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# **space programming**

**f o r**

**COLLEGE OF EDUCATION BUILDING**  
**University of New Mexico**

**FLATOW**  
**MOORE**  
**BRYAN**  
and  
**FAIRBURN**

ARCHITECTS  
ENGINEERS  
PLANNERS

June 61

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## FOREWORD

This study has been prepared as a cooperative effort of the College of Education faculty, the University architectural consultant, and the architects. It is the result of many conferences which involved all the departments of the College of Education and departments of other colleges of the University which had allied and bordering interests in this space allocation. Hundreds of questions were asked these departments concerning their requirements for space. Budget limitations necessitated a careful analysis of each requirement aimed at combining functions, consolidating offices, streamlining laboratories, and careful scheduling to facilitate multiple use of facilities. This report is a result of these conferences in which many new ideas for use of space were suggested and analyzed.

No drawings were made during this programming as drawing would have acted as an unwanted crystalizing agent during this formulative stage. A few space diagrams and some functional charts were prepared to show possible relationships of spaces. These were purposely kept in simple, freehand circle organization chart form in order not to complicate the analysis.

Those who participated in these sessions contributed many constructive ideas, not only to the space allocations, but to a better and clearer understanding of each department's educational role in the college. Good planning is a result of clear, organized thinking. The analysis and thinking then must be clearly stated so the architect can design for economy, function, and desirability. It follows that a poor program can only result in a poor facility, whereas a good program may facilitate the design of an outstanding building.

This report is intended as a working tool for those involved in planning and is at this stage yet unfinished and still being refined. It will stay in this form, somewhat, until the building is occupied. It is reproduced at this time to show the direction of our efforts and to encourage constructive criticism and suggestions on everything except spelling, grammar and form.

Thanks to

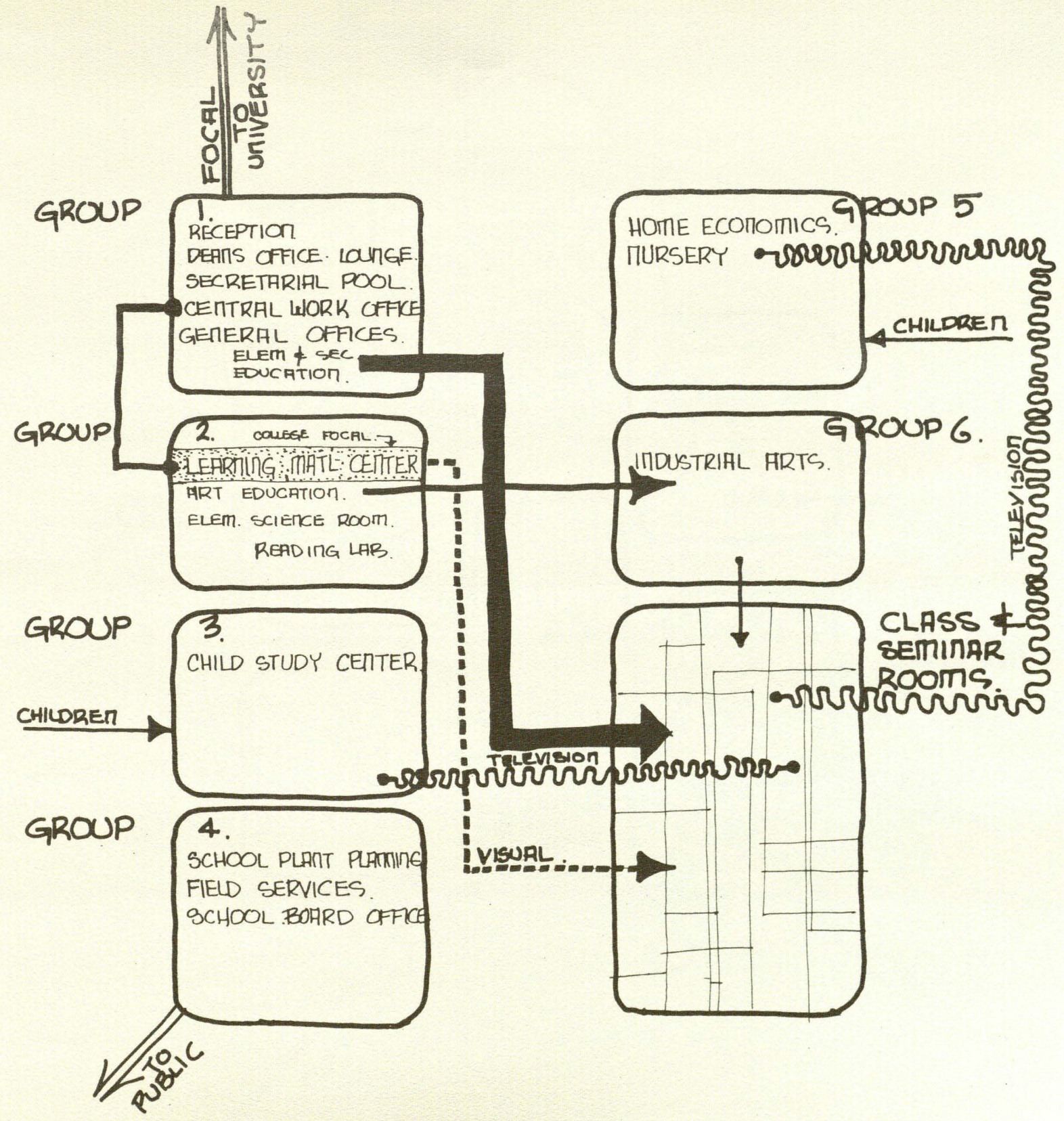
President Tom Popejoy  
Dr. Chester Travelstead, Dean, College of Education  
Don Schlegel, University Architectural Consultant  
Frank Angel, Chairman of Building Committee  
College of Education Faculty

## IN THE BEGINNING

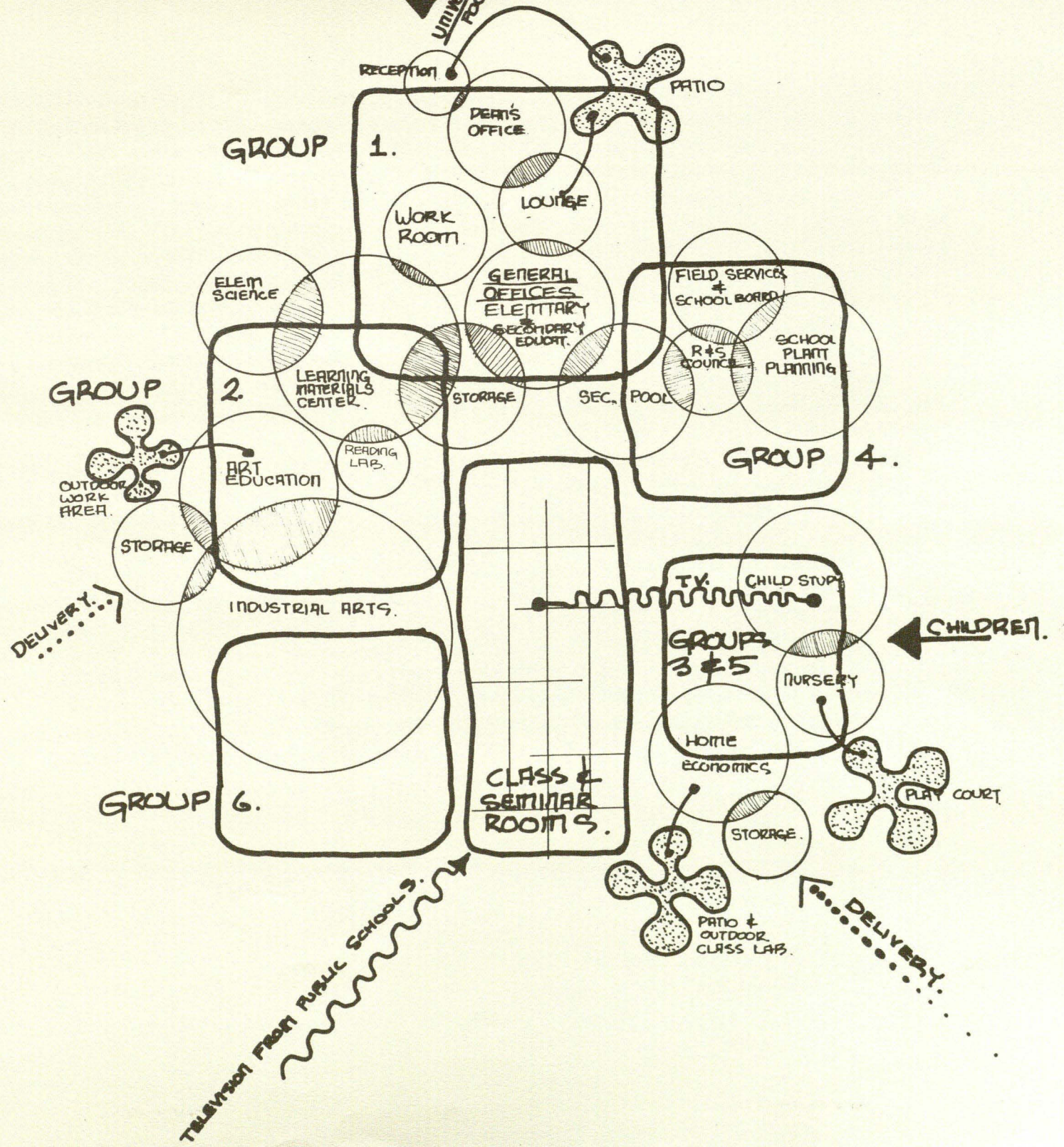
and preceding this study, a rough estimate of space desired by each department of the College of Education was assembled by the University architectural consultant. Space requirements were translated to square footages and are given below. These footages provided the basis for beginning planning.

Revised outline of departments and desired spaces.	Sq. Ft.
1. Educational Administration	2,000
2. Elementary Education	4,136
3. Secondary Education	2,246
4. Administrative Services	7,940
5. Child Study	4,312
6. Home Economics	9,536
7. Nursery	4,642
8. Learning Materials Center	5,000
9. Industrial Arts	10,000
10. Art Education	7,696
11. Education Classrooms	10,492
12. General Classrooms	<u>9,600</u>
	77,600
Corridors, Toilets, Public Space, Wall Thickness, etc.	<u>33,022</u>
TOTAL	110,622

As the study progressed, it became obvious that some of the space assignments should be broken down into their components and these components grouped with others of a similar function. For example, virtually all the office spaces, regardless of their initial assignment (i.e., Home Economics, Secondary Education, etc.) were combined into general office areas. The Nursery, Child Study Center and Elementary Education were also combined in one general area. In developing the program, by analyzing the use of space, practically all the original space assignments changed in size and/or were reassigned into areas of similar function.



