

PROPOSED PLAN FOR
THE KANSAS STATE COLLEGE STUDENT HOSPITAL

by

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INTRODUCTION

Kansas State College is a state educational institution located in Manhattan, Kansas, a town of approximately 15,000 population. The campus is northwest of the city proper and is situated on a higher elevation.

The climate of the area is subject to sharp changes. The winter months from November to February have a temperature range of 10° below zero to 32°F. above zero. The summer temperature often goes as high as 100° to 105°F.

Kansas State College has its own heating and electrical plant, but gets water service from Manhattan and gas service from the Kansas Power and Light Company.

The Student Health Service makes an important contribution to the students of the college. It is located on the campus in order to be easily reached by the students. The hospital and clinical facilities of the city of Manhattan are always strained. The community health facilities are thus relieved from added strain by the college health facilities. Because the program operates on a non-profit basis, the students receive these health services at less expense than would be possible if they went to local doctors and pharmacies.

The student population at this time (1952) is nearly 5,000. Surveys have been made which indicate that the student enrollment may increase to 10,000 by 1960. The health facilities, as shown by records, are used by 84 percent of the enrollment.

The present Student Health Service is in an inadequate, temporary structure, constructed from surplus, war barracks.

The proposed hospital must, therefore, be designed for the needed facilities and for the modern equipment of the future.

HISTORY

The Morrill Act, approved by the United State Congress on July 2, 1862, was the basis for the establishment of Kansas State College. The Act granted 30,000 acres of land to the state for each member it had in the House and Senate for "the endowment, support, and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanical arts. . .".¹

Another educational institution already established, the Bluemont Central College, offered its building and 100 acres of land to the State if the legislature would locate the college in Manhattan, Kansas. On March 3, 1863, the Kansas Legislature approved the act and designated the institution as the Kansas State Agricultural College.

The first record of health facilities being offered by the college was in 1903 when two local doctors from the city of Manhattan were designated as student doctors. Their services were obtained by charging a fee of fifty cents per student. January 13, 1906, the legislature was asked for appropriations to provide for a hospital and a fee for other medical services. The first request was not authorized. Student and alumni papers were still urging a student infirmary four years later. Finally, in 1911, the State legislature passed a session law authorizing

¹Julius T. Willard, History of the Kansas State College of Agriculture and Applied Science, p. 17.

the Board of Regents to collect a fee of fifty cents per student at each semester for the student benefit fund. It was in this year that it was first announced in the catalogue that there would be a fee for inpatient and outpatient care.

From a portion of the fees collected, a nurse was hired in 1912 to attend the students and the balance of the money was used to pay an outside physician when one was necessary.

The first physician actually appointed for the college was Dr. R. T. Nicholas, who came to Kansas State in 1913. His office was located on the second floor of Anderson Hall, the main administration building. A year later an assistant doctor was appointed. She was Dr. Marie Green, the first woman physician to come to the campus. She served in this capacity until 1917.

Dr. C. M. Siever was appointed college physician in 1916, a position which he held for nineteen busy years. Two years after his appointment, a flu epidemic swept the campus. There were no facilities to care for all of the patients, and Dr. Siever was forced to use the president's house as an emergency hospital.

Miss Grace UMBERGER was appointed assistant nurse in 1919, a position she held until 1940.

By 1920 it was evident that more room was needed for an infirmary. It was decided to officially transform the president's home, which had served for contagious diseases in 1918, into the college hospital. This had originally been a farm home until the expanding college surrounded it.

Student health fees were raised to three dollars for each semester in 1922. This made it possible to appoint an assistant physician, Dr. Belle Little.

It was not until 1936 that the health facilities were expanded to include the service of three full time doctors. During this period Dr. Husband, head of the Student Health Service, was successful in initiating the complete physical examination as a requirement for all students upon enrolling in the college.

Dr. Husband, in the interest of the health of students and for interested persons, inaugurated in 1938 a two-hour course on Preventive Medicine.

With the rising costs of operation by 1938, it was necessary to increase the student health fee to five dollars. This fee has had a gradual increase to the present time. The fee for fall of 1952 will be ten dollars.

The actual housing of the Student Health Service was not enlarged until 1946. At this time the college obtained former army barracks from Coffeyville, Kansas. The barracks were connected to the old infirmary and were in use by October 1947. The Student Health Service is still housed in these barracks which includes an outpatient department and a thirty-eight bed hospital. Ten of the beds are for women and twenty-eight are for men. The old infirmary, the former president's house, still houses twenty beds, thus making the total available at fifty-eight.

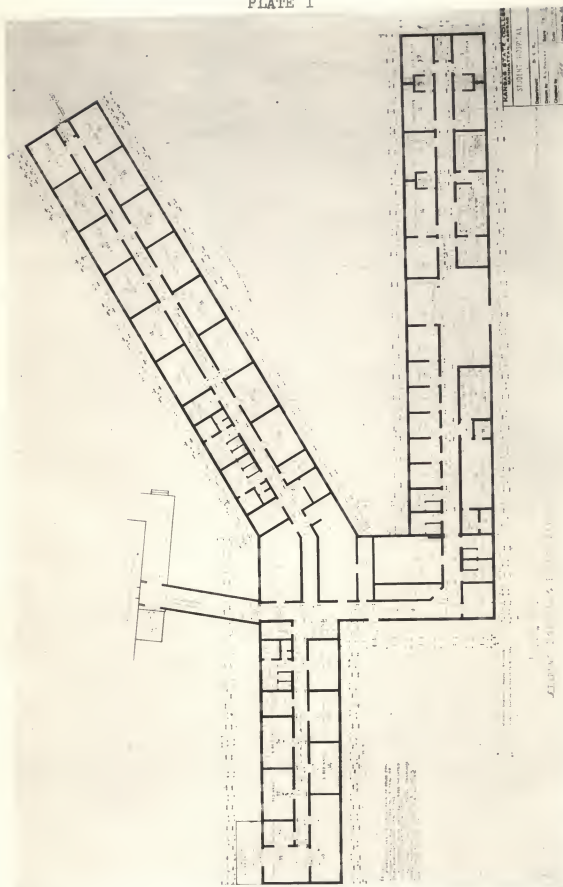
Dr. R. R. Snook became college physician in 1947; then, a year later in October 1948, Dr. B. W. Lafene succeeded Dr. Snook as the college physician. Dr. Lafene has continued to serve the college in this capacity.

The Student Health Service does not provide for major surgery. If major surgery is necessary, the student selects his own surgeon and must pay all of his own expenses for trans-

portation to a Manhattan hospital, the cost of the operation, and the fee of the local hospital. The student hospital offers two free days of hospitalization a semester for each student. If the period of hospitalization is longer, three dollars per day will be the cost, plus any extra charge for expensive medicine and/or laboratory procedures. If the length of hospitalization exceeds twenty-one days, the charge will be made at the current Blue Cross rates.

Throughout this history of eighty-nine years, it can be seen that there has been no permanent housing designed and built for the health facilities. This has hindered the staff in performing their services and in obtaining adequate equipment.

PLATE I



STATEMENT OF THE PROBLEM

Since the present hospital is a temporary structure, the maintenance or up-keep of the building is costly. The structure is frame with asbestos siding and asphalt roofing; the interior is sheet rock instead of plaster. Higher standards of construction should be met to satisfy the requirements of the Public Health Service, under Public Law No. 725 79th Congress. The fire codes are of particular concern. There should be a one-hour fire rating for the general structure of a one storey building. Inflammable storage rooms and boiler rooms must have a three-hour rating. Buildings of more than one storey in height should be constructed of incombustible materials such as reinforced concrete or protected, structural steel for the framework. The fire-rating for a more than one storey structure is three hours.

