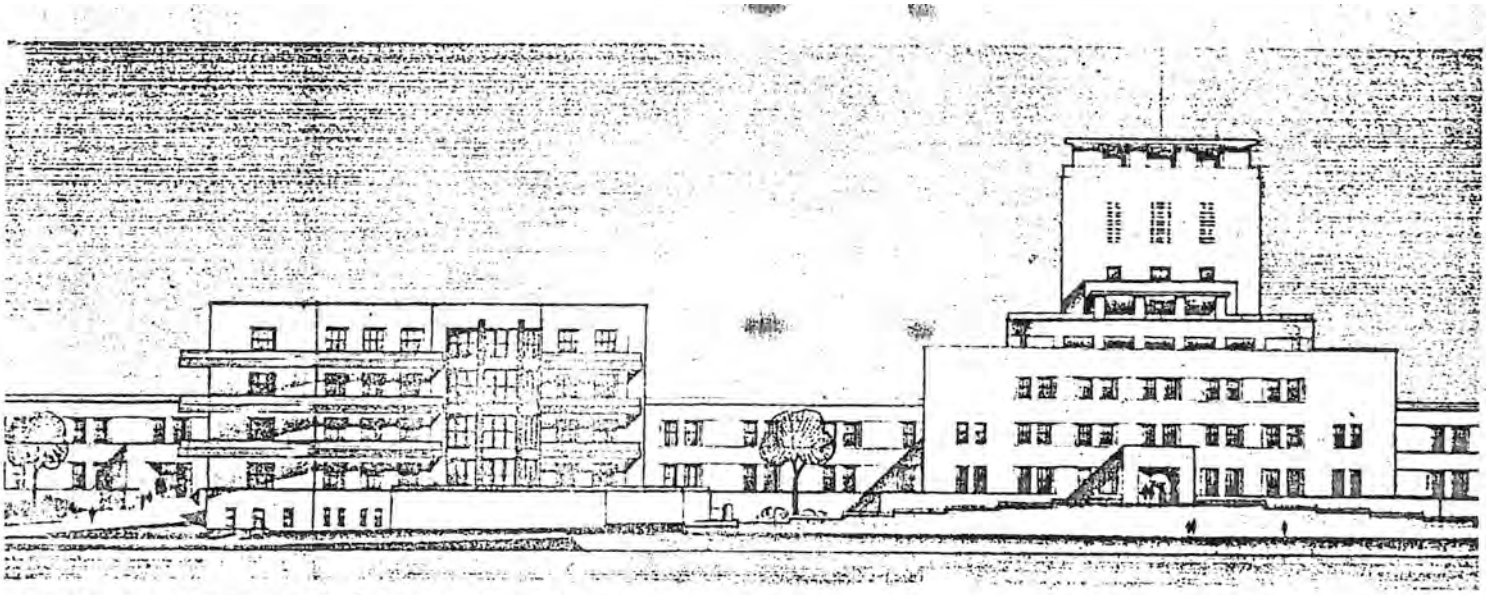


Welfare Hospital will house New York City's chronic patients.

The Fruit of Research

By ISADORE ROSENFIELD

THE 1,500-bed hospital for chronic diseases which is the subject of this article is the first tangible result of agitation, research and educational work which have been carried on for a period of years by agencies and individuals largely under the leadership of the committee on chronic illness of the Welfare Council in New York City. The committee's studies revealed the haphazard and often tragic way in which chronic illness has been dealt with and prompted the formulation of a constructive program.

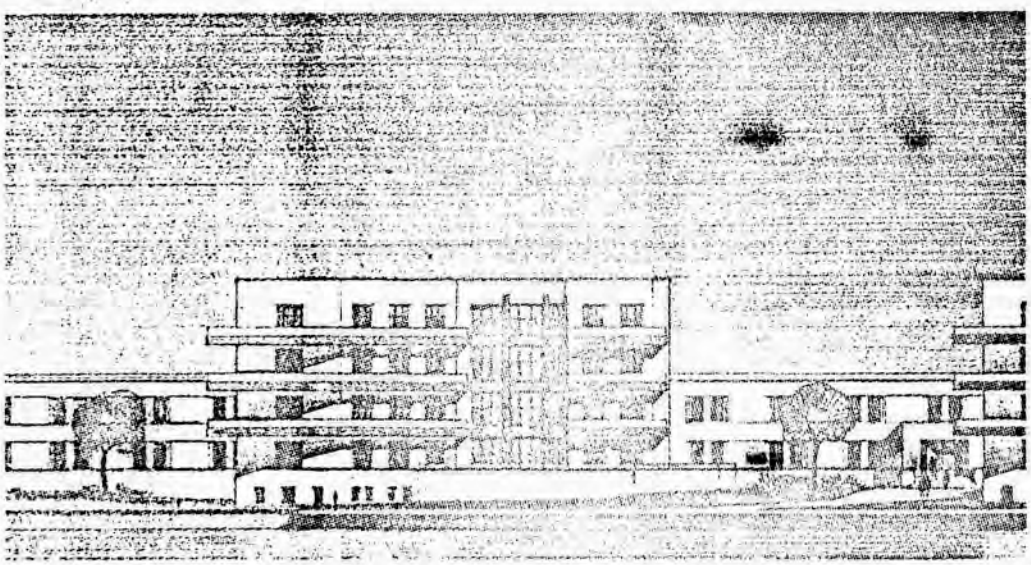
The project to be known as Welfare Hospital is one of many in a long term program for the development of municipal hospitals in New York City which was initiated in the administration of Mayor Fiorello H. LaGuardia, under the direction of Dr. S. S. Goldwater, commissioner of hospitals. It is also part of a comprehensive scheme of development for Welfare Island. This island has hitherto been shared by the Department of Hospitals and the Department of Correction. The correctional institutions have been demolished and their sites will be occupied by hospitals and auxiliary institutions. Thus the entire island will become hospital territory.

