

WAYNE STATE UNIVERSITY
WSUL & DALNET COMPUTER FACILITY
F E A S I B I L I T Y S T U D Y

SV&A PROJECT NO: 8423.01
ML&S PROJECT NO: 84-3933
WSU PROJECT NO: 8476

TABLE OF CONTENTS

1. SUMMARY OF STUDY
2. SUMMARY OF SPATIAL REQUIREMENTS
3. DETAILED SPACE SPECIFICATIONS
 - 3.1 Computer Room
 - 3.2 Operator Room
 - 3.3 Equipment Repair/Storage
 - 3.4 Communications Closet
 - 3.5 Reception
 - 3.6 Project Manager Office
 - 3.7 Workroom
 - 3.8 Conference Room
 - 3.9 Training Room
4. SPATIAL RELATIONSHIPS
5. LIGHTING REQUIREMENTS
6. ELECTRICAL REQUIREMENTS
7. COMMUNICATIONS REQUIREMENTS
8. SECURITY REQUIREMENTS
9. ENVIRONMENTAL REQUIREMENTS
10. KRESGE LIBRARY ALTERNATIVE LOCATION
11. SCIENCE LIBRARY ALTERNATIVE LOCATION
12. COST SUMMARY
13. SCHEDULE

SUMMARY OF STUDY

1. SUMMARY OF STUDY

The Wayne State University Library system (WSUL) and the Detroit Area Library Network (DALNET) intend to purchase jointly a computerized circulation control and integrated library system for their operations. The equipment and its associated operational activities will be centralized on the Wayne State University campus. Specifications have been prepared for the equipment and proposals have been received from vendors. This document outlines the associated requirements for physical space to accommodate the equipment and its associated activities, reports on the analysis of alternative sites and outlines preliminary estimates of construction costs and schedule.

Initially two locations, one in the Kresge Library and one in the Purdy Library, were considered for this program. However as a result of the analysis of the spatial requirements and other Library priorities, the Purdy Library location was abandoned and the Kresge Library location was limited to accommodating an alternative for the WSUL Computer Facility only without any administrative spaces.

A location capable of accommodating the entire program was identified as being available on the seventh floor of the Science Library. Alternative layouts were prepared for this space and a preferred arrangement was selected. This layout was developed with the option of installing the WSUL program only or adding DALNET to install the full program.

Cost estimates were developed for the alternatives in the Science Library location and the Kresge Library location.

A schedule for the work was prepared and the several questions identified for resolution before the next stage of the design work;

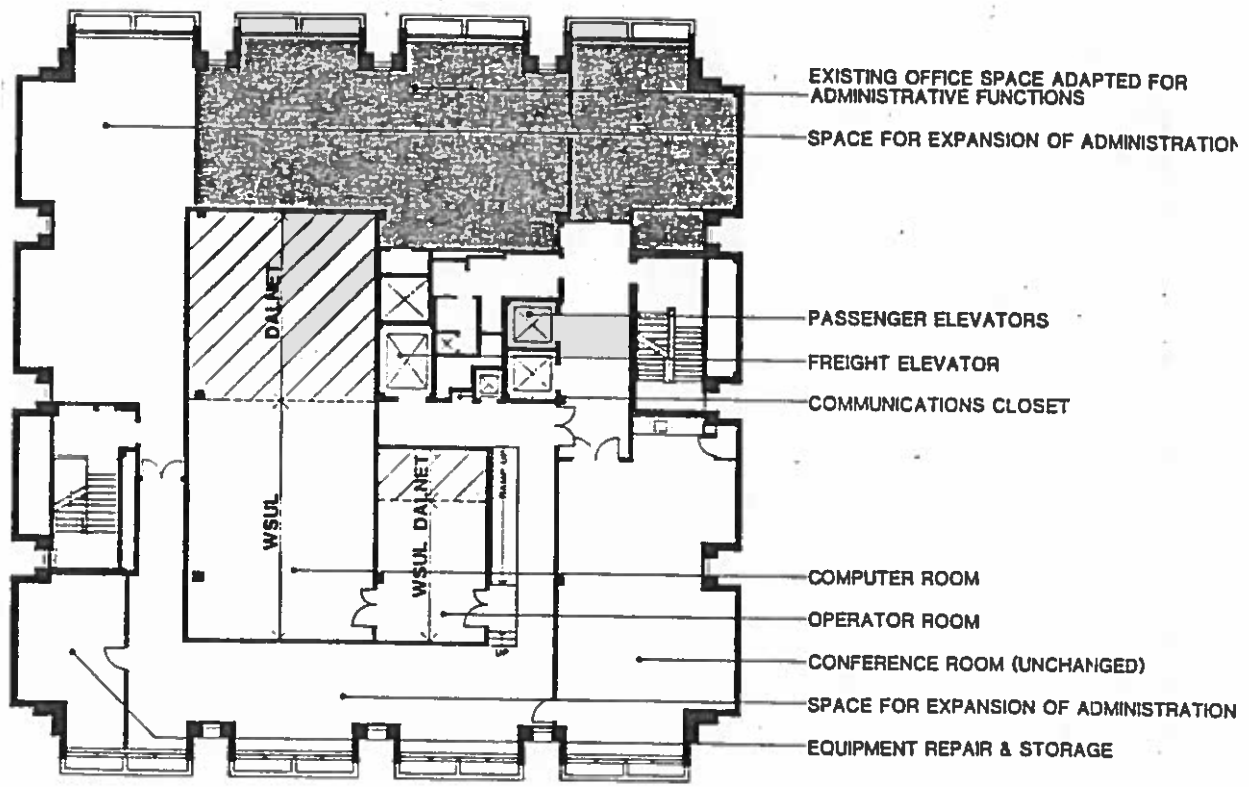
Should the Kresge location be deleted from further consideration? (If DALNET remains in the program)

Should the final design and construction documents for the WSUL Computer Facility commence before those for the DALNET Facility?

Should the documents for DALNET commence before DALNET is committed to the project?

Should specific provisions for DALNET be made in the WSUL installation (at a cost over the minimum necessary to accommodate WSUL) before DALNET is committed to the project?

Information to assist in answering these questions is contained in this report.



SCIENCE LIBRARY SEVENTH FLOOR

SUMMARY OF SPATIAL REQUIREMENTS

LARGER PROGRAM - WSUL & DALNET COMBINED

SPACE	IBM NET AREA	GEAC NET AREA
Computer Room		
WSUL Phase 1	392 SF	315 SF
WSUL Phase 2	36 SF	132 SF
DALNET	280 SF	800 SF
Environmental	165 SF	165 SF
Power Conditioning	60 SF	60 SF
Circulation & Planning (10%)	93 SF	147 SF
Operator Room		
WSUL Phase 1	350 SF	310 SF
WSUL Phase 2	-	- SF
DALNET	19 SF	63 SF
Circulation & Planning (10%)	37 SF	37 SF
Equipment Repair/Storage	200 SF	200 SF
Communications Closet	3 SF	3 SF
Circulation (@ 10% net)	164 SF	223 SF
SUB-TOTAL COMPUTER FACILITY	1799 SF	2455 SF
Staff Area		
Reception	175 SF	175 SF
Project Manager Office	175 SF	175 SF
Workroom	700 SF	700 SF
Conference Room	350 SF	350 SF
Training Room	600 SF	600 SF
Circulation (@ 10% net)	200 SF	200 SF
SUB-TOTAL STAFF AREA	2200 SF	2200 SF
TOTAL FACILITY	3999 SF	4655 SF

The Staff Area is indicated separately from the Computer Facility because space may dictate a remote location for this group of spaces.

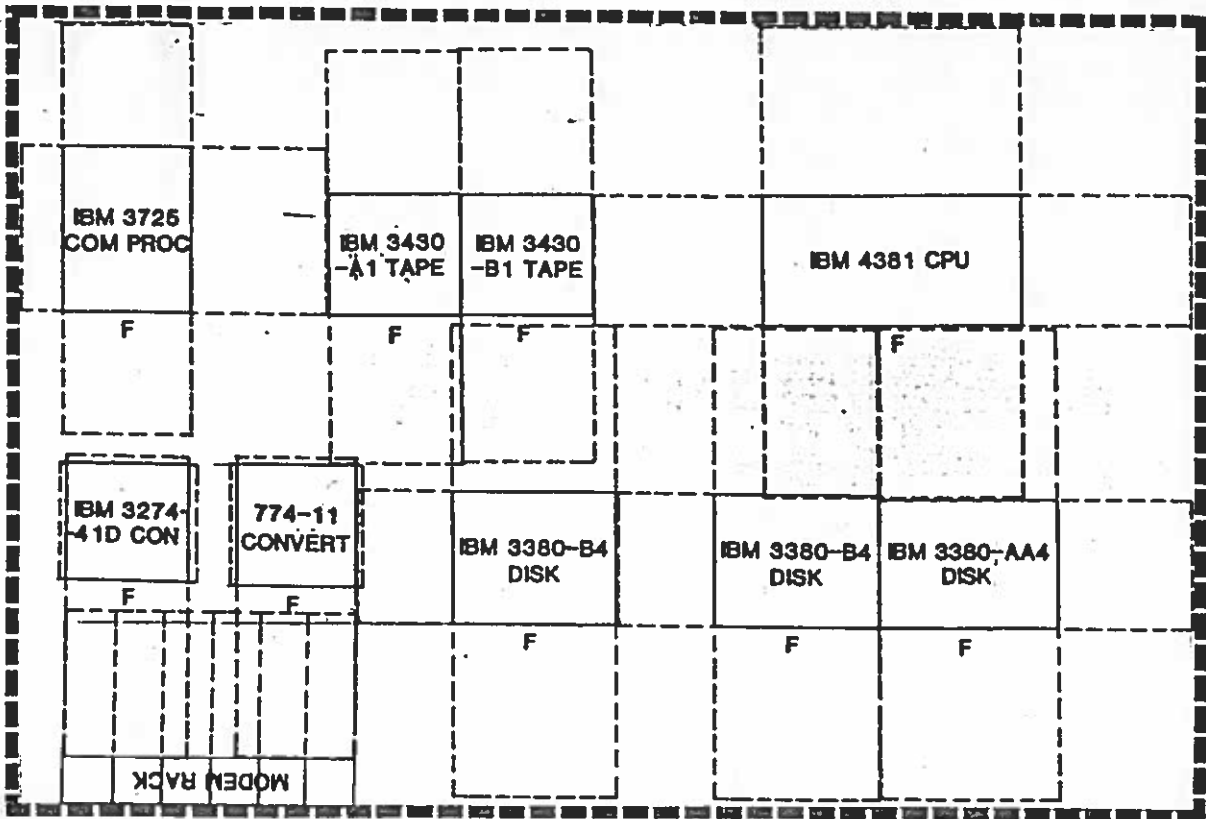
See Figures 1, 2, 3 & 4 for generation of space required for Computer Room and Operator Room.