The present building is flimsy in structure. Therefore, it causes undue noises and vibrations that hinder some examinations which require silence. The lung and heart examinations are of particular concern in this problem.

The present location is very limited in area for expansion, parking of cars, and open yards. The confusion arising from the close, surrounding buildings is disturbing to the bed patients. The power plant and the industrial shops create most of this confusion.

Since the building is not air conditioned, the windows are generally open to olfactory unpleasantness from the chemistry

and veterinary buildings. The open windows do not afford proper ventilation, now do they give protection against the dusty atmosphere.

The location and the design of the proposed hospital is very important in order to correct the major problems of the present hospital.

EXPLANATION OF PLATE II

Proposed Plot Plan

EXPLANATION OF PLATE III

Proposed Main Floor Plan

Room Schedule:

1. Main Waiting Room
2. Information Desk
3. Treatment Room
4. Doctor's Examination Room
5. General Office
6. Record Room
7. Business Manager's Office
8. Conference Room.
9. Pharmacy
10. Physical Therapy
11. Treatment Booth
12. Examination and Treatment Booth
13. Hydrotherapy Booth
14. Exercise Area
15. Eye Tunnel
16. Laboratory
17. X-ray Room
18. Control Booth
19. Film Filing
20. Dark Room
21. Dressing Room
22. Central Sterilizing and Supply
23. Operating Room
24. Utility Room
25. Nurses' Station
26. Work Room
27. Nurse's Office
28. Pantry
29. Bath
30. Stretcher and Chair Space
31. Patient's Bedroom
32. Isolation Room
33. Clean Linen
34. Soiled Linen
35. Kitchen
36. Staff Dining Room
37. Personnel's Dining Room
38. Day Storage
39. Garbage Refrigeration
40. Dietitian's Office
41. Office
42. General Storage
43. Storage
44. Air-Conditioning Equip. and Storage
45. Doctors' Lounge and Locker Room
46. Nurses' Lounge and Locker Room
47. Personnel's Lounge and Locker Room
48. Lounging and Waiting Area
49. Janitor
50. Toilet

SCALE



SECOND FLOOR PLAN

EXPLANATION OF PLATE IV

Proposed Elevations of the Hospital

PLATE IV



NORTHEAST ELEVATION



SOUTHEAST ELEVATION



SOUTHWEST ELEVATION



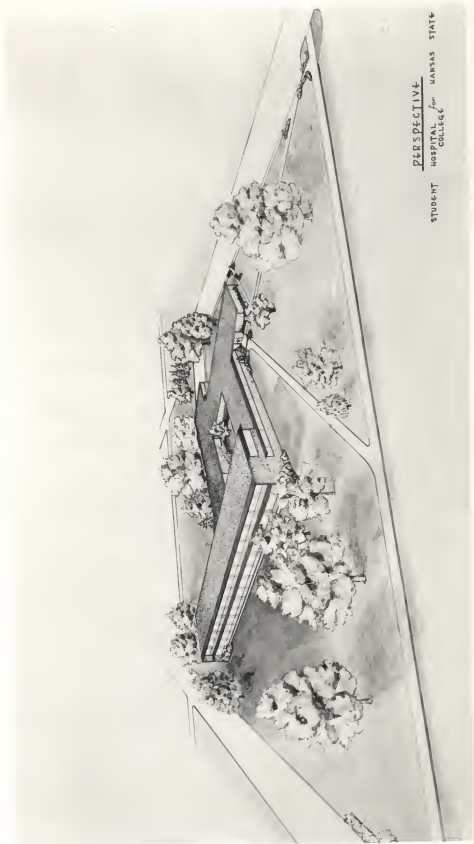
NORTHWEST ELEVATION

SCALE
1" = 10'

EXPLANATION OF PLATE V

Perspective of Proposed Building

PLATE V



PERSPECTIVE
STUDENT HOSPITAL *for* KANSAS STATE
COLLEGE

SCHEME FOR PROPOSED STUDENT HOSPITAL

The location of the proposed student hospital is north of the Field House between Seventeenth and Denison Streets. At present the lot is used by the Athletic Department as a practice field. The site is shown on Plate II.

The proposed site of the new hospital is in the center of the population and activity of the Kansas State campus. The sororities and fraternities are to the south and west of the proposed site. The men's dormitories are being planned for location to the north and west. The women's dormitories are to the east and north of the location. The major class activity is east, extending north and south of the hospital. Visits to the hospital are made during hours between classes and any leisure time remaining would usually be spent at the nearby student union. The Athletic Department, which has frequent need for emergency treatment, would also be close to the hospital.

The orientation of hospitals is becoming more important in the design and the location. With the building on higher ground, the overnight, summer breeze cools the structure and surrounding objects. The patient is the basic concern in such design. The cooler, morning sunlight and views from the bedrooms govern the exact location of the building on the site. The prevailing breezes of winter and summer help in the determination of the building design and of the heating and cooling systems. This involves the size and location of the windows and determines the protective-wall areas. Direct sunlight of the summer should be controlled by overhangs on the windows.

The bed-patients' wing faces 30° south by southeast. This provides the cooler, morning sunlight, then cuts off most of the hot, afternoon sunlight. The few bedrooms on the northwest side have direct afternoon sunlight in spring and summer.

The main entrance of the hospital is on the east side. It is mainly used by the outpatients. The parking for the outpatients and the visitors is on Seventeenth Street and in a lot, north of the hospital. The service and emergency drive is combined on the west side of the building, as indicated on Plate II. There is also a parking area for the staff and personnel on the west side. This parking area may be used by night visitors who will use the emergency entrance.

The landscaping of the site and building is on Plate XVII.

The general arrangement of the proposed hospital is formulated on the functions of the outpatient and inpatient departments. The outpatient department is basically on the northeast side of the building and the inpatient department is on the southwest side. The inner facilities or departments are located to give immediate service to the patient. Although the outpatient and inpatient departments are not directly related, the facilities are inter-related for the convenience of the staff and personnel. This general arrangement is illustrated on Plate III.

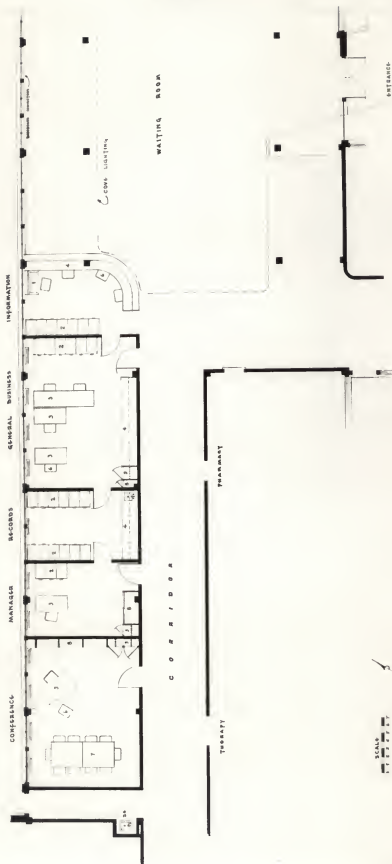
EXPLANATION OF PLATE VI

Administration Department

List of Equipment:

1. Switchboard
2. Files
3. Desk
4. Counter
5. Coat Closet
6. Chair
7. Table
8. Shelves

PLATE VI



ADMINISTRATION DEPARTMENT

SCALE
1" = 10' 0"

ADMINISTRATION DEPARTMENT

The information desk is near the entrance of the Student Health Service. The main control of the entire hospital is from this desk. It has complete control of the waiting room and entrance as well as the intercommunication system. The telephone switchboard, doctors' registry and nurses' "call" are located at the information desk. The active files of the students are placed within the information area for convenience to the nurses for checking and directing the patients.