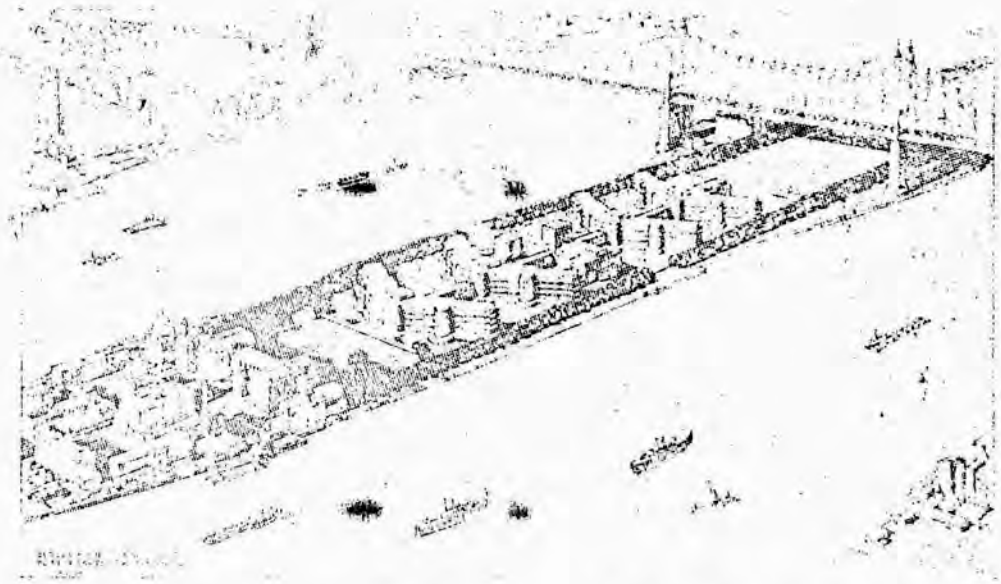
The buildings housing the present hospitals on the island are on the whole old and out of date. It is, therefore, anticipated that ultimately the entire island will be rebuilt. The current development of Welfare Island may be regarded as the first installment of a comprehensive plan covering the whole island. The current work consists of a central nurses' residence, power plant and Welfare Hospital.

The central nurses' residence will house 605 nurses. It is intended to serve not only the Welfare Hospital but other institutions on the island and is planned for future expansion. The power plant is designed to take care of the needs of the central nurses' residence and the Welfare Hospital. It too is planned for future expansion calculated to replace ultimately the several boiler plant units scattered over the island. Under the present plan the nurses' residence, power plant and the hospital are connected by a tunnel providing continuous walking passage as well as pipe space. In the ultimate development this tunnel will be continued throughout the length of the island.

Turning to the hospital proper, the purpose here is not primarily to describe it but rather to explain the principles in accordance with which it was developed. The odd shapes of the buildings and the manner in which they are disposed are frankly unconventional and raise questions as to the reasons why they were thus disposed.