SMALLER PROGRAM - WSUL ONLY

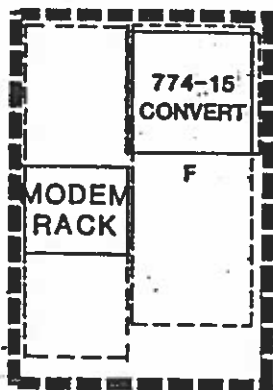
SPACE	IBM NET AREA	GEAC NET AREA
Computer Room		
WSUL Phase 1	392 SF	315 SF
WSUL Phase 2	36 SF	132 SF
Environmental	165 SF	165 SF
Power Conditioning	60 SF	60 SF
Circulation & Planning (10%)	65 SF	67 SF
Operator Room		
WSUL Phase 1	350 SF	310 SF
WSUL Phase 2	-	- SF
Circulation & Planning	35 SF	31 SF
Equipment Repair/Storage	200 SF	200 SF
Communications Closet	3 SF	3 SF
Circulation (@ 10% net)	132 SF	138 SF
SUB-TOTAL COMPUTER FACILITY	1438 SF	1411 SF
Staff Area		
Reception	175 SF	175 SF
Project Manager Office	175 SF	175 SF
Workroom	700 SF	700 SF
Conference Room	350 SF	350 SF
Training Room	600 SF	600 SF
Circulation (@ 10% net)	200 SF	200 SF
SUB-TOTAL STAFF AREA	2200 SF	2200 SF
TOTAL FACILITY	3638 SF	3611 SF

The Staff Area is separated from the Computer Facility because space may dictate a remote location for this group of spaces.

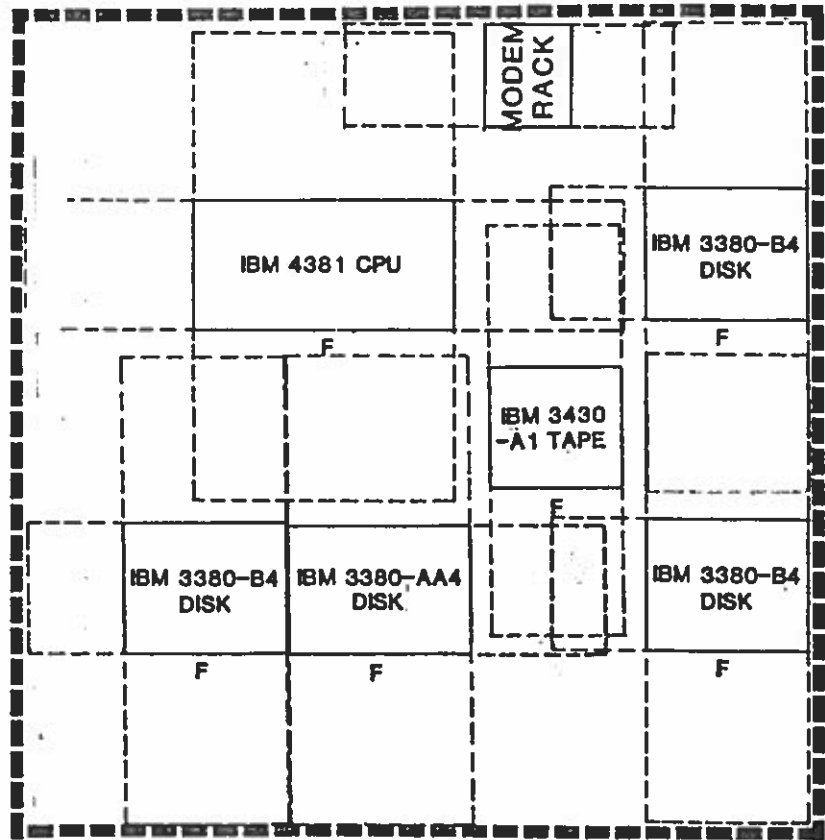
See Figures 1, 2, 3 & 4 for generation of space required for Computer Room and Operator Room.