The general business office is adjacent to the information desk. The area is large enough to handle three or four desks for secretaries or other personnel. The record room is between the general business office and the business manager's office. In this room a small work-area is supplied for mimeographing and file sorting.

The head doctor or administrator's office is in a small conference room. There is shelving in this room for a small library for the use of the doctors and the remaining staff.

The administration area is finished with plaster walls and acoustical-tile ceiling. The colors are light but warm in hues for northern exposure. The main, waiting area is in an informal seating arrangement with indirect cove lights, and some recessed lights and a few table or floor lamps in chosen spots.

The location of this department is shown on Plate III, and is enlarged on Plate VI.

EXPLANATION OF PLATE VII

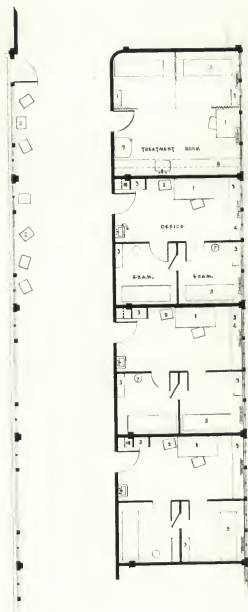
Doctors' Examination Rooms

Treatment Room

List of Equipment::

1. Desk
2. Chair
3. Shelving
4. Files
5. Examination Table
6. Lavatory
7. Stool
8. Counter
9. Refrigerator
10. Closet

PLATE VII



TREATMENT ROOM & DOCTORS' ROOMS

SCALE



EXAMINATION ROOMS

Upon entrance to the outpatient department the examination rooms are of immediate access as indicated on Plate III. The arrangement is illustrated on Plate VII. The nurse at the information desk may assign the patient to a particular doctor. If the patient prefers, he may wait across from the doctor's room in the wide corridor. All patients are called through the intercommunication system from the waiting areas as well as the court.

The treatment room is used for immunizing, shots, dressing of bandages and examinations by nurses. The room contains two booths for faster service. Counters and shelves are furnished for preparation and storage. A six cubic-foot refrigerator is used for medicines. The two treatment tables are enclosed by suspended, plastic curtains.

There are six examination rooms, one for each doctor. Each room is divided into three small rooms or booths of which two are used for examinations. The dividing partitions are of two-inch metal lath and plaster. The examination tables have storage space below with added shelving in each room for supplies. The booths have a ceramic wall-tile wainscot at door height.

The six doctors may consist of three or four diagnostic specialists, one orthopedic specialist, and one psychologist. Each doctor has his own desk for conference and history taking. A small area is supplied for personal library and files. There is one lavatory in each doctor's examination room. The walls are of plaster and the ceiling of acoustical tile. The floors

are vinyl-plastic tile. The colors are of cool shades to give the rooms the appearance of greater size. The windows are high which gives privacy.

EXPLANATION OF PLATE VIII

Physical Therapy Department

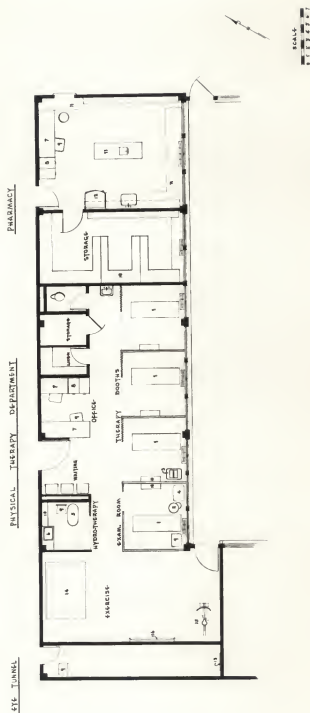
Pharmacy

Eye Tunnel

List of Equipment:

1. Treatment Table
2. Infrared Lamp
3. Ultraviolet Lamp
4. Diathermy Machine
5. Leg Bath
6. Paraffin Bath
7. Desk
8. Files
9. Chair
10. Shelves
11. Counter
12. Refrigerator
13. Eye Chart
14. Floor Mat
15. Stationary Bicycle
16. Wall Bar

PLATE VIII



PHYSICAL THERAPY

Physical therapy includes the employment of therapeutic exercise and massage and the utilization of the effective properties of light, heat, cold, water and electricity in the treatment of disease and injury. This treatment is ordered by a physician and carried out under his direction by a physical therapist. Physical therapy is a relative newcomer to the medical profession; but, correctly prescribed and administered, it benefits many conditions commonly seen in general practice and hastens the patient's recovery and return to work.

Since 1934 physical therapy measures have been employed at the Kansas State College Student Health Service. At the present time the physical therapy department is easily handled by one physical therapist, and it is not anticipated that the increased enrollment in the future will necessitate adding another physical therapist to the staff. Records of the past seven years show that an average of 1.34 visits per student are made to physical therapy by the 84 percent of the total school enrollment who use the Student Health Service. Of these visits 73.3 percent are made by men and 26.7 percent are made by women.

The physical therapy department consists of a small waiting area, an office, four booths for treatment (including one for examination), linen storage, minor equipment storage, a hydrotherapy booth, and an exercise area. The arrangement is shown on Plate VIII. Each of the four booths contain shelves for medical and linen supplies. Located in three of the booths are infrared

lamps and the other booth contains an ultraviolet lamp. A diathermy machine is also included in one of the booths with an infrared lamp. Each booth will contain a treatment table which will have some storage space underneath. Each booth will have space for two chairs, one to be used for the patient's dressing. The hydrotherapy booth will be small, containing only a leg bath and paraffin bath. It has sufficient shelving for linen, medical supplies and small equipment. A drain will be necessary in the floor of the hydrotherapy booth. The exercise area will be somewhat larger in order to accommodate such equipment as a floor mat, stationary bicycle, wall bar, a system of weights, and a small treatment table. From this room there is an entrance into the court, which can be used for general exercise. The department also has a toilet for patient or therapist use and a lavatory on the outer wall for general use.

The materials of the department should be such as to facilitate easy cleaning and care. The floors may be either a high quality of inlaid linoleum or vinyl-plastic tile. The walls are plaster with a wainscot of ceramic wall-tile. The partitions of the booths are of two-inch metal lath and plaster with ceramic wall-tile, extending seven feet from the floor. The ceiling is of acoustical tile. The colors in this department should be of cool tones, perhaps to the greens or blues. Plastic curtains may be used for the booths which would assist in their servicing by the therapist. The department should be completely air conditioned, but so designed as to avoid drafts of any kind. The windows are entirely of obscure glass.

PHARMACY

The pharmacy is one of the most often used departments of the Student Health Service. There are 6.19 visits per year by each of the 84 percent who use the Health Service. It is very near the entrance to the waiting room and information desk for easy access as shown on Plate III. All service from the pharmacy is handled through a window with a counter.

The room itself will contain a desk for the pharmacist and filing cabinets for his use. There are two heights of counters for use in different positions and for different purposes. One counter, connected with the service window, is forty inches high for the standing position. The second is thirty-six inches for general service and clean-up area. The two sinks and the plumbing are acid resistant. One of the sinks is a small cup-sink for mixing and the other is for general clean-up use. The counters are all acid resistant, preferably of soapstone. There is one refrigerator of nine cubic-foot capacity. There are shelves stretching around the room, with added storage in an adjacent room for stock. The room arrangement is shown on Plate VIII.

The finish material is of particular concern. The floor is of vinyl-plastic tile or of quarry tile. The walls are plaster with ceramic wall-tile, splash-back apron between counters and upper cabinets. The ceiling is of acoustical tile. All of the millwork is of a high quality finish of three-coat enamel to withstand hard wear.

