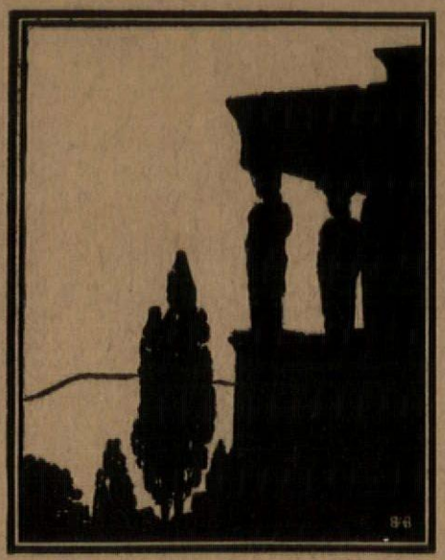
ARCHITECTURE

February 1933



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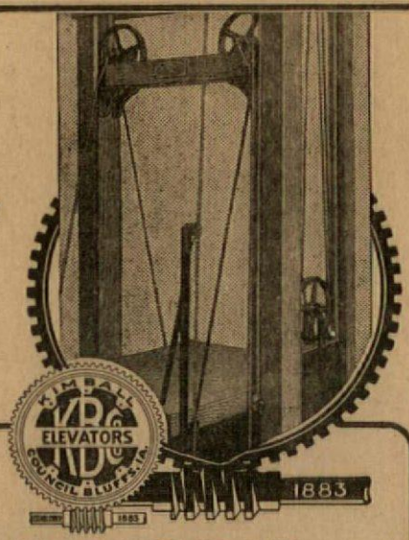

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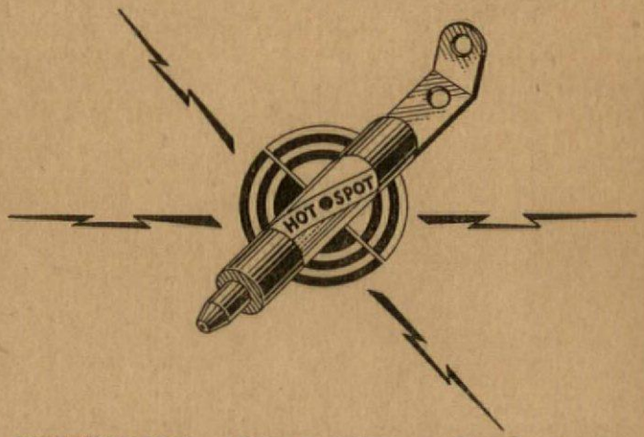

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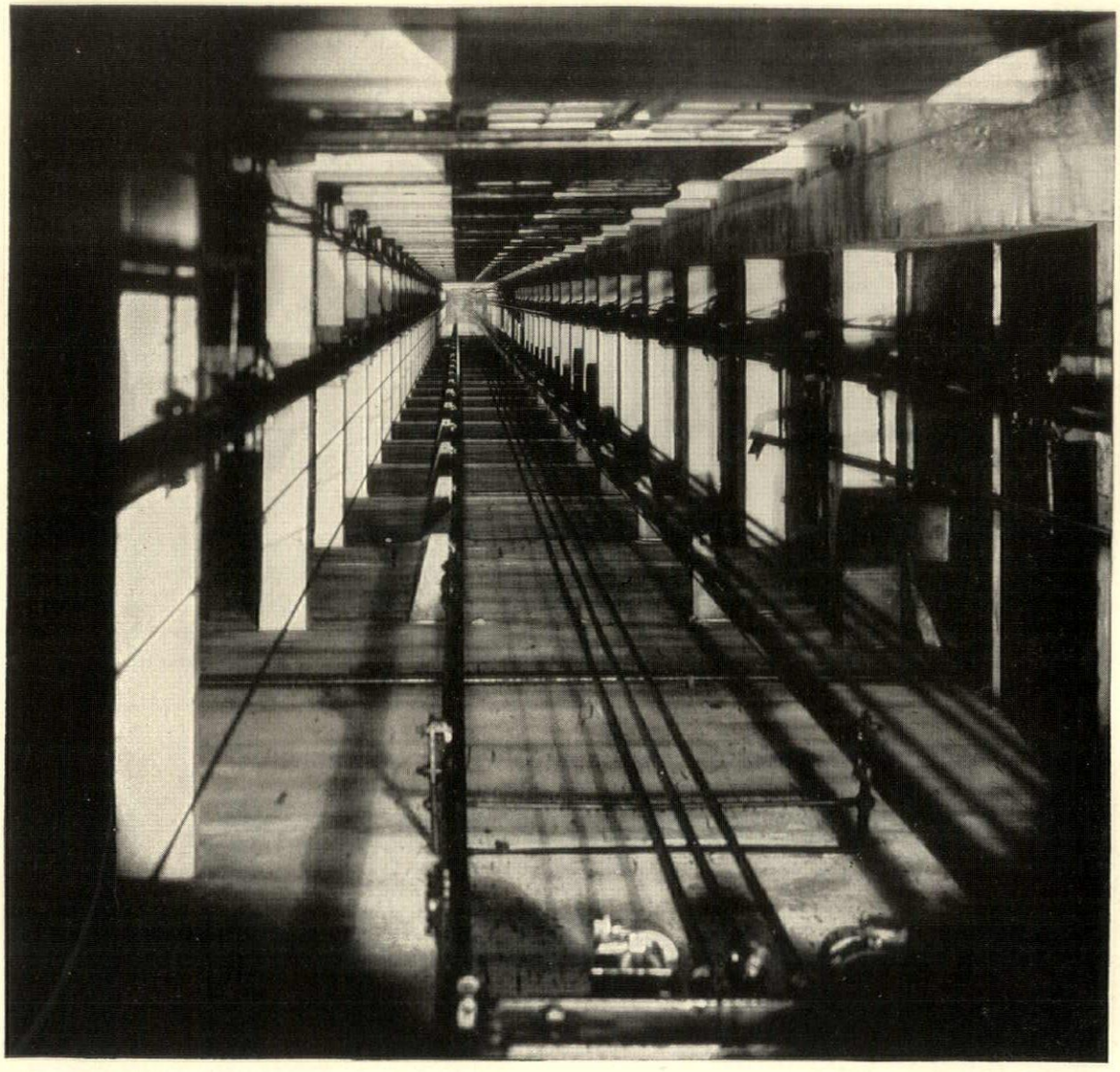

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MAINE ARCHITECTURAL SOCIETY

UNTIL recently there has been no organization of architects within the State of Maine. The Maine Architectural Society has now adopted a constitution and by-laws conforming to those suggested by the A. I. A. for use by its chapters.

The Society has three classes of membership; Members, Associates, and Affiliates. The Affiliated Membership is composed of men whose occupations or interests are in some way allied to architecture.

The officers of the Society are: President, John Calvin Stevens, F.A.I.A.; Vice-President, John P. Thomas, A.I.A.; Secretary-Treasurer, Royal Boston, Jr. The remaining members are: Harry S. Coombs, C. Parker Crowell, A.I.A.; Alonzo J. Harriman, E. Leander Higgins, Walter S. Lancaster, A. I.A.; George I. Massur, Henry Richards, John Howard Stevens, A.I.A.; Josiah T. Tubby, A.I.A.; and Philip S. Wadsworth. Associates: John Allen, Donald H. Lovejoy, and Henry W. Stevens. Affiliated: Alexander Bower, A.N.A.; Harry H. Cochrane, William J. Dougherty, Albert C. Hobbs, John H. Huddilston, Lucien P. Libby, and Karl von Rydingsvard.

The offices of the Secretary are in Room 413, Clapp Memorial Building, Portland, Me.

ARCHITECTURAL LEAGUE SHOW

THE forty-eighth annual exhibition of the Architectural League of New York will be held from February 18 to March 11, in the Fine Arts Building, 215 West 57th Street, as announced by Arthur Loomis Harmon, chairman of the exhibition committee. Despite the depression, and in fact, because of it, the members of the League are uniting to make a selective and representative showing of architecture and its kindred arts.

Any profits resulting from the show will go to the Architects' Emergency Committee unemployment fund.

Exhibits will include works of contemporary architecture, sculpture, landscape architecture, decorative painting, and works of the native arts and crafts produced within the last year. All exhibits, to be eligible, must pass the juries of selection in their respective fields.

The usual annual competitive awards will be made. They include the Medals of Honor in the five classifications above mentioned; the Silver Medal in Architecture awarded for domestic work, the Michael Friedsam Medal for the most distinguished work in behalf of native American craftsmanship, the Birch Burdette Long Medal for distinguished rendering, and the Avery Prize for small sculpture.

The membership of the exhibition committee in charge of the Annual Exhibition is as follows:

A. L. Harmon, Chairman; Archibald M. Brown, D. Putnam Brinley, Noel Chamberlin, G. A. Holmes, Philip L. Goodwin, Harvey W. Corbett, Otto W. Heinigke, Ernest W. Keyser, Julian Clarence Levi, Irwin L. Scott, Joseph Urban, and Ralph T. Walker.

The following committees have charge of the various divisions of the forthcoming exhibition and will serve as the juries of selection.

Committee on Architecture: A. L. Harmon, Chairman; Archibald M. Brown, Roger H. Bullard, G. A. Holmes, William Muschenheim, Irwin L. Scott, and Ralph T. Walker.

Committee on Decorative Painting: D. Putnam Brinley, Chairman; Francis Bradford, Jr., Arthur Covey, Salvatore Lascari, J. Mortimer Lichtenauer, and Edward Trumbull.

Committee on Sculpture: Ernest W. Keyser, Chairman; Gaetano Cecere, Ulric H. Ellerhusen, James E. Fraser, Charles Keck, Albert T. Stewart, and A. A. Weinman.

Committee on Crafts: Otto W. Heinigke, Chairman; Richard F. Bach, Lee Simonson, Eugene Schoen, Giles Whiting, and Oscar Widman.

Committee on Landscape Architecture: Noel Chamberlin, Chairman; Armistead Fitzhugh, and Robert L. Fowler, Jr.

CHICAGO'S CENTURY OF PROGRESS EXPOSITION

ON December 1, exactly six months before the formal opening of the Chicago Exposition, every major exhibit building which the Exposition itself will erect was under construction. The following are either already completed, or under construction on the Fair grounds on Chicago's lake front:

The Administration Building; the Agricultural Building; the Dairy Building; the Hall of the States; the Federal Government Building; the Electrical Building; the Communications Building; the Hall of Social Science; the Terrazzo Esplanade; the Enchanted Island; Sears, Roebuck Building; Illinois Host Building; the Golden Pavilion of Jehol (a replica of China's finest Temple of Lamaism); the Hall of Science; the "Sky Ride"; five pavilions in the General Exhibits Group; Blue Ribbon Restaurant; Twelfth Street Entrance; Sixteenth Street Bridge; Twenty-third Street Bridge; old Fort Dearborn (a replica of Chicago's first settlement); the Lincoln group; the Home Planning Hall; the Johns-Manville Corporation Building; the Southern Cypress Manufacturers' Building; two houses in the Home and Industrial Arts exhibit; General Motors Corporation Building; Chrysler Sales Corporation Building; the Travel and Transport Building and Dome; attractions on the Midway, or amusement zone; the Mayan Temple.

R. A. I. C.

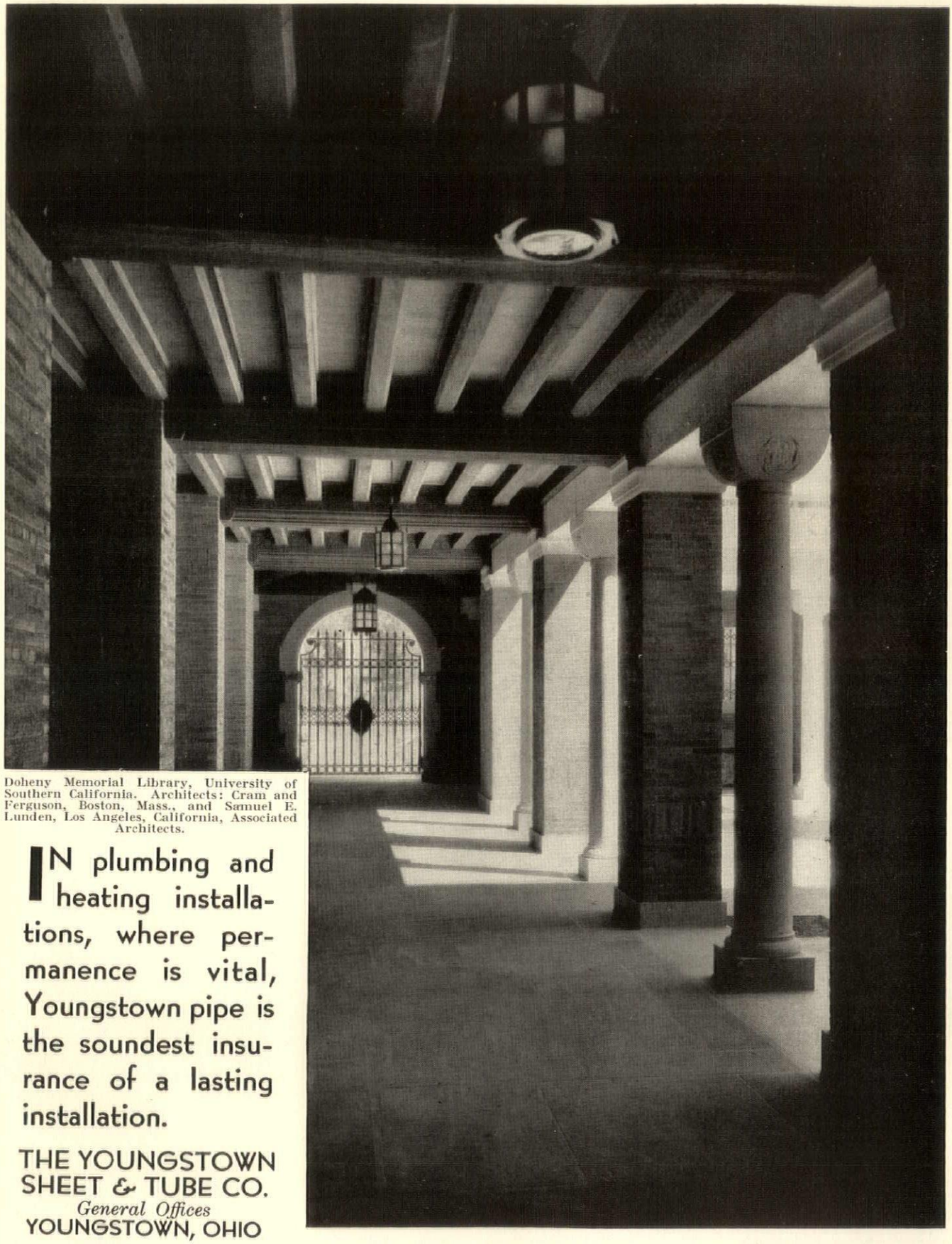
THE twenty-sixth annual meeting of The Royal Architectural Institute of Canada will be held at the King Edward Hotel, Toronto, Ontario, Canada, on Friday and Saturday the 17th and 18th February, 1933. Alcide Chaussé, Honorary Secretary, 706 St. Gabriel Street, Montreal, Que.

NEW YORK UNIVERSITY'S LECTURE COURSE

THE College of Fine Arts, New York University, offers a lecture course on art, decoration, and architecture during the second term, beginning February 1. The lectures, which will be given at the Metropolitan Museum of Art, consist of General History of Art by Herbert R. Cross, Mohammedan Decorative Art by Rudolf M. Riefstahl, Principles of Baroque Art by Erwin Panofsky, Origins of Flemish Painting by Erwin Panofsky, Seminar: Problems in the History of Art by Erwin Panofsky, History of Illuminated Manuscripts in Spain by Walter W. S. Cook, French Romanesque Sculpture by Meyer Schapiro, Late Gothic Painting in Siena by Millard L. Meiss, History of Design by C. Hayes Sprague, Dynamic Backgrounds of Modern Art and

(*Continued on page 4*)

ARCHITECTURE, published by CHARLES SCRIBNER'S SONS, 597 Fifth Avenue, New York, N. Y. February, 1933. Volume LXVII, No. 2. Published monthly on the 28th of the month preceding date of issue. Entered as second-class matter, March 30, 1900, at the Post-Office at New York, N. Y., under the Act of March 2, 1879. Yearly subscription rate to members of the architectural and allied professions, $3; to all others, $6.



Doheny Memorial Library, University of Southern California. Architects: Cram and Ferguson, Boston, Mass., and Samuel E. Lunden, Los Angeles, California, Associated Architects.

Architecture by Eugene Schoen, Fundamental Problems of Modern Art by Leo Katz, The Evolution and Technique of Modern Art by Leo Katz, Fundamentals of Interior Decoration by Evan J. Tudor, Ancient Textiles and Tapestries by Rudolf M. Riefstahl, Oriental Rugs by Rudolf M. Riefstahl, and Tapestries, their History, Design, and Technique by Lorentz Kleiser.

Further information may be had by addressing the Executive Secretary, College of Fine Arts, New York University, 250 East 43rd Street, New York City.

PRINCETON WINS FRENCH MEDAL

THE medal awarded annually to the American school of architecture submitting most meritorious work in six competitions of the Beaux-Arts Institute of Design was presented this year to Princeton. The medal is called the University Medal of the Groupe Americain, Societé des Architects Diplomés par le Gouvernement Français.

TRADE PRACTICES OF THE ORNAMENTAL IRON, BRONZE AND WIRE INDUSTRY

AT a trade practice conference held in Cambridge Springs, Pa., last October, the iron, bronze and wire industry adopted certain resolutions dealing with trade or business practices. These resolutions, with some slight modifications, have been accepted by the Federal Trade Commission, and the rules have now been sent to members of the industry for individual acceptance.

GEORGE WILLARD CONABLE, 1866–1933

GEORGE W. CONABLE, recently of Schirmer, Smith & Conable, New York City, died on January 2, at St. Anthony's Hospital, St. Petersburg, Fla. Mr. Conable was born in Cortland, N. Y., was graduated by Cornell in the class of 1890, and received his early architectural office training with C. P. H. Gilbert, Barney & Chapman, and Ernest Flagg. Among the buildings which Mr. Conable designed were Wagner Memorial Lutheran College, Staten Island; the Central Queens Y. M. C. A. in Jamaica, L. I.; the Jamaica Chamber of Commerce; the Hallenbeck-Hungerford Building in Lafayette Street, and the Kingston Avenue Hospital, Brooklyn; the Rye Beach development, now part of the Westchester County park system; and the Hudson River Day Line's development at Indian Point. He designed more than fifty churches, perhaps the most widely known of which is Trinity Lutheran Church, Long Island City. Among the schools that he designed were the New Hyde Park (L. I.) Public School; the Central High School, Cortland, N. Y.; and the Western China University in China.

EDWARD L. TILTON, 1861–1933

EDWARD LIPPINCOTT TILTON, architect of New York City, died January 5, at his home in Scarsdale. Mr. Tilton was born in New York City, started in the banking business at the age of sixteen, but soon turned to architecture and entered the office of McKim, Mead & White.

In 1887 he went to Paris, spending three years at the Ecole and in sketching through Europe. Returning to this country in 1890, he set up his own practice a year later in partnership with William A. Boring, now Dean of the School of Architecture at Columbia. Boring & Tilton made an enviable name for the firm during the years immediately following. When Mr. Boring resigned in 1916, Mr. Tilton continued his practice in association with Alfred Morton Githens. Notable among their works are the Wilmington (Del.) Public Library for which the A. I. A. awarded a gold medal; the libraries at Springfield and Somerville, Mass.; the Carpenter Memorial Library and the Currier Museum at Manchester, N. H.; and the Medical Library for Johns Hopkins University, Baltimore.

At the time of Mr. Tilton's death the firm was engaged in a number of projects, including the Museum of Fine Arts and the Museum of Natural History at Springfield, Mass.; the Administration Building for Bergen County, N. J.; the Post Office at Manchester, N. H.; the Library of Girard College, Philadelphia; and the new Enoch Pratt Memorial Library at Baltimore.

Mr. Tilton was also deeply interested in archæology, and in 1895 accompanied a group to excavate the Argive Heræum in Argos, Greece. He was the author of a monograph on this work.

Mr. Tilton was one of the organizers of the Society of Beaux-Arts Architects, was treasurer for twenty-five years of the Paris Prize Committee Fund, and at the time of his death was treasurer of the New York Society of the Archæological Institute of America, a member of the Architectural League, of the Society of Beaux-Arts Architects, and a Fellow of the American Institute of Architects.

EDWARD E. GRANT, 1860–1932

EDWARD E. GRANT, architect, of Newark, N. J., died on December 19, of pneumonia in Lexington, Ky. Mr. Grant was born in Saratoga, but lived in Newark for more than forty-five years, with his home and office in recent years at 859 Broadway. About a year ago he retired from active practice. Mr. Grant designed the church, convent and school of Our Lady of Good Counsel, the North Newark Recreation Hall, and various office buildings and factories in his community.

A CORRECTION

IN publishing several illustrations of the executive offices in the Squibb Building, New York City, we failed inadvertently to give credit for the design of these interiors to both Sherley Warner Morgan and The Firm of Ely Jacques Kahn. Mr. Kahn's firm alone was credited, though Mr. Morgan was associated with him in the design of these interiors. The illustrations were published in "Modernism in Woodwork," December, 1931, and in "Business Offices of Executives," December, 1932.

PERSONAL

Kemper Goodwin, architect, has opened his own office for the practice of architecture, at 208 Kangerga Building, Henderson, Texas, and would like to receive manufacturers' samples and literature.

The architects heretofore practising under the name of Philip L. Small, Cleveland, Ohio, will in the future practise under the name, Small, Smith & Reeb. The partners are Philip L. Small, George C. Smith, J. Elmer Reeb, and James I. Kuhn. Francis K. Draz will be associated with Small, Smith & Reeb in residential work. The office remains in the Terminal Tower.

Hugh Clinton Porter and G. Harmon Gurney announce the formation of a partnership for the practice of architecture under the firm name of Gurney & Porter. Their offices are at 6 East 45th Street, New York City.

ARCHITECTURE

REG. U. S. PAT. OFFICE

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CONTENTS

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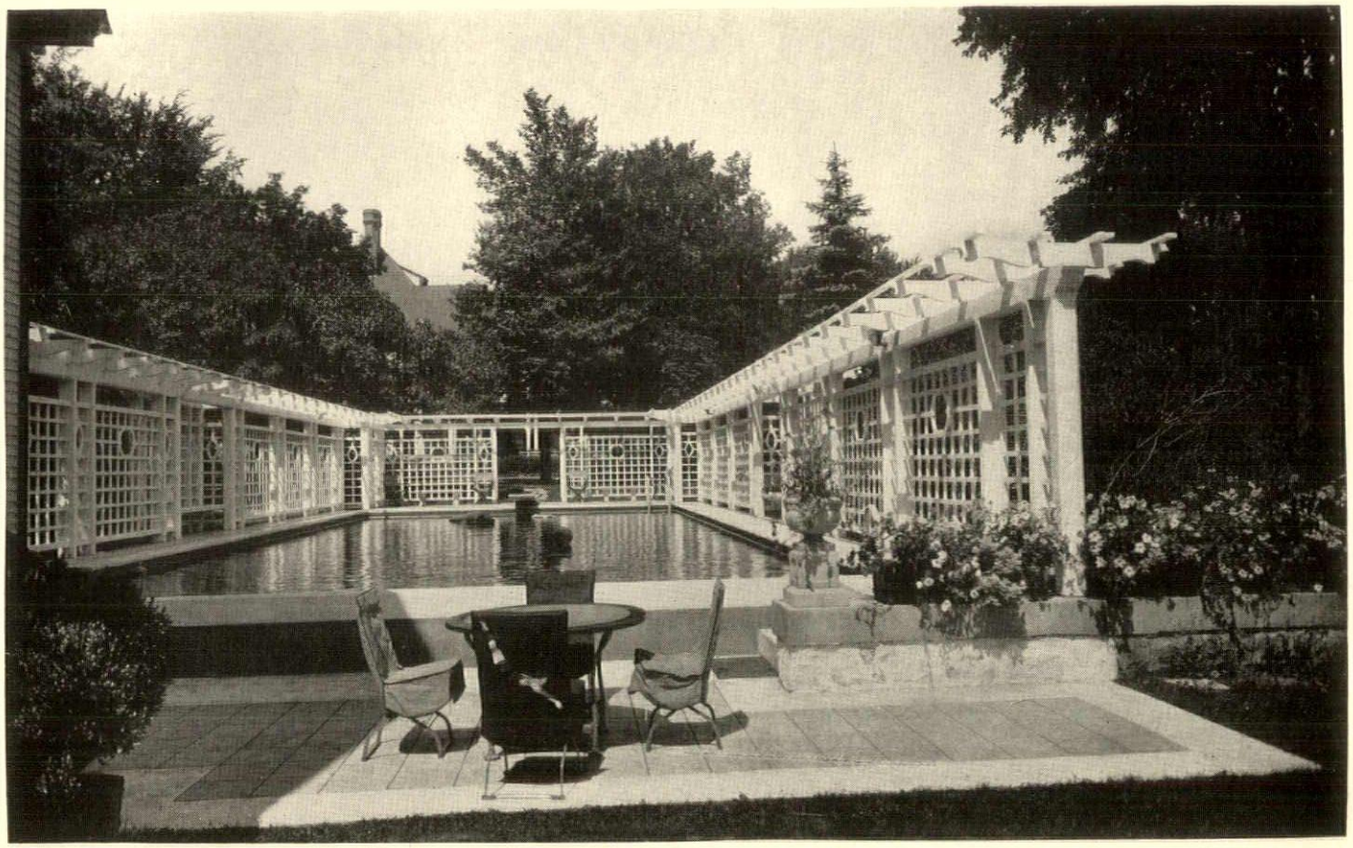

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From the pencil drawing by Carl Loven

« ARCHITECTURE »

ARCHITECTURE

VOLUME LXVII FEBRUARY 1933 NUMBER 2

The Hospital, Today and Tomorrow

By Carl A. Erikson

OF SCHMIDT, GARDEN & ERIKSON, ARCHITECTS

THE permanence of architecture is at once its joy and its sorrow. The architect's pleasant dreams and his ghoulish nightmares alike become terrifyingly and conspicuously permanent over the face of the earth. The painter, the sculptor, the musician, the writer—all the arts—have a garret of the forgotten; but the architect stands before this generation, the next, and the next, and the next, just as he is—in all his nakedness.

Yet the architect is but the creature of his environment and of his client. No matter how much we prate, that fact remains even more permanently than do our buildings. Pericles might have understood Cret. But imagine, if you can, Corbusier and Lorenzo the Magnificent. How about Wright and the Merrie Queen, Cram and Nero?

Hospitals are never destroyed and seldom remodelled. And obsolescence is a word not found in the hospital lexicon. And yet hospital technique, clientele, and personnel have been completely changed in fifty years. It isn't surprising then that the architects having much to do with hospitals become impressed with the permanence of the buildings they leave behind—spending days and nights (once upon a time) trying to push the existing buildings around to permit enlargement. While there are forces which will require the rebuilding of many other kinds of buildings, there seems to be none that can effect the rebuilding of a hospital building. Once it is, it always is.

Nothing more aptly illustrates how completely the environment and the client dominate the architect. Modern medicine made the modern hospital. It is now, and always has been, utilitarian. It is a workshop—for the humane, kindly, and efficient care of the sick—the like of which the world has never before known. And it has developed in less than fifty years. But medicine has progressed so rapidly that the hospitals have never had the time to take inventory. They are very like the factory that finds building after building is needed to meet the demand, yet it has neither the time nor the capital for the rearrangement necessary to lower operating costs. A practised eye is hardly necessary to disclose similar wastefulness in some of our older and larger hospitals. The possession of three or four X-ray Departments is hardly much worse than the alternative—in one hospital—of an hour's transport from one important patient's group to and from the single X-ray Department. Four and five kitchens are not uncommon in the older hospitals. Three and more Operating Departments are not unusual—but can hardly be deemed efficient. While recent years have seen an enormous growth in hospitals, the next few years should see the hospital's integration through remodelling to permit more efficient operation.

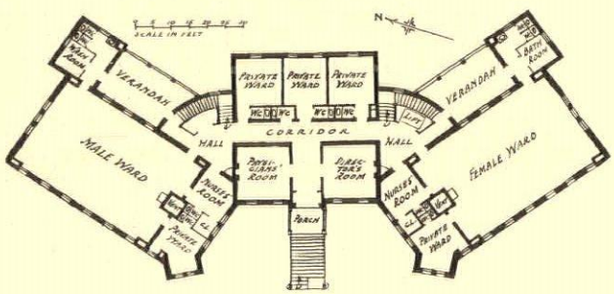
In the hospitals, the patient—numbers and kind—is necessarily the first consideration. Even though they are correct who anticipate a marked reduction in our rate of population increase, there are many factors that will offset a similar effect in the number of patients using the hospital. The steadily declining death rate and immigration mean an increase in the average age of the inhabitants. As children are not found in the hospitals in proportion to their numbers in the population, the increase in older folks will add to the patronage of the hospital. If the predictions of many of our housing experts come true—that the permanent domiciles of our people will continue to grow smaller—our hospitals must inevitably become larger, or more numerous. "Efficiency" apartments become very deficient ones when sickness enters. If medicine continues to increase its dependence on diagnostic and therapeutic devices that are

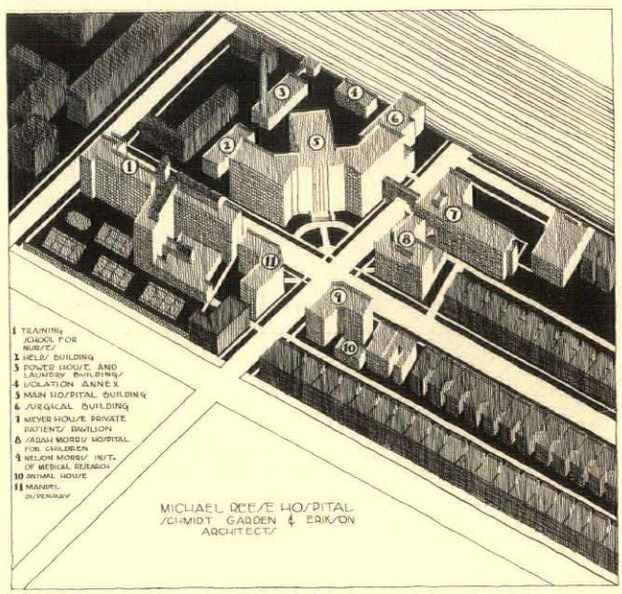
best assembled in the hospital, a further increase in hospital beds may be expected, as well as increases in space assigned to these auxiliaries.

Decentralization of population, which some tell us may be expected in the next few decades, will probably increase the number and size of hospitals to serve those communities. It is hardly to be expected, though, that it will retard the development of the large hospitals, for they have some obvious advantages in the massing of personnel and equipment, and in the classification of patients.

But what manner of man is this patient? A cross-section of the community, to be sure. With one eye on the obstetrical ward, it is still generally true that sickness, like rain, falls alike on the just and the unjust, on the rich and on

Above, Michael Reese Hospital, Chicago—the bridge across Twenty-ninth Street. Below at the left, the plan of the original unit prepared in 1883 or 1884. Below at the right, a bird's-eye view of the present institution with a capacity of 659 beds. For this number of beds the hospital finds it necessary to provide housing for 447 nurses and 50 internes. The hospital contains approximately 4,000 cubic feet per bed. Schmidt, Garden & Erikson, architects

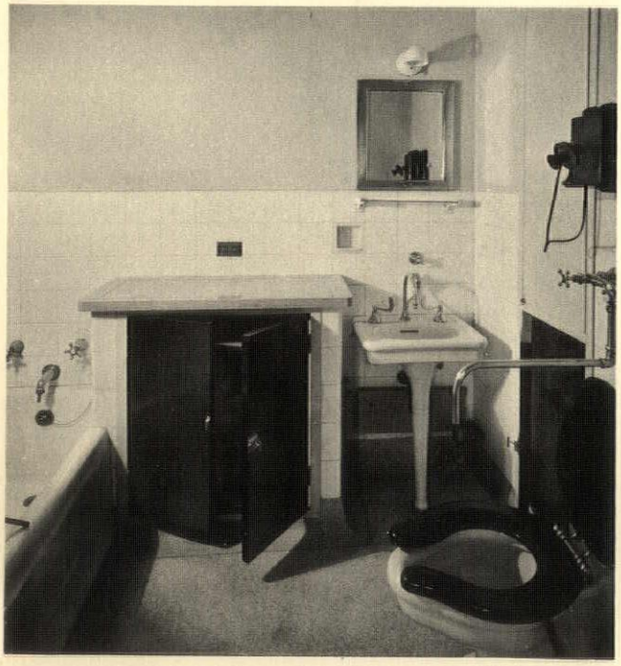




the poor. A few years ago there were many who believed—and cited statistics to prove—that the beds for the poor were too numerous. Rorem's studies for the Rosenwald Fund conclusively demonstrated the change in the kind of housing provided for the patient in the past decade. Luxurious private rooms *ad infinitum*, many small wards, were the usual programme. The studies of the Committee on the Cost of Medical Care show that the rich are well provided for, the poor moderately so, but the in-between—the "white collar" classes—are hopelessly ignored in hospital care. Their efforts to out-do the Joneses; whether it be in autos, in sickness, or in death, has been, in part, the cause of the great production of hospital quarters now too luxurious and expensive. If hospitals have over-provided for this group, parallels may be found in almost every kind of building during the past decade: hotels, apartments, houses, offices, etc. Unlike these, the conversion of hospital rooms into less expensive ones is a relatively simple matter, and usually a gain to the community.

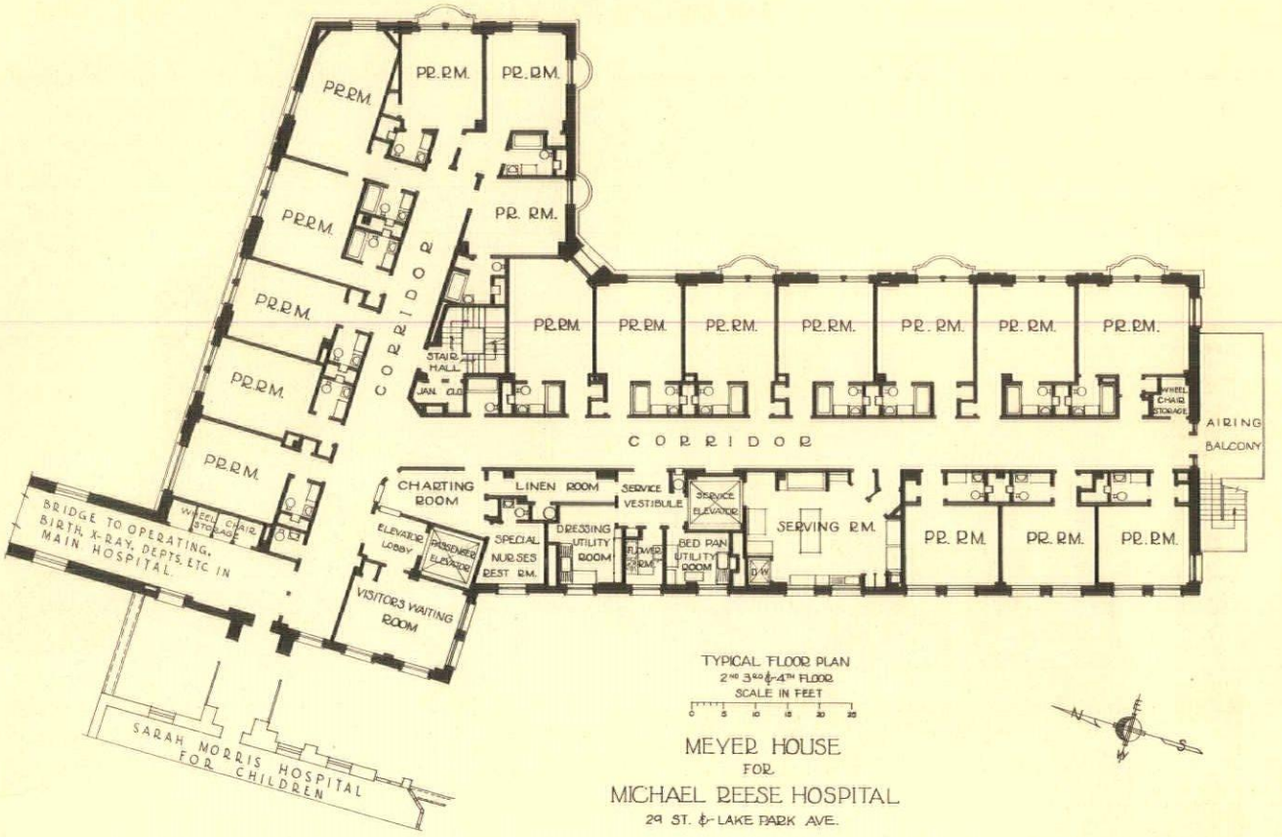
The care of the sick "middle-class" is a problem so much bigger than the hospital, that we had best prayerfully leave it to the Committee on the Cost of Medical Care. But hospital building of the future will be strongly affected by the effort to find a solution. I am convinced that one way to lower costs will be through the greater efficiency of the physical plant to avoid expensive duplication of space, personnel, and equipment. Another factor may be the introduction of group nursing. Under such a system a small group of patients is assigned to a squad of graduate nurses who relieve one another, so that one nurse is always on duty. This costs the hospital more than ordinary or "floor care" nursing by pupils. The patients pay more for it, but very much less than for special-duty nurses, unnecessary in the majority of cases. A number of experiments along these lines have been undertaken, but no standards have yet emerged. It is agreed, however, that this type of nursing works best if each group has its own sink and toilet room.