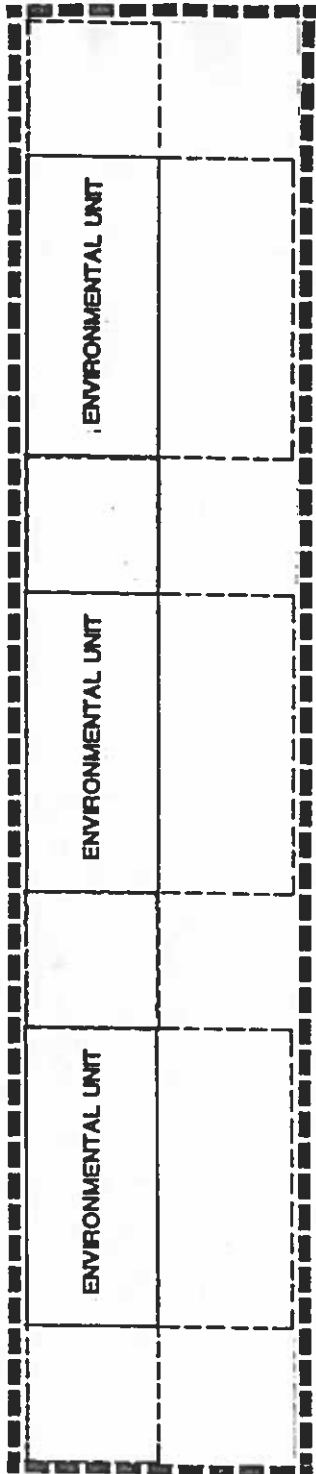
IBM WSUL Phase 1 392 SF



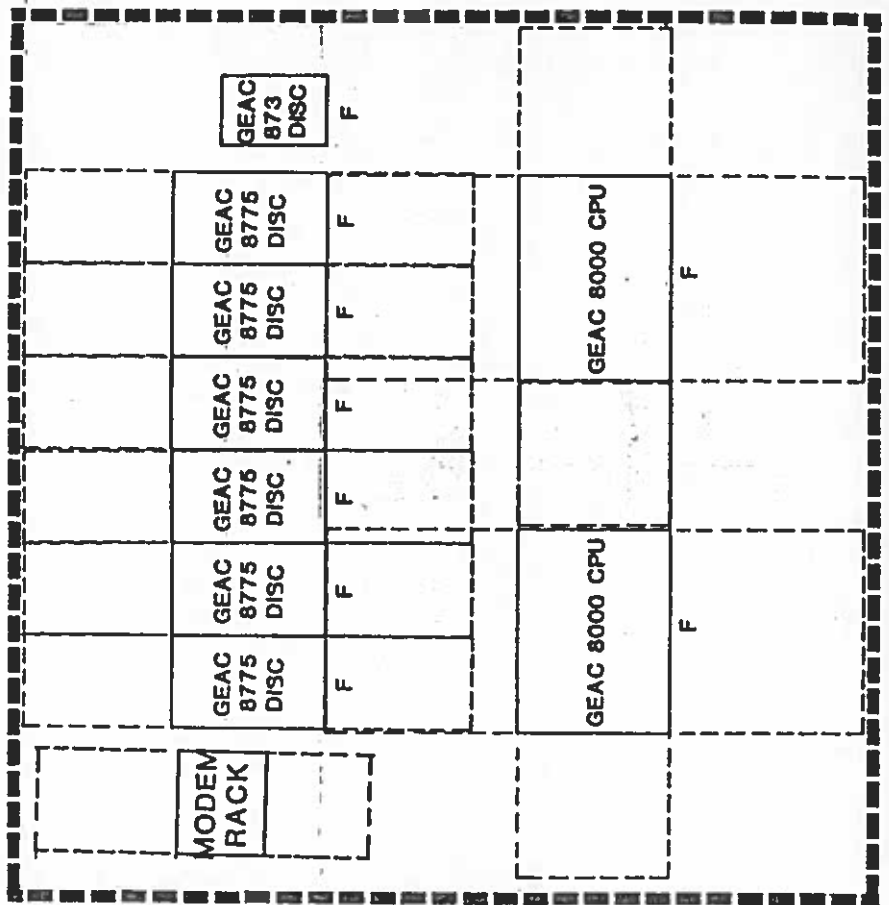
IBM WSUL Phase 2 33 SF



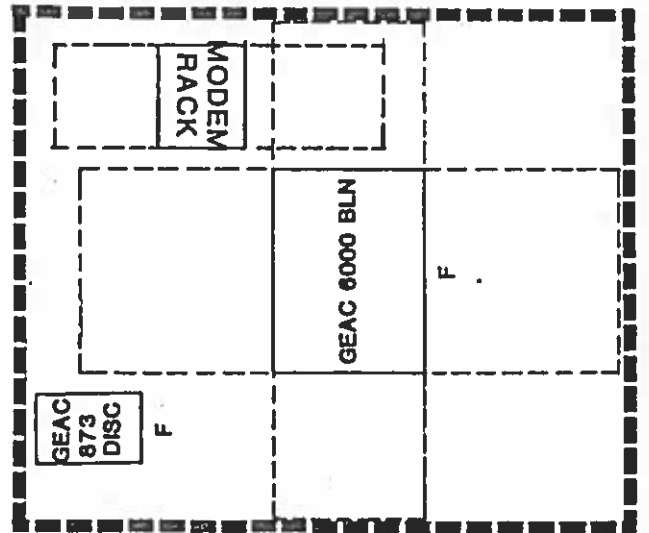
IBM DALNET 280 SF



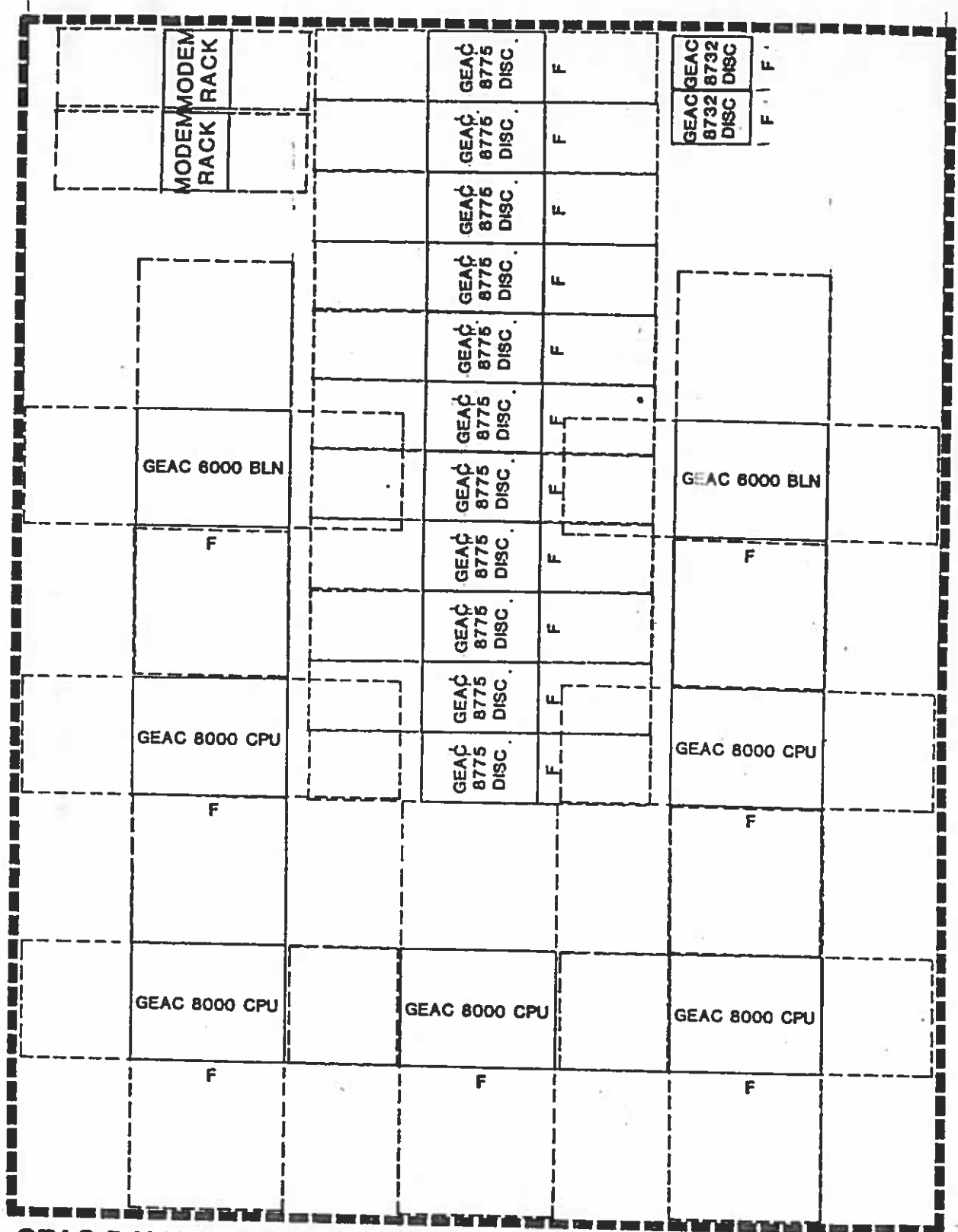
Environmental 165 SF



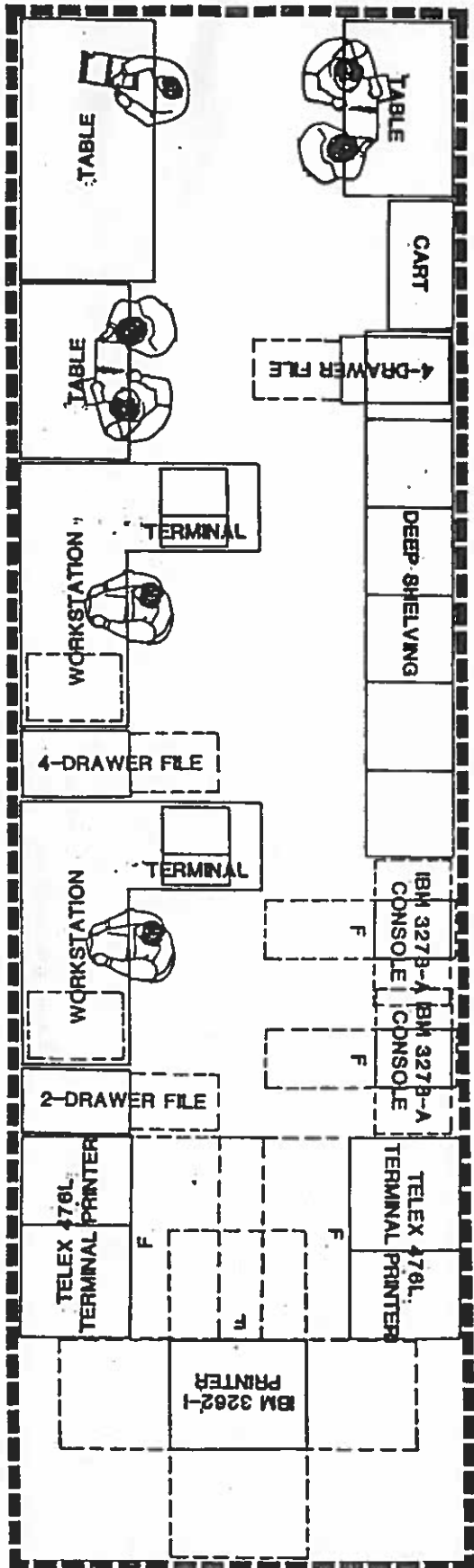
GEAC WSUL Phase 1 315 SF



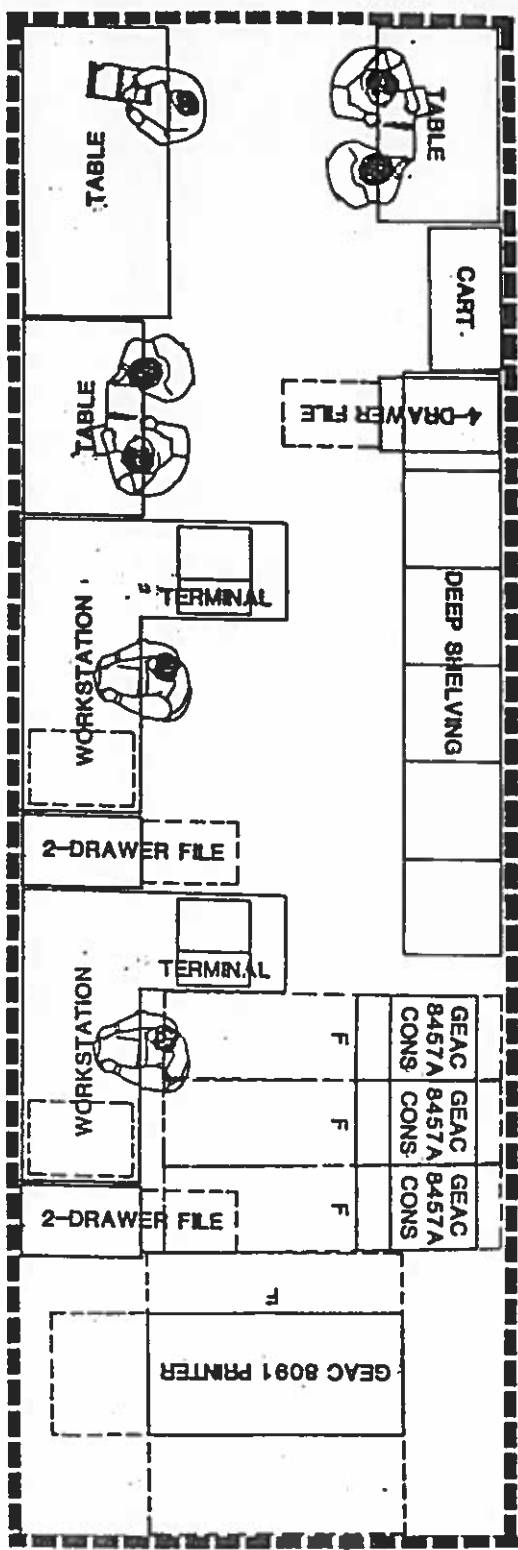
GEAC WSUL Phase 2 132 SF



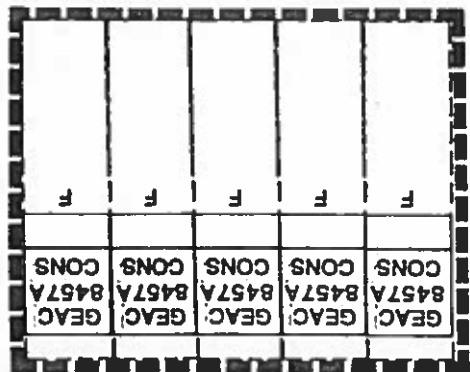
GEAC DALNET Phases 1 thru 3 800 SF



IBM Phase 1 350 SF



GEAC Phase 1 310 SF



GEAC Phase 2 63 SF

DETAILED SPACE SPECIFICATIONS

3.1 COMPUTER ROOM

3.1.1 Function

To house the CPUs, disk and tape drives, terminal controllers, etc., necessary to operate the WSUL and DALNET computer systems.

To house a tape storage cabinet, and carts to move paper and tape output around.

To be operational throughout 24 hours. Computer Operators will initially work the following hours;

6:00 A.M. until 1:00 A.M. Monday through Friday.

7:00 A.M. until 9:00 P.M. Saturday and Sunday.

Closed on New Year's Day, Memorial Day, 4th July, Labor Day, Thanksgiving Day, and Christmas Day.

3.1.2 General Character

Efficient, uncluttered, clean appearance.

3.1.3 Location

Immediately adjacent to Computer Operator's Room.

Isolated from heavily used public areas.

3.1.4 Access

Access must be restricted to authorized staff and service people. Access must be available 24 hours per day. The hours from 1:00 A.M. to 6:00 A.M. and the six holidays will initially only be used for emergency access. There should be easy access for computer equipment. The access should be remote from heavily used public areas.

3.1.5 Size

See Section 2 and Figures 1, 2 & 3.

Ceiling should be 7 feet high minimum above access floor.

3.1.6 Furniture

One (1) computer tape storage cabinet 36"W x 18"D x 78"H. (18" front clearance).

Wall shelving, 12" deep.

One (1) 4'0"x2'6" table with drawers for a telephone and storage of equipment repair records.

Two (2) carts, 36"W x 18"D, to transport tapes.

Two (2) chairs.

Wall clock.

3.1.7 Equipment

Two alternative systems are to be considered until final selection by WSUL - NOTIS (IBM) and GEAC. See listing of equipment on following sheets.

3.1.7 Computer Room (Contd)

IBM ALTERNATIVE - WSUL Phase 1 Installation

1 IBM 4381 CPU Group 2.

Dimensions - 64.5"W, 70.5"H, 32"D.
Clearances - 42"F, 42"B, 42"S.

4.70 KVA, 13,650 BTU, 1350 CFM.

1 Disk (2540 MB) IBM 3380-AA4.

Dimensions - 44.5"W, 70.5"H, 32"D.
Clearances - 42"F, 42"B, 34"RS, 0"LS.

2.40 KVA, 6000 BTU, 360 CFM.

2 Disks (2540 MB) IBM 3380-B4.

Dimensions - 40"W, 70.5"H, 32"D.
Clearances - 42"F, 42"B, 0"RS, 24"LS.

2.20 KVA, 5100 BTU, 220 CFM.

1 Tape Drive IBM 3430-A1.

Dimensions - 33"W, 39"H, 30"D.
Clearances - 36"F, 36"B, 0"RS, 0"LS.

1.20 KVA, 3700 BTU, 200 CFM.

1 Tape Drive IBM 3430-B1.

Dimensions - 33"W, 39"H, 30"D.
Clearances - 36"F, 36"B, 0"RS, 0"LS.

0.40 KVA, 1250 BTU, 60 CFM.

