A 500-BED SUBURBAN GENERAL HOSPITAL

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE,

MASTER IN ARCHITECTURE, JULY, 1961

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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July, 1961

Pietro Belluschi, Dean
School of Architecture and Planning
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Cambridge, Massachusetts

Dear Dean Belluschi:

In partial fulfillment of the requirements for the degree of Master in Architecture, I hereby submit my thesis entitled, A 500-Bed Suburban General Hospital.

Respectfully yours,

Sidney W. Stubbs, Jr.

ABSTRACT

A 500-BED SUBURBAN GENERAL HOSPITAL

SIDNEY W. STUBBS, JR.

SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER IN ARCHITECTURE, JULY, 1961.

This Thesis proposes the design of a 500-bed general hospital to fill the medical needs for a rapidly growing satellite city with a population of 100,000 within a normal automobile radius of twenty minutes.

The problem is an hypothetical one derived from the Third Annual Competition sponsored by the Mastic Tile Division of the Ruberoid Company and from recommendations of the Public Health Service of the United States Department of Health, Education and Welfare.

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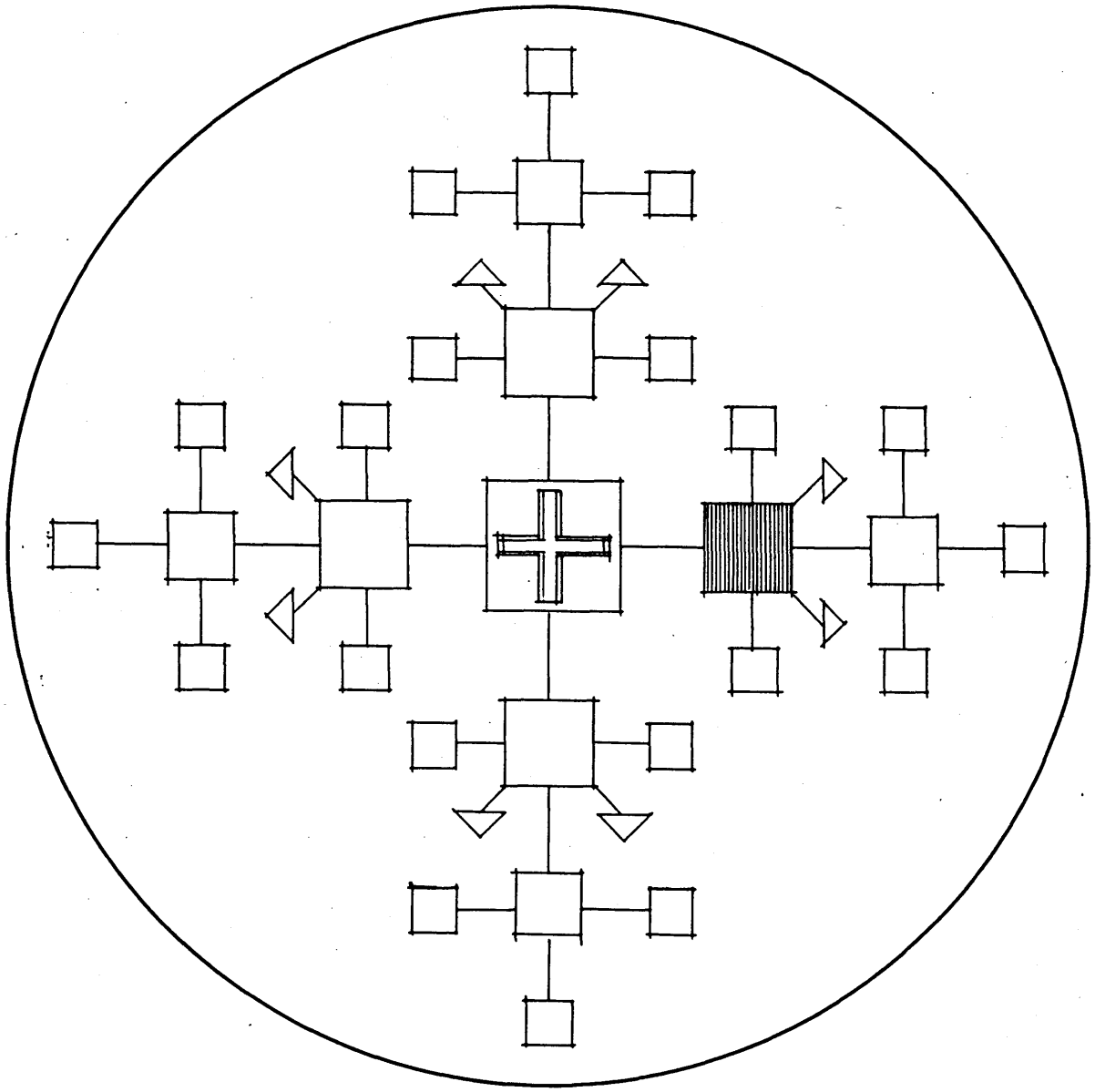
THE COORDINATED HOSPITAL SYSTEM [1.]

"To improve hospital service along its three major fronts - preventive, diagnostic, therapeutic - all states now are developing their 'coordinated hospital system'." Such a plan proposes tying all hospitals into a cooperative hook-up in which there would be a constant exchange of information, training, consultation service and personnel, and in which patients would be referred from one hospital to another.

With the large "base" or "teaching" hospital as the center, next in line would be a large general hospital called here a "district" hospital. Then a smaller one, the "rural" hospital, of minimum size for genuine hospital service. For the isolated community there would be a community clinic with a small nursing unit for obstetrical or emergency cases, not really a hospital at all, but an outpost at the far end of the line."

The hospital proposed in this Thesis would be of the "district" type. Having a beginning as a hospital of "rural" size it would expand to "district" size within a period of 15 years.

BASE HOSPITAL	DISTRICT HOSPITAL	RURAL HOSPITAL and Health Center	COMMUNITY CLINIC
Teaching, Research, Consultation			
CANCER CLINIC	MAJOR SURGERY	INTERNAL MEDICINE	OBSTETRICS
PSYCHIATRIC SERVICE	OBSTETRICS	OBSTETRICS	EMERGENCY MEDICAL AND SURGERY
HEART CLINIC	INTERNAL MEDICINE	EYE,EAR,NOSE, THROAT	LABORATORY x-ray bacteriology
MAJOR SURGERY	COMMUNICABLE DISEASES tuberculosis venereal disease other	DENTISTRY	DENTISTRY
INTERNAL MEDICINE	PEDIATRICS	MINOR AND UNCOMPLICATED SURGERY	PRIVATE OFFICE OR OFFICES FOR PRIVATE PHYSICIANS
OBSTETRICS	PSYCHIATRIC SERVICE	LABORATORY x-ray bacteriology	ADMINISTRATIVE PUBLIC HEALTH OFFICES Health Officer Sanitarian
PEDIATRICS	EYE,EAR, NOSE, THROAT	ADMINISTRATIVE PUBLIC HEALTH OFFICES	Public Health Nurses Public Health Clinics Maternal and Child Health
ORTHOPEDIC SURGERY	DENTISTRY	Health Officer Sanitarian	Tuberculosis
COMMUNICABLE DISEASES Tuberculosis Venereal Disease Other	PHYSIOTHERAPY	Public Health Nurses Public Health Clinics Maternal and Child Health Tuberculosis Venereal Disease	Venereal Disease Public Health Education
TEACHING Nurses Interns Residentsq Post-Graduates	LABORATORY X-ray Pathology Bacteriology Chemical	Public Health Education	
LABORATORY X-ray Pathology Bacteriology Chemical PHYSIOTHERAPY DENTISTRY EYE,EAR,NOSE,THROAT DIETETICS	TEACHING Nurses Interns Dietetics		



U.S.P.H.S. COORDINATED SYSTEM

BASE

DISTRICT

RURAL

COMMUNITY CLINIC

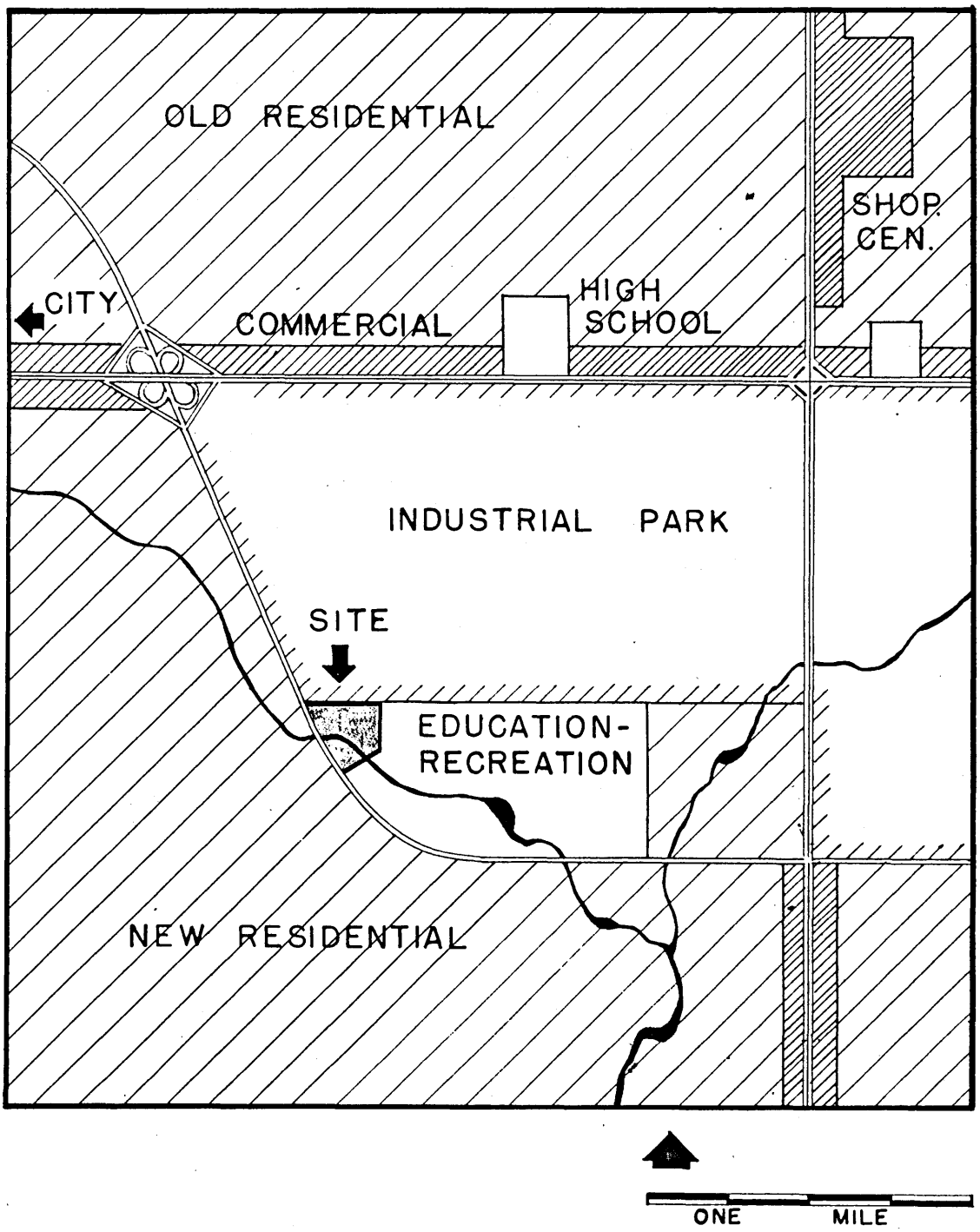
CRONIC DISEASE

THE SITE

The site is located in a rapidly growing satellite city on the fringe of a major metropolis. The site is bounded on the north by a large industrial park; on the east and south-east by a recreation and education area consisting of schools, parks and playgrounds; on the west and southwest by a secondary road with a new and rapidly growing residential area beyond. The site slopes from the north-east corner to a small river running through the lower portion from west to east.