EYE TUNNEL

Adjacent to the physical therapy department in an eye tunnel which is used for examinations. The greatest need for this eye tunnel occurs during entrance physical examinations. If one eye tunnel is not enough at this time, additional room may be obtained in the nearby exercise area of the physical therapy department as shown on Plate VIII. The eye tunnel is sufficiently long for charts to be read at twenty feet. The walls and floor are of a dark and dull finish to reduce any reflected light or glare.

EXPLANATION OF PLATE IX

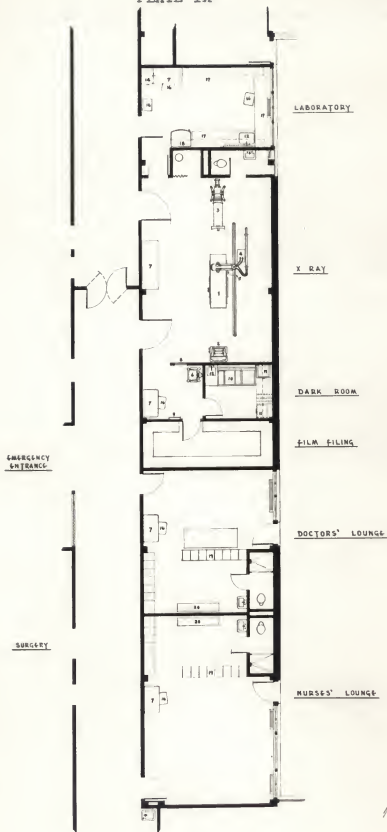
Radiology Department and Laboratory

Doctors' and Nurses' Lounges

List of Equipment:

1. X-ray Table
2. Cassette Changer
3. Microfilming Machine
4. Transformer
5. Tube Stand and Rails
6. Control Panel
7. Desk
8. View Window
9. Film Viewer
10. Developing Tank
11. Film Drier
12. Sink
13. Table
14. Files
15. Film Storage
16. Chair
17. Counter
18. Refrigerator
19. Lockers
20. Bench
21. Couch

PLATE IX



SCALE
1" = 10'

X-RAY DEPARTMENT

The X-ray or radiology department is used for diagnostic purposes only. This includes radiographing, fluoroscoping and microfilming. Radiography is X-ray photography in true size. Fluoroscopy makes use of continuous X-rays striking a fluoroscopic screen so that the picture is in motion. Microfilming is used in taking X-ray photographs on a reduced size film. This is mainly used for entrance examinations for continuous-filming process. During the year there are only an average of 0.27 visits per year made by each student of the 84 percent of students who use the Student Health Service. Of those using the X-ray department, 76.8 percent of the visits are made by men. The Athletic Department furnishes the greater number of these men.

The radiology department includes: control booth, dark room, film storage room, dressing room and toilet. The arrangement is shown on Plate IX. A desk is in the control booth for use as the technician's own office area. The film-storage room is adjacent to this area. This involves the active and inactive files of films. The dark room is also adjacent to the control booth. It contains the three tanks used in developing the film, a drying area which includes the film storage cabinet and also film pockets for the different sizes of film. The drying procedure is done by an electric unit which is mounted on the counter top. No exterior exhaust is needed for the drier.

In the main room the one X-ray tube, which is mounted on a fourteen-foot track, cares for the four units for diagnostic purposes. It is on center line with the X-ray table, the Cassette

changer, the filming unit and the fluoroscopic screen, which is also attached to the tube stand.

The room is fully protected with a lead shield which is 1.5 millimeters thick. This may be applied to the haydite-block partitions before it is plastered. There are two doors to the main room which facilitates the traffic for entrance, physical examinations. There is one door which opens into the laboratory so that one technician, if necessary, may take care of both departments. The radiology department is located to give immediate service to surgery or emergency. Therefore, it is readily available for night use when the outpatient department is closed.

The rooms are simply furnished with vinyl-plastic tile floor, plaster walls, acoustical-tile ceiling and a ceramic wall-tile wainscot in both the dark room and toilet. The colors of the rooms are of cool shades with a high percentage of light reflection.

LABORATORY

Laboratory visits average 1.8 times per student enrolled. Of these, 68 percent are male students. The hematology bar is twenty-eight inches high. Attached to the bar is a pivoted table which holds the microscope at 20 inches from the floor. The remaining counters in the room are 36 inches high. The counter tops are acid resistant and the sink is also acid resistant for general cleaning purposes. There is a six cubic-foot refrigerator for specimens and medicines. The flooring is of quarry tile. The wainscot is of ceramic wall-tile, seven feet high. The ceiling is acoustical tile.

DOCTORS' AND NURSES' LOUNGES

The doctors' locker and lounge room is near the emergency entrance. It includes a complete bath and space for lockers and dressing which is separated by lockers from the lounging area. The room may contain casual chairs and a desk if desired. The nurses' locker and lounge room is adjacent and similar in arrangement as shown on Plate IX.

EXPLANATION OF PLATE X

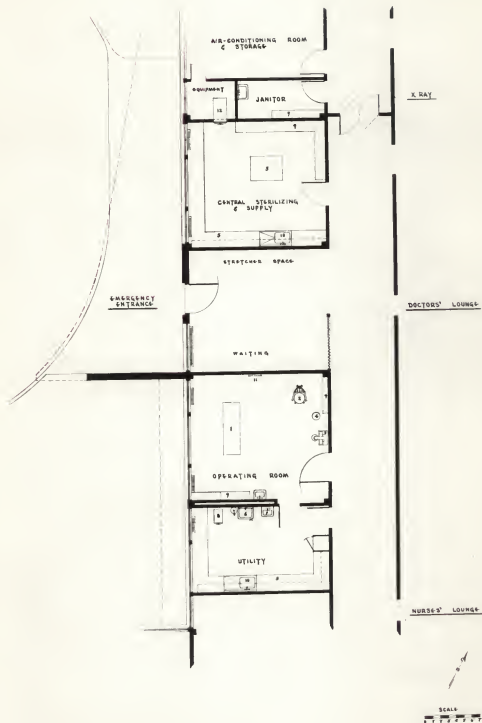
Surgical Department

Central Sterilizing and Supply

List of Equipment:

1. Operating Table
2. Treatment Chair
3. Portable X-ray Machine
4. Stool
5. Counter
6. Scrub-up Sink
7. Lavatory
8. Instrument Sterilizer
9. Shelves
10. Sink
11. Film Viewer
12. Autoclave

PLATE X



SURGICAL DEPARTMENT

The emergency entrance is off a circular drive which includes minor parking for doctors and night visitors. There is a small waiting area within the entrance as well as stretcher space by the door.

The operating room is adjacent to a utility room that includes scrub-up, clean-up, and minor storage as shown on Plate X. The operating room contains an operating table, shelving for supplies, a lavatory and space for a portable X-ray machine. The floors should be of conductive plastic or linoleum. There is a wall-tile wainscot in the operating room and utility room. Acoustical-tile ceiling is in the utility room and Keene's-plaster ceiling in the operating room.

There is a separate air-conditioning unit for the surgical department. This should be operated under average conditions of 80° F. temperature and 60 percent relative humidity. This unit will be housed in the air-conditioning room which is nearby.

The doctors' locker and lounge room is directly across the hall for convenience to emergency. The nurses' locker and lounge room is adjacent to it and also near the nurses' station.

The central sterilizing and supply room is in close connection with surgery. It has one autoclave for sterilizing of linens and other supplies. There is a sink in the general work area. Surgical and treatment bundles are prepared and distributed for use when needed. The floor is of plastic tile or quarry tile. The wall is ceramic wall-tile. The ceiling is metal, acoustical tile.