The problem was to design a hospital for 1,500





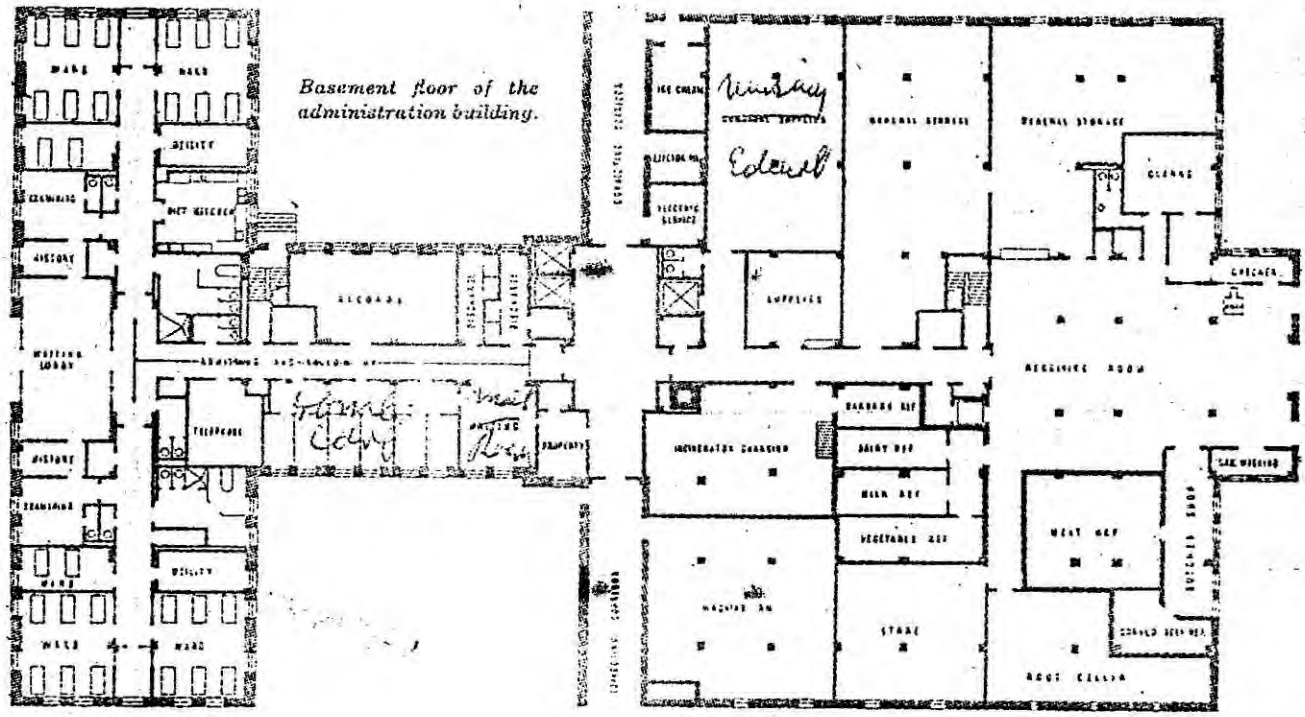
Perspective of chronic disease hospital on Welfare Island, New York City. The hospital's bed capacity is 1,500.

adult patients, men and women, suffering from chronic illness. The report of the committee on chronic illness of the Welfare Council recommended that the type of patient considered should preferably be housed in low buildings, because chronics are frequently ambulant and freedom of the grounds for such patients is considered to be of therapeutic importance.

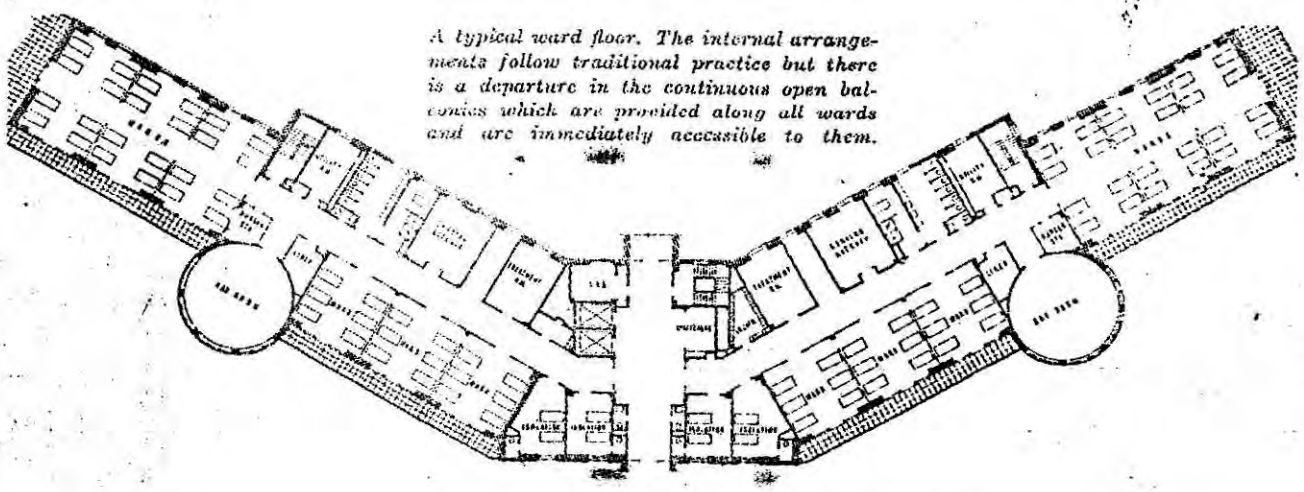
Two-story buildings at first considered were deemed uneconomical. As experience indicates that about 50 per cent of the clinical classifications which are intended to be treated here are generally ambulant it was decided that it would be consistent with economy and the needs of the patients to erect four-story buildings. By virtue of this, 25 per cent of the patients would be on the ground floor and another 25 per cent within reach of the grounds by means of one flight of stairs. Further justification for this decision was based on the provision of balcony facilities immediately accessible from the wards at the various stories.

