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Program Review and Development Manual

Physical Science Building

**Fort Hays State University
Hays, Kansas**



A JOINT VENTURE

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Horst, Terrill and Karst Architects, P.A.

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FOREWORD

GOALS

FACTS

CONCEPTS

General Concepts

Chemistry

Geoscience

Physics

Computer Center

Shared Spaces

NEEDS

FOREWORD

This document is provided as a supplement to the original Architectural Program, dated July 1991, developed for the Fort Hays State University Physical Science Building.

The information included here-in is the result of the Project Program review conferences held at Fort Hays State University Campus on April 6-10, 1992. This information is to be used in conjunction with the data contained in the original program for the purposes of schematic design of the facility.

The Design Team wishes to express a sincere appreciation to the Director of Facilities Planning, Administration, and Staff of all Departments at Fort Hays State University for their valuable input of data, concerns, resources and assistance during this process.

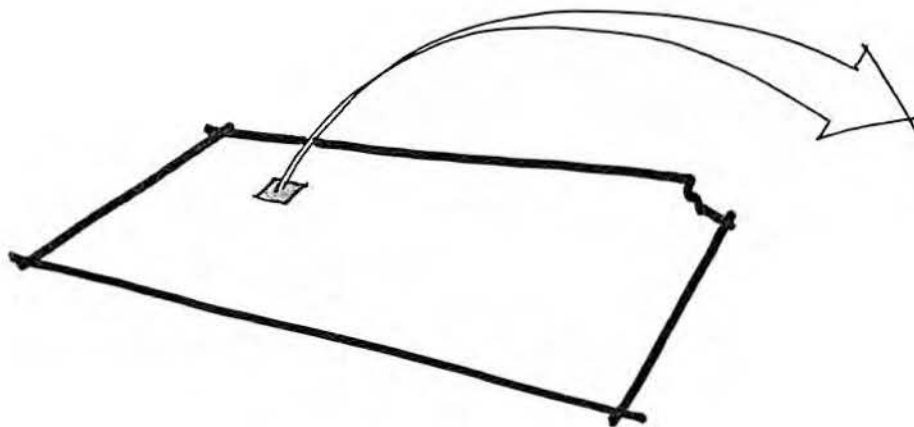
GOALS

Goals establish direction for the program and indicate the types of facts and concepts that need to be uncovered during the programming and planning process.

"INVENT THE FUTURE"

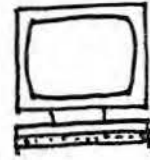
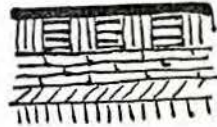
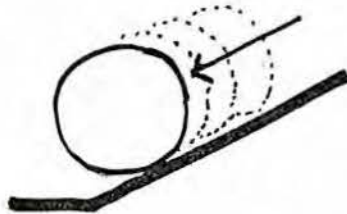
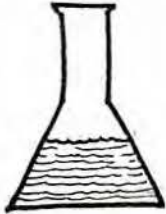
IN A

UNIQUE FACILITY

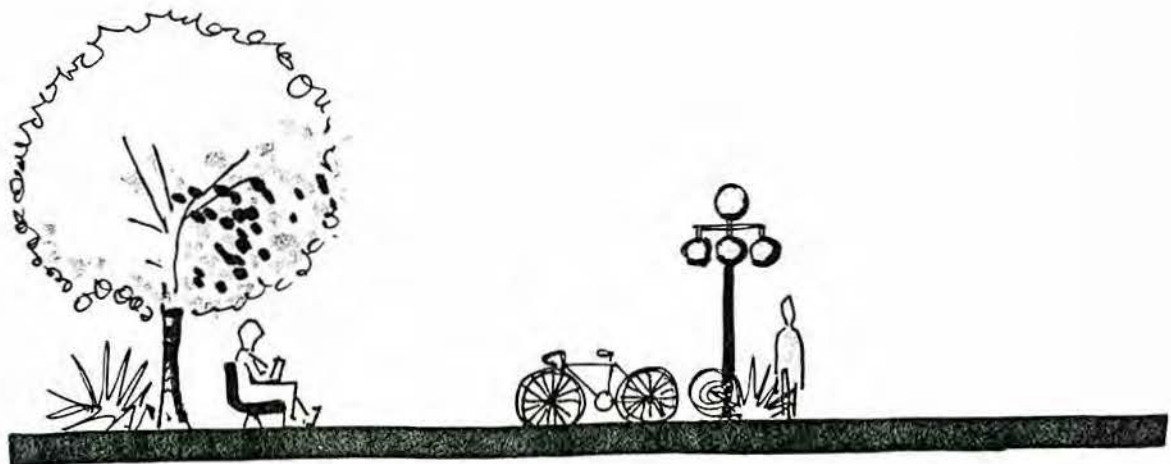


LONG-DISTANCE LEARNING
OFF - CAMPUS

DEPARTMENTS HOUSED

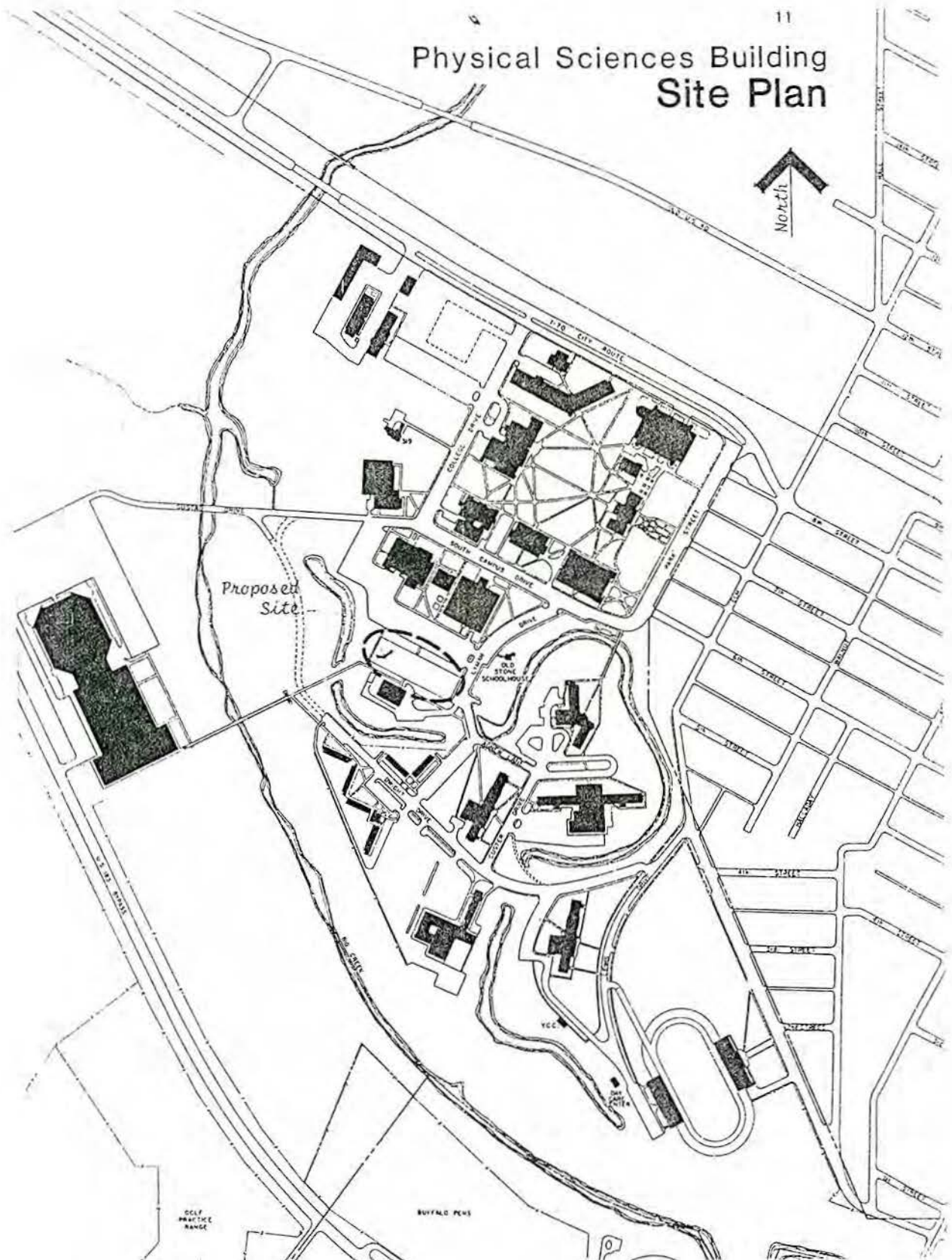


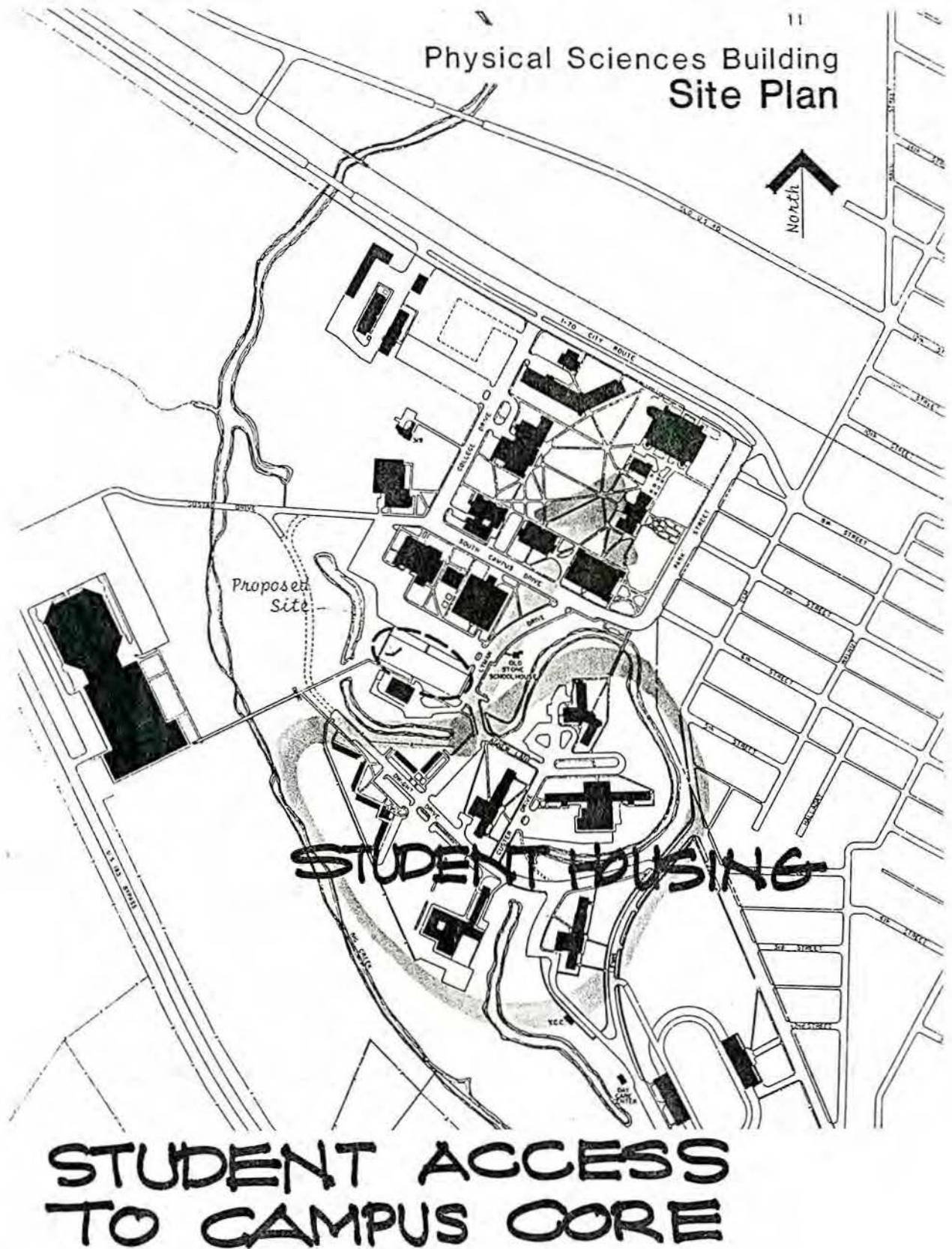
chemistry Physics Geo.Sc. Computing
Center

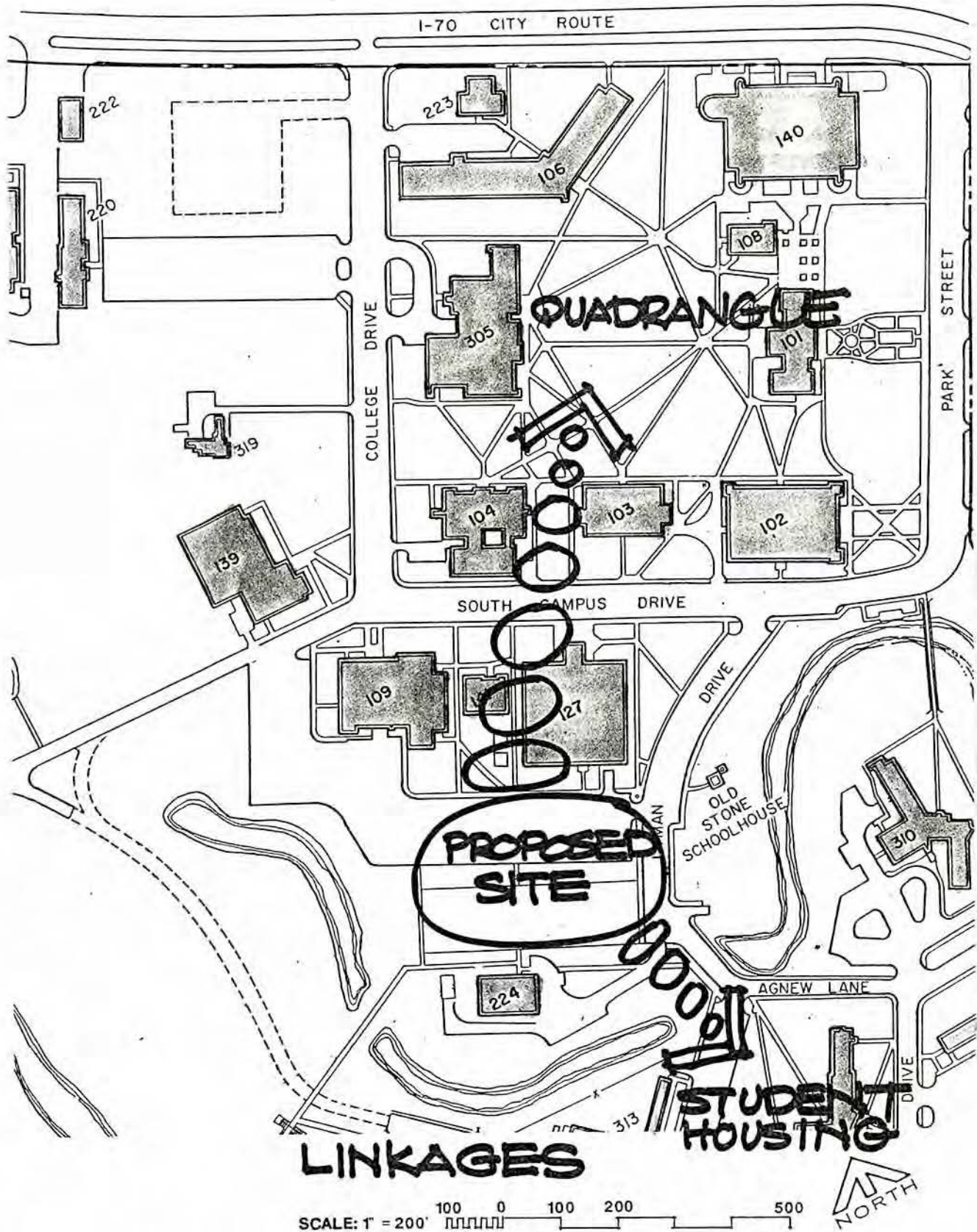


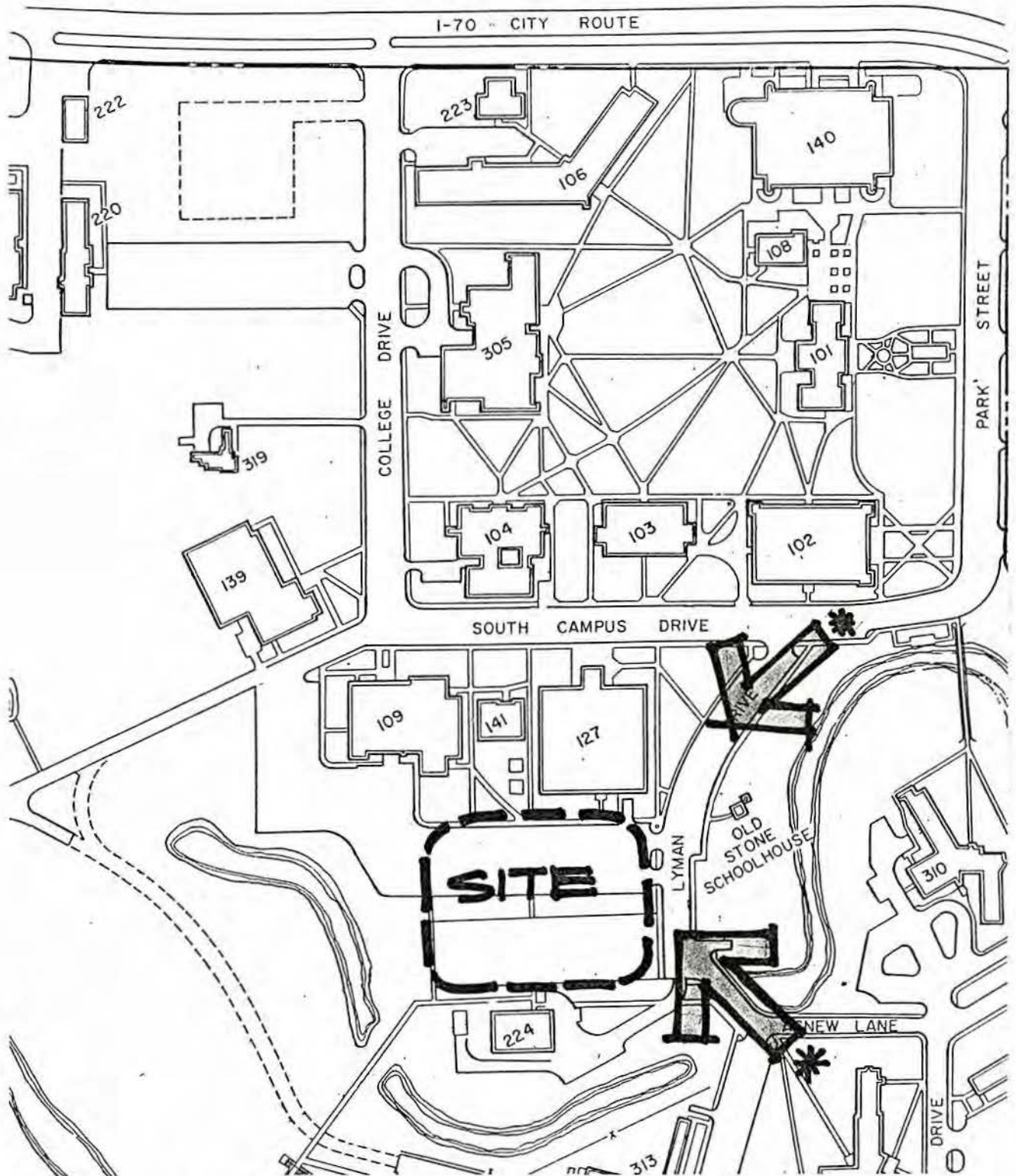
CREATE A "PEOPLE PLACE" ENVIRONMENT

The Facts documented in this section describe important underlying conditions which will affect and influence the design.