There are older residential areas, schools, churches, and a shopping center in the vicinity. The site is joined by the secondary road to a four-lane highway to the east and to a major six-lane highway to the north leading to the metropolitan area.

Private automobiles would make up the majority of the traffic into the site with some local bus service.


OLD RESIDENTIAL
SHOP. CEN.
CITY
COMMERCIAL
HIGH SCHOOL
INDUSTRIAL PARK
SITE
EDUCATION-RECREATION
NEW RESIDENTIAL
ONE
MILE

CIRCULATION

"Separate all departments, yet keep them all close together; separate types of traffic, yet save steps for everybody; that's all there is to hospital planning." [2.]

Good circulation is basically the proper integration of the different departments so that the different types of traffic through the building will be separated as much as possible, traffic routes will be short, and important functions will be protected against intrusion.

The primary principle of circulation planning is protection of the patient. Too much or the wrong kind of traffic will disturb or contaminate the patient in the nursing unit, destroy the aseptic technique of the surgical suite, and reduce the efficiency of the hospital personnel. Short traffic routes assist in assurance of asepsis and also save time and steps for the doctors, nurses and other personnel thus helping to prevent fatigue. Separation of dissimilar activities is also important. Quiet and noisy activities, "clean" and "dirty" cases, different types of patients, etc. should be separated. Even with good disposition of functions and good separation of traffic, positive control points are required for proper circulation.

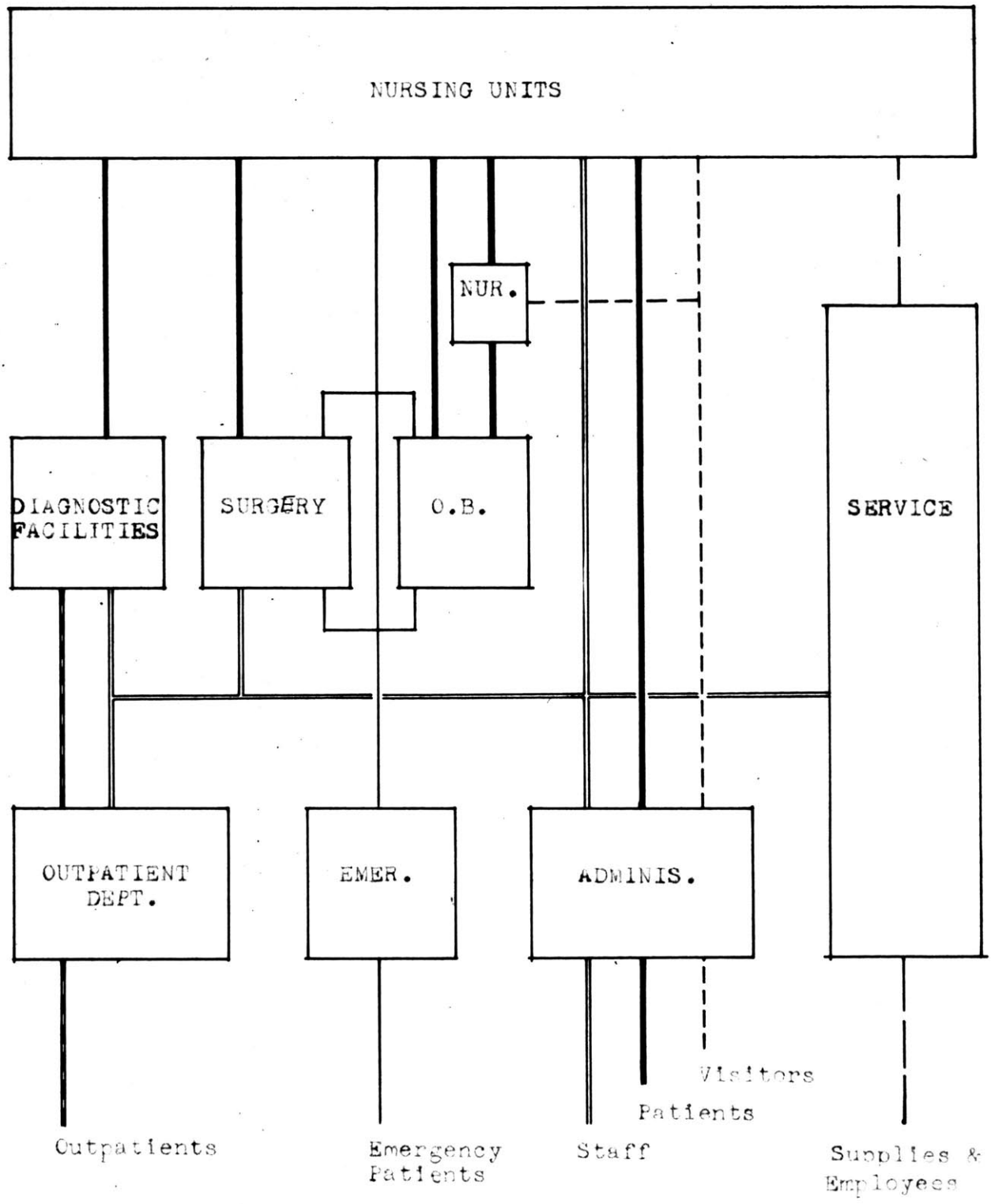
Good circulation begins outside of the building. There are four major traffic lines; in-patients and visitors, out-patients, emergency patients, and service and non-professional employees. To these could be added an entrance for doctors so that they could enter directly from the doctors' parking area and not be stopped by visitors and relatives.

The emergency entrance would be used for real emergency cases requiring immediate attention in the emergency suite. The emergency case might also be a drunk, a criminal, a psychiatric case or a medically "dirty" patient.

The service and employee entrance should actually be two entrances. They can be located in the same area but should be separated.

Parking should be grouped in so far as possible for the entrances served to help separate the types of traffic. Doctors should be provided with a private readily accessible parking area.

Figure 1. shows the main streams of traffic within the hospital. These will be discussed in more detail later.

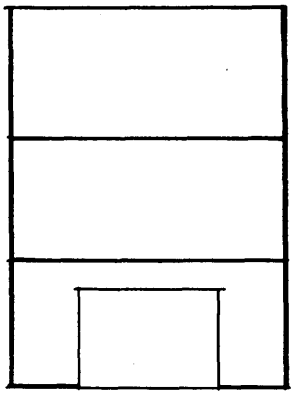


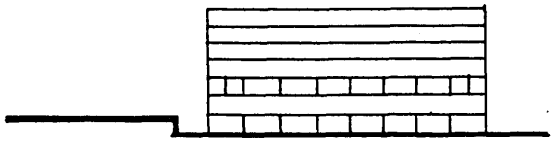
CIRCULATION [3] FIG. 1

EXPANSION

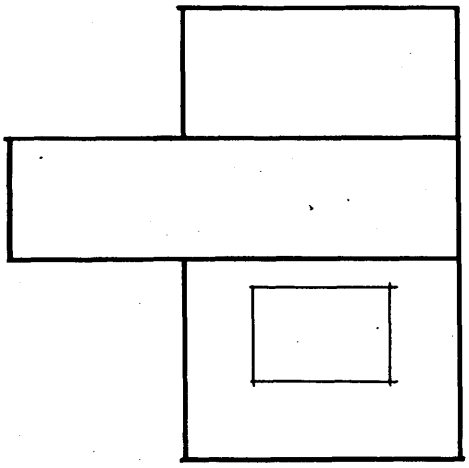
It is always difficult to judge the exact pattern of expansion for a hospital. The different departments of the hospital expand at varying rates. In any case the hospital must function properly at all times and the expansion should be orderly and controlled.

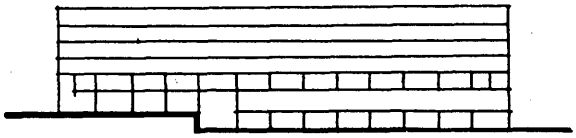
Figure 2. illustrates a suggested system for the orderly growth of the hospital based upon the requirements of the program.



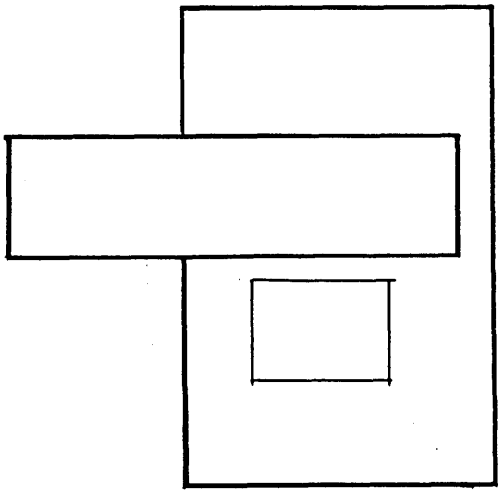


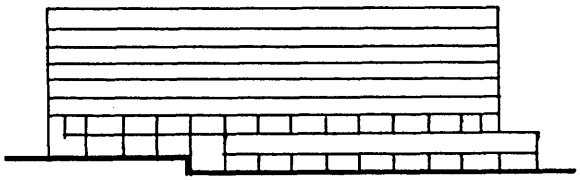
STAGE 1





STAGE 2





STAGE 3

FIG. 2

FUNCTIONAL RELATIONSHIPS AND DESIGN CONSIDERATIONS

1. The Medical and Surgical Nursing Unit.

When thinking of the nursing unit questions immediately arise as to just what is the best for the patient, the best for the staff, and the least expensive, etc. To go from one extreme to another the least expensive solution would be one large room containing 500 beds, and the best would be 500 single-bedded rooms with private baths. It is obvious that the first would not work socially or medically, and the second would be too expensive for a general hospital. The solution lies somewhere between the extremes.

The large open ward containing 20 to 30 patients (see Figure 3.) is still used in Europe and in some military hospitals in the United States. The plan used most often is the Rigs Ward adopted at the Rigs Hospital in Copenhagen in 1910. In this type of ward 20 to 30 patients are placed in an open room divided by partitions placed perpendicular to the exterior walls forming cubicles in which the beds are placed perpendicular to the partitions usually in groups of four for each cubicle. This plan works very well in so far as nursing care is concerned. The patients can be well supervised and are readily accessible. However, it is very inflexible in the separation of patients and it is difficult to maintain good aseptic techniques.