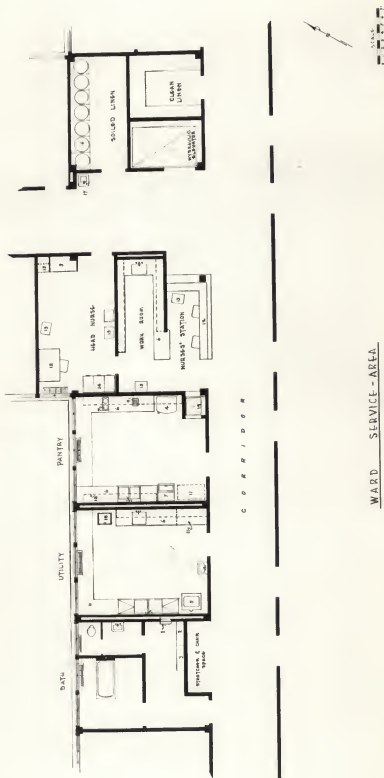
EXPLANATION OF PLATE XI

Ward Service Area

List of Equipment:

- | | |
|-----------------------|--------------------|
| 1. Bedpan sterilizer | 11. Truck space |
| 2. Bedpan drying rack | 12. Desk |
| 3. Shelves | 13. Chair |
| 4. Refrigerator | 14. Files |
| 5. Clinic sink | 15. Coat closet |
| 6. Counter | 16. Clothes hamper |
| 7. Ice-making machine | 17. Water cooler |
| 8. Hot-plate | 18. Sterilizer |
| 9. Toaster | 19. Dumb-waiter |
| 10. Cabinet | |

PLATE XI



WARD SERVICE-AREA

The nurses' station is centralized to have complete control of the bedroom floor as shown on Plate XI. Since the outpatient department is closed off during the evening and night, the nurses' station controls the entire hospital for both night duty and visiting. Night visitors use the emergency entrance. The nurses' station handles the nurse's-call system to all of the patients' rooms, which cuts down a lot of the nurse's traffic to and from the room. It also has the registry box in connection with the main information desk in the waiting room of the hospital. The registry gives all information concerning the nurse's and doctor's station of duty in the hospital. The active files of the inpatients are kept at the station for immediate use. A small work room is adjacent for medical preparations.

The head nurse has an office next to the nurses' station who is in control for night duty and in connection with patient entrances. The elevator is across from the nurses' station. There is space next to the nurses' station counter for waiting.

The pantry, which is used for diets and refreshment periods in the hospital, is next to the nurses' station. It handles the entire floor and has a small dumb-waiter to the second floor pantry. The dumb-waiter may also be used from the nurses' station. The pantry contains a refrigerator of six cubic-foot capacity, a small, ice machine, a double sink, a two-unit hotplate and a toaster, along with other small equipment. There is space beside the door for a truck.

The utility room also serves the entire floor. It includes a clinic sink, a double sink with double drain-board, and one smaller sink for general cleaning, and a boiling-type sterilizer. A lavatory will also be in the room for general use.

Each ward for the men and women has a bath unit separate from their own individual bath in the room. It will consist of a water closet and lavatory in one room with a tub in another which may be used as a continuous flow tub. In the outer hall of the bath unit is a bedpan sterilizer with drying rack and adjacent shelves for linen. In the corridor next to this bath unit is space for chairs and stretchers.

Next to the elevator is the soiled linen room which has several, sorting hampers. Also next to the elevator off the corridor is the clean linen room which supplies the ward floor. This ward service-area is duplicated on the second floor.

The materials used for the working areas have to be very serviceable and of high quality. The corridor floor will be plastic tile which is quiet and serviceable. It is used throughout the service ward area. The corridor will have ceramic wall-tile wainscot, seven feet high. The ceiling is acoustical tile with recessed lighting fixtures in the ceiling and in the baseboard of the corridor for night use. The colors should be kept light with hues of green.

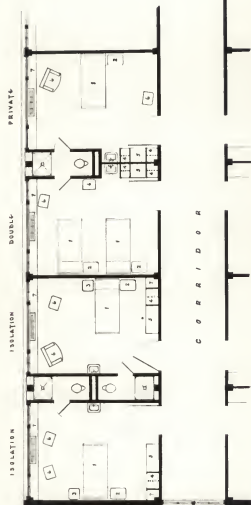
EXPLANATION OF PLATE XII

Typical Patient's Room

List of Equipment:

1. Bed
2. Bed table
3. Utility cabinet
4. Closet
5. Drawers
6. Chair
7. Shelves

PLATE XII



TYPICAL PATIENT ROOMS

SCALE
1" = 10'

PATIENTS' ROOMS

The nursing unit consists of two storeys of bedrooms. All rooms are designed to have two beds for peak loads. Four rooms on each floor are isolation rooms with a private bath to each room. All other bedrooms have a toilet and bath between two bedrooms. Any room may be used as a private room if necessary. The total capacity for peak loads may be 80 beds by doubling each room. Under this load the men can have 48 beds and the women can have 32 beds. During normal loads the total capacity may be 66 beds with two single bed isolation rooms and two private rooms in each section of men or women.

Each room has a lavatory within the room. Each patient has a small closet and drawer space. The shelving below the windows is partly enclosed for books and other articles. Each bed in the double rooms has a curtain that surrounds it. The curtain is plastic and suspends on cords from a recessed track in the ceiling. This gives more privacy. The rooms are simply furnished and decorated. The walls are smooth plaster and the ceilings are acoustical tile. The floors are vinyl-plastic tile throughout the nursing unit. The furniture is of neutral shades of green and tan which is becoming popular among hospital equipment and furnishings. The colors of the rooms vary with room exposure and room occupancy. The northern exposure generally has colors of a warm hue in very light shades, such as neutral shades of orange and yellow. The southern-exposure rooms may have colors toward the cooler shades, such as hues of green and blue.

Of the colors, women usually prefer red, blue, green, purple, yellow and orange in this order. Men usually prefer blue, red, green, purple, orange, and yellow in this order. The warmer colors are for stimulation and convalescence. The cooler colors are for relaxation and chronic illnesses. Blue is considered to be warm and stimulating with the right cast, which includes some yellow in very light shades. Green has a restful quality. Yellow is considered to be the color of cheer. Grey and buff are best with a cast of pink or yellow. Ceiling colors must be kept light for more reflection but may have a light tint for small rooms and northern exposures. If needed, colored lights may be added to give different effects for the patient's changing moods. Simplicity is a must in contrast of furniture, color and arrangement.

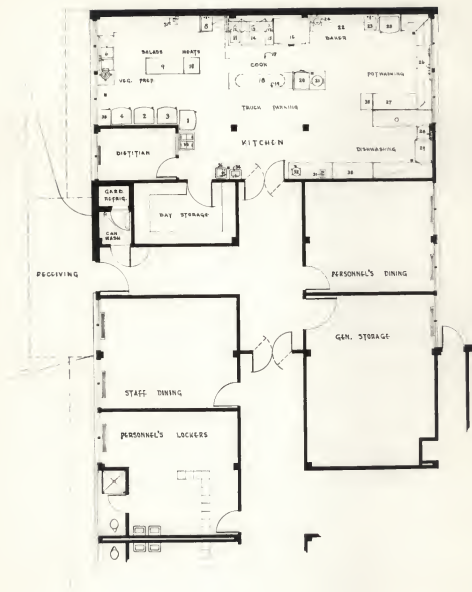
EXPLANATION OF PLATE XIII

Dietary Department

List of Equipment:

1. Salad Refrigerator, 10.3 cu.ft.
2. Dairy Refrigerator, 10.3 cu.ft.
3. Meat Refrigerator, 10.3 cu.ft.
4. Vegetable and Fruit Refrigerator, 10.3 cu.ft.
5. Potato Peeler, 15# Bench Type
6. Double Sink, Stainless Steel
7. Meat Slicer
8. Single Sink w/Drainboard, S.S.
9. Salad Table
10. Meat Block
11. Fry Kettle, 25# cap., 32"h x 20"w x 24 $\frac{1}{2}$ " deep
12. Plain Backsalf
13. Backsalf Broiler, 36" wide
14. Range or Cabinet Base; 3 hot plates,
32"h x 26"w x 28" deep
15. Electric, "Ad-a-foot"-Section Range:
2 Round Units, 12" wide
16. Oven, 2 Deck; 54-3/8"w x 36"d x 70"h
17. Vent Hood
18. Cook's Table
19. Utensil Rack
20. Steamer, 2 Decks; 22"w x 24"d
21. Kettle, 20-30 qt. cap
22. Baker's Table With Storage Below and Above
23. Sink
24. Mixer, 20 qt. cap. Bench Type
25. Refrigerator, 6 cu.ft.
26. Triple Sink With 180° Water Outlet
27. Pot Cabinet
28. Pre-flush Sink
29. Dishwasher
30. Dish Cabinet
31. Toaster
32. Coffee Urn, 5 gal. W/Hot Water
33. Ice Cream Cabinet
34. Lavatory
35. Utility Cabinet For Mops and Cleansing
Materials
36. Water Cooler with Glass Filler and Fountain

PLATE XIII



DIETARY DEPARTMENT

SCALE

DIETARY DEPARTMENT

The function of the dietary department is to plan food and service for the patients and staff, and to provide food as economically and efficiently as possible. The major factors involving food service include the following: number to be served, how, where, when, who and what to be served.

The number of patients of this hospital is very variable. The average load may be 50 beds. The number of staff and personnel to be served is very low, because the noon hours of the outpatient department are closed to provide time for meals. The small town adds convenience and desire of home meals for the staff and personnel. This system may change by greater student population and demand for noon-hour service.

The centralized, bulk-food service is used to perform the best service. The trays are set up in the kitchen without the hot food. The salads are placed on trays from the refrigerator at the last minute before serving. The hot food is then placed in steam trucks. The final, tray set-up may be at the pantry or at the patient's room.

The staff's and the perscnrels' dining rooms are near the kitchen for direct order from a small menu if such is desired. Trays may be handled by tray trucks. The tray trucks will also handle the dirty dishes from the patients and dining rooms to dishwashing.

The basic sequence of service is from receiving to storage, preparation, serving, and consumption. The service entrance is next to the kitchen and the two storage rooms. The main, day

storage is directly off the kitchen. It contains the small food items and part cases not requiring refrigeration. There are vermin-proof storage cans, adjustable shelves and platform scales. Since the number of meals are varied, the storage is small and the food deliveries are frequent. Bulkier storage may be in the general-storage room. The storage of meats, fruits, vegetables, and dairy products are in three separate refrigerators near the entrance and also handy to preparation. There is a separate refrigerator for prepared salads which is close to truck parking and tray set-up. The vegetable preparation is adjacent to storage and refrigeration, and follows in sequence to cooking and salads.

The pastry area is separate from vegetables, but is in close connection to the ovens and potwashing. The baker has a small refrigerator for his own use. The cooking and baking is, therefore, centralized among the preparation areas and in close connection to truck parking. The potwashing and dishwashing completes the circle of service. The storage cabinets for pots and dishes are handy to the cook and tray set-up. The bulk garbage is kept in refrigeration at the service entrance. The dietitian's office has complete control of receiving and serving near the kitchen entrance. The arrangements are shown on Plate XIII.

All of the sinks, the tables and counter tops are stainless steel. The floors are quarry tile throughout the kitchen, storage and garbage refrigeration. The walls are ceramic wall-tile. The ceiling is of metal, acoustical tile. The ceiling is

ivory with the walls of a cool color such as pale green. Floor drains are spotted throughout the kitchen. The steamer and kettle are in a trough for easier drainage.

EXPLANATION OF PLATE XIV

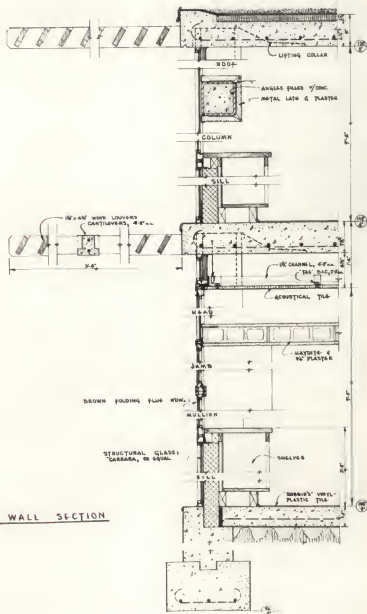
Section "A-A" Through Building
Wall Section

PLATE XIV



SECTION "A-A"

SCALE
1" = 4'-0"



TYPICAL WALL SECTION

SCALE
1" = 4'-0"

STRUCTURAL SYSTEM

The structure of the hospital consists of reinforced concrete and steel. The construction is simplified by the lift-slab method.

This lift-slab method has been proven to be very economical. Form work is cut to a minimum, which saves both time and money. The placement of steel and concrete is easier and quicker at grade level. There have been savings of 30 percent on the roughing-in of electrical work. Heating and plumbing have had more than 10 percent savings. This type of construction provides easy placement of partitions and equipment.

The columns are 8" x 8", made from two 8" angles welded and filled with concrete. The roof and floor slabs are formed on the ground, then lifted into place in sections by hydraulic-screw lifts on each column.

The exterior wall of this hospital is basically stone with added spaces of carrara glass around windows as shown on Plates IV and XIV. The stone is of narrow-coursed ashlar. The overhangs are of concrete and wood louvers. The roofs are flat and built-up with inside downspouts for drainage. A typical, wall section is shown on Plate XIV.

The windows are of aluminum, which are called Browne, made by Universal Corporation of Dallas, Texas, or equal. They are similar to casements.

The interior partitions are four-inch, haydite block with plaster finish. Some partitions between booths are metal lath

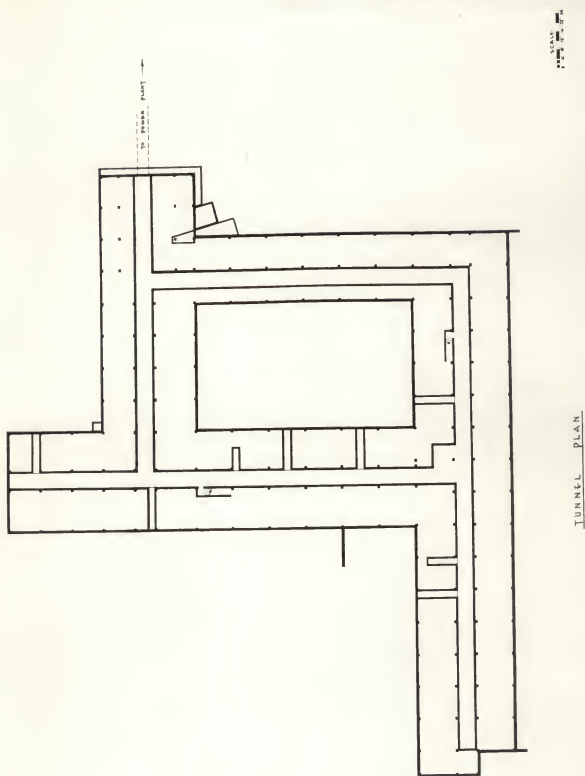
and plaster, two-inches thick. Ceramic wall-tile is added as indicated. The ceilings are suspended to allow space for plumbing and ductwork. The ceiling material is acoustical tile which is installed by the mechanical system for easy access to plumbing.