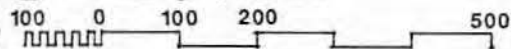


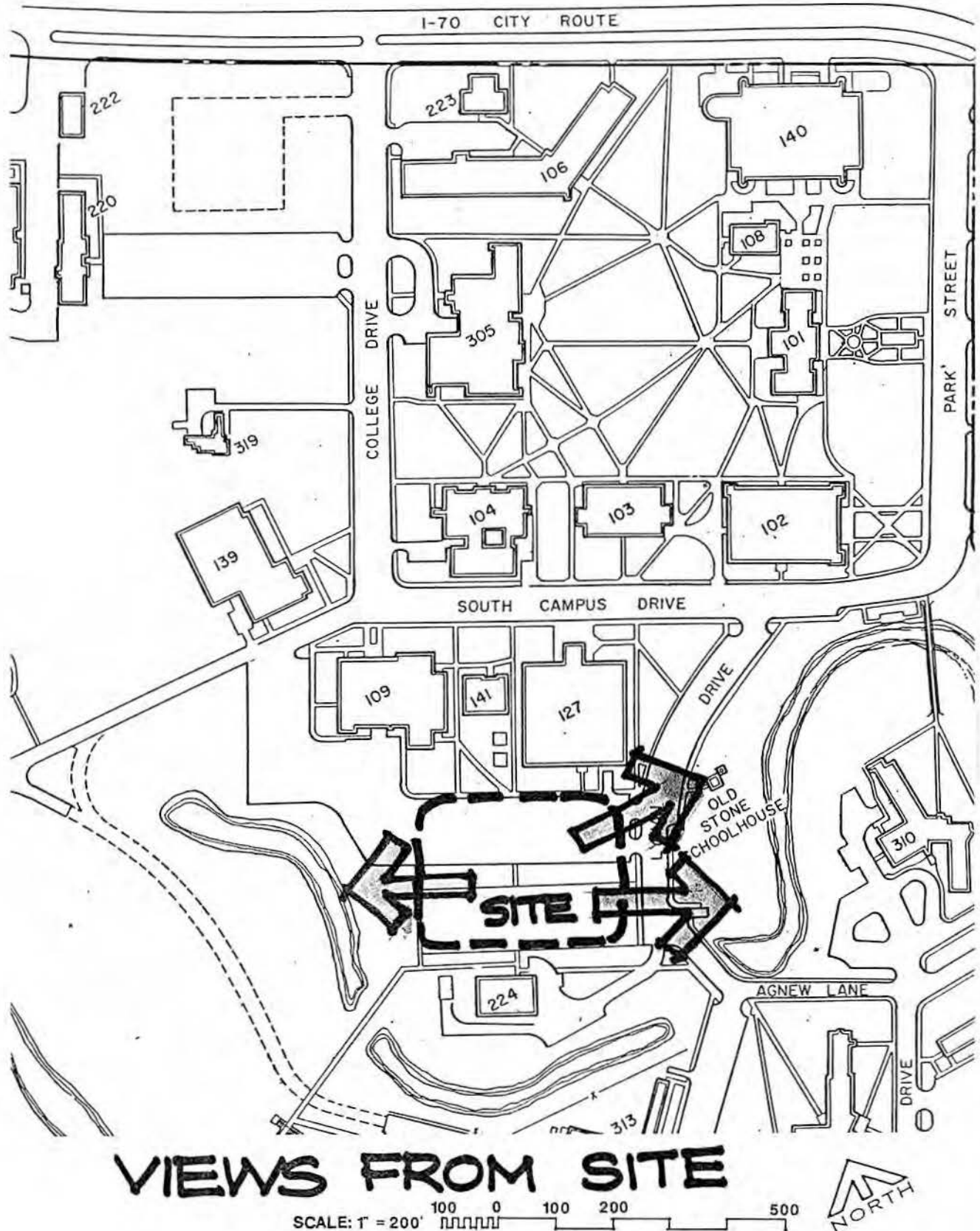


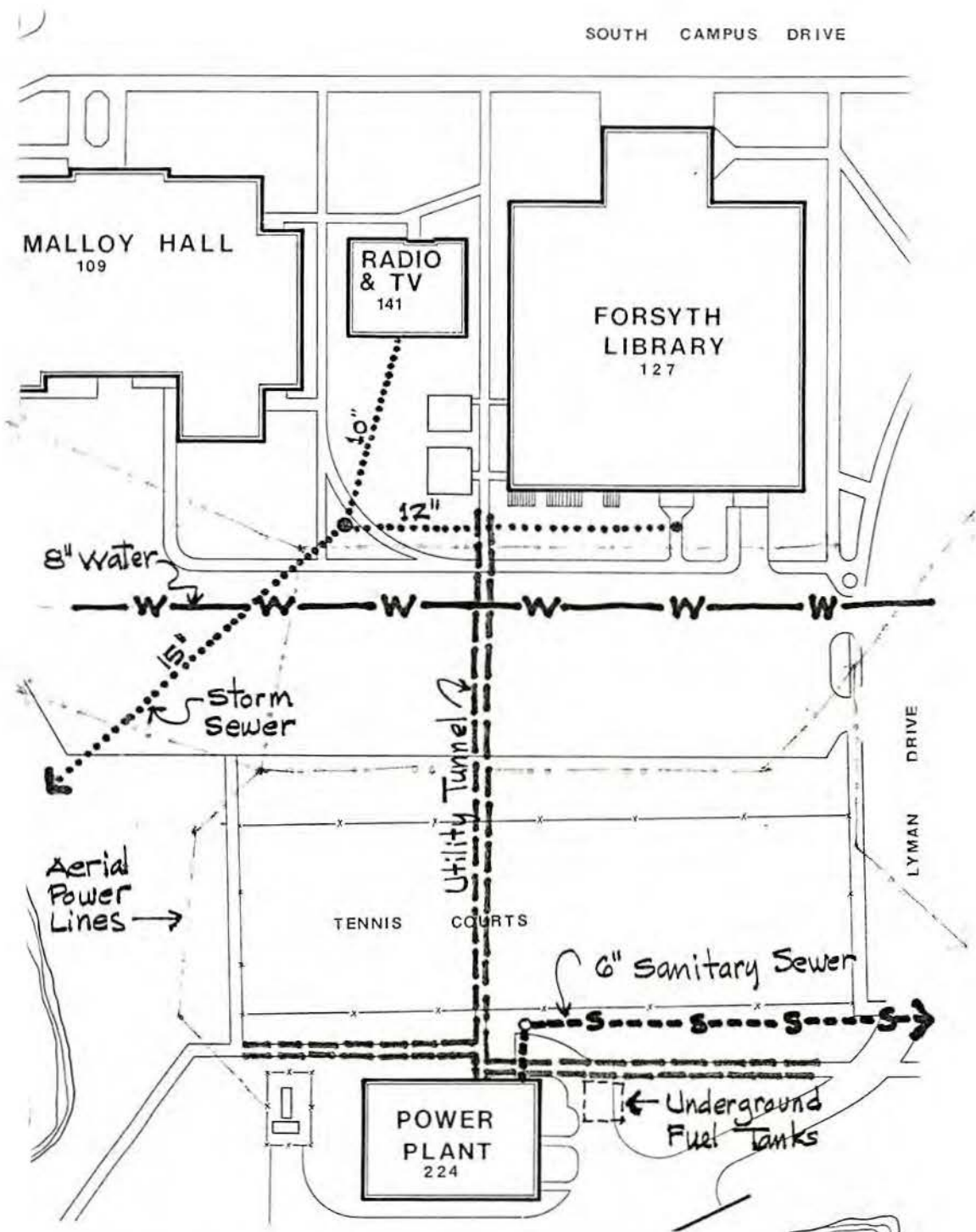


VIEWS TO SITE

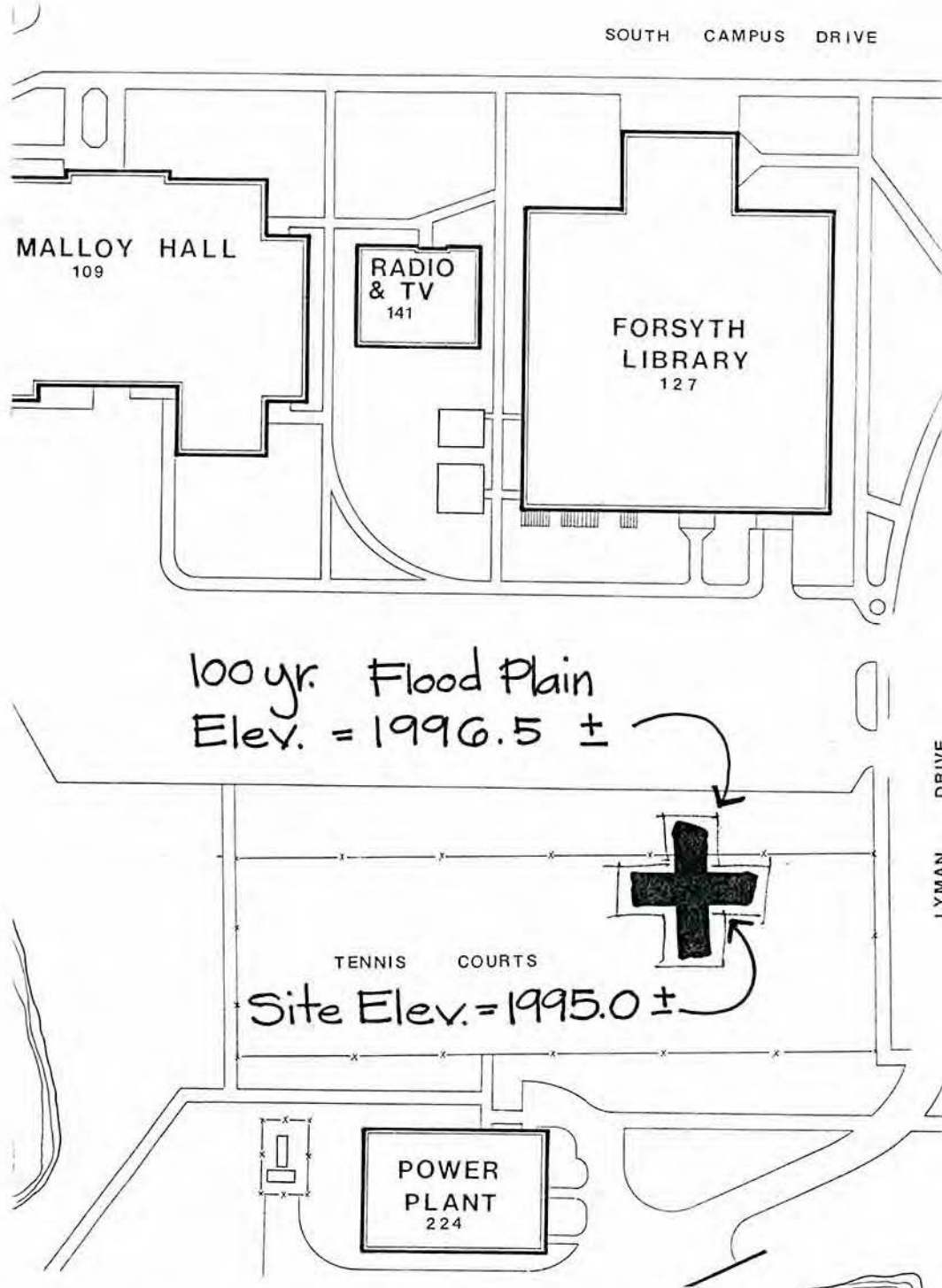
SCALE: 1" = 200'