FRONT DOOR OF COLLEGE  
UNIVERSITY FACUL.



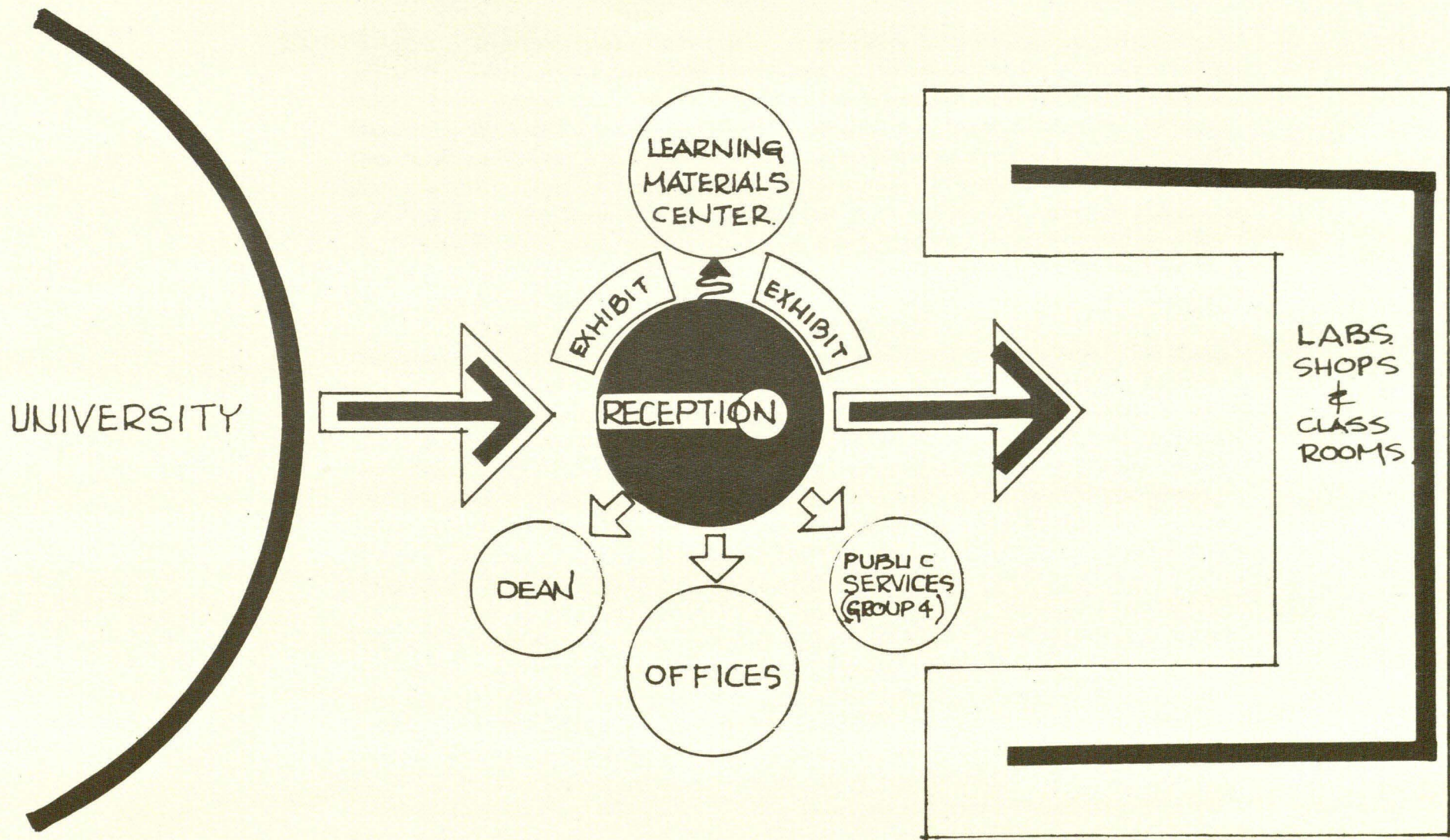
The relationships of groups and sub-groups were studied in the following diagram. Note the overlapping of certain elements, indicating the possibility of common space and faculty usage.

**RECEPTION** - Area for the college should be at the main entrance to the building or buildings and focus on the University campus, thereby affecting a close relation to the University quadrangle. This space will be so arranged that direction to the entire plant can be made from this entry point. It should be spacious. It should have visual access to the parts of the building which are display areas such as the learning materials center and exhibition space. From the reception area, the receptionist should be able to direct visitors and others to the general offices and the Group 4 unit in particular. Group 4 includes the space in the building which is devoted to loosely connected activities insofar as this college is concerned, such as the School Plant Planning, the Field Services group and the Research group. The area should lead into a main access way that will connect the offices for the entire building and the offices of the Dean. The introduction to the building from this reception space must be inviting and stimulating. This space should do all of those things for the college that will define it to the public as a progressive, modern educational plant. Essentially it is controlled by one receptionist who will devote the major part of her time to giving instructions and to directing people in the building. It may be possible to assign other duties to this person, but primarily the main purpose for her being located in this area will be as a receptionist. Whether or not she will have time for other duties should be determined and her space should be designed accordingly.

**REVISION:** DETAILED ESTIMATES OF THE WORK LOAD AT THE RECEPTION CENTER RESULTED IN MODIFYING THE DUTIES ASSIGNED TO THIS AREA. IT IS CONCLUDED THAT THIS RECEPTION CENTER SHOULD BE ASSOCIATED ONLY WITH THE DEAN'S AREA, THE OFFICES ON THE FIRST FLOOR OF THE ADMINISTRATION AREA AND THE SECRETARIAL POOL. TWO OTHER RECEPTION AREAS WILL BE PLANNED IN THE BUILDING TO HANDLE CALLS AND MESSAGES. ONE WILL BE IN THE CHILD DEVELOPMENT LAB AND ONE WILL BE IN THE GENERAL OFFICE AREA.

**r e c e p t i o n**





**traffic study**

**DEAN'S AREA** - Whatever type of advertising or publicity information that the college wishes the public to see should be introduced at the reception space; the space between the reception area and the offices or the foyer that would connect these two. Essentially the Dean's <sup>area</sup> department would consist of the Dean's office, the Assistant Dean's office and secretarial space plus a reception area and some type of conference room that might be shared with other functions. However, a conference room specifically for the Dean may not be justified in its frequency of use. If this proves so, the conference room possibly should be someplace that it can be used by other members of the faculty. Availability from a common foyer or from the professors' office area should then be considered.

The previous thinking of the Dean's space included areas that are now being thought of as a part of the entire group of which the Dean's area is only a part. Therefore, the work room which was originally assigned to the Dean's space will now be assigned to the entire office group which will include offices for all the professors in the college and will be adjacent to or close to the Dean's area. Also, the student assistant that was originally assigned to the Dean's space would be thrown into the general office area of the building and would not necessarily be a part of the Dean's suite itself. The faculty lounge which was originally listed under the Dean's space under this scheme would become a part of the office area.

**GENERAL OFFICE AREA** - This area could be broken down into individual offices for the professors, a common secretarial pool and a general workroom. The basic space allocation consideration is whether or not private offices for the professors and a common secretarial pool is better than separate offices for the secretaries, the general assistants and the faculty. It is concluded that the faculty offices should be pulled in from various laboratory areas into a general office area. For the purpose of considering this general office area, we will make the assumption that first, wherever possible, all faculty members will have an office in the area and that a common secretarial pool which will give services to all of the professors, supervised by a competent office engineer, will service all of the offices, do all of the typing, reproducing and all office and filing for the professors will be included. A tape recording system aimed toward office efficiency will be set up to handle this secretarial function. Also this space must be considered as an area that will start out with a certain square foot requirement based on the present student load and will need to be expanded, increased and/or subdivided into other offices for a period of some 10 years during the growth of the college.

Following the University master plan analysis it seems that at the present time twenty-two offices for professors will be required; whereas, at some projected date, say in 1970, fifty-two offices for professors will be required. This does not include, of course, secretarial space or space for the graduate assistants. A detailed study of each lab function will be required before the assignment of space <sup>for</sup> the graduate assistants can be made. Certainly a large number of them will be in the general office space, but the study of the supervision in the lab may require that some of the space for graduate assistants be placed in the more or less general work space in the various laboratories. This must be determined by the examination of the space requirements in the laboratories.

**DECISION: THE STUDENT ASSISTANTS WILL BE PLACED IN LARGE OPEN OFFICE AREA ADJACENT TO PROFESSORS' OFFICES. THEY WILL NOT HAVE PRIVATE OFFICES, AS SUCH, BUT MAY BE GIVEN SIMPLE SCREENS OR SPACE DIVIDERS TO FACILITATE MAXIMUM USE OF AREA, YET AFFORD SOME PRIVACY.**

Basically, the question is how to divide the area assigned as office space. Does each professor require a private space? Must it have a door that can be locked that gives him privacy for interviewing students and for conducting his general office work? Secondly, should the graduate students have a comparable area of approximately the same size; should they be placed two or three to the room; or should they be placed in a general office and their individual areas subdivided by some type of low or moveable partition or something of this nature? All members of the faculty agree that the nature of the professor's duties require that he be assigned a room completely enclosed, affording him privacy. This space should afford room for reference materials, seating, in addition to his own desk, for three people. In the interest of economy these offices must be kept reasonably small, which means they must be very well designed. Economy of space and good design can be accomplished by using built-ins and assignment of the function of the space within the offices making good office layouts. The layout of the office itself should not be left up to the individual professor, but should be an integral part of the design of the building. This will reduce the amount of space required

in offices but at the same time give each professor more facilities to work with and a better arrangement than he would have if he simply moved into a rectangular office space. The space that will be needed to accommodate the additional offices each year can be included and constructed as a part of this program. It will be enclosed and heated and completely equipped insofar as electrical and utilities are concerned. This expansion space must be easily subdivided so additional private offices can be taken from it as the staff increases. In other words, rather than give each professor one to be used for a conference room and rob him of it when additional offices are needed, the space that is programmed to be subdivided shall be kept as some open area that can be used for display purposes or for interior patio space or interior court areas of some type that can be subdivided as needed for the expanding faculty. In the assignment of offices to various departments in the college, the assignment will be made to affect unification within the office area.

**SECRETARIAL POOL** - The secretarial pool will be closely related to the office space. It does not necessarily have to be the space that you walk through to get to the offices. It can be a separate room or rooms that are set apart from the offices with an intercom or similar type of communication system that will allow the professors to communicate with the secretarial staff. It should be centrally located insofar as the offices are concerned in order that the records and filing systems can be kept in this general secretarial area. A part of this office function may be expanded to include a filing system and a filing room which would be controlled and supervised by a filing clerk who would handle all of the records and be responsible for having these records available both to the professors and to the secretarial pool as needed. All student records would be kept in this central records area. The secretarial pool would include space that is assigned to duplicating machines, mimeograph machines, paper storage, desk and work space for the secretaries themselves, assembly areas for getting out pamphlets and similar types of work. It will have a supervisor's space assigned to the general office manager of the secretarial pool.