With all columns heavily covered with plaster and filled with concrete, the fire rating will be at least three hours. The rating may be easily obtained for four hours with metal lath and 1-3/4-inch, perlite plaster.

EXPLANATION OF PLATE XV

Plan of Tunnel for Plumbing

PLATE XV



MECHANICAL INSTALLATIONS

The entire building will be air conditioned for sanitation, economical maintenance, and comfort to patients and personnel.

The main, air-conditioning units are located in three rooms for ease of zoning and controlling.

The main, supply duct is in the ceiling of the corridors. The greater amount of return-air is controlled through the corridors to grilles feeding directly into the air-conditioning rooms. Some air is returned through ducts in the tunnels.

The surgical area is on a separate zone for strict control of temperature and humidity which helps in the conduction of static electricity. This is important when anaesthesia is used. It also aids in comfort for staff and in the protection of patient. The temperature should be from 70° to 80° F. with the relative humidity at 55 to 60 percent. The air is not recirculated, but is exhausted-off at a greater volume to maintain better circulation.

The outpatient department is on a separate zone. This is so arranged because the hours of use are limited. The department includes physical therapy, pharmacy, administration, doctors' examination rooms, laboratory, and the personnel's toilets.

The nursing units have separate air-conditioning zones for each floor. This enables the complete closing-off of the second floor when not in use. The radiology department and lounges are in the nursing-unit zone on the first floor, supplemented

with an exhaust system.

The dietary department is also separately zoned. This gives better control of food odors and of working comfort. An exhaust hood over the ranges aids in the system.

The heating system is hot water to convectors in the rooms. Therefore, any room may be on a thermostat with a pneumatic valve at the unit. The source of the heating system is from the campus power-plant.

All of the major heating and sanitary plumbing is in tunnels under the corridors of the hospital. The pressure pumps for the hot-water system are in the tunnels also. They can be reached from stairways in the two, main-floor, air-conditioning rooms. The tunnels are shown on Plate XV. To aid the winter heating system, the air conditioning can continue to give better circulation as well as cleaner air. A heating coil can substitute for the compressor.

The convector units are under the windows and the air-conditioning grilles are above the doors.

All stoops at the entrances will be heated with embedded hot-water coils. This will prevent the collection of ice and snow.

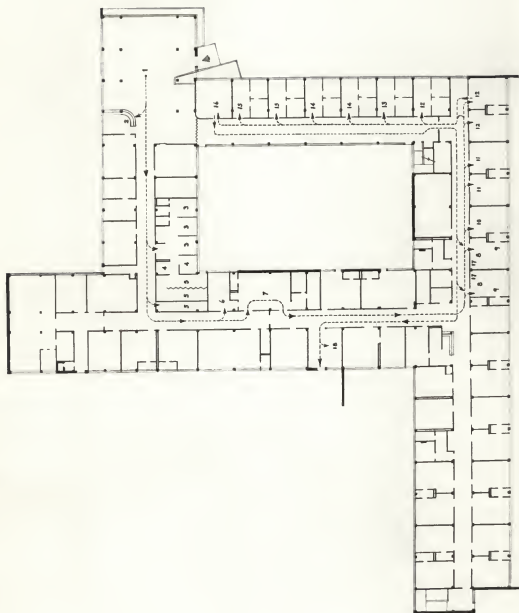
EXPLANATION OF PLATE XVI

Entrance Physical Examinations

Sequence of Examinations:

1. History
2. History Checking
3. Dental
4. Blood Pressure and Temperature
5. Vision and Hearing
6. Vaccination and Skin Test
7. X-ray
8. Change Clothes
9. Urine Specimen
10. Height and Weight
11. Ear, Nose, and Throat
12. Heart and Lungs
13. Hernia and Abdomen
14. Nervous System and Reflexes
15. Speech Defects
16. Skin, Bones, Joints, and Posture
17. Change to Street Clothes
18. Final History Check

PLATE XVI



FLOW CHART f₄₀₀ ENTRANCE PHYSICAL EXAMINATIONS

ENTRANCE, PHYSICAL EXAMINATIONS

The different examinations are lined-up in sequence for time and dress. The line starts in the main, waiting room, as shown on Plate XVI. In this room the history of the student is taken, then checked at the information counter before the student enters the physical-therapy department. Three booths are used for dental examinations and two booths for the blood pressure and temperature readings. There is one tunnel-room for eye tests, but two more can be improvised in the physical therapy department. Vaccinations and skin tests are made in the laboratory. The chest X-ray is microfilmed in the radiology department.

The patient then changes clothes for the final examinations. Two bedrooms are used for the changing of clothes and for the collecting of urine specimens. The reading of weight and height is in one bedroom. Three bedrooms are used for the ear, nose and throat examinations. One bedroom and one doctor's room are used for heart and lung checks. Of the remaining doctors' rooms, one is used for hernia and abdomen check, two for reflexes and nervous system, and two for checking speech defects. The treatment room is used for the checking of the skin, bones, posture and joints.

A portable curtain is across the corridor at the north end near the treatment room. This reverses the traffic for the change to street clothes. The final, history checking is in the small waiting area at the emergency entrance. The patient leaves at this entrance.

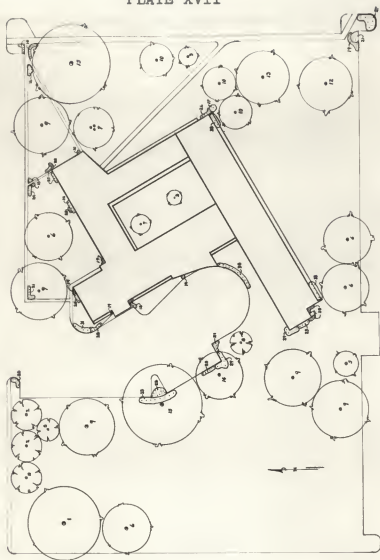
EXPLANATION OF PLATE XVII

Landscaping

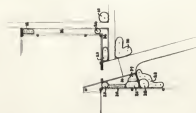
Plant Listing:

1.	American Elm	21.	Japanese Flowering Quince
2.	Austrian Pine	22.	Japanese Kerria
3.	Goldenrain Tree	23.	Mahonia
4.	Hackberry	24.	Mentor Barberry
5.	Honey Locust	25.	Smooth Hydrangea
6.	Pin Oak	26.	Spreading Euonymus
7.	Redbud	27.	Tamarix Juniper
8.	Redcedar	28.	Thunberg Spirea
9.	Red Oak	29.	Vanhoutte Spirea
10.	Russian Olive	30.	Waukegan Creeping Juniper
11.	Scotch Pine	31.	Weeping Forsythia
12.	Silver Maple	32.	Weigela
13.	Sugar Maple	33.	Winter Honeysuckle
14.	White Ash	34.	Common Periwinkle with Bulbs
15.	White Oak	35.	English Ivy
16.	Black Jetbead	36.	Flowers
17.	Common Smoketree	37.	Roses
18.	Freobel Spirea	38.	Common Flowering Quince
19.	Indianeurrent Coralberry	39.	Little-leaf Euonymus
20.	Japanese Barberry		

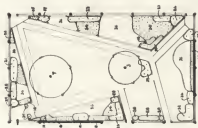
PLATE XVII



SITE LANDSCAPING



COURT LANDSCAPING



LANDSCAPING

The art of landscaping is becoming more and more important to the architect, his client, the general public and to public agencies. The architect can design areas to feature landscaping in and around the building. Landscaping also can emphasize architectural features, such as entrances and approaches.