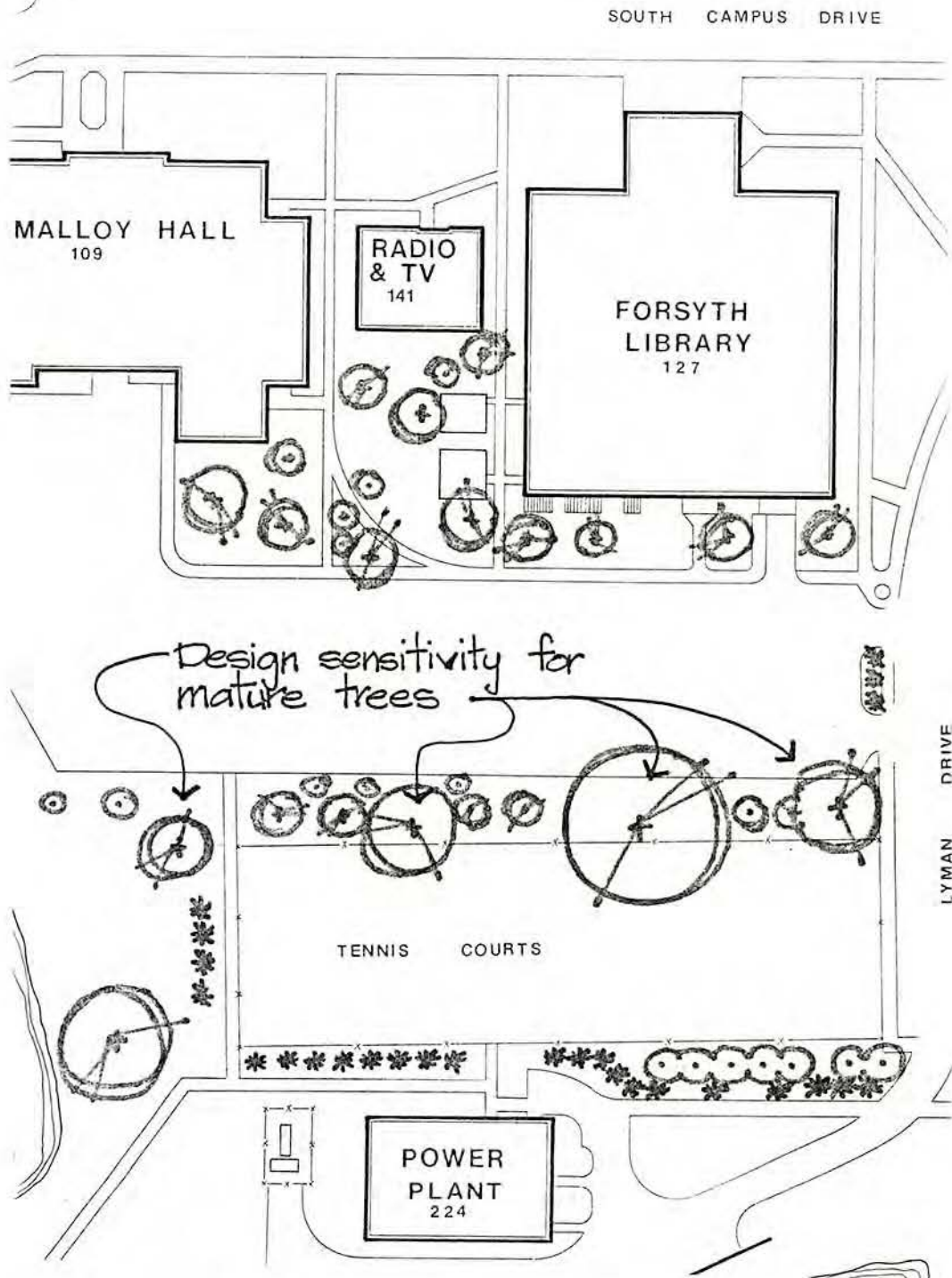




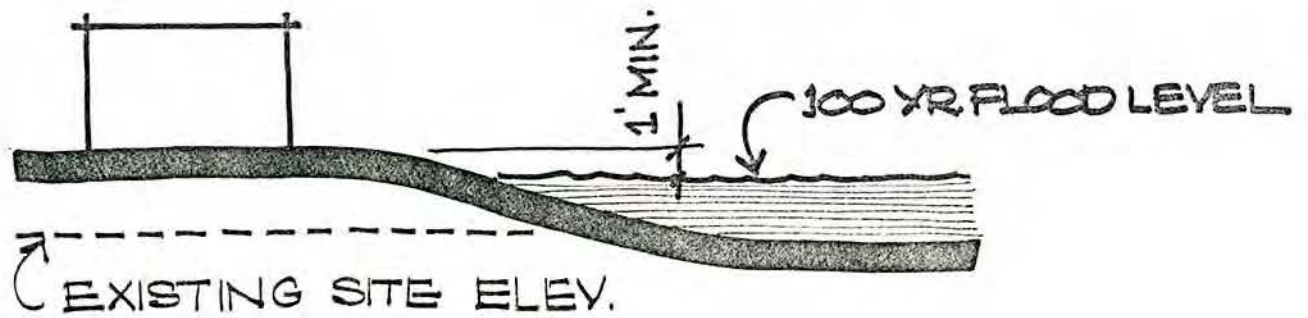
EXISTING UTILITIES



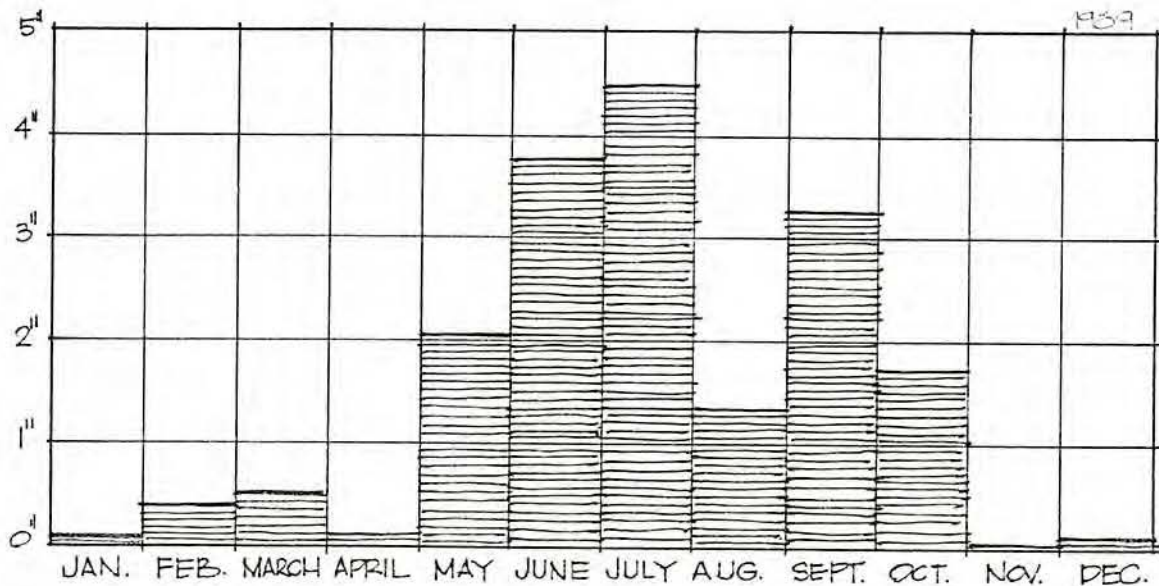
100 YEAR FLOOD ELEVATION



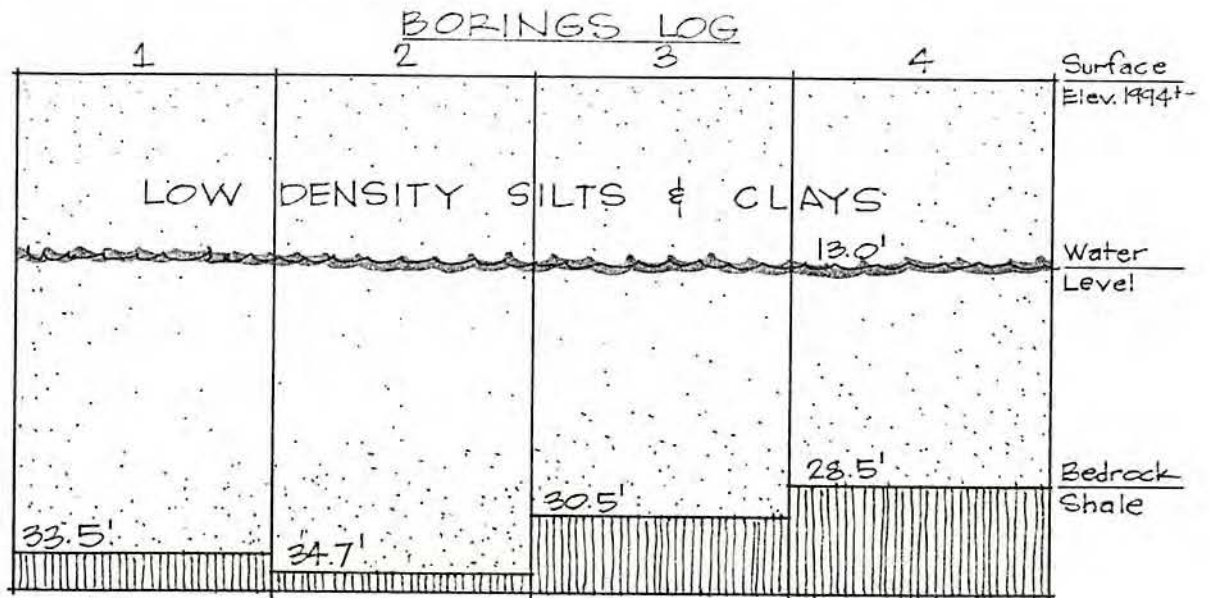
EXISTING LANDSCAPING



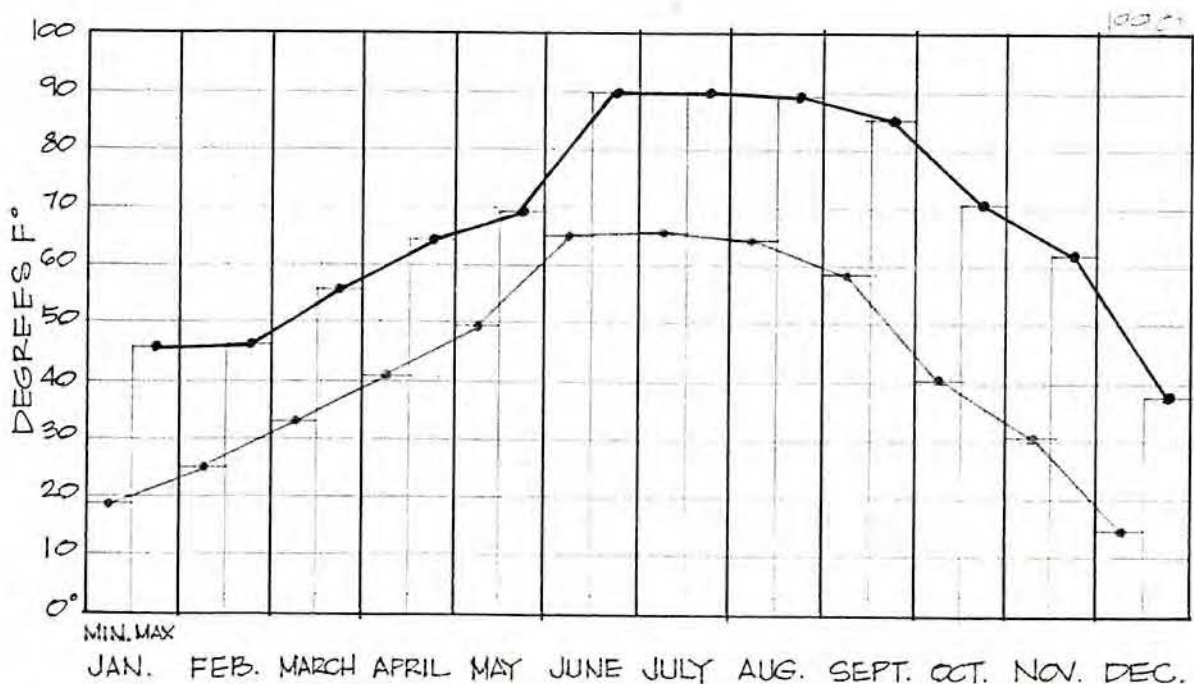
FLOOD PLAIN CRITERIA



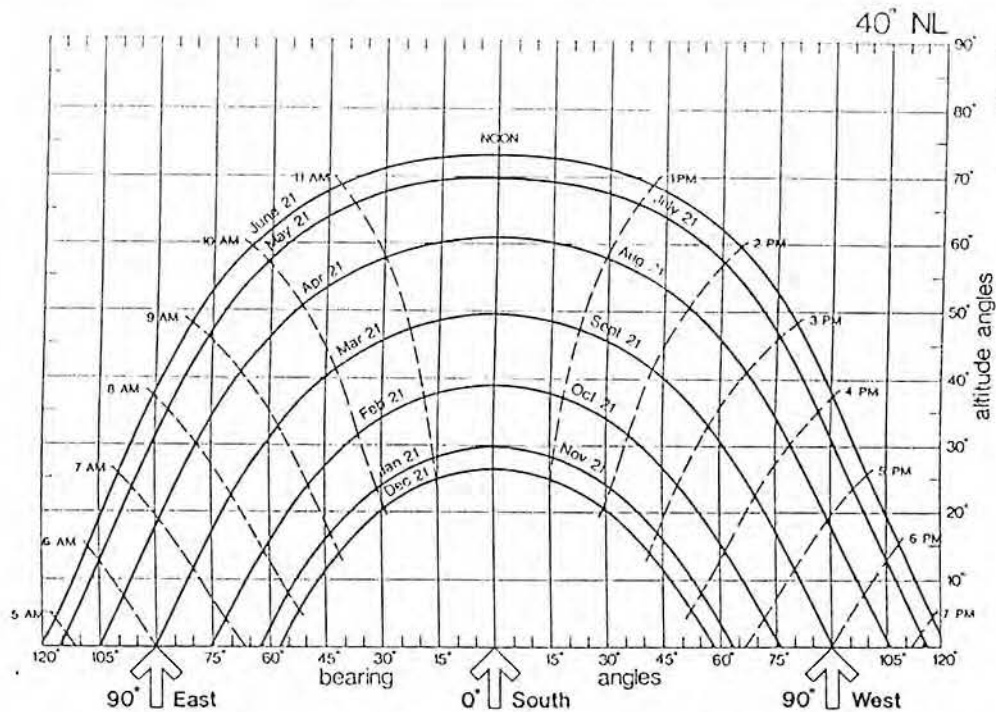
MONTHLY PRECIPITATION



PRELIMINARY GEOLOGY



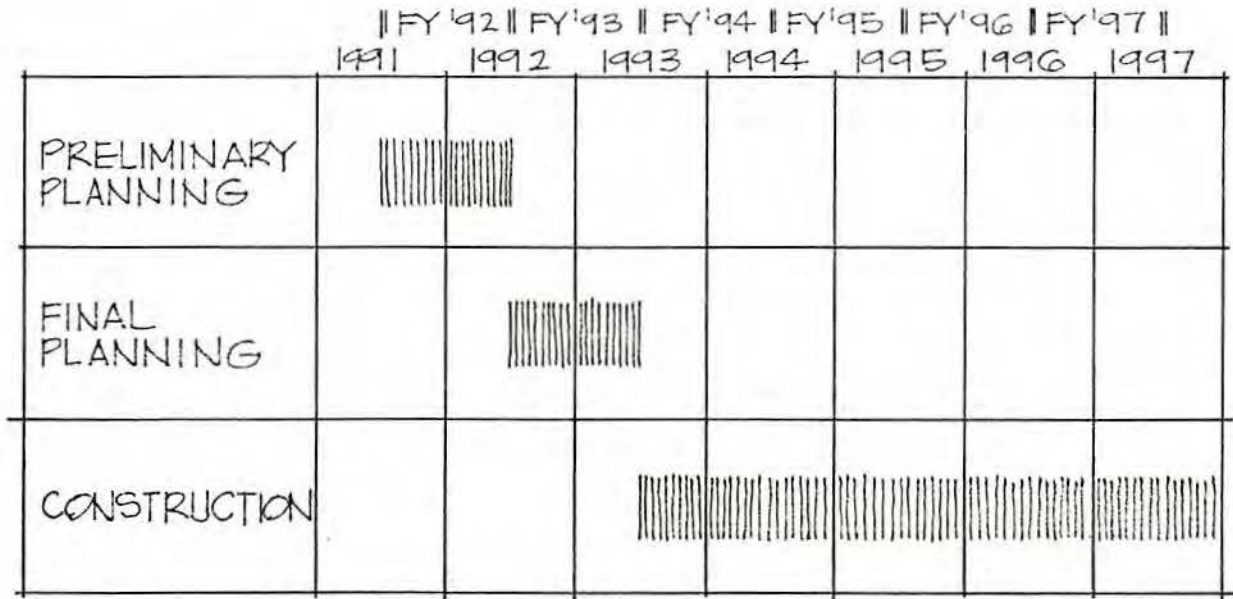
AVERAGE TEMPERATURES



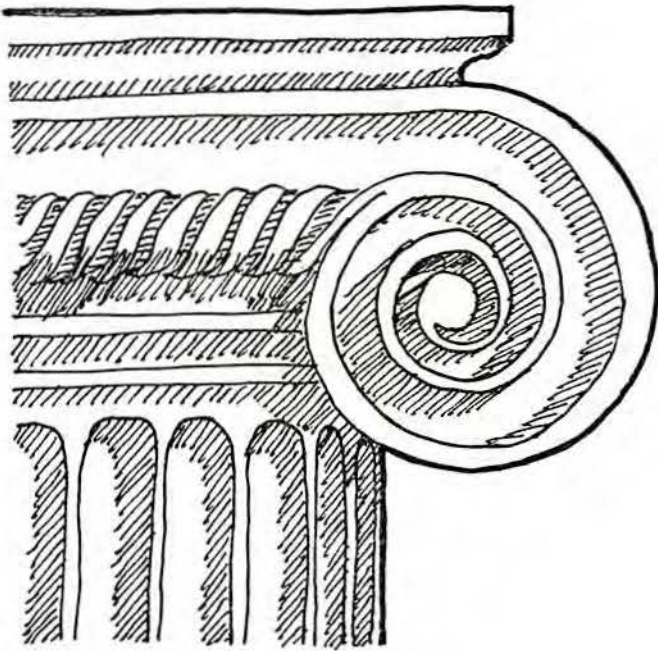
SUN PATH DIAGRAM



PLANNING FOR THE PHYSICALLY DISABLED

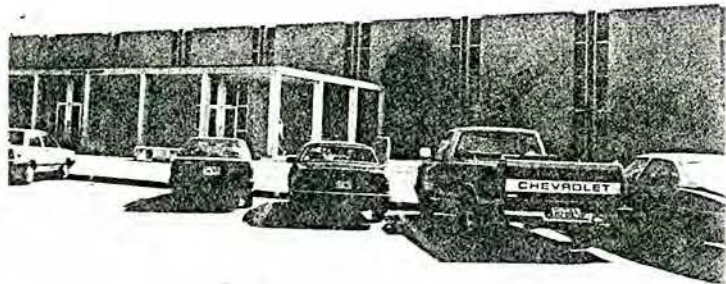
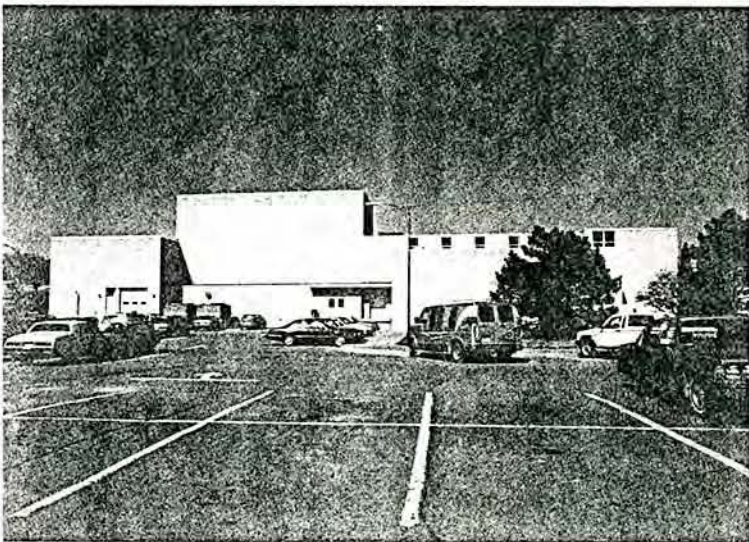
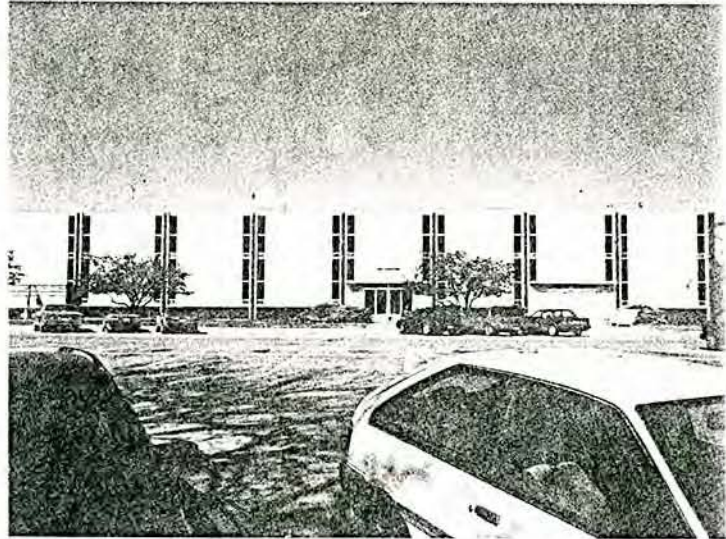
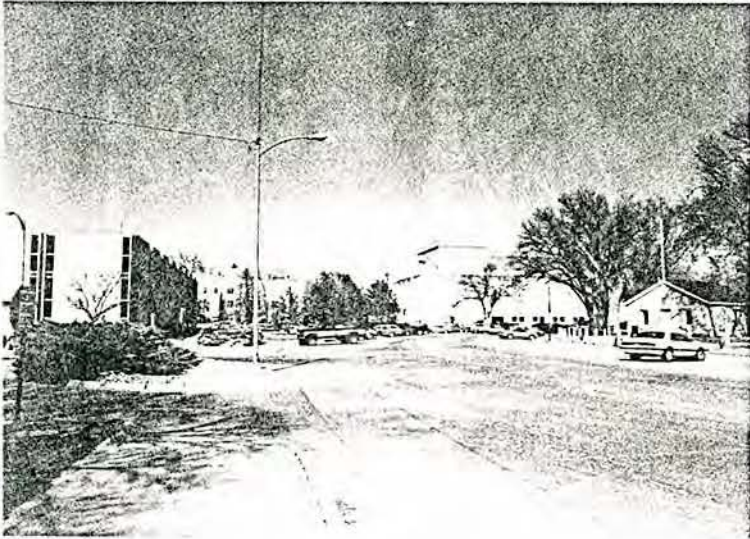


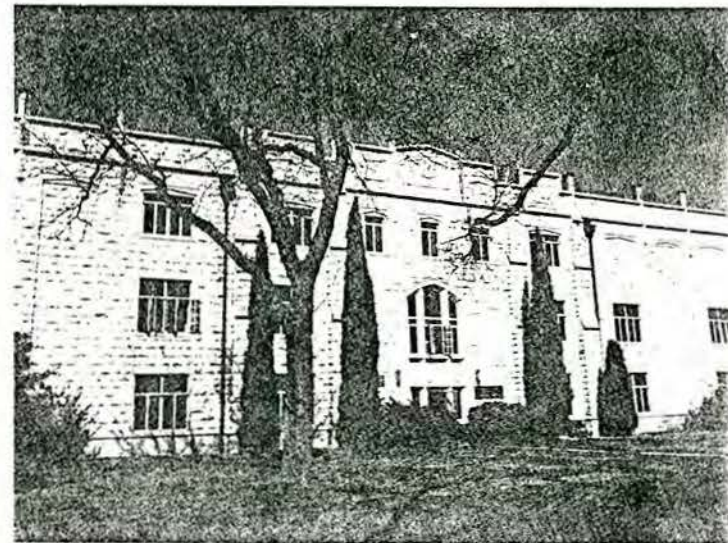
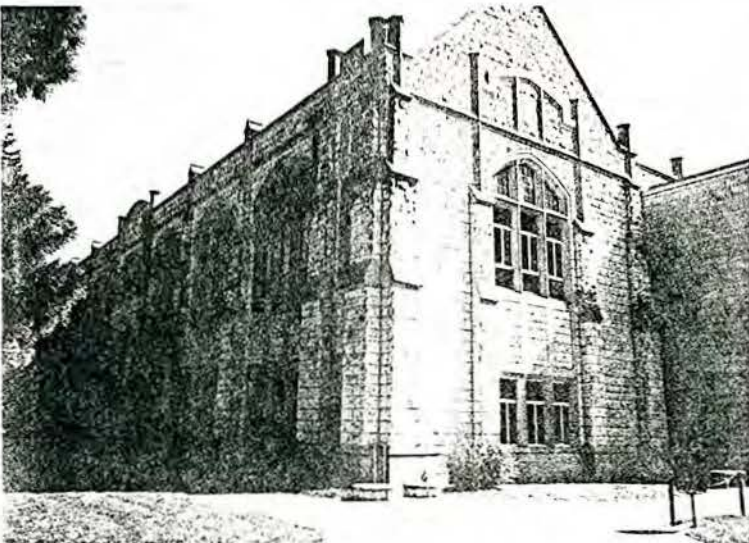
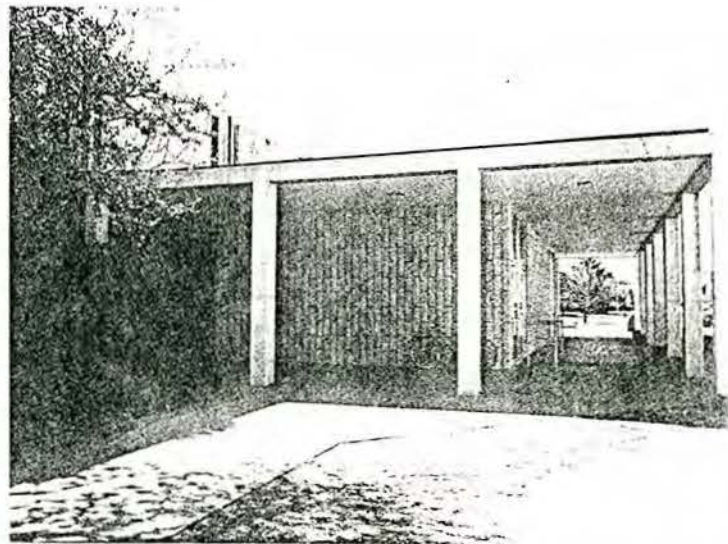
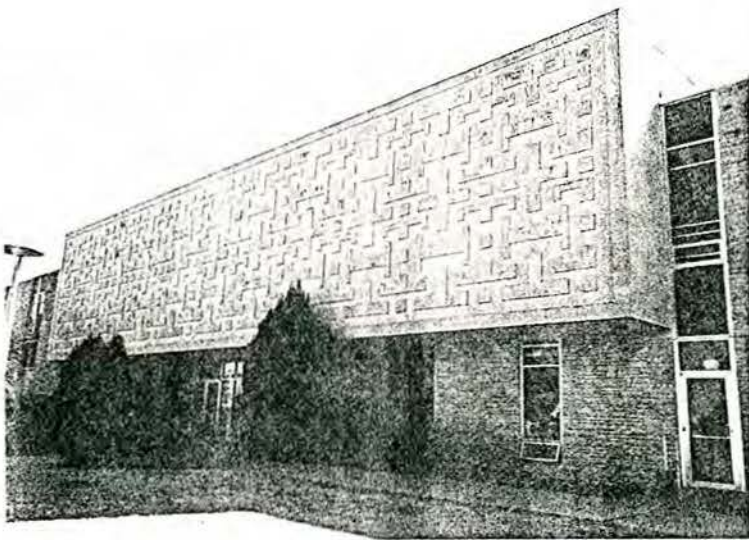
PROJECTED TIME LINE

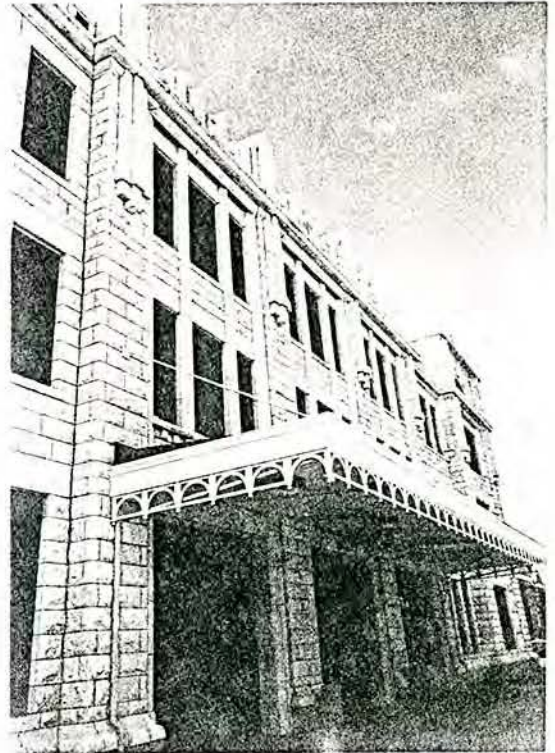
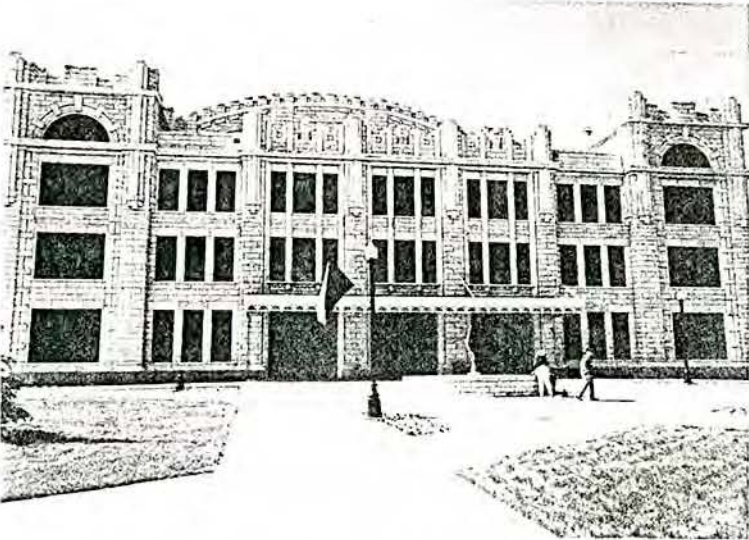


CAMPUS CONTEXTURE





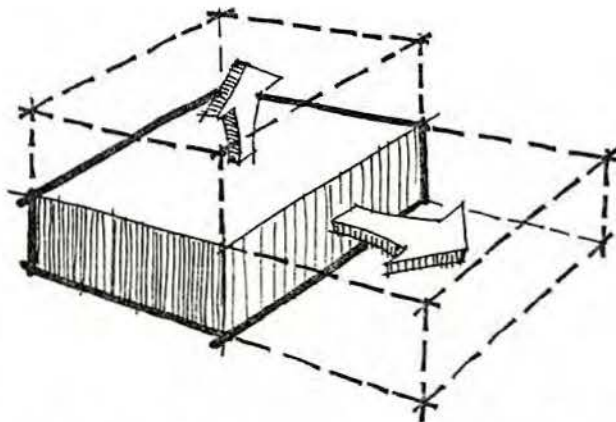
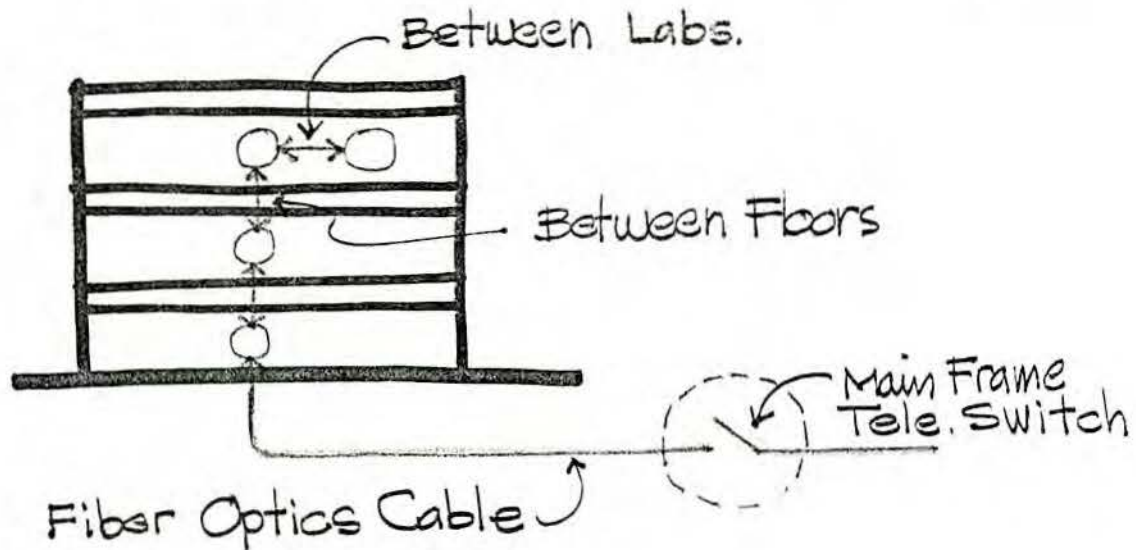




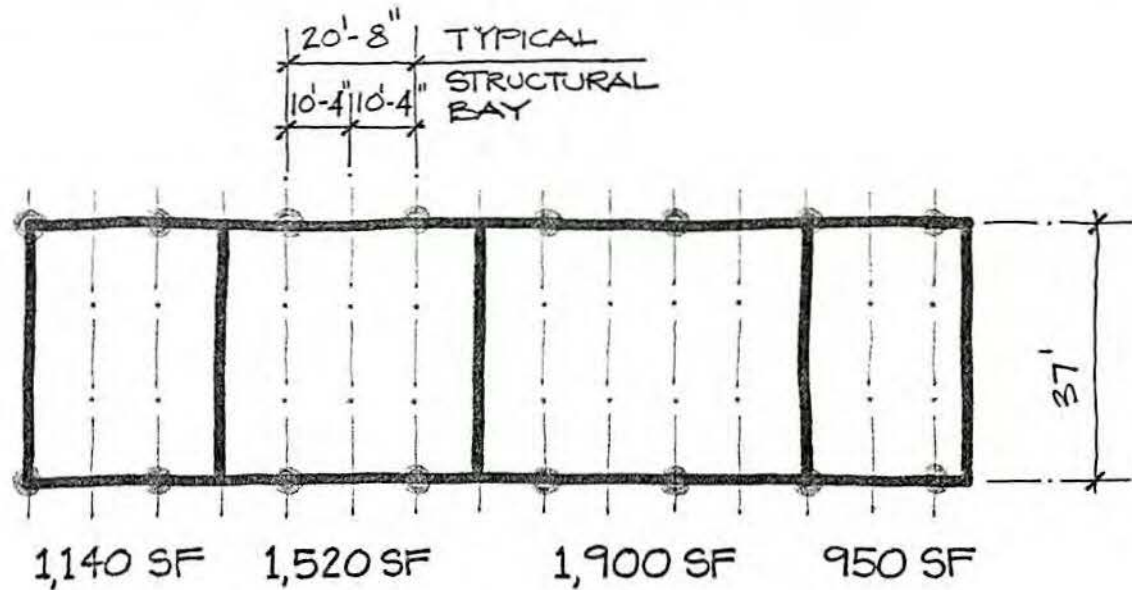
CONCEPTS

Concepts are qualitative means with which goals may be realized. They define relationships, priority, grouping, flexibility, environment and other qualities the design should embody. Programmatic concepts provide abstract, not physical, solutions to functional problems.

TELECOMMUNICATIONS

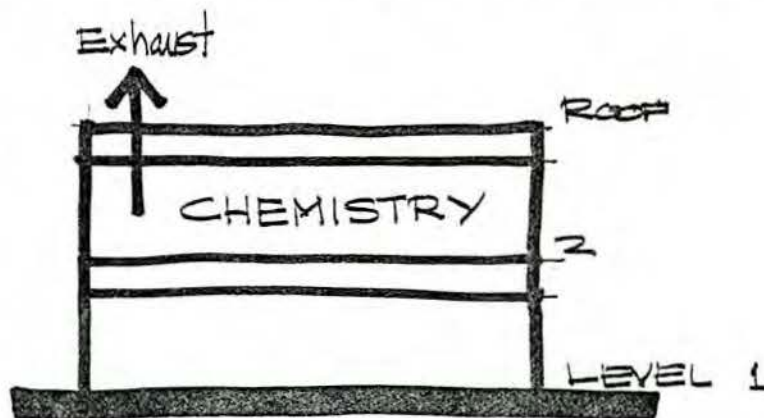


BUILDING EXPANSION

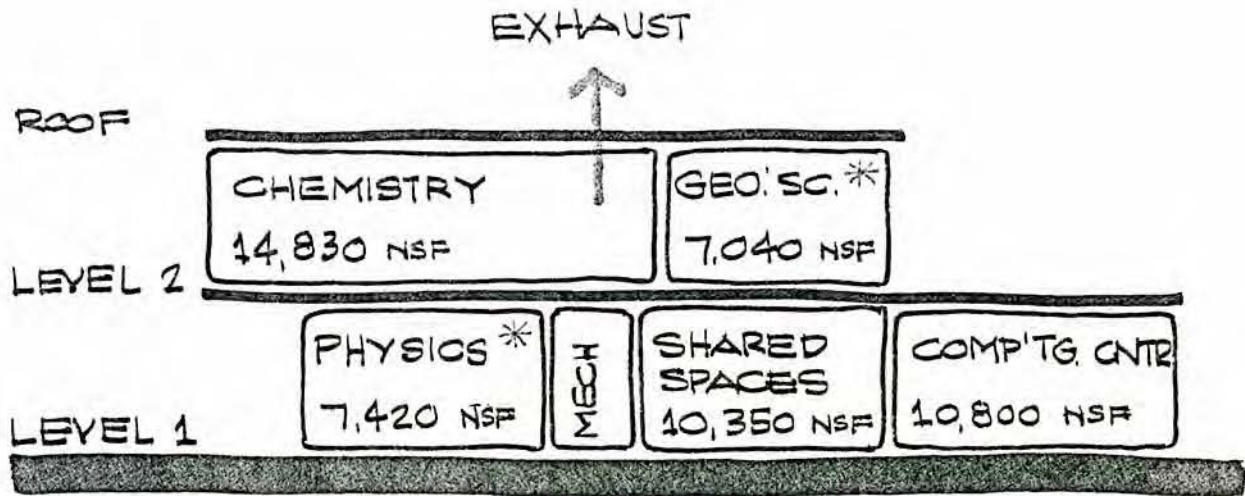


STANDARD LAB MODULES

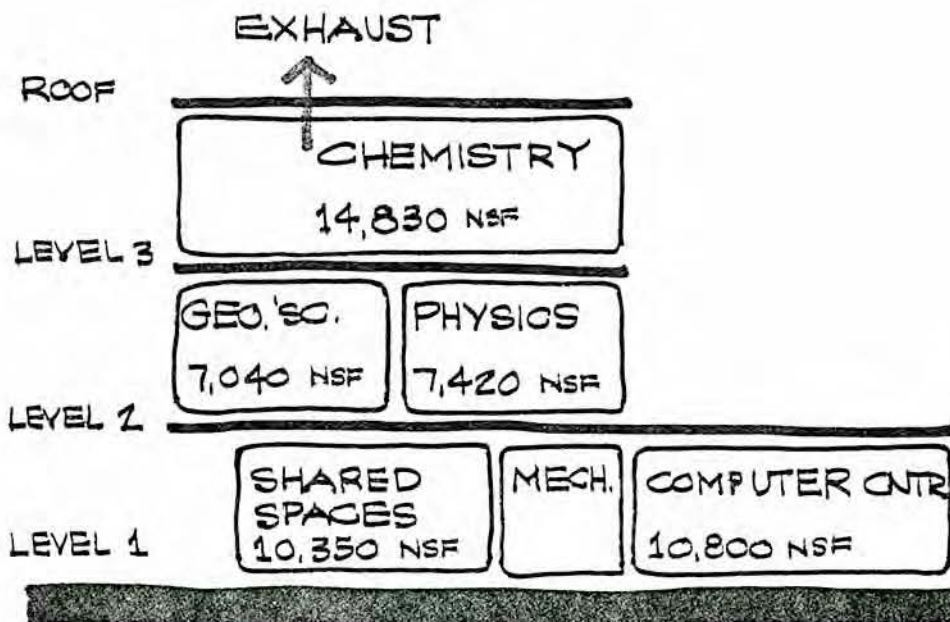
LOCATE **CHEMISTRY** ON TOP FLOOR.....**EXHAUST** IS EASIER



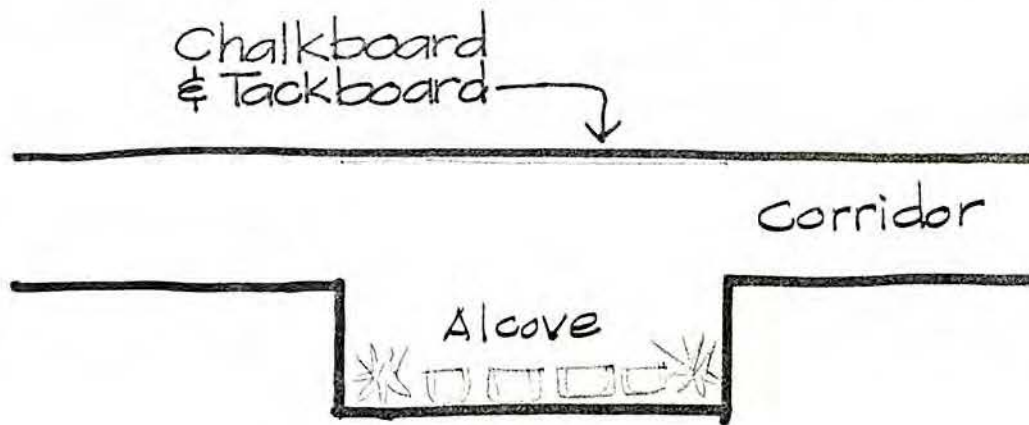
* could be interchangeable



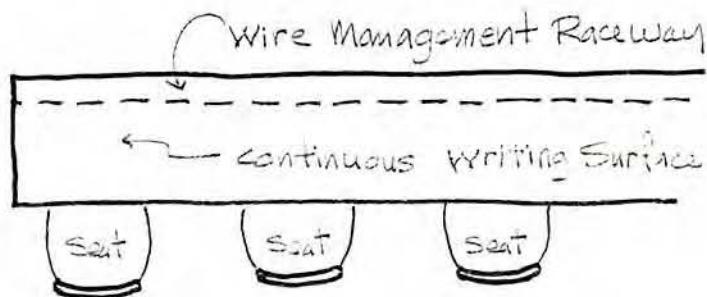
BUILDING ZONING... 2 FLRS.