In other ways, the nursing may affect future planning. The nursing organizations are furiously protesting the "overproduction" of nurses. Some are also objecting to the apprenticeship system, under which the hospital sick is cared for by pupil nurses at a supposedly small cost to the hospital. If the number of pupil nurses is reduced, or the apprenticeship system in training them is abandoned in part, then interesting possibilities may become probabilities. In either event, hospital planning will be strongly affected by the elimination, in part at least, of an educational problem. The size

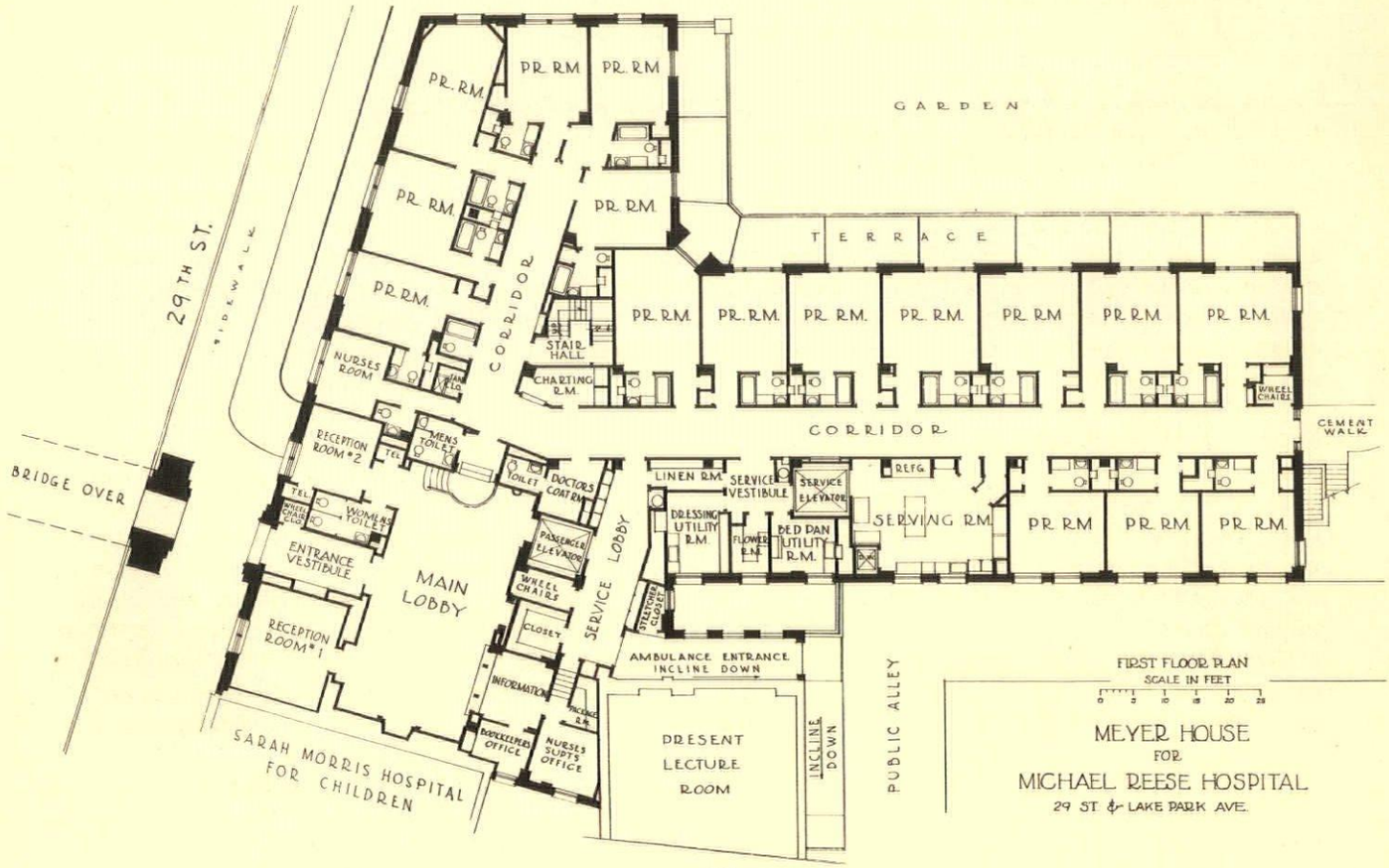


A service room in Meyer House (for private patients). In this division of Michael Reese Hospital each private room has its own private service room

A corridor in Meyer House. Extensive use has been made of sound-absorbing materials both in the corridors and in the service rooms



Above, a typical floor plan of Meyer House, and below, the first-floor plan of the same building in the Michael Reese Hospital group. Schmidt, Garden & Erikson, architects

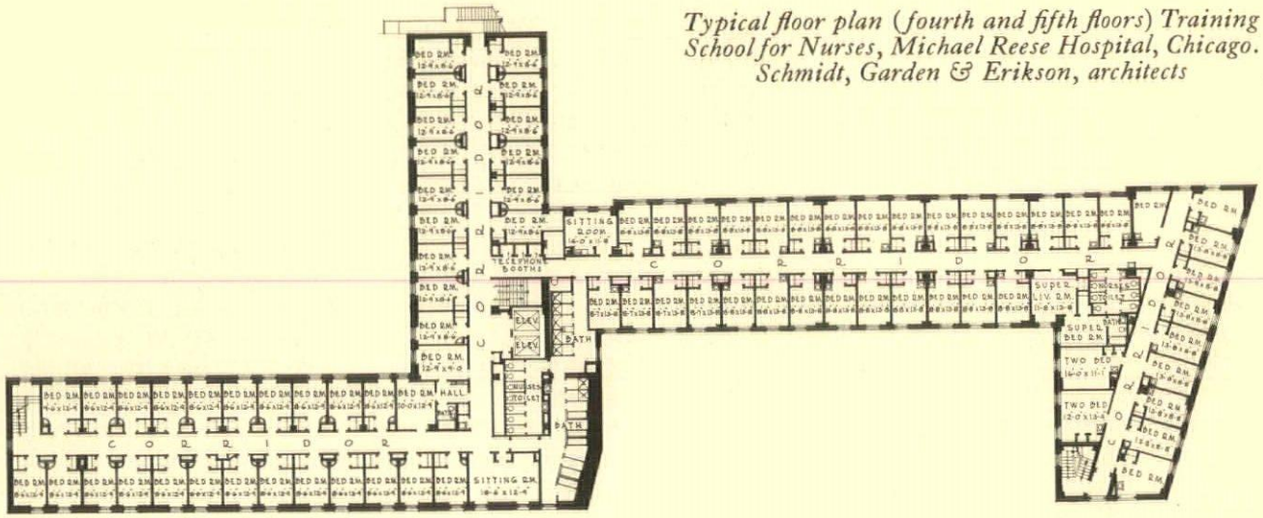


The main lobby of Meyer House, the location of which may be seen on the first-floor plan opposite. In keeping with the purpose of this building, the interior finish is of an unusually luxurious character

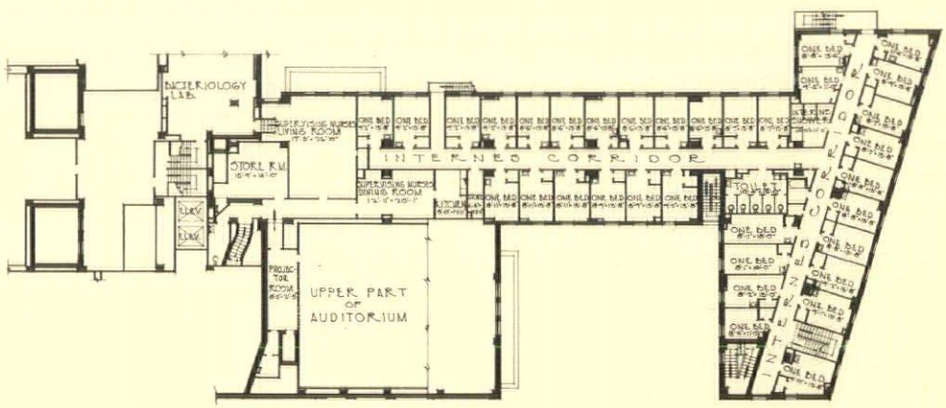
of the nursing unit (the number of patients under one supervisor) has been partly determined by this educational problem. If the nursing is to be done by graduates and their assistants, the nursing unit may be very considerably enlarged. The nurse in charge, having no educational duties, will be a mere supervisor. The unit may, therefore, be greatly increased in size, perhaps to two or three times as large as it is now.

A third factor of tremendous potential, but unpredictable, influence lies in the Science of Medicine. Money and workers have been poured into medical research until I imagine that the total number of workers so engaged would surprise most of us. Research has made the modern hospital possible. It has made it safe to group a large number of sick people together. Fifty years ago the few hospitals were the last resort of the poor and of the strangers who became desperately ill. Today even the multi-millionaires (have we any left?) use the hospital for serious illness. But research has at the same time eliminated the need for many hospitals beds. The conquest of yellow fever, the suppression of typhoid, the reduction in scarlet fever, diphtheria, and many other diseases of childhood—all of these and many other results of research have decreased the use of the hospital. But on the whole, developments in medicine tend to greatly increase the needs for hospital beds as well the doctors' dependence on the personnel and equipment assembled in the hospital. The stethoscope and the thermometer, the simple equipment of yesterday, are supplemented by extensive laboratories—by 1,000,000-volt X-ray apparatus, by the cardiograph, by basal metabolism, and by many other almost magical devices. Simultaneously there has developed increased reliance on non-surgical treatment in the hospital. Diet, various forms of physiotherapy, oxygen treatment, the X-ray, and many similar devices, now play important parts in the restoration of health. Should both of these tendencies continue, further expansion of these departments and introduction of new ones may be anticipated.

The hospital of today is but the child of scientific medicine. I have tried to indicate some of those things that may influence its fu-



Typical floor plan (fourth and fifth floors) Training School for Nurses, Michael Reese Hospital, Chicago. Schmidt, Garden & Erikson, architects



Mezzanine floor plan, Training School for Nurses, Michael Reese Hospital. This space and part of that above it on the next floor is utilized for internes' living quarters, with a separate stairway to the first floor

ture physical manifestations, but who can predict the development of any robust child?

Will the care of mental illness become an important part of the general hospital, as many believe that it should? Might it not be advantageous to meet the ever-increasing requirements for care of patients—now called chronic—by special departments in general hospitals? Should the general hospital care for the contagious cases? Is the pride taken by the general hospital in the lowered average days' stay in the hospital entirely justified? Is it caused by the great influx of tonsil cases (usually only one day in the hospital), by the great demand for beds, by the cost of hospital service, or by improvement in medical and hospital service alone? Might it not be to the advantage of the community to prolong the patient's stay to insure proper care? Is it possible that convalescent cases, now given attention at separate hospitals, might be advantageously cared for in separate sections of the general hospital? Need the general hospital shun tuberculosis? What about the care of the advanced cancer patient? Will the doctors' offices be a part of the hospital group? Where are the funds to build and operate the hospital of the future to come from—some form of health or hospital insurance, from governments, or through the liberalty of the wealthy? What will the medical practice of the future be?

If any one can correctly answer all of these questions, we should then have a basis for some guesses about the ultimate future of the hospital building. The unsolved problems are numerous—but hardly more so than in 1882. While it is hardly safe to generalize from the physical development of one hospital, yet a comparison with a hospital of 1882 and one of today will illustrate some very startling differences. Michael Reese Hospital of Chicago is used because it was considered a well-planned hospital when it was completed in 1882, it is now one of the better-known institutions of the country, and, finally, accurate data is available.

The Michael Reese Hospital of 1882 contained 360,000 cu. ft., 70 patients—about 5,200 cu. ft. per patient; the Reese of today contains

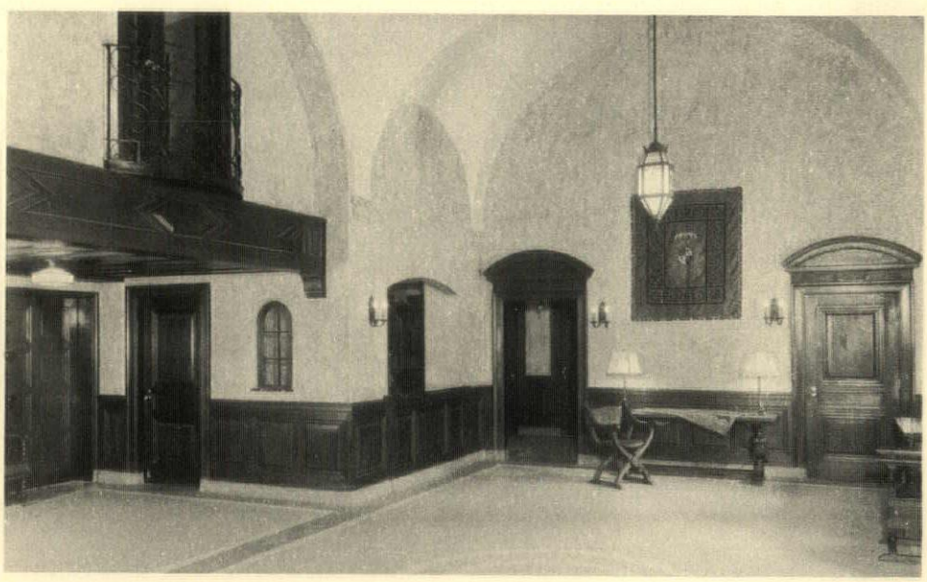
7,300,000 cu. ft. for 650 patients, or about 11,000 cu. ft. per patient. While it is difficult actually to determine the reasons for all of the increase per bed, it is relatively easy to account for a large part of the increase of 5,800 cu. ft. per bed. Sixty per cent is due to housing the increased number of nurses, internes, and help now found necessary; 9 per cent to the large Out-Patient Department, 9 per cent to the laboratories—practically non-existent in 1882. Probably half of the remaining 22 per cent may be accounted for by provision of departments—unknown in 1882—such as X-ray, cardiography, physiotherapy, metabolism, etc. Perhaps the other 10 or 11 per cent is accounted for by the change in kind of patients' quarters and the improved auxiliary rooms for their bedside care.

A rather startling comparison! But it is hardly safe to predict that a similar growth will take place in the next fifty years. A most powerful brake in the continuance of this tendency will be the cost of producing and operating such space. Hospitals have been built in which but 11.6 per cent of the gross area of the building is used for housing patients; 15 per cent is a not uncommon figure. Somehow this area must be increased—if it continues to decrease we will shortly be building hospitals without patients. They will be store houses for equipment. One hospital has a useful but cumbersome piece of apparatus used in applying plaster casts. It is used about two hours per week in a room devoted solely to that purpose. Some day that hospital will find a way to quickly and easily store that apparatus so that for some part of the other 166 hours of the week the space may be used for other purposes.

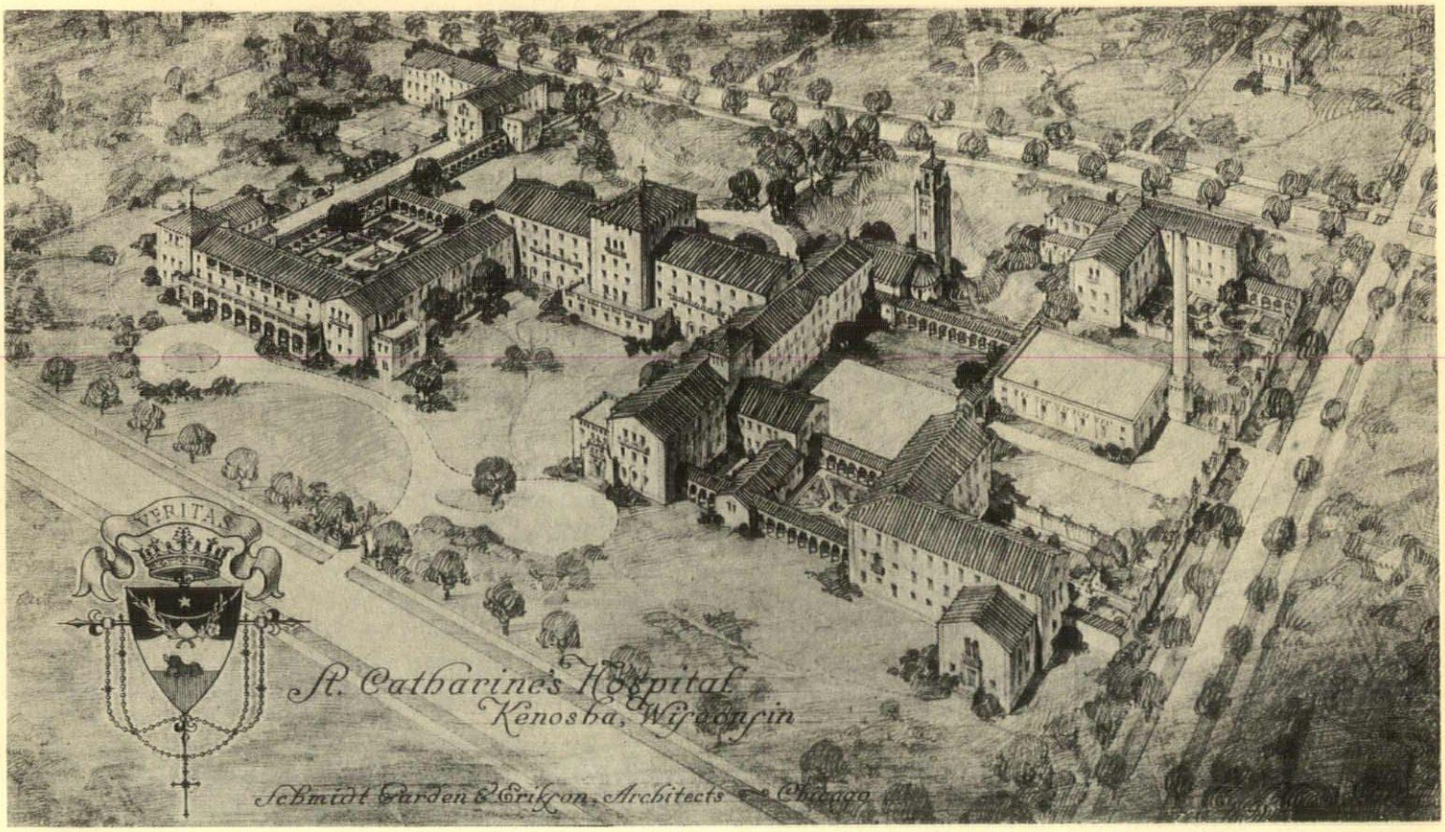
It is hardly necessary to discuss the effect that changes in building methods and materials, now being so fully discussed, may have on hospital building; the hospitals have been ready always to adopt methods and materials of proven worth.

To the architect the hospital is the most fascinating of sirens. It is all things to all architects. To some it presents the lure of humanity—assisting in relief of suffering. To others, an intellectual lure—the mental stimulus of chess or other problems capable of infinite variety of solutions. Some find its stimulus that of exploration into the unknown, where the inhabitants speak a polysyllabic language and perform magic rites that surpasseth the architect's understanding. To some the hospital is hardly more than a jig-saw puzzle, in which the whole picture clicks into place after much trial and error. Because the hospital is so long-lived, many architects find it an opportunity to do a beautiful building. Sometimes the results are as ludicrous as the efforts of one of our architects who dearly loves his Georgian. In his last hospital the front presents all of the Georgian beauty—rich in brocades and laces, even the powdered wig and the tantalizing curl are there to complete the illusion. But, we dare not ask her to step the stately minuet, for the poor dear is stripped naked in the rear. And the dastardly medical authority who stripped her has laid deep lashes—of Corbusier-like balconies, six feet wide, and enormous windows! And that nightmare will be terrifying and conspicuously permanent over that part of the earth forever more.

Having let down my guard that far, perhaps it would be just as well to invite any one who has read to this point to finish the article. I know that he will have looked at the illustrations before he began to read, so that comments by me on the mechanics of hospital planning will be redundant.



Garfield Park Hospital, Chicago. The main lobby. Schmidt, Garden & Erikson, architects

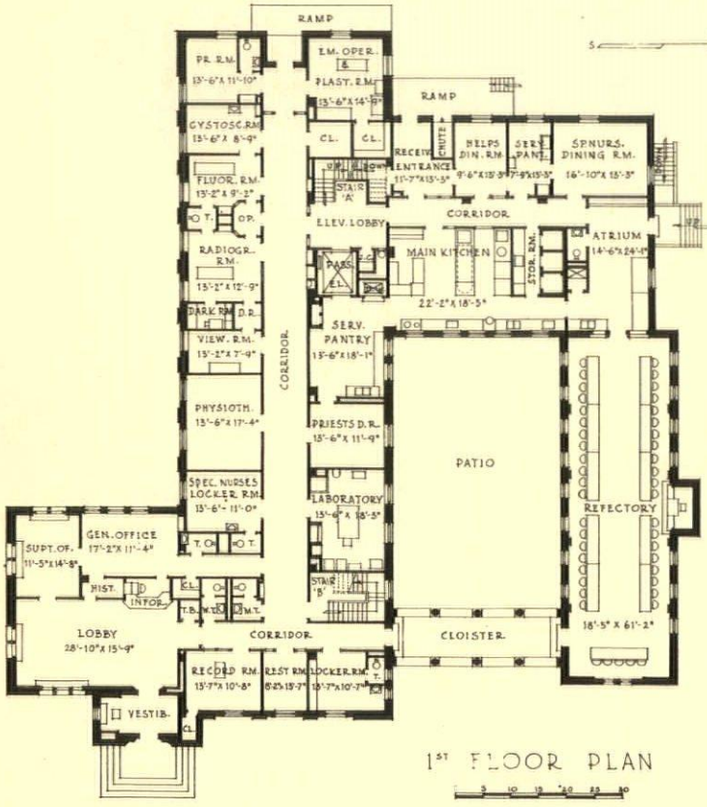


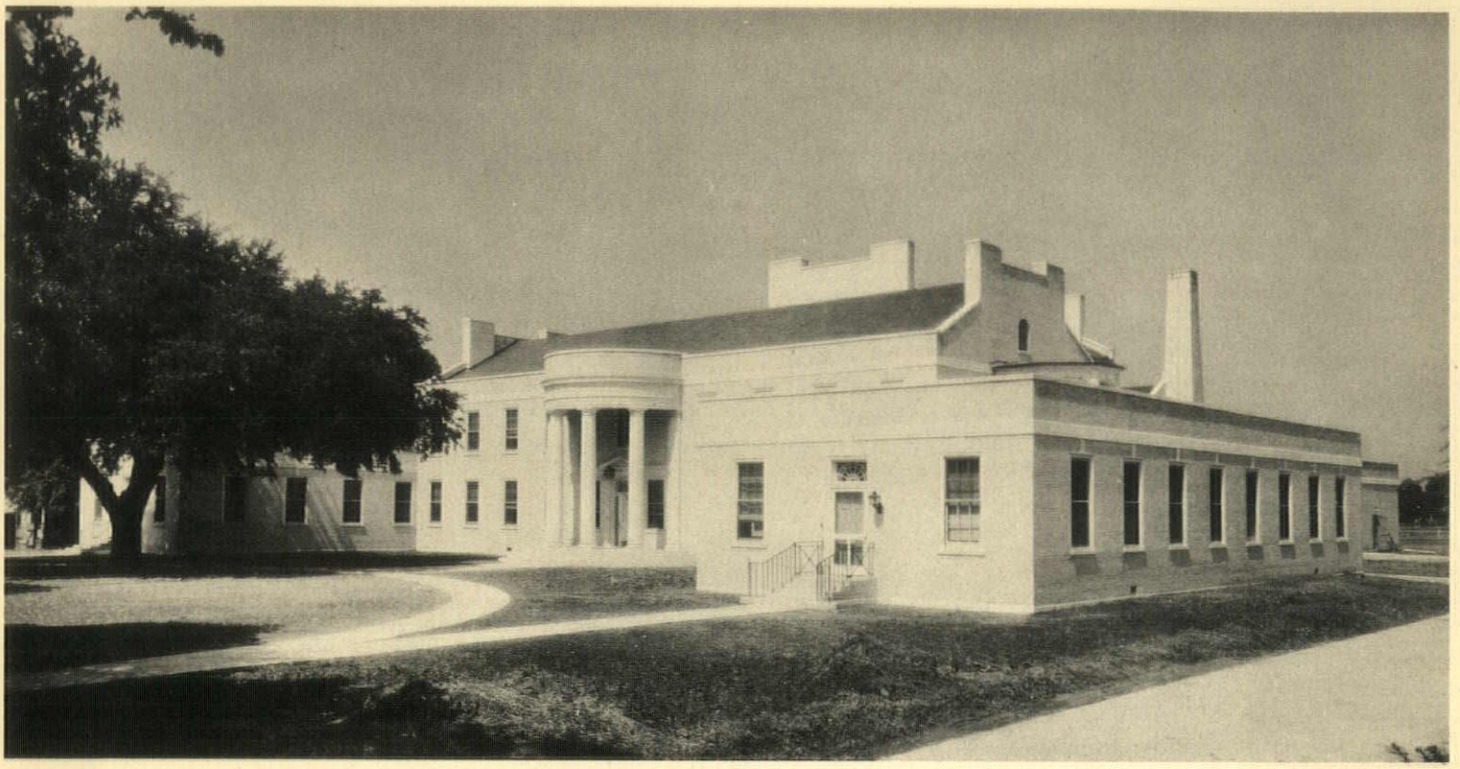
St. Catharine's Hospital, Kenosha, Wis.

Schmidt, Garden & Erikson, Architects

Here was a site over 800 feet square, the ground fairly level. The problem called for a 40-bed hospital at a minimum cost consistent with good construction, and the unit was to be made part of a much larger group. The hospital is conducted by the Sisters of St. Dominic. Unlike most Catholic hospitals, however, the nursing is done by Sisters.

The exterior is of a Chicago common brick with variegated red tile roof. Bedford stone is used for trim. It is expected that the common brick will be painted or stained white in the next building development

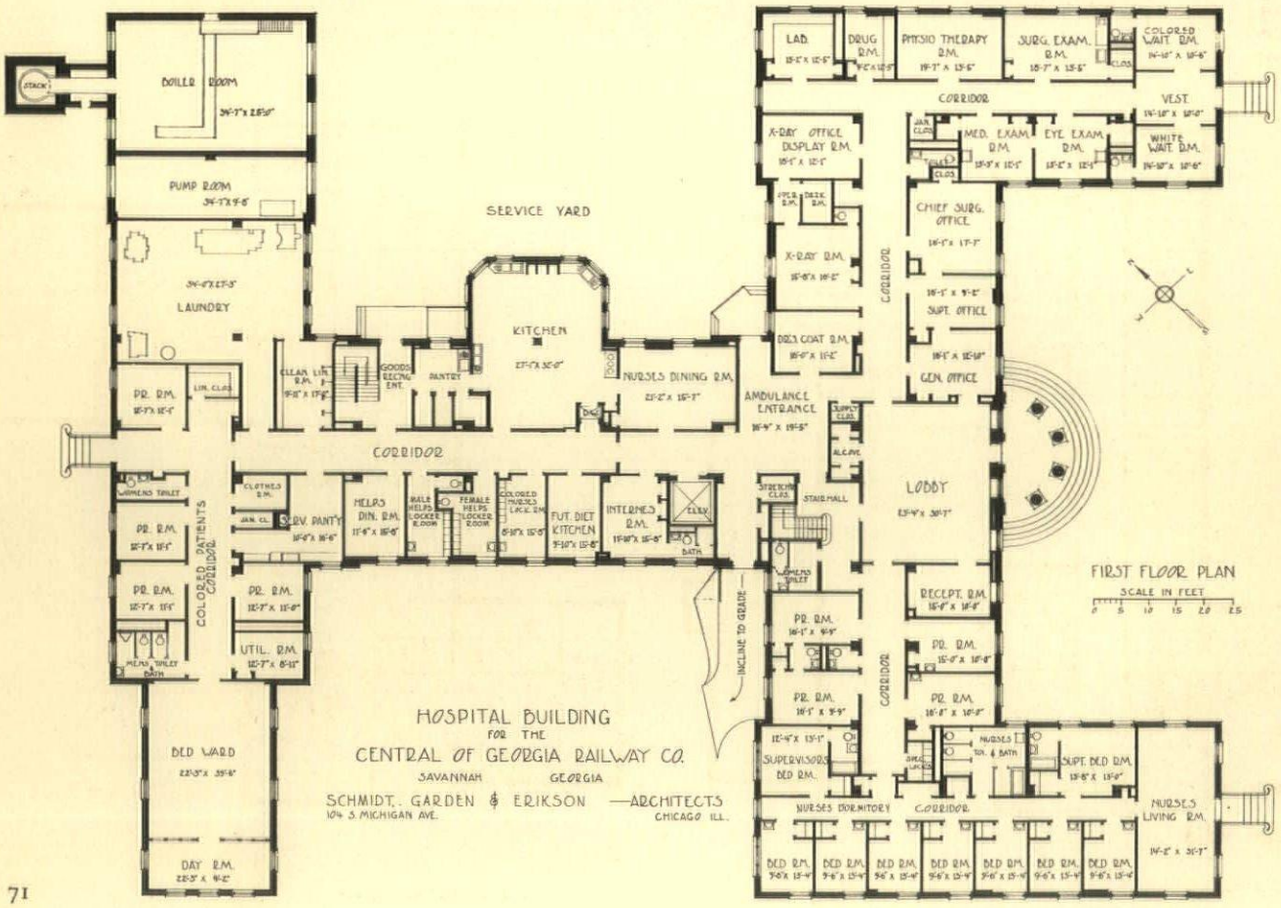


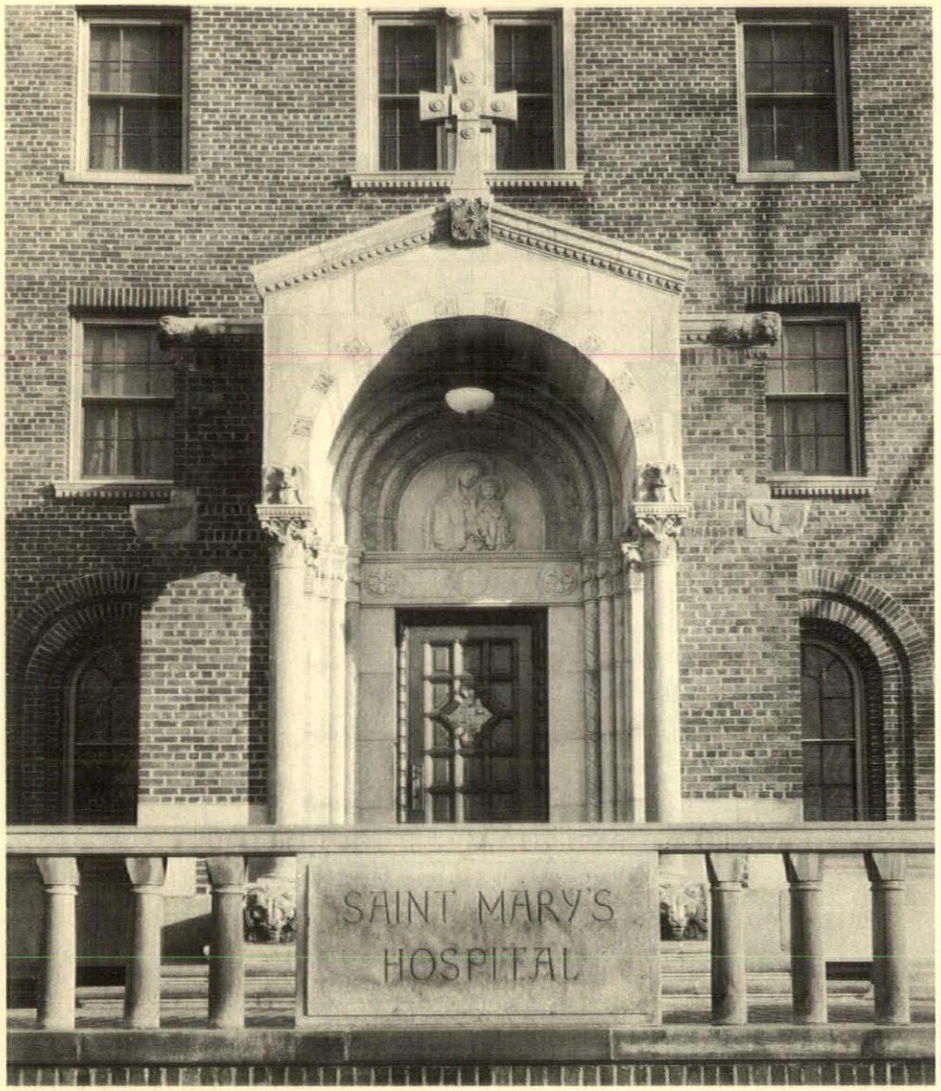


Central of Georgia Railway Company Hospital, Savannah, Ga.