Trees and shrubs add interest to the site in all seasons. They change color and texture which changes the scenery.

The trees may be so located as to add protection to the building and site. Winter windbreaks help to protect buildings from direct gales of wind. Such trees are predominately evergreens. Well-chosen, deciduous, shade trees give protection from the extremely hot sun for parking areas as well as buildings. These trees should have high trunks to allow breezes to pass and to leave unobstructed views.

The choosing of trees and shrubs involves the color distribution for the seasons, height and spread to fit the building and site, and varieties of shrubs to withstand extreme sun and shade. The varieties should also be well chosen to fit the climate for temperature and moisture.

The grouping of trees and shrubs should be simple in design. The trees have a better appearance in groups of one kind with one or two different kinds inter-mixed. Shrubs should be arranged similarly but in larger groupings. A shrub of an extreme height next to a short group of shrubs has a better appearance than if each shrub of the group is of a different height. Although, there must be some variations of height and size arrangements to create interest.

CONCLUSION

The erection of the proposed hospital for the Student Health Service will give an important and essential addition to the Kansas State College campus. The physical and mental health of young men and women should be of the greatest concern to everyone.

The proposed site of the hospital has been chosen because of its central location with regard to student housing and activities. This makes the hospital convenient for the students to visit. This convenience will encourage visits and help check the spread of illnesses. The pleasant surroundings within the hospital will also entice the patient to have more concern for his own health as well as the health of others.

The arrangement of the building offers the patient quicker and more adequate service. The convenience of the different departments and the intercommunication system saves time and energy for the staff which also gives quicker service.

The simplicity of the floor plan and the construction will be economical to erect. The careful choice of materials will provide economical maintenance and lasting beauty.

ACKNOWLEDGMENTS

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PROPOSED PLAN FOR
THE KANSAS STATE COLLEGE STUDENT HOSPITAL

by

ARLENE TAD TINKLER

B. S., Kansas State College
of Agriculture and Applied Science, 1949

AN ABSTRACT OF A THESIS

submitted in partial fulfillment of the

requirements for the degree of

MASTER OF SCIENCE

Department of Architecture

KANSAS STATE COLLEGE
OF AGRICULTURE AND APPLIED SCIENCE

1952

Kansas State College is a state educational institution located in Manhattan, Kansas. The Student Health Service of the college makes an important contribution to the students.

The student population at this time (1952) is nearly 5,000. Surveys have been made which indicate that the student enrollment may increase to 10,000 by 1960.

The present Student Health Service is in an inadequate, temporary structure. The proposed hospital must, therefore, be designed for the needed facilities and for the modern equipment of the future.

The first record of health facilities being offered by the college was in 1903. The authorized collection of fees for the health service was begun in 1911. Doctors and nurses were hired to care for outpatients only. By 1920 the Student Health Service realized the need for an infirmary or hospital for inpatients. The president's home was then converted into an infirmary. It is presently used as an annex to the main hospital. The expansion of the health facilities did not occur until 1946. Surplus army barracks were used to house the present hospital. There are now thirty-eight beds in the addition and the building includes the outpatient department. The total beds available are fifty-eight, which includes the annex.

Since there has been no permanent housing designed and built, a new hospital should be planned to satisfy the future need and to satisfy the construction standards of the Public Health Service.

The location of the proposed student hospital is north of

the Field House between Seventeenth and Denison Streets. This site is in the center of the population and the activity of the Kansas State campus. The building is orientated to obtain the desired sunlight and the approaches for pedestrian, parking area, emergency area, and the service area.

The main entrance is on the east side of the building. The emergency entrance and service entrance is on the west side.

The administration department is near the main entrance. The department includes: the information desk, general business office, record room, business manager's office, and conference room. The main waiting room is adjacent to the administration department. The seating arrangement is informal.

The examination rooms are also adjacent to the main waiting room for convenience to the outpatients. These rooms include a treatment room and six doctors' rooms. Each doctor's room has two examination booths with his office area.

Physical therapy is greatly used in the outpatient department. The therapy suite is near the waiting room, and it consists of a small waiting area, office area, four treatment booths, hydrotherapy booth, linen storage, minor equipment room, exercise area, and a toilet. The suite has access to the court, which may be used for general exercise.

The pharmacy is near the main entrance and accessible from the doctors' examination rooms. The information desk across the corridor cares for the pharmacy's cash receipts. A room is adjacent for bulk storage.

The eye tunnel is for vision examinations. The tunnel or

dark room is long enough for charts to be read at twenty feet.

The X-ray department is used for diagnostic purposes only. This includes radiography, fluoroscopy, and microfilming. It is greatly used by the outpatient department, but must be readily accessible to the emergency area. The department includes: main X-ray room, control booth, dark room, film filing room, dressing room, and toilet. The main X-ray room must be enclosed with a lead shield.

The laboratory is greatly used by the outpatient department. Bars and counters are designed for the different procedures. The working surfaces are acid resistant. The room is connected to the X-ray department for one technician to care for both departments if it is necessary.

The doctors' and nurses' lounges are near the emergency entrance and the nurses' station. The rooms include: shower, toilet, locker area, and lounge area. The lounges are accessible to the court.

The surgical department is adjacent to the emergency entrance and to the nursing unit. The department includes the operating room and the utility room. Scrub-up and clean-up is within the utility room. A separate air-conditioning unit is used to give better control of temperature and humidity.

The central sterilizing and supply room is in close connection to surgery. It has one autoclave for the sterilizing of linens and other supplies. Surgical and treatment bundles are prepared and distributed for use when needed.

The ward service-area is controlled from the nurses' station.

It includes: nurses' station, work room, head nurse's office, pantry, utility room, bath unit, clean-linen room, and soiled-linen room. The area is centralized in the nursing ward and is duplicated on the second floor. A hydraulic elevator is near the nurses' station. A dumbwaiter in the pantry and nurses' station also connects to the second floor.

The patients' rooms are designed to have two beds for peak capacity of the hospital. The normal capacity is 66 beds which includes private rooms, isolation rooms, and double rooms. Each room shares a toilet and bath except the isolation rooms which have private baths. Each patient has a small closet and drawer space. There is a lounging area on second floor for ambulatory patients and visitors.

The dietary department is in the northwest corner of the building for the convenience of the service area. The centralized, bulk-food service will thus perform the best service to the patients. The staff's and the personnel's dining rooms are near the kitchen. The kitchen has the day storage and dietitian's office adjacent. The general storage is also near the service entrance.

The structure of the hospital consists of reinforced concrete and steel. The lift-slab method is used. Steel columns are square and filled with concrete. The exterior wall is basically stone with added spaces of carrara glass around the windows which are aluminum. The partitions are haydite with plaster and wall tile in specified areas. The ceilings are suspended and are generally of acoustical tile.

The entire building is air conditioned in separate zones. There are three air-conditioning rooms for equipment and storage. Exhaust systems aid in the control of the air.

The heating system is hot water to convectors. This method gives better control for room temperatures. The air conditioning aids in the winter system for better circulation of air. The source of the hot water is from the campus power-plant. All stoops at the entrances have hot water panels to prevent the collection of ice and snow.

Several hospital rooms are converted for the entrance, physical examinations. The different examinations are lined-up in sequence for time and dress. The line starts from the waiting room and circles the court, counterclockwise. At the end of the examinations, the patient exits at the emergency entrance.

The landscaping of the proposed site will add interest and supply weather protection in certain locations. The approach to the main entrance is featured with the aid of colorful and well shaped trees and shrubs. The parking areas have some protection from the sun and the northwest wind. The interior court is landscaped for year-round beauty, and may provide cut flowers for the hospital.