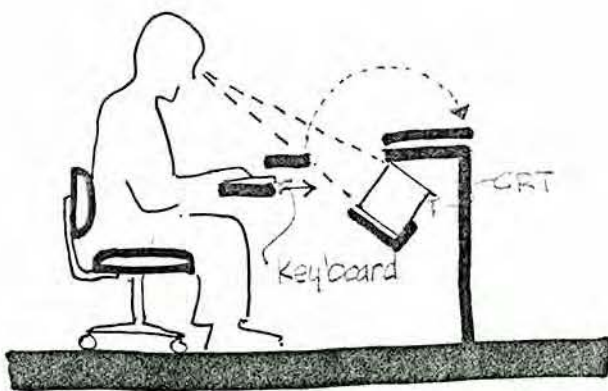
BUILDING ZONING... 3 FLRS.



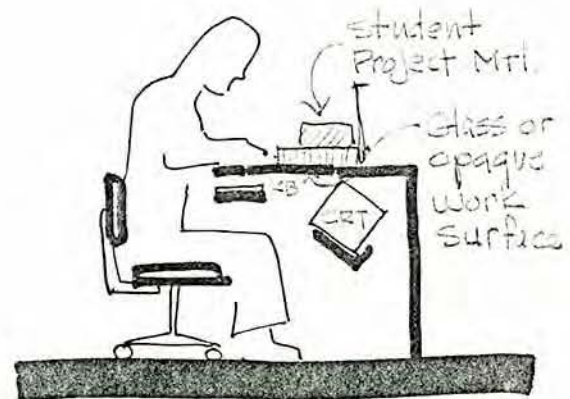
PROVIDE **ALCOVES** IN CORRIDERS
FOR STUDENT **STUDY** AND **RESTING**



**GENERAL LECTURE
CLASSROOM SEATING**

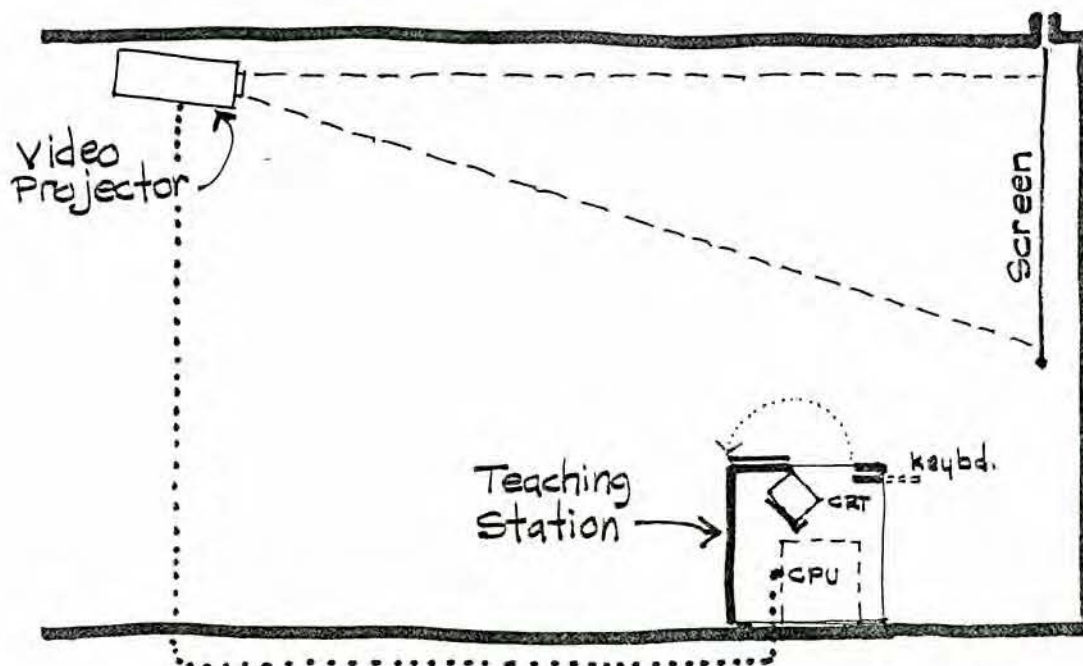


COMPUTER USE

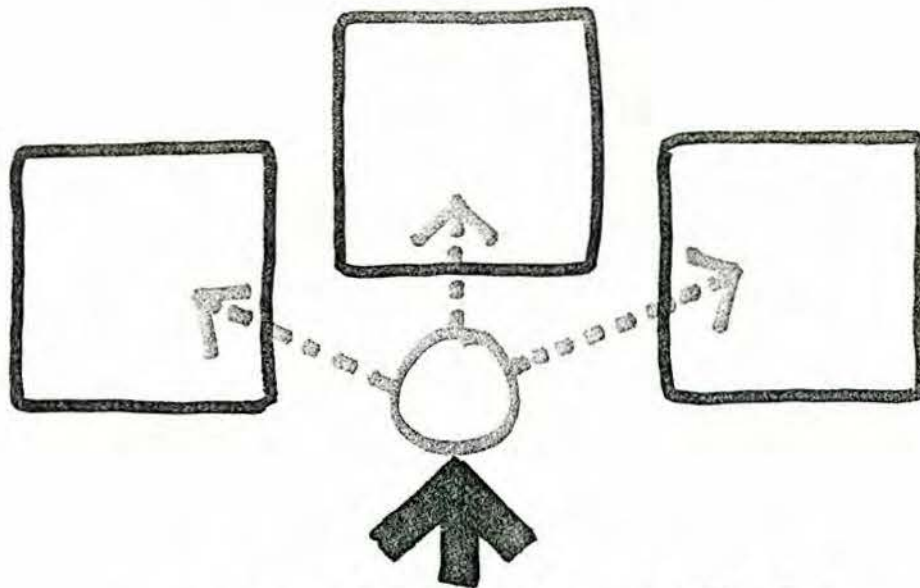


WORK SURFACE
USE

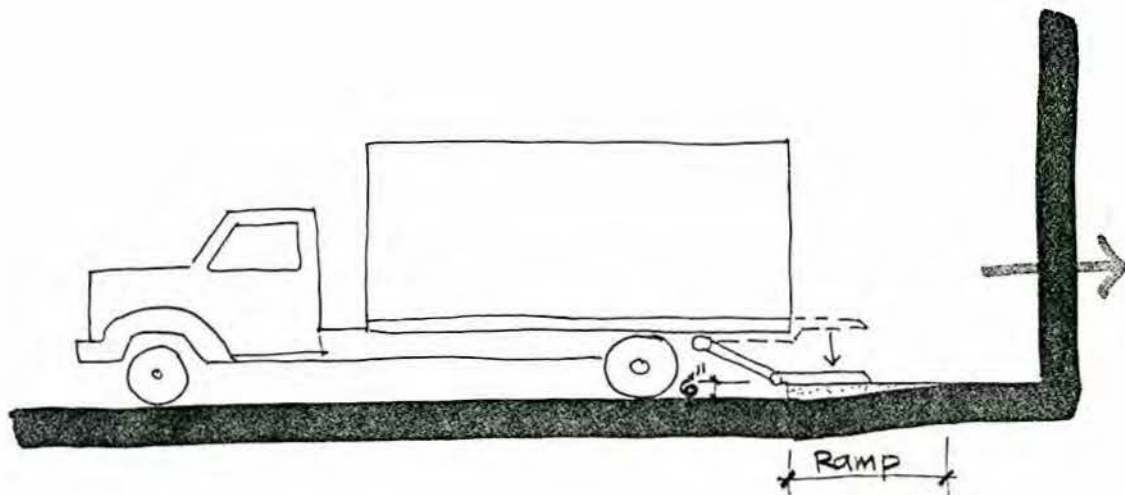
WORK STATION CONCEPT



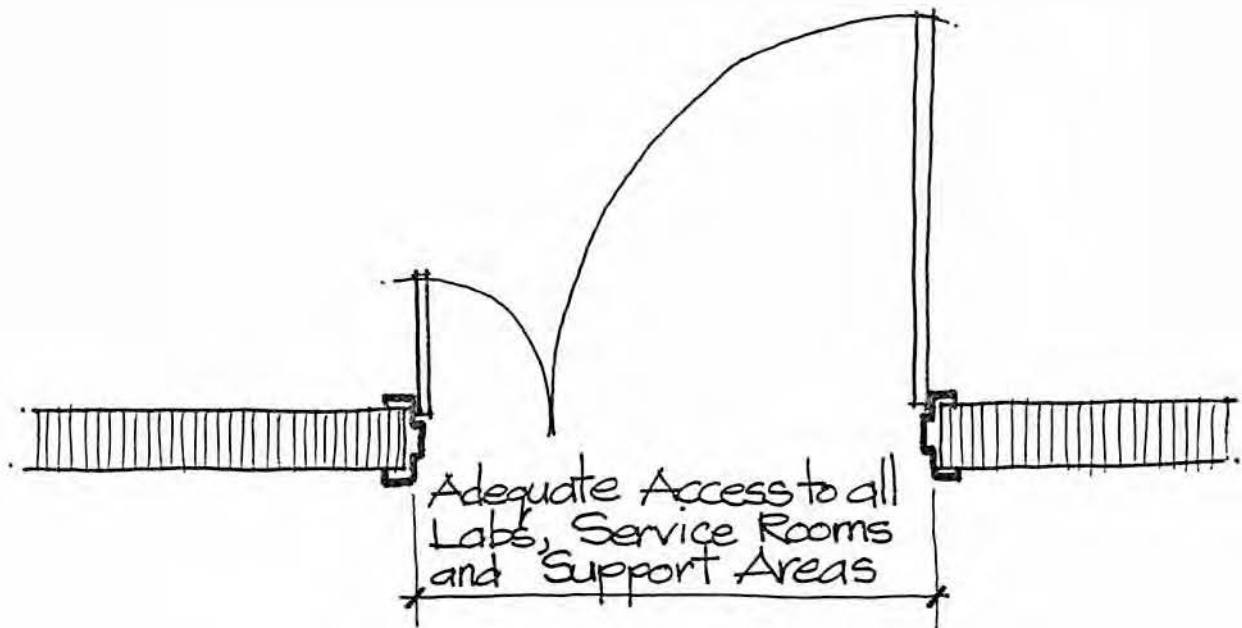
TYPICAL TEACHING STATION



**CENTRALIZED
SERVICE
ACCESS**



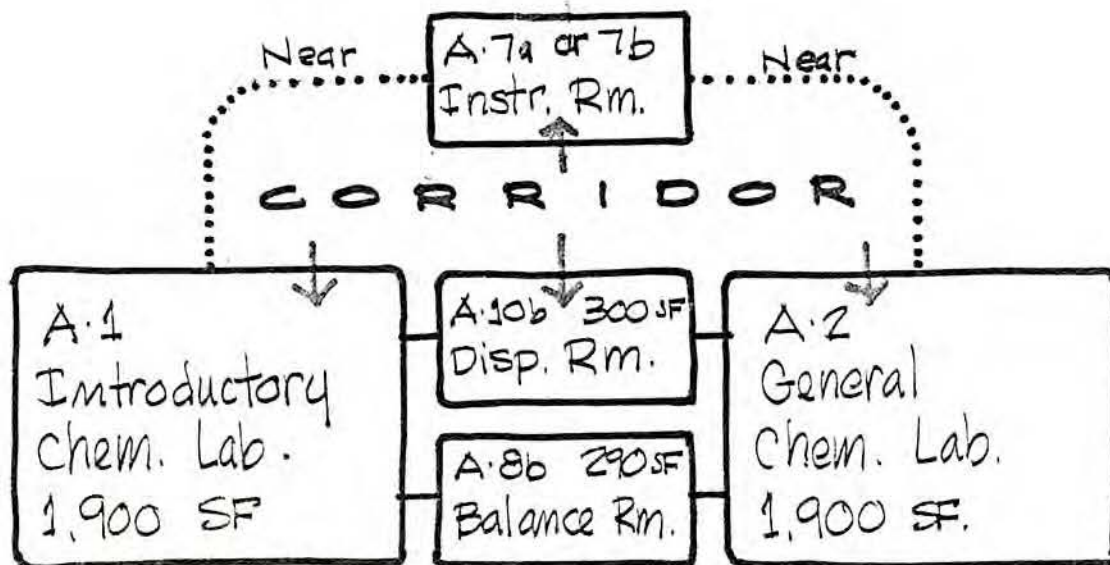
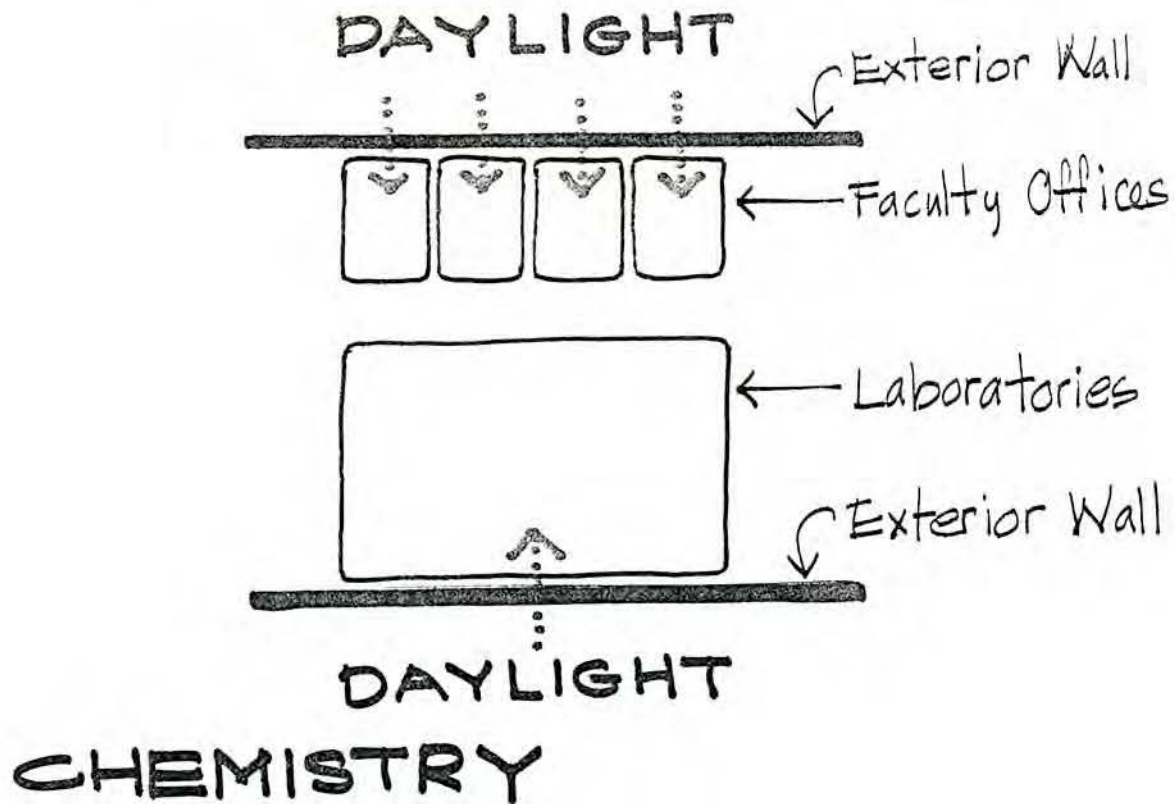
SERVICE/DELIVERY ENTR.



ADEQUATE ACCESS

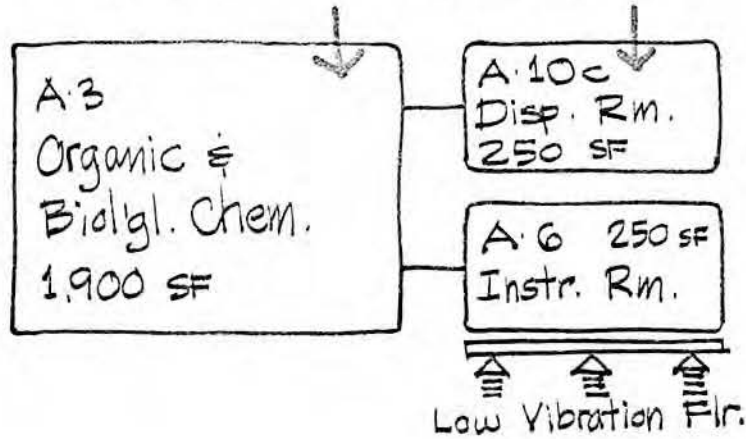
Fort Hays State University • Physical Science Building