Schmidt, Garden & Erikson, Architects

The site is in an outlying residential district. In this climate the west rooms were undesirable, the cooling breezes coming from the south and east. The north rooms are not objectionable during the summer. The hospital is primarily for the railway company employees, but is open also to private patients of the staff physicians. Fifty-seven beds were to be supplied, of which 12 for the colored people were to be segregated. The building contains 586,000 cubic feet; or 8,750 cubic feet per bed, and 10,250 cubic feet per patient's bed



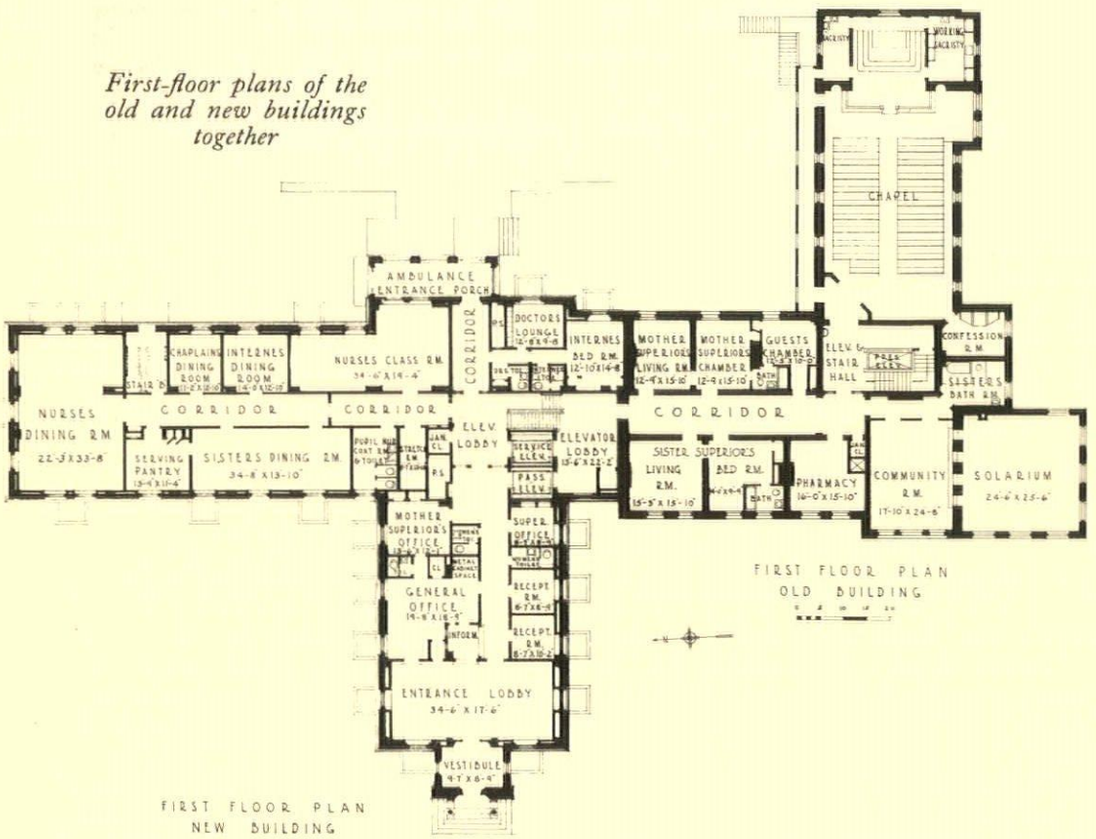


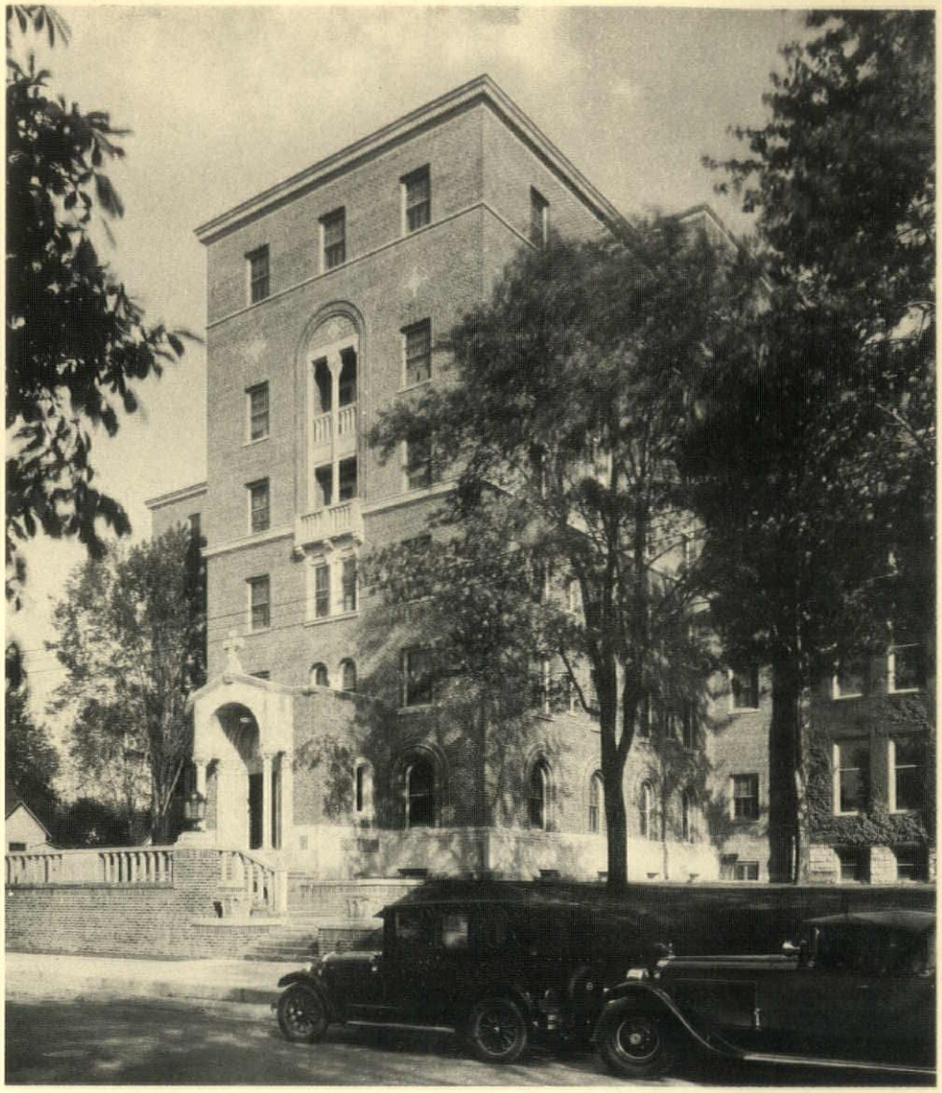
Here was a problem of adding to an existing hospital of about 60 beds, increasing the capacity to 150. Necessarily this required a consideration of all the auxiliaries, most of which were too small for this increase. Moreover, provision was to be made for further expansion.

The existing building was between 30 and 40 years old, in too good condition to wreck. The story heights were excessive. Considerable study was required to adjust the floors of the new building so as to permit the passage of wheeled apparatus across without long and high ramps. The elevators serve both buildings

ST. MARY'S HOSPITAL,
SAGINAW, MICH.

First-floor plans of the old and new buildings together

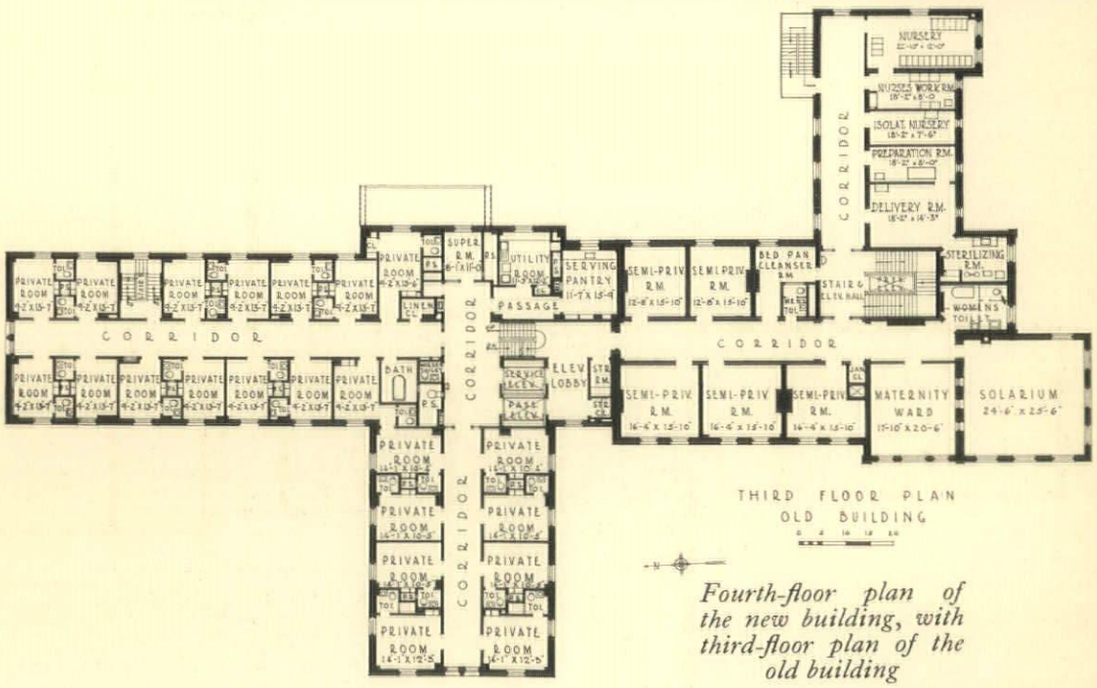




The large rooms in the old building are used for wards. Patients' rooms in the new building are all small private rooms, each with its private toilet.

The new building contains all of the facilities of the hospital proper. The old building contains the wards, chapel, the birth department and the kitchen. The latter is unusual in that trays are set up in the serving room adjoining the kitchen on unheated, open food carts, carried up on the elevators and through the corridors to the rooms

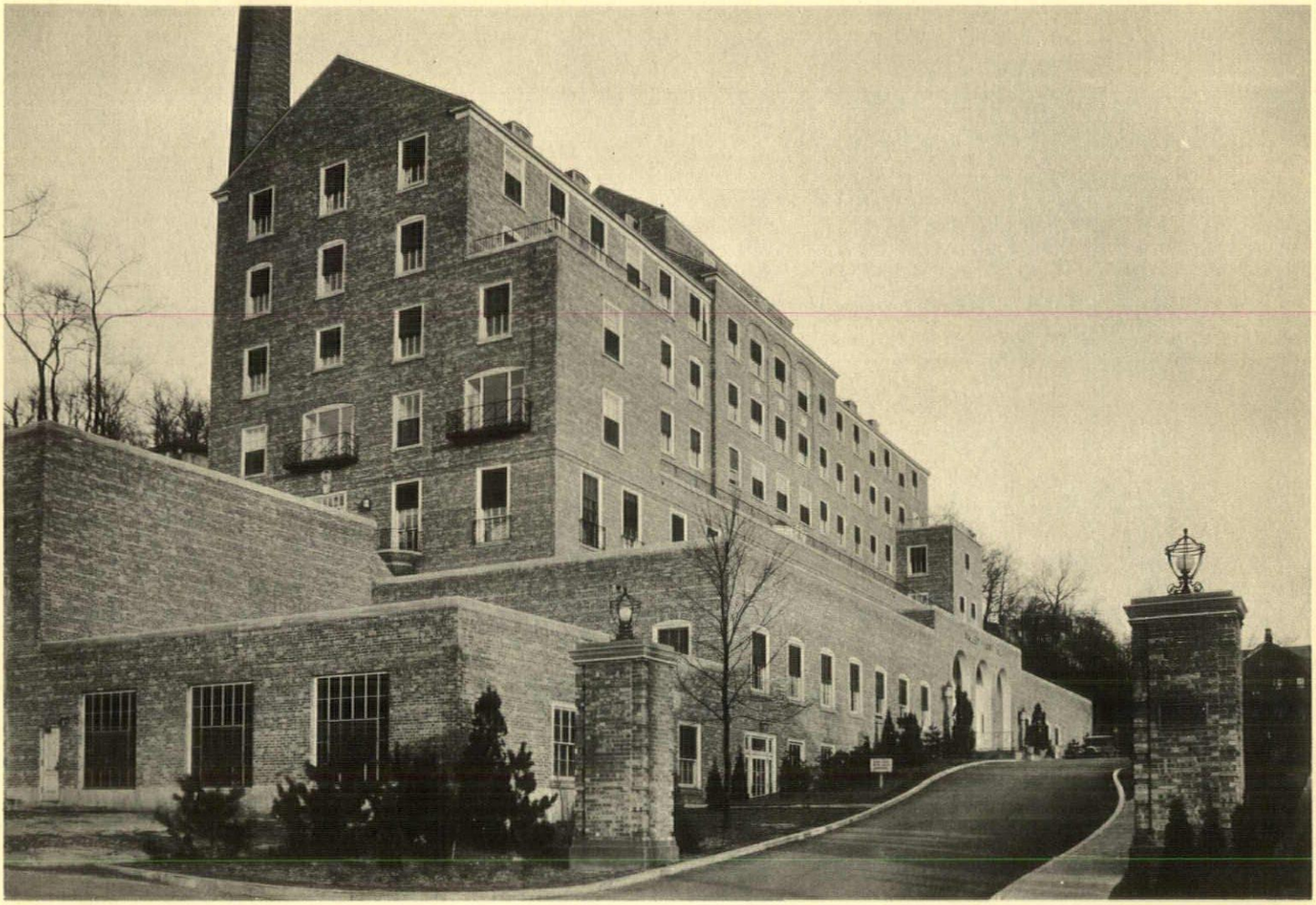
SCHMIDT, GARDEN & ERIKSON, ARCHITECTS



FOURTH FLOOR PLAN
NEW BUILDING

THIRD FLOOR PLAN
OLD BUILDING

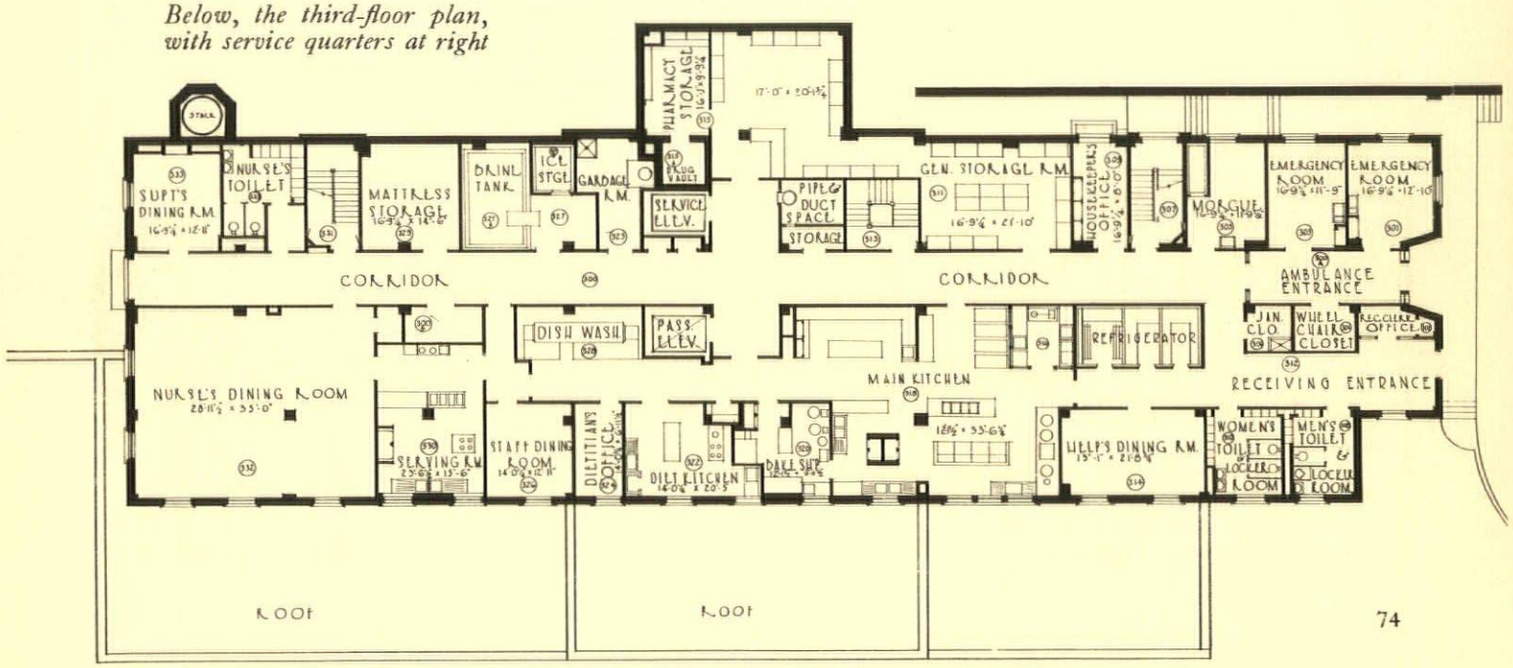
Fourth-floor plan of the new building, with third-floor plan of the old building



VALLEY HOSPITAL,
SEWICKLEY, PA.

Existing building consisted of a 50-bed hospital and a nurses' home, both of ordinary construction, and both so located that it was impossible to enlarge either of them. The programme called for a new 110-bed hospital complete in itself; conversion of the old hospital building into a nurses' home; and conversion of the old nurses' home into a help's building. Contours of the site were such as to permit of an unusual yet logical

Below, the third-floor plan, with service quarters at right

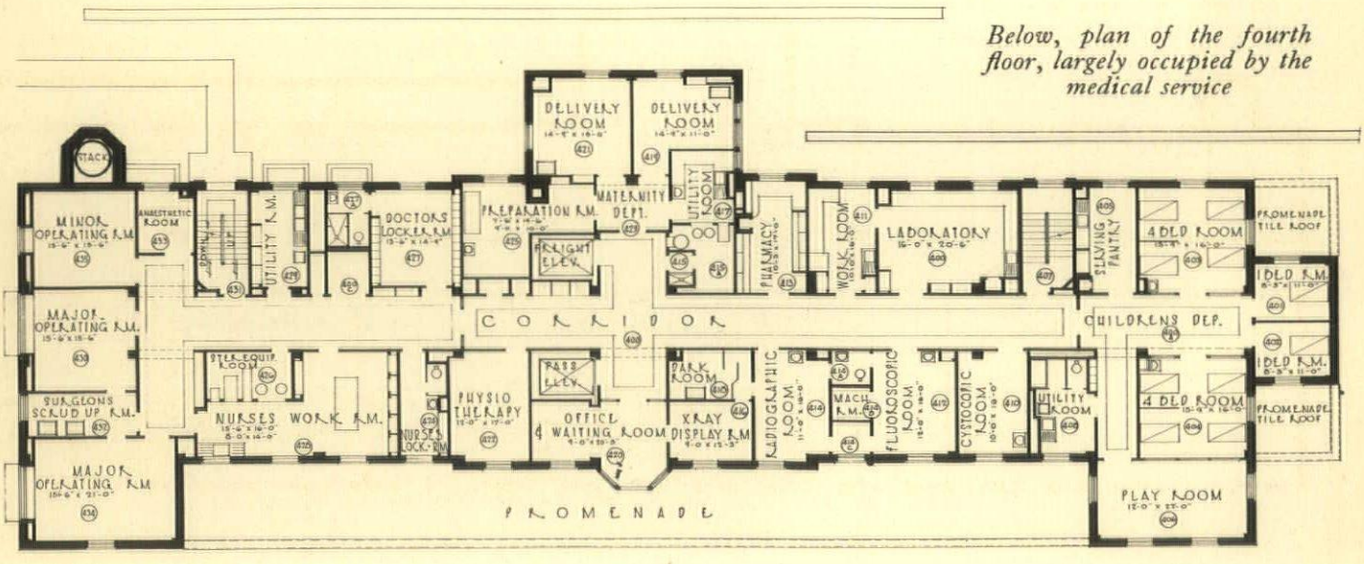


arrangement of the various departments. Patients' rooms are all in the upper three floors of the main building. Below these are the medical services, then the kitchens and dining-rooms, the laundries, then offices, and below all, the power house and engine rooms. The cubic contents of the building total 884,000 cubic feet, or approximately 8,000 cubic feet per patient's bed

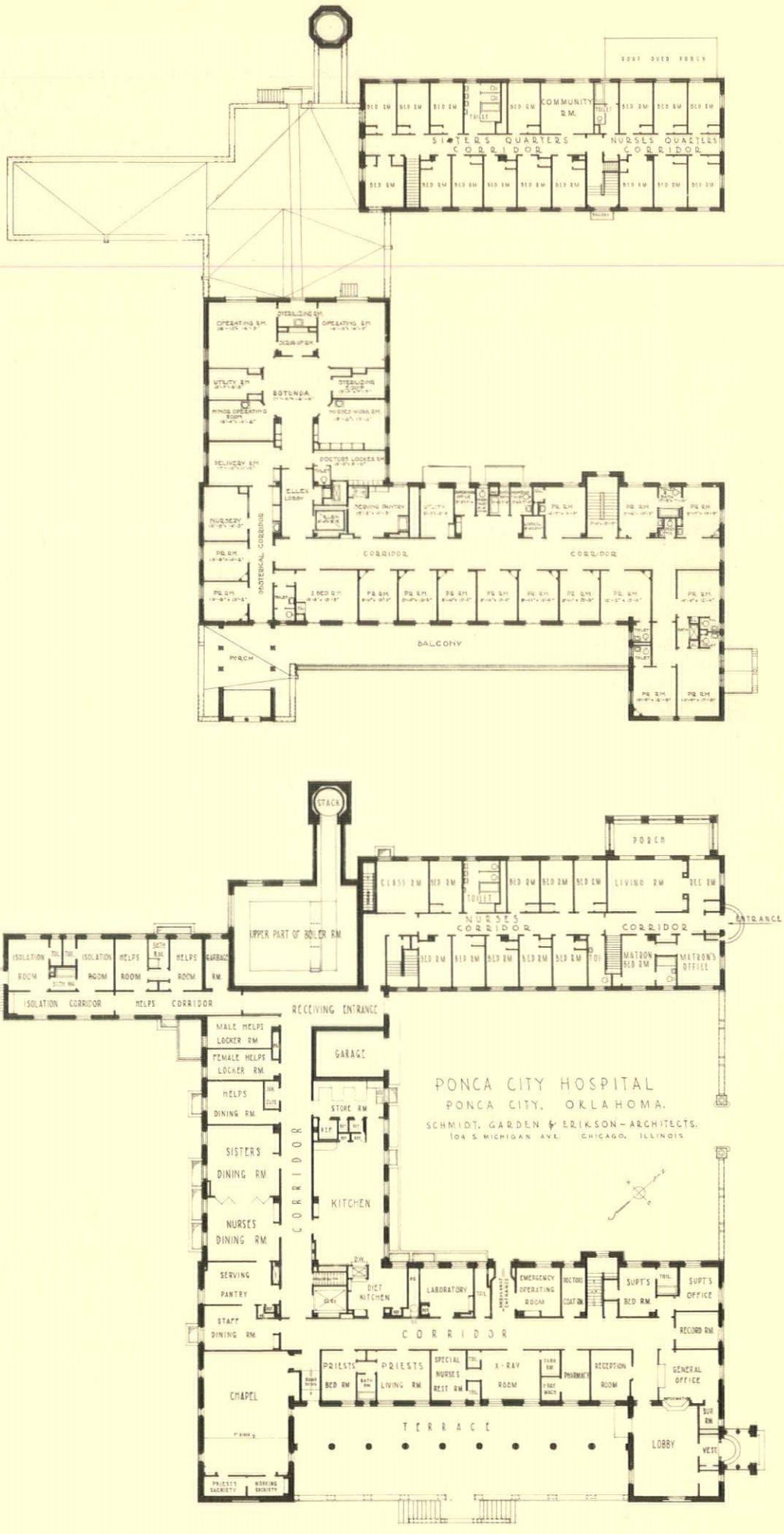
SCHMIDT, GARDEN & ERIKSON, ARCHITECTS;

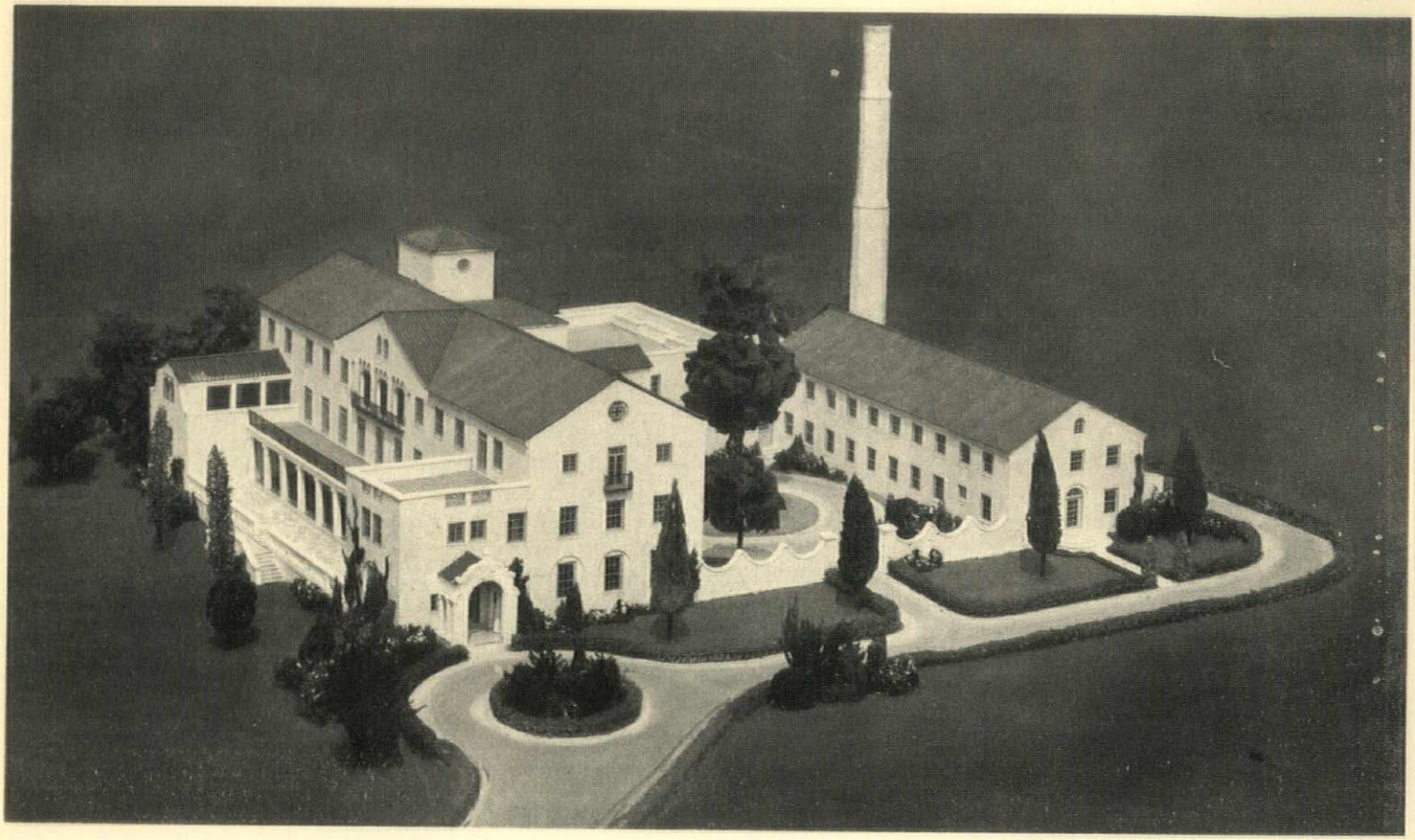
S. S. GOLDWATER, M.D., CONSULTANT

Below, plan of the fourth floor, largely occupied by the medical service



FOURTH FLOOR PLAN

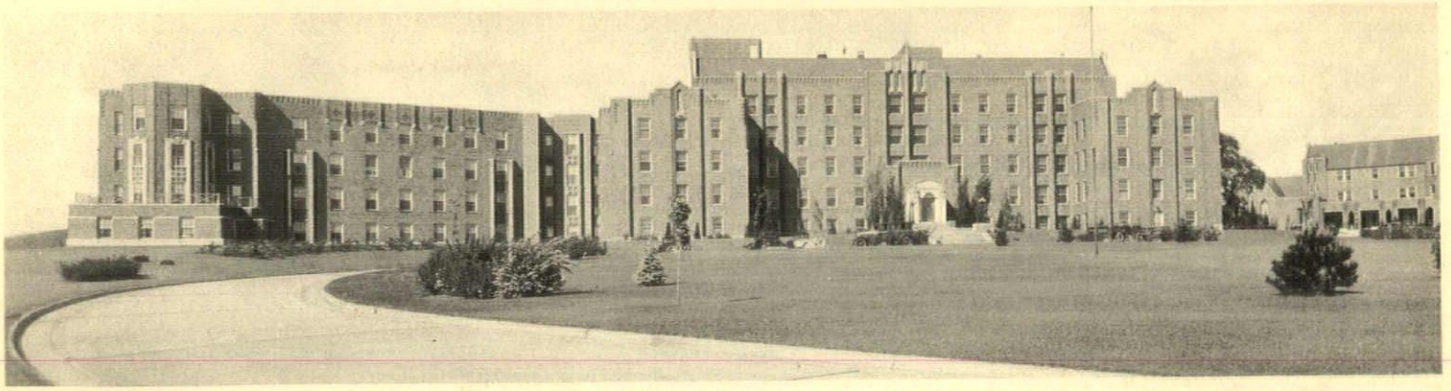

ROOF OVER PORCH
COMMUNITY R.M.
SISTERS QUARTERS CORRIDOR
NURSES QUARTERS CORRIDOR
BED RM
OPERATING RM.
STERILIZING RM.
ROTUNDA
UTILITY RM.
MINOR OPERATING ROOM
NURSES WORK RM.
DELIVERY RM.
DOCTORS LOCKER RM.
NURSERY
SERVING PANTRY
CORRIDOR
PR. RM.
1 BED RM.
BALCONY
PORCH
STACK
PORCH
CLASS RM.
LIVING RM.
REC RM.
NURSES CORRIDOR
ENTRANCE
MATRON'S BED RM.
MATRON'S OFFICE
UPPER PART OF BOILER RM.
ISOLATION ROOM
ISOLATION CORRIDOR
HELPS ROOM
HELPS CORRIDOR
GARBAGE RM.
RECEIVING ENTRANCE
MALE HELPS LOCKER RM.
FEMALE HELPS LOCKER RM.
HELPS DINING RM.
SISTERS DINING RM.
NURSES DINING RM.
SERVING PANTRY
STAFF DINING RM.
CHAPEL
PRIESTS SACRISTY
NURSES SACRISTY
GARAGE
STORE RM.
KITCHEN
DIET KITCHEN
LABORATORY
EMERGENCY OPERATING ROOM
SUPT'S BED RM.
SUPT'S OFFICE
RECORD RM.
PRIESTS BED RM.
PRIESTS LIVING RM.
SPECIAL NURSES REST RM.
X-RAY ROOM
PHARMACY
RECEPTION ROOM
GENERAL OFFICE
TERRACE
LOBBY
VEST.
PONCA CITY HOSPITAL
PONCA CITY, OKLAHOMA.
SCHMIDT, GARDEN & ERIKSON - ARCHITECTS.
104 S. MICHIGAN AVE. CHICAGO, ILLINOIS

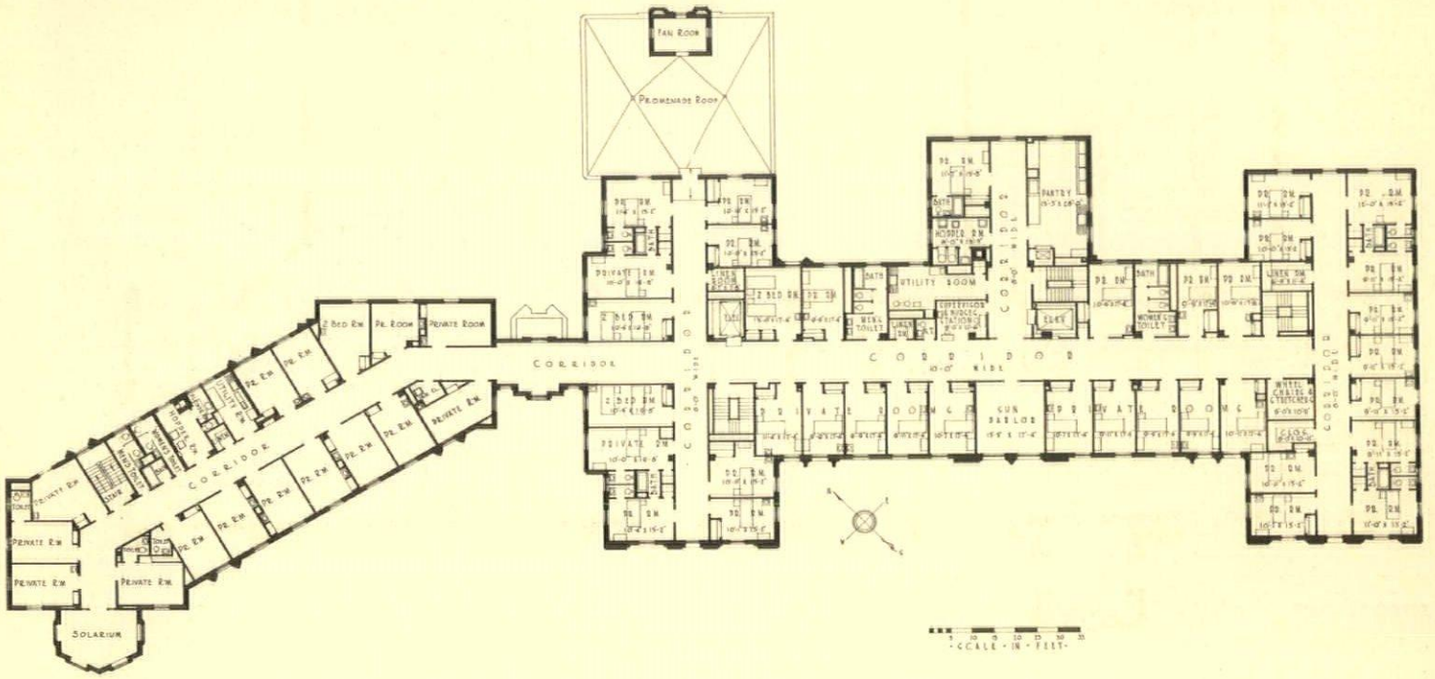


PONCA CITY HOSPITAL
OF THE SISTERS OF ST. JOSEPH,
PONCA CITY, OKLA.
SCHMIDT, GARDEN & ERIKSON, ARCHITECTS

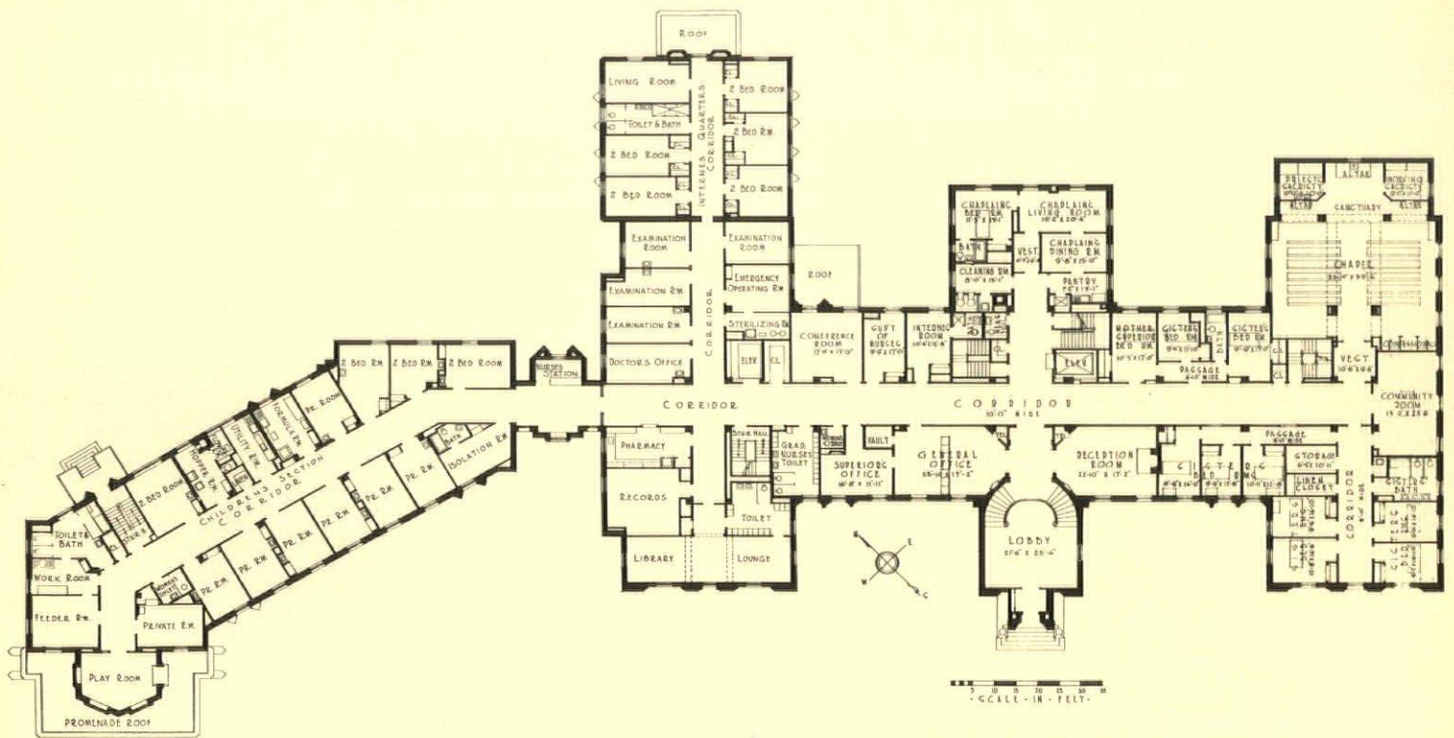
It was required to provide all of the hospital facilities needed for the city, including the housing of the necessary personnel. Due to a limitation of funds, it was decided to provide facilities for 45 patients (not including nursery bassinettes) and 32 personnel. It was necessary to include two beds for communicable diseases. Provision was made for future growth up to at least 100 beds, the main building to be extended southwesterly.