1 Converter Datastream 774-11.

Dimensions - ??"W, ??"H, ??"D.
Clearances - ??"F, ??"B, ??"S.

?." KVA, ???? BTU, ?? CFM.

10 Modems UDS RM8-212A.

Dimensions - See rack below.
Clearances - See rack below.

1 Controller IBM 3274-41D.

Dimensions - 30"W, 20"H, 29"D.
Clearances - 44"F, 1"B, 0"T, 1"RS, 1"LS.

0.30 KVA, 836 BTU, 70 CFM.

1 Communications Processor IBM 3725 (24 lines).

Dimensions - 32"W, 60"H, 41"D.

Clearances - 29.5"F, 29.5"B, 34"RS, 9.75"LS.

1.20 KVA, 2000 BTU,

15 Modems (NOT SPECIFIED YET).

Modem Rack - one (1) 70" rack

Dimensions - 25.5"W, 70"H, 21"D.

Clearances - 25.5"F, 36"R, 0"S.

Power Strip in rack.

3.1.7 Computer Room (Contd)

IBM ALTERNATIVE - WSUL Phase 2 installation

1 Convertor Datastream 774-15.

Dimensions - ??"W, ??"H, ??"D.

Clearances - ??"F, ??"B, ??"S.

?.?? KVA, ???? BTU, ??? CFM.

15 Modems VDS RM8-212A

Dimensions - See rack below.

Clearances - See rack below.

* 1 Controller IBM 3274-41D.

Dimensions - 30"W, 20"H, 29"D.

Clearances - 44"F, 1"B, 0"T, 1"RS, 1"LS.

0.30 KVA, 836 BTU, 70 CFM.

** 10 Modems (NOT SPECIFIED YET).

Modem Rack - One (1) 42" rack.

Dimensions - 25.5"W, 42"H, 21"D.

Clearances - 25.5"F, 36"R, 0"S.

Power Strip in rack.

* Not required for Science Library location of
Computer Facility.

** 12 Modems required for Science Library location.

3.1.7 Computer Room (Contd)

IBM ALTERNATIVE - DALNET Phase 1

1 Disk (2540 MB) IBM 3380-AA4.

Dimensions - 44.5"W, 70.5"H, 32"D.
Clearances - 42"F, 42"B, 34"RS, 0"LS.

2.40 KVA, 6000 BTU, 360 CFM.

1 Disk (2540 MB) IBM 3380-B4.

Dimensions - 40"W, 70.5"H, 32"D.
Clearances - 42"F, 42"B, 0"RS, 24"LS.

2.20 KVA, 5100 BTU, 220 CFM.

1 IBM Tape Drive 3430-A1

Dimensions - 33"W, 39"H, 30"D.
Clearances - 36"F, 36"B, 0"RS, 0"LS.

1.20 KVA, 3700 BTU, 200 CFM.

1 IBM 4381 CPU Group 2

Dimensions - 64.5"W, 70.5"H, 32"D.
Clearances - 42"F, 42"B, 42"S.

4.70 KVA, 13650 BTU, 1350 CFM.

35 Modems (NOT YET SPECIFIED)

Modem Rack - One (1) 70" Rack.

Dimensions - 25.5"W, 70"H, 21"D.
Clearances - 25.5"F, 36"R, 0"S.

Power Strip in Rack.

IBM ALTERNATIVE - DALNET Phase 2 & 3

2 Disk (2540 MB) IBM 3380-B4

Dimensions - 44.5"W, 70.5"H, 32"D.
Clearances - 42"F, 42"B, 0"RS, 24"LS.

2.20 KVA, 5100 BTU, 220 CFM.

3.1.7 Computer Room (Contd)

GEAC ALTERNATIVE - WSUL Phase 1 Installation

2 GEAC 8000 CPU & Tape Units (2 bay)

Dimensions - 50"W, 52"H, 38"D.
Clearances - 48"F, 48"B, 36"S.
Weight - 857 LBS.

AC socket Hubbell 2710, 250 volts, 30 amps.

20 amps, 115/230 volts, 60 Hz.

Single phase, neutral and isolated ground.

Each 313c cabinet has a separate AC plug.

4000 BTU (not including Disk or Tape drives).

2 GEAC 8695 Tape Drives

Physically included in CPU.

AC Socket 115 volts, 15 amps.

9 amps, 115 volts, 60 Hz.

Isolated ground.

2500 BTU

6 GEAC 8775 Disc Units (675 MB)

Dimensions - 23"W, 36"H, 38"D.
Clearances - 36"F, 36"B,
Weight - 639 LBS

AC socket Hubbell 2320 Socket 250 volts,
20 amps.