Chemistry Department

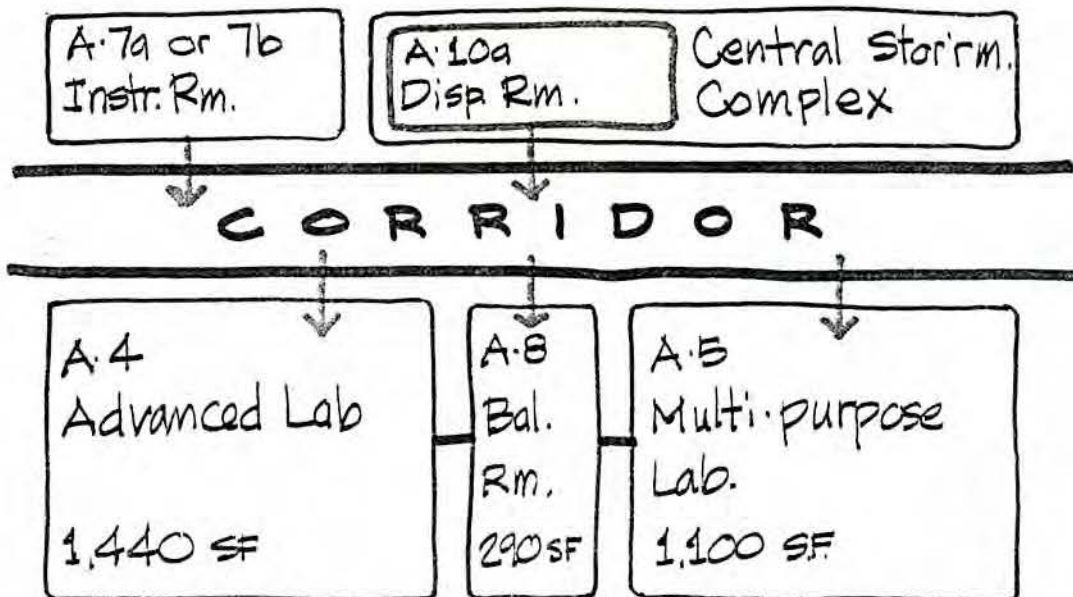


CHEMISTRY LABS. A.1 & A.2

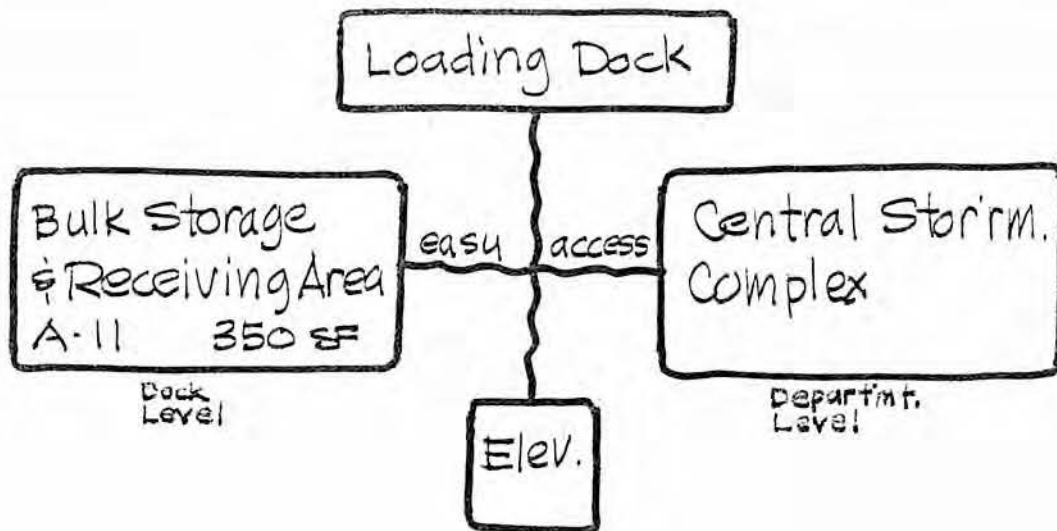
CORRIDOR



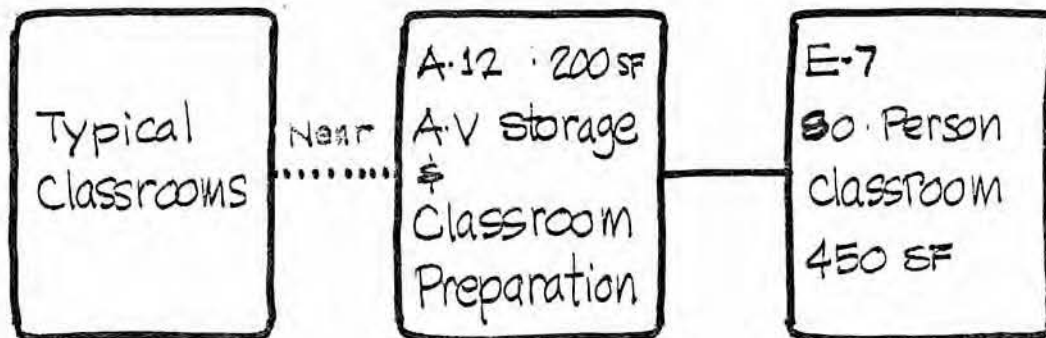
CHEMISTRY · LAB A.3



CHEMISTRY · LABS A.4 & A.5



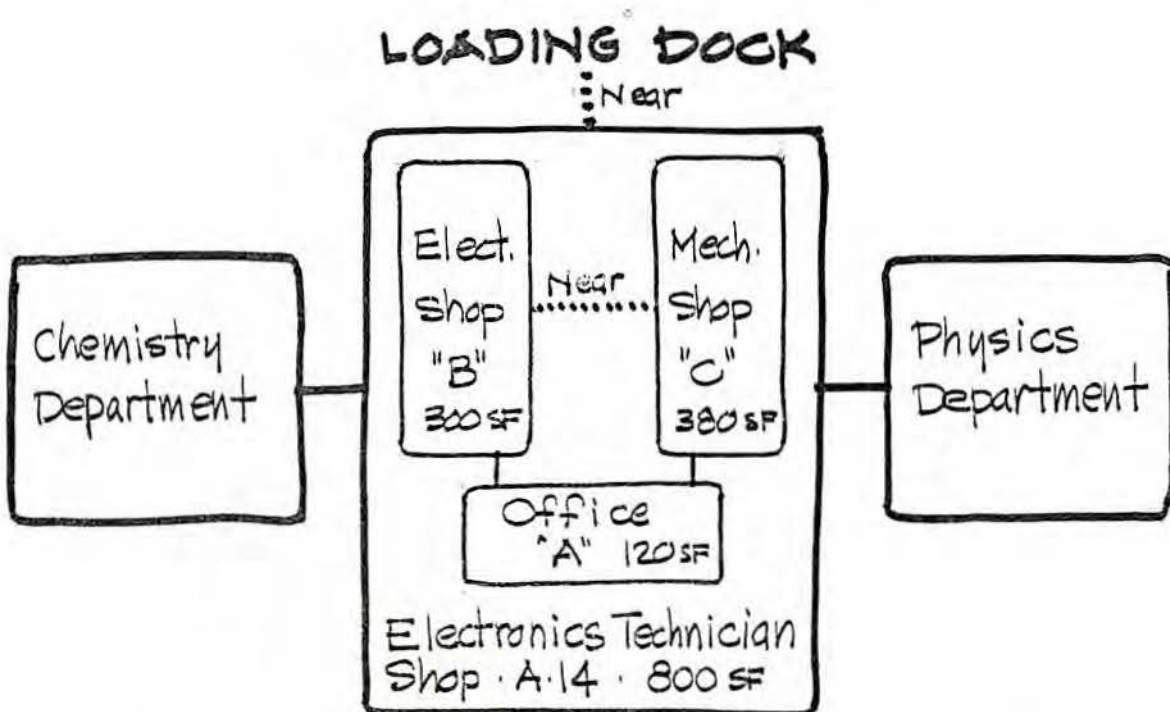
CHEMISTRY · A-11



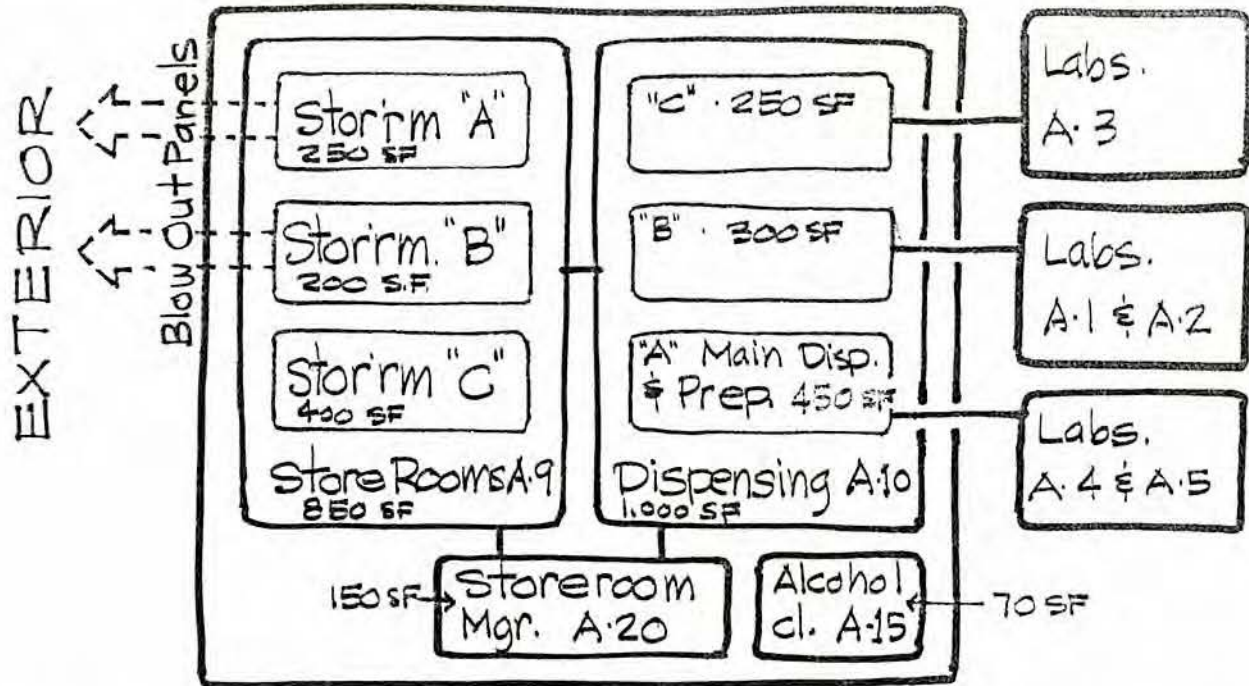
CHEMISTRY · A-12



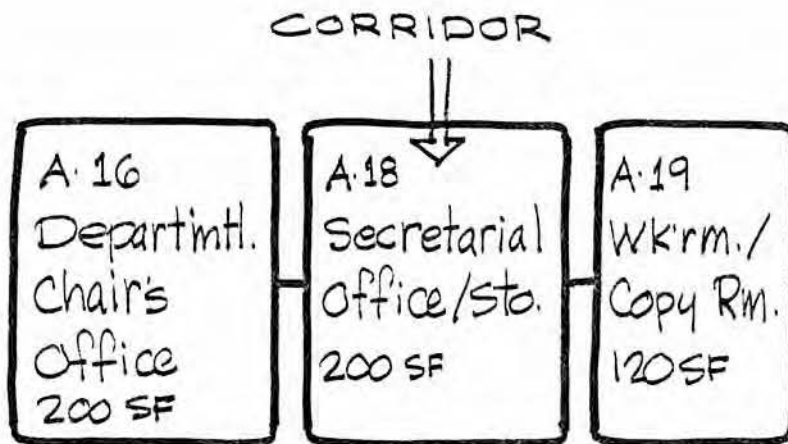
A.13 CHEMISTRY • GLASSWORKING ROOM



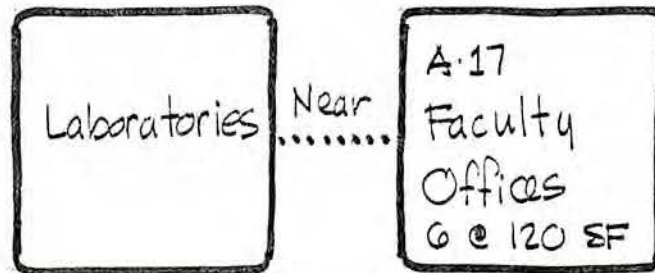
A.14 ELECTRONICS TECH. SHOP



CENTRAL STOREROOM COMPLEX. CHEMISTRY

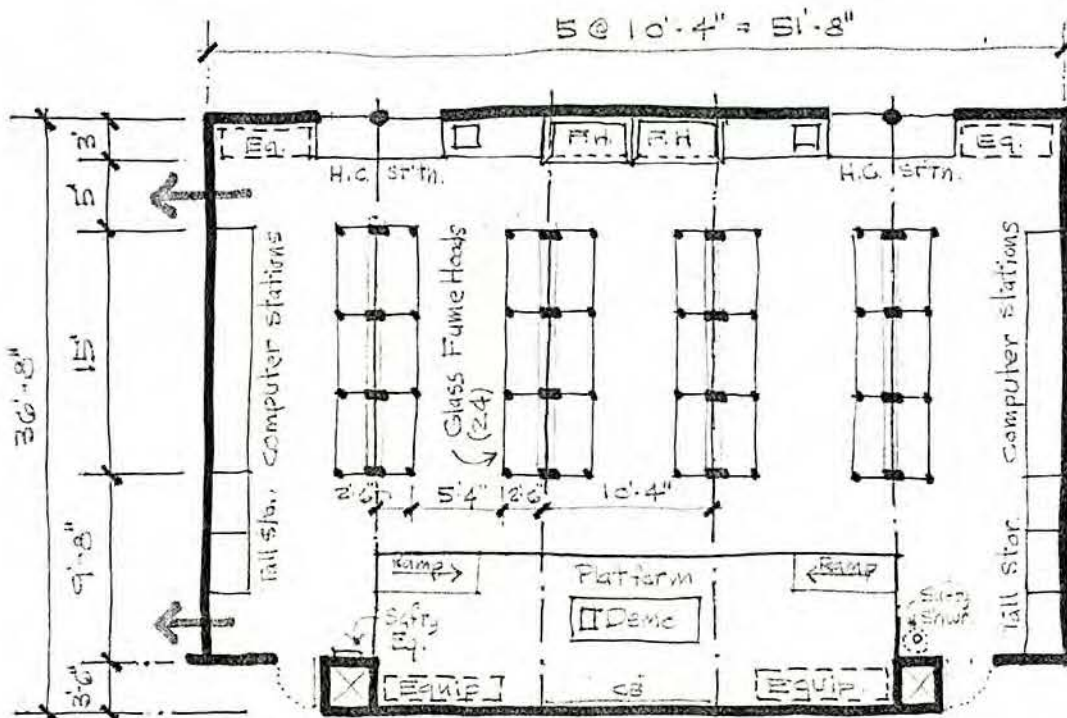


CHEMISTRY • DEPARTMENTAL OFF.



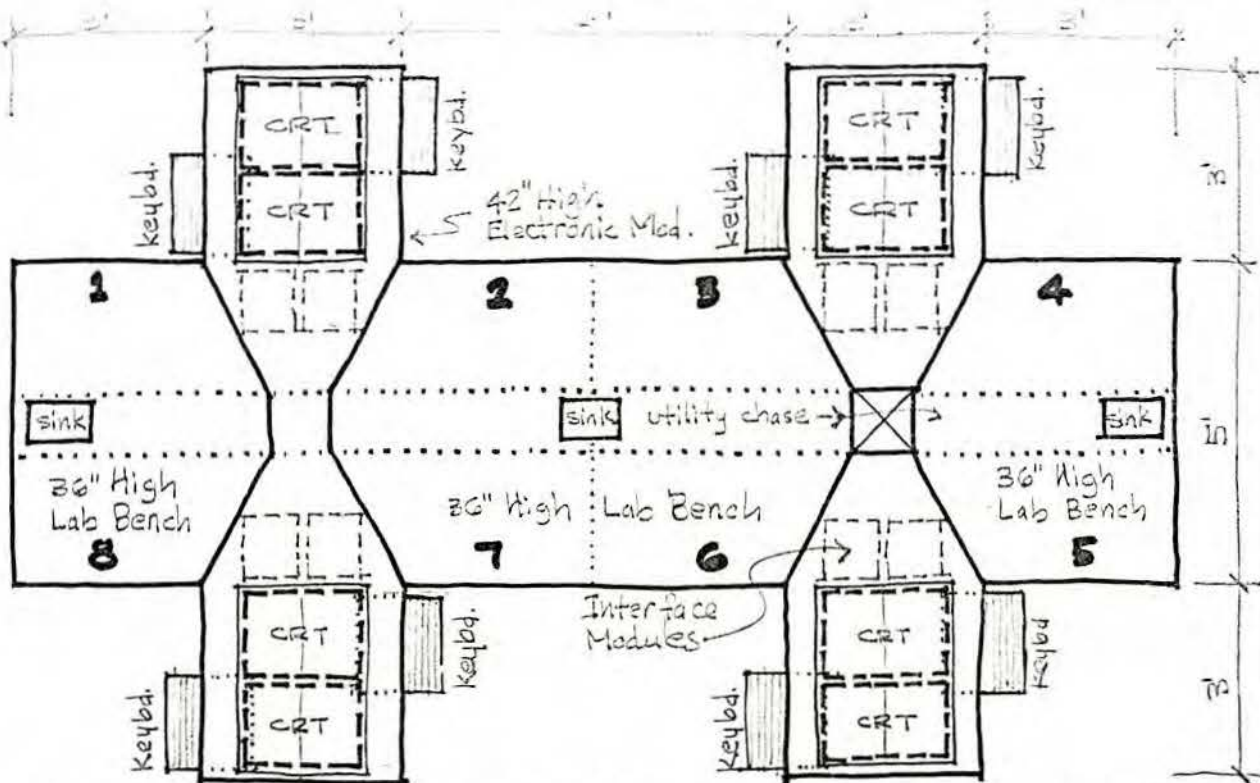
Merge computer stations & lab work stations?

A-17 CHEMISTRY • OFFICES

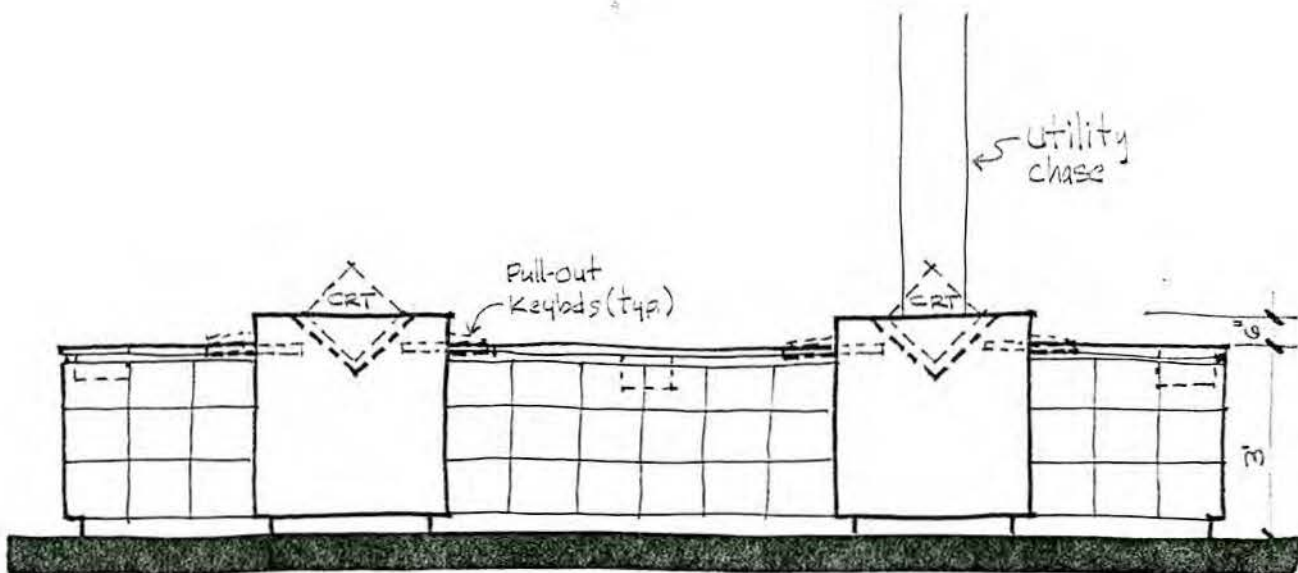


CORRIDOR

CHEMISTRY LAB. A-3 ... 1,900 SF.



CHEMISTRY · STUDENT STATION



CHEMISTRY · STUDENT STATION

Project Program Review Conference:

April 6, 1992: Revised April 10, 1992

Re: Physical Science Classroom Building
Fort Hays State University

Chemistry Department:

Attendance:

Larry Nicholson
James Hohman
Delbert Marshall
Dave Huseland
Ed Shearer
Max Rumpel
Ida Hulett
Eric King
Design Committee

A. Introductory Discussion:

1. Goals, Needs, Concepts.
2. Horizontal expansion capabilities would be most economical.
3. Each Department should be on one level, rather than being split on separate levels or areas.
4. Chemistry may work best on the top floor due to extensive fume hood exhausting.
5. Physics, Geosciences and Shared Spaces may work on any floor.
6. The Computer Center may be outside of tower area or adjacent to Science Complex.
7. A structural grid is advisable to set up a uniform building construction module and economy in construction cost. A Lab Module of 10'-4" would provide a 20'-8" x 36'± Bay spacing.
8. Each Department should review the proposed concept of adjacencies.

B. Basic Decisions to be considered:

1. Where to locate Labs:
 - a. Natural light required. - Windows are desirable in Classrooms & Labs.
 - b. Windows in offices - definitely.
 - c. Emergency lighting for shut down of experiments is important.
 - d. Natural Ventilation - open windows cause problems with mechanical ventilation.
 - e. Skylights may be possible in lieu of windows - may need to be shuttered.
 - f. Module structural grid - possibly 10-4' wide = 380 SF per module.
2. Sizes:
 - a. Chemistry Labs (3) 1900 SF, (1) 1440 SF, (1) 1100 SF programmed.
 - b. Important criteria is to get the number of Lab stations needed with adequate circulation around - same manipulation of spaces and areas are OK.

C. Common Concerns:

1. Shared Space offices are to be put into each Department.
2. Conference Rooms are to be located within each Department.
3. Student study areas are to be located within each Department.
4. Gary suggests we plan for mail rooms within each Department. These areas could also be used to receive items from students. Gary has added area for this to the Program if space is available. Security is a concern which must be addressed.
5. Lab ceilings - need good lighting for working with specimens. No conclusion reached on ceiling vs. no ceiling in Labs.
6. Various ideas discussed on computer applications. Where to locate monitors is a major concern. Recessed into desktops is especially good at Instructors' desks and at Computer Labs. Several concepts are needed for review.
7. Need overhead projection at front of room. Some multi-media controls must be considered.
8. Considerations shall be given to how the placement of the new building will impact the existing conditions and entry at the Library Building. Also, ramifications to the Parking Lot. Currently, parking for Sheridan Hall is using this parking lot. Displacing too much parking will be a problem.

9. Unassigned space can be used to fill some areas as conceptual design develops the Programmed spaces.
10. Several concepts are needed for Computer Terminal usage analysis.

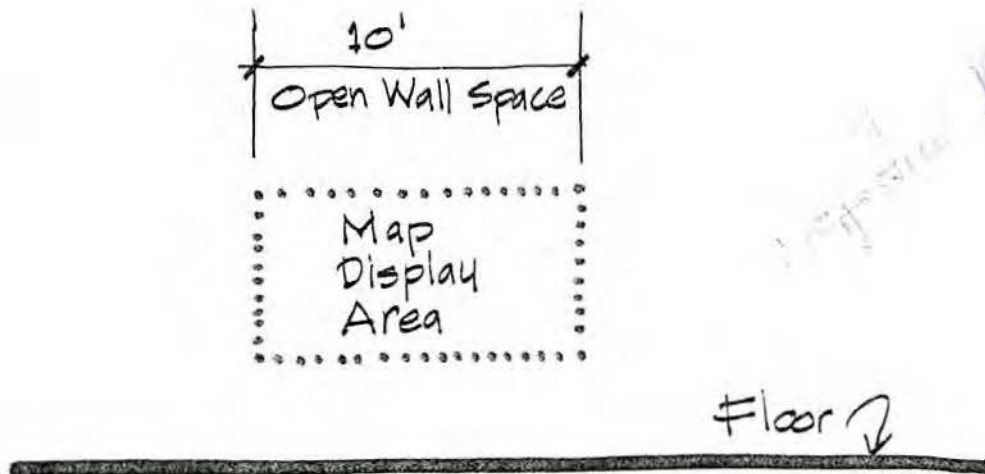
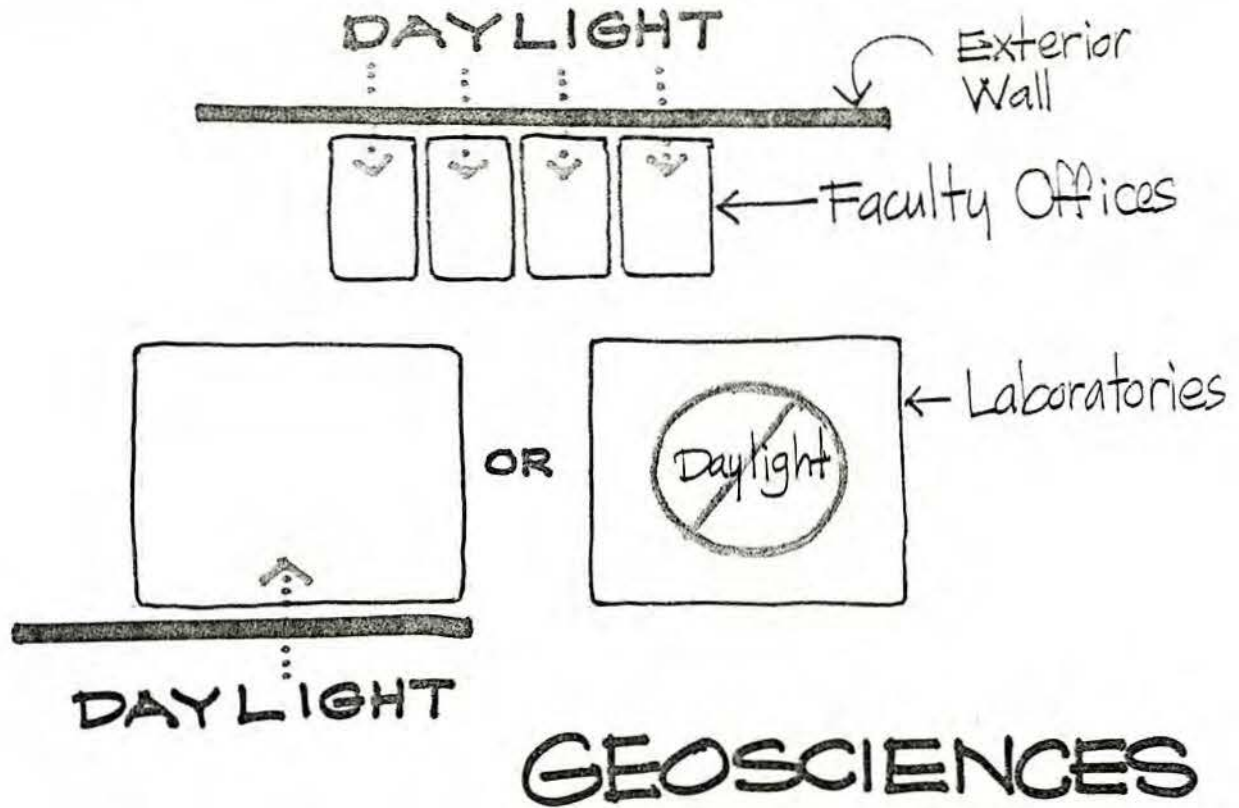
D. General Comments:

1. No plans to expand perchloric acid usage.
2. All Instrument Rooms need venting for equipment.
3. 80 per Classroom shall be tiered seating.
4. Tables are preferred in Lecture Rooms in lieu of tablet arm chairs. Consideration should be given to this concept in room layout. (Consensus agreement will be requested).
5. Numbers of work stations are important to the Committee.
6. All Instrument Rooms should access from Corridors.
7. Plan for 5' of bench length per student.
8. Balance, Dispensing and Instrumentation Rooms should locate between Labs A1 and A2.

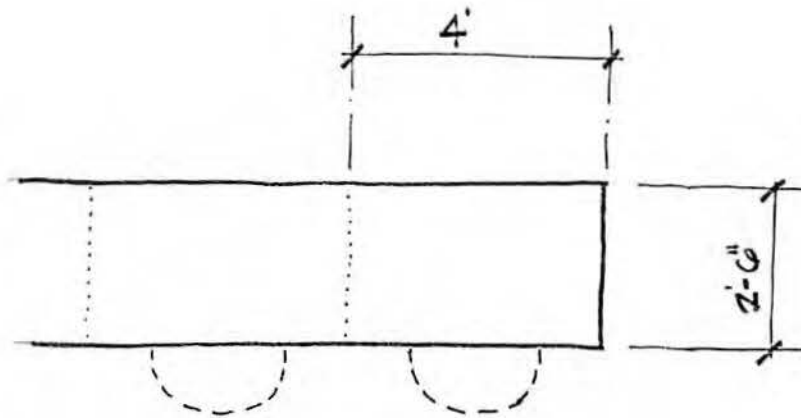
E. Specific Areas:

1. Room No. A-1: Introductory Chemistry Lab:
 - a. 24 station must have adjacency to:
 1. Balance Room (A-8)
 2. Dispensing Room (A-10)
 - b. Instrument Room should have Corridor access for use by other Labs.
 - c. A central Dispensing Storage area can be used for bulk storage and dispensing to satellite Dispensing Rooms.
 - d. Traffic of dispensing chemicals from Central Storage to Satellite Dispensing rooms can be done through the main Corridor.
 - e. Plan on 5' of bench space per student.
 - f. Need a platform for demo area that is flexible in construction.
 - g. 4' of fume hood per 2 students. (48 LF of fume hood required).
 - h. Instrument Room does not need immediate adjacency to A-1 or A-2, however, must be close.
2. Room No. A-2: General Chemistry Lab:
 - a. Instrument Room does not need immediate adjacency to A-1 or A-2, however, must be close.
 - b. Balance Room has students working within room.
 - c. Instrument rooms have students approach by a dispensing window or dutch door.
 - d. Demo station should be raised 6" above floor elevation in 3 Labs. This needs study and consideration for accessibility. (possibly use a portable riser system)
 - e. Utilities - same as per program outlined.
 1. CAP Type I de-ionized water.
 2. Plumbing drains in plastic is acceptable.
 - f. One conventional fume hood, with utilities, for dispensing purposes is needed against the wall.

3. Room No. A-3 - Organic and Biological Chemistry Lab:
 - a. Fume hoods at student stations should be 5' per student with utilities at each end.
 - b. Lab A-3 may be the only Lab needed for glass fume hood arrangement. - (6) 2 hood benches.
 - c. At perimeter of Lab, there should be at least one fume hood, with utilities, for dispensing purpose - other areas at perimeter can be used for computer stations.
 - d. Windows above benches at exterior wall is possible.
 - e. Steam needs to be included in utilities.
 - f. Chiller for cold water is needed.
 - g. Aspirated water for vacuum is more reliable to Staff.
 - h. Adjacencies:
 1. Balance Room - not necessary for Lab A-3.
 2. Dispensing Room - adjacent to Corridor (most dedicated to this Lab).
 3. Instrumentation Room = A-6 (critical)
 - j. Use glass hoods in Lab A-3 only.
4. Room No. A-4 - Advanced Lab:
 - a. Same as A-3 for adjacencies.
 - b. No glass hoods required.
 - c. 16 station room.
 - d. Vent Room A-7a.
5. Room No. A-5 - Multi-purpose Lab:
 - a. Adjacency requirements:
 1. Dispensing Room
 2. Instrument Room - A-7a or A-7b or A-6 adjacent from Corridor.
6. Room No. A-11 - Bulk Storage & Receiving Area:
 - a. Central area to receive supplies and transport to storage.
 - b. Provide freight elevator.
7. Room No's. A-9, A-10A, A-15 & A-20 - Store Room Complex:
 - a. Store Room Manager, Dispensing Rooms, Alcohol Closet and Main Dispensing Storage has to be on Chemistry level.
8. Room No. A-12 - A.V. Storage:
 - a. Adjacent to 80 student Classroom - E-7
9. Room No. A-13 - Glass Working Room:
 - a. Needs good ventilation, could be near Electronics.
 - b. Also close to Storage Room.
 - c. Should be on same floor as Department.
10. Room No. A-14 - Electronics Technician Shop:
 - a. This area should be close to loading dock. (on ground level).
 - b. Needs a fume hood.