The plans on the opposite page show the first and second floor plans. The hot westerly sun makes rooms on this side undesirable, but there is no serious objection to northerly rooms in this climate. The exterior is of stucco, with Bedford stone trim and variegated red tile roof. The floor construction is of concrete joists resting on wall-bearing tile. The heating is by gas

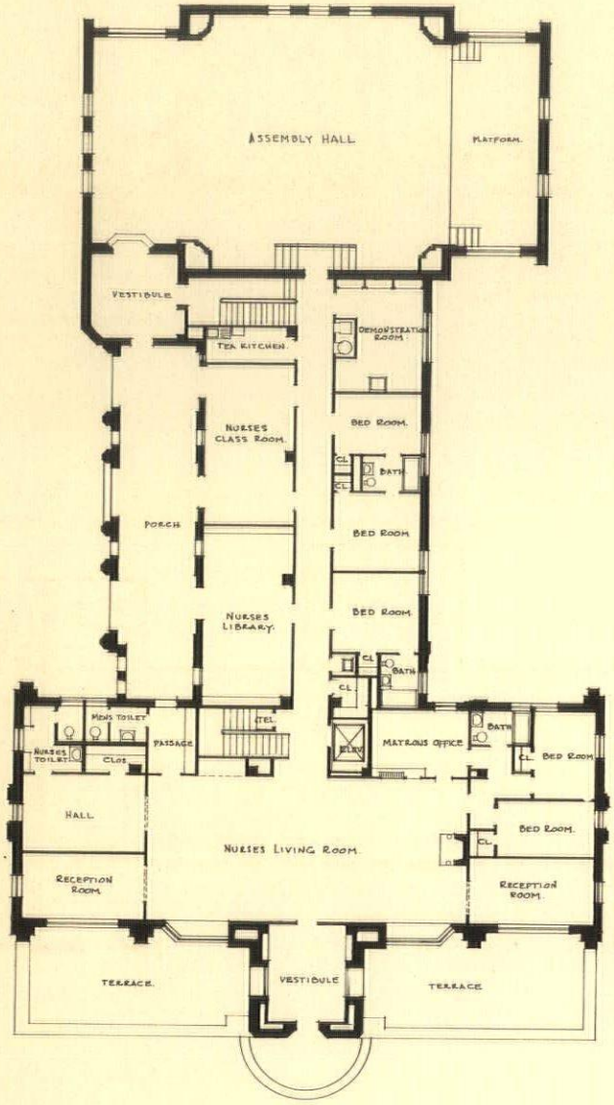




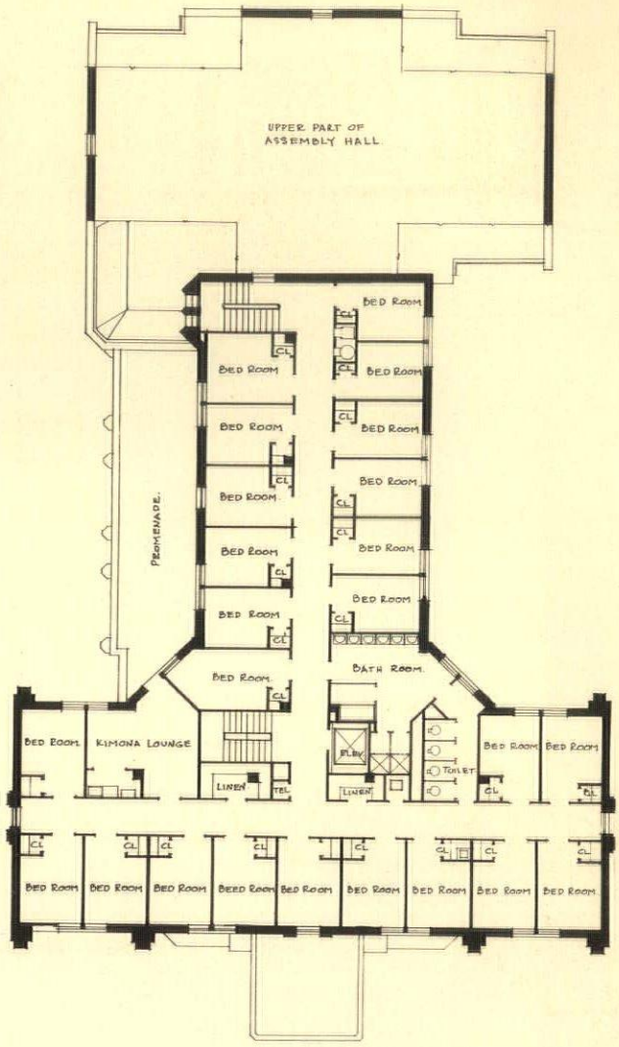
· THIRD · FLOOR · PLAN ·



· FIRST · FLOOR · PLAN ·



FIRST FLOOR PLAN



SECOND & THIRD FLOOR PLAN

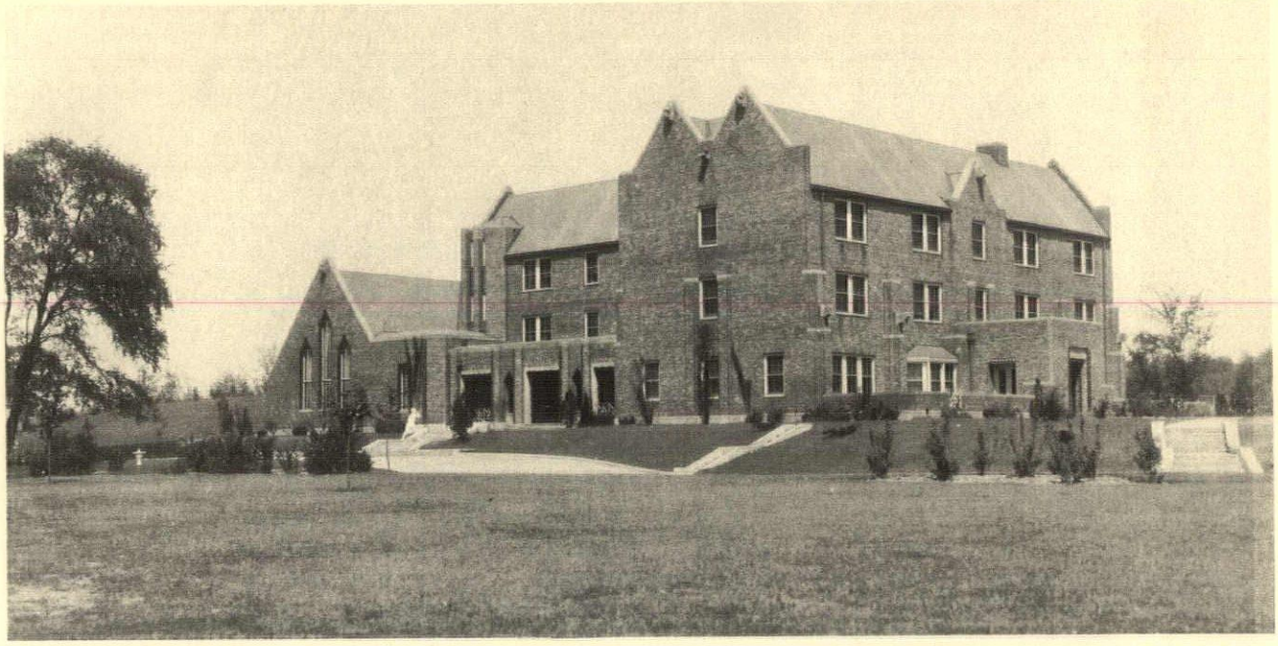
Leila Y. Post Montgomery Hospital of the Sisters of Mercy and Werstein Nurses' Home, Battle Creek, Mich.

Schmidt, Garden & Erikson, Architects

On the opposite page there is shown a general view of the hospital building, with the plans of the first and third floors. Provision is made for 118 patients, 12 Sisters, and 17 help in the main building, with accommodations in the Nurses' Home for 53.

In the hospital building the contents total is 1,065,403 cubic feet; power house and laundry, 70,000 cubic feet; the Nurses' Home, 273,500 cubic feet. The hospital is favored by a site of about 15 acres on the outskirts of Battle Creek, the land high and undulating. Toward the west is an attractive view over the main highway into a city park.

Variegated red brick and Bedford stone were used in the construction, slate for the roofs

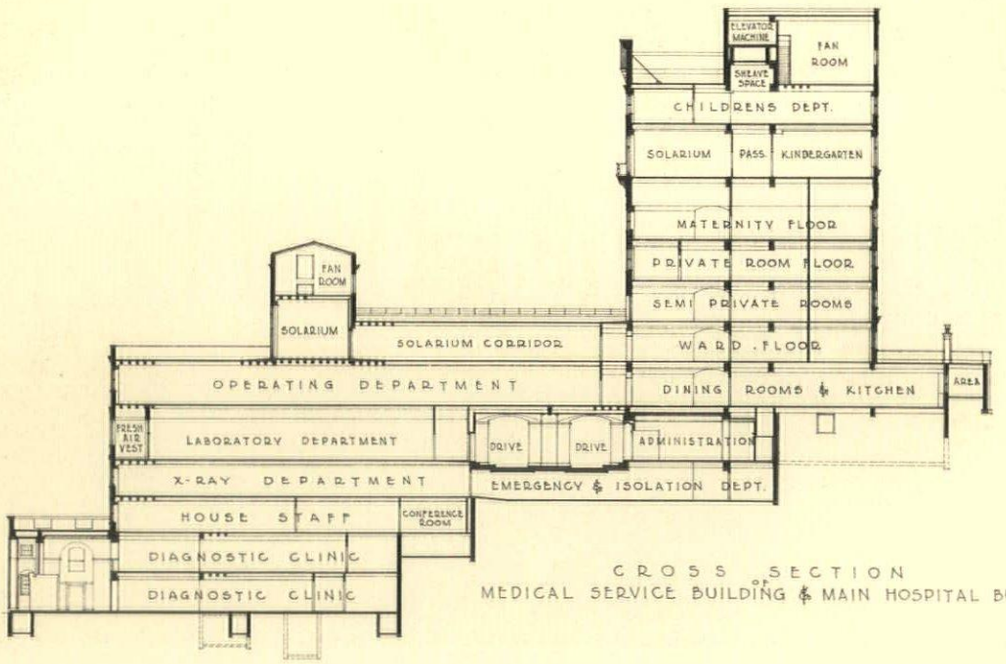


Above, the Werstein Nurses' Home at Leila Y. Post Montgomery Hospital, Battle Creek, Mich.

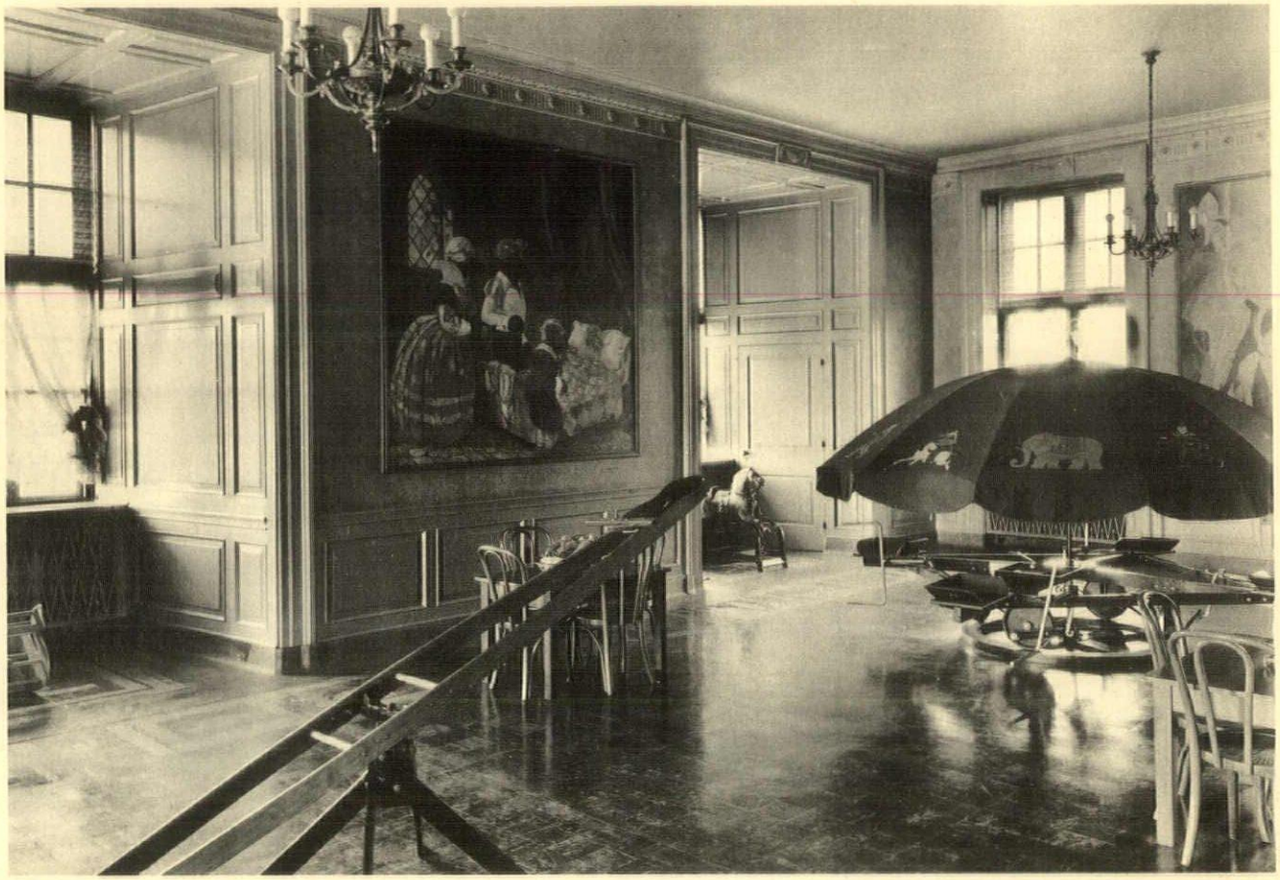
Below, the auditorium in the Nurses' Home. Here the wainscoting is of light gray brick, the plaster very slightly mottled, and the woodwork birch, finished almost in its natural color

MONTEFIORE HOSPITAL, PITTSBURGH, PA.
SCHMIDT, GARDEN & ERIKSON, ARCHITECTS; HENRY HORNBOSTEL, CONSULTING ARCHITECT; S. S. GOLDWATER, M.D., HOSPITAL CONSULTANT

The site is in the Schenley Park district, consisting of slightly more than 4½ acres on a typical Pittsburgh hillside. The immediate problem called for a hospital of 175 beds (exclusive of nursery bassinettes) that could be expanded to 200 or 225 beds in emergencies; housing for 12 internes; a large Out-patients Department, and housing of the necessary nurses. Future expansion is planned for a capacity of 400 to 500 beds



CROSS SECTION
OF
MEDICAL SERVICE BUILDING & MAIN HOSPITAL BUILDING

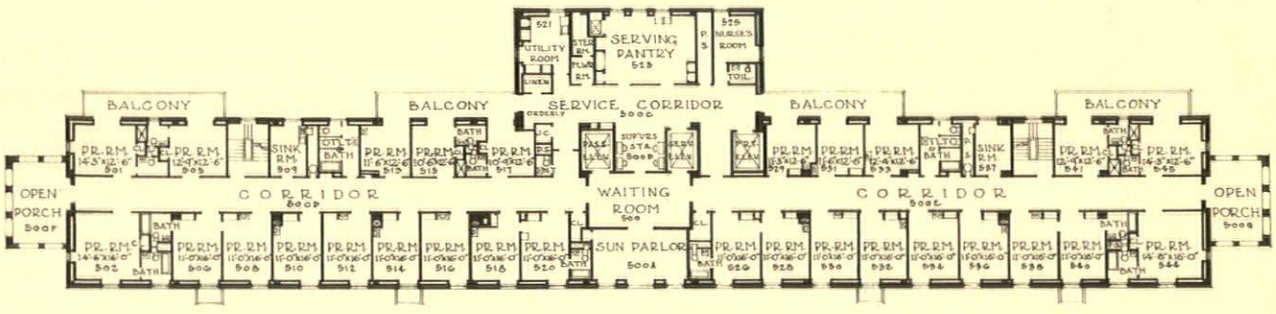


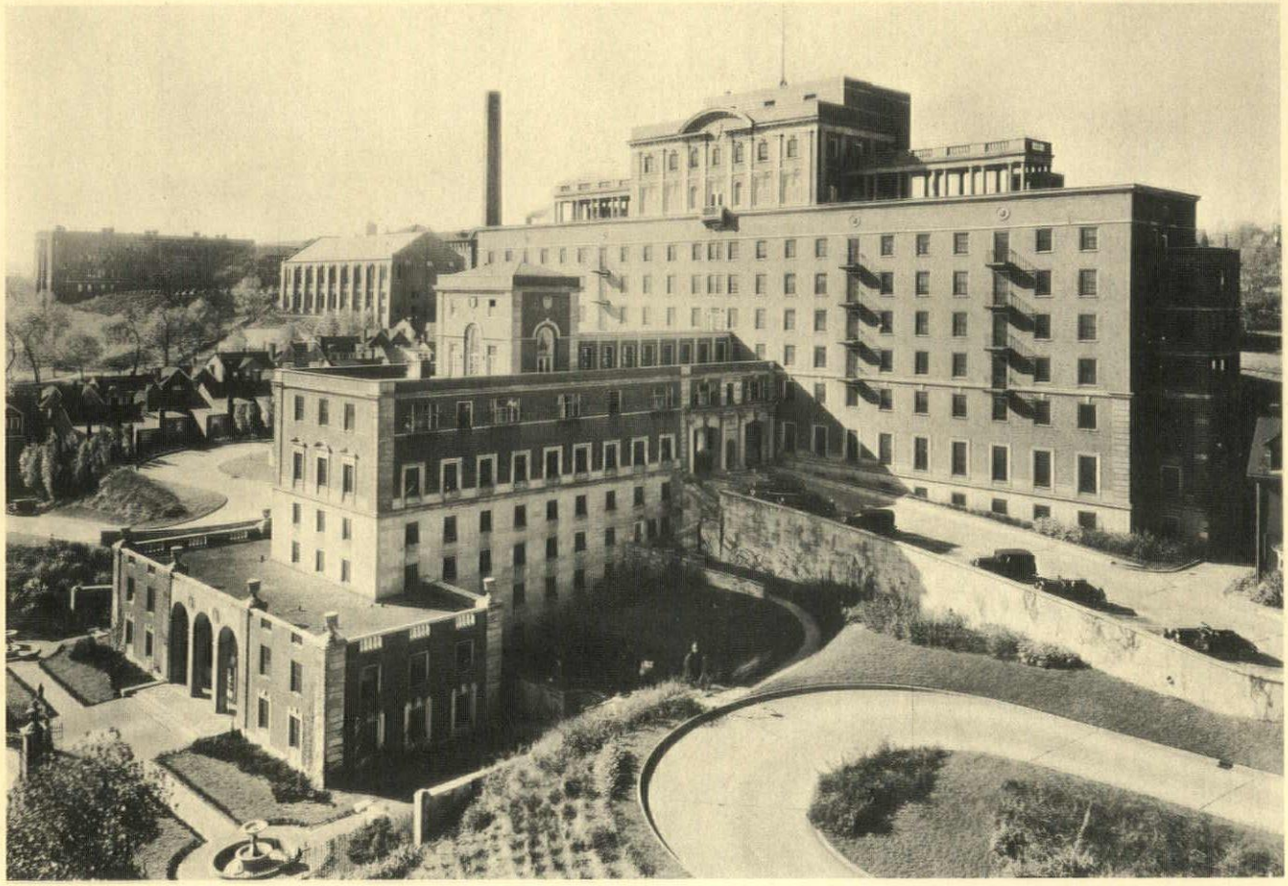
The children's playroom on the seventh floor

From the lowest point on Fifth Avenue to the highest point on the site was approximately 80 feet. Ease of access for most of the out-patients dictated the location of the department close to Fifth Avenue. The in-patients' section was located at the top of the hill to avoid as far as possible the traffic on Fifth Avenue, and to secure the better outlook. These two distinct units were connected by a building containing the services used by both types of patients. Three residences existing on the site are used as temporary quarters for nurses.

The building contains 2,066,000 cubic feet, or 11,805 cubic feet per patient, and 10,989 cubic feet per bed. The large figure per patient is accounted for by the liberality of provisions in the Operating Department, X-ray, laboratories, etc., and by the large Out-patients Department

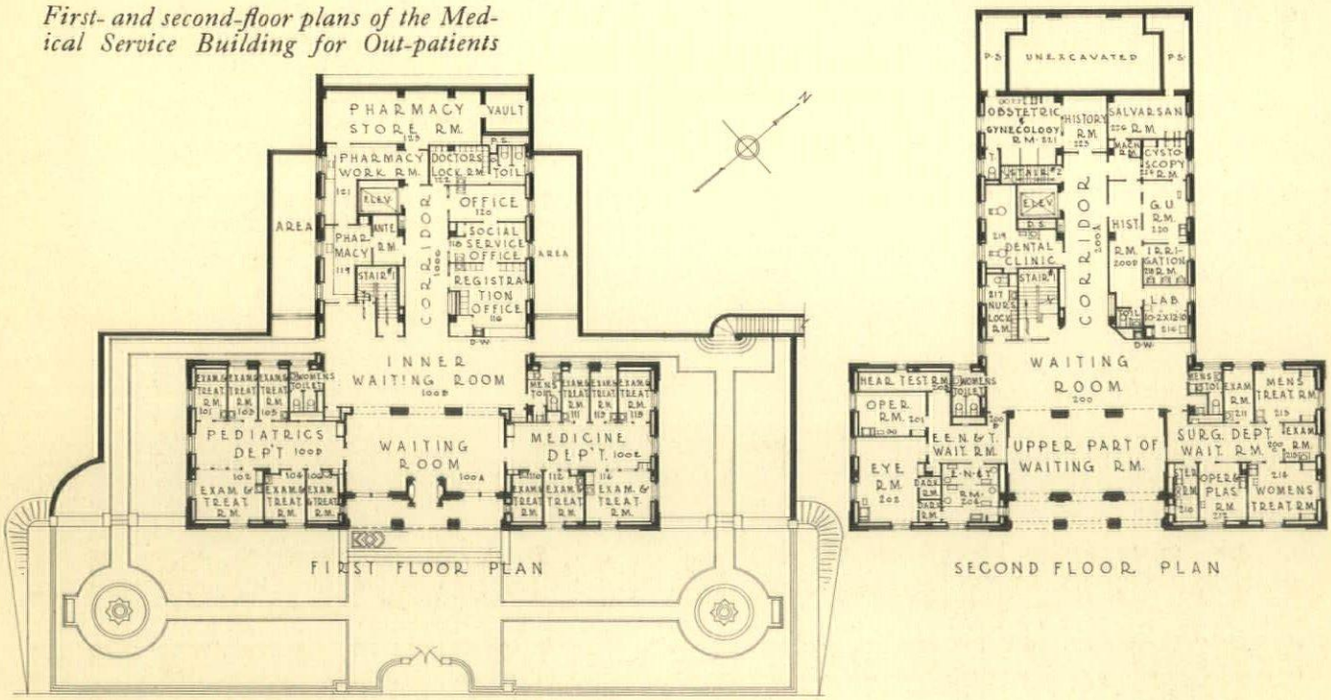
Fifth floor plan of the main hospital building. The bottom of the plan faces southeast

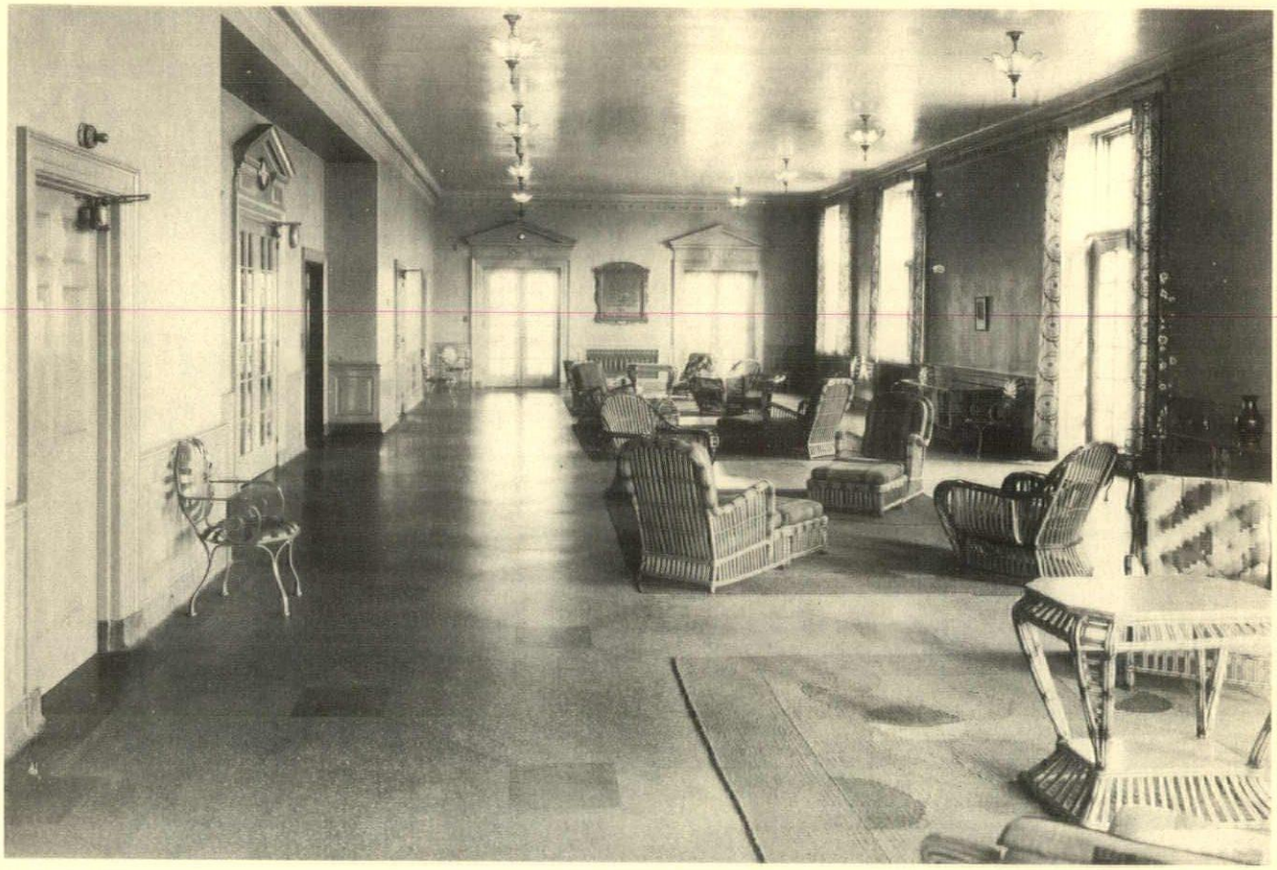




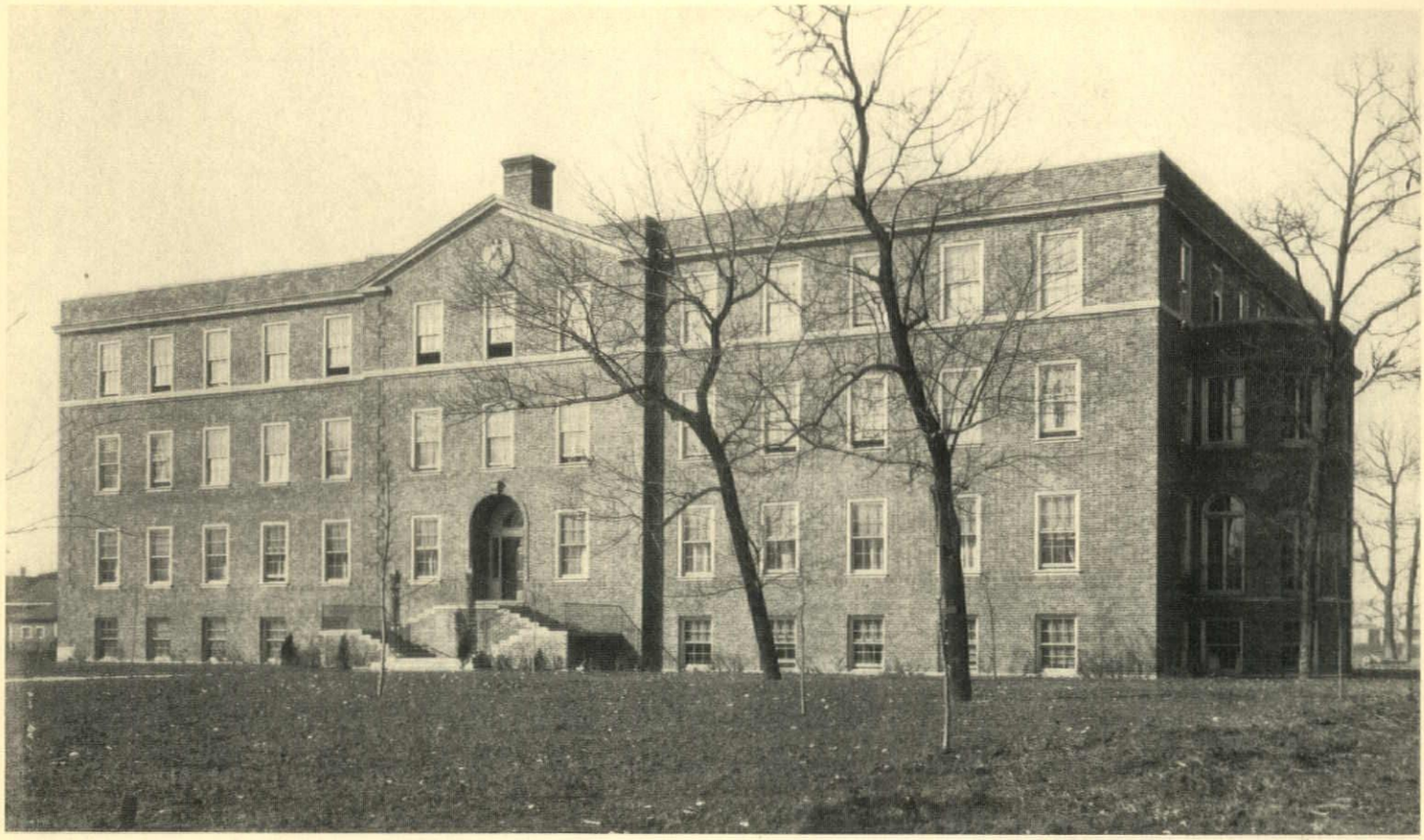
The hospital from the east, a view which makes clear the abrupt changes in level

First- and second-floor plans of the Medical Service Building for Out-patients





Above, the solarium lounge on the seventh floor of the main building.
Below, the Out-patients' Entrance on the lower, or Fifth Avenue side



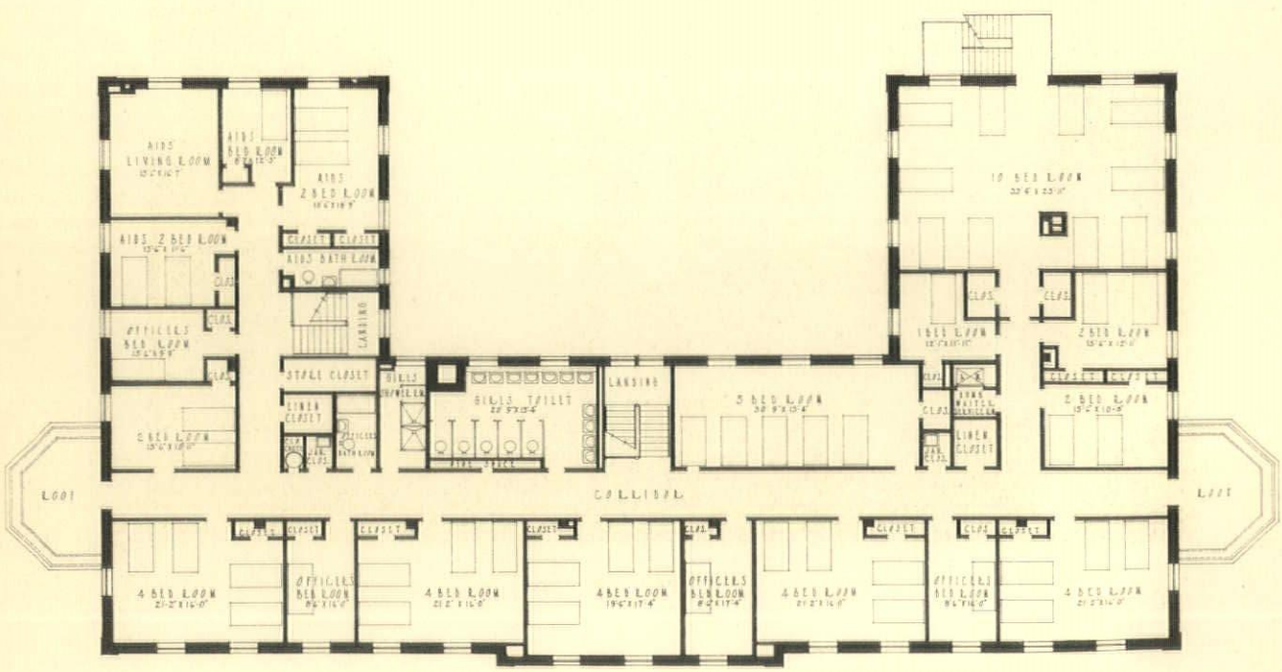
SALVATION ARMY HOSPITAL FOR WOMEN, CHICAGO, ILL.

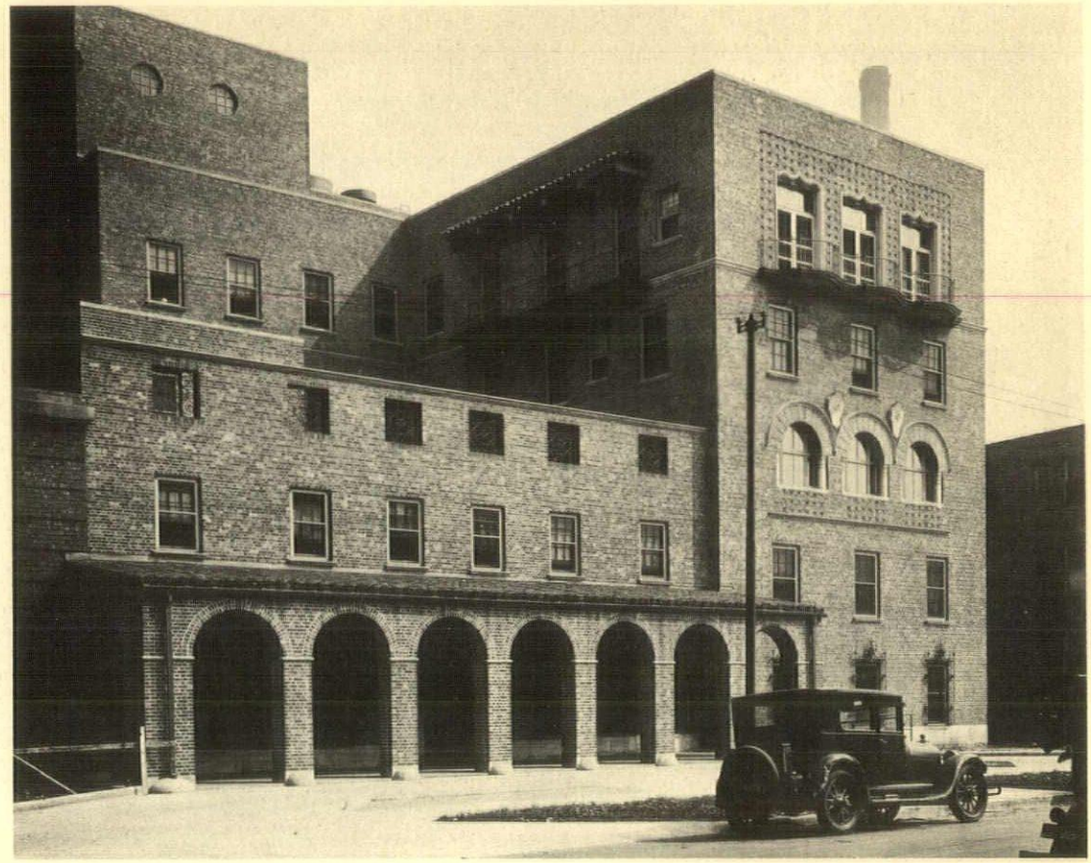
SCHMIDT, GARDEN & ERIKSON, ARCHITECTS

The problem called for the construction of a building for the care of unmarried mothers before, during, and after the birth of the baby. Unlike the ordinary maternity hospital, the patients are sometimes residents here for some months, and, for the most part, are able to take care of themselves as well as of the babies. The building contains provisions for 70 patients, 15 personnel, and about 35 babies.