There have been several hospitals built with all single rooms, one of the first being the King Daughters' Hospital at Temple, Texas in 1908. The single-bedded room with private toilet or private bath offers some advantages. The staff has

maximum flexibility in assigning patients and the patients have freedom in receiving visitors, lighting, and watching television. It is very doubtful however, that this maximum flexibility would even be required in a large hospital and planning for single occupancy results in greater area per patient, longer traffic routes, and problems of supervision and control. For non-ambulatory patients it does not provide the often necessary benefits obtained from the companionship of a roommate. In addition most patients could not afford the high rate necessary to substain a private room.

A ward containing rooms of varying capacities would seem to best suit both the patient and the staff. The United States Public Health Service (U.S.P.H.S.) recommends a 1/3, 1/3, 1/3, ratio between one-bed, two-bed and four-bed rooms. To accept this literally would be a mistake. This might or might not be the proper ratio for a particular hospital. If the hospital is small the ratio of single-bedded rooms would be larger to allow the needed flexibility in segregation and isolation of certain cases. In a larger hospital, containing a maximum care unit, a contagious unit, and a psychiatric unit, the ratio would naturally be much smaller. A ratio of 20% one-bed rooms, 60% two-bed rooms and 20% larger rooms would be more realistic for a 500-bed hospital of the type under consideration in this Thesis.

Conventionally, the nursing floor has been laid out along a single corridor with the majority of the bedrooms and the ancillary functions on the other (see Figure 4.). Most of the rooms have good orientation and the plan works well for small hospitals, but because of the limitation on the number of rooms imposed by the internal distances, large hospitals often have problems in trying

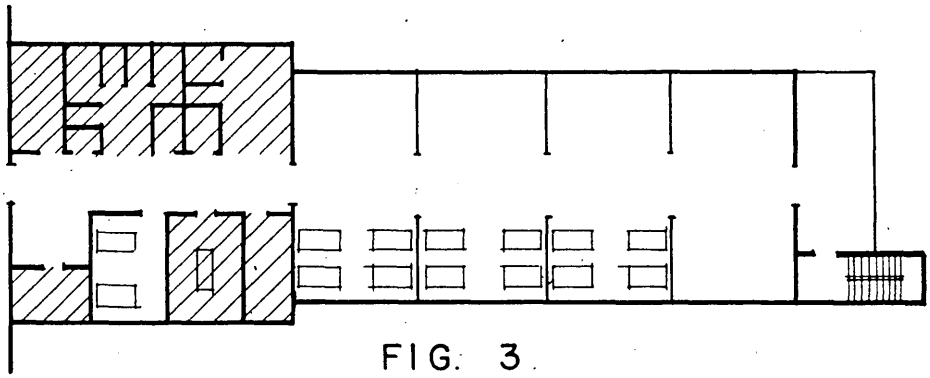


FIG. 3

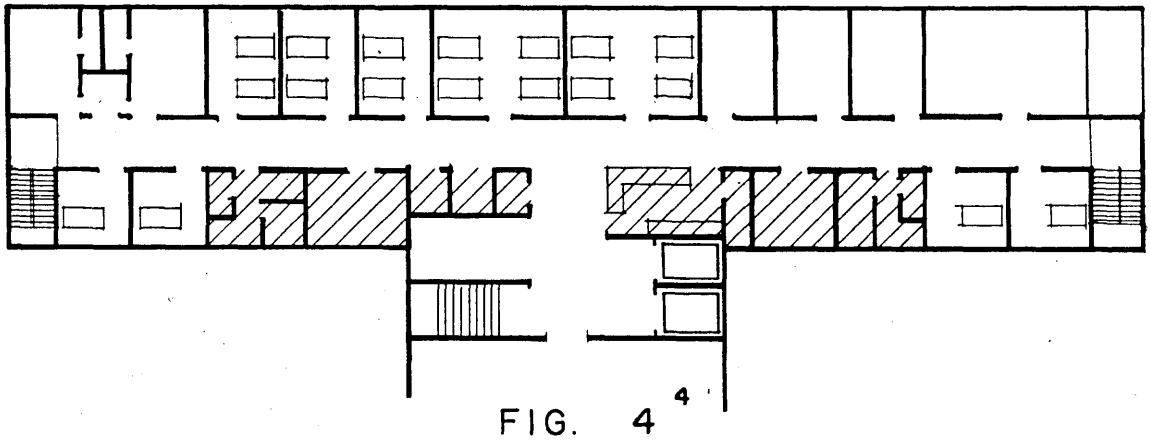


FIG. 4

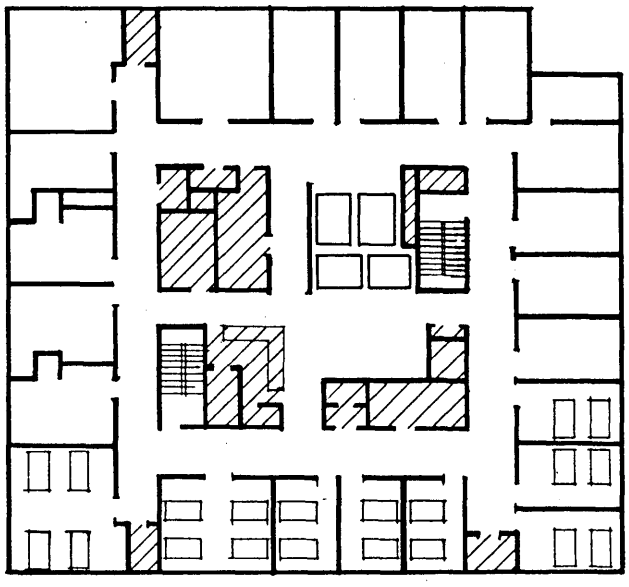


FIG. 5

to use this plan. The well-known X, Y, H and + configurations are plan forms developed because of these limitations.

In an attempt to shorten circulation routes several centralized plan forms, with the ancillary facilities in the core, have developed. (See Figures 5,6.) These do shorten the distances but in doing so confuse circulation patterns in the core and make control difficult. Nurses object to the limited visibility from the nurses' station. At least 25% of the rooms have poor orientation.

The plan adopted for this thesis is a growth of the double pavilion plan first developed by hospital consultant Charles F. Neegaard. In this plan (See Fig. 7) all of the services are placed in a central core available to two corridors. This scheme shortens circulation routes and reserves the desirable peripheral areas for the patients. Since the ancillary facilities do not double in size when used by two wards instead of one, a great deal of space is saved which can be used to more advantage.

In this plan each bedroom is provided with, or shares with another bedroom, a room containing a complete bath with shower and bedpan washer, dressing and locker space, and a supply cabinet. This system is designed to save the nurses' time and energy. By having everything the nurse needs on hand within the room she can spend more time with the patient and less time walking up and down the corridors emptying bedpans, getting fresh linen, and helping patients to the central toilet or shower.

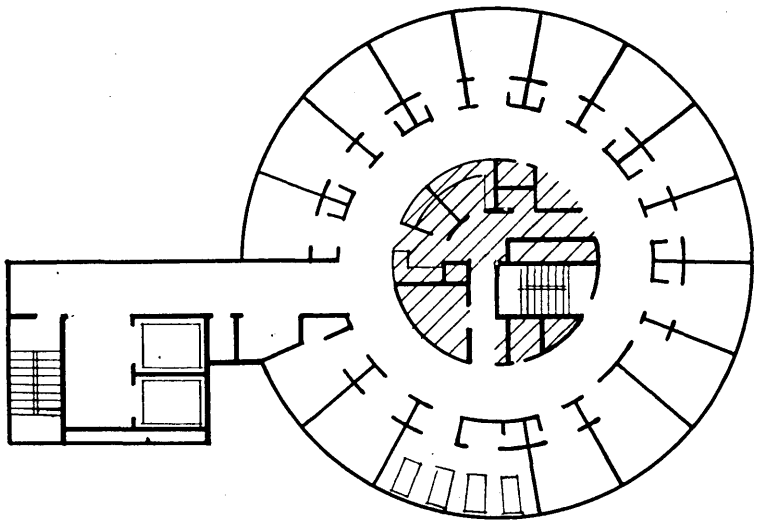


FIG. 6[6]

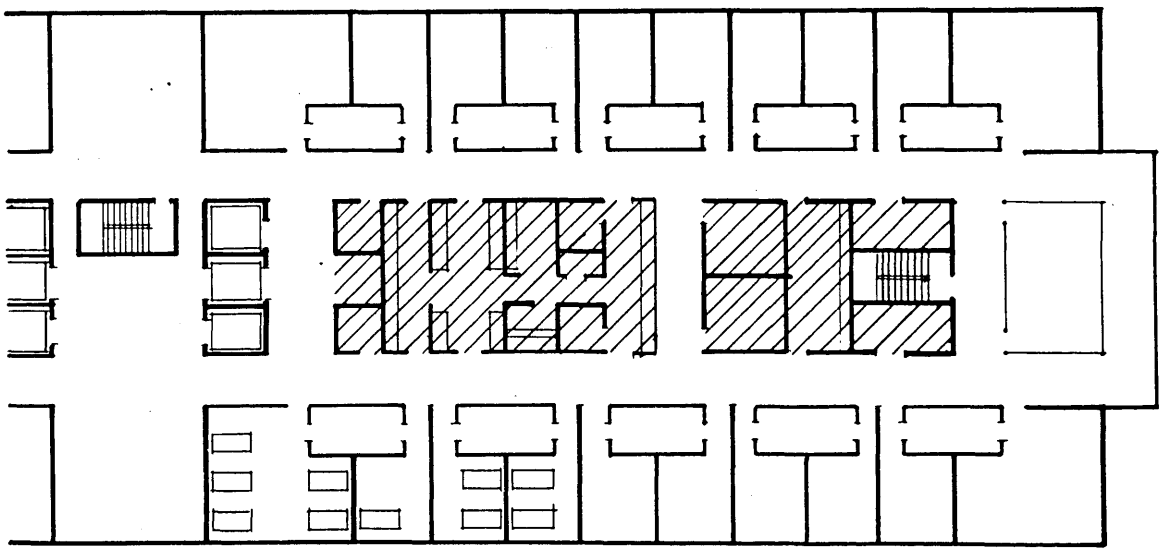


FIG. 7

The supply cabinet would be divided into two sections each side accessible from the corridor and from the bedroom. One side would contain all the clean and sterile supplies needed for one day, and the other side would be used to receive soiled supplies from the room. Each night an attendant would place clean supplies from central cupply in the cabinet to be removed from the room side as needed. The soiled supplies would be collected in a cart and returned to central sterilizing or to the laundry (thus doing away with the questionable laundry chute.) After each use the carts would be cleaned and made ready for the next day's service.

It might be noted that this nursing unit with the adjoining bathrooms and 252 square feet of area per bed compares favorably with the U.S.P.H.S. nursing unit which has 267 square feet per bed.

Nurses' station. The nurses' station should be located as centrally as possible in the nursing unit and should command full view of the nursing corridors. The nursing station will be used for the administrative work of the nurses inherent in-patient care, preparing medicines, and for doctor-nurse conferences.

The nurses' station should provide adequate desk space for the nurses to keep charts and make out reports. A separate locked room is necessary for storing and preparing medicines. A small room is desirable for consultation between staff members, doctors, patients and patients' families.. A space for doctors to study charts and to dictate instructions is also desirable. A toilet should be provided for the nurses' use.

Utility Room. The utility room is the general work room for the nursing unit.