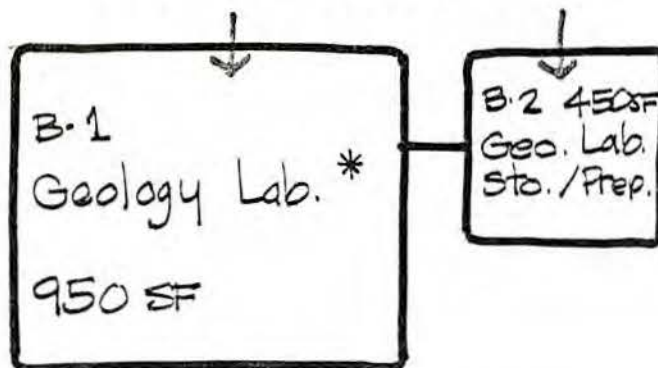
GEOSCIENCES • TYP. LABS.



TYPICAL STUDENT STATION

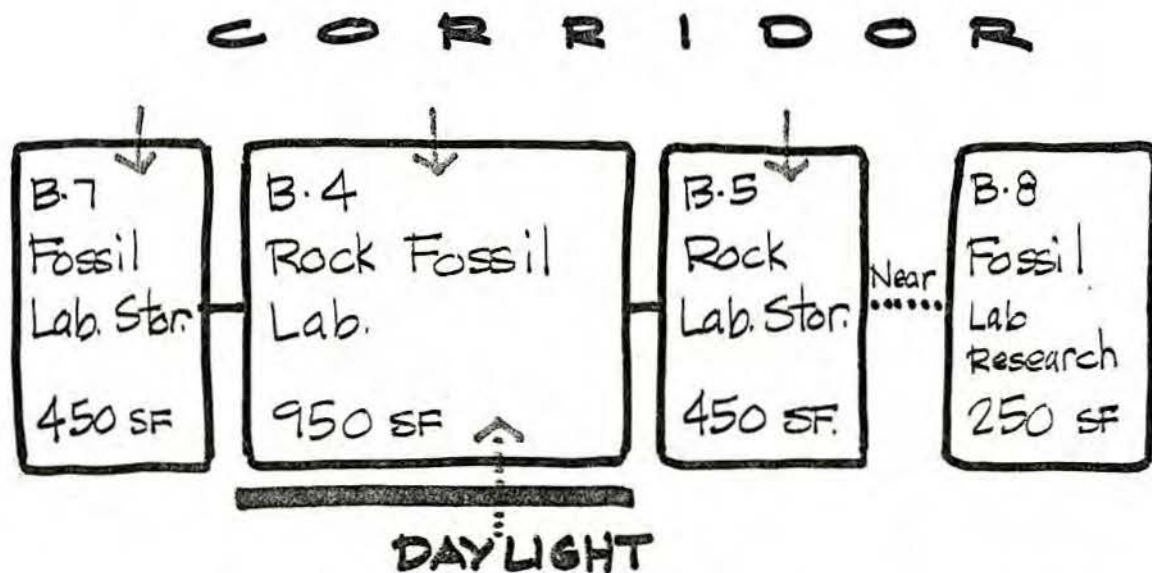
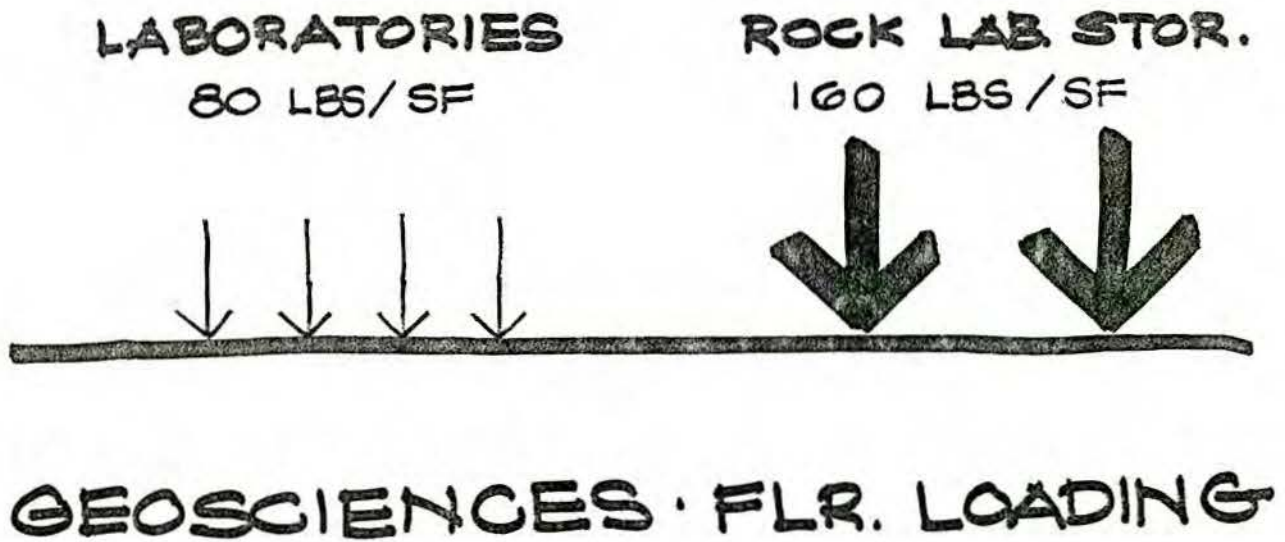
GEOSCIENCE

CORRIDOR

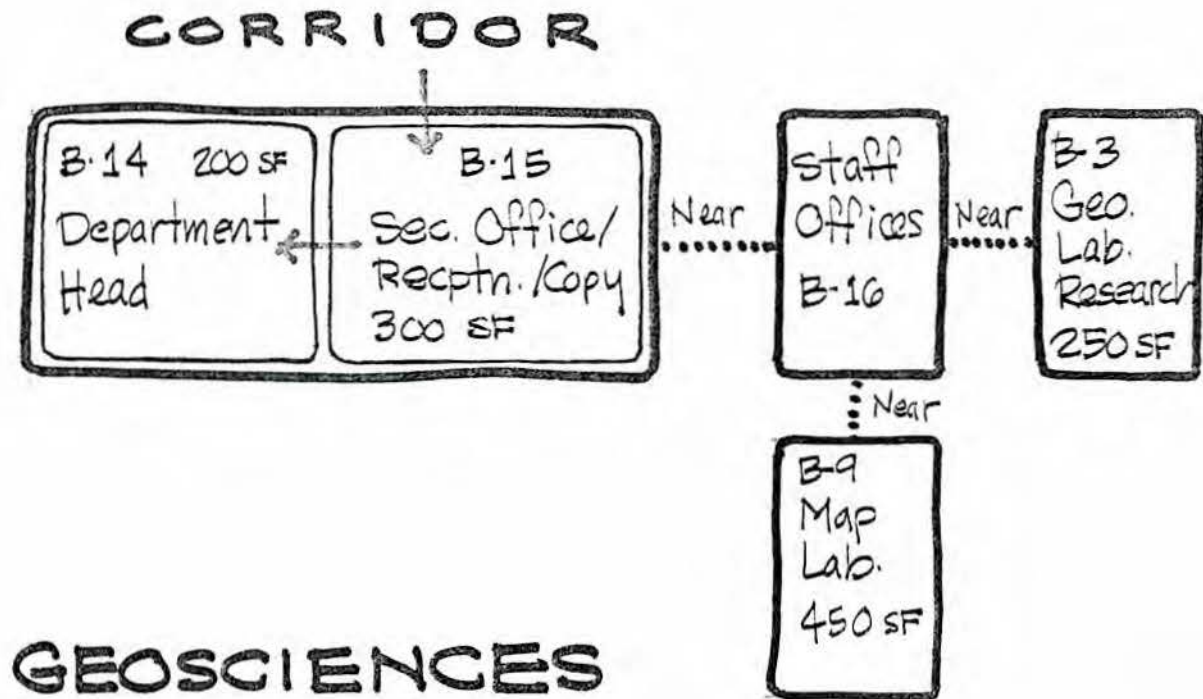


* Windows Acceptable

GEOSCIENCES LAB. B.1



GEOSCIENCES LAB. B.4



Project Program Review Conference:

April 6, 1992: Revised April 10, 1992

Re: Physical Science Classroom Building
Fort Hays State University

Geosciences Department:

Attendance:

Larry Nicholson
John Ratzlaff
Paul Ghilligor
Richard Zakrzewski
Gary Millhollen
Eric King
Design Committee

A. Introductory Discussion:

1. Goals, Needs, Concepts.
2. Horizontal expansion capabilities would be most economical.
3. Each Department should be on one level, rather than being split on separate levels or areas.
4. Chemistry may work best on the top floor due to extensive fume hood exhausting.
5. Physics, Geosciences and Shared Spaces may work on any floor.
6. The Computer Center may be outside of tower area or adjacent to Science Complex.
7. A structural grid is advisable to set up a uniform building construction module and economy in construction cost. A Lab Module of 10'-4" would provide a 20'-8" x 36'± Bay spacing.
8. Each Department should review the proposed concept of adjacencies.

B. Basic Decisions to be considered:

1. Labs could have windows or no windows.
 - a. Different kinds of lamps are available, however, maintenance will not be practical to keep separate.
 - b. Rock and Fossil Lab (B-4) & Geology Lab (B-1) definitely needs windows for natural daylighting or intensive task lighting with good color rendition for rock sample identification. (Ken Neuhauser should be consulted about light requirements.)
2. Offices should definitely have windows.

C. Common Concerns:

1. Shared Space offices are to be put into each Department.
2. Conference Rooms are to be located within each Department.
3. Student study areas are to be located within each Department.
4. Gary suggests we plan for mail rooms within each Department. These areas could also be used to receive items from students. Gary has added area for this to the Program if space is available. Security is a concern which must be addressed.
5. Lab ceilings - need good lighting for working with specimens. No conclusion reached on ceiling vs. no ceiling in Labs.
6. Various ideas discussed on computer applications. Where to locate monitors is a major concern. Recessed into desktops is especially good at Instructors' desks and at Computer Labs. Several concepts are needed for review.
7. Need overhead projection at front of room. Some multi-media controls must be considered.
8. Considerations shall be given to how the placement of the new building will impact the existing conditions and entry at the Library Building. Also, ramifications to the Parking Lot. Currently, parking for Sheridan Hall is using this parking lot. Displacing too much parking will be a problem.
9. Unassigned space can be used to fill some areas as conceptual design develops the Programmed spaces.
10. Several concepts are needed for Computer Terminal usage analysis.

D. General Comments:

1. Need for a permanent rock display in Geosciences at Labs B-1, B-4 and B-12.
2. Open shelves on one wall of 10 LF for Map Display is needed.
3. Also need some storage space for field equipment. This is not included in the Program. We can allocate space if it works into the design.

E. Specific Areas:

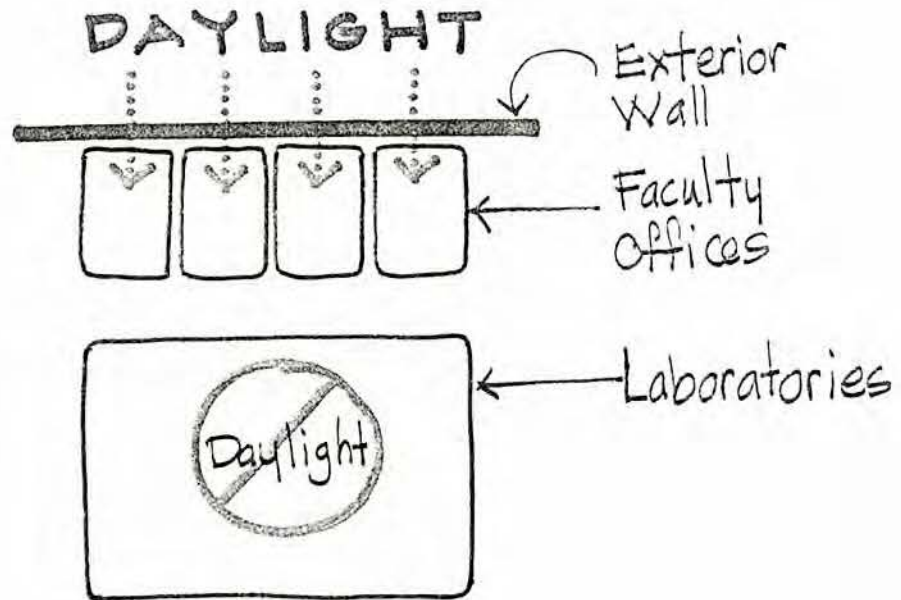
1. Room No. B-1: Geology Lab:
 - a. Change Program to 24 station Lab (General Purpose Lab) in lieu of 20 within the same programmed area.
 - b. Existing Labs use fixed benches with drawers.
 1. 32 station Lab - eight stools around each table.
 - c. Chairs with fixed backs are required. (N.I.C.)
 - d. Arrange room to have all students face front of room.
 - e. Use 30" min. depth table - electric power strip on tables.
 - f. Student work space needs to be 4' table top width for each student.
 - g. Each table does not need a sink.
 - h. Sinks around perimeter of room for handwashing (sinks with sediment traps).
 - j. Demo table: regular table (3'x7).
 - k. Room No. B-1 adjacency - B-2 & B-3.
2. Room No. B-2: Geology Lab Storage/Prep:
 - a. Adjacent to Corridor access.
3. Room No. B-3: Geology Lab Research:
 - a. Adjacent to Corridor and Lab B-1.
 - b. Can be used as a Faculty Office.
 - c. Can be located with Faculty Suite with Staff Offices.
 - d. Needs lots of Storage.
4. Room No. B-4: Rock and Fossil Lab:
 - a. Change program to 24 student Lab with the same programmed area.
 - b. Adjacent to B-5 through B-8.
5. Room No. B-5: Rock Lab Storage/Prep:
 - a. Should be adjacent to B-4 and B-6.
 - b. Must have heavy floor loading capacity.
 - c. Must have access from Corridor and Lab B-1.
 - d. B-5 and B-7 should be accessed from Corridor and adjacent to B-4.
6. Room No. B-7: Fossil Lab Storage/Prep:
 - a. Provide a fume hood and sink.

7. Room No. B-10: Microscope Lab:
 - a. Adjacent or near to one of Faculty Offices.
 - b. A small class meets in this Lab for permanent arrangement of microscopes. (10-12 stations + 1 demo microscope with TV monitor).
 - c. Room needs security and observation.
 - d. Fixed counters with electrical power. (Regularly spaced outlets for microscopes).
 - e. Provide a sink.
 - f. No windows desired.
 - g. Lower tables needed because microscopes are fairly high (verify heights).
 - h. Microscope tables should arrange around the outside of the room with a table in the center for other uses, i.e.; conference, etc.
 - j. Microscope tables can be continuous with drawers below.
 - k. If space allows, provide for 1 or 2 computer stations.
8. Room No. B-11: X-Ray Lab:
 - a. Near Faculty Office as B-10.
 - b. Needs 220V electrical power.
 - c. Has high heat load.
 - d. No lead shield required.
9. Room No. B-12: Computer Mapping Lab:
 - a. Should be adjacent to B-11 for convenience.
10. Room No. B-13: Saw Room:
 - a. Adjacent to B-4 and freight elevator.
 - b. Noisy functions - close to service.
 - c. Use sink and acid resisting drains.
11. Department Administrative Offices Suite:
 - a. Faculty Offices should be located close to the respective Labs.
 - b. Group Faculty Offices as much as possible.
12. Storage Area for Geological Alliance Library: (not originally programmed) (100 SF \pm).
 - a. Has Administrative Staff requirements.
 - b. Possible public access for K-12 Teachers on a mail-out basis.
 - c. Could possibly go into B-3 or spare office space.
 - d. This area can be considered if space allows.
13. Computer Room Usage:
 - a. When scheduled, will be by Instructor.
 - b. When unscheduled, will be available to entire student body.
14. Field Equipment Storage Room: (not originally programmed)
 - a. Add a space of about 400 SF for storage of tents, poles, etc. Consideration to be given if space will allow.

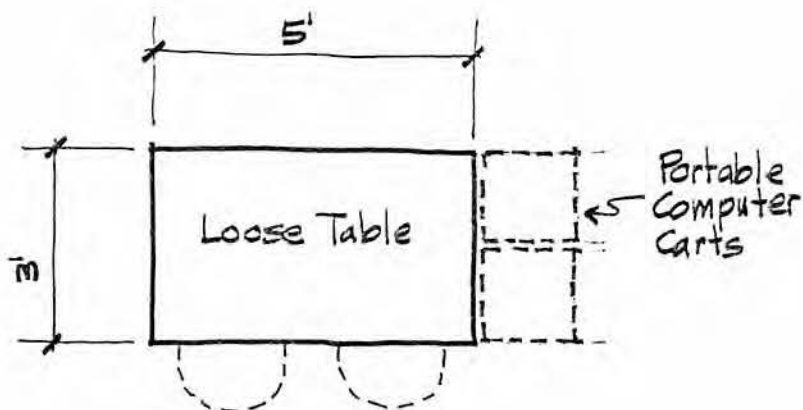
15. G.I.S. Lab: (not originally programmed)
 - a. If space will allow, add a Geographic Information System Lab (G.I.S.) for database management with computer mapping.
 - b. Area to be a 10 person Lab with two printer stations and Instructor's Area.
 - c. This space is requested to be added to the Program through Review Discussions.
 - d. Potentially should have 24 hour access.
 - e. Lab should be within or adjacent to Geoscience Department.

Fort Hays State University • Physical Science Building

Physics Department

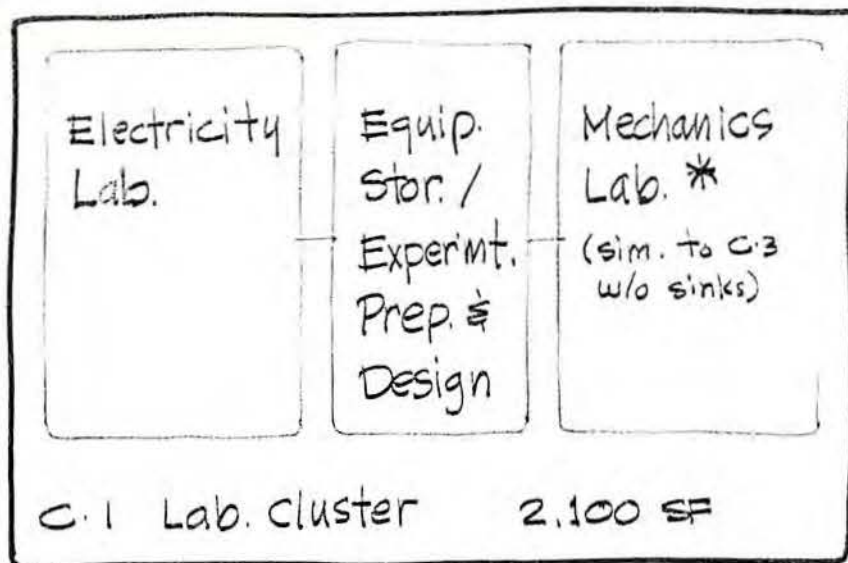


PHYSICS



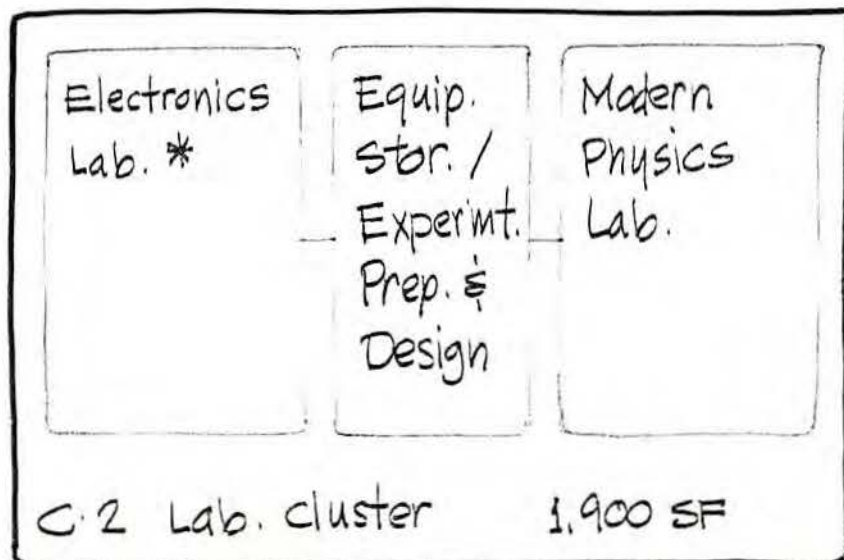
TYPICAL STUDENT STATION

PHYSICS



* Windows Acceptable

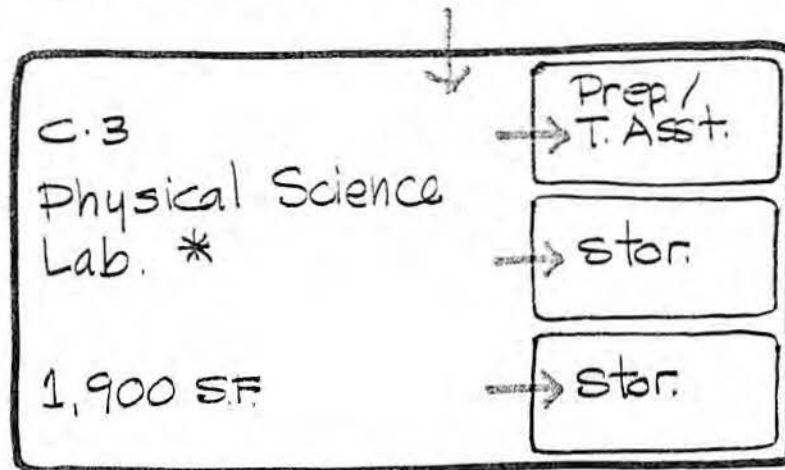
PHYSICS • LAB. C.1



* Windows Acceptable

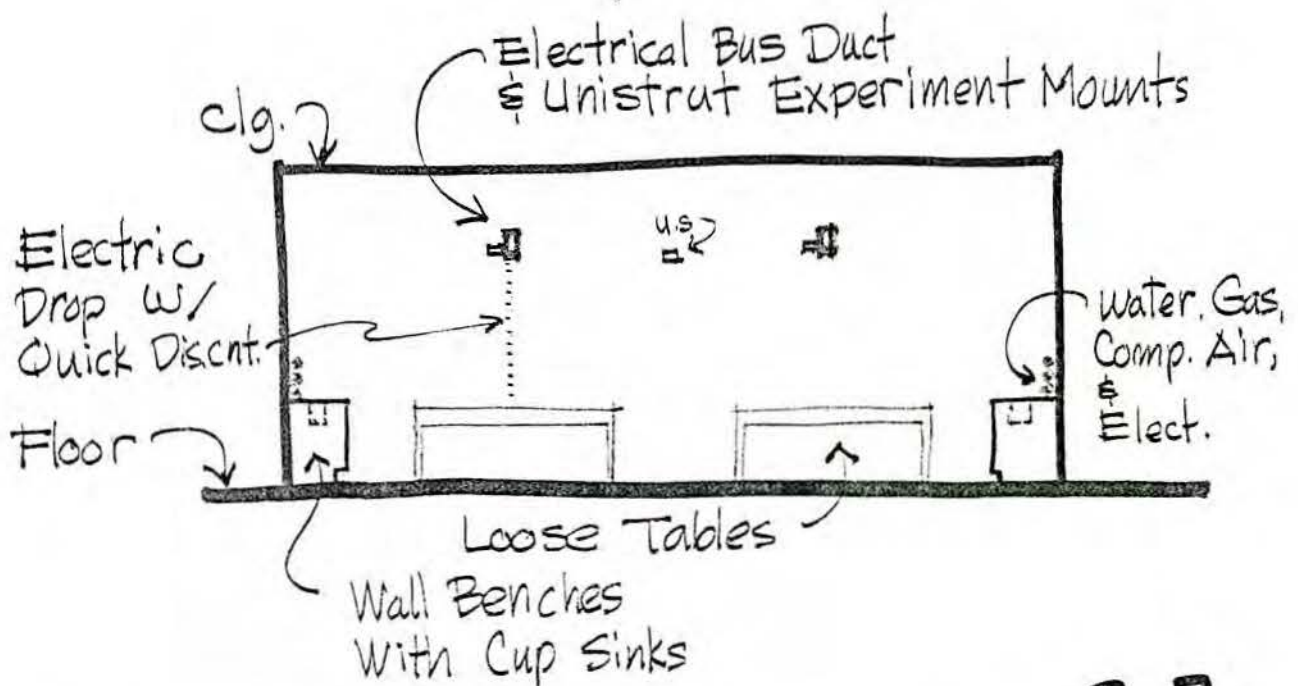
PHYSICS LAB. C.2

CORRIDOR



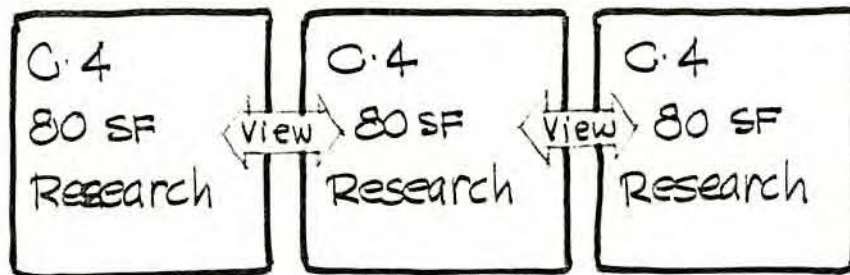
* Windows Acceptable

PHYSICS LAB. C.3



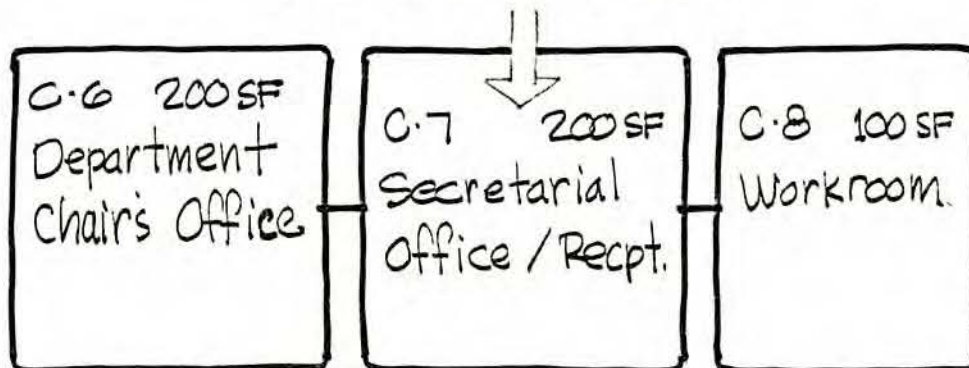
C.3

PHYSICS... PHYSICAL SCIENCE LAB



C.4 PHYSICS. RESEARCH CUBICLES

CORRIDOR



PHYSICS. DEPARTMENT OFFICE

Project Program Review Conference:

April 6, 1992: Revised April 10, 1992

Re: Physical Science Classroom Building
Fort Hays State University

Physics Department:

Attendance:

Larry Nicholson
Roger Pruitt
Lou Caplin
Keith Krueger
Kwo-Sun Chu
Maurice Witten
Eric King
Design Committee

A. Introductory Discussion:

1. Goals, Needs, Concepts.
2. Horizontal expansion capabilities would be most economical.
3. Each Department should be on one level, rather than being split on separate levels or areas.
4. Chemistry may work best on the top floor due to extensive fume hood exhausting.
5. Physics, Geosciences and Shared Spaces may work on any floor.
6. The Computer Center may be outside of tower area or adjacent to Science Complex.
7. A structural grid is advisable to set up a uniform building construction module and economy in construction cost. A Lab Module of 10'-4" would provide a 20'-8" x 36'± Bay spacing.
8. Each Department should review the proposed concept of adjacencies.