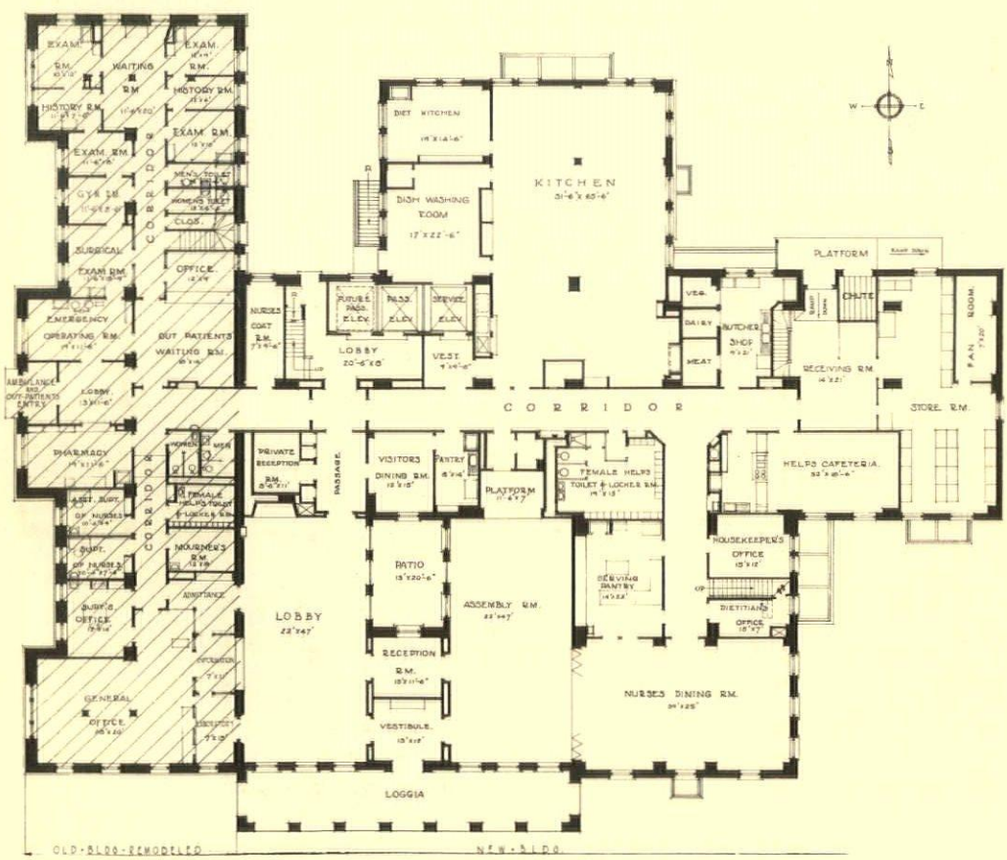
The walls are of variegated red brick and Bedford stone, and the building contains 404,000 cubic feet. The cubic contents per patient is low, naturally—about 5,800 cubic feet; and still lower per bed (exclusive of the babies), less than 5,000 cubic feet. The cost was approximately $2,500 per patient bed, and somewhat over $2,000 for all beds.

Plan below is that of the third floor





MOUNT SINAI HOSPITAL,
CHICAGO, ILL.

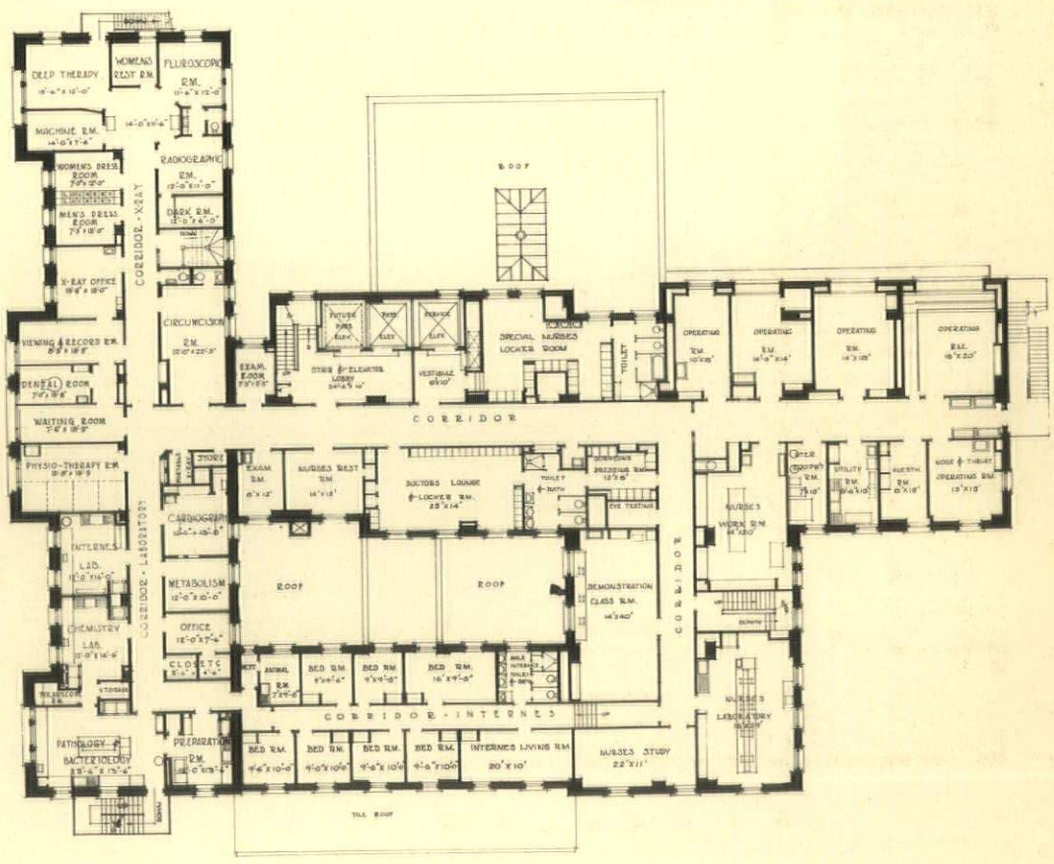


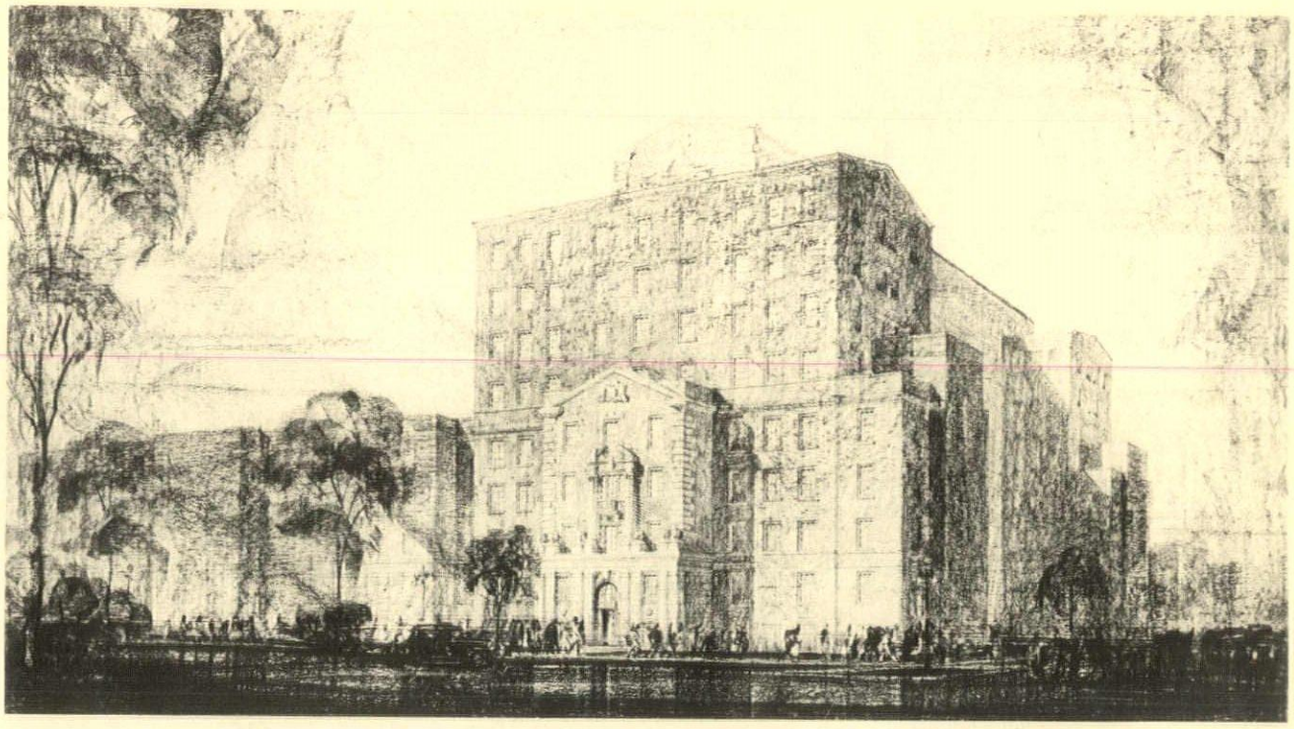
There was an existing hospital building about ten years old (shown cross-hatched in the plan at left). This occupied the most desirable portion of the site. It was an expensive matter to remodel it, yet the values that remained were so great that the building could not be wrecked.

The hospital was to be enlarged to a capacity of 150 beds, with housing for 8 internes. Eventual capacity was to be 300 to 400 beds, with provision for the housing of nurses. The illustration above shows the present stage of the project, provision having been made for the support of additional stories. Total cubic contents of main building, power house and laundry, and the old hospital, are 1,280,100 cubic feet, 8,530 cubic feet per patient, or 8,100 cubic feet per bed

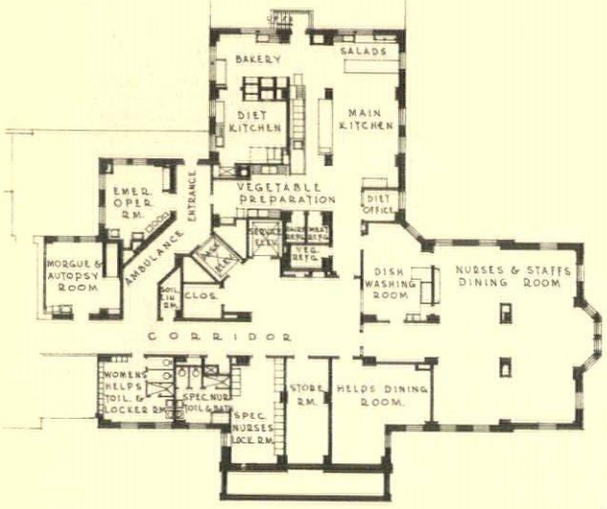
At the top of the page is a perspective of the project as it is to be carried forward, and at the right, the first-floor plan (first floor above ground level). One of the most interesting features of the scheme lies in the relationship between departments on the ground floor (page 86) and the first floor, as it permits of the minimum of personnel and the maximum of control. Note the relationship between the Out-patients Department with the X-ray Department directly above it, and yet how closely this department is connected with the in-patients section by way of the first floor. The scheme is possibly only because the surgeons now recognize that they are no longer dependent upon daylight and the location of the operating rooms at the top of the building

SCHMIDT, GARDEN & ERIKSON, ARCHITECTS; ALFRED S. ALSCHULER, ASSOCIATE ARCHITECT



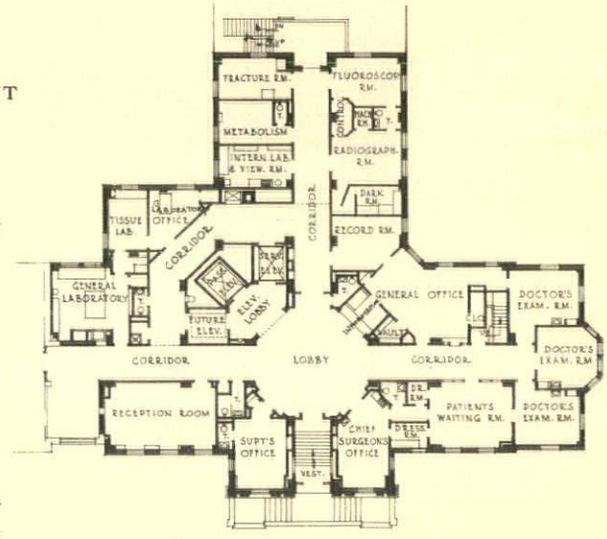


The problem called for the addition of 50 private rooms to an existing hospital, with corresponding increase of all of the auxiliaries; future growth to envisage a possibility of 350 or 500 beds. This is one of the few cases in which provision for future expansion has been provided through construction strong enough to carry additional stories. Interesting features are the location of the nurses' station, and the relation of the serving pantry to the two wings and to the service elevators

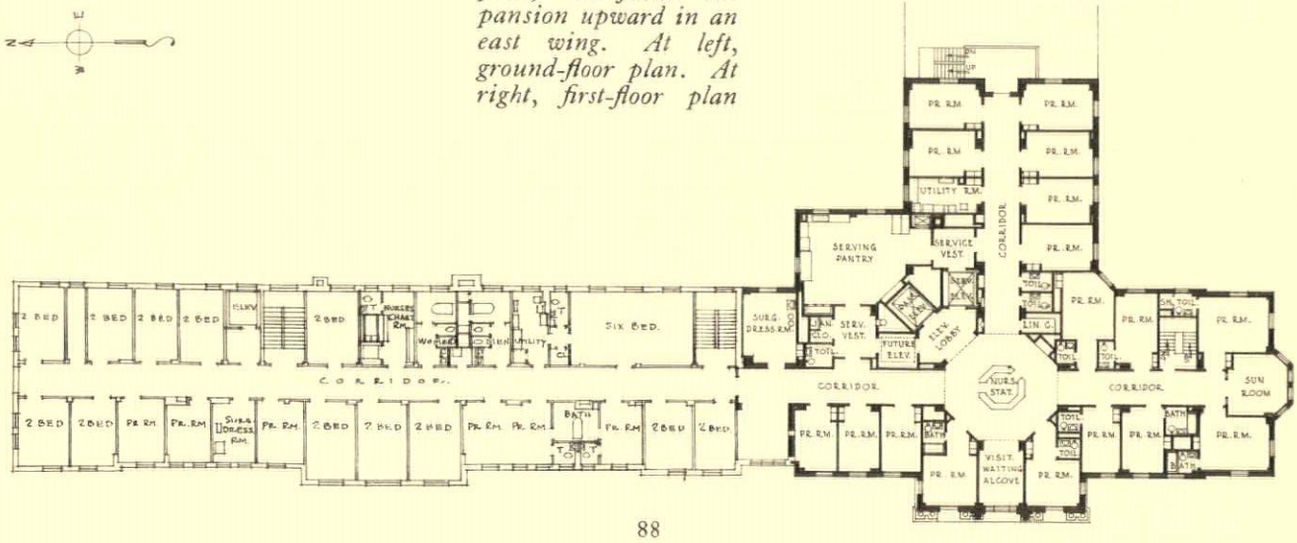


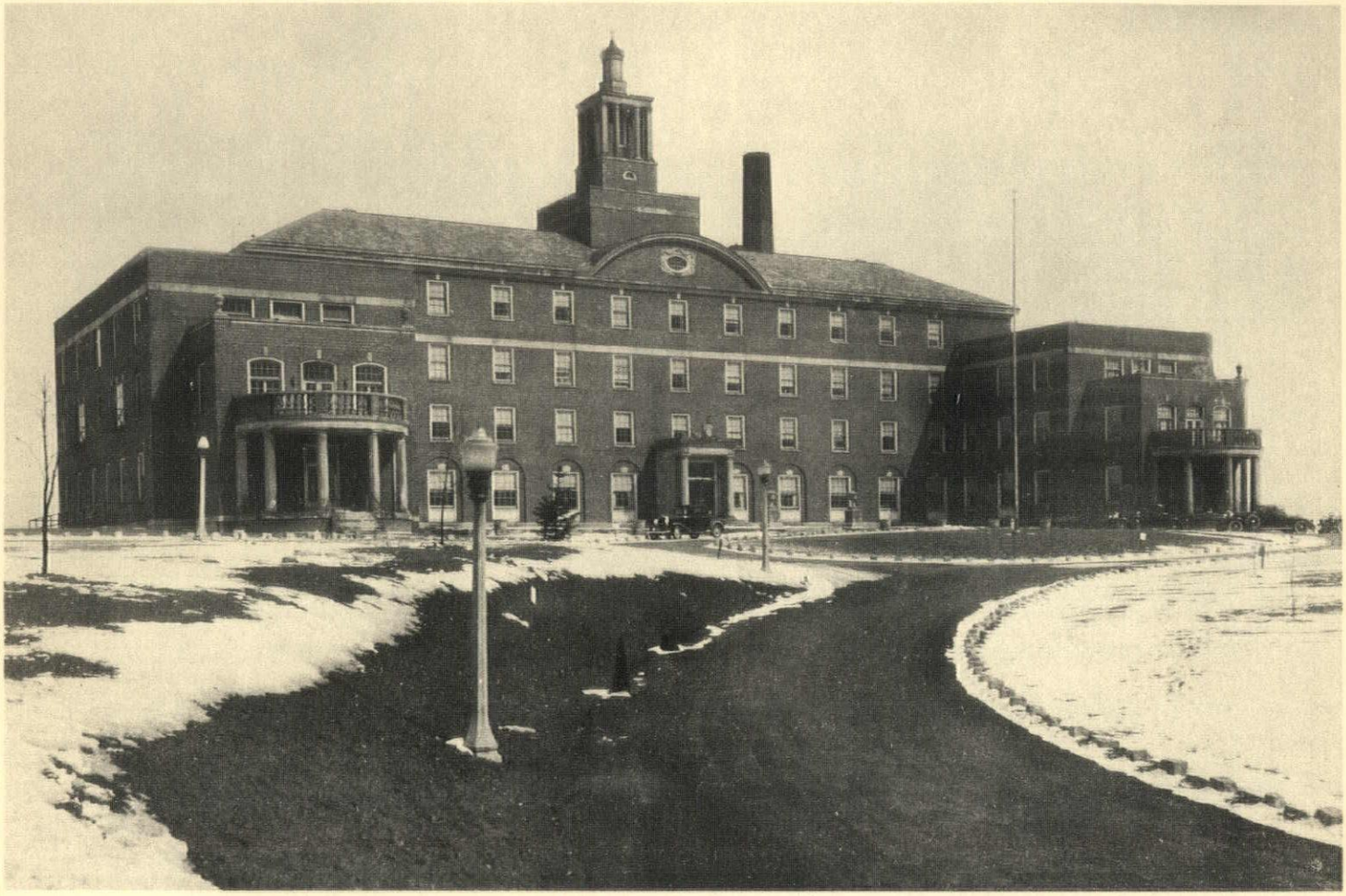
SWEDISH COVENANT HOSPITAL, CHICAGO, ILL.

SCHMIDT, GARDEN & ERIKSON, ARCHITECTS



Below, typical floor plan, with future expansion upward in an east wing. At left, ground-floor plan. At right, first-floor plan





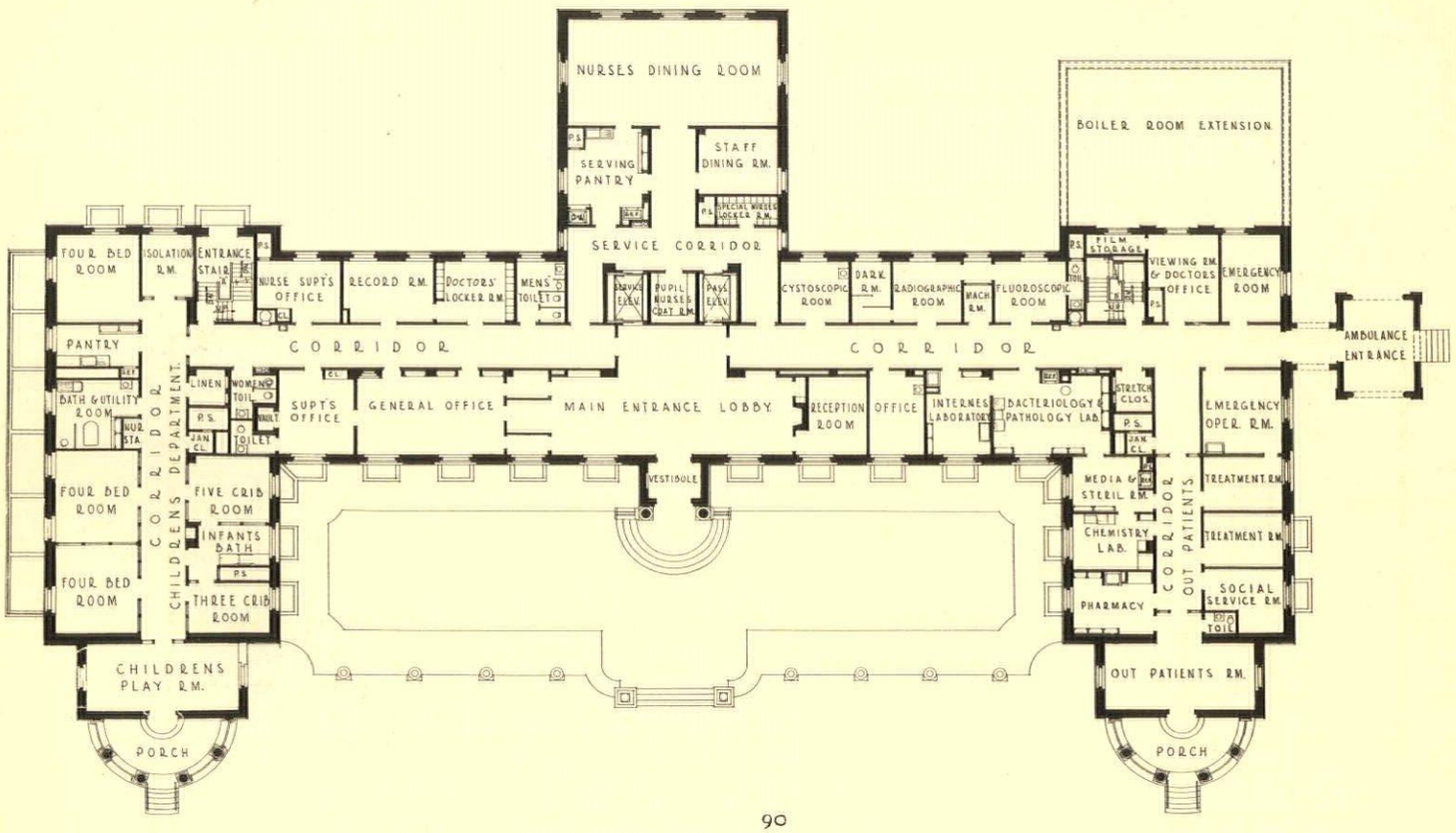
WASHINGTON HOSPITAL,
WASHINGTON, PA.

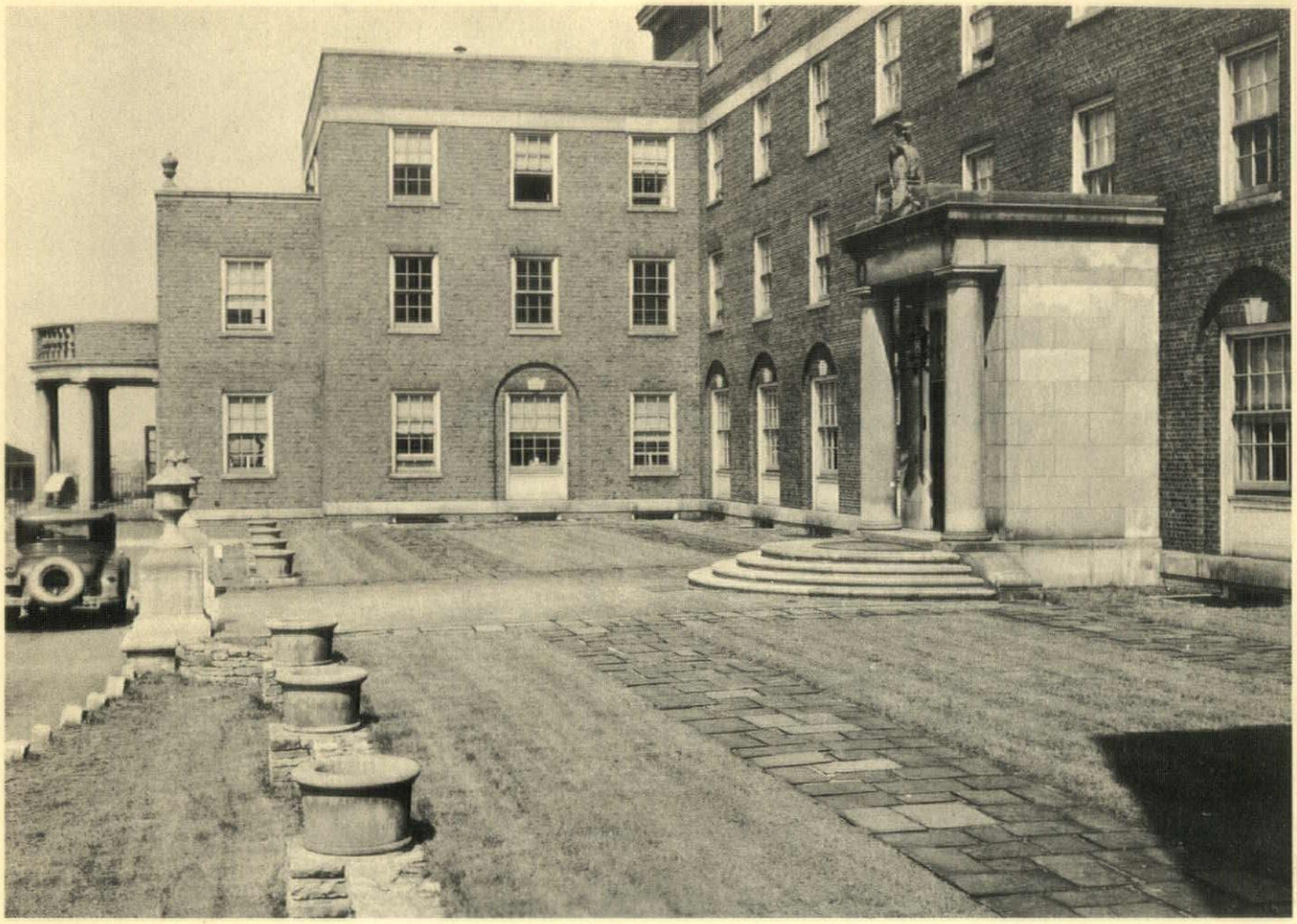
SCHMIDT, GARDEN & ERIKSON,
ARCHITECTS

Above a general view of the hospital, which occupies a site of almost eight acres in the coal mining region. Architects who have not built in this locality may be interested to know that it is necessary to supplement the usual topographical survey with an under-ground survey, to make sure that there are no mines, active or abandoned, under the building.

As developed, the building contains 113 beds, with provisions to expand this to 150 beds in cases of emergency, by doubling up in the large single rooms and by using the solaria for patients

Above, an operating room in the Washington Hospital. Below, plan of the first floor, indicating the relationship of the Out-patients Department and the Children's Department in the wings, connected by the medical service

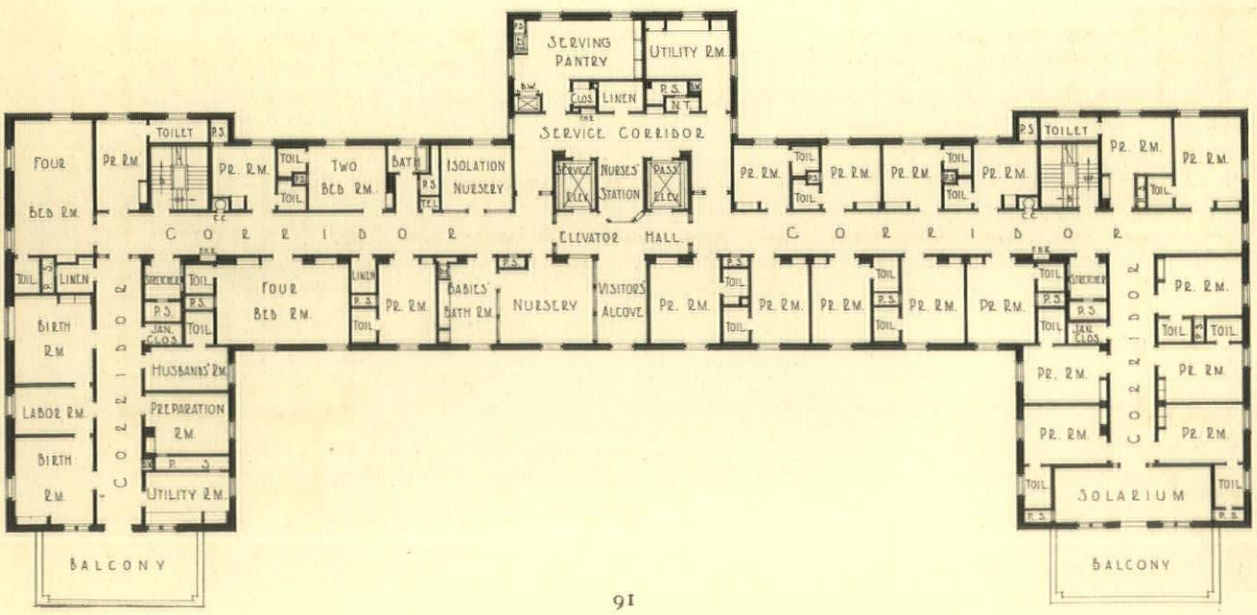


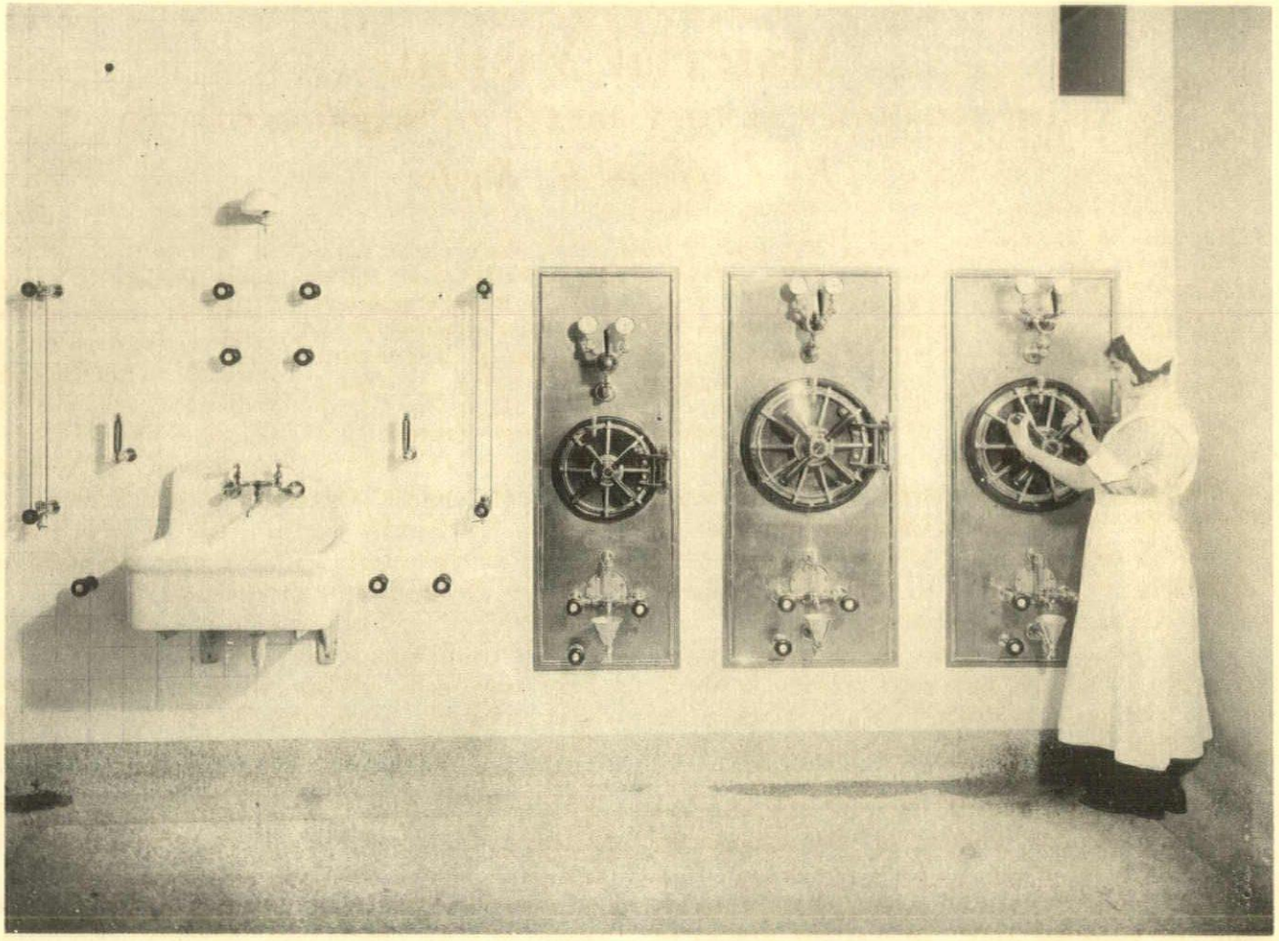


Above, the entrance terrace of the Washington Hospital. The materials used for the exterior are variegated face brick with trim of Bedford stone.

Below, plan of the third floor. This is the first use, in the architects' practice, of the service corridor principle, which is also to be seen in the plans of Montefiore Hospital at Pittsburgh (page 82). The location of the laundry is in the basement under the left wing. The boiler room and machinery room are under the opposite wing, with the stack detached, as indicated on the first-floor plan.

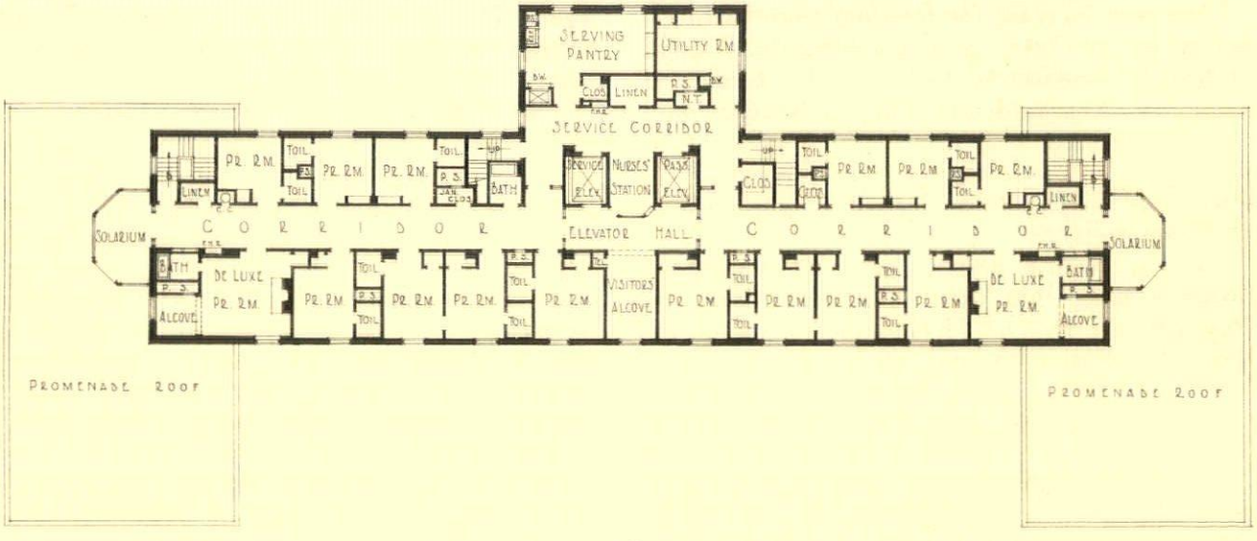
Below, plan of the third floor. It is interesting to compare this with the plan of the fourth floor on the next page, indicating the setbacks at the ends





Above, sterilizer room in the Washington Hospital. Below, the plan of the fourth floor, with its solarium at either end of the corridor. Note the partitioning off of the elevator hall and the visitors' alcove, as well as the double access to elevator car, from both the hall and the service corridor.

The building contains 886,000 cubic feet; or 7,840 cubic feet per patient, and 7,560 cubic feet per bed. Provisions are made for ample future expansion



Material Vision

LIGHT AND OPTICS AS THEY RELATE TO INTERIOR DESIGN

By Carleton B. Ryder

"Thy dawn, O Ra, opens
the new horizon—
Men and their fates are
thine, in all their stations,
Their many languages, their
many colors——"

Egyptian "Book of the Dead," translated by Robert Silliman Hillyer

Here is Mr. Ryder's third article dealing with what might be called organic structure. In December "The Neglected Sense" carried acoustics forward into æsthetics. Last month "Fair Weather" opened up a vista of possibilities in air conditioning. The present article deal with light, and a concluding installment will attempt a rational alignment of the various factors of the "human economy" in building.—EDITOR.

THE plant patiently strains skyward. The spirals of the moth taper into the flame.

Man leans to light. Light shades his moods and bends his ways.

Is it because we, or the moth, or the plant, so desire? Perhaps, but such volition is obedient to the greater will of "Ra." Science believes that as the moth approaches the light one eye is first affected. A normal muscular balance is upset by the unequal stimulus. A greater muscular tension of the stimulated side causes the moth to turn lightward—thus strengthening the stimulus with mounting effect—to a fabled end. In various grades of complexity such a theory may apply to all life.