**NOTE:** Requirement - We need a more carefully defined statement of exactly how this pool is going to work. We need, for the final assignment of space here to sit down with the person that will organize this general secretarial pool and decide in very great detail just how this secretarial space will be laid out. We need to know what kind of equipment we are going to have that will transmit the messages from the professors' offices to the common pool, we need to know what kind of duplicating equipment, both photographic and printing, that will be available, we need to determine roughly how many letters will be going out of this area a day, how many secretaries are actually going to be here.

At the present time it seems that the whole college is somewhat deficient in secretarial help, having a total of three and one-half secretaries. This will probably be expanded. It was originally anticipated that based on a department basis, by 1970 there would probably be required 15 secretaries, but with this worked on as a common pool, it is hoped that this number can be reduced substantially. The analysis of work load needs to be made now to get a more accurate count as to the number of secretaries that will be required by 1970.

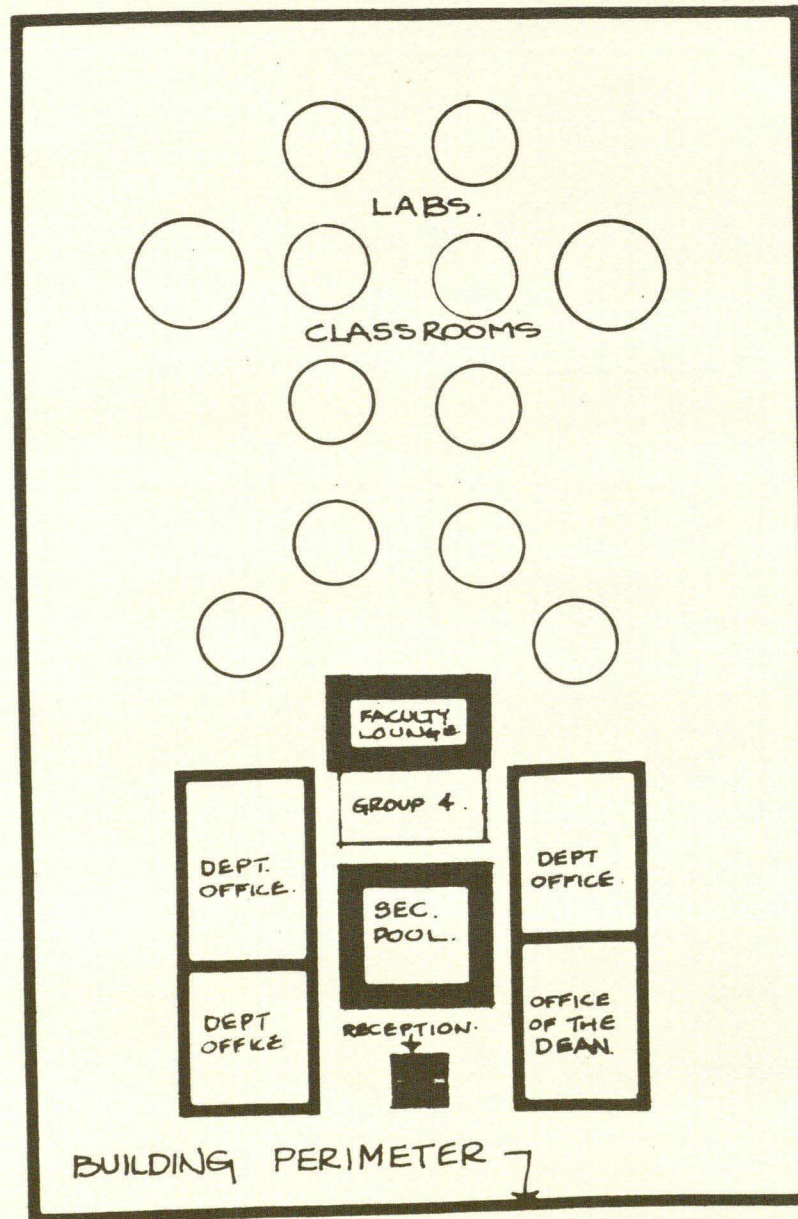
**CONFERENCE ROOMS FOR ADMINISTRATIVE UNIT** - There is a need for conferences both at the college level, conducted by the Dean's office, and also conferences at department level that would be conducted by the head of each department. Conference room or rooms should be in the administrative unit to serve this need. It may be possible that there should be two conference rooms, one large and one small, that would be available to both the Dean and the faculty. This is something that we should have a decision on. The small one would be designed to take care of eight people, whereas the large conference room should be designed for a larger group.

**FACULTY LOUNGE** - The faculty lounge is a part of the administrative unit, <sup>and</sup> is thought of as being an intimate area where the faculty can get together and exchange educational ideas during their relaxing period. If it gets too big, it would work to a disadvantage in this regard, so it is felt that it should be kept small. It would conveniently seat 15 people at a time rather than the entire faculty. It should be equipped with lounge chairs and be arranged informally so that there is a relaxed atmosphere to this space. It might be possible to open this space onto a small patio area that can be landscaped. Also, it would be good to locate it close to the conference room or seminar room that would be available to the Dean's office.

**TELEPHONE FACILITIES AND PAGING SYSTEMS:** The creation of a central secretarial pool with a central office area will necessitate the establishment of a telephone operator in the building who will receive all the calls and see that these calls are answered by switching them to the professors' offices and/or assistants. Also in this regard, there will be an intercom system that would connect through the central switchboard to the receptionist that can be controlled by the receptionist who can communicate with all of the professors in the central area of the building.

**NOTE THAT ON ADDITIONAL STUDY, THE RECEPTION AND TELEPHONE RECEIVING HAS BEEN BROKEN DOWN TO BE RECEIVED AT THREE POINTS - THE MAJOR RECEPTION POINT AT THE MAIN LOBBY, THE OFFICE AREA AND THE CHILDS GROWTH AND DEVELOPMENT LABORATORY.**

## CENTRALIZED OFFICES



### ADVANTAGES:

Efficient secretarial and general office operation.

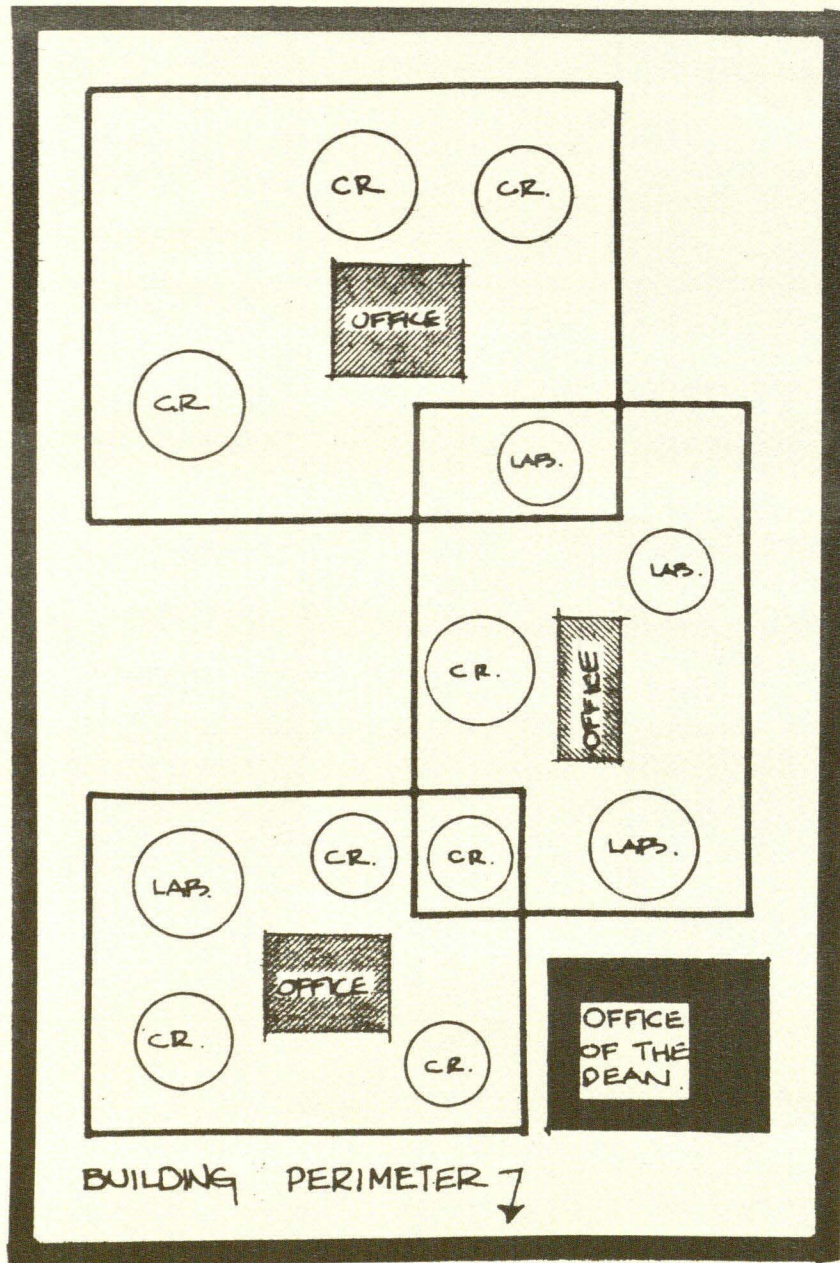
Increased inter-faculty and inter-department communication.

Increased access between departments and the office of the Dean.

Control and direction of visitors is achieved.

### DISADVANTAGES:

Increased distance between some faculty offices and some laboratories and class rooms.



## DECENTRALIZED OFFICES

### ADVANTAGES:

Department offices are close to class rooms and labs used most by the department faculty.