The second assumption made was that the buildings should face south for obvious reasons. As the island runs approximately north and south, the buildings were placed with their long axes east and west. The physical limitations of the width of the island minus the space required for marginal roads left a cross-island dimension of about 400 feet within which buildings could be placed. A study of a straight line cross-island unit revealed that such a unit could house about ninety-two patients per floor. At four floors per building it was found by simple arithmetic that four such buildings would provide for the total required number except those who would be in the admitting units.

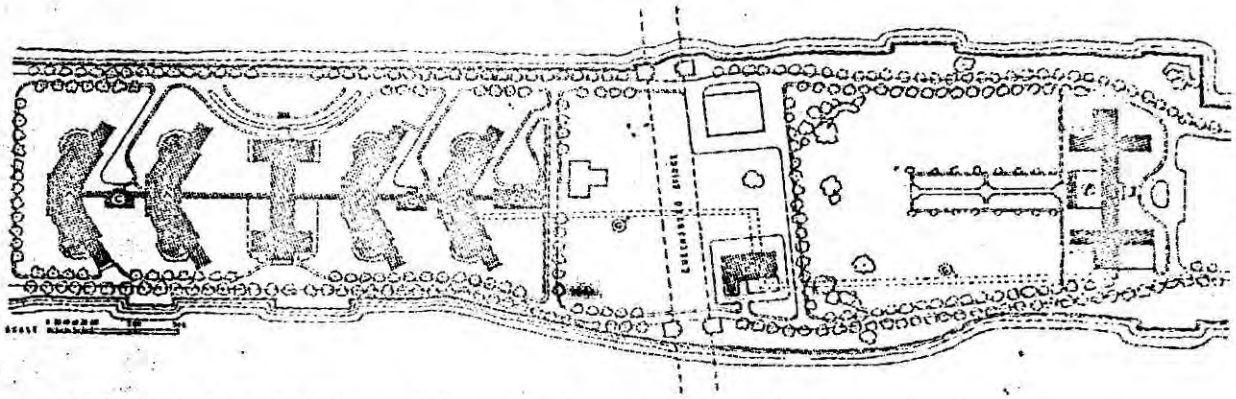
A study was then made of the administration



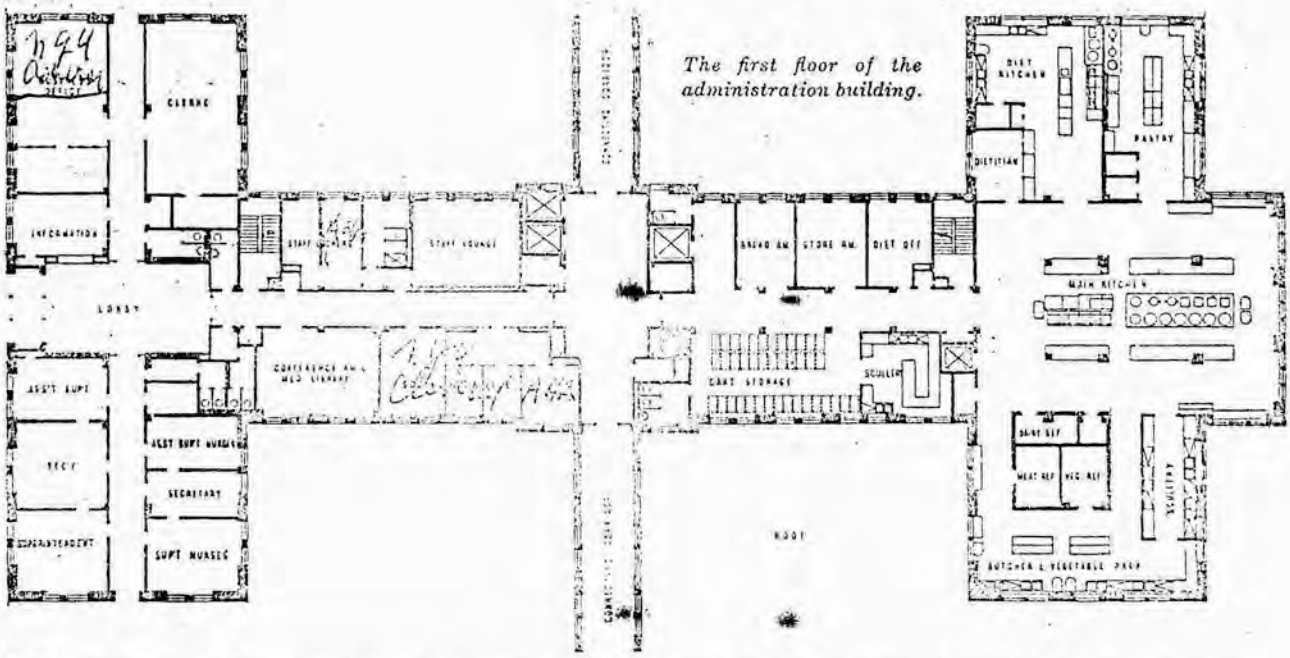
Basement floor of the administration building.