But man painstakingly tries to outwill Nature. Not very long ago, as time goes, we "came indoors." Darkness proving intolerable, we contrived a mimic sun. Today forty per cent of the people suffer disabled sight, although it is doubtful if there is a more stark disability than blindness. Our substitute sun was deficient.

We seek increase for freedom from Nature's bonds, but too often seek it arbitrarily. Denial of Nature increases latitude only by decreasing longevity. Our understanding of Nature must advance in step with our cunning if our purpose is not to be defeated. For "increase" follows *better adaptation to Nature, or applications of Naturalness.*

To be concise and orderly in treating so broad a field, this paper is divided into the Physical, the Psycho-Physiological and the inferred Conclusion phases.

THE PHYSICAL

Of those dispensing light and color, advised or innocent, there are none whom understanding does, or would not, otherwise than assist. It is essential to any great facility of usage.

Color may result from refraction and reflection whereby light is divided, as in the diffracting prism, into beams of its component wavelengths. Or color may result from "filtration," whereby certain beams are transmitted or reflected, and the rest disposed of through absorption or dissipation.

"White" light is a progressive band of wavelengths from approximately 4000 angstroms to 8000 angstroms. When we deal with colored light rays, we adopt the "additive" method. Thus, individual colored beams, converging on a single spot, add up to a produce "white" if they include a "white" light wavelength balance. Unbalance causes the spot to assume the color of the wavelengths predominating.

The "subtractive" method, a more usual means of color production, depends upon filtration. Thereby pigments reflect or transmit the desired hue and subtract the others from the incident light.

Many pigments, most notably the analines, reflect certain hues and transmit others simultaneously.

But pigments have limitations; their filtering action is only relative. It is subject to variation with the intensity of the incident light. Purity ensues when a pigment is subjected to that intensity at which filtration passes the greatest proportion of the desired hue and the smallest proportion of the undesired hues. This is the pigment's "saturation point." As the intensity decreases from this point, or the action is altered by adding black pigment, the capacity for passing the desired hue is fallen short of. These "shades" progressively darken to "black." As the intensity increases from the saturation point, or the action is altered by adding white pigment, the capacity for removing the undesired hues is exceeded. These "tints" progressively lighten to "white."

The saturation points of the various colors differ. The natural order of this "tone" or "value" difference proceeds from the maximum

brightness of yellow in both directions (around the spectrum) to the minimum brightness of purple.

Of such physical phenomena Nature has established an equilibrium of proportion and order. The single primary source is the sun, of intensities up to 10,000 foot-candles of a bright day. Diffusing property renders the atmosphere a secondary source, one of 2000 foot-candles intensity. This is a significant ratio. The composition of the radiant energy reaching us from these sources is definite. A specific proportion of Ultra Violets are present. Light from the primary source is "white," its component wavelengths predominantly yellow. The diffused secondary light is predominantly blue. With decreasing intensity, the peak of predominance tends toward the red end of the spectrum. The soil reflects the yellow-reds. Vegetation takes the yellow-blues from the soil, so reflects them from its foliage. This gives us the peaks of Nature's pigment balance. Only in her frivolous moments does Nature introduce pigmentary extremes, and these are equalized by intensities of light usually above the saturation point and subject to the Natural tonal balance that results from a single predominant light source.

THE PSYCHO-PHYSIOLOGICAL

Evolution has fitted us for these ideals.

We are receptors of radiant energy. Not merely our organs of sensing respond, but our entire bodies, when, as matter, they absorb, dissipate, transmit, or reflect, radiant energy. It is probable that the totally blind do react to light, may be conscious of it and even to its direction. In this way direction and intensity of light may have effects additional to the visual, at least deserving of research. The eye employs its refracting media and structure to focus light on the retina. The adaptability of the eye is competent to do such tasks as Nature asks. But it constantly fails to meet Man's exaggerated demands.

Convergent adjustment for spatial fixation —the two-eyed vision such as we reproduce in the stereoscope—is suitable for distant vision but rapidly fatigues when its objective is as close as this page. Under high intensities, contraction of the iris confines the entering light to a pupillary area distinctly focussed, because combined sensitivity is greatest at the centre of the retina, or "fovea." Under intensities below twenty foot-candles the expansion of the retina admits a breadth of light beam in excess of the eye's ability to focus most definitely. This is heightened by the differences of focal length common to different colors. Attempts to focus contrasting colors simultaneously produce blurring known as chromatic aberration.

To the rare contrasts in Nature, evolution has responded by constructing the retina to respond to all colors at the fovea. Expanding therefrom, sensitivity drops off first for green, then, in order, for red, blue, yellow, and lastly white. Consistent with Nature's pigment balance, our eyes are least concerned over the most predominant hues; *but are most sensitive to, and soonest fatigued by, the hues that are extreme in Nature.*

Nature's own more or less horizontal plane of visual interest results in an angle of visibility not including the sun in its positions of greater intensity. Furthermore the eye has developed so that its blind spot (the entrance of the optic nerve), together with general decreased sensitivity to intensity, is in the lower part of the retina. Thus glare is minimized in Nature.

The last and one of the most important limitations of the eye is its comparatively low maximum speed of adaptation. It can be focussed not so very much faster than a camera. But, worst of all, when met with abnormal situations—such as some interior conditions—it takes hundreds of years to evolve response! And then distaste usually accompanies the effort. So we step from the physiological to the psychological, tracing the light stimulus through the neural channels that lead to the end of produced response. But preference, while it is a well-meaning indicator, is often misled by "relief" or pure, abstract "willfulness."

The general types of Psycho-physiological response may be divided as in the preceding article, "Fair Weather," namely, into the Functional, the Habitual, and the Illusional.

The Functional.—Discrimination favors high intensities of light, as is obvious from the preference for clear over cloudy weather. This discrimination extends to most all of the previously mentioned "ideals" of Nature. The order of preference places most tints before shades. Adherence to natural tonal order pleases, is called "congruous" or "harmonious." Departure from this order (as by associating a yellow shade and a purple tint) is termed "incongruous" or "inharmonious." This procedure, in restraint, has spice; it is irritating in excess.

By courtesy of General Electric Company

A demonstration of the first psychological step away from window lighting. Both vertical and overhead sources, while retaining their conventional forms, closely approximate natural color and radiation balance, through wholly artificial means. Wanamaker's Philadelphia Store tea room; John T. Windrim, architect; The Voight Company, technicians

Relief may invert the normal order of preference. Thus, to the tired eye, low intensities are preferable because essential to relaxation. Intensities below two or three foot-candles are actually sleep-conducive. Between such levels and the higher levels of efficient visual diligence the effect is conducive to visual recreation, or physical action. Similarly, "relief" is responsible for the psychologist's preference order of colors: red, blue, violet, green, orange, yellow. In this case we have been so long exposed to Nature's order that we fly to its reversal, but doubtless if the experiments whereby this order of preference was determined were continued for a period of time we should find the subjects glad to return to Nature's prescription.

The Habitual.—The complexity of this type of response is usually the result of its development in early life through post-natal association. Habits may arise from natural adaptation to arbitrary environment; some seem to have no better foundation than "willfulness." They are usually best appeased by subtle applications of Illusion, concealing the corrections.

The Illusional.—Habitual association is the palette, functional limitations the brush, of the Illusional response. The importance of visual illusion to all design cannot be understated. It can be used with startling success—or neglected with dismay. But since it is fundamentally an "abnormal," it must be used with caution, and is rarely justified to any great extent except for the correction of factual abnormalities, or habit pacification. The greatest care must always be taken that the illusion appeals consistently to the senses concerned.

The author viewed the McGraw-Hill Building, New York City, from 42nd Street and Broadway recently and noticed that the tower arising from the principal setback appears *wider at the top* in disconcerting conflict with the laws of perspective. His sobriety may be verified. The illusion is the result of vertical central lines bordered by short horizontal lines. When the arrangement is foreshortened the effect of divergence outweighs the convergence of perspective. A common characteristic of linear illusion is that it may not appear in

elevation or rendering, yet cries out in three dimensions!

Spatial illusions consequent upon chromatic aberration abound in the use of color. By nature the eye is nearsighted for blue and farsighted for red rays. The psychological tendency is to put such colors in their places.

The illusion termed "induction" is very common. Thence complementary colors are induced in neutral areas surrounding extremes. Portions of lighter areas immediately adjacent to darker areas are further lightened by induction. Thus the effects of contrasting combinations are heightened, and vice versa. Another illusional effect is for brilliant reds to take on halos of purple, and vice versa.

CONCLUSIONS

The argument for Naturalness, supported by an understanding of such fundamentals as above outlined leads to unmistakable conclusions—a present vision of factual clarity and a bright vista beyond. Let us follow it through.

Our first and one of our most difficult tasks is to determine the line of distinction between visual diligence and relaxation. This distinction should be determined as exactly as possible. To place it empirically between the commercial and residential is altogether too crude; it should be located conditionally and temporally with respect to the occupant. It compels the conviction that visual *effort* should never be subordinated to visual *effect*. Our eyes are ready to say when and where the change should be, but we are schooled in ignoring their requests. It rests with the ophthalmologist to define the needs and with the interior designer to apply the definition, with us to realize the benefit.

To that end the interior designer should analyze the conditions *and the occupant*, reach his conclusion with the consultant, and then proceed, first, to supply illumination conforming to the visual task; second, to limit the occasion for visual work in conformity with the illumination; third, to ensure psychological fitness before imposing the conditions, and providing for a certain degree of their flexibility; and, fourth, perfecting the visual recreation.

With respect to the first of these, Intensity is the principal consideration. We have seen that the eye reaches functional efficiency at twenty foot-candles. This implies a somewhat higher general order of illumination than we are accustomed to, indoors.

It is often desirable to exceed the functional minimum of twenty foot-candles, under adaptational conditions. For instance, the usual rate of light decrease during the afternoon is too rapid for the eye to keep abreast of. Therefore, supplemental illumination might well be higher during waning daylight than is essential after dark. For the same reason interior illumination during daylight should be highest near entries and graduated progressively inward. The lighting of the Holland Vehicular Tunnel is a successful application of such practice. The same theory may be extended to the increase of supplemental illumination in office buildings before and after hours of exposure to high natural light. Such variation may be practically effected by controls of the photo-electric type, in conjunction with a timing control. Thus a means of insuring a constant level of light, in spite of natural fluctuations, with their certain disruptive results, is also provided.

The second step in the interior designer's procedure, limitation of the occasion for visual work in conformity with the illumination, is self-evident. It is primarily noted here to show the intricate inter-relationship between each phase of the interior structure, and should serve to remind the designer that the essential benefits to be derived from perfect relaxational lighting may be voided by the introduction of such a seemingly inconsequential factor as a bookcase. But further than this, the surest way to remove the probability of visual work is to present a means of substitute occupation, tactual or audible, accessible to the restless.

Third, let us see how our observations on fitness may be generalized and applied.

As to the source of light, if we wish to return to the eye its Natural domain, we should adopt a direct primary and indirect, or, at least, perfectly diffused, secondary source in a maximum ratio between primary and secondary of ten to one. Intensity reduction should likewise be largely confined to the former, its direction should be of single predominance, and its shifting not discernible.

We are thus placed at once in complete opposition to the prevailing "spotty" systems of lighting, with their complex divisions of attraction and sudden changes. We are offered the enticing prospect of having a dependable shadow direction and contrast ratio upon which to build our architectural and decorational scheme *without necessity of compromise*. Can this be possible?

The most difficult, but not insurmountable, obstacle is the window. Artificial light can be introduced through this source. It can be reflected with considerable inefficiency from the "transparent mirror" type of vision panel, but most practically it can be introduced by semi-indirect lighting troughs in close proximity to the window. However if, as we are rapidly and wisely tending, we decisively divorce the window's conflicting attributes, vision and illumination, by confining the former to quarters where there is something to be gained by looking out, we have obviated the difficulty in great part. The window is then to be considered, in the present writing, purely upon its merits as a vertical panel source of light. What, then, are such merits?

The panel system is at best a diffused direct source, but with insufficient diffusion to be an ideal secondary source. As a primary source the vertical panel is suitable at low relaxational lighting intensities. When the intensity is raised to diligence levels it will perforce become a well of glare from many positions within the room. Glare is not only painful to the eye but most uneconomical, since, by reduction of the pupil, it may waste a great part of the total illumination.

Glare from a high-intensity, direct, primary source can only be totally overcome by removing it from the visual angle, which is to say, placing it directly overhead—its most natural position. To gain such a result at all or many points in a room we must confine the rays to as nearly a vertical direction as possible. This is made feasible by utilization of vertical-vane assemblies, or by directional glasses and reflectors. They may be concentrated over locations of visual work, or be general, equally without glare or the disadvantages of multi-direction.

Naturalness for the secondary source then implies effective introduction over the maximum area at the minimum intensity. This is probably most readily accomplished by a totally indirect system reflected from ceiling and walls. As intensities are decreased for relaxational reasons, the primary source should first be cut, then diminution of the secondary source may progress from the ceiling downward upon the walls, but bearing in mind that the highest law in lighting is the ban on visible sources of concentrated light below the level of the eye.

As for light composition, fitness has specific implications. The primary source would thus naturally be "white" light of greatest proportionate intensity in the yellow wavelengths. This is reasonably close to the characteristics of the common incandescent filiment, possibly with slight blue-filter correction. The secondary source should be of somewhat more blue cast. With decreasing intensities the entire color balance should shade toward rosiness. Color in light is a thing to be tactfully used, indeed. There is no criterion in Nature for extensive use of any color, and no end to the psycho-physiological complications arising from such use. The intentionally "bizarre" may be achieved, but its desirability is the rare exception.

Light composition (as elsewhere mentioned) should include a definite, healthful quota of Ultra Violet radiation. The common electric lamp does not supply this, but bulbs of the available tungsten-electrode mercury-arc type do. This radiation may be controllable for high-intensity short exposure or, which is probably better, constant low intensity.

But in this latter type of lamp we find a close approximation of the bluish visible spectrum suitable for the above-discussed secondary source. To apply it in a totally indirect system requires that close attention be given to the reflecting surfaces, because few are efficient reflectors of Ultra Violet. Of these, white lead may be cited as one of the best pigments, and chromium and aluminum as the better metals. The last may be applied in leaf or paint form, and if decoration is overlaid, it should be of as high a coefficient of Ultra Violet transmission as possible.

This line of reasoning leads the writer to a path not immediately open, but nevertheless irresistible: to overcome the disadvantages of concentration common to the incandescent filament, effect perfect diffusion, and obtain it more economically than by reflection, by means of a plausible development—the fluorescent surface excited by invisible Ultra Violets.

Our discussion of pigmentary fitness needs no elaboration to show the evidently natural methods of application. We have every assurance that the most "livable" schemes are those adhering to Nature's practice. Nor should we fear closer approach to the maximum purity or saturation of such colors, especially if we subject them to tint-inducing high intensities and the tendency toward natural tone order that follows from a single predominant source.

But for all this we are still confronted with

what may be termed the need for visual recreation—as distinctly more purely psychological than the need for relaxation. Visual diligence finds itself at home in the yellows, and relaxation seeks the greens. But recreation demands extremes, both of color and contrast, of specifically short duration, or small expanse. The ramifications of this subject into balance, form, line and mass, as well as color, cannot be touched upon here. Co-ordination of this extensive and delicate psychological field is yet in its infancy.

A notable development in this line is the "Clavilux" or color organ, as contrived by the artist, Thomas Wilfred, whose object it is to sway the sensibilities through play of light. The conclusion of first interest to this article is that mobility as well as form are indispensable adjuncts to color for achieving material effects. Mobility being in a certain sense the reciprocal of time, or temporal change, the findings of Mr. Wilfred return us again to the fundamental of specifically short duration for optical recreation. Although granting mobility to the eye renders smallness of contrast a means of obtaining the same end, it is still a much less precise means than temporal change.

In summary, the inference is that a complete change of interior design and color scheme, controlled temporally or at will and for brief intervals, would be ideal. Such a system has been and can be evolved through decoration purely by light, as with projecting apparatus of the "Clavilux" type equipped with "records." But decoration by light should be far removed from any conflict with illumination—and kept there.

Although we should find ourselves able to return sleep to the insomniac, digestion to the dyspeptic, and insure our children's right to sound eyes by straightforward application of improved lighting principles, we should still meet the hecklers, typical of the habitual response. To these the answer is a silent application of persuasive psychology, which is neither a remote nor a very difficult task. Departure from custom for closer approach to Naturalness is seldom hard to reconcile.

And yet, with so much at our finger tips, we shall not grasp it until we have accomplished the co-operation of psychologist, physiologist, engineer, and designer—and until we have realized the equal importance of each. To quote Doctor C. E. Ferree, eminent ophthalmologist, in a communication to the writer, "Until the forces which contribute to the entire housing are better aligned, we shall not have comfortable and attractive places in which to work and live." In the light of its importance this opinion cannot be too emphatically advanced.

We have seen the productive economy of advanced lighting practice. Is not human economy the *quantum sufficit* for another stride?

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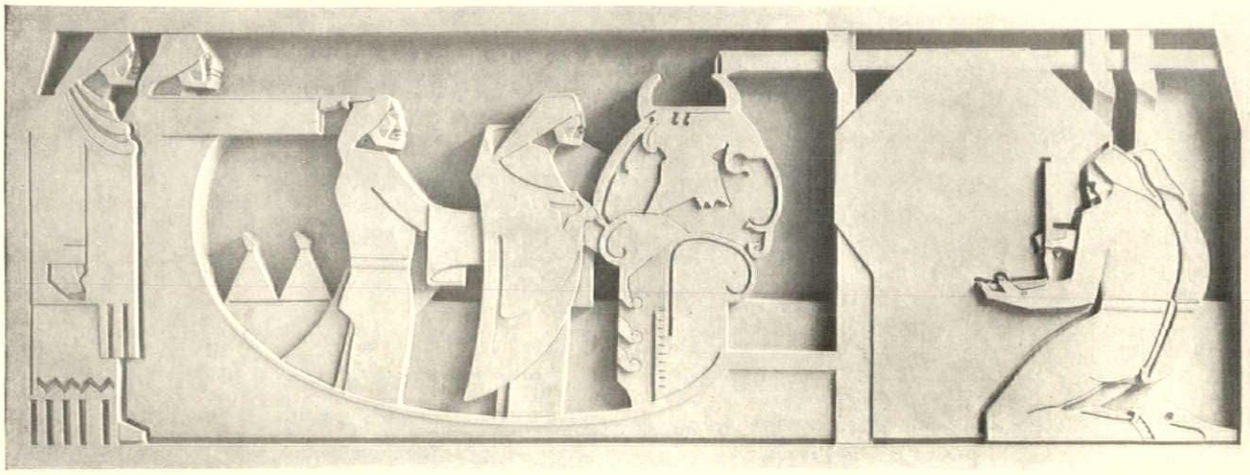
OTHER AUTHORS

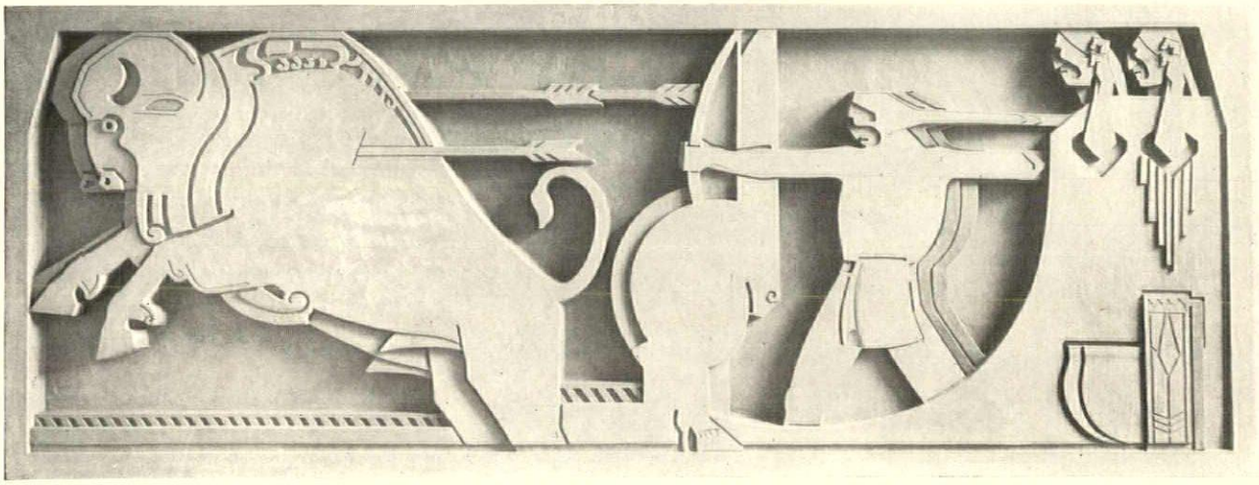
P. W. Cobb, C.-E. A. Winslow, L. Greenburg, E. W. Beggs, C. S. Woodside, W. N. Goodwin, Jr., E. B. Titchener, J. F. Dashiell, L. T. Troland, A. I. Gates.

John David Brcin, sculptor, in collaboration with John and Alan McDonald, architects, has carved sparingly in the pink Georgia marble of Omaha's Joslyn Memorial some integral decoration and several panels symbolizing the Early West (overleaf). The masks in the circles are of the Trapper and the Plowman

Sculpture on the Joslyn Memorial, Omaha, Neb.



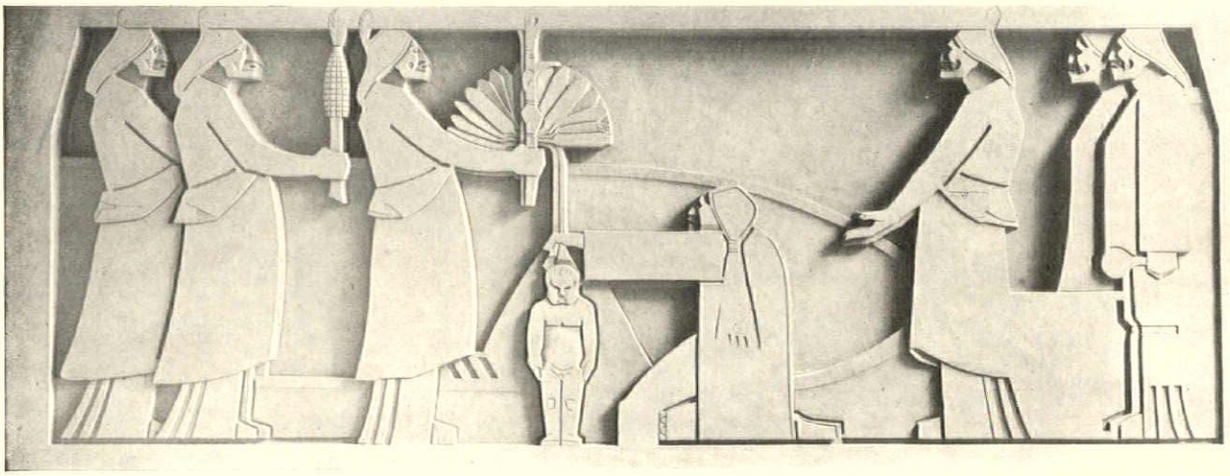
"Indian Picture Writing"



"Sign Language"

JOHN DAVID BRCIN, SCULPTOR

"Prayer for Life"



Some Pitfalls in Supervision

By W. F. Bartels

XXVIII. HARDWARE

(CONTINUED)

DOOR butts should be of adequate size and number. The superintendent should carefully check these items and also make sure that they are of the material specified. Here again the magnet may prove to be a discerning helpmate in the detection of the metal. Also, a file is a very revealing instrument to have around when testing hardware. It may also be found that two pairs of butts are being used in place of the three called for, and even the two are not the type specified. Doors subjected to extemely hard usage should have the hinges bolted where possible. In the use of invisible hinges care should be exercised to see that the correct size and proper number are used. If a door so hinged should sag because of poor or inadequate hinges the whole purpose of their use would be defeated. The application of olive butts should be carefully overseen. These butts (so called because of their resemblance to an olive) are not easy to install. If not properly adjusted (*i. e.*, a true bearing obtained on each one where two are used) the door is apt to swing open or shut when left to its own devices.

The installation of hardware, though relatively simple and requiring very little thought, is often most successfully bungled. Butts with loose pins are hung with the pin on the exterior, or on the public-hall side of an apartment door. Left-hand locks are installed on the right-hand doors with the result that they do not catch. Neither screen-door hardware nor any other kind should be allowed to be installed so close to the outer edge of the door stile that the hand may be pinched between the knob and the jamb of the door.

Cheating on the grade or type of metal is one of the most common pastimes in the hardware business. Passing off plated ware for the genuine cast material should not "get by" any superintendent familiar with the use of file and magnet. As a rule stamped goods are easily distinguished by the feeling or light weight. Various other items must be checked—foot and head bolts on doors must have receiving plates or "keepers," and the holes in them must be cut out. Often the holes are not made and even the plates are left off. Window lifts should be large enough so that a good purchase may be obtained to open the window. Window catches should be so installed that when the window is locked both parts of the catch fit snugly and cannot be jarred open by shaking the window.

Besides fitting tightly in their mortises, locks should have the strike plates well secured. Then too, the centre of the lock bolt should be the centre of its hole in the strike plate. Then if any slight settling in the building occurs it will not necessitate changing the strike plate, with the resulting disfigurement of the trim. Keys should not only be furnished for their respective locks, but should actually operate these locks. Many a tenant has moved in an apartment only to find that the keys inserted in the locks of interior doors were only ornaments.

Knobs should be tight and securely fastened. If not of the screw shank type, washers should pack the knob so that it will not be loose and rattle. One contractor about to put the finishing touches to a house found the screw holes in the shanks of the knobs not the proper size for the door. This he remedied by cutting off the shank and wedging the other knob on. The screw hole he fixed by cutting off the head of the screw and gluing it in the hole. This job probably would last until the owner moved in or an over-ambitious person gave the knob a good pull.

All doors should be checked to see that the hinges are properly set. No door should swing shut of its own accord unless it has a door check. Nor should any makeshifts be allowed to substitute for good workmanship. Sometimes if the butts have been set too deep, or the strike-plate hole is too high for the lock bolt, a heavy thumb tack or other unobtrusive object will be set just below the lower hinge. Doing this will throw the opposite side of the door upward, thus making the lock work and the door close. With all these subterfuges, it will be seen that the superintendent must not feel content just because in the specification it says, "hardware to be chosen by the architect," but must realize that he has to be more up on his toes than ever when such a phrase is encountered.

ROOFING *and* SHEET METAL

MANY newspapers and magazines have "Building Departments" in which various questions appear pertaining to the repair and upkeep of the home. If the architect and superintendent would peruse these they would see entirely too large a percentage asking: "What can I do to make my cellar dry and habitable?" or, "Why should every heavy rain make my cellar wet," and so on until one might believe all cellars to be wet and damp in and out of season. The questions, however, make one feel sorry for these owners—and for the superintendent (if there was one). In most cases it is probable that a faulty condition cannot be remedied without considerable expense. The cost of insuring cellars being dry at the time the house was being constructed is insignificant compared to the amount required later to accomplish this purpose. In most cases there is no excuse for a wet cellar. The architect should make provision for building a dry cellar and the superintendent should see that these provisions are strictly carried out.

No matter what the method of waterproofing employed, there is no excuse for not seeing that it is properly carried out. Where water pressure develops, and it does with serious frequency, there must be reinforcing to guard against it. Sometimes this matter is not given enough thought. Floors and walls may be made waterproof by a variety of methods. Sometimes materials are added to the concrete mix. Sometimes a felt well bedded in a good grade of pitch is put on the outside of the wall. But either method must be well executed.

Imagine the plight of a commuter summoned home with the admonition to hurry because his house was falling down. He hurried home dismayed to find that his cellar floor was developing huge waves in it. This was poor consolation even though he realized that the house itself was not going to fall down, at least not at that very moment. An expert superintendent was summoned, but at first was able to give no explanation. If there was a good waterproofing beneath a properly reinforced slab, what could the trouble be? The answer could only be found by digging up the concrete floor. The waterproofing was in excellent condition and so was the concrete, despite the fact that it was cracked. *But* the reinforcing in the concrete had been put in "upside down," as it were. Instead of the reinforcing being in the top of the slab where it belonged, it was put at the bottom just as in an ordinary above-ground floor slab. No one had reasoned out that the pressure would be up and not down.

The waterproof coating of walls must be carefully applied. The entire job is rendered vulnerable by faulty application, or the damaging of one small section through which the water can work its way. All edges of fabric must be lapped and joined. Pitch pockets are to be avoided wherever possible. Great care must be taken with the waterproofing immediately after it is applied so that nothing harms it. The necessary protective covering must be provided as soon as possible.

For the small house in the country the waterproofing should be brought up above grade or to the first floor. In the city building it is brought up above the sidewalk level. If there is a sidewalk vault, it is carried under the sidewalk over the vault and fastened to the flashing of the building. A leak will often travel thirty or forty feet before making its appearance inside the building, and it costs a pretty penny to hunt for it when tearing up the sidewalk is involved.

There are hundreds of types of roofs but almost more important than the quality of the roofing is the quality of the workmanship. The best roofing material ever made can be spoiled by poor laying. Experience is a necessary qualification for a roofing contractor, but neither it nor the loud proclamation that he has been forty years in the business, will automatically result in a good job. This type of contractor generally has a subordinate who attends to the work, and the superintendent who lets any roofer not personally known to him go about his business without supervision will rue the day that he did so. It is far better for the superintendent to spend a little extra time insisting on a good job than to lie awake nights later, wondering just where the many leaks are coming from.

(*To be continued*)

The Editor's Diary

Monday, November 28.—Dropped in to see Henry Wright who sails tomorrow night for Europe where he is to spend a few months checking up, with the results abroad, his own findings regarding housing problems.

Wednesday, November 30.—Walked up from The League after lunch with Robert Kohn, he telling me something of his proposed school for qualified architects who want to be brought up to date in the matter of housing. It is possible that the school will open next spring here in New York with lectures and instruction by Henry Wright, Clarence Stein, Frederick L. Ackerman, and others, to distribute among those in the profession who are interested and qualified, the data that the last few years' experience and research have brought out. Most architects who attempt extensive low-cost housing in these days will find themselves as unfitted to cope with the problem as they would be unfitted to perform an appendix operation. It is of the utmost importance, now that housing looms ahead of us as the architect's greatest task, to avoid the errors and waste that our advanced knowledge makes clear.

The Society of Beaux-Arts Architects held its annual dinner this evening at the Institute of Design. Aside from some discussion as to what would constitute proper attire at the coming Beaux-Arts Ball, and the re-election of Arthur Ware as president, much of the evening was taken up by George Chappell (Doctor Walter Traprock) who, with the aid of six fish bowls containing colored water, four sausages, three pears, a wooden door and some silk ribbon, carried on a medical analysis of leading artists in the United States. With the apparatus mentioned, and several charts, he discussed the blood pressure, water pressure, height, length, mental and vegetable capacity of his subjects.

Thursday, December 1.—Speaking of blighted city centres, there are numerous perennial plants that in the course of time begin to decay at the centre of the clump, and find new life by expansion on the perimeter. Finally the old clump has to be lifted, divided, and re-established. Our larger cities seem to have been doing pretty much the same thing. At the recent National Conference on City Planning in Pittsburgh, the significant conclusion of the whole affair was expressed very clearly by Harland Bartholomew. Vague ideas as to how we may produce a city beautiful will get us nowhere. What we have got to do is to bring together the facts as to changing quantities and locations of population over a considerable period in the past, so that we may plot the probable growth in the future; what that population is and does, and finally where that population should be disposed within a comfortable area for the best interests of all. We shall find probably that with the slowing up of population growth our cities are too big, rather than too small, and crowded because of haphazard, unconsidered growth. We shall have to reconstruct the crowded centres. It is more than likely that in redisposing city populations in more logical grouping and housing, we shall find that public utilities in the outskirts, winding through grass-grown streets of further planned subdivisions, may be abandoned or possibly torn up to salvage what remains good in them.

If we could examine without prejudice the actual assessment values of our blighted centres, without prejudice either as to what they were once or as to what we fondly hope they may yet become, we should probably find that these particular parts of the city are a liability rather than an asset, even in the mere matter of revenue. We shall probably soon awake to the realization that land must be assessed and taxed on the basis of what use it may serve, rather than on the basis of what ultimate profit it may bring some individual.

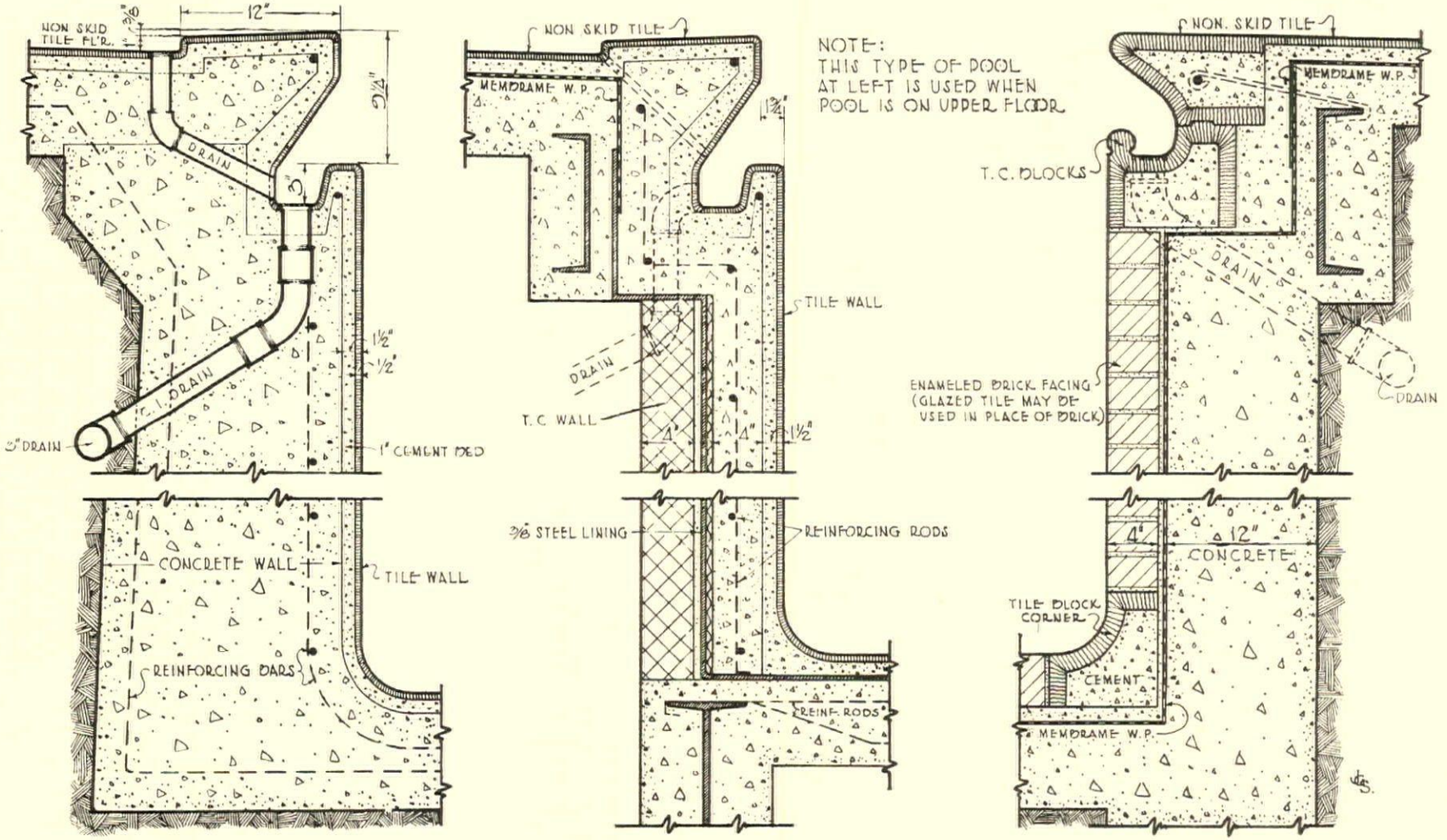
Friday, December 2.—Dr. Leicester B. Holland is on the warpath again, with his lance aimed at the practice of making museum trophies of our early American domestic interiors. The present uprising was brought about by the fact that a museum recently attempted to purchase a panelled room in Charleston, S. C. The aid of Albert Simons was sought, who informed the museum that he was opposed in principle to any antiquities being sold out of the city. As a matter of fact, I think Mr. Ernest Russell puts it rather well in urging museums "to abstain from the devastating practice of purchasing or installing interiors or other portions of early buildings except those whose demolition is inevitable."