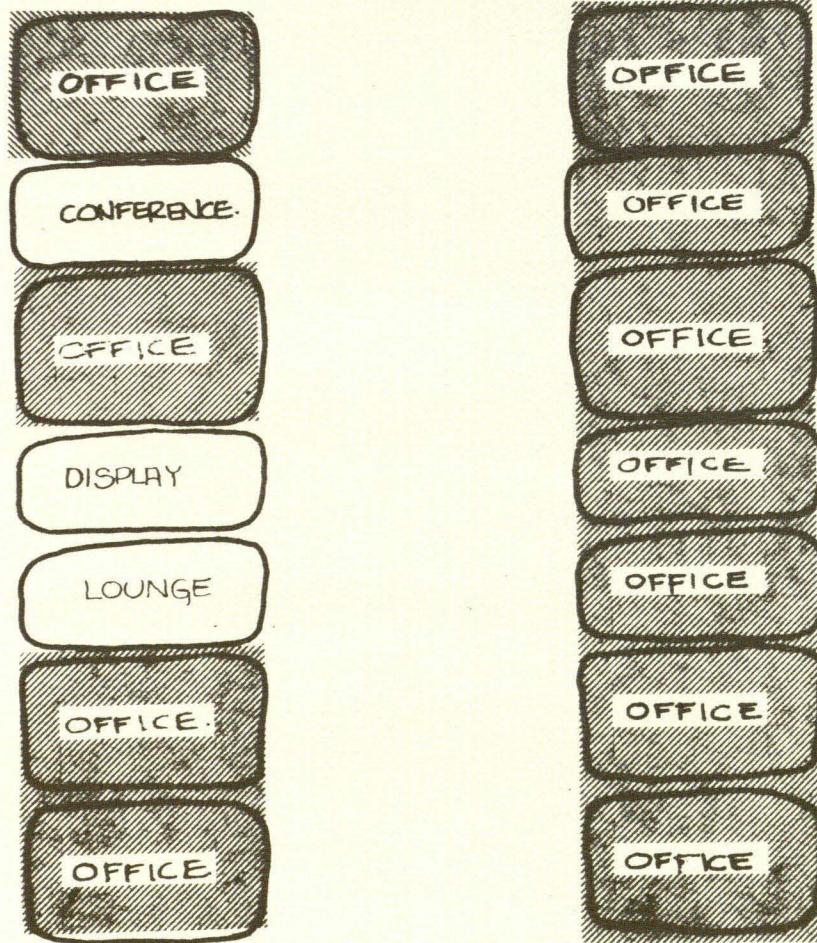
### DISADVANTAGES:

No secretarial or general office efficiency - resulting in an increased secretarial staff.

No central faculty facilities such as a faculty lounge, resulting in lack of communication between faculty members.

Questionable communication between the office of the Dean and various departments.

Faculty members become laboratory and class room custodians.



**office expansion**

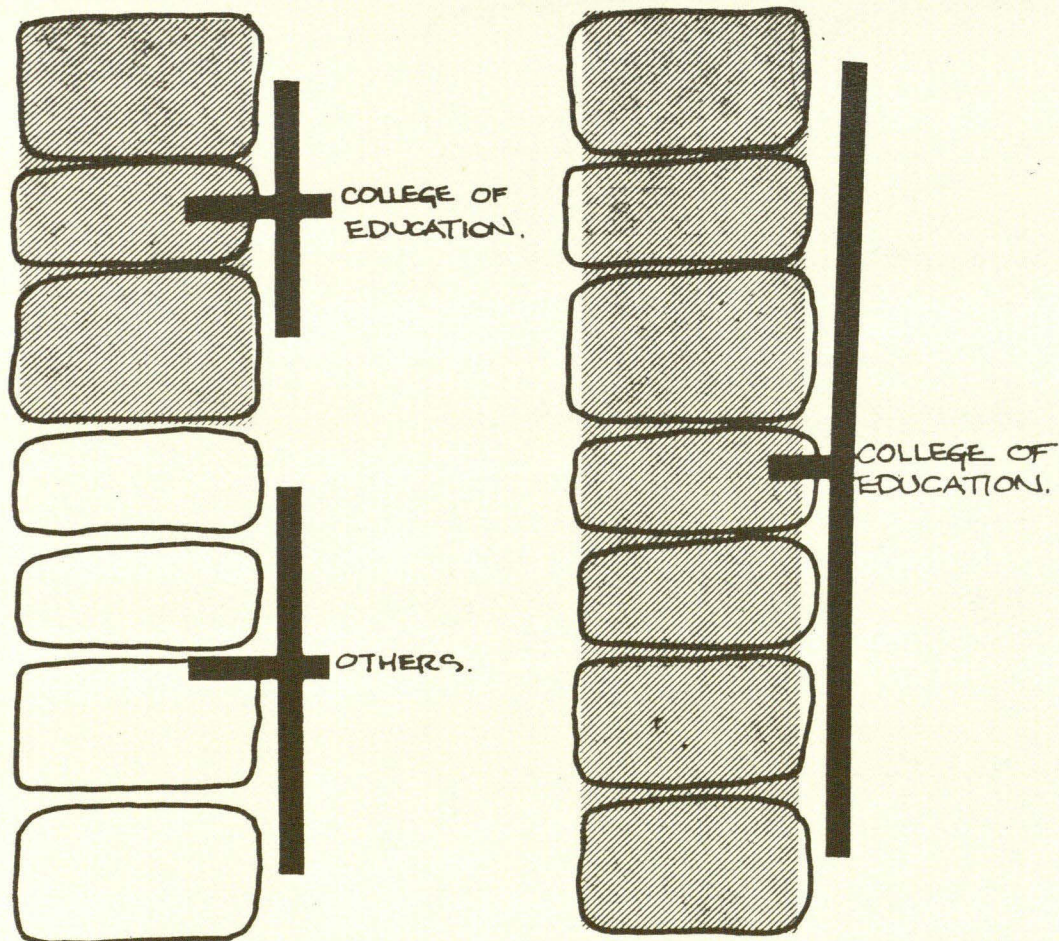
ADVANTAGES

Some possible saving may be attained by providing total required space in 1960.

DISADVANTAGES

Personnel will become dependent on an excess of space.





## office expansion

### ADVANTAGES

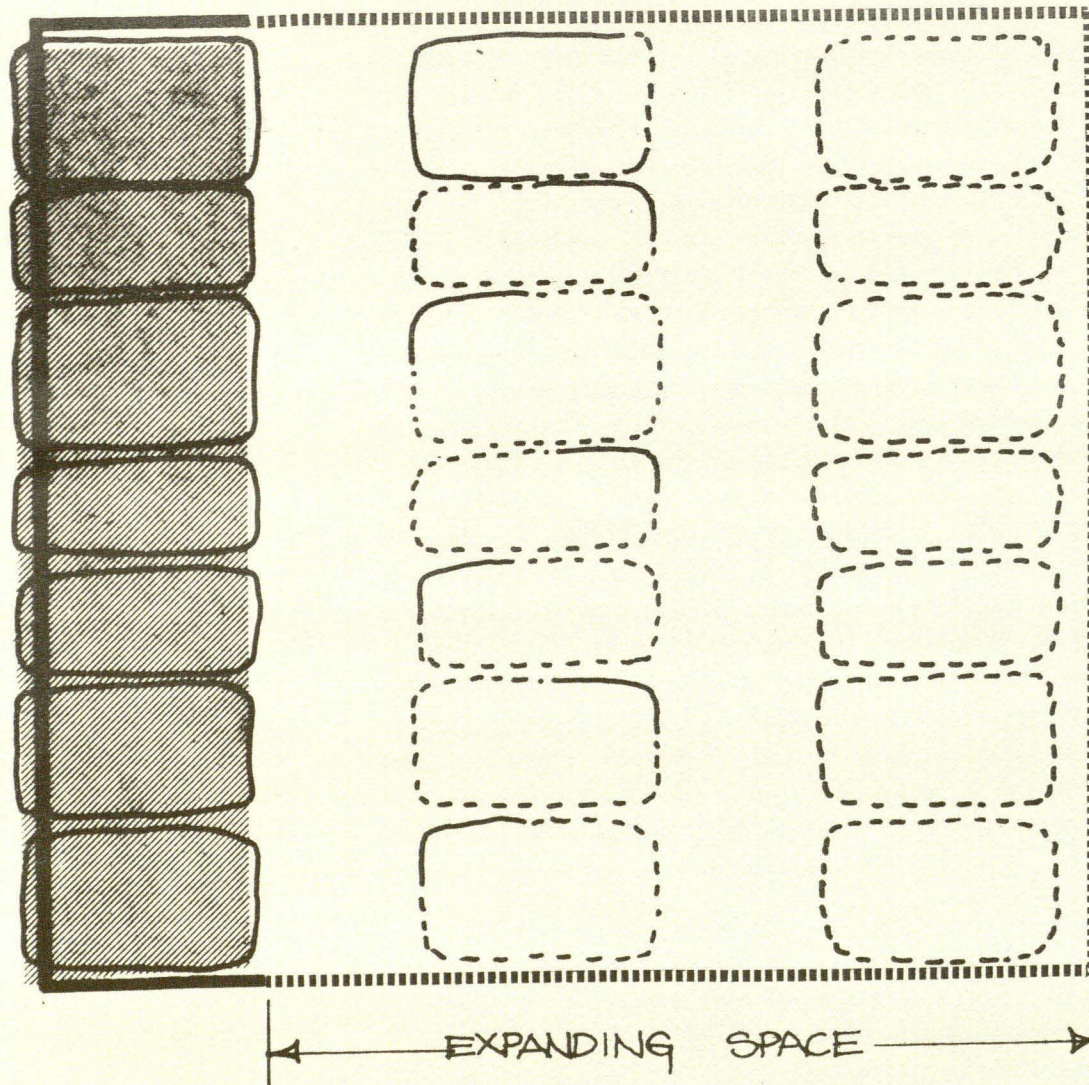
Some possible saving may be attained by providing total required space in 1960.

Partial solution to the problem of limited existing office space at the university.

### DISADVANTAGES

Will space occupied by others be available when needed by the College of Education.

Space for others is paid for from the budget or the College of Education.



**office expansion**

ADVANTAGES

Space for expansion is partially enclosed in 1960 and may be used as a patio for display or outside activities. Groups of offices are built as needed.

Expansion is planned and controlled.

Space is always available to the College of Education.

Space is flexible and allows expansion of general office facilities as needed.

DISADVANTAGES

Additional offices may have a higher unit cost in 1965 or 1970 because of rising construction costs.

CLASSROOMS AND SEMINAR ROOMS - The original basic consideration for class and seminar rooms is for rooms of two sizes; one with 330 square feet and 716 in the other. There were to be four of these total. The classrooms were in three categories, the first being 900 square feet, the second 1200 and the third 2400. Some of these classrooms were to be available to the entire university or easily <sup>accessible</sup> ~~accessible~~ to the entire university for general university use in addition to part-time use by the college of education. Of the contemplated 16 classrooms, the present load on the classrooms in the college of education will keep 12 of these busy approximately 70% of the time. As the college grows, it will be necessary to work out a tighter schedule and of course to expand it to the other four classrooms which will be, at the present time, assigned to the university as a whole for general use. This will require further study and analysis, but the general approach to the expansion problem is one of scheduling a higher frequency of use in the 12 classrooms and recovering from the university as a whole over a period of time the classroom use which will be immediately assigned to the other colleges of the university. All of these spaces are primarily designed as lecture rooms with a requirement that the light in each room can be controlled so that visual educational material can be used to a maximum advantage. This would include television reception. The larger rooms should be so designed that a maximum flexibility of arrangement of the audience within the space would be possible. A variety of shapes would give the <sup>college</sup> ~~department~~ a flexibility which would add to the teachers' experience in arranging educational background in a variety of spaces and shapes. This may result in an educational gain in preparing prospective teachers in the use of various shapes of rooms in setting up educational environment. The advantage in experimenting with the educational adaptability of various types and volumes of space for various educational purposes should not be underestimated. Long range gains to be had in the design of these lecture spaces both in a variety of shapes and even possibly in a flexibility so that the shapes might be varied or changed in some way must be considered.