This room would be used for the storage and preparation of equipment and supplies used in general throughout the nursing unit. Facilities would be provided for the preparation of juices and between-meal snacks for the patients. A separate area of the utility room would be used for the disposal of waste and the cleansing of equipment not requiring sterilization in the central sterilizing room. The utility room should be located adjacent to the nurses' station

Treatment Rooms. Treatment rooms are necessary in every nursing unit. Examination, surgical dressings and other procedures would be done here instead of in the bedrooms behind the curtains where there are no facilities. It would often save the patient from embarrassment and would keep the other patients from being disturbed. It would also be used for teaching purposes.

Day Room. A day room should be provided for ambulant patients to congregate. It gives them a chance to chat and provides a change of scene from the bedrooms. This room should not be confused with the visitors' rooms placed near the elevators.

Storage and Closets. There are a number of smaller rooms and closets needed within the nursing unit. Janitor's closets, flower rooms, stretcher and wheel chair storage and general bulk storage must be provided.

2. The Maternity Nursing Unit.

In general the maternity nursing unit will require the same facilities for the mothers as are provided in the normal nursing unit. In addition, facilities must be provided for keeping and caring for the infants.

The "rooming-in" plan in which the infants are kept in the mothers' rooms is used quite often in Europe and in American military hospitals. There are advantages in that the normal nursery can be omitted and provisions made only for premature and suspect infants. The mother is also more "emotionally involved" with the child. There are, however, some disadvantages to the plan. If there are more than one mother and child in the room, the infants tend to disturb the other mothers. There are some mothers who,for physiological or psychological reasons might not be able to, or should not, care for the infant while in the hospital. Mothers who have other children at home often do not like to care for the infant in the hospital, but prefer to rest in expectation of the return home to the other children. Proper examination and utility facilities are not provided.

In the "decentralized nursery" two to six infants, with thin services, are placed between a pair of rooms containing mothers. This plan has obvious advantages over the "rooming-in" plan but there are still disadvantages. The utilities must be duplicated for each nursery. It is hard to maintain supervision, and the pediatrician must move his equipment from nursery to nursery to check and examine the infants.

Another plan is the sub-divided central nursery. In this system the nursery is divided into groups of eight bassinets each, in a separate cubicle. This is

based on the standard that one nurse should not care for more than eight infants. Between each nursing room there would be a nurses' station, work area, and examining area. Constant supervision could be maintained from the nurses' station.

Suspect nursery. The suspect nursery would be used for observation of infants suspected of having a communicable disease. From this nursery infants would either be transferred back to the normal nursery or sent to the pediatrics unit. The requirements are similar to those of the normal nursery.

Premature Nursery. The premature nursery would hold, until they are strong, premature infants. Then they would be transferred to the normal nursery or sent home.

Formula Room. The formula room should be divided into two sections - one for the receiving and cleansing of bottles -- the other for the preparation and sterilization of the bottles and formula. Each maternity unit would have its own formula room.

3. The Pediatric Nursing Unit.

The Pediatric Unit deals with premature infants through adolescence, which involves a great variety of medical and surgical conditions. The unit would contain generally the same facilities as the normal nursing unit with the additon of the facilities mentioned below.

For infants three nurseries are required, a sick nursery, a premature nursery, and a suspect nursery. These would be similar in plan and contents to the nurseries in the maternity unit.

Several crib rooms should be provided for small children. These rooms should be the same size as the regular bedrooms to allow for flexibility, also full-size beds are often required for mothers spending the night with sick children.

A play or activity room is a necessity for the pediatric unit. This room would be used as a playroom for younger children, for games, occupational therapy and school work for older children, and a social room and library for adolescents. It may also be used for a dining room at meal time. It should be located near the nurses' station for proper control.

4. The Psychiatric Unit

The Psychiatric Unit would contain facilities for the treatment of short-term patients and for holding those patients who must be transferred to a state hospital where accomodations for long-term treatment are more favorable.

This unit will require facilities for the segregation of patients showing different behavior characteristics. These can be divided into four groups; [7]. Convalescent-30 to 40%; Quiet-30 to 40%; Depressed-20-25% and Disturbed-5 to 10%. The arrangement should be flexible so that full use of all facilities may be made at all times, as the patient classifications change during the treatment program. Day rooms, available for each classification, are required in order that the many and varied groups and group-activities may be carried on simultaneously for any or all groups.

There are two main sections of the nursing unit, an open section and a closed or locked section. The convalescing and some of the quiet patients will be housed in the open section. This section can be somewhat similar to a medical nursing unit. The remainder will be in the locked section. This section will contain special bedrooms and treatment rooms as recommended by the U.S.P.H.S. and the American Hospital Association.

5. The Surgical Suite

The traditional location for the surgical suite has been on the top floor on the north side. Efficient lighting and mechanical ventilation were not possible as the suite was located where they could have natural light and be more or less dust-free. This was also the terminal point of the hospital and therefore avoided unnecessary circulation.

The advent of good artificial light and air conditioning provides greater flexibility for the location of the suite. Physical factors such as expansion and plan form, and circulation factors such as relationship to the nursing units, radiology, pathology and the emergency department have a more important bearing on the location.

Operating Rooms. Surgeons and architects usually apply the terms "major" and "minor" both to surgical procedures and the operating rooms in which they are performed. The terms have no precise meaning. Some authorities considered the difference to be one of size, others consider it to be one of equipment included.

When the advantages and disadvantages of a minor operating room are studied, there is a considerable question as to the need of a minor operating room at all. Surgeons whose operations are scheduled for minor operating rooms, often consider it an affront to their dignity. A minor operating room is less expensive to build because of its smaller size but the restricted number of surgical procedures which can be performed may prove it to be false economy. The greater flexibility of the major operating room can be obtained relatively cheaply since the increase in cost is not proportional and the equipment and services must be provided in any

case. There is also the risk that further changes in surgical treatment and procedure may make the minor operating room obsolete.

The major operating rooms were formerly designed on the pattern of the classical Greek Theater with rising tiers of curved seating but in recent years the rectangular or square room has superceded the circle. During the past twenty years, operating rooms of many sizes and shapes have been designed to cater to difficult arrangements for accomodating observers, lighting, ventilation, etc.

Perhaps the most distinctive is the egg-shaped operating room now in use in Europe [8]. that was developed from the sperical designs by Walter in the 1930's. The spherical wall-ceiling with individual spotlights sunk in the whole surface, is an attempt to provide high-density, shadowless illumination on the sterile field, and to eliminate dust catching surfaces overhead. Problems such as excess heat, changing lamps from inside the operating room and dust-catching surfaces have been solved in this design but it is doubtful that the illumination of the sterile field is as good as that obtained with a good suspended lamp. Some surgeons say that the lighting is inadequate for deep cavities and that supplementary lighting is needed. Supplementary lighting is also required if two fields are to be lighted simultaneously (example, skin-graft). The table must be moved to alter the illuminated field on the patients' body. Other problems inherent in the egg-shaped design are: the difficulty of providing overhead booms for supporting oxygen and anesthesia lines, television cameras, etc., the excessive noise due to the poor acoustic shape and hard surfaces of the room, and the lack of flexibility in usage imposed by the plan.

On the basis of the actual function of the room it is difficult to estimate the exact size of a major operating room because procedures and equipment vary for different operations and for different surgeons. Studies show that a minimum size 16 ft. by 16 ft. is required, but many surgeons and surgical supervisors recommend 20 ft. by 20 ft. of free floor space.

The rapid development of cardiac and neuro-surgery has created the need for one or more extra large operating rooms. This type of surgery calls for a larger team of surgeons (at times, two teams are required, example - kidney transplants), and a great deal of additional equipment such as heart-lung machines, hypothermia equipment, etc., also electronic monitoring equipment which frequently is not explosion-proof. The system in which a control room is placed between two large operating rooms works very well. This control room would also house equipment required for closed circuit television.

There are several methods of providing observation for operations. The generally prefered method is for a small group of observers to actually be in the operating room. This system provides obvious teaching advantages, but the group is limited in size and there is the possibility of additional bacteria and of distraction for the surgeons. Another method is to locate a gallery to one side or over the operating room. This isolates the observers but the possibility of an unobstructed view of the sterile field which is adequate for teaching purposes is slight. It does, however, allow medical students and nurses to observe operating room procedures. The use of closed circuit television and motion pictures allows larger groups to observe. It seems that not one, but a combination of methods are needed for adequate observation in all cases.

In 1846 the first public demonstration of anesthesia was performed at the Massachusetts General Hospital in Boston. In 1873 the first induction room adjoining the operating room was used. "The patients are etherized in a small ante-room adjoining the operating theater and when anesthesia is complete, the patient is picked up and carried in the arms of a stout attendant into the theater."[9.] Since that time there has been a great deal of controversy over where induction should take place.

Induction rooms are not used to any extent in the United States and most hospitals which have induction rooms use them for other uses. Neither the U.S.P.H.S., the American College of Surgeons, or the American Society of Anestheologists recommends induction rooms.[10.] The National Fire Protection Association recommends not using them because of the danger of an explosion. Proponents argue that time is saved between operations and that it is psychologically better for the patient, but recent study shows the time saved to be slight.[11.] More anesthetists are required, and the psychological effect has not been proved one way or the other.

Ancillary Facilities.

Recovery Room. The purpose of the recovery room is to hold the patient during the critical period from the end of the operation to the regaining of consciousness. It provides a high standard of nursing care during the recovery period and prompt attention in an emergency. Isolation curtains are not required because patients are removed as soon as they are fully conscious and the curtains make the nurses' work harder. However, there should be an isolation room for infectious cases.

All services should be within the room but should be enclosed with a glazed partition to reduce noise.

Scrub-up rooms. The scrub-up area is used for scrubbing by the surgical team before each operation. This room should be located adjacent to the operating room to reduce walking distance after scrubbing and to allow the surgeons to see into the operating room while scrubbing.

Clean-up and Sub-sterilizing rooms. The central clean-up room provides facilities for cleaning up after the operation. The extent of the facilities required is based upon the system used.

If decentralized sterilizing is used (all possible items sterilized in the sub-sterilizing room) there would be little or no work to be done other than the cleaning of sensitive instruments, and the collection of disposable items and items issued from other departments.

If a sub-sterilizing room is not used then the clean-up room must handle all sterilizing in addition to the normal collection and disposal of items. This system aggravates the problem of contamination transfer for all "clean" and "dirty" supplies are processed in the same area.

Although there is a chance of contamination when using sub-sterilizing rooms, it seems to be the medically superior system.

Frozen Section Laboratory. In the course of an operation it might be necessary for a microscopic examination to be made of the tissue removed from a patient.

This examination must be made before the operation can continue. For this reason a small frozen section lab is included within the suite. The probability of an examination being needed can usually be predicted before the operation (10 to 15% of all operations),[12] and the laboratory would only be staffed when such an operation was scheduled.

Change Rooms. All personnel who work in the surgical suite change their clothing before they enter the suite. Change rooms should be provided for professional males, all females, and non-professional males. Each change room would contain locker, toilet and shower facilities. The personnel would enter the change rooms from outside the suite, change shoes and clothes, and enter the suite directly from the change room. The reverse procedure would be used in leaving the suite.