Monday, December 5.—Clarence W. Farrier, who is assistant director of operation for the Chicago Fair, tells some particularly interesting phases of his experiences in *The Journal of the Western Society of Engineers* for October. The article is far too long to quote, but one point that impressed me was the scheme for preventing extreme heat losses from the Administration Building, which, of course, has been in use for some time. Space between the studs is blown full of a mixture of emulsified asphalt and old scrap paper, to which was added some sodium silicate to reduce the fire hazard. The total thickness of the wall is but little over four inches, yet it has the same heat resistance as a seventeen-inch brick wall, plastered.

Mr. Farrier reports considerable difficulty in painting this building. The exterior covering is a material made up of Portland cement and asbestos fibre, highly compressed to a thickness of one-quarter inch. Mr. Farrier blames neither the material nor the paint, but admits that the first paint job failed entirely and came off, and the second painting is fading badly. It would seem to be a matter for the paint research chemists.

Tuesday, December 6.—A. W. Robertson, Chairman of the Board, Westinghouse Electric and Manufacturing Company, delivered the Towne Lecture today before the annual meeting of the American Society of Mechanical Engineers in the Engineering Societies Building, New York City. It is a calm and worthy appraisal of society's present plight, with no attempted panacea. Rather, Mr. Robertson urges that human affairs should be studied with all the energy and devotion that we have been giving to science. The basic laws on which human affairs progress may be, must be, assured if man is to have any real control of his future.

Thursday, December 8.—D. Putnam Brinley today held a private view of his latest mural decorations, painted for The Metropolitan Life Insurance Company's new home office-building now near completion. I had the pleasure of examining these with Ely Jacques Kahn, chuckling over "The Adventures of Huckleberry Finn" in the cafeteria. The other series was "Scenes from Wild Life" in the elevator lobby of one of the basements. In Huckleberry Finn, Brinley has certainly achieved a naïveté and delightful humor in a particularly distinctive manner. There is an enormous area of these murals, an area which had to be painted in the course of a few months. Brinley's scheme provided for cartoons which were cut out, stencil-like, applied to the canvas, and the painting—or rather drawing—done with an airbrush.



· DETAIL · OF · VARIOUS · SWIMMING · POOL · SECTIONS ·

A SERIES OF WORKING DRAWINGS BY JACK G. STEWART

· SCALE : 0 3" 6" 9" 1'-0" ·

· PLATE · Nº 33 ·

Friday, December 9.—The diverse wanderings of a certain marble column have apparently ceased, perhaps permanently. Stanford White discovered the column in one of his rambles through Italy, and brought it to America. During his lifetime it remained in a marble yard in New York City. After White's death the column was purchased by two daughters of Abram S. Hewitt, a former mayor of New York, who had it erected at the grave of their father in Greenwood Cemetery. Recently it was found to be weathering badly, so Erskine Hewitt presented it to Cooper Union, of which his father was a benefactor, and it has been placed in the entrance of Hewitt Building.

Saturday, December 10.—Horace Peaslee, of Washington, has taken up cudgels for cities of the dead. Mr. Peaslee happens to be consulting architect for the Fort Lincoln Cemetery at Washington, and the Wintergreen Gorge Cemetery at Erie, which experience led to his further observations of the fact that while cities of the living are planned by experts, built by architects, and adorned by artists, cities of the dead are left to the haphazard direction of commercial interests. His hope for improvement lies in the co-operation of architects and landscape architects with cemetery authorities. He feels that "every private cemetery should require that each monument be approved by a consulting architect." Why not by an art commission consisting of an architect, landscape architect, and sculptor?

Monday, December 12.—With Russell Whitehead, Claude Bragdon, Eugene Schoen, William Van Alen, and others to see the *Conte di Savoia* upon the completion of her first trip across the Atlantic. Mr. Gustavo Pulitzer, who designed all of the interior of the boat with the exception of the main salon, guided us over the liner. Two things impress one: the clarity of the plan—one knows where he is and where he is going at any point; and second, Mr. Pulitzer's amazing fertility of imagination in the use of materials. He brings everything upon his palette—rare woods, bamboo sticks, parchment, etched metals, incised plaster, pictorial inlays of woods, copper for a dance floor, reeded columns, rare minerals, and unusual textiles. Throughout, moreover, he has shown a particular flair for the use of unexpected colorings in successful combination.

Tuesday, December 13.—A letter from Samuel Yellin, who has been in France for the better part of a year building up his health, tells me that he is expecting to sail for America this month, which will be good news for his many friends.

Thursday, December 15.—Ellis Jackson of Providence thinks that in recent years we have rather overdone the matter of elaborating the commercial structures. The choicest marbles, most carefully fabricated bronzes, some of our best murals, and particularly rare woods from all over the world, have been used to embellish commercial buildings. Jackson's idea is that this has tended to cheapen the chief means by which our public buildings have heretofore been distinguished. In other words, if we see these rare materials and elaborate craftsmanship in our office-buildings, we are inclined to appreciate them less in our libraries, museums, and other public works—and if we have done our best in the lesser work, we have nothing further to offer.

Friday, December 16.—William Sydney Wagner, who died last summer at Northport, lives on in the memories of many friends. Some of these friends have just erected in Northport Rural Cemetery, on a hill overlooking Long Island Sound, a monument to this man who was an architect of great promise through his own persistence and tireless efforts. Sydney Wagner did not have the opportunities of a college education, yet in 1907 he won the Paris Prize, enabling him to study at the Ecole des Beaux Arts in Paris for two and a half years.

The monument which has just been erected was designed by Otto R. Eggers and Edward Field Sanford. The slab of Vermont marble came through Lou Crandall of the George A. Fuller Company. John Donnelly carved the figure that Sanford modelled, and the foundations and setting were provided by Clair Wills of C. T. Wills, Inc.

Monday, December 19.—It is interesting to note the disappearance, in the most recent work of electrically lighted signs for theatres, of the old scheme of forming letters out of the bulbs themselves. Roxy's new theatre in Rockefeller Center provides a recessed box in the front edge of the marquise, the box being rather plentifully filled with bulbs and painted a highly reflective white. Cut-outs are interposed in the front recess, changing the lettering in this way.

I notice a still more elaborate scheme in one of the new Trans-lux theatres. Here the slightly recessed background is lined with closely parallel neon tubes, alternating in red and blue. The cut-out letter is again used in front of this, and by alternating and combining the red and blue tubes a particularly arresting sign is flashed. An ingenious detail of the scheme provides cut-out letters that are themselves sloping, thereby gaining a "cross-hatched" color immediately behind them.

Tuesday, December 20.—An interesting ceremony took place in the Vanderbilt Gallery of the Fine Arts Building lately when the heirs of the late Alfred D. Lenz, American sculptor, presented to the American Artists' Professional League the details of the Lenz process of casting metals. F. Ballard Williams, president of the League, said that Mr. Lenz had been regarded as "one who seemed to possess some magic power over the crucible," particularly when he finally succeeded in combining several different metals or alloys in one cast. The National Sculpture Society will publish in book form the formulas, diagrams and explanations.

Wednesday, December 21.—In the old days when one wanted to talk science he went to a particular club for luncheon where science would most certainly be discussed, to another for architecture, to another for sports. In these days one has no choice. The conversation where any two or three are gathered together is of economics, with a number of widely differing opinions that matches precisely the number of persons present.

Thursday, December 22.—Between national inertia, largely on the part of investment sources, and through direct opposition of the National Association of Real Estate Boards, housing is making no progress. The latter organization bases one of its objections to the use of public credit for limited-dividend, tax-exempt, State-supervised, multi-family housing on the theory that if these projects are carried out, they will be of no benefit to the poorer classes for whom they are intended. This argument apparently avoids the rather evident fact that new housing never has sheltered the poorer classes themselves, but has, on the other hand, provided a step upward for these classes by moving the present occupants of old housing that is necessarily on a lower scale, both in accommodations and rentals. Until we arrive at a very much higher plane of civilization, it is obvious that this progression by steps will be the chief means of bettering housing conditions. As one family moves up into, say, newly built dwellings, a less fortunate family moves out of a hovel into the dwelling just vacated. One serious fault in this method of progress is that we are so loth to destroy the hovel after it has been vacated, trusting instead that some poor unfortunate family will have to utilize it.

BOOK REVIEWS

SIX VOLUMES ON THE PRESIDENT'S CONFERENCE

HOME OWNERSHIP, INCOME AND TYPES OF DWELLINGS. Reports of the Committees on Home Ownership and Leasing, ERNEST T. TRIGG; Relationship of Income and the Home, NILES CARPENTER; Types of Dwellings, JOHN IHLDER. Foreword by ROBERT P. LAMONT. 230 pages, 6 by 9 inches. Illustrations from photographs and graphs. Washington: 1932: The President's Conference on Home Building and Home Ownership. $1.15.

NEGRO HOUSING. Report of the Committee on Negro Housing, NANNIE H. BURROUGHS; Prepared for the Committee by CHARLES S. JOHNSON. Foreword by ROBERT P. LAMONT. 282 pages, 6 by 9 inches. Illustrations from photographs and drawings. Washington: 1932: The President's Conference on Home Building and Home Ownership. $1.15.

FARM AND VILLAGE HOUSING. Report of the Committee on Farm and Village Housing, ALBERT RUSSELL MANN; Prepared for the Committee by BRUCE L. MELVIN. Foreword by RAY LYMAN WILBUR. 293 pages, 6 by 9 inches. Illustrations from photographs, maps, and drawings. Washington: 1932: The President's Conference on Home Building and Home Ownership. $1.15.

HOUSING AND THE COMMUNITY—HOME REPAIR AND REMODELING. Reports of the Committees on Housing and the Community, JOSEPH H. PRATT, M.D.; Reconditioning, Remodeling, and Modernizing, FREDERICK M. FEIKER. Foreword by RAY LYMAN WILBUR. 291 pages, 6 by 9 inches. Illustrations from photographs and drawings. Washington: 1932: The President's Conference on Home Building and Home Ownership. $1.15.

HOMEMAKING, HOME FURNISHING AND INFORMATION SERVICES. Reports of the Committees on Homemaking—Housing and Family Life, MARTHA VAN RENSSELAER; Home Furnishing and Decoration, RUTH LYLES SPARKES; Home Information Services and Centers, PEARL CHASE. Foreword by RAY LYMAN WILBUR. 238 pages, 6 by 9 inches. Illustrations from photographs and drawings. Washington: 1932: The President's Conference on Home Building and Home Ownership. $1.15.

HOUSING OBJECTIVES AND PROGRAMS. General Sessions of the Conference. Reports of the Correlating Committees on Technological Developments, GEORGE K. BURGESS; Legislation and Administration, BERNARD J. NEWMAN; Standards and Objectives, LAWRENCE VEILLER; Education and Service, ALBERT SHAW; Organization Programs, Local and National, HARLEAN JAMES; Research, JAMES FORD. Foreword by ROBERT P. LAMONT. 345 pages, 6 by 9 inches. Illustrations from photographs. Washington: 1932: The President's Conference on Home Building and Home Ownership. $1.15.

The above are the six volumes which, together with five previously issued, constitute the official record of The President's Conference on Home Building and Home Ownership. Under each of the titles above, the names of individuals are those of the committee chairmen; it is impossible, of course, to ascribe more definite authorship to these volumes, in the preparation of which the work has been so widely divided. The publications as a group have been edited by John M. Gries and James Ford. Years of study on the part of outstanding authorities have been put, directly or indirectly, into this great work. It might fairly be called an encyclopædia of American home making.

MATERIALS AND METHODS OF ARCHITECTURAL CONSTRUCTION. By CHARLES MERRICK GAY and HARRY PARKER. 639 pages, 6 by 9 inches. Illustrations from drawings and photographs. New York: 1932: John Wiley & Sons, Inc. $6.

The authors, both of whom are professors of architectural instruction in the University of Pennsylvania, have condensed in one volume the essential textbook information concerning materials and their use in building construction. While the book is not intended to be a handbook, the material is so concisely and logically presented as to bring it practically into the field of the architect's office tools.

PHYSICAL PROPERTIES AND WEATHERING CHARACTERISTICS OF SLATE. By D. W. KESSLER and W. H. SLIGHT. 35 pages, 6 by 9 inches. Illustrations from photographs. Research Paper No. 477. Pamphlet binding. Washington: 1932: U. S. Department of Commerce, Bureau of Standards. 10 cents.

COLONIAL ARCHITECTURE OF CAPE COD, NANTUCKET AND MARTHA'S VINEYARD. By ALFRED EASTON POOR. 120 pages, 8 by 10½ inches. Illustrations from photographs and measured drawings. New York: 1932: William Helburn, Inc. $8.40.

With the acceptance of the "Cape Cod Type" over such a wide area of the country, it is rather surprising that the task of illustrating the originals in photographs and measured drawings has not long since been undertaken. Mr. Poor's unquestioned service to architectural literature is therefore all the more welcome.

THE SEVENTY-SIXTH IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS

ARCHITECTURE'S PORTFOLIO OF

INTERIOR DOORS

Subjects of previous portfolios are listed below at left and right of page

1926
- DORMER WINDOWS
- SHUTTERS AND BLINDS

1927
- ENGLISH PANELLING
- GEORGIAN STAIRWAYS
- STONE MASONRY TEXTURES
- ENGLISH CHIMNEYS
- FANLIGHTS AND OVERDOORS
- TEXTURES OF BRICKWORK
- IRON RAILINGS
- DOOR HARDWARE
- PALLADIAN MOTIVES
- GABLE ENDS
- COLONIAL TOP-RAILINGS
- CIRCULAR AND OVAL WINDOWS

1928
- BUILT-IN BOOKCASES
- CHIMNEY TOPS
- DOOR HOODS
- BAY WINDOWS
- CUPOLAS
- GARDEN GATES
- STAIR ENDS
- BALCONIES
- GARDEN WALLS
- ARCADES
- PLASTER CEILINGS
- CORNICES OF WOOD

1929
- DOORWAY LIGHTING
- ENGLISH FIREPLACES
- GATE-POST TOPS
- GARDEN STEPS
- RAIN LEADER HEADS
- GARDEN POOLS
- QUOINS
- INTERIOR PAVING
- BELT COURSES
- KEYSTONES
- AIDS TO FENESTRATION
- BALUSTRADES

Below are the subjects of forthcoming Portfolios

Metal Stair Railings
MARCH

Verandas
APRIL

The Eagle in Sculpture
MAY

Eaves Returns on Masonry Gables
JUNE

Exterior Lettering
JULY

Entrance Driveways
AUGUST

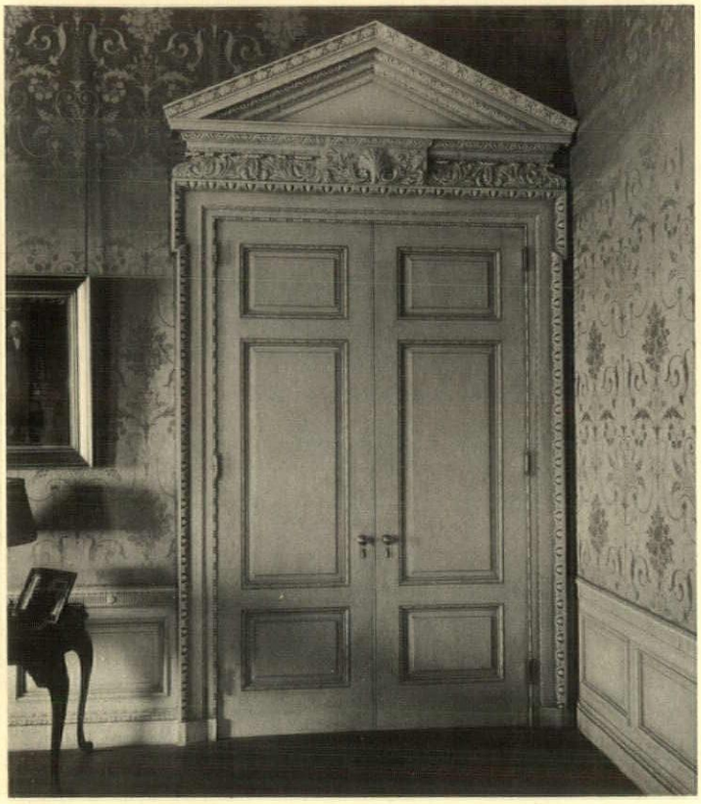
Photographs showing interesting examples under any of these headings will be welcomed by the Editor, though it should be noted that these respective issues are made up about six weeks in advance of publication date.

1930
- SPANDRELS
- CHANCEL FURNITURE
- BUSINESS BUILDING ENTRANCES
- GARDEN SHELTERS
- ELEVATOR DOORS
- ENTRANCE PORCHES
- PATIOS
- TREILLAGE
- FLAGPOLE HOLDERS
- CASEMENT WINDOWS
- FENCES OF WOOD
- GOTHIC DOORWAYS

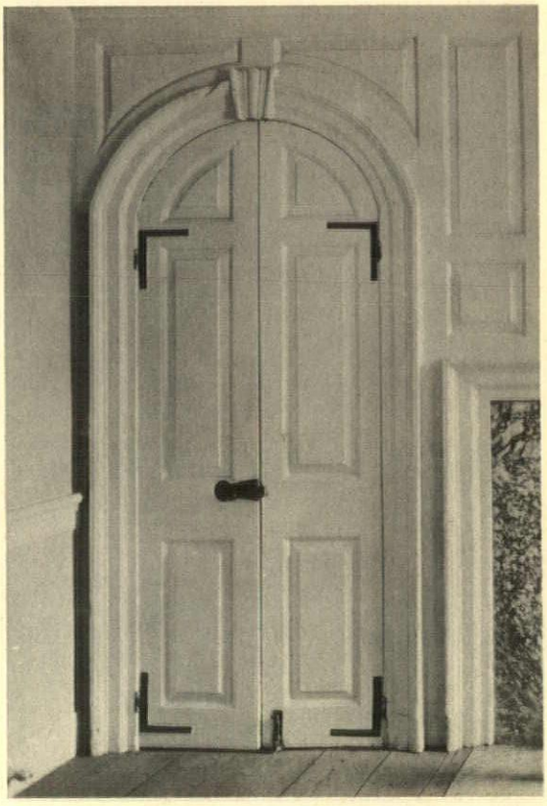
1931
- BANKING-ROOM CHECK DESKS
- SECOND-STORY PORCHES
- TOWER CLOCKS
- ALTARS
- GARAGE DOORS
- MAIL-CHUTE BOXES
- WEATHER-VANES
- BANK ENTRANCES
- URNS
- WINDOW GRILLES
- CHINA CUPBOARDS
- PARAPETS

1932
- RADIATOR ENCLOSURES
- INTERIOR CLOCKS
- OUTSIDE STAIRWAYS
- LEADED GLASS MEDALLIONS
- EXTERIOR DOORS OF WOOD
- METAL FENCES
- HANGING SIGNS
- WOOD CEILINGS
- MARQUISES
- WALL SHEATHING
- FRENCH STONEWORK
- OVER-MANTEL TREATMENTS

1933
- BANK SCREENS



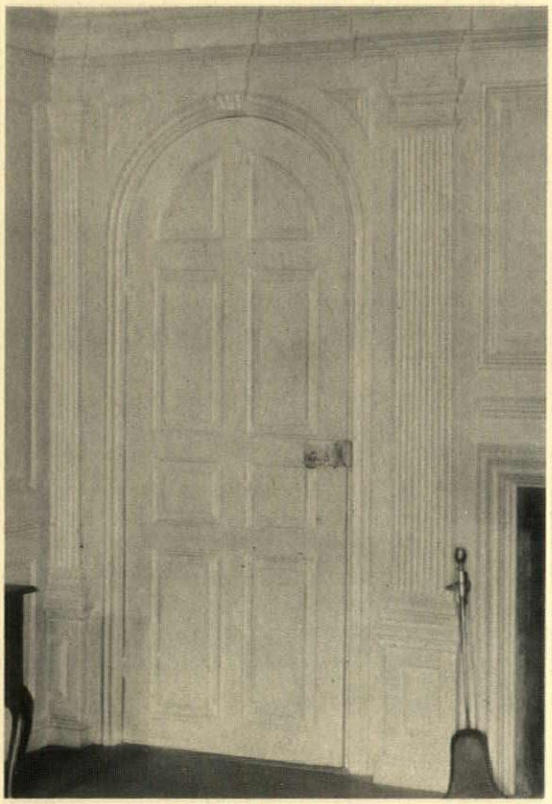
Greville Rickard



Valley Forge Headquarters (1760)

Remington House (1806), Cazenovia, N. Y.

Benjamin W. Morris

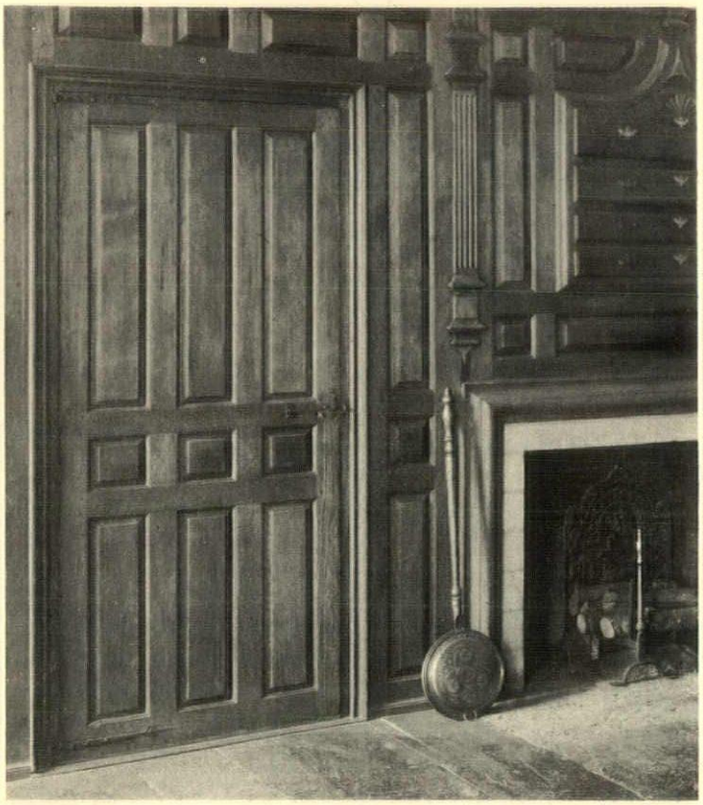


Orne House (c. 1730), Marblehead, Mass.

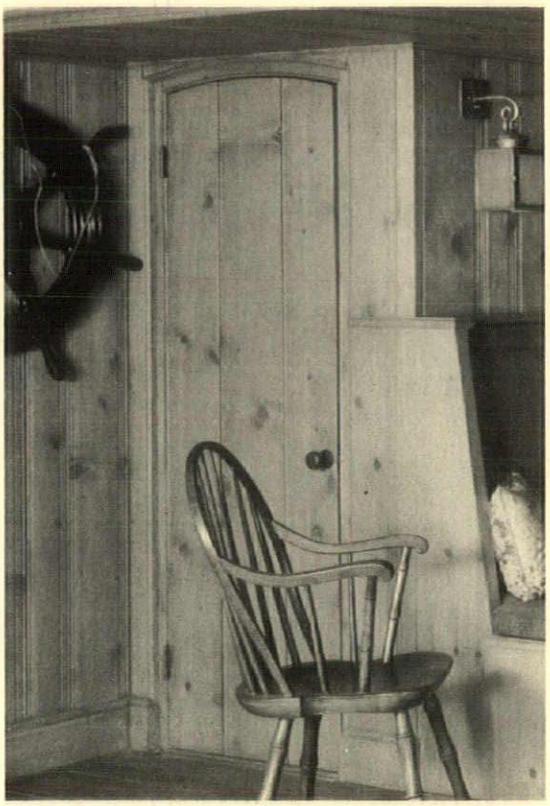
Hentz, Adler & Shutze

Aymar Embury II

Mott B. Schmidt

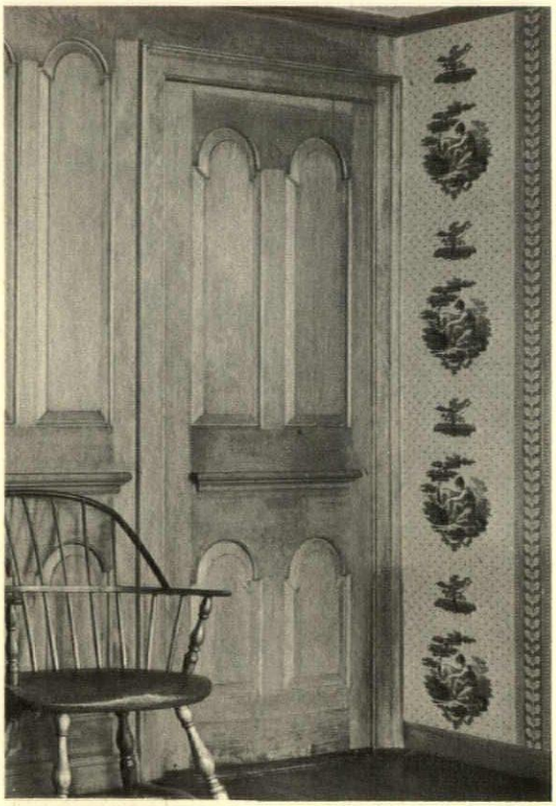


Fiskdale (c. 1750), Worcester County, Mass.