It is essential that classrooms be readily accessible to the general office unit; that they be easily loaded and unloaded either from public corridors or from a public court; that they be pleasant; that the classroom unit can be added to at some future date as the college requirement for space expands beyond the space available from the present budget. The whole philosophy in the design of the classrooms and seminar units may well be that they are to be flexible, alive, stimulating and ever changeable space that can, as a secondary consideration, be used as experimental areas in educational environment. Some of them may be used by the school plant planning <sup>staff</sup> ~~department~~ and these planned in terms of use of the classroom spaces that the teacher might find himself in when in the public school system. In this regard, we consider it exciting that the educational <sup>college</sup> ~~department~~ is thinking in terms of

some different shaped rooms, One or more could be either circular or oval shaped with different levels and teaching more or less "in the round" rather than in the static rectangular pattern. Some of the classrooms, if not all of them, should be easily accessible to the entire university without going through the administrative unit. Students should enter directly into these classrooms without disturbing offices or laboratory space or any other function of the college.

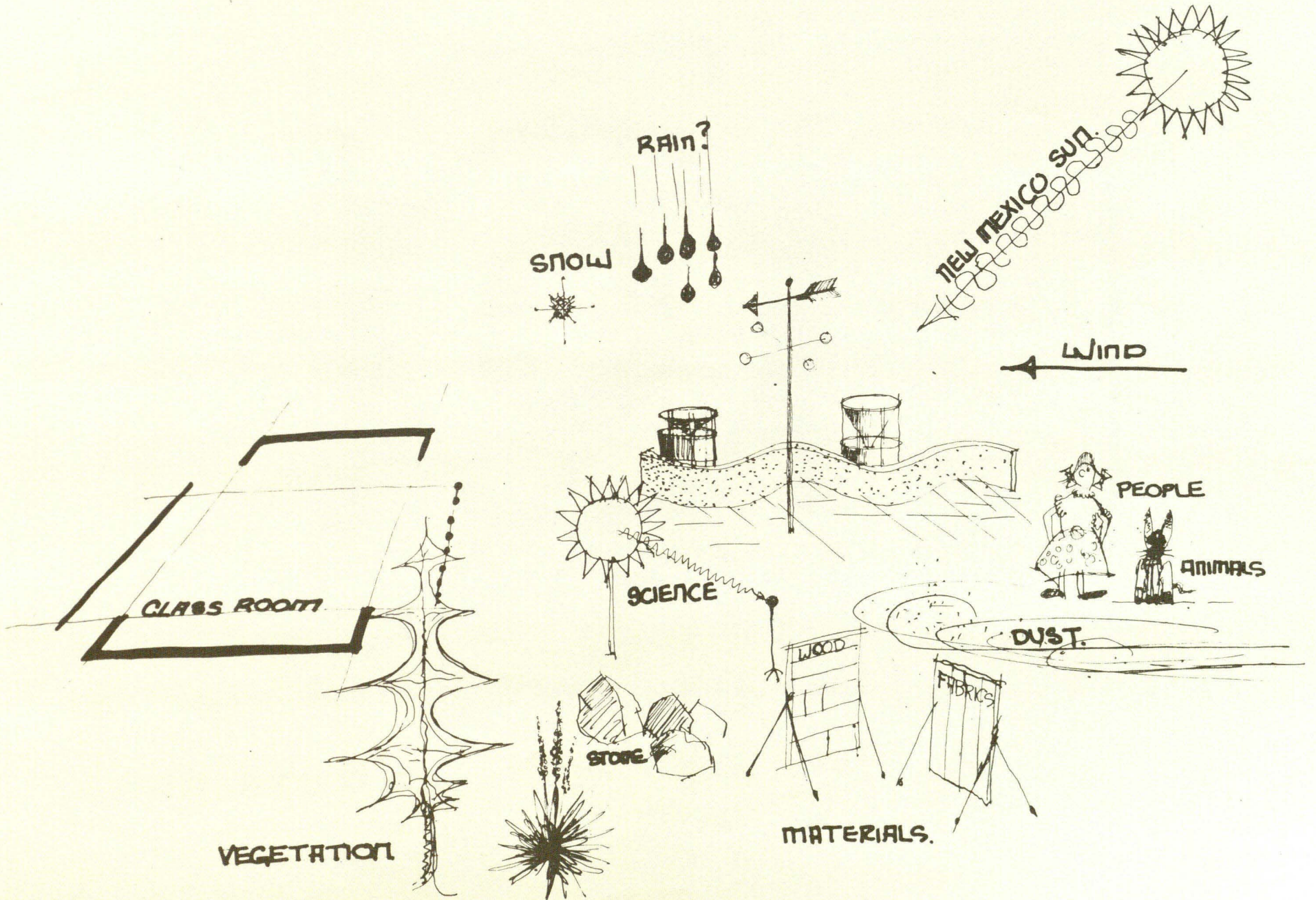
We still need to discuss and talk about the equipment, fixtures, fittings, appurtenances, furniture, finishes and everything else in regard to these seminar rooms. These details we mention here because we do not want to forget them. We must also talk about educational tools such as flexibility of blackboards, motion picture screens, cabinets that need to go into this space. These things will have to be talked about and decided upon and they are mentioned here so that they will not be left out.

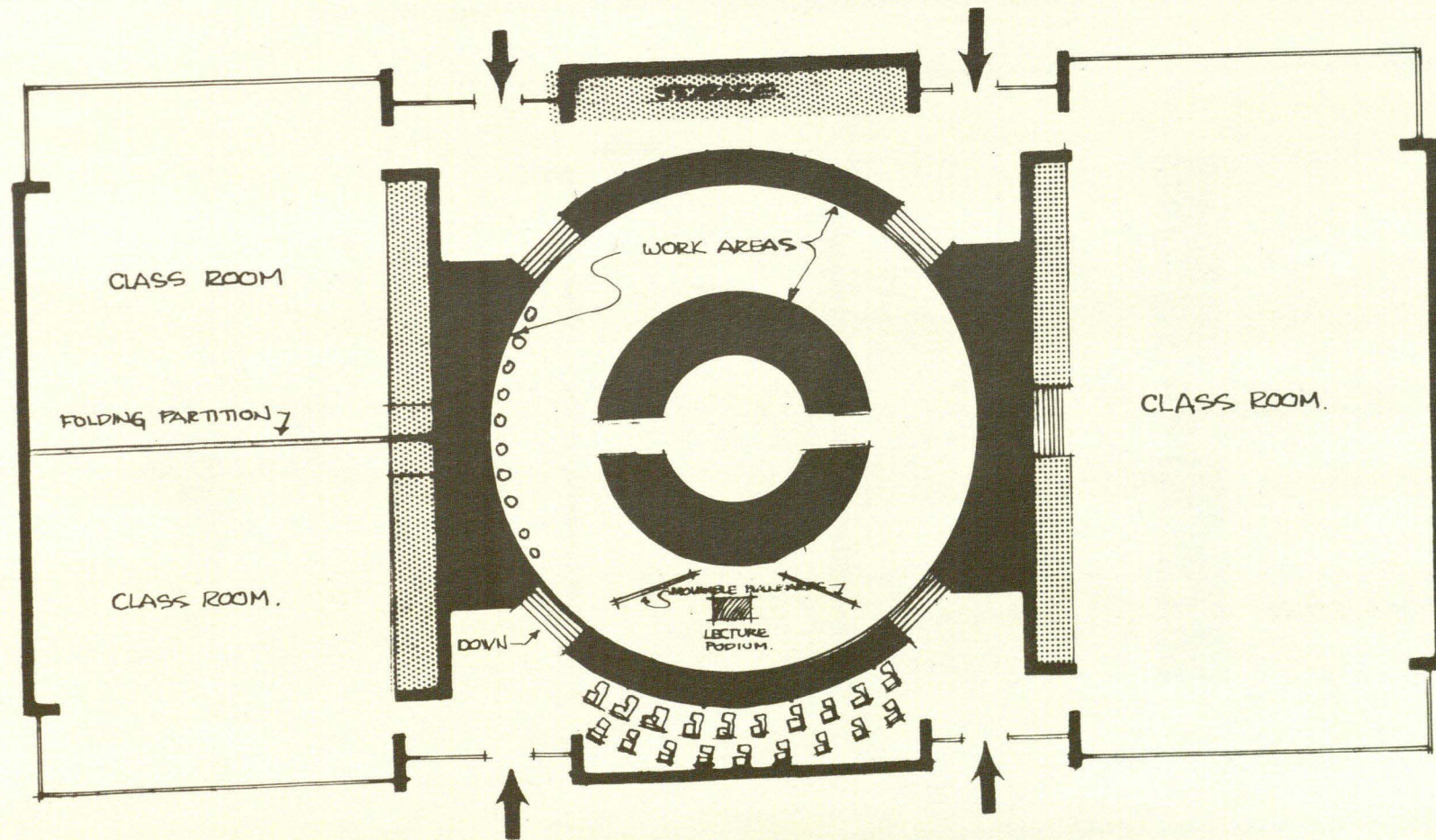
It may be considered feasible at this point to designate certain lecture and seminar rooms as flexible space. These can be equipped with ~~moveable~~<sup>movable</sup> partitions that can be rearranged and laid out in patterns facilitating research in modern school design. In some ways this might be tied in with the school plant planning section of this college which should be interested, on a long range basis, in some type of experimenting in educational spaces. The planners at this point need a definition of the goals and limits of the goal in regard to this arrangement of classrooms and seminar space. Is it going too far afield to assume that a flexibility in the arrangement of space in the manner suggested is beyond the requirements for this space?

DECISION - THIS QUESTION WAS ANSWERED. APPROXIMATELY 15 PERCENT OF THE CLASSROOM SPACE WILL BE DESIGNED WITH MOVABLE TYPE PARTITIONS, WALLS, CABINETS, ETC., SO THAT IT CAN BE USED AS A CHANGING EXPERIMENTATION AREA FOR SPACE ARRANGEMENTS AND SHAPES. ALL OTHER CLASS AND SEMINAR ROOMS WILL BE PERMANENT IN THEIR CONFIGURATIONS.