12 amps, 208 volts, 60 hz.

Single phase, isolated ground.

Separate circuit required for each GEAC 8775
due to start-up surge.

4500 BTU.

2 GEAC 8926 Modem

Dimensions - See rack below.

Clearances - See rack below.

Dial-up modem 1200 Baud.

* 7 Modems (NOT YET SPECIFIED).

Modem Rack - One (1) 70" Rack.

Dimensions - 25.5"W, 70"H, 21"W.
Clearances - 25.5"F, 36"R, 0"S.

Power Strip in Rack.

3 GEAC 8733 Disc Units (332 MB).

Dimensions - 16.5"W, 10.5"H, 25.5"D.
Clearances - 0"F, 0"B, 0"S.
Weight - 110 LBS.

100 CFM.

240 volts, 50/60 Hz.
Maximum current: Run 2.6, Start 11.0.
0.624 KVA.

1775 BTU.

(All four drives for WSUL Phases 1 & 2 will be installed in one cabinet).

* 14 Modems required for Science Library location of Computer Facility.

3.1.7 Computer Room (Contd)

GEAC ALTERNATIVE - WSUL Phase 2 Installation

1 GEAC 6000 Boolean Processor

Dimensions - 50"W, 52"H, 38"D.
Clearances - 48"F, 48"B, 36"S.
Weight - 857 LBS.

AC socket Hubbell 2710, 250 volts, 30 amps.

20 amps, 115/230 volts, 60 Hz.
Single phase, neutral and isolated ground.

4000 BTU.

2 GEAC 8732 Disc Units (160 MB)

These are housed in GEAC 6000.

Dimensions - 8.5"W, 10.2"H, 29.8"D.
Clearances - 0"F, 0"B, 0"S.
Weight - 70 LBS.

AC socket 115 volts, 15 amps.

2.8 amps, 120 volts, 60 Hz.
Single phase, isolated ground.

820 BTU.

1 GEAC 8733 Disc Unit (332 MB)

Dimensions - 16.5"W, 10.5"H, 25.5"D.
Clearances - 0"F, 0"B, 0"S.
Weight - 110 LBS.

100 CFM.

240 volts, 50/60 Hz.
Maximum Current: Run 2.6, Start 11.0.
0.624 KVA.

1775 BTU.

(In same cabinet as WSUL Phase 1 drives).

* 10 Modems (NOT YET SPECIFIED)

* 20 Modems required for Science Library location for
Computer Facility.

3.1.7 Computer Room (Contd)

GEAC ALTERNATIVE - DALNET Phases 1 thru 3

5 GEAC 8000 CPU & Tape Units (2 Bay)

Dimensions - 50"W, 52"H, 38"D.
Clearances - 48"F, 48"B, 36"S.
Weight - 875 LBS.

AC Socket Hubbell 2710 250 volts, 30 amps.

20 amps, 115/230 volts, 60 Hz.
Single phase, neutral and isolated ground.
Each 313c cabinet has a separate AC plug.

4000 BTU (not including disk or tape drives).

4 GEAC 8695 Tape Drives

Physically included in CPU.

AC Socket 115 volts, 15 amps.

9 amps, 115 volts, 60 hz.
Isolated ground

2 GEAC 6000 Boolean Processors

Dimensions - 50"W, 52"H, 38"D.
Clearances - 48"F, 48"B, 36"S.
Weight - 857 LBS.

AC socket Hubbell 2710, 250 volts, 30 amps.
Single phase, neutral and isolated ground.

4000 BTU.

11 GEAC 8775 Disc Units (675 MB)

Dimensions - 23"W, 36"H, 38"D.
Clearances - 36"F, 36"B.
Weight - 639 LBS.

AC socket Hubbell 2320 250 volts, 20 amps.

12 amps, 208 volts, 60 Hz.
Single phase, isolated ground.
Separate circuit required for each GEAC 8775
due to start-up surge.

4500 BTU.

4 GEAC 8926 Modems

Dimensions - See rack below.

Clearances - See rack below.

Dial-up modem 1200 Baud.

40 Modems (NOT YET SPECIFIED)

Modem Rack - Two (2) 70" Racks.

Dimensions - 25.5"W, 70"H, 21"D.
Clearances - 25.5"F, 36"R, 0"S.

Power strip in racks.

8 GEAC 8732 Disc Units (160 MB)

Some (?) units located in GEAC 6000.

Dimensions - 8.5"W, 10.2"H, 29.8"D.
Clearances - 0"F, 0"B.
Weight 70 LBS.

AC socket 115 volts, 15 amps.

2.8 amps, 120 volts, 60 Hz.
Single phase, isolated ground.

820 BTU.

(Four drives in GEAC 6000 and four drives in one cabinet).

8 GEAC 8733 Disc Units (332 MB)

Dimensions - 16.5"W, 10.5"H, 25.5"D.
Clearances - 0"F, 0"B.
Weight - 110 LBS.

240 volts, 50/60 Hz.
Maximum current: Run 2.6, Start 11.0
0.624 KVA

1775 BTU
100 CFM

2 Cabinets for Disc Drives (4 332 MB drives per cabinet).

3.1.8 Special Features

Access floor to be provided 18 inches above structural floor.

Floor covering to be anti-static (no carpeting).

Ramps to be provided for PH requirements and cart access.

Ceilings to be sound absorbant (NRC .60-.70).

Walls to have sound absorbant covering (NRC .85).

Doorways on line of equipment access to have double doors with 5'0" minimum clear opening.

Exterior windows to be secured or removed.

3.2 OPERATOR ROOM

3.2.1 Function

To provide shared work space for a maximum of two computer operators and one assistant at any one time.

To enable a computer operator to work at the console and visually monitor the operation of the Computer Room.

To enable the operator to conveniently run the system printer, yet be shielded from excessive noise.

To store documentation, including records of system configuration and performance (for daily problem solving and analysis by the operator).

To provide a work area for handling and distribution of paper output.

3.2.2 General Character

Less austere than the Computer Room but still appearing well-organized and efficient. Semi-private workspaces for each computer operator.

3.2.3 Location

Immediately adjacent to Computer Room.

Close to Equipment Repair/Storage.

3.2.4 Access

Access requirements as 3.1.4.

Access required for carts with paper output.

3.2.5 Size

See Section 2 and Figure 4.

3.2.6 Furniture

Workstations for two computer operators, each with a desk with drawers, chair, 12" shelving, a terminal, 2-drawer file cabinet and a bulletin board.

Partition between workstations.

4'0" x 2'6" table and chair for assistant.

Clock.

Workstation for the console(s) including chair.

6'0" x 3'0" table for distributing output.

Wall shelving with 24" deep sections for sorting output for pickup/delivery.

Cart for transporting output.

Chalk board for schedules and system configuration.

4'0" x 2'6" table for telephone and documentation needed to handle trouble calls, including chair.

File cabinet, 4-drawer.

Wastebaskets.

3.2.7 Equipment

Two alternative systems are to be considered until final selection by WSUL - NOTIS (IBM) and GEAC. See listing of equipment of following sheets.

3.2.7 Operator Room (Contd)

IBM ALTERNATIVE - WSUL Phase 1

2 IBM 3278-A Consoles

Dimensions - 16"W, 19"H, 21"D.

Clearances - 30"F, 1"B, 6"T, 13"RS, 11"LS.

0.20 KVA, 450 BTU, Convection CFM.

1 IBM 3262-1 Printer

Dimensions - 38"W, 39.5"H, 29.5"D.

Clearances - 30"F, 30"B, 30"RS, 30"LS.

1.40 KVA, 3750 BTU.

2 Telex 476L Terminals

Dimensions - 19"W, 21.5"H, 27.9"D.

Clearances - ?

1.2 amps, 115 volts, 60Hz.
Single phase.

300 BTU

2 Telex 281B Matrix Printers

Attached to terminals.

Dimensions - 15.6"W, 4.7"H, 11.2"D.

Clearances - Air vent on top, paper at rear.

1.2 amps, 60 Hz, 115V AC single phase.
300 BTU.

Located at Operator's workstation.

IBM ALTERNATIVE - WSUL Phase 2

No change.-

IBM ALTERNATIVE - DALNET

2 IBM 3278-A Consoles

Dimensions - 16"W, 19"H, 21"D.

Clearances - 30"F, 1"B, 13"RS, 11"LS, 6"T.

0.20 KVA, 450 BTU, Convection air flow.

3.2.7 Operator Room (Contd)

GEAC ALTERNATIVE - WSUL Phase 1

1 GEAC 8091 Printer (on pedestal)

Dimensions - 64"W, 44"H, 30"D.
Clearances - 15"F, 24"B, 24"RS, 0"LS.
Weight - 240 LBS.

AC socket 115 volts, 15 amp.

2 amps, 115 volts, 60 Hz.
Isolated ground.

1600 BTU.

3 GEAC 8457A Control Consoles CRT

CRT Dimensions - 22"W, 15"H, 21"D.
CRT Clearances - 48"F, 6"B.

Keyboard Dimensions - 18.5"W, 2.5"H, 8.0"D.

Weight - 51 LBS.

AC socket 115 volts, 15 amp.

2 amps, 115 volts, 60 Hz.
Isolated ground.