A typical ward floor. The internal arrangements follow traditional practice but there is a departure in the continuous open balconies which are provided along all wards and are immediately accessible to them.



This drawing shows the plot plan of the current development. A—ward buildings; B—administration; C—visitors' entrance; D—laboratory and morgue; E—power house; F—nurses' home; G—tunnel.



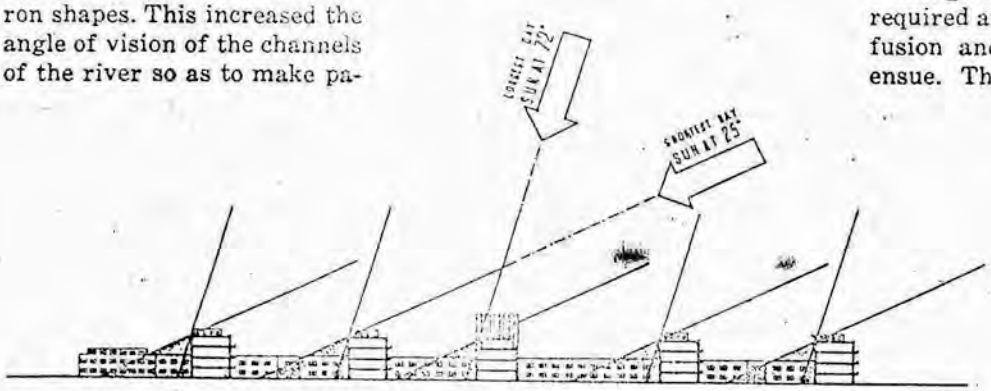
The first floor of the administration building.

building to house the admitting unit for patients, receiving department for goods, administration, diagnostic and treatment facilities, the kitchen and dining facilities. For convenient accessibility, it was decided to place this unit in the middle with the patients' pavilions north and south of it. Space had also to be provided for a laboratory building. When these were laid out in diagrammatic form, it showed that within the space available on the former penitentiary site there was sufficient light and air around the buildings and that even on the shortest day for this latitude the buildings would not cast shadows upon each other.

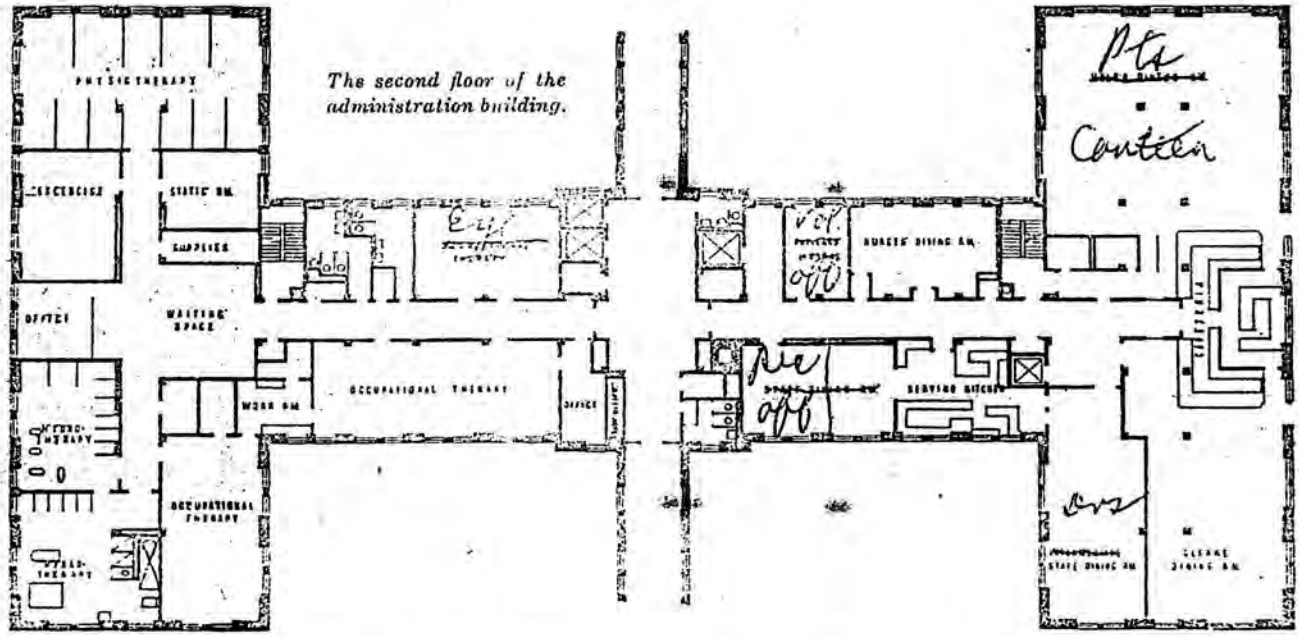
This, however, was considered not completely satisfactory because under this scheme the patients on the south face of one building would be looking into the service portion of the building in front of them. Furthermore, this plan would have given insufficient view of the two channels of the East River to the east and west. To overcome these difficulties, it was decided to break the straight line units into chevron shapes. This increased the angle of vision of the channels of the river so as to make patients feel that they are facing the river rather than facing the back of a building. In this maneuver a longer sun exposure day was achieved. Whereas a straight line unit has an exposure of 180°, the chevron shape, which deviates from the straight line by 30°, gives a sun exposure of 240°.

