power Systems | | 180,000 |
| 7. Emergency Systems | | 45,000 |
| 8. Fume Hoods (Exclusive of 81,000 s.f.) | | 0 |
| | | <u>\$ 843,680</u> |
| c. Assignable Spaces | | |
| 1. Category 1 3,955 s.f. x \$ 5.85/s.f. | | 23,140 |
| 2. Category 2 8,496 s.f. x \$13.05/s.f. | | 110,880 |
| 3. Category 3 8,628 s.f. x \$28.80/s.f. | | 248,490 |
| 4. Category 4 15,317 s.f. x \$40.00/s.f. | | 612,680 |
| 5. Category 5 41,380 s.f. x \$50.00/s.f. | | 2,085,550 |
| 6. Cold Rooms 2,469 s.f. x (N.I.C.) | | 0 |
| 7. Stair/Mech. <u>755 s.f.</u> (Under other areas) | | 0 |
| | 81,000 s.f. | <u>\$3,080,740</u> |
| d. Bidding Contingency | | |
| 1. (10% of Construction Estimate) | | <u>\$ 509,870</u> |
| Total Construction Cost | | <u>\$5,608,610</u> |
| (Construction Monies from Grant \$5,639,500) | | |

II. PROFESSIONAL SERVICES

| | | |
|---|--|-------------------|
| a. A/E Fees | | |
| 1. A/E Basic Services (Contract A) | | 37,500 |
| 2. A/E Basic Services (Contract B) | | 535,860 |
| 3. A/E Master Planning/Additional Services/ Reimbursable Expenses Including Consultants. | | 223,040 |
| | | <u>\$ 796,400</u> |

| | |
|--|-------------------|
| b. Consultants | |
| 1. Special Consultants | 5,000 |
| 2. Scheduling Consultant | 0 |
| 3. Cost Consultant (Special from U/M) | 0 |
| 4. Testing and Balancing | 10,000 |
| | <u>\$ 15,000</u> |
| c. U of M In-House | |
| 1. Supervision (1.25% x Const. Cost) | 70,100 |
| 2. Misc. Engineering | 8,000 |
| 3. Site Survey | 1,500 |
| 4. Activation and Incidentals | 10,000 |
| 5. Health Sciences Planning Office (1.25% x Const. Cost) | 70,110 |
| 6. Landscaping Design Fees | Inc. Elsewhere |
| 7. Furnishings and Group I & II Equipment Fees | Inc. Elsewhere |
| 8. Graphics & Signage Fees | Inc. Elsewhere |
| | <u>\$ 159,720</u> |

III. SPECIAL CHARGES

| | |
|--|-------------------|
| a. Sitework (Landscaping Allowances) | 26,350 |
| b. Utilities | 4,000 |
| c. SAC Charge | 4,250 |
| d. Permits (.002 x Const. Cost) | 11,220 |
| e. Control Center Wiring | 40,000 |
| f. Chilled Water Systems | 100,000 |
| g. Construction Contingency (5% x Const. Cost) | 280,430 |
| h. Materials Testing | 5,000 |
| | <u>\$ 471,250</u> |

IV. FURNISHINGS AND EQUIPMENT

| | |
|---|-------------------|
| a. Group I Equipment not in Base Contract | |
| 1. New Cold Rooms \$125/s.f. 1500 s.f. | 187,500 |
| 2. Remodeled Cold Rooms \$ 60/s.f. 920 s.f. | 55,200 |
| b. Group II Equipment | |
| 1. Furnishings and Equipment | 717,300 |
| 2. Graphics and Signage | 20,000 |
| | <u>\$ 980,000</u> |

PROJECT COST (PRIOR TO COST REDUCTIONS) \$8,030,980

V. COST REDUCTION ITEMS

| | |
|---|-------------|
| TYPE I COST - Prorated cost paid by Future Remodeling | |
| a. Surgical Pathology Renovation | \$ (35,007) |
| b. Mortuary Science Renovation | \$ (20,999) |

TOTAL PROJECT COST \$7,974,974