B. Basic Decisions to be considered:

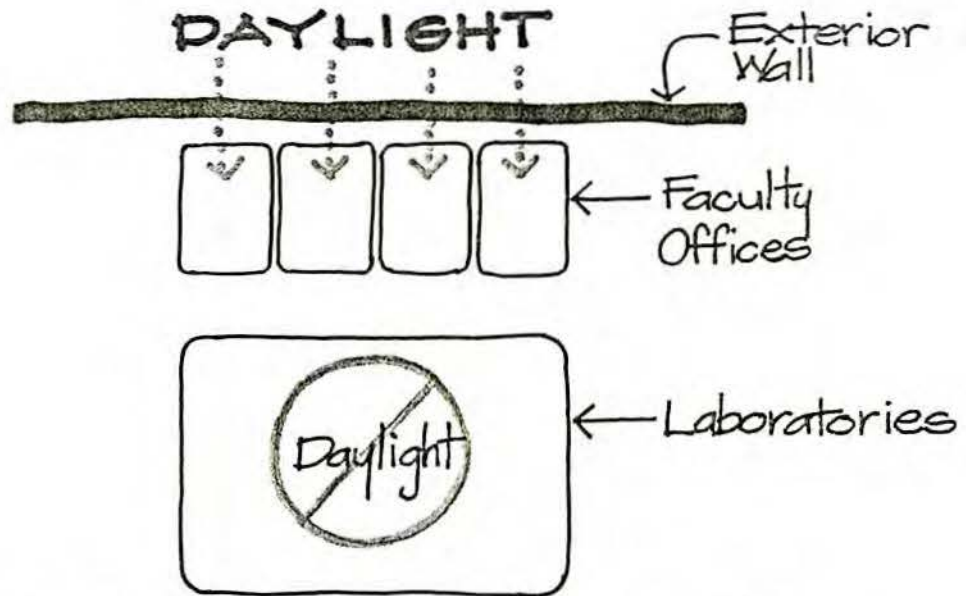
1. Where to locate Labs concerning incorporation of windows:
 - a. Daylighting - Labs do not need natural light.
 - b. Physics Labs may need to be totally darkenable.
 - c. Physics Labs can be interior rooms.
 - d. Offices should have windows. - Exterior rooms preferred.
2. Size of Labs - A Modular Design will affect structure, configuration. Incremental bays will provide uniformity and economy in construction cost.
 - a. A concept of 2 Labs w/storage between is an acceptable design. Storage areas must be secure to keep supplies on open shelves.

C. Common Concerns:

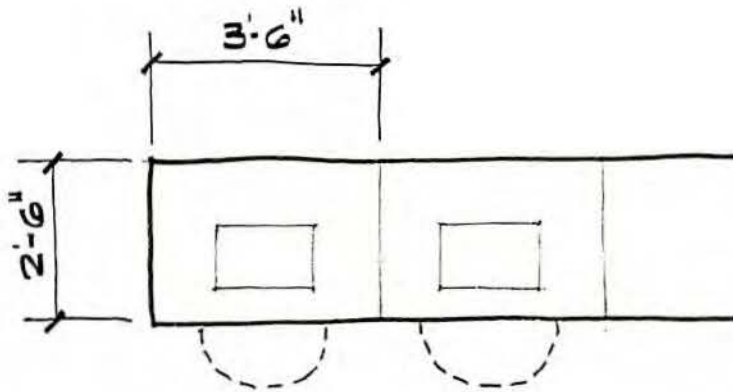
1. Shared Space offices are to be put into each Department.
2. Conference Rooms are to be located within each Department.
3. Student study areas are to be located within each Department.
4. Gary suggests we plan for mail rooms within each Department. These areas could also be used to receive items from students. Gary has added area for this to the Program if space is available. Security is a concern which must be addressed.
5. Lab ceilings - need good lighting for working with specimens. No conclusion reached on ceiling vs. no ceiling in Labs.
6. Various ideas discussed on computer applications. Where to locate monitors is a major concern. Recessed into desktops is especially good at Instructors' desks and at Computer Labs. Several concepts are needed for review.
7. Need overhead projection at front of room. Some multi-media controls must be considered.
8. Considerations shall be given to how the placement of the new building will impact the existing conditions and entry at the Library Building. Also, ramifications to the Parking Lot. Currently, parking for Sheridan Hall is using this parking lot. Displacing too much parking will be a problem.
9. Unassigned space can be used to fill some areas as conceptual design develops the Programmed spaces.
10. Several concepts are needed for Computer Terminal usage analysis.

- c. Possible to have one large Storage Room to be adjacent to all Labs.
 - d. Most storage in the Physics Area can be within the Lab Rooms.
 - e. Compressed air: 80 PSI - trace amounts of oil is acceptable - refrigerated quality. (very high quality compressed air is not required. Needed only in Mechanics Lab).
 - f. Arrangement for student stations:
Teams of 2 - one table per 2 students; Typical student work area is 36" wide. - 3x5 tables.
 - g. Lecture/Demo desk shall have gas, water, electricity - the demonstration table to be fixed with open conduit for future computer adaptation to project images to a screen; video camera capabilities are possible.
 - h. Mobile demo tables can be used in Lecture Classroom as well as in Labs.
 - j. Video camera location at back of Lab is needed.
 - k. Mobile demo table with utilities for each shared Lecture Classroom. Should have a Storage Room for make-up of this demo table (see Room A12 - 200 SF). This space cannot be shared with Chemistry. Should be adjacent to the 40 and 80 student Lecture Rooms.
2. Room No. C-2: Electronics & Modern Physics Lab:
- a. Larger tables are needed for bigger displays.
 - b. Provide 8 stations - Plan for 1 student per table. Table size to be 36"x5'. Provide one demo table.
 - c. Two Labs with common storage placed between them.
 - d. Same set-up as Room No. C-1.
 - e. Physics needs 6 tables.
3. Room No. C-3: Physical Science Lab:
- a. Provide 24 stations - 12 tables.
 - b. Two students per table is best arrangement.
 - c. Science Resource Center requires some storage along walls.
 - d. One large room in center of space can be the Lecture Space
 - 1. The Teacher Prep & Storage Rooms can be provided at one end or side of the space.
 - 2. (2) 3'x6' tables are needed in the Prep Room - (Provide telephone in Lab).
 - 3. Two desks for Teacher's Prep are required. Also 2 tables (3'x6').
 - 4. Provide open shelves for storage and space for file cabinets in Teacher's Prep Area.
 - e. Demo table on Teacher's Assist. side of room.
 - f. Chalkboard on fixed walls.
 - g. Demo table should be centered at end of Lab with the Teacher's Prep Room.
 - h. No operable partition or curtain needed.
 - j. Unistrut row at ceiling down each row of tables.

4. Room No. C-4: Research Cubicles - no need for particular adjacency to Labs:
 - a. Two tables - 24"x5'; mobile.
 - b. Provide sink and gas to be available in one of the three cubicles with fixed benches.
5. Room No. C-5: Darkroom - no adjacency requirements.
 - a. Circular light, tight door or a vestibule may suffice.
 - b. Provide back shelf exhaust fan for adequate ventilation away from user.
 - c. No gas or telephone requirements.
 - d. Locate from Corridor - check 1 hour Code requirements.
6. Rooms C6, C7 and C8 for Administrative Suite - Department Chair's Office should have direct access to Corridor, but not a high priority.
All access should be through Receptionist.
7. Room No. C-9: Faculty Office - provide a suite area with C-6, C-7 and C-8 to consolidate offices. (direct access from Corridor is a problem)
 - a. Direct access through Receptionist.
 - b. Provide a secondary access if possible.
 - c. Adjacent to Administration Area.
 - d. Loop corridor of Suite to Main Corridor.
 - e. Windows in Offices desirable.
 - f. Chalkboard in Offices (Dry or Chalk?)
Poll all groups to determine what they want.
 - g. Corridor display tackboard with glass.
8. Room No. C-10: Teaching Assistant Offices: One larger room with shared space would be better than 2 smaller rooms.
9. Classrooms - Shared Areas:
 - a. 30 person and 40 person Lecture Rooms are to have interactive video.
 - b. All need a demo table with all utility capabilities.
 1. Where can it be parked? A space for storage must be provided.
 2. All Demo equipment is separate from Lab equipment - separate storage needed.
 - c. Storage Rooms should be common to most Lecture Rooms with close proximity.
 - d. Storage Rooms should be used as a Prep. Room: 200 SF.
 - e. Prep/Storage Room needs to be adjacent to the 80 person Lecture Classroom.
 - f. Prep/Storage Rooms for Chemistry & Physics needs to be separated. These rooms could be located between 80 & 40 person Lecture Rooms.
10. Room No. A-14: Electronics & Mechanics Shop:
 - a. 1/2 of all area is shared between Physics and Chemistry.
 - b. Contain all dust from Mechanics Shop from infiltrating the Electricity Shop.
 - c. Locate on First Floor close to loading dock.
 - d. Freight delivery with dock should be provided for lumber, etc., if possible.

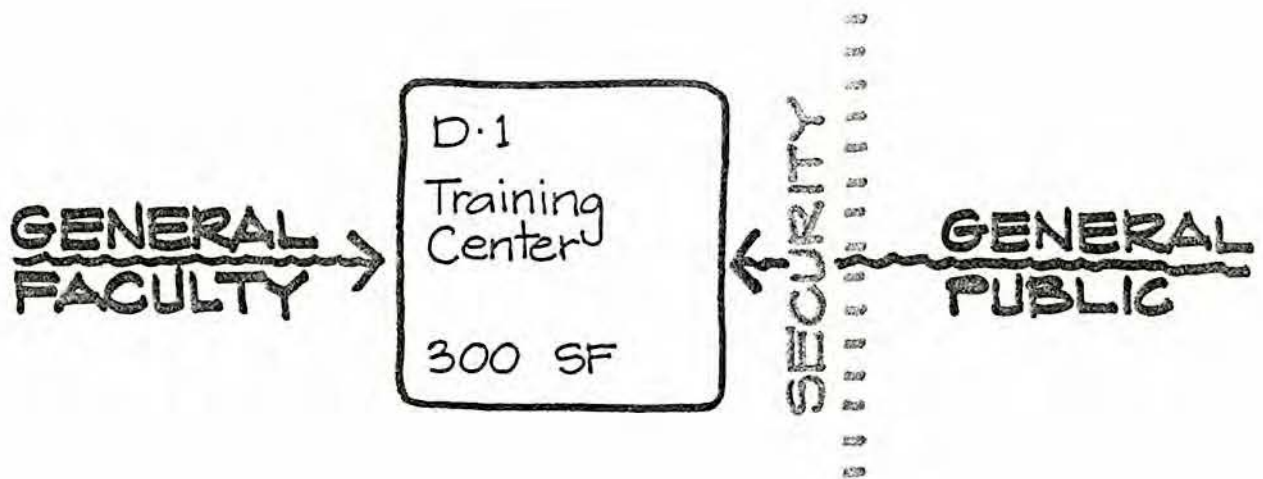


COMPUTING CENTER

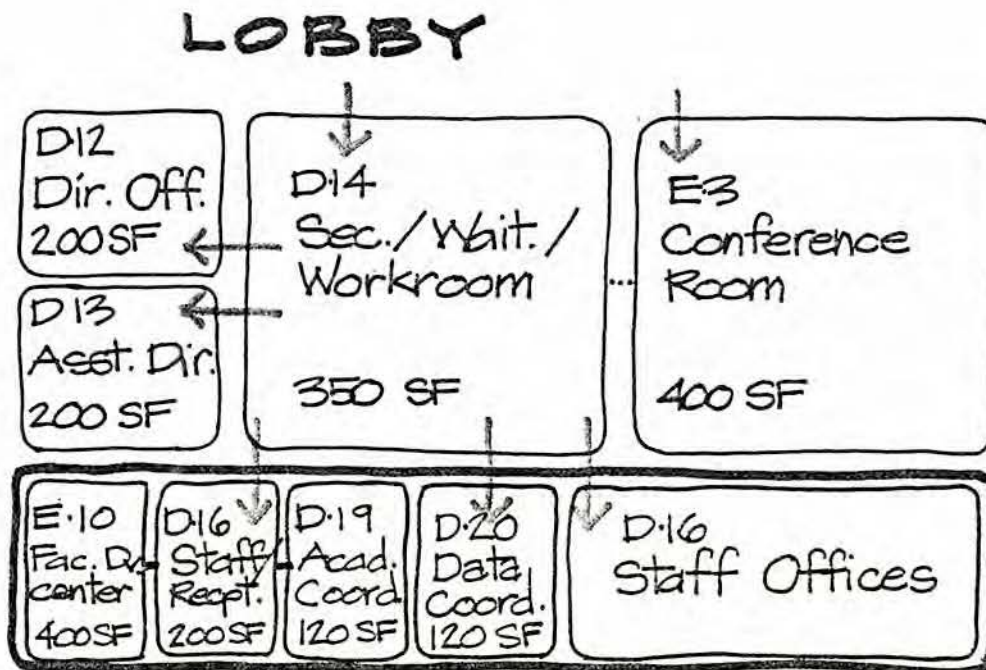


TYPICAL STUDENT STATION

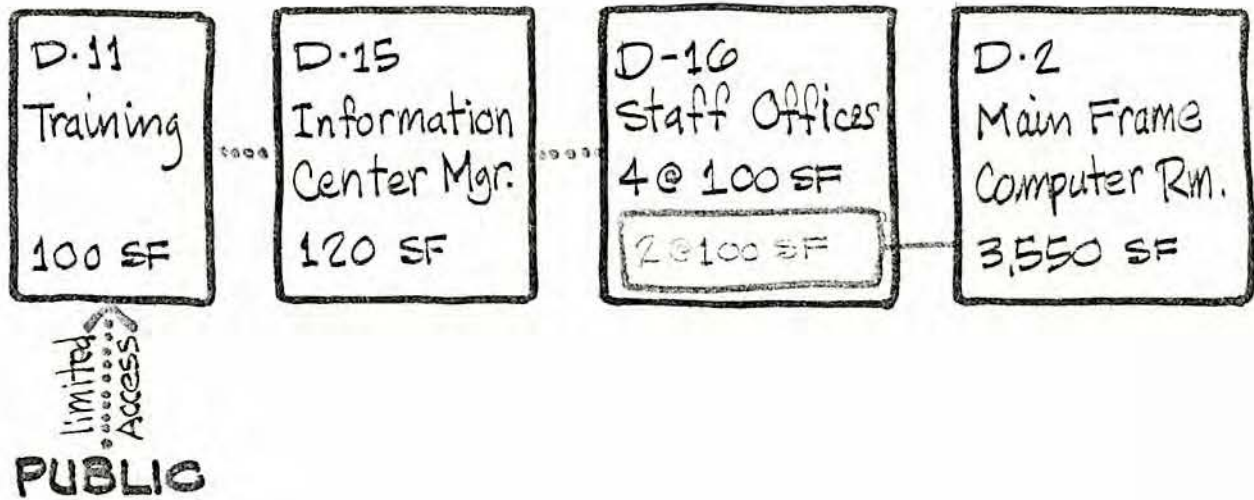
COMPUTING CENTER



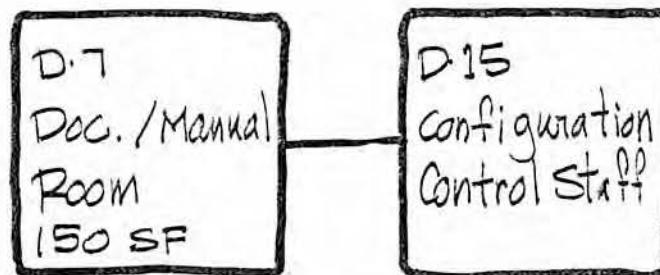
COMPUTING CENTER D-1



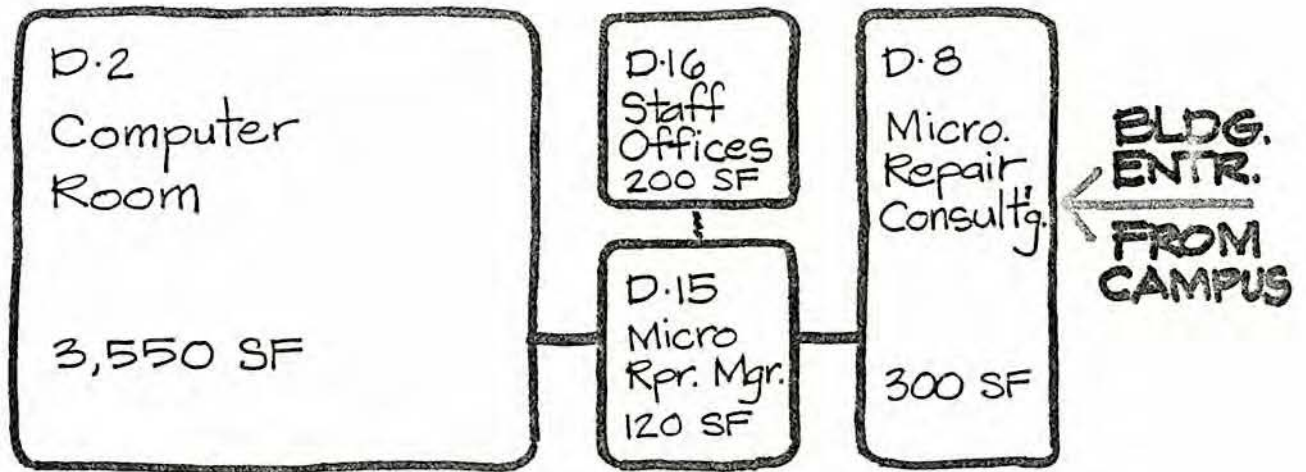
COMPUTING CENTER • ADMIN.



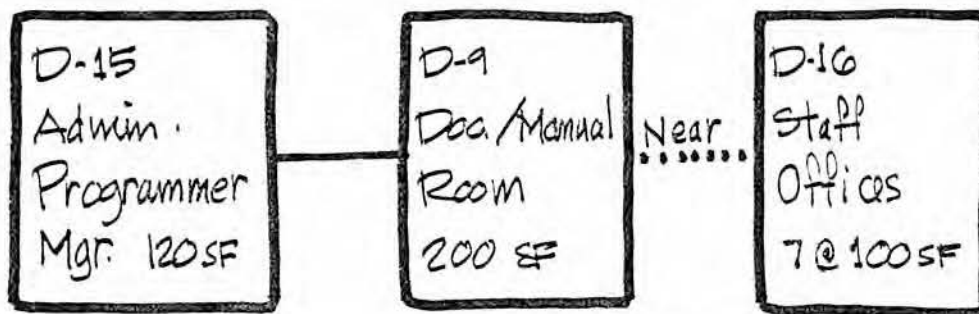
COMPUTING CENTER



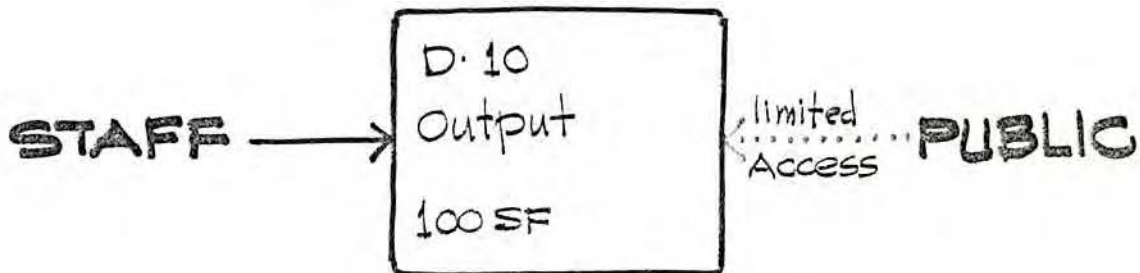
COMPUTING CENTER D-7



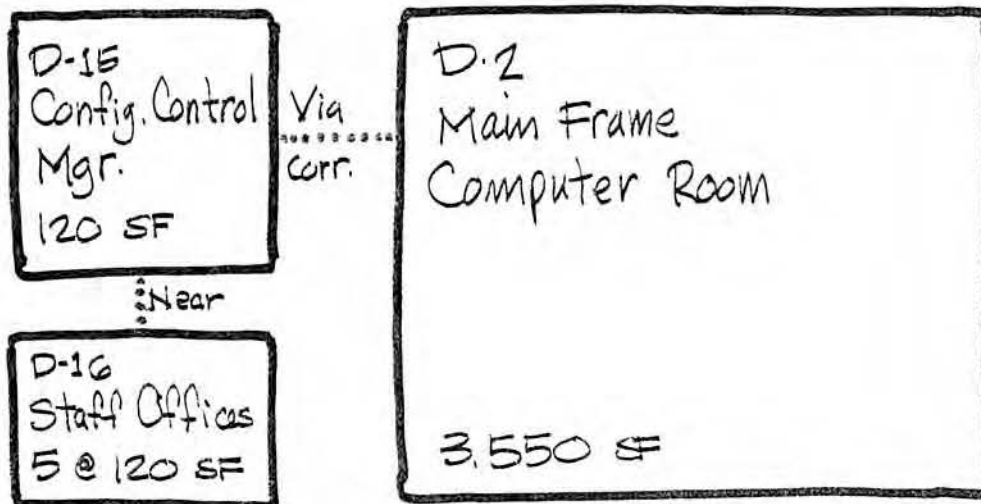
COMPUTING CENTER D-8



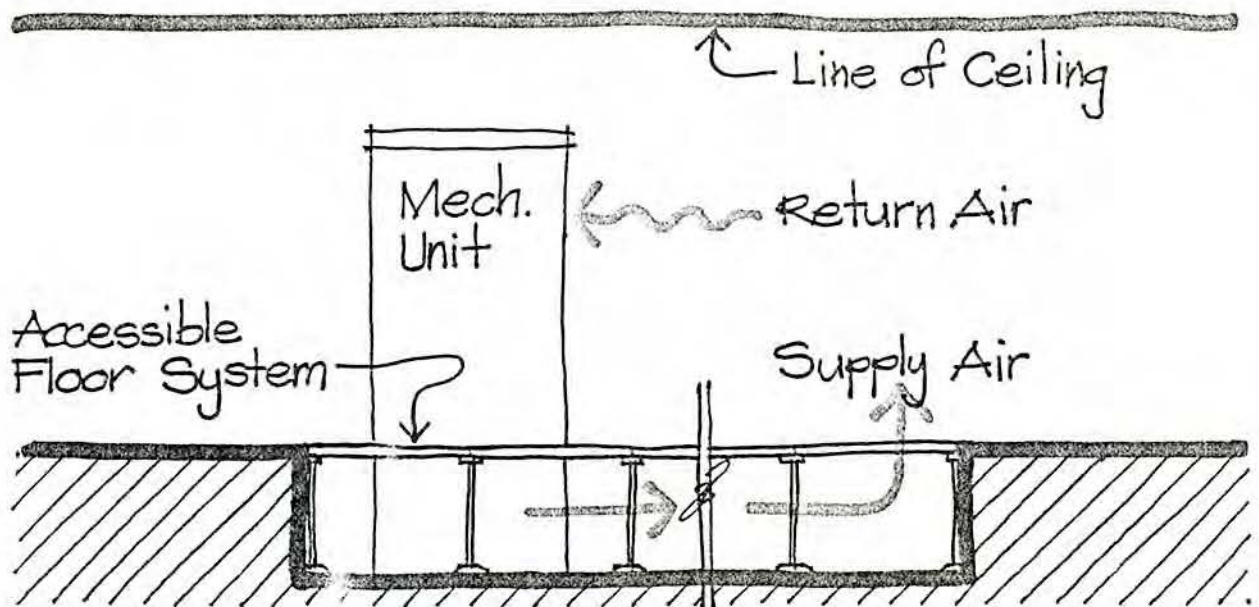
COMPUTING CENTER D-9



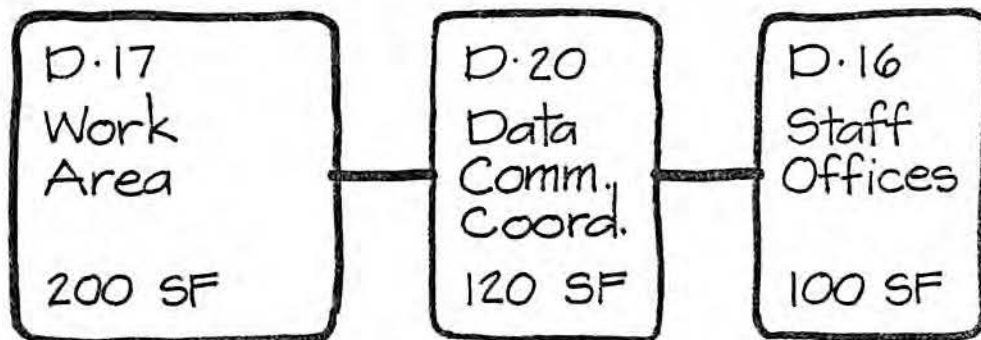
COMPUTING CENTER D.10



COMPUTING CENTER D.15



ACCESSIBLE FLOOR - MAIN FRAME COMPUTER RM.