In the general planning special consideration was given to the problem of proper circulation. It was assumed that patients, doctors, people on business and visitors to patients would enter the hospital group from the west road and that service deliveries would be made from the east road. Patients are admitted into the two admitting units in the administration building for diagnosis and from there distributed to their respective wards by the various elevators in the several pavilions.

Experience in the city hospitals shows that 1,500 patients would receive about 3,000 visitors per visiting period. If these were admitted through the administration building, extensive waiting room space would be required and considerable confusion and congestion would ensue. The visitor would en-



Buildings do not cast shadows upon each other.



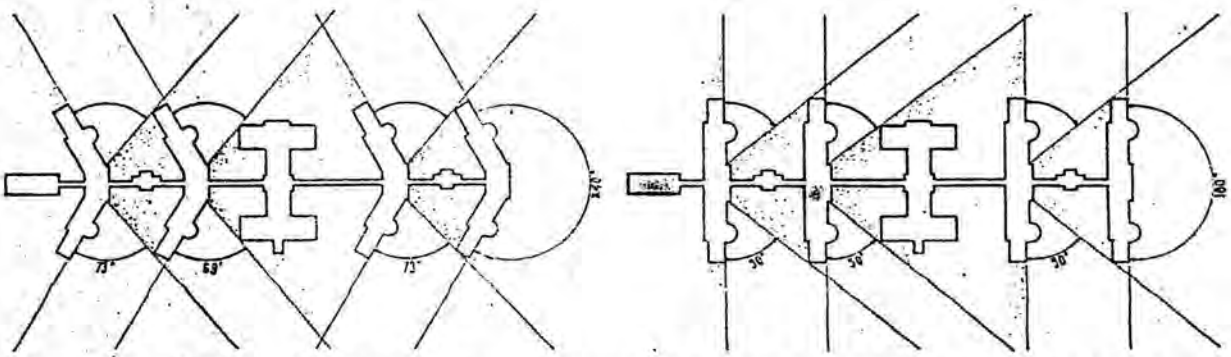
The second floor of the administration building.

counter difficulty in finding the proper ward which would cause difficulties in control. For these reasons it was decided to establish two visitors' entrances between the pairs of pavilions. This arrangement involves short travel along the corridor to the nearest ward pavilion.

The point of delivery is on the east shore and the lines of distribution to various buildings are along the basement corridor.

The connecting corridor is comprised of basement and two stories. From the point of view of circulation the ideal thing would have been to have the corridor four stories or the same height as the ward units. This, however, would have been needlessly expensive. At least during warm weather the roof of the connecting corridor is an additional means of lateral circulation on the level of the third story. An examination of the circulation diagrams should reveal another important principle in circulation—that all through communication is along the connecting corridor which cuts the various buildings (except the laboratory) on the short axis. The various ward units and services, including the laboratory, form culs-de-sac. In other words, in this scheme, we have a main thoroughfare off which there are branches which feed the various working units. In this manner comparative privacy and quiet are achieved in each unit.

This hospital is unique in its general plan and disposition of parts. It is based on strictly functional planning, which means that in disposing the parts the first consideration was given to the peculiar needs of chronic patients and administration. This involved the problems of circulation, control, orientation, view, ample ground space. No concession was made to any preconceived notions as to arrangement that would produce a beautiful picture or pattern. The arrangement presented here is frank, honest and straight-



A comparison of two schemes. Left, the building as designed, with wings at an angle; average angle of unobstructed vision, 72°. Right, alternate scheme, with wings perpendicular; average angle of unobstructed vision, 50°.