350 BTU.

GEAC ALTERNATIVE - DALNET Phase 1-3

5 GEAC 8457A Control Console CRTs

CRT Dimensions - 22"W, 15"H, 21"D.
CRT Clearances - 48"F, 6"B.

Keyboard Dimensions - 18.5"W, 2.5"H, 8.0"D.

Weight - 51 LBS.

AC socket 115 volts, 15 amps.

2 amps, 115 volts, 60 Hz.
Isolated ground.

350 BTU

3.2.8 Special Features

Access floor to be provided 18 inches above the structural floor.

Floor covering to be anti-static (no carpeting).

Ramps to be provided for PH requirements and cart access.

Ceilings to be sound absorbant (NRC .60-.70).

Walls to have sound absorbant covering (NRC .85).

Doorways on line of equipment and cart access to have double doors with 5'0" minimum clear opening.

Visual monitoring of Computer Room required through windows from console workstations.

Exterior windows removed or secured.

3.3 EQUIPMENT REPAIR/STORAGE

3.3.1 Function

To store supplies for printers and staff.

To store spare parts and equipment.

To provide space for repair of peripheral equipment (optional).

To provide space for lockers for staff (optional).

3.3.2 General Character

Workshop.

3.3.3 Location

Close to the Operator's Room.

3.3.4 Access

Access requirements as 3.1.4.

Access required for carts with supplies and equipment.

3.3.5 Size

200 SF (100 SF minimum per WSUL).

3.3.6 Furniture

5'0" x 2'6" desk with drawer, and chair (optional).

6'0" x 2'6" workbench (optional).

Pegboard on wall to hang tools, cables, etc. (optional).

Small bookcase for manuals (optional).

24" deep shelving for storage of supplies and spare equipment.

Waste basket.

Lockers for six (6) people (optional).

3.3.7 Equipment

Calculator

3.3.8 Special Features

None.

3.4 COMMUNICATIONS CLOSET

3.4.1 Function

To house panels and switch gear for communications systems.

3.4.2 Location

Adjacent to Computer Room and Operator Room.

3.4.3 Size

Closet 6'0"x1'6" with double doors.

3.4.4 Special Features

Plywood backboard for equipment mounting.

3.5 RECEPTION AREA

3.5.1 Function

To provide space for receptionist/typist.

To house office equipment needed.

To receive visitors, sales representatives, etc.

To hang coats of visitors and staff.

3.5.2 General Character

Attractive yet business like.

3.5.3 Location

Near entrance to the computer facility (optional).

Near office of Project Manager and other staff.

3.5.4 Access

Accessible by staff, visitors and service people. The general public should not have easy access and the entrance should be remote from heavily used public areas.

3.5.5 Size

About 175 SF with coat closet.

3.5.6 Furniture

Two visitor comfortable chairs.

Workstation for receptionist/typist with desk with drawers, chair, wastebasket, 4-drawer file cabinet, terminal and printer, electric typewriter, and shelving.

5'0" x 2'6" table for collating.

Wastebasket.

3.5.7 Equipment

Typewriter, self-correcting electric.

IBM personal computer with printer. (Used independantly and as terminal with direct connection to IBM 3274 Controller or GEAC 8000 CPU.)

Calculator.

Office copier with cabinet space for its supplies.

Unit kitchen including office coffee maker.

3.5.8 Special Features

None.

3.6 OFFICE

3.6.1 Function

To provide space for the Project Manager to work and meet with a few staff members in privacy.

3.6.2 General Character

Attractive, yet business like.

3.6.3 Location

Near reception area.

In the computer facility (optional).

3.6.4 Access

Accessible by staff and visitors through the reception area.

3.6.5 Size

About 175 SF.

3.6.6 Furniture

Workstation for the Project Manager with a desk with drawers, shelving, a 2-drawer file cabinet, space for a terminal and printer, wastebasket, chair.

5'0" x 2'6" work/conference table with three (3) chairs.

Chalkboard (optional).

Coat tree.

3.6.7 Equipment

Terminal and printer. IBM PC connected to IBM 3274 Controller or GEAC 8000 CPU.

Calculator.

3.6.8 Special Features

None.

3.7 WORKROOM

3.7.1 Function

To provide semi-private workspace for remaining project staff, a minimum of three people increasing to a maximum of seven over five years.

To provide a small group working area (optional).

3.7.2 General Character

Attractive, relatively quiet and business-like.

3.7.3 Location

Near the Reception Area.

Near the Project Manager Office.

In the Computer Facility (optional).

3.7.4 Access

Accessible by staff and visitors via the Reception Area.

3.7.5 Size

Each person should have at least 100SF. (Total of 700 SF).

Space not initially used for workstations to be used for group working.

3.7.6 Furniture

Workstation for each person including a desk with drawers, shelving, a 4-drawer file cabinet, space for a terminal and printer, wastebasket, chair, and bookcase for manuals.

Modular partitions between workstations to provide some privacy and noise barrier.

6'0" x 3'0" work/conference table with six (6) chairs.

Chalkboard (optional).

36"W x 18"D x 78"H supply cabinet.

3.7.7 Equipment

Terminal for each person. IBM PCs connected to IBM 3274 Controller or GEAC 8000 CPU.

3.8 CONFERENCE ROOM

3.8.1 Function

To provide space for meetings of Committees organized to implement the computer system and operate the network.

Maximum occupancy of ten (10) people.

3.8.2 General Character

Private, attractive, yet functional meeting room.

3.8.3 Location

Near the project staff (optional).

Near the reception area (optional).

Near lavatories (optional).

Adjacent to Training Room for multi-purpose usage.

3.8.4 Access

Accessible by staff and visitors through the Reception Area (optional).

3.8.5 Size

35 SF per person with a total of 350 SF.

3.8.6 Furniture

Large table with ten (10) chairs.

Small table for handouts and coffee pot.

Chalkboard.

Wastebasket.

3.8.7 Equipment

Screen and cart for slide projector.

3.8.8 Special Features

None.

3.9 TRAINING ROOM

3.9.1 Function

To provide space for small group training sessions (twelve people). Trainees can be staff, visitors or library patrons.

3.9.2 General Character

Classroom appearance.

3.9.3 Location

Near the project staff (optional).

Near Lavatories (optional).

Adjacent to the Conference Room for multi-purpose usage.

3.9.4 Access

Accessible by staff and visitors through the reception area (optional).

Accessible by the public (optional).

3.9.4 Size

About 300 SF.

3.9.5 Furniture

6'0" x 4'0" table with six (6) chairs.

Twelve 5'0" x 2'6" tables and chairs for twelve (12) terminals with printers.

Chalkboard.

Wastebaskets.

High stand for large screen monitor (optional).

Overhead projector with screen (optional).

3.9.6 Equipment

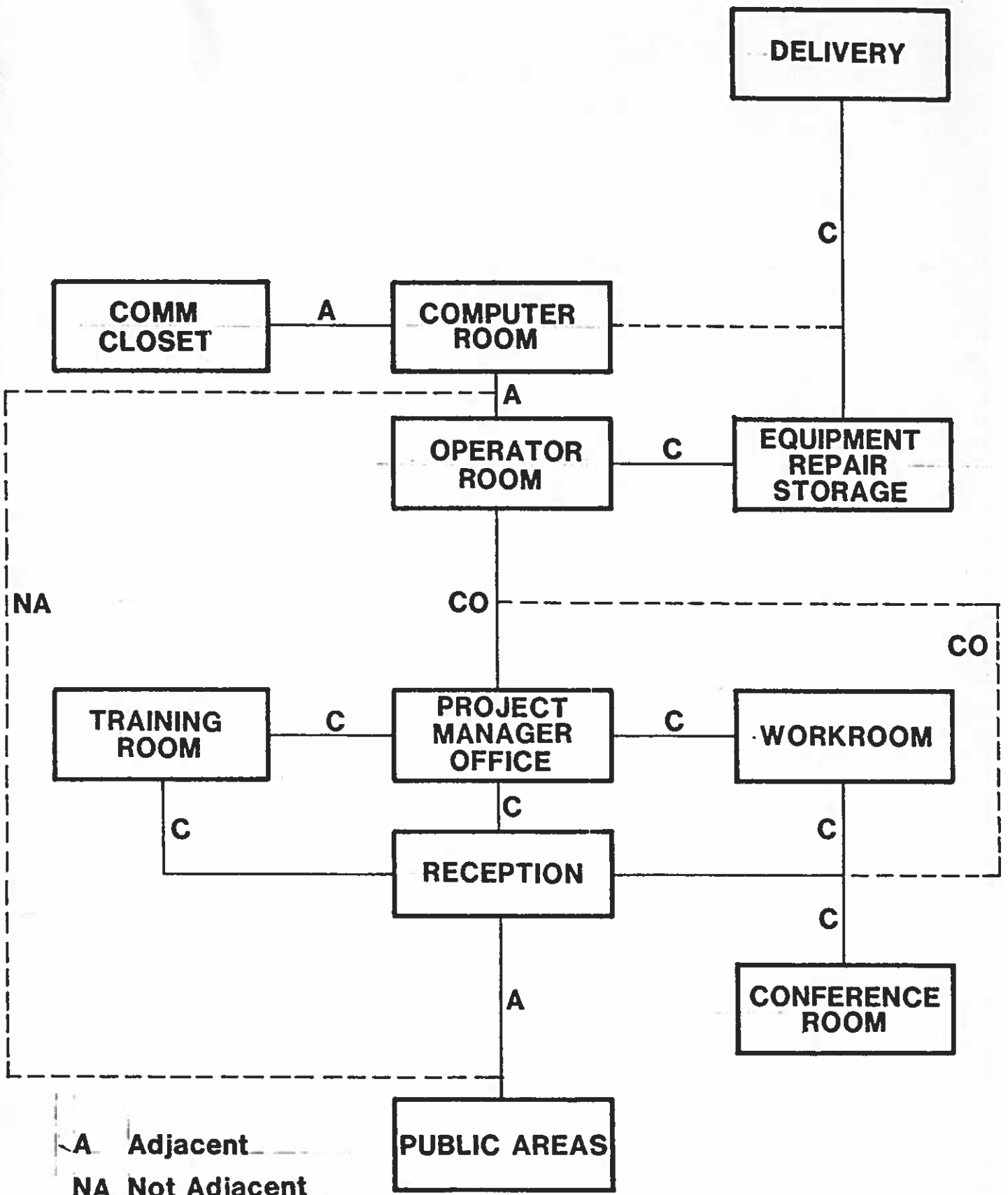
Twelve (12) terminals with printers to be IBM PCs with direct connection to IBM 3274 Controller or GEAC 8000 CPU.