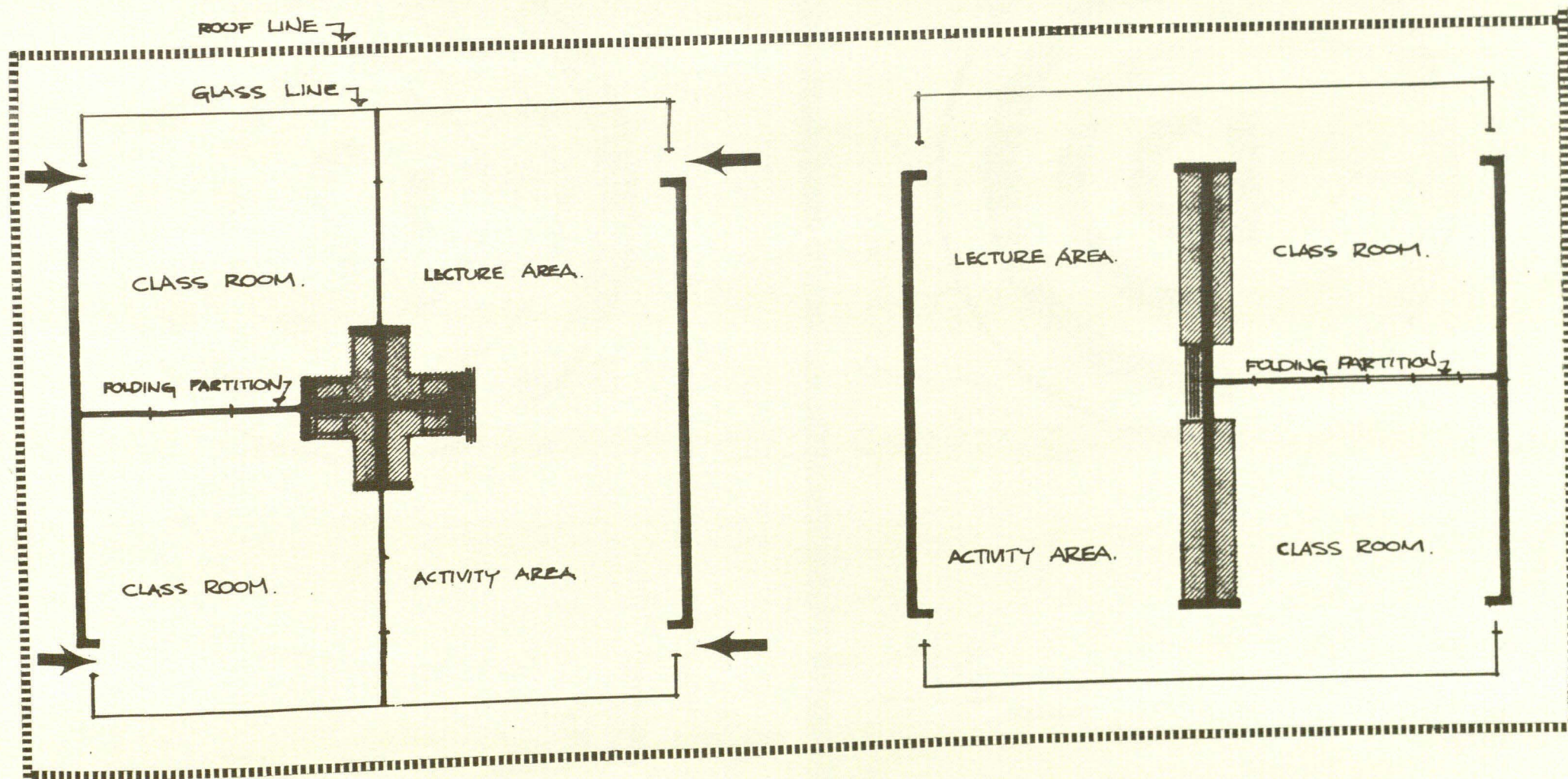
College of Education

Is it a goal of the Educational Department to teach the teachers how to expand their teaching environment to include outside spaces? If this is so, then possibly some of these classrooms and classroom spaces should extend as outside laboratory areas so that imaginative use of the outside spaces can be properly incorporated into the design of the classroom unit.

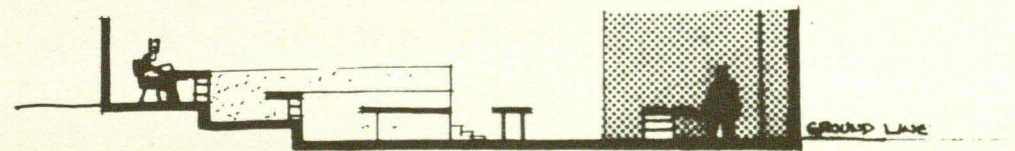
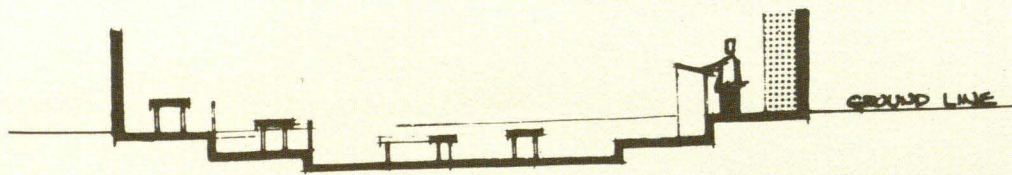
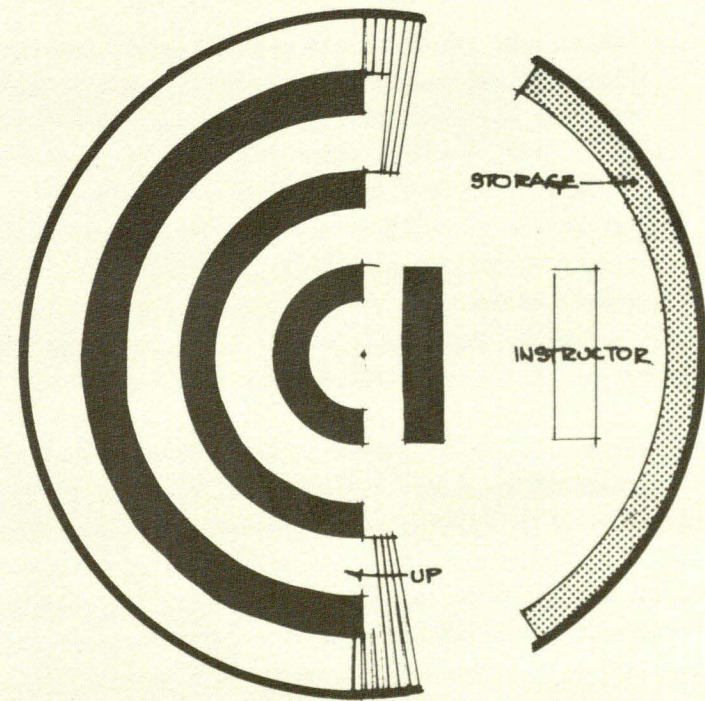
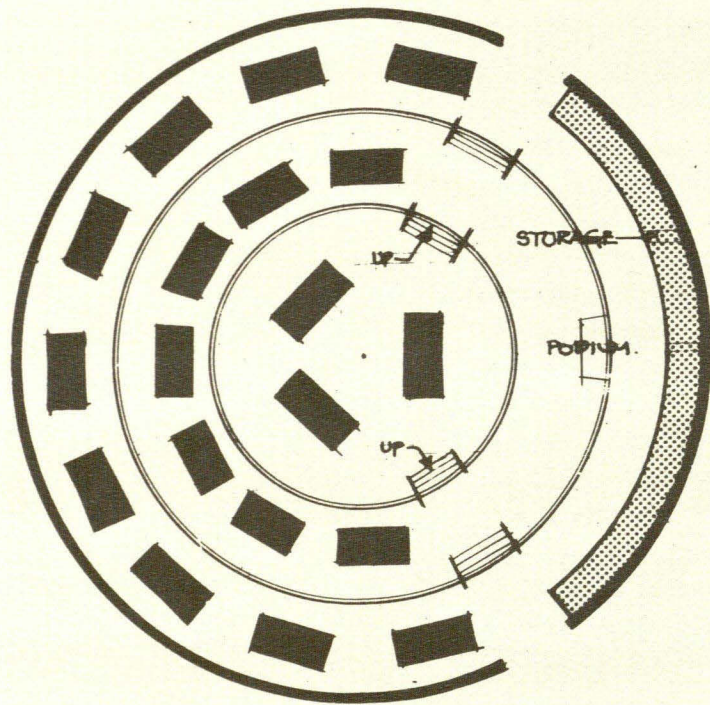




space study



space study



space study "kivas"



LEARNING MATERIALS CENTER - We have discussed three parts of the building, the reception, general office space and classroom and seminar space. We have yet to consider the space which is basically laboratory area. The term "laboratory" is used in the broadest sense of the word and means instructional areas other than simple lecture halls which include special tools, devices and equipment for teaching. The normal laboratory areas for a College of Education include art education, reading, child study center, home economics and nursery, industrial arts and a Learning Materials Center. This Learning Materials Center will be used by the college for the preparation of learning devices used in practice teaching in elementary and secondary education such as charts, color devices, etc. It will share some of its facilities with the Department of Art Education and may have a close relationship with the Science Center.

In effect, the Learning Materials Center will be the focal point of student activity. It will be available for longer periods than the normal laboratory and will probably reduce the extra-curricular activity and off-period use the other labs would normally encounter. It is anticipated that the efficiency of the other laboratories will thereby be increased. Specifically, a student who needs to do work in the art education room might move construction of some light material to the Learning Materials Center and have the proper facilities to execute his work, thereby releasing the Art Education Laboratory for an additional assignment. It will also give him the opportunity to work on any assignment when the other laboratories are closed.

The Learning Materials Center will house such items as <sup>text</sup>books and periodicals used by the Public School System, educational outlines and briefs prepared by the various school systems, information on educational environment, etc. Visual and possibly some reading aids used by the College of Education would also be stored in this area. The space assigned to the Learning Materials Center would be broken down or partially broken down into a book room, study area, office machine area, visual aids, sound room, general work area and possibly a science center and general comprehensive shop space.