COMPUTING CENTER D-17



COMPUTING CENTER D.18

Project Program Review Conference:

April 7, 1992: Revised April 10, 1992

Re: Physical Science Classroom Building
Fort Hays State University

Computer Center:

Attendance:

Larry Nicholson
Keith Faulkner
Eric King
Design Committee

A. Introductory Discussion:

1. Goals, Needs, Concepts.
2. Horizontal expansion capabilities would be most economical.
3. Each Department should be on one level, rather than being split on separate levels or areas.
4. Chemistry may work best on the top floor due to extensive fume hood exhausting.
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7. A structural grid is advisable to set up a uniform building construction module and economy in construction cost. A Lab Module of 10'-4" would provide a 20'-8" x 36'± Bay spacing.
8. Each Department should review the proposed concept of adjacencies.

B. Basic Decisions to be considered:

1. 24-hour public access is required to Computer Labs.
2. Ground floor location is best.
3. Security:
 - a. Computing Center is open to public in daytime and secured at night.
 - b. Key pad locks currently used and works well for times needed for security. A coded access system with data gathering computer program is desirable.
 - c. No windows are required in all Lab spaces.
 - d. Uninterruptable power source for "orderly shutdown" is required according to IBM requirements.
 - e. Building will probably have a main common entry Lobby for general Department access.
 - f. Consider area for mail delivery at each Department.
 - g. Provide for waiting space at each Reception area to Office suites.
 - h. All offices should have windows.

C. Common Concerns:

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2. Conference Rooms are to be located within each Department.
3. Student study areas are to be located within each Department.
4. Gary suggests we plan for mail rooms within each Department. These areas could also be used to receive items from students. Gary has added area for this to the Program if space is available. Security is a concern which must be addressed.
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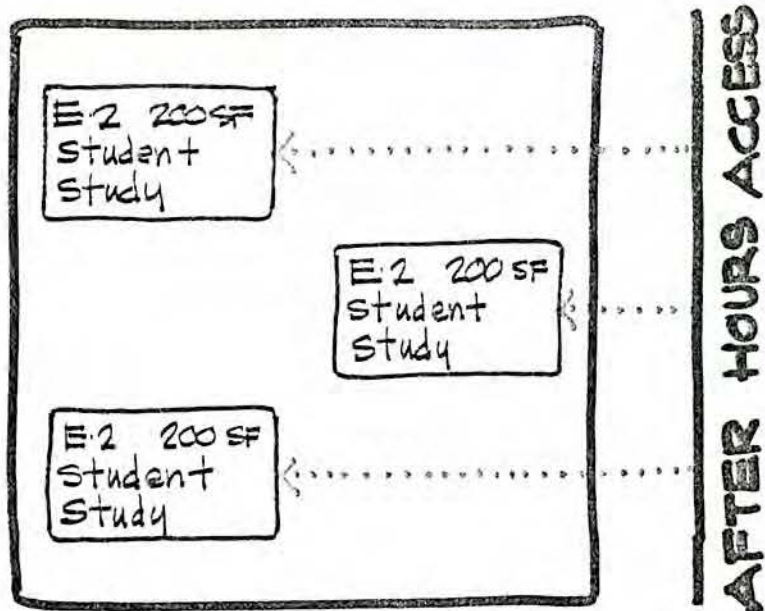
D. Specific Areas

1. Room No. D-1 - Training Center:
 - a. Open area during office hours: public access - secured at other times.
 - b. All Labs will be outside Training Center.
 - c. Similar to a Lab - set up as a Classroom situation.
 - d. Usage will be for training computer function.
 - e. Ideal arrangement is to locate monitors into the desks.
 1. Glare is a problem and must be considered.
 2. Micro Labs and Training Rooms can use this type of arrangement.
 - f. 42" width per work station is minimum requirement.
 - g. Accessible flooring for computer Labs and Training Rooms to allow maximum accessibility, if budget will allow.
 - h. Some means of book placement is needed at each workstation.
 - j. Training Center should be close to Building Lobby.
2. Room No. D-2 - Computer Room:
 - a. Floor access is important.
 - b. Most security requirement of any area.
 - c. No public access - ever.
 - d. Provide dispatch window or may be better to combine with output/input Data Entry Dispatch Room.
 - e. Computer Room is programmed about 1/3 times larger than immediate needs to allow for future growth. (1000± SF extra space).
 1. How to use this space in the interim?
 - a. Temporary Office space.
 - b. Usage which can be easily relocated when necessary.
 1. Classroom - security and public access becomes a problem.
 2. Shell space - unfinished area.
 3. Resource Center.
 4. Computer Lab.
 - f. Printing is currently being done in Computer Room.
 - g. Main frame printer must be in Computer Room.
 - h. Location of HVAC unit outside of Computer Room is desired, but the unit will function better inside the room. Research noise data for User consideration to determine selection.
 - j. Power source shall be orderly shut-down u.p.s.
3. Room No. D-3 - Supplies Storage:
 - a. Adjacent to Computer Room.
 - b. Easy access to Dock for freight delivery.
 - c. Receiving can be directly into Storage Room, but can be through a receiving area - area must remain secure.
 - d. Provide ramps to meet truck height.
 - e. Semi-truck delivery occurs occasionally.
 - f. A raised dock is not necessary; more flexibility can be gained without a raised dock.
4. Room No. D-4 - Same as D-3.

5. Room No. D-5 - Off-Campus Vendor Repair:
 - a. Access to Equipment Storage and Computer Room and Dock.
6. Room No. D-6 - Tape Vault:
 - a. Adjacent to Computer Room.
 - b. Size as programmed is satisfactory.
7. Room No. D-7 - Documentation/Manual Room:
 - a. Limited public access.
 - b. Adjacent to Configuration Control Staff (5 offices).
 - c. Similar to a Library for manuals.
8. Room No. D-8 - Micro Repair:
 - a. Adjacent to equipment storage or service area.
 - b. Could locate near main entry for access to computers - orient towards campus traffic.
 - c. Must be in secured area.
 - d. Adjacent to Manager's Office: D-15
9. Room No. D-9 - Documentation to Administrative Programming:
 - a. Adjacent to Manager's Office: D-15
 - b. Adjacent to offices for Staff: D-16
10. Room No. D-10 - Output:
 - a. Administrative programmers route their output through this area.
 - b. Internal use only - printers and a table.
 - c. Linked electronically to main frame.
 - d. No windows required.
 - e. Must be convenient to Staff.
11. Room No. D-11 - Training Room:
 - a. Limited public access - can be accessible during daytime.
 - b. Staff uses this area for training - Computer Center Staff only. Employs video training sessions.
 - c. Can be located deeper into Computer Center.
12. Administrative Suite (D-12 to D-16):
 - a. Director and Assistant Director will have direct communication through Receptionist.
 - b. Secretary will control access to all Administrative Offices.
 - c. Only one Manager Office is to be adjacent to Computer Room (Configuration Control Manager) doesn't need direct access or visual control.
 - d. Information Center Manager (D-15) close to public outside of secured area.
 - e. All Administration Staff to be in Suite.
 - f. Allow for secondary entrance for Staff, if possible.
 - g. The Operations Supervisor Offices need direct access to the Computer Room; doesn't need Corridor access.

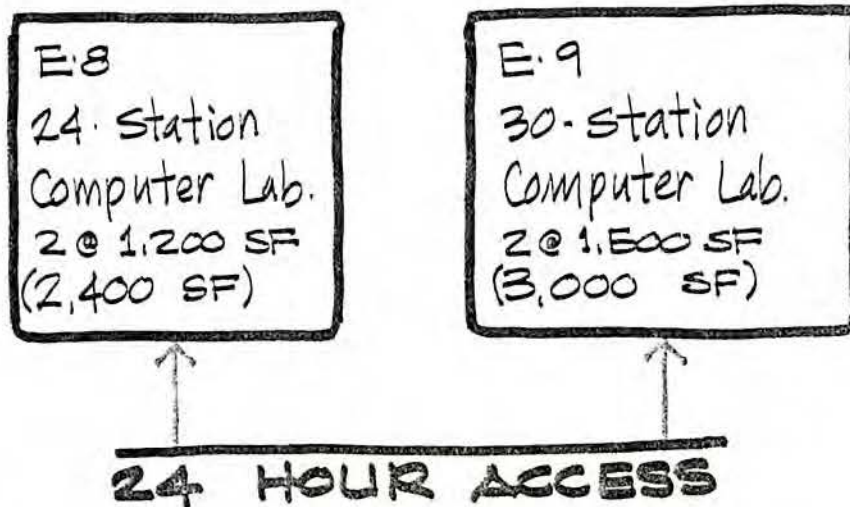
13. Room No. D-15 - Manager Offices:
 - a. One office adjacent to Computer Room for Configuration/Control Manager.
 - b. Other three offices are not as critical for direct access to Computer Room.
 - c. Four Manager Offices.
 1. Configuration Control
 2. Administrative Programmer - close to D-9
 3. Micro Repairs/Consult -
 4. Information Coordinator - close to D-11
14. Room No. D-16 - Staff Office:
 - a. Access to all offices to be through Reception Area and controlled with secure area.
 - b. Maintain convenience for Staff and Manager's Office to easily communicate.
 - c. Staff Offices: Suggested configuration:

1. Administrative Programming	- 1 Manager & 7 Staff
2. Configuration Control	- 1 Manager & 5 Staff
3. Academic Coordination	- A.C. Office & 2 Staff (one large office)
4. Information Center	- 1 Manager & 4 Staff (2 of these to be direct access to Computer Room)
5. Micro. Consultation	- 1 Manager & 2 Staff
6. Data Communication	- Data Communication Office & 1 Staff
<hr/> 21 Offices	
15. Room No. D-18 - Work Area:
 - a. Adjacent to Staff Offices.
 - b. Needs public access. Basically is Data Entry Office.
16. Room No. D-19 - Academic Computer Coordinator:
 - a. Adjacent to Faculty Development Center - Room No. E-10.
 - b. Two Staff offices must be adjacent (could be one office, double size).
 - c. Needs to be limited access.
 - d. Access to Faculty Development Center can be through Staff office.
17. Room No. D-20 - Data Communications Coordinator Office:
 - a. Adjacent to Work Areas - Room No. D-17.
18. Room No. E-1 - Lobby/Displays Area:
 - a. Space for exhibits, movable displays, etc.
19. Room No's. E-3 and E-4: 20 person Conference Room:
 - a. Areas open to Corridor.
 - b. Do not include in a main Department Suite, but can be adjacent to a Department Suite.
 - c. Each Department can have priority call on each Seminar Room adjacent to each Suite.
20. Room No. E-8 and E-9: Computer Classrooms:
 - a. No windows.
 - b. Accessible floor.
 - c. 24 hour public access.



E.2

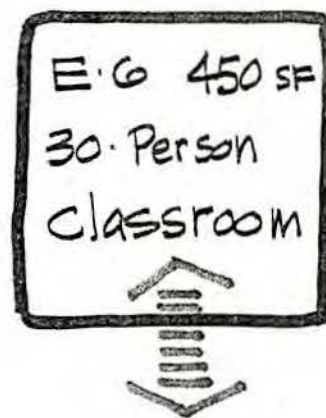
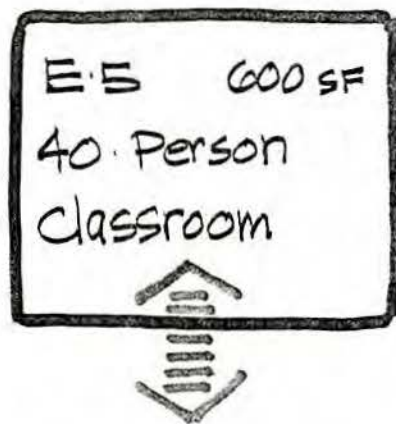
GENERAL USE/SHARED SPACES



E.8 & E.9

GENERAL USE/SHARED SPACES

2/2/65



TWO-WAY INTERACTIVE T.V.

Needs quantify project requirements identified in the preceding three sections.

SUMMARY OF OFFICES

	Facility (120 SF)	Teaching Asst. (50 SF)	Staff (100 SF)
● CHEMISTRY	8		
● GEO. SCIENCES	7		
● PHYSICS	6	2	
● COMPUTING CENTER			21
TOTALS	21	2	21

SUMMARY OF LAB. SPACES

	AREA (SF)						
	2,100	1,900	1,440	1,100	950	450	250
● CHEMISTRY		3	1	1			
● GEO. SCIENCES					2	5(1)*	3
● PHYSICS	1	2					
TOTAL	1	5	1	1	2	5(1)*	3

* SPACE NEED IDENTIFIED IN ADDITION TO PREVIOUSLY PROGRAMMED REQMTS.



A JOINT VENTURE

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SPACE NEEDS ANALYSIS

Physical Science Building
Fort Hays State University
Hays, Kansas

April 7, 1992

Page 1 of 4

SPACE Room No./Name	PROPOSED NET AREA (SF)				NOTES
	Qty.	Unit Area	Total Area	Div. Total	
CHEMISTRY DEPARTMENT			14,830		
Laboratories			8,240		
A-1 Introductory Chemistry Laboratory	1	1,900			1
A-2 General Chemistry Laboratory	1	1,900			1
A-3 Organic & Biological Chemistry Laboratory	1	1,900			1,42
A-4 Advanced Laboratory	1	1,440			1
A-5 Multipurpose Laboratory	1	1,100			1
A-6 Instrument Room	1	250	250		2
A-7 Instrument Rooms			580		
Room A	1	290			3
Room B	1	290			
A-8 Balance Rooms			580		
Room A	1	290			4
Room B	1	290			5
A-9 Storerooms			850		6
Room A	1	250			
Room B	1	200			
Room C	1	400			
A-10 Dispensing rooms			1,000		
Room A - Main Dispensing & Prep. Area	1	450			7
Room B - Satellite Dispensing & Prep.	1	300			
Room C - Satellite Dispensing & Prep	1	250			
A-20 Storeroom Manager	1	150	150		6
A-11 Bulk storage/Receiving Area	1	350	350		8
A-12 A.V. Storage/Classroom Preparation Area	1	200	200		9
A-13 Glass Working Room	1	200	200		10
A-14 Electronics Technician Shop			800		11
Room A - Office	1	120			12
Room B - Electronics Shop	1	300			13
Room C - Mechanical Shop	1	380			14
A-15 Alcohol Closet	1	70	70		6
Departmental Administrative Suite			1,560		
A-16 Department Chair's Office	1	200			15
A-18 Secretarial Office/Storage	1	280			16
A-19 Workroom/Copy Room	1	120			15
A-17 Faculty Offices	6	120			17
E-11 Faculty Offices	2	120			

SPACE Room No./Name	PROPOSED NET AREA (SF)				NOTES
	Qty.	Unit Area	Total Area	Div. Total	
GEOSCIENCES DEPARTMENT					7,040
B-1 Geology Laboratory (24 ea.)	1	950	950		18,41
B-2 Geology Lab. Stor./Prep./Grad. Students	1	450	450		19
B-3 Geology Lab. Research	1	250	250		20
B-4 Rock and Fossil Laboratory (20 to 24)	1	950	950		21,41
B-5 Rock Lab Stor./Prep./Grad. Students	1	450	450		22
B-6 Rock Lab. Research	1	250	250		23
B-7 Fossil Lab. Stor./Prep./Grad. Students	1	450	450		24
B-8 Fossil Lab. Research	1	250	250		25
B-9 Map Laboratory	1	450	450		26
B-10 Microscope Laboratory	1	250	250		26
B-11 X-Ray Laboratory	1	200	200		
B-12 Computer Mapping Laboratory	1	450	450		41
B-13 Saw Room	1	250	250		
Departmental Administrative Suite			600		
B-14 Department Chair's Office	1	200			15
B-15 Secretarial Office/Reception/Copy Room/Mail Rm.	1	400			16
B-16 Faculty Offices	5	120	600		15
E-11 Faculty Offices	2	120	240		
B-12 G.S.I.(Geographics Information Systems) Lab.	1	450	(450)		44
B-13 Field Equipment Storage Room	1	400	(400)		44
B-14 Geological Alliance Library	1	100	(100)		44
PHYSICS DEPARTMENT					7,420
C-1 Electricity & Mechanics Lab. Cluster	1	2,100	2,100		
C-2 Electronics & Modern Physics Lab. Cluster	1	1,900	1,900		
C-3 Physical Science Labs./Storage	1	1,900	1,900		
C-4 Research Cubicles	3	80	240		
C-5 Darkroom	1	100	100		
Departmental Administrative Suite			600		
C-6 Department Chair's Office	1	200			15
C-7 Secretarial Office	1	300			16
C-8 Workroom	1	100			15
C-9 Faculty Offices	4	120	480		
C-10 Teaching Assistant's Offices	1	100	100		
COMPUTING CENTER					10,800
D-1 Training Center	1	300	300		27
D-2 Computer Room	1	3,550	3,550		28
D-3 Supplies Storage	1	1,000	1,000		29
D-4 Equipment storage	1	400	400		30
D-5 Off Campus Vendor Repair	1	100	100		31
D-6 Tape Vault	1	120	120		32
D-7 Documentation/Manual Room	1	150	150		33
D-8 Micro Repair/Consulting	1	300	300		34
D-9 Documentation/Manual Room	1	200	200		33
D-10 Output	1	100	100		33
D-11 Training Room	1	100	100		35
Departmental Administrative Suite			3,380		
D-12 Director's Office	1	200			15
D-13 Assistant Director's Office	1	160			15
D-14 Secretarial Office/Waiting/Workroom	1	400			16
E-10 Faculty Development Center	1	400			37
D-16 Staff Offices (Reception/Staff)	1	200			

SPACE Room No./Name	PROPOSED NET AREA (SF)				NOTES
	Qty.	Unit Area	Total Area	Div. Total	
D-20 Data Communications Coordinator's Office . . .	1	120			
D-16 Staff Offices	13	100			
D-15 Manager Offices	4	120	480		35
D-16 Staff Offices	6	100	600		35
D-17 Work Area	1	200	200		36,37
D-18 Work Area	1	300	300		37
GENERAL USE/SHARED SPACES			10,350		
E-1 Lobby and Display Area			500		
E-2 Student Study Rooms	3	200	600		38
E-3 20-Person Conference Room	1	400	400		39
E-4 20-Person Conference/Seminar Room	3	400	1,200		38
E-5 40-Person Classroom	1	600	600		
E-6 30-Person Classroom	1	450	450		
E-7 80-Person Classroom	1	1,200	1,200		43
E-8 24-Station Computer Laboratory	2	1,200	2,400		40
E-9 30-Station Computer Laboratory	2	1,500	3,000		40
TOTAL NET ASSIGNABLE AREA (59.5% of GSF)			50,440		
TOTAL UNASSIGNABLE AREA (walls, circ., toil.,etc.) @ 40.5% of GSF .			34,300		
TOTAL GROSS AREA			84,740		

NOTES

1. Adjacent to Dispensing, Balance and Instrument Rooms
2. Adjacent to room A-3 (Organic & Biological Chemistry Lab.)
3. Adjacent to room A-4 (Advanced Lab.)
4. Adjacent to room A-4 (Advanced Lab.)
5. Adjacent to rooms A-1 & A-2 (Intro. Chem. & Gen. Chem. Labs)
6. Part of the central storeroom complex
7. Main dispensing area and preparation area for the central storeroom
8. Located near exterior loading dock and easy access by elevator to central storeroom complex
9. Adjacent to room E-6 (Instrument Room) and close to as many classrooms as possible
10. Located near the central storeroom complex and room A-14 (Electronics Tech. Shop)
11. Equally shared with Physics Department
12. Adjacent to rooms B & C (Electronics & Mech. Shops)
13. Adjacent to room A (Office) and near room C (Mech. Shop)
14. Adjacent to room A (Office) and near room B (Electronics Shop)
15. Accessible from Secretarial Office
16. Accessible from Hallway
17. Located near the Laboratories
18. Adjacent to rooms B-2 & B-3 (Geo. Lab. Sto. & Geo. Lab. Research)
19. Adjacent to rooms B-1 & B-3 (Geo. Lab. & Geo. Lab. Research)
20. Adjacent to rooms B-1 & B-2 (Geo. Lab. & Geo. Lab. Sto.)
21. Located close to rooms B-5 & B-8 (Rock Lab. Sto. & Fossil Lab. Research)
22. Adjacent to rooms B-4 & B-6 (Rock/Fossil Lab. & Rock Lab. Research)
23. Adjacent to rooms B-4 & B-5 (Rock/Fossil Lab. & Rock Lab. Storage)
24. Near to rooms B-4 (Fossil Lab.)

25. Near to rooms B-5 (Rock Lab. Stor.)
26. Adjacent to one faculty office
27. Public access but security must be possible
28. Adjacent to room D-3 (Supplies Storage)
29. Adjacent to room D-2 (Computer Room), have humidity control and entrance from the exterior via the loading dock
30. Adjacent to room D-3 (Supplies Storage)
31. Must have 24 hour access and be secured from both outside and inside
32. Adjacent to Computer Room with 24 hour staff access
33. Convenient for all staff with public access limited
34. Limited access but near building entrance and adjacent to staff offices
35. Limited public access
36. Convenient exterior access and adjacent to sub-department manager.
37. Public access yet be secure
38. Strategically distributed throughout the building
39. Located in vicinity of the computing center office complex
40. Must have 24 hour accessibility
41. Provide permanent rock display in Lab along side walls on open shelving
42. Provide bench top fume hoods with glass sides for each student station
43. Provide storage closet for electrostatic generator
44. Space need identified in addition to previously programmed requirements