Large screen monitor (optional).

3.9.7 Special Features

None.

SPATIAL RELATIONSHIPS



- A Adjacent
- NA Not Adjacent
- C Close
- CO Close (optional)

WSUL & DALNET COMPUTER FACILITY Figure 5 Relationships

LIGHTING REQUIREMENTS

5. LIGHTING

5.1 Computer Room

Illumination level of approximately 60-75 F.C. maintained, employing standard acrylic plastic lens fixtures.

Battery operated emergency lights required.

5.2 Operator Room

Illumination level of approximately 60-75 F.C. maintained, employing low brightness lens or louver fixtures for ease of seeing monitors and consoles.

5.3 Equipment Repair/Storage

Illumination level of approximately 50 F.C. maintained, employing standard acrylic plastic lens fixtures.

5.4 Communication Closet

Illumination level of approximately 30 F.C. maintained.

5.5 Reception

As 5.1.

5.6 Project Manager Office

As 5.1.

5.7 Workroom

As 5.1.

5.8 Conference Room

As 5.1.

5.9 Training Room

As 5.1.

ELECTRICAL REQUIREMENTS

6. ELECTRICAL REQUIRMENTS

6.1 Computer Room

Power panels to be provided for all present and future computer equipment and environmental air conditioner units. Panels to be connected to main incoming service transformers.

Separate circuits to be provided for equipment.

Emergency "shut-down" of all equipment and environmental air conditioner units to be provided by means of pushbuttons at exit doors.

A suitable power conditioner unit to be provided to minimize surges, spikes, etc.

All equipment wiring to be installed under raised access floor.

6.2 Operator Room

As 6.1.

6.3 Equipment Repair/Storage

Receptacles and power outlets to be provided as required for "housekeeping" and for the various equipment listed under 3.3 thru 3.9.

Existing panels to be used wherever possible.

6.4 Communication Closet

As 6.3.

6.5 Reception

As 6.3.

6.6 Project Manager Office

As 6.3.

6.7 Workroom

As 6.3.

6.8 Conference Room

As 6.3.

6.9 Training Room

As 6.3.

COMMUNICATIONS REQUIREMENTS

7. COMMUNICATIONS REQUIREMENTS

All telephone cables will be installed by Michigan Bell Telephone Company.

7.1 Computer Room

Raceways to be provided for modems as listed under 3.1.7.

Information required on sizing of raceways.??????

One (1) regular telephone outlet required.

7.2 Operator Room

As 7.1.

7.3 Equipment Repair/Storage

One telephone outlet adjacent to desk.

7.4 Communication Closet

None.

7.5 Reception

Receptionist to have call director to answer all lines.

Raceway and outlet for receptionist terminal connection.

7.6 Project Manager Office

One (1) telephone outlet near workstation.

Raceway and outlet for terminal connection.

7.7 Workroom

Three (3) telephone outlets to be provided, one adjacent to each workstation.

Provision to be made for additional four (4) outlets.

Raceway and outlets to be provided for terminal connection at each workstation.

Provision to be made for additional four (4) terminal connections.

7.8 Conference Room

None.

7.9 Training Room

Three (3) telephone outlets.

Raceways and outlets for twelve (12) terminals.

SECURITY REQUIREMENTS

8. SECURITY

8.1 Computer Room

Special locking required. Could be electrically operated??? Cord access??

Code required smoke detectors tp be provided at ceilings and below raised floor. Smoke detectors to tie into existing fire alarm system and therefore to the WSU Public Safety Department. Operation of smoke detectors will activate a signal in the Public Safety Department.

Remote high temperature devices are desired.

Motion detection system for key access points.

8.2 Operator Room

As 8.1.

8.3 Equipment Repair/Storage

No special requirements.

8.4 Communication Closet

No special requirements.

8.5 Reception

No special requirements.

8.6 Project Manager Office

No special requirements.

8.7 Workroom

No special requirements.

8.8 Conference Room

No special requirements.

8.9 Training Room

No special requirements.

ENVIRONMENTAL REQUIREMENTS

9. ENVIRONMENTAL REQUIREMENTS

9.1 Computer Room

Environmental systems to be separated from the existing building HVAC systems.

Independant counter flow environmental air conditioner units to be provided. Units to be located in the Computer Room. Attendant dry coolers to be located out of doors.

Air to be discharged below raised floor and pass upwards through equipment via openings in the raised access floor.

Design criteria to be;

Room Temperature	72F +/- 2F
Room Humidity	50% +/- 5% R.H.
Air Filtration	45% Min. NBS.

Redundancy to be;

Initial equipment installation - two (2) units, each sized for 100% of the load (providing one (1) spare unit).

Ultimate equipment installation - three (3) units (one unit added) each sized for 50% of the load.

9.2 Operator Room

As 9.1.

9.3 Equipment Repair/Storage

To be served from existing building HVAC system.

9.4 Communication Closet

As 9.3.

9.5 Reception

As 9.3.

9.6 Project Manager Office

As 9.3.

9.7 Workroom

As 9.3.

9.8 Conference Room

As 9.3.

9.9 Training Room

As 9.3.

KRESGE LIBRARY

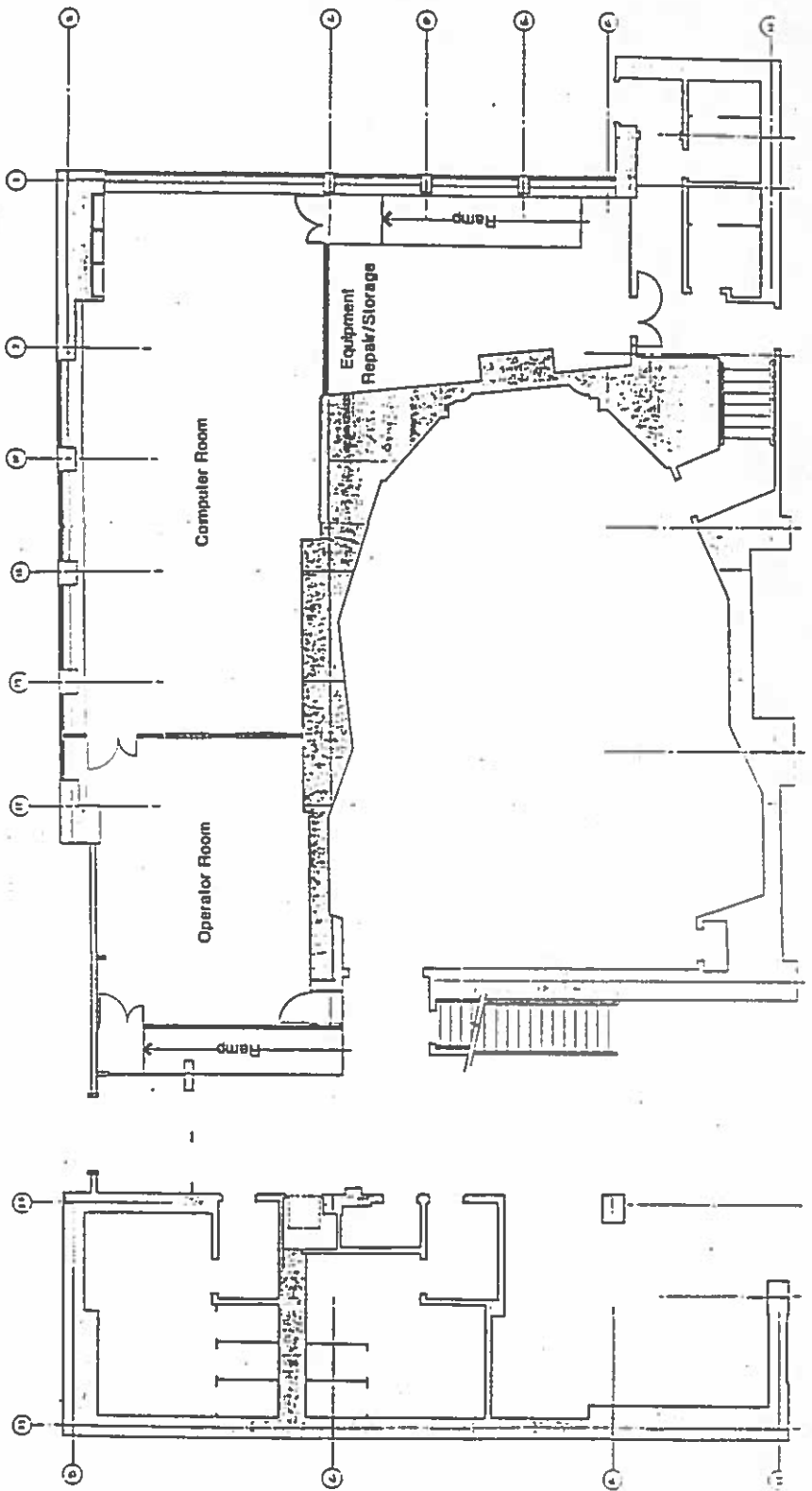
10. KRESGE LIBRARY ALTERNATIVE LOCATION

Following an analysis of the spatial requirements for the full program (WSUL & DALNET) it was concluded that the space available in the Kresge Library would only accommodate the WSUL Computer Facility without administrative spaces.