Lounge. A small lounge should be included for doctors and nurses for coffee, rest and a "change of view".

Classrooms. Classroom space should be provided for instructing nurses and interns and for staff conferences and lectures. This would also provide a place for viewing operations on television and motion pictures. Entrance to the rooms should be from outside of the surgical suite.

Offices. Offices are needed for the surgical supervisor, the clerks who manage scheduling and paperwork, the clinical instructor and possibly the chief of staff and the chief anesthesiologist.

Storage. There are a multitude of storage areas required. Space must be provided for clean instruments, medical gases, janitors' supplies, sterile supplies, spare operating tables and lights, anesthesia machines and other miscellaneous[1] equipment and supplies.

6. Obstetrical Suite

In general the obstetrical suite requires somewhat the same facilities as the operating suite. In addition labor rooms and a small nurses' station are necessary. Provisions should be made to allow the husband to accompany his wife into the labor room if the doctor allows this procedure.

7. Emergency Department.

As mentioned previously most emergency cases are cases best admitted away from the public view. The department should also be readily accessible for both ambulances and private automobiles which require parking space. A large number of emergency cases are accident cases in which the patient is pronounced dead on arrival or shortly after arrival at the hospital. Location near the morgue would provide holding space until the family could be notified and the body picked up by a mortician. It would also facilitate the procedure on cases requiring autopsy and laboratory work.

Operating Room. In many hospitals a major operating room is included in the emergency department. This idea is wrong for it is unwise to attempt a serious operation in the emergency department which is not equipped nor fully staffed for such operations, when well-equipped and staffed operating rooms are available near by. By performing all serious operations in the surgical suite unnecessary duplication of facilities is avoided. However, there should be a mirror operating and fracture-reducing room included with proper x-ray and fluoroscopic facilities.

Nursing Unit. A small nursing unit is necessary for overnight patients. The next morning the patient would either be discharged or admitted to a normal nursing unit. An isolation room for suspect cases would be desirable, especially for children.

Treatment rooms. Rooms for examination and treatment should include dressing booths to prevent unnecessary delay in the use of the room and a utility room which could be common to all.

Other Facilities. The office should be located to provide good control over the entrance to the department. It would be used for reception and administration. procedures. The waiting area should be adjacent to the office for control purposes.

8. X-Ray and Radiation Therapy.

The X-Ray Department works in close relationship with several other departments in the hospital. Both inpatients and outpatients will use the department and care should be taken so that traffic patterns do not mix. There is also a close relationship between the x-ray department and the surgical unit. Traffic is generated by certain radiological procedures in the operating rooms and if a dark room is not provided within the surgical suite, then the exposed film must be transported to the x-ray department for processing. This system eliminates the duplication of costly equipment and keeps all photographic procedures under a central control.

Diagnostic X-Ray. The x-ray rooms are equipped with combination x-ray and fluorscopic machines. The U.S.R.H.S. recommends a room 12' x 18' x 9'-6' which seems to serve very well. A control booth is necessary in the room to protect the operator from harmful rays during the x-ray procedure. This need not be a room but merely a shield to deflect the rays. In fluorscopy the booth isn't necessary. The room must be shielded against the escape of harmful rays, the amount of shielding required varies with the exact functions of the room. Each x-ray room should have at least two dressing rooms so that the equipment and staff can function without delay. A barium "kitchen" is required and of course a water closet as barium travels quite rapidly through the system.

Therapy. Only basic x-ray therapy and radioisotope facilities should be included as the more complicated cases would be sent to the base hospital where more extensive equipment is located. The inclusion of one deep therapy and one superficial therapy room would be necessary. These rooms should be located to

either side of a control room containing dressing booths, control rooms, recovery room and toilet. The radioisotope room would include a radiochemistry laboratory and a patient uptake measuring room with adjoining dressing room. These therapy rooms should be separated from the diagnostic rooms.

Cystoscopy. The cystoscopy rooms can be located in several departments within the hospital. The surgical suite and the x-ray department are the most suitable for the procedures performed. Location in the surgical suite is convenient for the anesthesiologist for cases requiring general anesthesia and the recovery room is readily available. The main disadvantages of this location is that outpatients would be required to enter the surgical suite and many surgeons object to cystoscopy procedures which are "dirty" cases being performed within the surgical suite because of the danger of contamination. A location in the x-ray department would place the cystoscopy rooms near the darkroom and other radiological facilities and would prevent costly duplication of equipment as previously mentioned.

Photographic Rooms. All exposed film would be taken to the darkroom for processing. Automatic film processing machines have done away with most hand-processing and reduced the space required. The entrance into the darkroom should either be through a light lock or light maze.

The viewing room should be located adjacent to the darkroom to facilitate the viewing of film as soon as possible after processing. The room should be large enough to accommodate several groups while viewing the film.

Since the film file has a direct relationship to both the darkroom and the viewing room it should be located so that it is convenient to both.

Other Facilities. Waiting space for patients, office space for administrative personnel, and storage equipment for bulk equipment and supplies must be included, with sizes dependant upon organization and procedures used.

9. Laboratory.

The laboratory would conduct between 180,000 and 200,000 tests annually for the hospital and the outpatient department. These tests would be divided among six units of the laboratory; hematology, urinalysis; biochemistry; histology; serology and bacteriology. With the exception of the serology - bacteriology unit the functions of the units may be grouped together to facilitate supervision, common use of equipment and flexible use of personnel. The Serology - Bacteriology unit should be enclosed to reduce the possibility of contamination.

Pathologist office. The pathologist office should be located so that he has access to the laboratory, the histology section in particular. A work space should be provided for examinations in the privacy of his office.

Other Facilities. A reception room and waiting area, collection rooms, utility rooms, and a "quiet" room for basal metabolism and electrocardiography should also be included.

10. Necropsy Department.

The morgue and autopsy facilities should be located to prevent unnecessary contact with the public. The department must be convenient to the elevators from the nursing units, the surgical suite and the emergency department, and should have an exit to the service yard to facilitate pick-up by morticians.

Office. The department office should be located at the entrance for control. This office would handle receiving and administrative work.

Viewing Room. Located at the entrance to the department adjacent to the morgue should be a viewing room used for identification purposes.

Morgue. The morgue should be located to provide optimum circulation between the refrigerated boxes, the entrance, the autopsy rooms and the exit. There should be between 10-15 boxes depending upon the practices of the local morticians.

Lockers. Locker space and shower and toilet facilities must be provided for the staff members working in the department.

Teaching Facilities. A small classroom and museum should be included to facilitate the teaching of nurses and interns. The autopsy rooms should be large enough to accomodate a group of observers.

11. Administrative Department

Lobby and waiting space. The main lobby and waiting room should be located with convenient access to the stairs, corridors and elevators leading to the administrative and patient areas, but access to these areas should be controlled by the information desk. In public general hospitals the number of visitors is quite high and adequate waiting space should be provided for the family and friends of the patients.

Admitting Office. The admitting office should be readily accessible from the entrance lobby but in a quiet area where privacy can be obtained. Several booths or rooms are necessary for the admitting procedure and social service functions. Easy access to the medical record room should be provided for obtaining records of returning patients.

Medical records and Library. The medical record room and library are directly related regarding study and research, and can be better managed by a single librarian. It should be remembered that the library will be used not only by the staff and interns but also by a certain number of people from outside the hospital.

Business Office. The general business office should have several cashiers' windows near the main lobby but there should be no direct entry into the office from that area. This office provides space for the clerical staff and equipment and should have a safe or vault fro records and patients' valuables.

Offices. General office space will be required by the hospital administrator,

the director of nursing, the assistant director of nursing, the bursar and their various secretaries. An office should also be provided for the use of visiting clergy.

Conference Room. A conference room should be included for directors' meetings and small conferences.

Auditorium. A small auditorium is necessary for staff meetings and for health education in the outpatient department.

12. Dietary Facilities.

The kitchen should be located at grade level to insure adequate light and ventilation and ease of daily delivery of meat, vegetables, and dairy products. If located adjacent to the service court deliveries can be made directly into the refrigerator section preventing carting of supplies through corridors and food preparation areas. There should be no circulation through the kitchen to other areas.

Central Tray Service. There are three general types of food service to the nursing units. With "central tray service" each tray is completely prepared in the kitchen and then transported to the nursing units on heated trucks. After the meal the dirty dishes and trays are collected and returned to the kitchen to be washed in the central dishwashing room. The most serious complaint against this method is that the food may become dried out, cold and unpalatable by the time it reaches the patient. There is also a certain amount of waste for the patient has no control over food portions.

Bulk Service. The "bulk service" system utilizes heated carts which are loaded in bulk in the main kitchen and transported to the nursing unit pantry. Here the trays are prepared and distributed to the patients. Upon completion of the meal the dishes and trays are returned to the floor pantry where they are washed and stored until the next meal. In this system serving hot food is less of a problem but the patient still has no control over the portion. It is necessary to have a very complete kitchen and dishwashing room on each floor, it requires personnel additions for efficient service and adds to the size of the confusion of the nursing unit.

A variation of the bulk food service is sometimes used in which the trays are prepared in the pantry with the exception of the food, and distributed to the patients. The bulk food cart moves from the main kitchen and the food is served to the patients. The patient is assured of hot food and the amount he desires, but the floor must still have a dishwashing room and pantry as above.

Centralized Bulk Service. The third and possibly the best method is the "centralized bulk food service". In this system, the trays are set up in the main kitchen and distributed to the nursing unit followed by the bulk food cart. The trays are served and at the end of the meal the dirty trays and dishes are returned to the main kitchen for washing. Hot food in the desired proportions is assured. The costly duplication of dishwashing equipment is eliminated and the pantry can be reduced to a size needed only for between meal snacks and juices.

Refrigeration. As mentioned previously direct delivery of perishables to refrigerators without going through the food preparation areas is highly desirable. The refrigerator section should contain three units, one for meat, one for fruit and vegetables, and one for dairy products. Because of the rising popularity of frozen foods, a large freezer should also be included for frozen meat, vegetables, and ice cream, etc.

Day Storage. Provision of a day storage room for non-perishable supplies for a twenty-four hour period will be necessary. The day storage takes care of small food items and part cases of food not requiring refrigeration. The room should be convenient to the receiving area and adjacent to the meat, vegetable and salad preparation areas.

Cooking Section. The main cooking section should be placed in a central location convenient to the serving area and away from the side walls.

Diet Kitchen. A special diet kitchen is not necessary. The number of diets other than normal, soft, and liquid will not exceed 15% of the total number of meals patient/and these can be prepared in the main kitchen. Student nurses would be trained in the diet department of the nursing school and not in the hospital kitchen.

Dish and Cart Washing. The dishwashing room should be located near the entrance to the kitchen from the nursing units. The food carts should be washed in a separate room. The cart room should be near the entrance and convenient to the dishwashing area.

Dietitian. The dietitian's office should be located to provide good control and supervision of the entire kitchen.

Toilets. Toilets should be readily accessible but not within the kitchen proper.

Dining Space. The dining room should be large enough to accomodate the staff and visitors using it in a two-hour period. Cafeteria service is the fastest and most economical for this type of institution. A small private dining space should be provided for special luncheons, business meetings, etc. A dining room should also be provided for the kitchen employees.