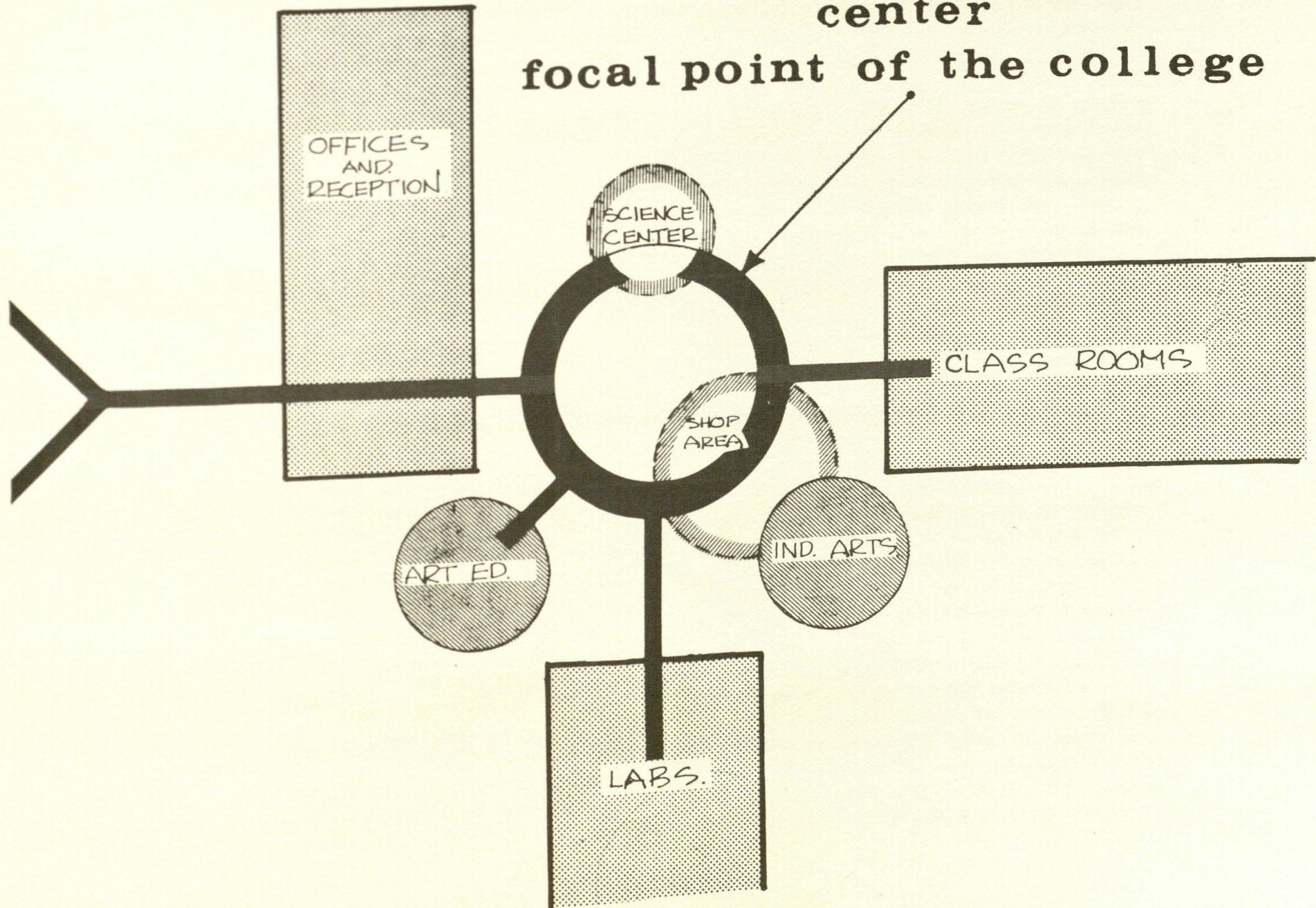
In general the Learning Materials Center should be a pleasant space and easily accessible to the entire college. It should be under the supervision of an administrator who has the responsibility for the maintenance and control of the equipment assigned to the Learning Materials Center.

**ELEMENTARY SCIENCE ROOM** - There exists a requirement to teach science to prospective elementary science teachers. Therefore, somewhere there must be a laboratory facility for this purpose. Present schedule requires a use of 3 hours a week during one semester. The low frequency in the use of this space poses a problem of how much space should be assigned for such a minimum use; where the science lab should be placed in the building, and how it should be related to the facilities. Because of the low frequency of use it must be constructed in such a manner that at least the lecture space can be used for other functions or purposes. Primarily the only equipment required is a simple science laboratory table and storage space for minimum equipment for use in the instruction of science for elementary students. This will involve a sink, drain, gas connections, and electrical outlets for the lab table itself. All of these things could be used or might be used as a part of or in conjunction with the Learning Materials Center. Therefore, this science lab can be so arranged that it can be a part of the ~~Materials~~ Learning <sup>Materials</sup> Center and arranged in such a way that the laboratory equipment might be adjacent to a lecture space that could be used by the ~~Materials~~ Learning <sup>Materials</sup> Center for other purposes. It may be that due to the progressively increased importance being placed on science in our educational system that, over a period of time, more facilities will be required as instructional aids for elementary teachers in science. If so, the space set aside for this purpose might be enhanced to include and encompass all of the various teaching devices and aids that might be required over a period of years. These may include astronomy materials, such as models of the universe, models of the globes, diagrams of the stars, telescopes, planetarium devices and electrical devices. These would ordinarily be moved back out of the way when not in use; however, as a part of the learning materials center they could be kept in a display area or display position. Additional equipment could include types of geological and archeological specimens that might be effectively used as a display area as a part of the lecture space in science. This might actually develop as a science area in the learning materials center into which you would then group all of the things pertinent to science including the visual aid materials and reading information, all the published material, etc. This could be extended almost indefinitely to include plant specimens, fish specimens which would involve aquariums, etc. In addition to the possibility of increasing and elaborating on this science room as a part of Learning Materials Center, it is felt that there is some need to instruct the students on how to teach out-of-doors, particularly how to teach scientific subjects out-of-doors and, therefore, this space might very well penetrate the exterior walls ~~of~~ and lead to an outside court. The classes involving science might then be extended to that area for instructing teachers on teaching outdoor sciences.

**DARKROOM** - As a part of science study some students are given instruction in photography and photographic development techniques. As both the Industrial Arts and the Art Education use the darkroom at infrequent times, the darkroom should be placed so that it is also convenient to these two departments.

**FUTURE ANALYSIS OF USE OF READING LABORATORY DICTATES THAT IT BE PLACED IN THIS CENTER. THE REMEDIAL READING FUNCTION WILL BE PLACED IN THE CHILD LABORATORY WITH THE CHILD STUDY CENTER, HOWEVER, READING MACHINES, ETC. THAT MIGHT BE USED BY COLLEGE STUDENTS TO IMPROVE READING HABITS WILL BE PLACED IN THE LEARNING MATERIALS CENTER SO THAT A MAXIMUM USE CAN BE MADE OF THE EQUIPMENT AND A MAXIMUM NUMBER OF STUDENTS BE EXPOSED TO THE USE OF THESE AIDS.**

learning materials  
center  
focal point of the college



**CHILD'S GROWTH AND DEVELOPMENT LABORATORY** - Three functions are supplied by the college of education which demand the use of children for study purposes. The primary purpose of these three functions is to train teachers and counselors in the proper techniques for instructing children. In the past these three functions have been completely separate, independent and carried on in different departments. These three are, first, nursery and kindergarten school that is conducted by the home economics department. This also includes an infant study area. The second is the child study center which is operated by the administrative services department of the college of education in the guidance area. The third is the remedial reading lab which deals with teaching slow readers how to read; training children who are slow because of their I.Q., and also children with emotional problems that affect their reading performance. The nursery school and kindergarten involves 30 children, 15 in each group. The nursery school is from 2 to 3 years old and the kindergarten is from 3 to 5 years old. The infant part of the nursery school would take care of from 4 to 6 children and would be used for one month a semester. The child study center involves primarily, at the present time, the study of children in the elementary age; however, this might be expanded at some future date to include older children. This department might have approximately 100 cases, or 100 children per week. They come in different numbers, depending upon the requirement by the department for instructional purposes. They may be there for one hour or three hours, depending upon the training of the child and what it requires. They work with these children in groups or singly and the observation of children takes place in groups or individually. The third part of this ~~child's~~ lab that requires children is the remedial reading section. At present approximately 64 children per year go through this remedial reading laboratory. Future teachers working for a Masters degree act as technicians in training these children. They are observed by large groups of teachers, ~~from the department of education~~. These future teachers must become familiar with the various aids that are used in this work. The question is raised at this point as to whether or not the machines involved in teaching reading should be placed in some location other than in the child's lab or that this entire remedial reading section might be moved to some other point whereby the machines that are a part of this section may be used by others for increasing reading efficiency. If we group three laboratories that involve children together so that there can be a common receptionist, a common reception area, a common delivery and control point for the children, certain economies in space assignment can be made. Also, the possibility of interjecting television transmission into this laboratory technique would facilitate the projection of the child under instruction into classroom and

seminar areas ~~there~~<sup>where</sup> the observers can see the entire process on television. Instruction pertinent to the handling of the child could be going on anywhere in the classroom and seminar area. It would be possible in the layout of this facility to have a central production area where the television pickup equipment is manned and housed that would be in the center of the ~~child's~~ lab. There are many pros and cons involved in this that must be explored. First of all there is the question of whether or not a television picture is good enough for the purpose for which it would be used. The use of television would not eliminate all of the observation rooms; however, it could reduce this space to a minimum as it would expand the use of the child's lab back to the class rooms and it could take care of an expanding enrollment problem. The design of these facilities for television use would facilitate the keeping of permanent records of case histories of exceptional value that could be replayed and even sold to other colleges for teaching purposes. A policy statement as to whether or not this child lab is a feasible grouping is required. A planning consideration here is the possibility of working this child study lab from three different vantage points, so to speak. The student teacher could be on the periphery of the child lab viewing the laboratory from a raised level or second floor level through one-way mirrors that would give him visual access to the entire child's lab. At the lower level underneath this student teacher's promenade or gallery would be the circulation space for the children in the labs and the administrative space for the child lab itself. The core of the child's lab could be television pickup and transmission which would transmit both back to the seminar rooms and could then also transmit to the student teachers' gallery.

ART EDUCATION - The activity in the Art Education lab is an interesting visual experience for the entire college, and in this regard is similar to the space that will be occupied by the ~~materials~~ <sup>materials</sup> learning center. The space requirement here is quite simple. There is need of storage for materials, individual storage for student and teacher materials, access to sinks and big work and display spaces. Also, this area should be designed so that large construction projects and experimentation in construction of teaching aids can take place in an outside work court. The Art Education space should be conveniently located near the learning materials center and the Industrial Arts <sup>area</sup> Department. There are times when the art education group might have a need to use some of the shop equipment that is kept in the industrial arts <sup>area</sup> department. If the proper relationship can be worked out between the art education ~~department~~ <sup>area</sup> and the industrial arts ~~department~~ it might be possible to assign some space as common to both because of the use of some shop equipment by the Art Education Department.

It is recognized that this Art Education laboratory must also function as a work space for the instructor, who is continually experimenting and devising techniques for teaching as an integral and fundamental part of the function of this space. Whether ~~or not~~ this involves a private office is questionable, but it does definitely involve a specially designed area for the instructor and the instructor's aids as a part of this laboratory.