A layout of this space was prepared. The Operator and Computer Rooms require raised access floors for cabling. Entrance to the Facility is along a ramp, meeting barrier-free requirements, from the main public areas into the Operator Room. The Operator Room in turn leads to the Computer Room and has a visual relationship with it through windows located to enable the operators to visually monitor the computer equipment. The Equipment Storage and Repair area is located at the rear of the Facility next to the rear entrance to the building. It is this entrance that will be used for equipment delivery. Another barrier-free ramp is located in this space to gain entry to the Computer Room. As this area of the Kresge Library is single storey the mechanical equipment necessary to control the environment of the Computer and Operator Rooms will be located on a steel structural framework on the roof directly over the Facility.

The Operator and Computer Rooms will be provided with laminate-finished static-reducing access flooring. The walls and ceilings will have sound absorbant treatment. The spaces are located adjacent to an external wall with windows. These windows will be removed and replaced with an opaque insulating treatment.

No administrative areas are provided in this alternative. Should this alternative be chosen these functions will be located elsewhere in the building in areas not yet identified. These areas are not included in the estimate of cost.



KRESGE LIBRARY

SCIENCE LIBRARY

11. SCIENCE LIBRARY ALTERNATIVE LOCATION

The seventh floor of the Science Library was identified as a possible location that would accommodate the entire program. Alternative layouts for the complete program were developed and a preferred alternative was selected. This layout was developed to allow the WSUL program to proceed without a commitment by DALNET and yet allow DALNET to be added at some future time (though with some disruption to the WSUL operation).

The seventh floor space is restricted by an area in the north east which presently houses the Dean of Engineering and will not be available until 1986.

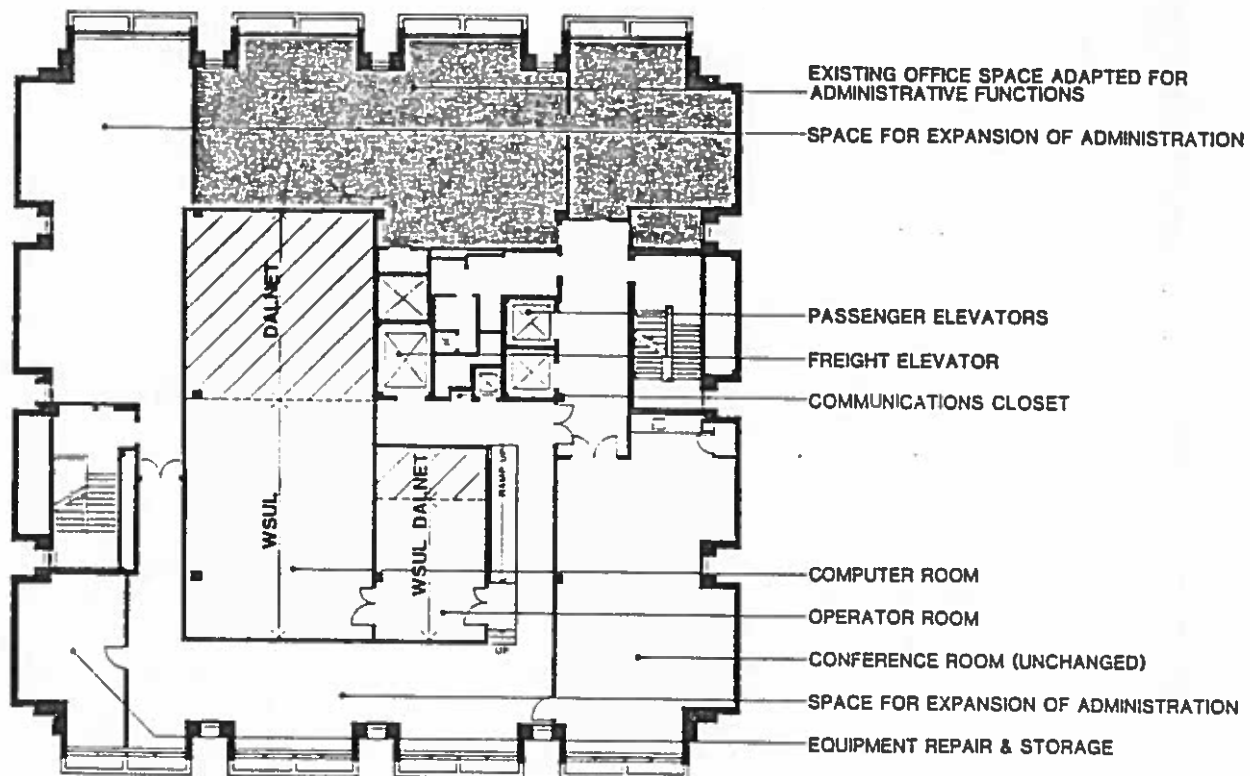
The Computer Facility will be located in the large open area to the west of the central service core, remote from the external wall. Both the Computer and Operator Rooms will have access floors approximately 15 to 18 inches above the existing floor to allow for equipment cabling. Access to the Computer Facility from the passenger elevators and freight elevators will be up a barrier-free ramp located to the east of the Operator Room. The Operator Room in turn leads to the Computer Room and has a visual relationship with it through windows located to enable operators to visually monitor the computer equipment.

The Computer Facility is arranged so that an initial WSUL area can be expanded north to accommodate DALNET.

The heat rejection equipment for the Computer Facility will be located directly over it on the roof.

The Equipment Repair and Storage Room will be located in the south west corner of the floor.

The Administrative accommodation will be located in the area presently occupied by the Dean of Engineering and allowance has been made to adapt the present accommodation. Space for expansion of the administrative activities is available along the western and southern perimeter of the floor. The large conference room in the south east corner is retained.



- EXISTING OFFICE SPACE ADAPTED FOR ADMINISTRATIVE FUNCTIONS
- SPACE FOR EXPANSION OF ADMINISTRATION
- PASSENGER ELEVATORS
- FREIGHT ELEVATOR
- COMMUNICATIONS CLOSET
- COMPUTER ROOM
- OPERATOR ROOM
- CONFERENCE ROOM (UNCHANGED)
- SPACE FOR EXPANSION OF ADMINISTRATION
- EQUIPMENT REPAIR & STORAGE

SCIENCE LIBRARY SEVENTH FLOOR

COST SUMMARY

12. COST SUMMARY

Science Library Alternative Location

Probable Cost - Preliminary Estimate

	WSUL only	DALNET only	Offices only
	\$	\$	\$
Demolitions	3,633	991	2,173
Structural Steel	2,240	2,240	-
Doors & Frames	4,368	462	231
Glass	1,534	-	-
Drywall	4,880	1,161	478
Acoustical Ceilings	6,300	1,312	5,400
Wall Systems	9,300	324	-
Wall Finishes	2,370	324	-
Floor Finishes	6,025	-	7,575
Painting	513	121	985
Access Floor	27,000	19,380	-
Specialities	2,600	-	2,176
Furnishings	23,805	8,550	24,765
General Conditions	9,457	3,486	4,378
Overhead & Profit	10,403	3,835	4,816
SUB-TOTAL ARCHITECTURAL	114,428	42,186	52,977
MECHANICAL	73,000	81,000	26,000
ELECTRICAL	82,000	90,000	13,000
T O T A L	269,428	213,186	91,977

Notes:

Architectural costs estimated by Sims Varner & Associates.

Mechanical and Electrical costs estimated by Migdal, Layne & Sachs.

If WSUL and DALNET carried out as one contract, the combined estimate could be reduced by \$96,000.

If provision was made in the WSUL contract for future DALNET work some portion of the above saving would be realised

(e.g. electrical feeders and power centre sized for combined load).

Professional fees, permit charges, etc. not included in the above costs.

Kresge Library Alternative Location - WSUL only

Probable Cost - Preliminary Estimate

\$

Demolitions	2,144
Structural Steel	2,660
Doors & Frames	2,111
Glass	1,309
Drywall	863
Acoustical Ceilings	4,560
Wall Systems	4,800
Wall Coverings	-
Floor Finishes	2,630
Painting	422
Access Flooring	26,000
Specialities	-
General Conditions	3,750
Overhead & Profit	4,125
<hr/>	
SUB-TOTAL ARCHITECTURAL	55,374
<hr/>	
MECHANICAL	75,000
ELECTRICAL	80,000
<hr/>	
T O T A L	214,911
<hr/>	

See notes on Science Library estimate.

SCHEDULE