13. Housekeeping Facilities.

Housekeeper. The housekeeper's office should be adjacent to the central linen room and in a position to maintain control over the linen, both clean and dirty.

Central Linen Room. The central linen room would be used to store and issue linen for the hospital. The should be a mending room and a new stock room within the central linen room.

Soiled Linen Room. The soiled linen room would be used to receive, sort and prepare for washing, the dirty linen of the hospital. Because of the type of service to the nursing units there would be no linen chutes.

Laundry. The laundry would wash and decontaminate the dirty linen and then dry and prepare it for re-use.

14. Supply, Storage and Maintenance.

Sterile supplies. All supplies requiring sterilization would be sterilized and pre-packaged in the central sterilizing room and distributed through central supply.

Central Supply. All supplies except pharmaceuticals would be distributed through central supply. For this reason it should be located centrally with easy access to the different storage rooms.

Central Storage. The central storage area would be divided into several areas; the furniture room, anesthesia storage, social service, clothing and food stores.

Anesthesia and Oxygen. The anesthesia and oxygen storage rooms should be located near the entrance to the service area. This provides easy access in case of fire and saves carrying heavy tanks into the building. The oxygen would be piped to the areas needing it from this storage room.

Receiving. There should be a receiving room where goods could be unpacked and checked before they are taken into the storage rooms. A small room for overnight storage of goods received,but not checked,is necessary.

Maintenance Shops. To facilitate quick and economical repairs and replacements the hospital should have good maintenance shops. A carpenter shop for general repairs and refinishing work, an electrical shop for repairing small motors, lamps and other fixtures, and a mechanical shop with equipment for heating and plumbing repairs would be provided.

15. Lockers and Lounges.

It is undesirable for either professional or non-professional help to go through the hospital in street clothes. For this reason lockers should be provided for employees and staff at the entrances. The locker rooms should contain - locker, toilet and shower facilities. Lounges should be provided for off-duty personnel.

16. Outpatient Department.

The functions of the outpatient department are education, prevention, diagnosis, and treatment of illness, and follow-up of hospital cases. It is very difficult to plan just how large or small an outpatient department should be for an estimated number of visits per year. The number of divisions, the number of stations, the number of sessions, and their length, etc. all must be considered.

If sessions were held eleven times a week, one each morning, one each afternoon and one on Saturday morning, and each session is three hours long, 9 - 12, and 1 - 4, then theoretically only six stations would be required to handle the estimated 40,000 visits a year, to the department. However this figure does not allow for the fact that there are some stations suited to only one purpose, some facilities are used jointly by the hospital and the outpatient department, and there are slack and rush periods and there is no expansion within the department.

There are about twenty clinical divisons within the outpatient department. As mentioned before some of these are jointly used by the hospital and the department (laboratory, x-ray, pysiotherapy), and others are only suited for one particular function (dentistry, minor surgery, eye, ear, nose and throat). The remainder overlap and can all use a somewhat similar room. The divisons by not being rigid allow a certain flexibility in the ebb and flow of traffic.

Examination the treatment room. These multi-purpose rooms should have adjoining dressing rooms to insure continuous use and should be adjacent to a utility room which could be used jointly by several rooms.

Minor Surgery. In the surgical division only surgical procedures of a minor nature would be performed. The utilities would be within the room but a small recovery room would be necessary.

Dentistry. The dentistry division should have at least two chairs, a small labpratory and a recovery room.

Eye, Ear, Nose and Throat. This division should have an eye examination and treatment room, a "dark" room (not photographic), and a room equipped for ear, nose and throat examinations.

Administration. The information and appointment desk should be located at the entrance to control the circulation in and out of the department. The cashiers' desk might be adjoining so that in slack hours one person could operate both positions. An adjacent office is necessary for the department supervision. Although there is a certain relationship between the hospital administration and the outpatient administration the two should be separate functions with separate entrances and lobbies.

Records. The records room should be readily accessible to both the administration and themedical staff. A conference room should be incorporated to provide space for studying records and staff conferences.

Waiting Space. The waiting space should be spacious and comfortable with toilets nearby. If possible the pediatric waiting should be separated from thenormal waiting areas to help those patients who might be nervous and easily upset.

Pharmacy. The pharmacy should be located at the exit from the department but before the cashiers' desk. All prescriptions for the department could be obtained here and this would be an entirely separate function from the hospital pharmacy.

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(Footnotes)

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3. U.S. Public Health Service. Design and Construction of General Hospitals, p. 47.

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8. Memorial Hospital, St. Lo,France: Paul Nelson.

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10. Warwick Smith. Planning the Surgical Suite, p. 225.

11. Ibid, p. 226.

12. Ibid, p. 304.

SPACE REQUIREMENTS

Nursing Units

Bed Area (includes rooms - 48 - lockers and baths)	6300
Day Area	400
Treatment Rooms (2)	288
Nurses' Station	
Utility Room	350
Soiled Utility	150
Floor Pantry	100
Storage and Closet Space	300
Visitors	600

Surgical and Obstetrical Suites

Major Operating Room (8)	3200
Special Operating Rooms (2)	1100
Control Room	350
Viewing Rooms (2)	350
Scrub-up Rooms (5)	500
Sub-Sterilizing Rooms (5)	600
Clean-up Rooms (5)	100
Instruments	100
Medical gases	100
Bulk Storage	300
Frozen Section Laboratory	100

Recovery Room	1500
Isolation Room	150
Classrooms (2)	1200
Seminar	120
Emergency	400
Lockers (professional males)	360
Lockers (non-professional males)	360
Lockers (females)	400
Lounge	200
Linen	50
Surgical Supervisor	120
Clerks	200
Chief of Staff	120
Anesthesiologist	120
Delivery Rooms (4)	1600
Scrub-up Rooms (2)	200
Sub-Sterilizing Rooms (2)	240
Labor Rooms (8)	960
Nursing Rooms	100

Emergency

Receiving	150
Admitting Office	150
Waiting Room	250
Minor Operating Room	250
Treatment Rooms (4)	400

Utility Room	250
Isolation Rooms (2)	340
Nurses' Station	100
Male Ward	260
Female Ward	260
Toilets and Baths	250

X-Ray and Radiation Therapy

Radiology and Fluorscopy Rooms (5)	1400
Cystoscopic Rooms (2)	580
Recovery Rooms and Toilets	200
Deep Therapy	380
Superficial Therapy	380
Control Rooms	100
Recovery Room	150
Radioisotope	280
Preparation Room	100
Fracture-reducing Room	280
Office space (3)	420
Waiting Space	500
Dark Room	280
Film File	480
Viewing Room	280

Laboratory	
General Laboratory	2000
Office	150
Toilets	150
Utility Room	120
Reception	50
Waiting Room	100
Collection Rooms (6)	300
Pathologist	150
Storage	150
Necropsy	
Autopsy Rooms (3)	1000
Storage	100
Laboratory	200
Morgue	320
Viewing Room	150
Mechanical Room	100
Lockers	200
Museum	380
Classroom	280
Office	200
Pharmacy	
Compound and Dispensing Laboratory	1000

Parental Solution Laboratory	300
Activity Store Room	400
Manufacturing Laboratory	200
Office and Library	150

Physical Therapy

Exercises and Pool	1300
Hydrotherapy	380
Electrotherapy	280
Office	150
Waiting Room	200
Lockers and Toilets	160

Administration

Main Lobby and Waiting Room	1600
Retiring Room	380
Public Telephones (10)	
Public Toilets	580
Gift Shop	600
Snack Bar	600
Chapel	300
Information and Telephone	100
Admissions and Social Service	200
Business Office	580
Records	900
Library and Conference	580

Hospital Administrator	200
Director of Nursing	200
Ass't. Director of Nursing	200
Secretaries	200
Misc. Office Space	400
Conference Room	200
Toilets	150

Dietary Facilities

Main Kitchen (includes bake shop, meat, vegetable and salad preparation)	5000
Refrigeration and Freezing	350
Dry Storage	350
Receiving	400
Dietitian's Office	200
Dishwashing Room	600
Cart Washing and Storage	800
Serving	600
Dining Room	2500
Private Dining Room	600
Employee Dining	300

Housekeeping Facilities.

Central Linen Room	800
Housekeeper	150
Soiled Linen	400

Laundry	4000

Locker Facilities

Nurses' Locker Room and Lounge	1200
Doctors' Lounge	400
Male Lockers	1000
Female Lockers	1000
Lounge	800

Stores

Central Stores	6000
Central Sterilizing	800
Distribution	300

Maintenance

Department Office	150
Mechanical Shop	350
Electrical Shop	200
Carpenter Shop	350
Refinishing Shop	300
General Storage	400

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THIRD ANNUAL COMPETITION - MASTIC TILE DIVISION - THE RUBEROID COMPANY

The health and hospital facilities of the parent city have been extended and developed to a point of congestion and the regional hospital council has recommended that future efforts be directed to developing a COORDINATED HOSPITAL SYSTEM on the general framework formulated by the United States Public Health Service, in which medical care facilities are proposed as follows:

Community Clinic
Rural Hospital
District Hospital
Base Hospital

The community's growth indicates a population of from 75,000 to 100,000 within a normal automobile radius of 20 minutes, and it has been decided that the Community Clinic should be consolidated with the Rural Hospital to form a Suburban General Hospital of 200 beds.

It is further proposed that the Surburban General Hospital be planned for integrated expansion in successive steps toward full completion over a 15-year period as a District Hospital with full complement of specialty services and a teaching program for nurses, internes and residents.

The regional hospital council has drawn attention to the following medical trends in patient care and has requested that consideration thereto be given in the planning study:

1. An Out Patient Department geared to a minimum of 40,000 clinic visits per annum with provision for flexible expansion as the Hospital grows.

2. Many doctors have found it advantageous to have private offices within the Hospital complex, where availability of complete diagnostic-treatment facilities are at their command. It has been agreed that the planning program should include 30 offices for private practitioners.

3. Treatment of patients on a full bed, semi-ambulatory or full ambulatory basis.

It is the purpose of this Competition to explore the experience of the architectural profession in solving this Hospital problem of growing medical needs within a cost range which can be supported by the community.

The following tables are given merely as a general statement rather than as a limiting or limited program. Awards will be based on the greatest contribution in medical planning including feasibility for change as medical advances are made, architectural quality of physical expression, and feasibility of construction within reasonable economic range.

SUBURBAN HOSPITAL
200 beds

Major Surgery

Internal Medecine

Obstetrics

Pediatrics

Laboratory

- Pathology
- Bacteriology
- Chemistry

Radiolcgy

- Diagnostic
- Treatment

DISTRICT HOSPITAL
500 beds

Major Surgery

Obstetrics

Pediatrics

Internal Medecine

Communicable Diseases
- Tuberculosis
- Venereal Disease
- Other

Psychiatric Service

Radiology
- Diagnostic
- Treatment

Physiotherapy

Dentistry

Eye, Ear, Nose, and Throat

Dietetics

Teaching
- Nurses
- Internes
- Residents
- Post Graduates

BASE HOSPITAL
Already provided in parent city.