If the University should furnish art materials such as drawing paper, brushes, ink, paints, etc., the space requirement for individual storage area now assigned to individual students could be reduced. Some, although not a large amount, of additional bulk storage area that would be under the control of the instructor or the professor would be required. At the present time each student that works in this laboratory is assigned a large drawer that must be furnished and housed in the space. This drawer must take large sheets of paper and a volume of art material. There is a big waste involved in both space and use of materials in the present arrangement. From the standpoint of the cost of the building and the space it would seem that the central supply room, in lieu of large individual storage areas, would be advantageous. It is considered important to get the idea of art education across to all the prospective teachers. It also is important that they become acquainted with the method of doing this architecturally so that they can take advantage of it in the arrangement of art departments in the schools into which they will go to teach.

**INDUSTRIAL ARTS DEPARTMENT** - The Industrial Arts <sup>curriculum</sup> Department is organized and equipped to prepare teachers for the high school instruction in industrial arts, which include the following fields:

- Metal work
- Welding
- Sheet metal work
- Art metal
- Metal spinning
- Pattern making
- Foundry casting
- Automobile mechanics
- Woodworking
- Leather working
- Electrical repair work

Emphasis is placed on the mechanical skill of proper use of equipment and machines. This department must give the prospective high school instructor the minimum training necessary to teach these skills at the high school level. As broad categories, the shop space required can be broken into two divisions. The first would be the metal shop which will include, besides all the metal craft, automobile mechanics. The second is a general shop area which will encompass all the woodworking equipment plus work space for electrical, leatherwork, upholstery, TV repair, etc. In addition to these two general shop areas, there is a need for a space that can be used as a planning center ~~for the department~~ into which can be placed certain reference materials needed by the Industrial Arts section. Adjacent to this center there should be an area set aside and designed for the supervision and control of the entire shop area into which would be placed facilities for the student assistant, the instructor, and special attention needs to be given to the design of the control point, as it must afford the proper visual contact with the equipment in the lab, yet at the same time be sufficiently removed to afford the instructor a degree of privacy and separation necessary so that he can prepare instructional devices, etc.

There are many items and supplies which need to be stored in the Industrial Arts section which must be itemized and analyzed, for the amount of space required and the volume necessary for the proper handling of items to be stored. In conjunction with the supply to the industrial labs, it will be necessary to provide this section with a delivery dock or room where supplies may be received from trucks.

**i n d u s t r i a l   a r t s**



Detailed requirements for the design of the various parts of the laboratory <sup>are</sup> ~~is~~ not discussed at this point as more research and detail information <sup>are</sup> ~~is~~ needed. The staff at the University is now preparing the lists of equipment that will be required in each lab with the amount of floor space that is required for each piece of equipment plus the electrical load requirements and utility connections.

The industrial arts laboratories generate a certain amount of noise which must be absorbed and confined to the area of the laboratory so as not to disturb the remainder of the college functions. Probably the noisiest piece of equipment in the entire lab will be the wood planer. Special study of the deadening qualities of acoustical treatment will be required to do the job properly. Special study must be given to the electrical system, the dust collecting system and the mechanical systems for this space as machines will be added and moved at various times which will require a flexibility in the utility distribution systems. It was mentioned in the discussion of the Art Education Section of this report that some of the equipment in this lab might possibly be made available to the Art Education Department for ~~their~~ <sup>its</sup> use. This requirement, plus the possibility of a joint use of darkroom facilities, may have sufficient weight to cause the Industrial Arts ~~Department~~ <sup>area</sup> to be placed adjacent to the Art Education Department.

The number of lockers or storage space for the individual student has not yet been defined and requires study.

The question arises in the design of Industrial facilities and/or industrial art laboratories as to how much emphasis should be placed toward orienting the design of the space for the creative aspect of the crafts involved. If this is considered desirable the design of the space may be different than if the orientation is strictly toward mechanical skills. For example, the theme for designing the student work and study space together with the instructional and supervision point of the laboratory might be aimed at the display or use of crafts as they apply to the creative efforts. The design of this section of the lab might easily be directed toward stimulating the prospective teacher to achieve excellence in certain crafts by a creative display of materials applicable to the various crafts. This is a subject that should be discussed in some detail and the theme decided on before the final layout of the space is accomplished.

HOME ECONOMICS DEPARTMENT can be assigned essentially as laboratory space as follows:

1. Food and Nutrition Laboratory.
2. Clothing and Textile Laboratory
3. Household Equipment Laboratory
4. Child Development Laboratory which will include a nursery and an infant care facility.
5. Home Practice Unit.

The basic requirements for space layout and equipment has been listed by the Home Economics Department and is adequate for detailed planning purposes.

The possibility of combining the Food and Nutrition Laboratory with other food preparation facilities on the campus was studied and discarded as being impractical. The use of this cooking facility in this department by the Nursery Unit was studied and ruled out as not feasible due to the experimental and research nature of the laboratory as opposed to the production aspect of the other. Delivery of food and supplies, both for the Nursery School kitchen and the Food and Nutrition Laboratory requires easy access to the outside of the building for delivery.

A detailed requirement of space required by the Clothing Laboratory has been prepared by the Home Economics Department. This space is a specialty use requiring special equipment and cannot be combined with other uses.

The display, demonstration of and maintenance procedures for household equipment will be assigned to the Household Equipment Laboratory. If women are to once again become masters of their homes they must understand the operation of the equipment now considered essential to home operation. This understanding must go beyond the simple use procedures and cover maintenance knowledge. This laboratory then will be a workshop primarily devoted to teaching maintenance of the home.

The Child Development Laboratory, which includes the Nursery School and the Infant Care facility has been placed with the other laboratories of the college that require the use of children. These other departments are arranged to observe the care of children. A part of the Child Study Center will be designed as a nursery facility. A part of the nursery facility will be so arranged that easy observation from a gallery or observation platform can be <sup>affected.</sup> ~~affected.~~

As this Nursery School needs an outside play area, this outside play area might well be used by the other parts of the Child Laboratory during unscheduled time. The reception, inspection and handling of the children will be done at a central receiving point that will function for not only the Nursery School, but the other two sections of this Child Study Center.

Requirement for designing in scale with the children and other special considerations needed in this Child Development Laboratory will require special study. Also the place of the Child Development Laboratory and close proximity to the study of facilities of the college imposes a problem of noise control both for the inside areas of the Nursery School itself and the outside play area that is necessary for this facility. These problems will receive special attention, as placement of facility within the group and detailing of the acoustical materials <sup>are</sup> critical.

The Home Economics Department operates a practice house for home economics students where, during their senior year, they live and practice the various phases of homemaking they have studied. This is an important phase of <sup>the</sup> home economics curriculum and is used at every major university in the nation. At many universities this unit is placed in some remodeled house near the campus. Placement of this unit in such deficient and restrictive space in some measure defeats the educational purpose of the facility. It would be better to plan this practice house as a part of the new educational building, even though its construction may not be possible in the present program due to budget limitations. This unit could be added at some later date. The philosophy for its need should be agreed on so it can be added.

The Home Making Unit or practice house should be a modern unit with spaces arranged for maximum <sup>flexibility</sup> ~~flexibility~~ of use so that continued experiments and revitalization through changing interior arrangements can enhance its use.

All of the laboratories in the Home Economics Department will be designed without offices. All offices will be placed in the office unit of the college, which will be close, and have easy access to all departments containing laboratories. Classrooms, as such, will not be placed in this department, but will be placed in the classroom section. This is done in an effort to place facilities where they can be used to maximum saturation by the entire college and university. Money and space saved through maximum use can then be invested in better special-use laboratories and additional facilities.

AT THIS POINT - After an analysis of the space requirements of the various departments it was decided to study the area requirements of these departments, utilizing a maximum of combining, eliminating and reassignment. The following area breakdown represents the minimum areas necessary for the College of Education to function, at the present time, as a modern, functional, educational building:

	<u>Sq. Ft.</u>
<b>GROUP 1 - GENERAL COLLEGE ADMINISTRATION</b>	
Secretary - Reception (Dean's Secretary) (Telephone Operator) (Reception)	400
Dean's Office	288
Asst. Dean's Office	168
Conference	200
Secretarial Pool (4 secretaries plus research and service area)	800
Records	<u>200</u>
TOTAL	2,056
<b>GENERAL OFFICE AREA</b>	
Secretary - Receptionist, Waiting	600
Graduate Assistant Area (30 students)	1,800
Offices:	
Guidance (2)	374
Foundations (2)	374
Administration (2)	374
Secondary Education (5)	840
Elementary Education (3)	504
Home Economics (4)	672
Art Education (3)	504
Industrial Arts (3)	504
Faculty Lounge	300
Conference - Seminar	<u>330</u>
TOTAL	7,176

**analysis**

GROUP 2 - LEARNING MATERIALS CENTER

Book Storage	800
Listening Area	400
Seeing Area	200
Crafts Area	800
Work Area	800
Machine Area	800
Reading Area	500
Elementary Science Room	1,200
Science Storage	400
Photo Laboratory	200
Comprehensive Shop	<u>2,000</u>

TOTAL 8,100

ART EDUCATION

Laboratory - Studios (3)	4,500
Art Storage	<u>200</u>

TOTAL 4,700

### GROUP 3 - CHILD GROWTH AND DEVELOPMENT LABORATORY

Secretary, Receptionist, Waiting	600
Men - Women Toilets	200
Child Study Area	
(4 Laboratories @ 144 each)	576
Nursery	
Play Room No. 1	600
Play Room No. 2	600
Infant Laboratory	600
Child Toilets	200
Kitchen	200
Dining	400
Storage	200
Wash - Dry	60
Inspection - Isolation	200
Observation	800
Television Area	<u>600</u>
TOTAL	5,836

### GROUP 4 - ADMINISTRATIVE SERVICES

Director School Plant	288
School Plant Laboratory	2,000
Chairman Administrative Service	288
Director Research and Field Service	288
Director of School Board Association	<u>288</u>
TOTAL	3,152

GROUP 5 - HOME ECONOMICS

Food and Nutrition Area (Includes Home Equipment Laboratory)	3,500
Clothing Textile Area	2,340
Faculty Student Social Center	1,200
Future Practice Housing	<u>          </u>
TOTAL	7,040

GROUP 6 - INDUSTRIAL ARTS

Metal Shop	3,000
Wood Shop	<u>3,000</u>
TOTAL	6,000

CLASS AND SEMINAR ROOMS

2 - Kivas	4,800
3 - Flexible Classrooms	3,600
2 - Seminar Rooms	1,432
2 - Large Classrooms	4,800
5 - General Classrooms	<u>4,500</u>
TOTAL	19,132

NET TOTAL	63,192 sq. ft.
LOBBY, CORRIDORS, WALLS, ETC.	<u>15,000</u>
GROSS TOTAL	78,192 sq. ft.