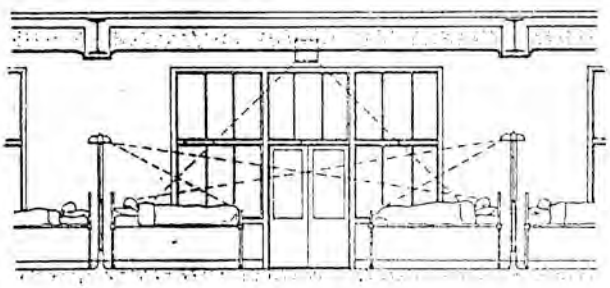
forward. It was reasoned that if all the parts were arranged in an orderly manner meeting the functional needs, the result would have esthetic wholesomeness. The illustrations bear out the correctness of this assumption.

The fact that the administration building does not follow the pattern of the ward buildings might be disconcerting to an architect steeped in the Beaux Arts tradition. Studies made with the idea of giving to the administration building a shape similar to that considered ideal for the ward buildings failed to meet the needs of the administration building. For this reason no concession was made to the thought of a uniform pattern.

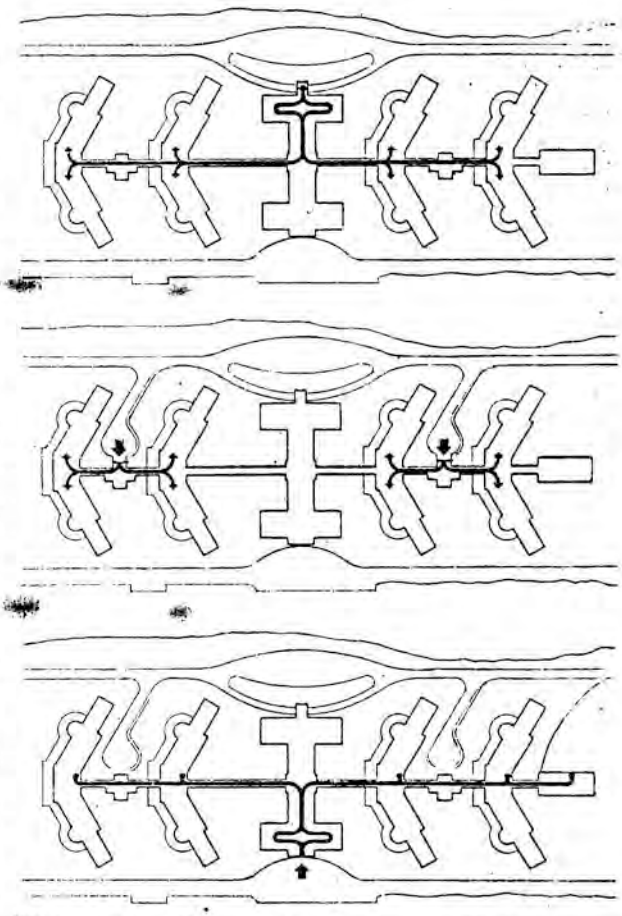
In its individual parts, this hospital can hardly boast of any departures of radical character, although there are features, too numerous for consideration in this article, which perhaps show some improvement over common practice. The following departures may be worth mentioning.

The ward units in their internal arrangement on the whole follow traditional American practice but present a departure in the manner in which porch and deck facilities are provided. In the traditional hospital there are often enclosed porches accessible from the wards and out-door facilities provided on roof decks. The experience of this department shows that in crowded city hospitals the porches are usually occupied as wards and the decks above are little used because of the extra personnel required in taking patients to and from the roof.

In the present instance, continuous open balconies are provided along all wards and immediately accessible to them. To prevent shading of the wards by the projecting balconies, the story heights were made 13½ feet from floor to floor. Third-story patients have in addition direct access to the paved roofs of the connecting corridors. On the first floor, there are broad terraces sufficiently large to accommodate most of the anticipated ambulant patients in each ward building. The terraces are connected by easy ramps with the grounds, which will be attractively landscaped for the convenience of the patients.