Heart Clinic

Major Surgery

Internal Medecine

Obstetrics

Pediatrics

Orthopedic Surgery

Communicable Diseases
- Tuberculosis
- Venereal Disease
- Other

Eye,Ear, Nose, Throat

Cancer Clinic

Psychiatric Serv

Laboratory
- Pathology
- Bacteriology
- Chemistry

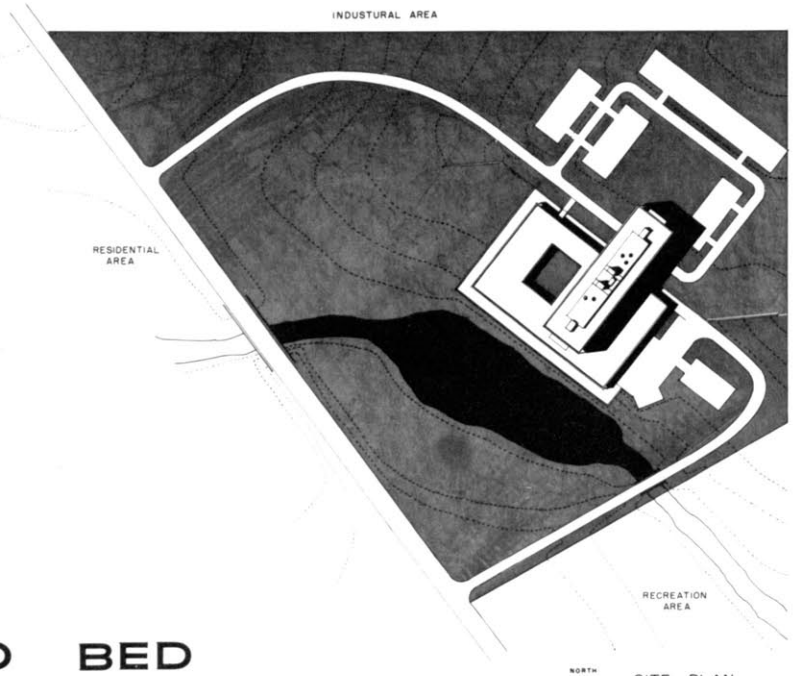
Radiology
- Diagnostic
- Treatment
- Psyiotherapy

Teaching
- Nurses
- Internes
- Residents

Dietetics

The expansion program shall be arranged for a three-stage growth, with suggested distribution of beds as follows:

Service	Stage I	Stage II	Stage III
Normal Medical-Surgical	115	125	165
Intensive Care	20	20	40
Minimal Care	---	40	60
Obstetrics	40	70	90
Pediatrics	25	45	70
Psychiatry	---	---	75
TOTAL BEDS	200	300	500



A 500 BED GENERAL HOSPITAL

A 500 BED GENERAL HOSPITAL

SUBMITTED IN PARTIAL FULLFILLMENT OF THE REQUIRMENTS FOR THE DEGREE MASTER OF ARCHITECTURE

JULY 28, 1961

SIDNEY W. STUBBS JR.

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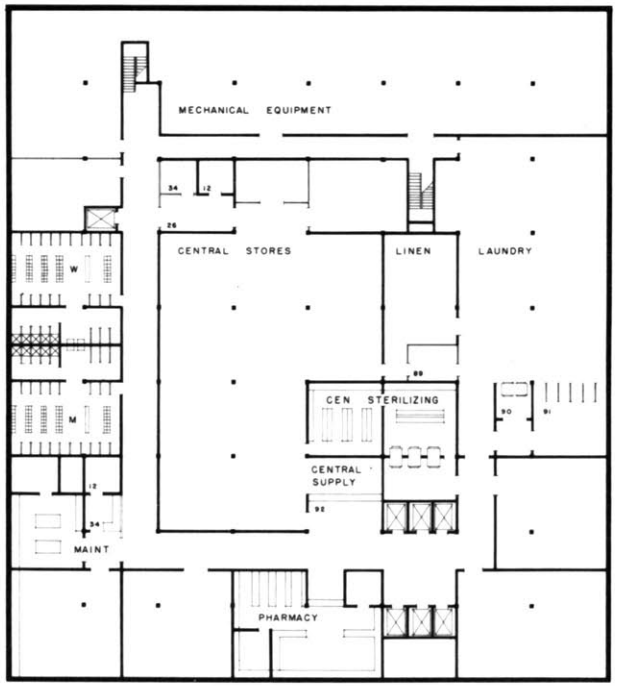

BASEMENT PLAN

0 10 20 30 40 50

1	ONE-BED ROOM
2	TWO-BED ROOM
3	THREE-BED ROOM
4	NURSES STATION
5	FIVE-BED ROOM
6	EXAM AND TREAT. ROOM
7	UTILITY ROOM
8	WORK ROOM
9	CONSULTATION
10	PANTRY
11	MEDICINE
12	STORAGE
13	DAY ROOM
14	ACTIVITY ROOM
15	VISITORS
16	NURSERY
17	SUSPECT NURSERY
18	PRE-MATURE NURSERY
19	FORMULA ROOM
20	CONTINIOUS BATH
21	DISTURBED PATIENT
22	DOCTOR
23	TIME KEEPER
24	UNIFORMS
25	DINING
26	RECEIVING
27	REFRIGERATORS
28	BAKE SHOP
29	SALAD AND VEGTABLE PREP.
30	MEAT PREP.
31	DRY STORAGE
32	CARTS
33	DISH WASHING
34	OFFICE
35	SNACKS
36	GIFT SHOP
37	MINOR OPERATING
38	RECEPTION
39	LABORATORY
40	AUTOPSY ROOM
41	CLASS ROOM
42	MUSEUM
43	MORGUE
44	VIEWING ROOM
45	DOCTOR'S LOUNGE
46	DOCTOR'S LOCKERS
47	NURSE'S LOUNGE
48	NURSE'S LOCKERS
49	EXERCISE ROOM
50	HYDROTHERAPY
51	ELECTROTHERAPY
52	AUDITORIUM
53	OPERATING ROOM
54	SPECIAL OPERATING ROOM
55	DELIVERY ROOM
56	SCRUB-UP
57	SUB-STERILIZING
58	LABOR ROOM
59	CLEAN-UP
60	INSTRUMENTS
61	ANESTHESIA STORAGE
62	LOUNGE
63	LABORATORY
64	DICTATING
65	CONTROL ROOM
66	PREPARATION
67	ISOLATION
68	RECOVERY ROOM
69	DEEP THERAPY
70	SUPERFICIAL THERAPY
71	RADIUM TREATMENT
72	FRACTURE
73	RADIOGRAPHY AND FLUOROSCOPY
74	CYSTOSCOPY
75	DARK ROOM
76	FILM FILE
77	FILM VIEWING
78	RETIRING ROOM
79	BUSINESS OFFICE
80	ADMITTING
81	INFORMATION
82	RECORDS
83	LIBRARY
84	ADMINISTRATOR
85	SECRETARY
86	DIRECTOR OF NURSING
87	ASST. DIR. OF NURSING
88	DENISTRY
89	HOUSEKEEPER
90	CONTAMINATED LINEN
91	SORTING AND MARKING
92	DISTRIBUTION
93	CONFERENCE
94	PHARMACY

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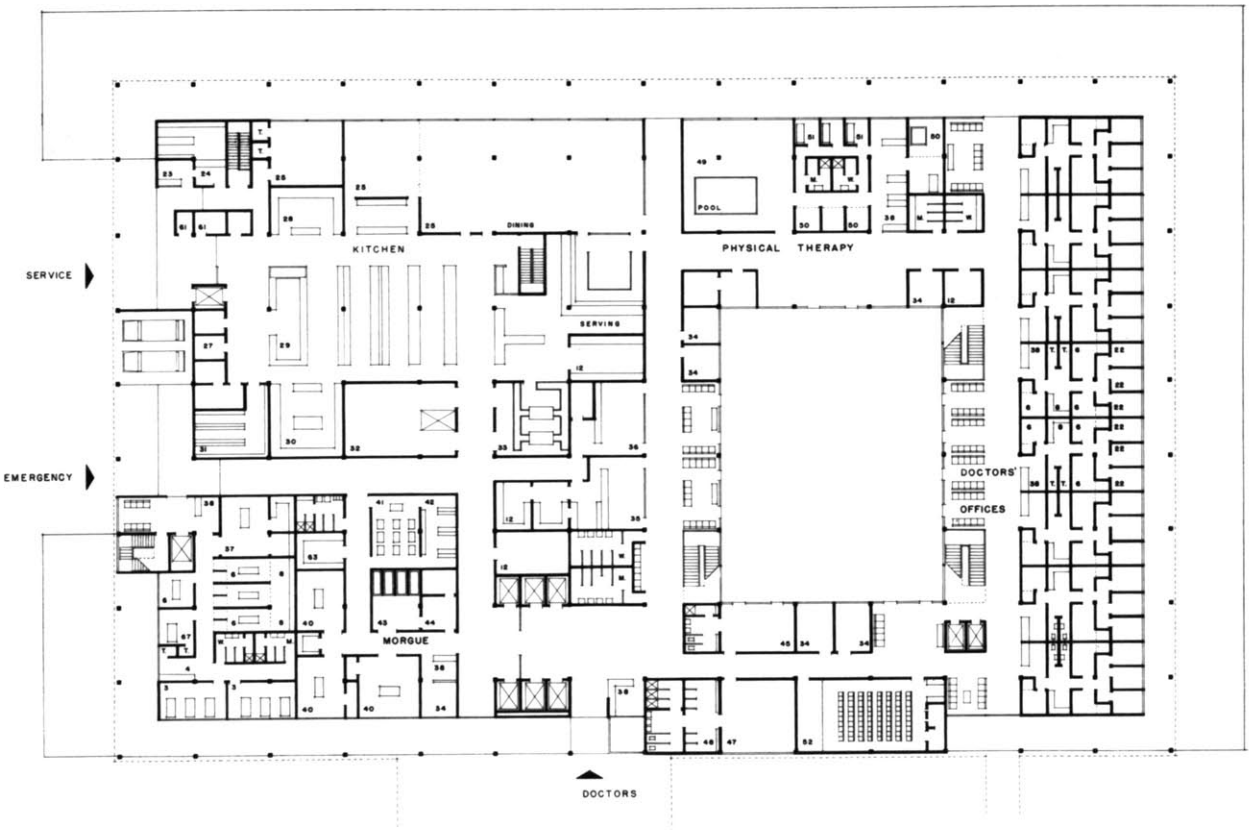
2



GROUND FLOOR PLAN

0 10 20 30 40 50

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FIRST FLOOR PLAN

0 10 20 30 40 50

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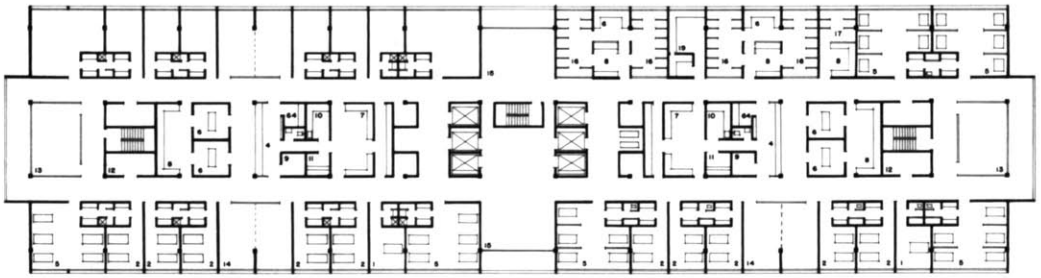
MINIMUM CARE UNIT

MINIMUM CARE UNIT

SECOND FLOOR PLAN



PEDIATRIC UNIT

PEDIATRIC UNIT

THIRD FLOOR PLAN

0 10 20 30 40 50

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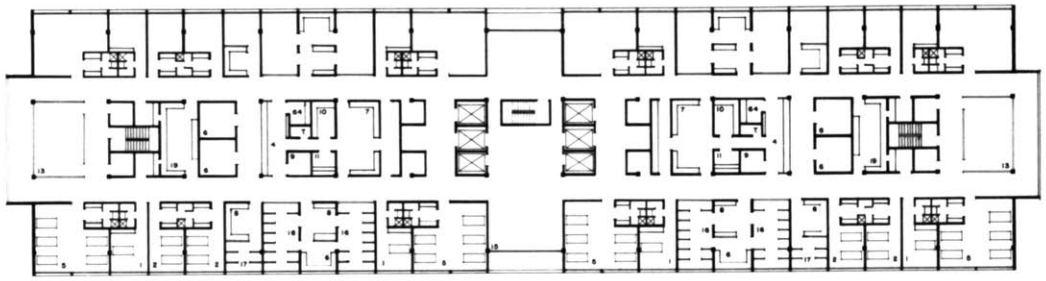
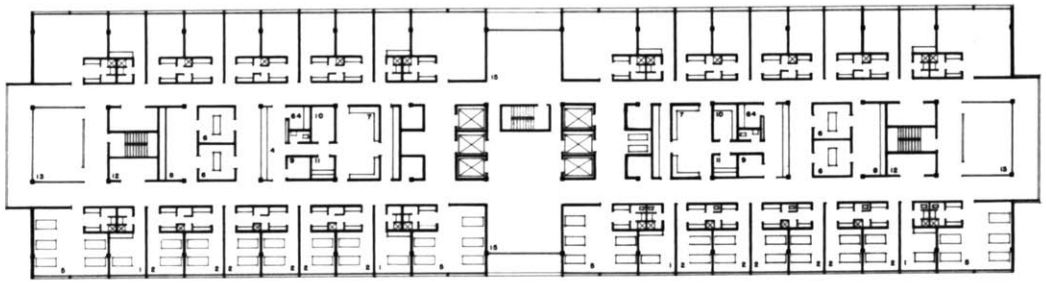
5



OBSTETRICAL UNIT

OBSTETRICAL UNIT

FOURTH FLOOR PLAN



MEDICAL-SURGICAL UNIT

MEDICAL-SURGICAL UNIT

FIFTH FLOOR PLAN

0 10 20 30 40 50

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MAXIMUM CARE UNIT

CONTAGIOUS DISEASE UNIT

SEVENTH FLOOR PLAN

PSYCHIATRIC UNIT

PSYCHIATRIC UNIT

EIGHTH FLOOR PLAN

0 10 20 30 40 50

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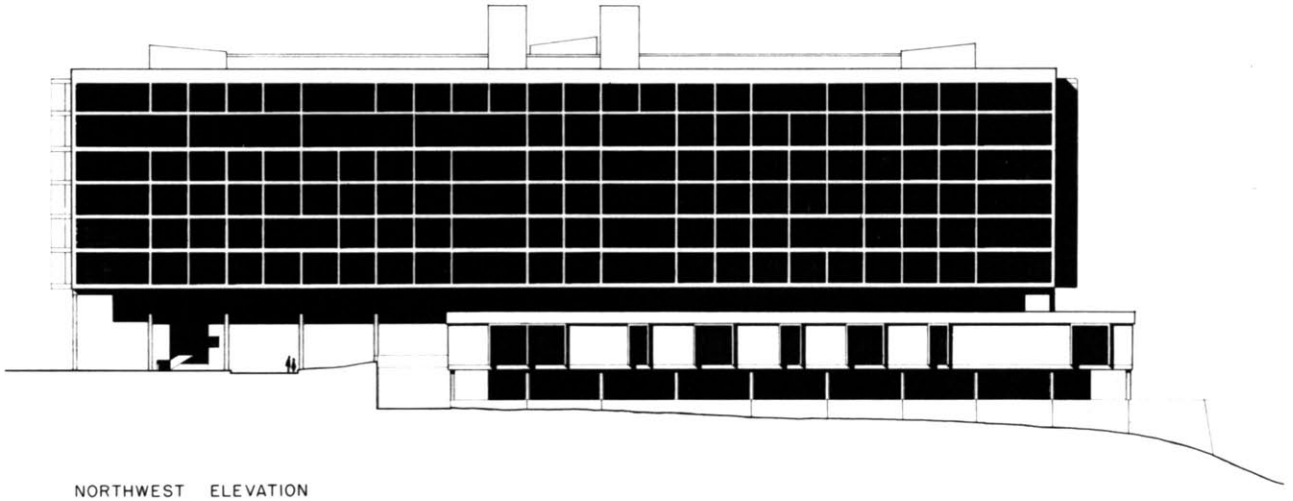
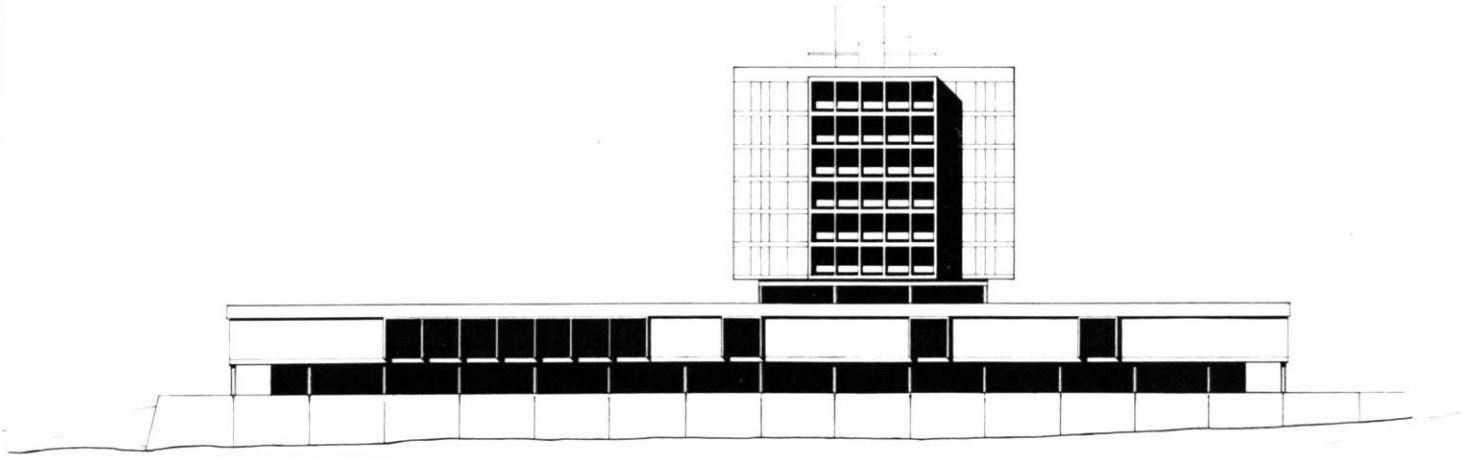
7



NORTHWEST ELEVATION



SOUTHWEST ELEVATION

0 10 20 30 40 50

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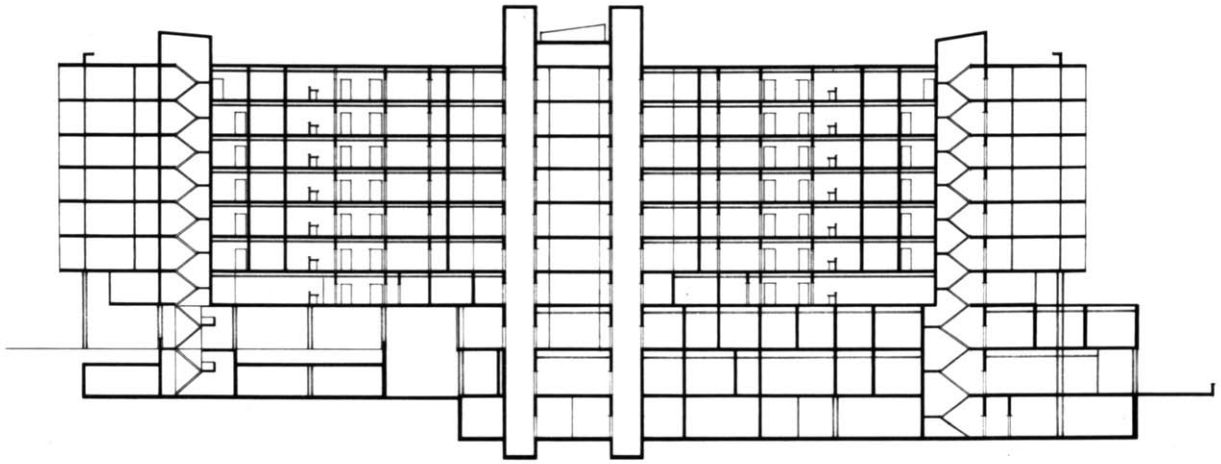
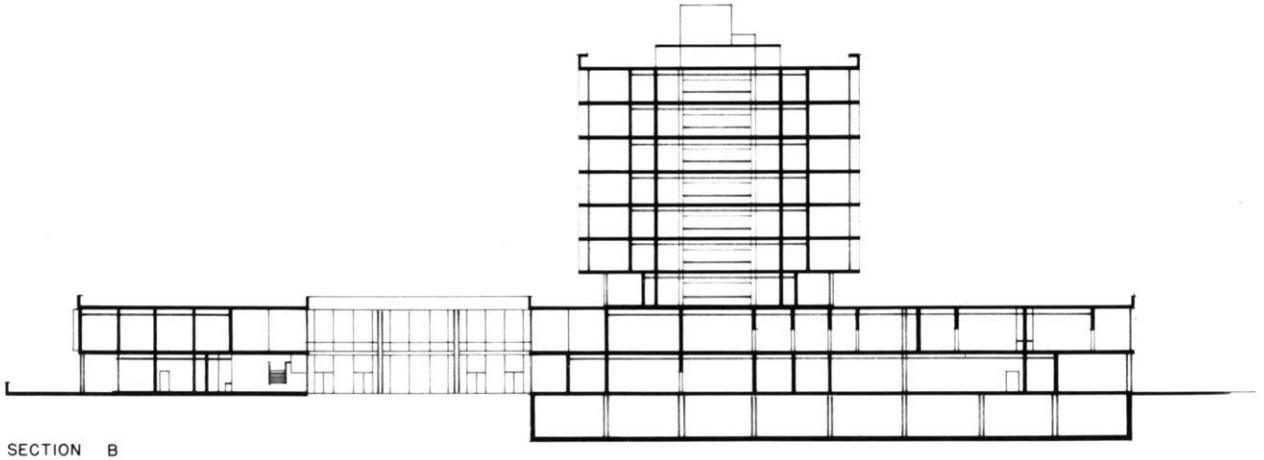


SECTION A



SECTION B

0 10 20 30 40 50

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