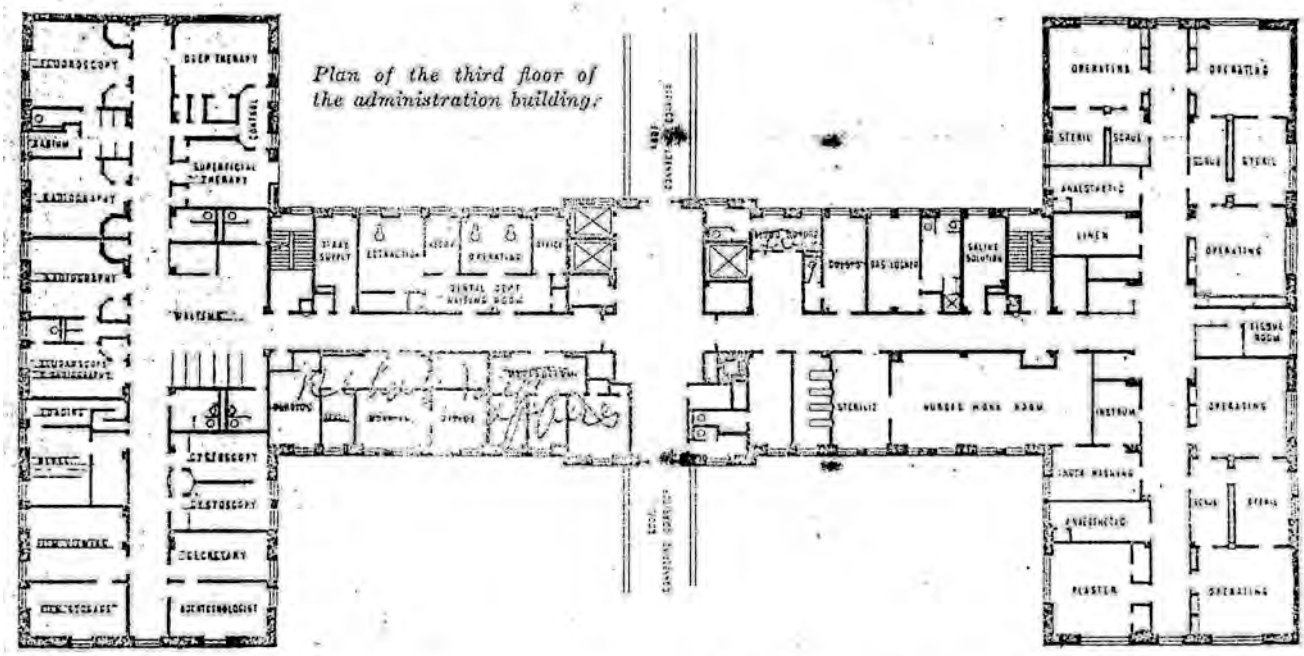
Scheme for ward lighting.



Circulation diagrams showing how traffic is regulated. Top, patients; center, visitors; below, service.

The common practice in ward lighting has been to use direct light suspended fixtures. Bedside lighting has been considered a luxury and when installed it has been usually either a somewhat unsightly and not always happily placed wall bracket or a portable type light attached to the bed. The difficulties with portable bedside lighting are well known and are accentuated in a large public ward and the suspended ceiling fixtures are glaring and fatiguing. When the ceiling fixture is the only source of light, it is usually so situated with reference to the patient that in reading the reading matter is in shadow.

In this hospital general lighting is provided from fixtures built-in to the ceiling. The view of the source is concealed by vertical metal louvres. This eliminates direct glare. On the partition back of each bed there is a fixed hooded reflector individually controlled and calculated to illuminate the entire bed. This is considered a proper arrangement for reading as well as for examination of patients. The reflectors are so designed that persons lying opposite each other cannot see the



Plan of the third floor of the administration building.

source of light in the reflector. Here again direct glare is eliminated.

There are many chronic patients in city hospitals intended primarily for acute cases. Experience shows that when chronics are treated along with acute patients, the medical staff is naturally more interested in the acute patients with the result that the chronics suffer comparative neglect. Under such circumstances medical knowledge of chronic diseases has not made the progress that it should. In this hospital every provision is made for chronic patients both from the point of view of nursing care and scientific treatment and research. The cooperation of medical schools has been promised in the organization and conduct of the clinical service.

At the top of the administration building, there are two stories for the housing of resident medical officers. On the second floor over the visitors' entrances, located between ward pavilions, demonstration lecture rooms are arranged with waiting facilities for both patients and students. Each ward has a demonstration treatment room. On each floor for every pair of nursing units there is a routine laboratory. Each ward building has two or more offices for the teaching personnel where conferences may be held between students and clinical directors. The laboratory building provides extensive facilities for routine and research work. Provision has been made for expansion of research facilities in the basement of the ward building nearest to the laboratory building. This story is a basement in name only as the north, east and west exposures where the laboratories will be are almost entirely above ground.

The work of occupational therapy is amply provided for in the several shops on the second floor of the administration building. In addition two industrial rehabilitation shops are provided in the basement story of ward buildings. Due to the crowning terrain of the island these two shops are also entirely out of ground and will have ample light, air and view of the river.

Research was conducted and preliminary studies were prepared under direction of Dr. S. S. Goldwater, commissioner of hospitals, by Isadore Rosenfield, his research assistant in architecture. The architects of the projects are Butler and Kohn, York & Sawyer, architects associated. Dr. Mark L. Fleming functioned as chairman of the department's planning board. The architects for the nurses' home are Morris & O'Connor and for the power house, Starrett & Van Vleck.