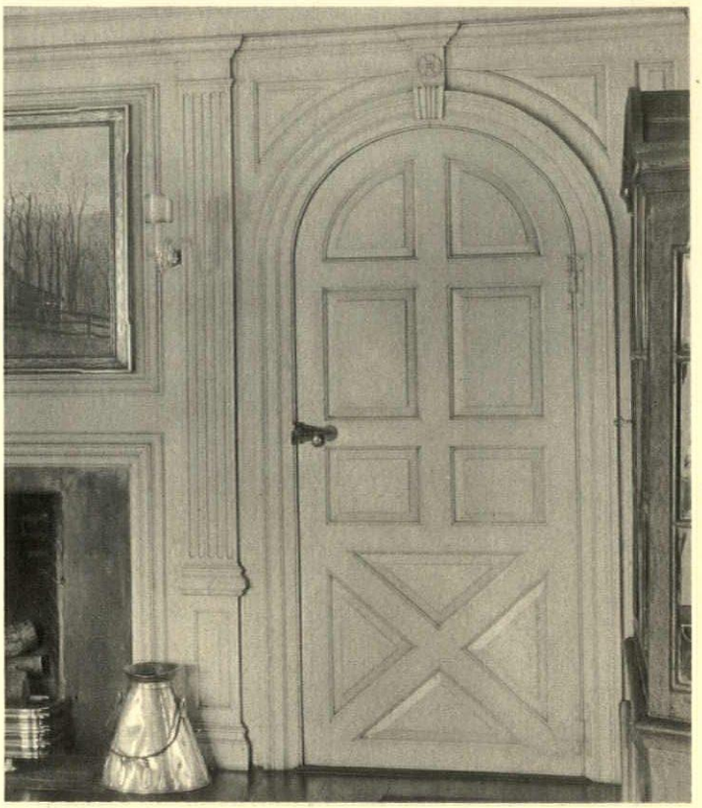


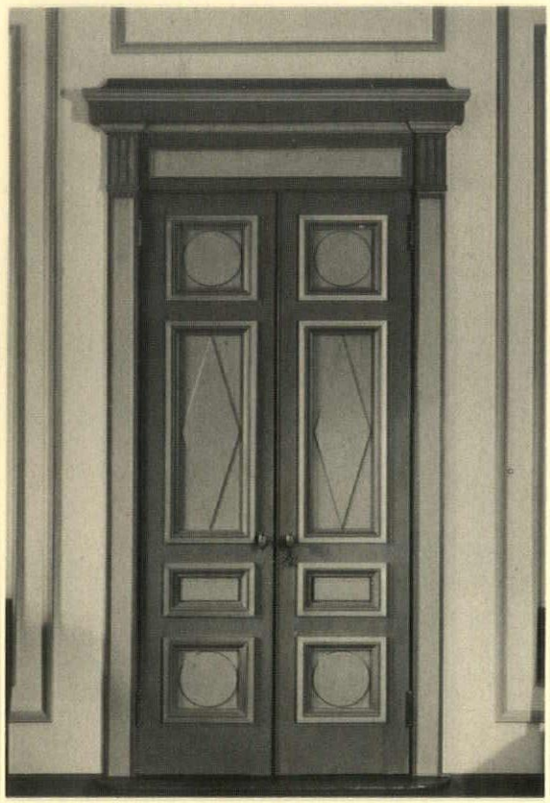
H. M. Woolsey

Electus D. Litchfield



Roger H. Bullard

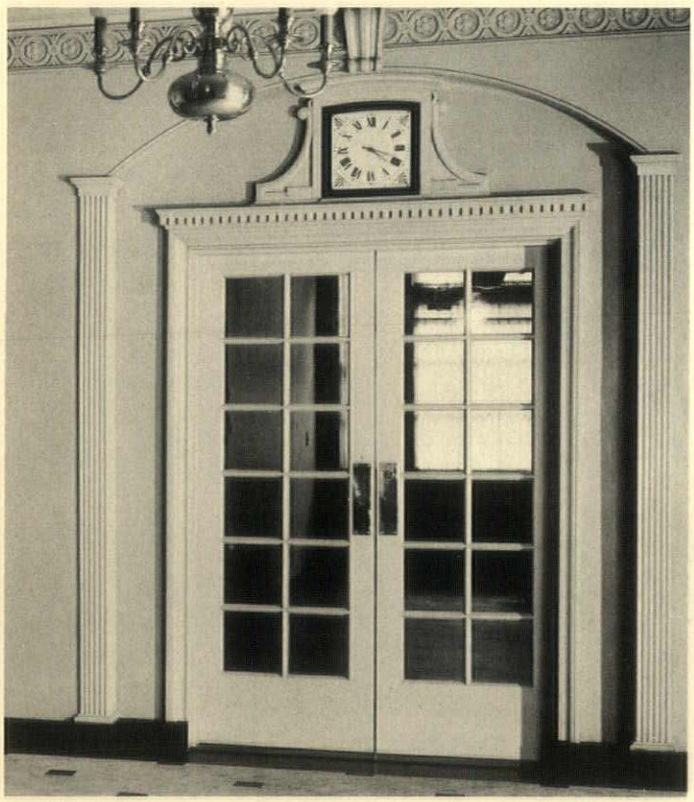




Rodgers & Poor

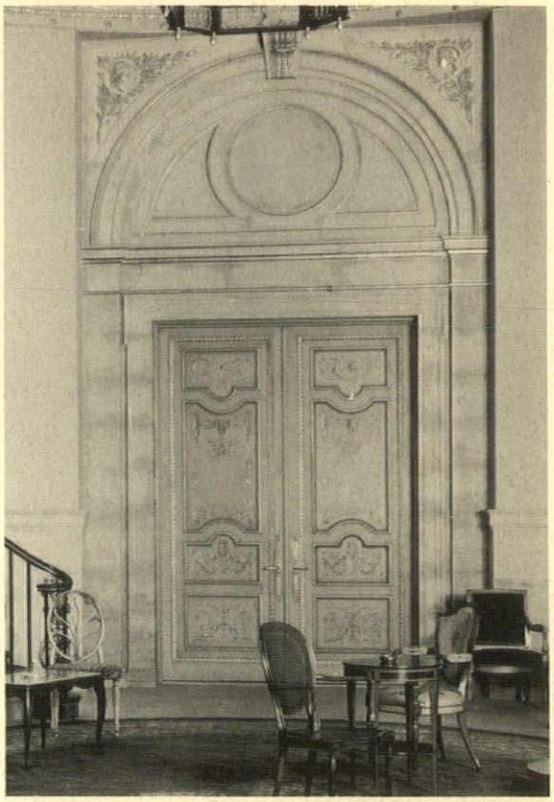
Aymar Embury II

Cameron Clark



LeRoy P. Burnham

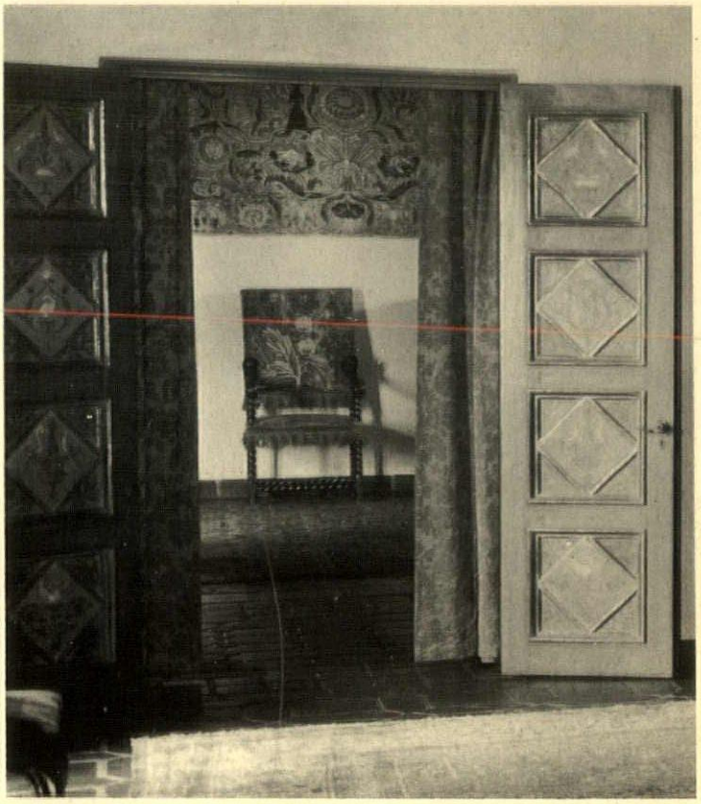
Gordon B. Kaufmann



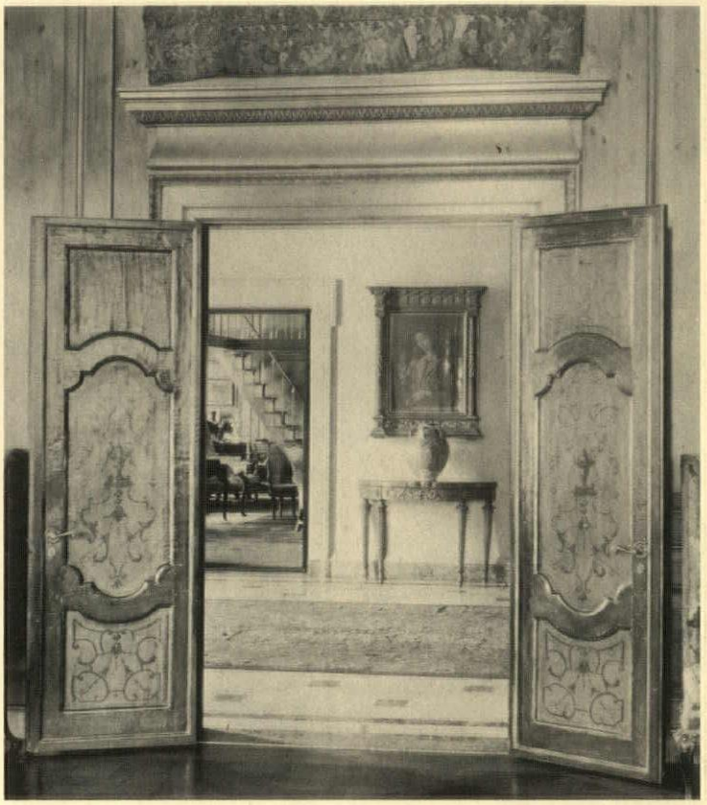
Schultze & Weaver

Miller & Martin

Gordon B. Kaufmann

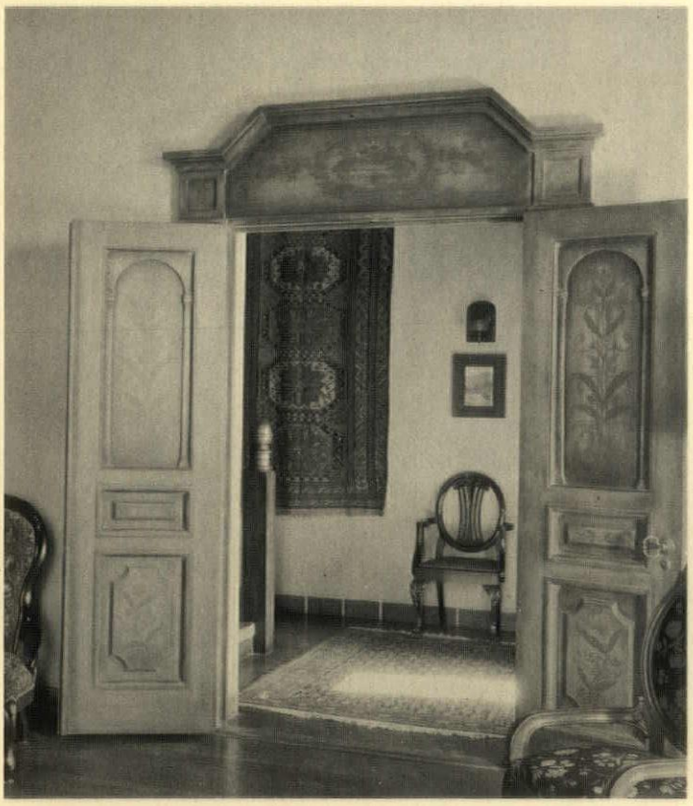


H. H. Whiteley

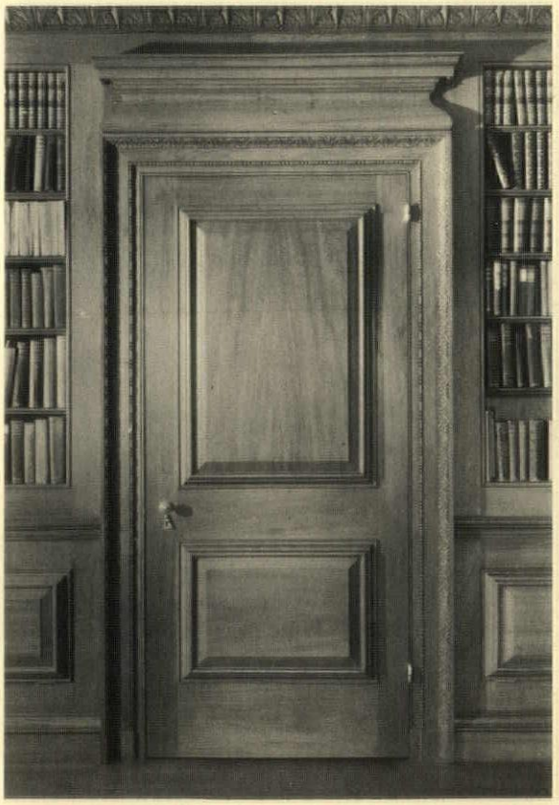


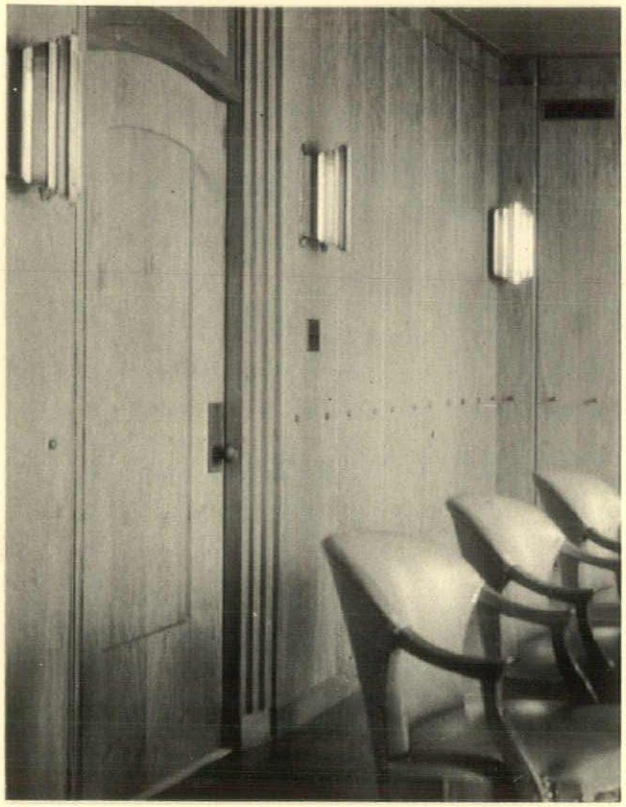
Delano & Aldrich

Gordon B. Kaufmann

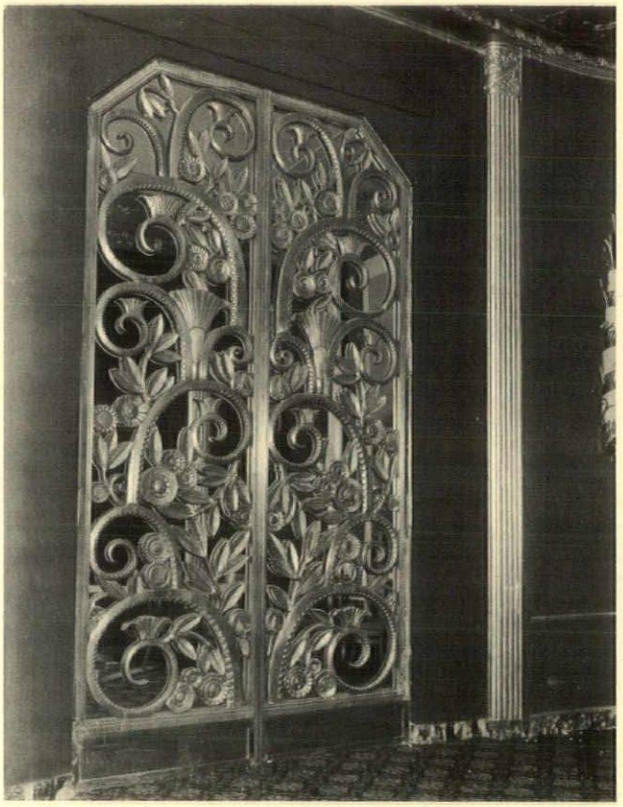


Evans, Moore & Woodbridge



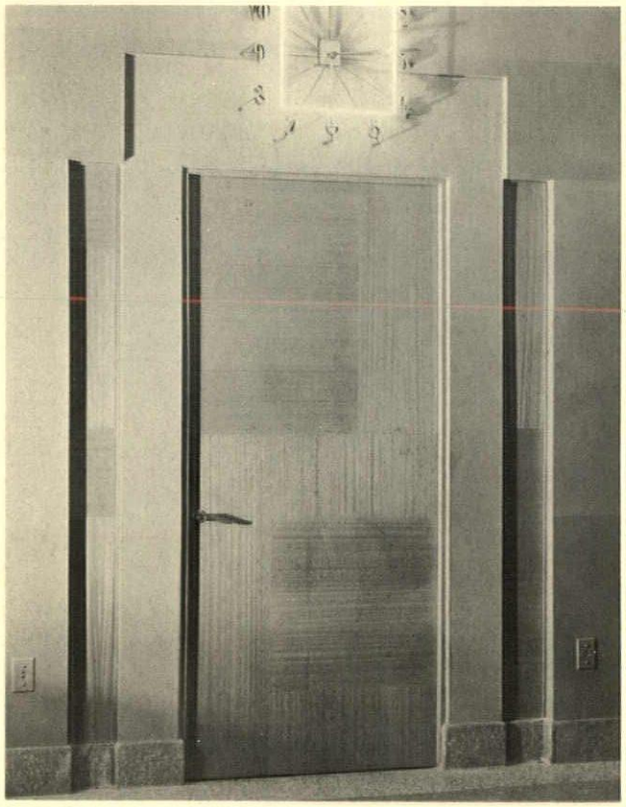


Holabird & Root

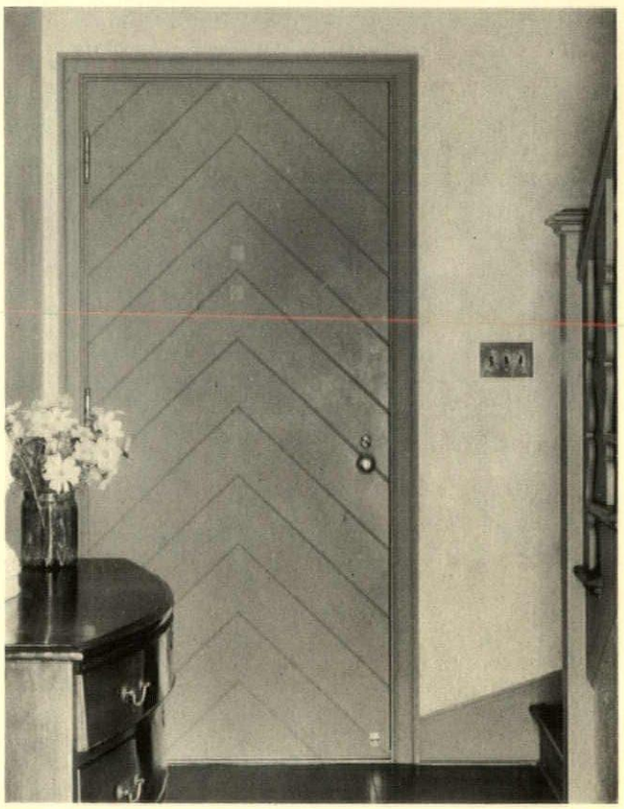


Walter W. Ahlschlager, Inc

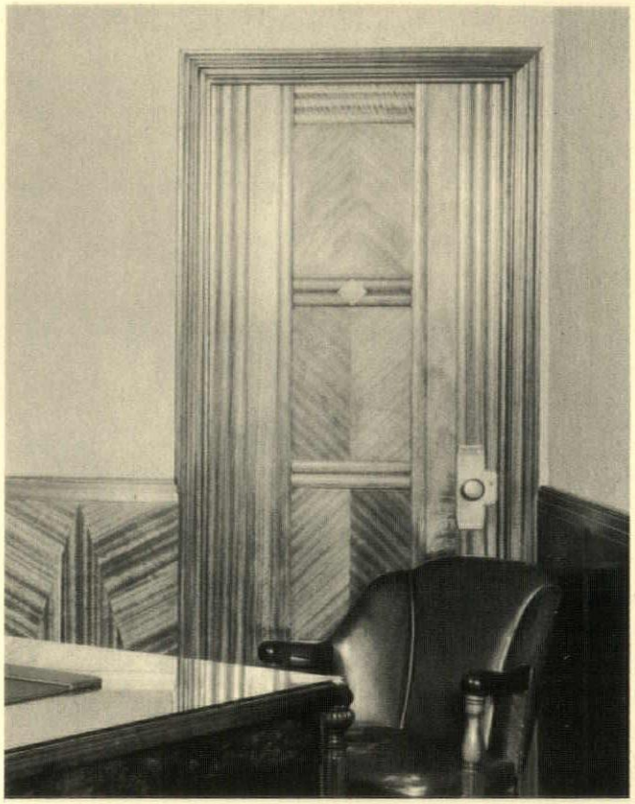
John Parkinson and Donald B. Parkinson



Waldron Faulkner

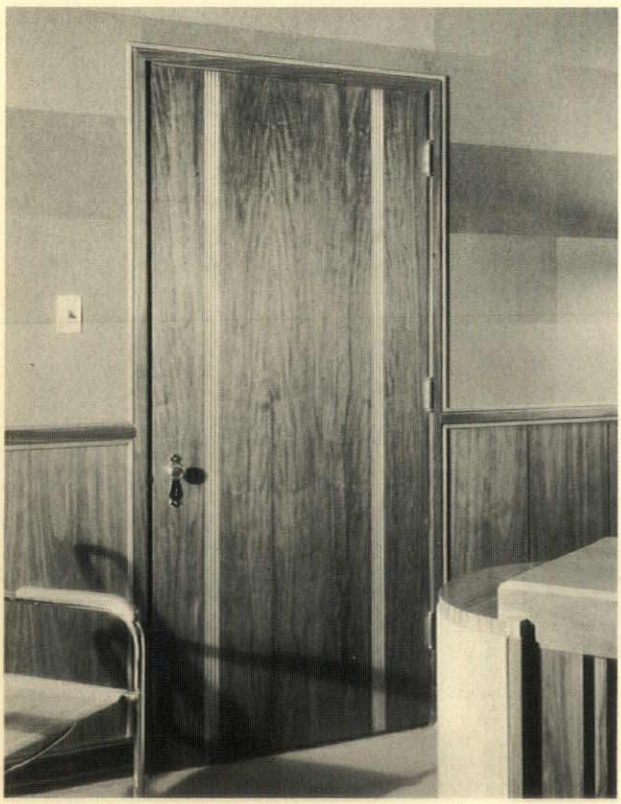


Robert Von Ezdorf

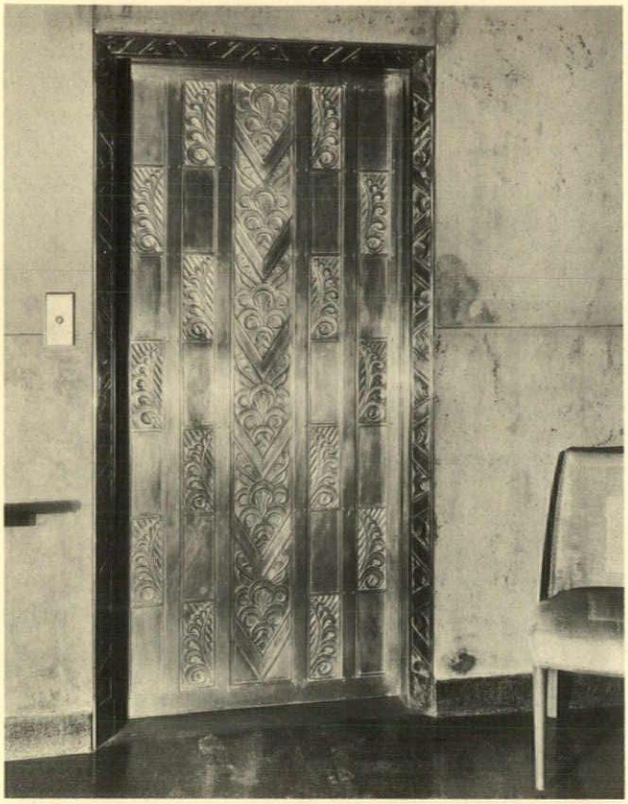


Morgan, Walls & Clements

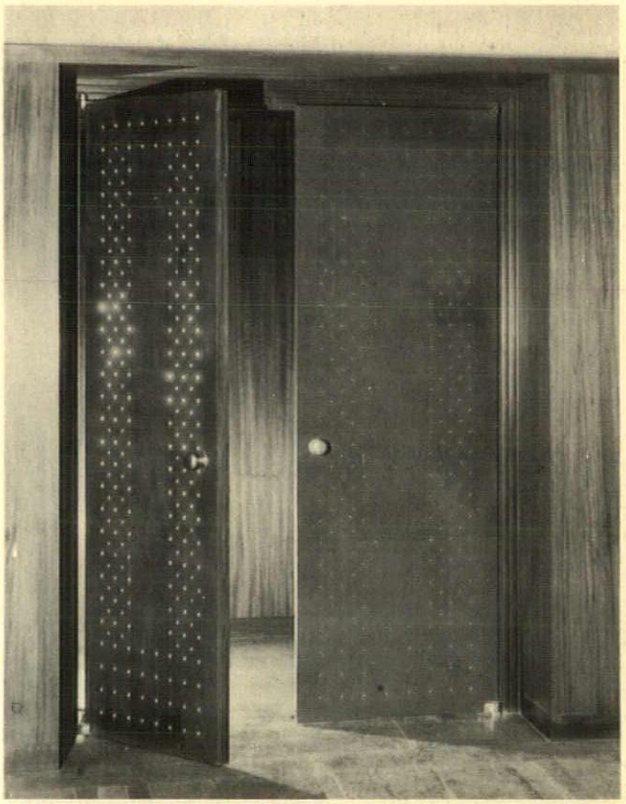
McClelland, Pennch & Jones



Samuel Lunden; John Parkinson and Donald B. Parkinson

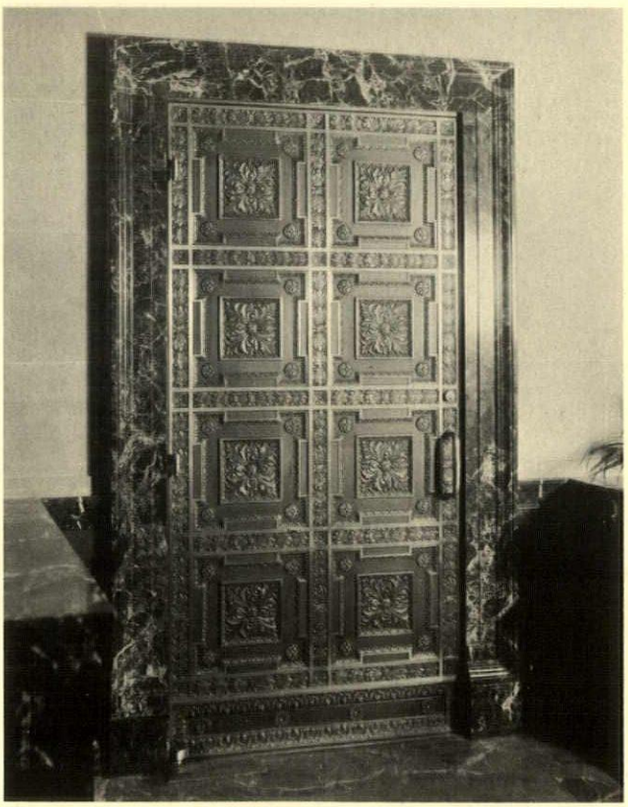


John Mead Howells and Raymond M. Hood



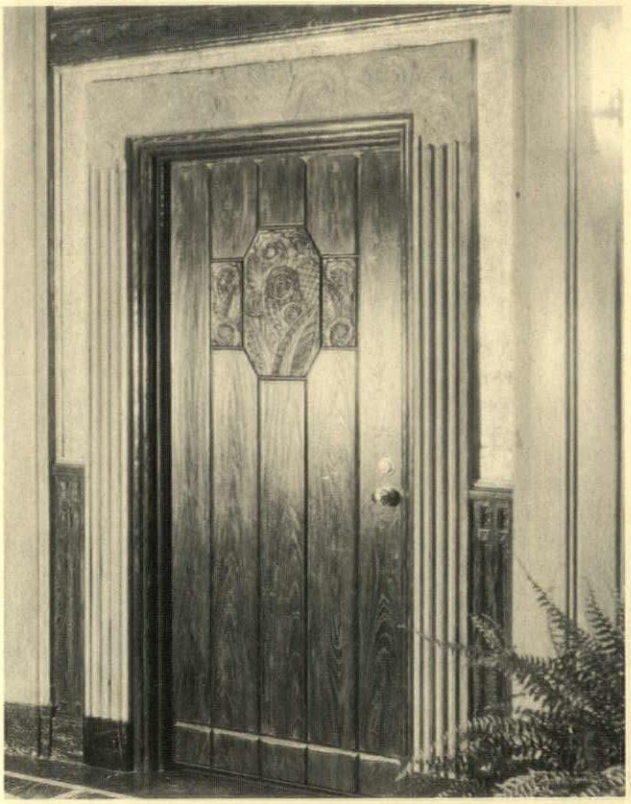
The Firm of Ely Jacques Kahn; Sherley W. Morgan

Walker & Eisen



Frank J. Forster

Cross & Cross



John Parkinson and Donald B. Parkinson

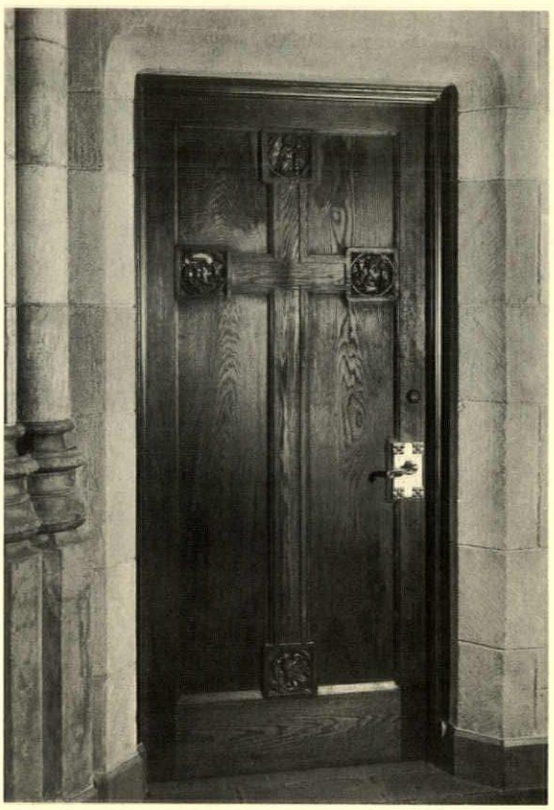
Wesley S. Bessell

Mrs. Jack Gardiner's bedroom

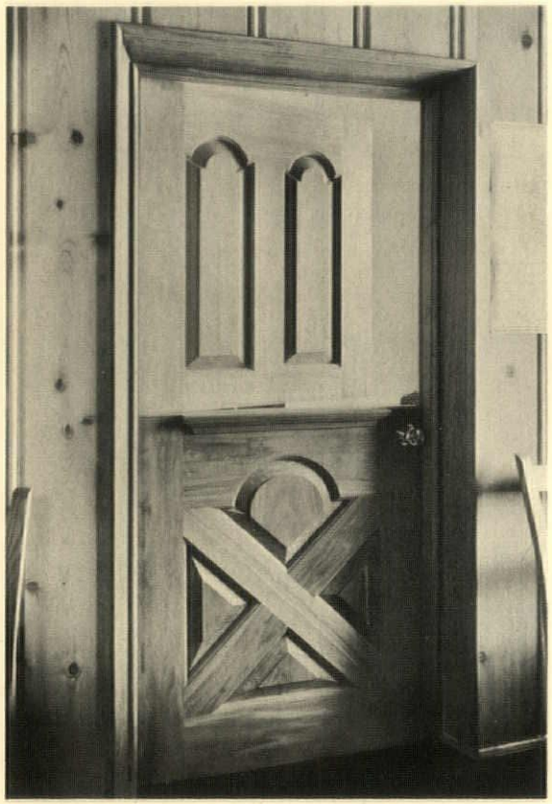
Dwight James Baum

Frederick J. Sterner

H. C. Pelton; Allen & Collens



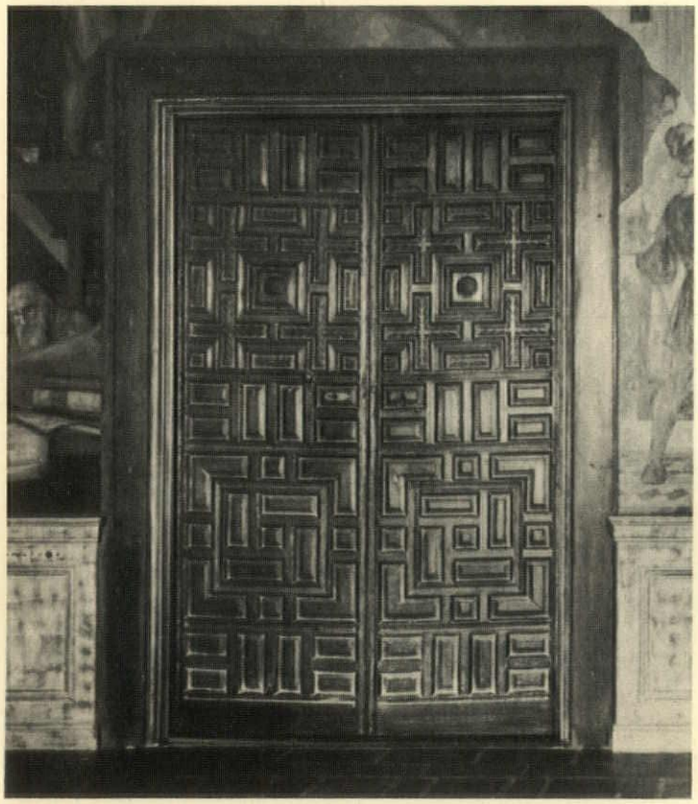
Dwight James Baum



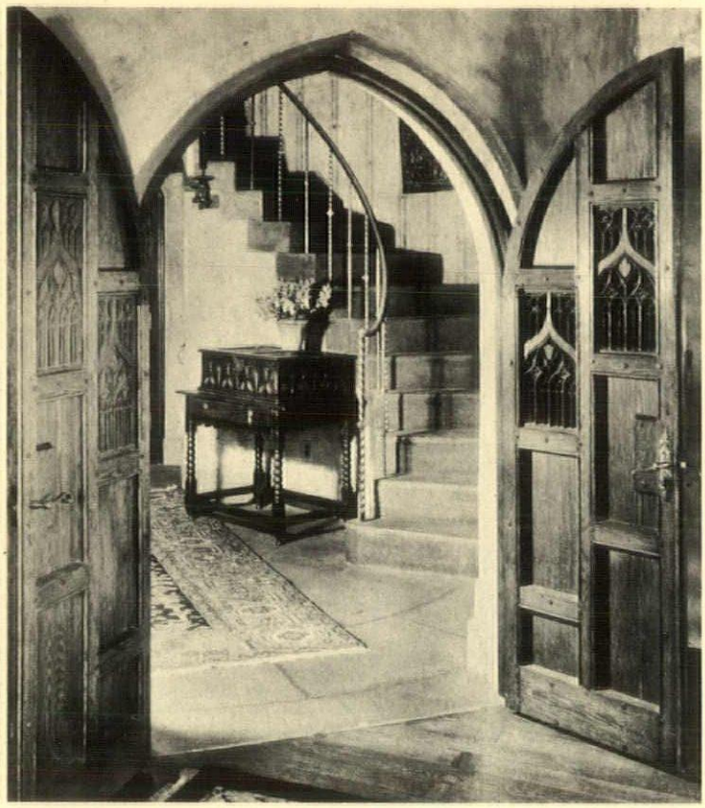
Allen G. Siple

York & Sawyer

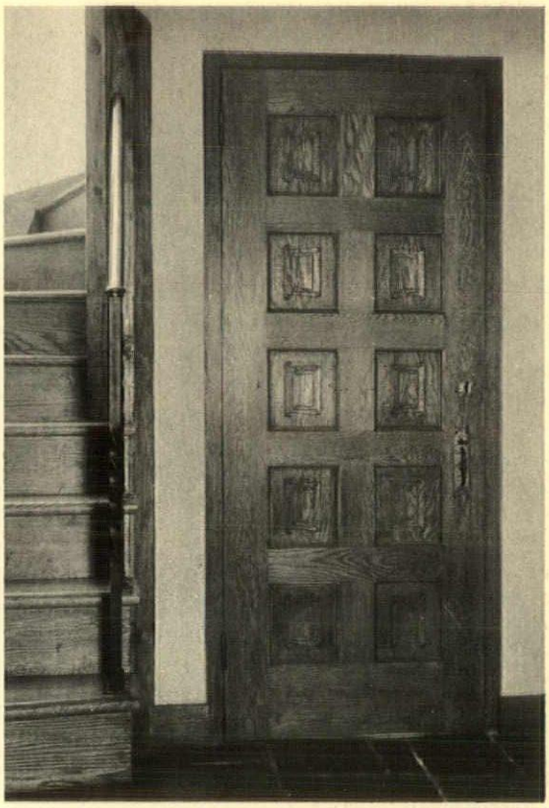
Gordon B. Kaufmann



Edward S. Hewitt



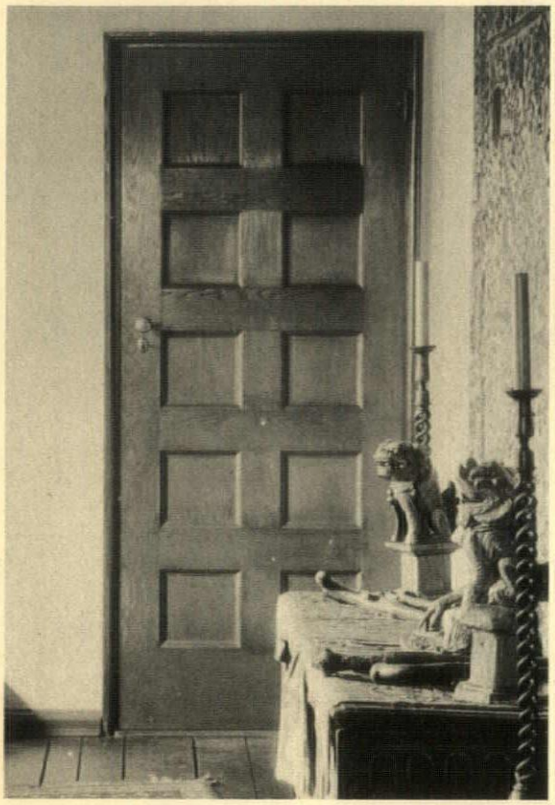
Frank J. Forster



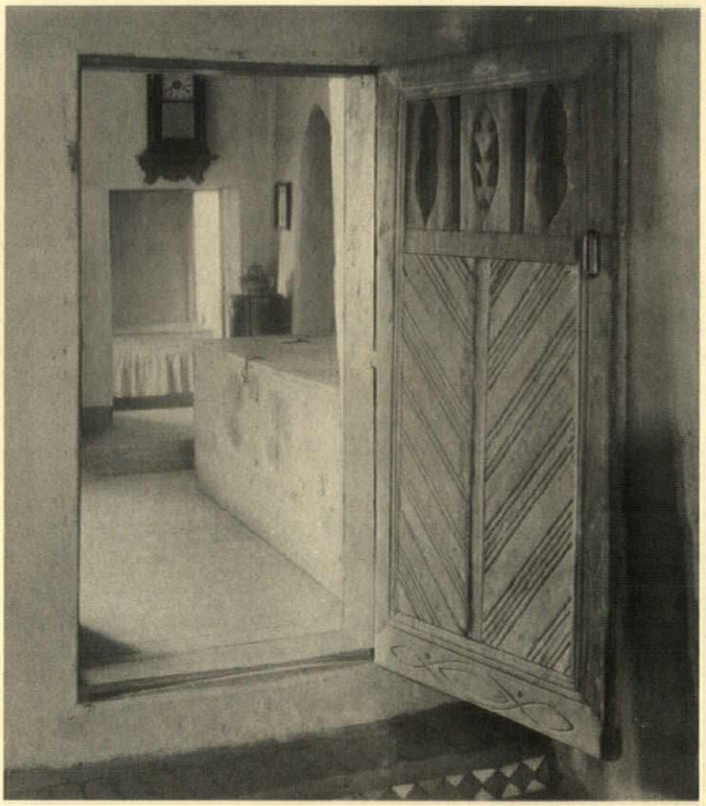
Frank J. Forster, R. A. Gallimore

Granville Dexter

From Zurich, Switzerland (c. 1630), now in Toledo (O.) Museum



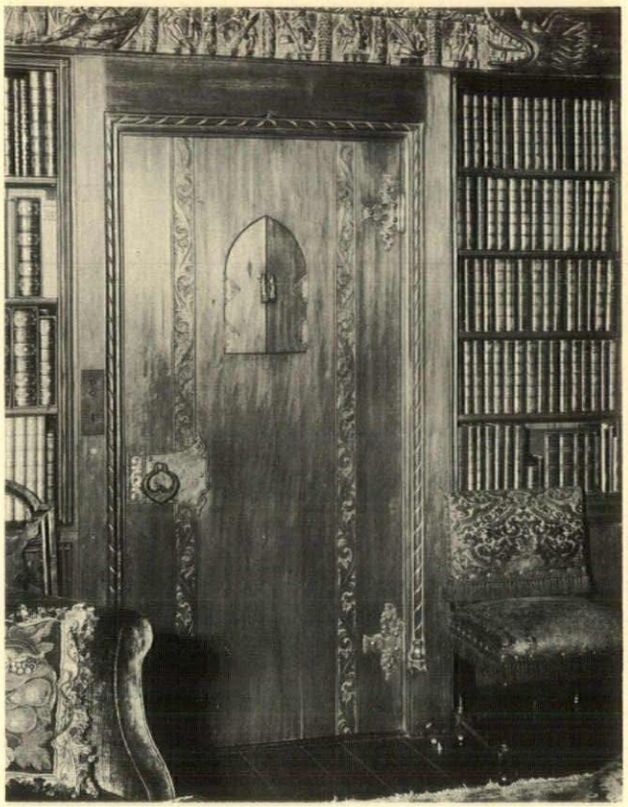
Wesley S. Bessell



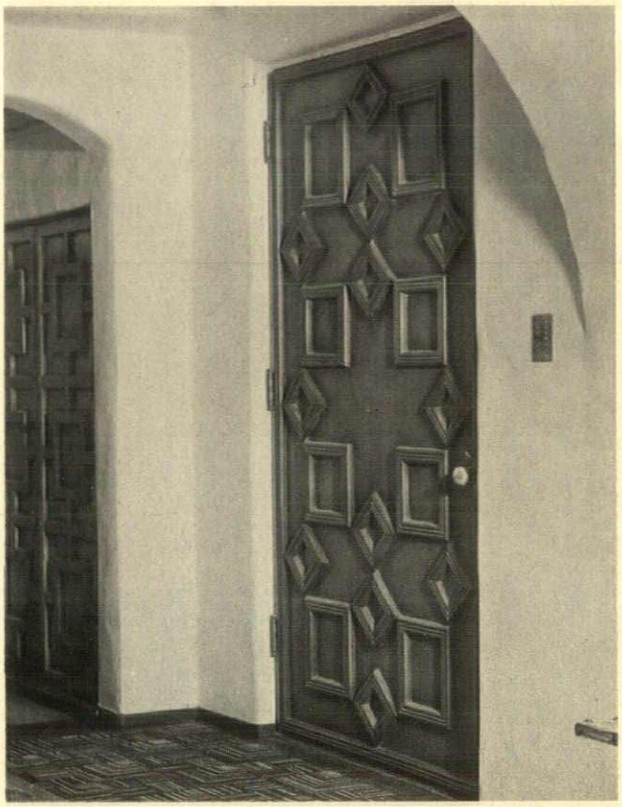
Lockwood House, Taos, N. M.

Cram & Ferguson

Ludlow & Peabody

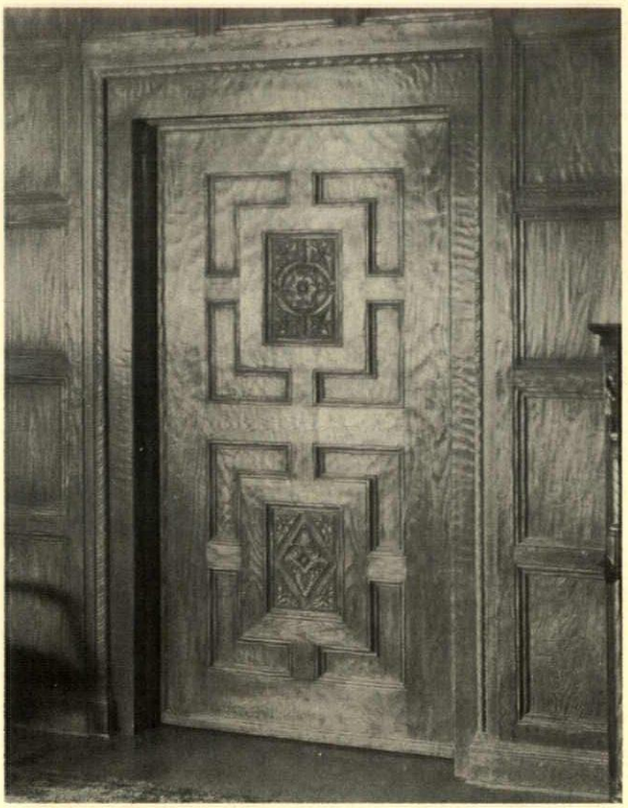


Harry Allen Jacobs

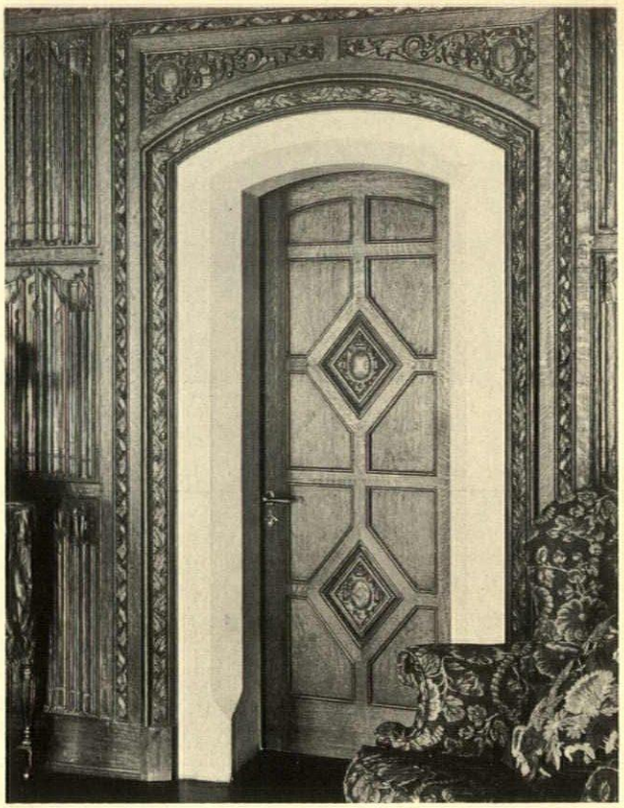


Benjamin Berry

Charles M. Hutchison



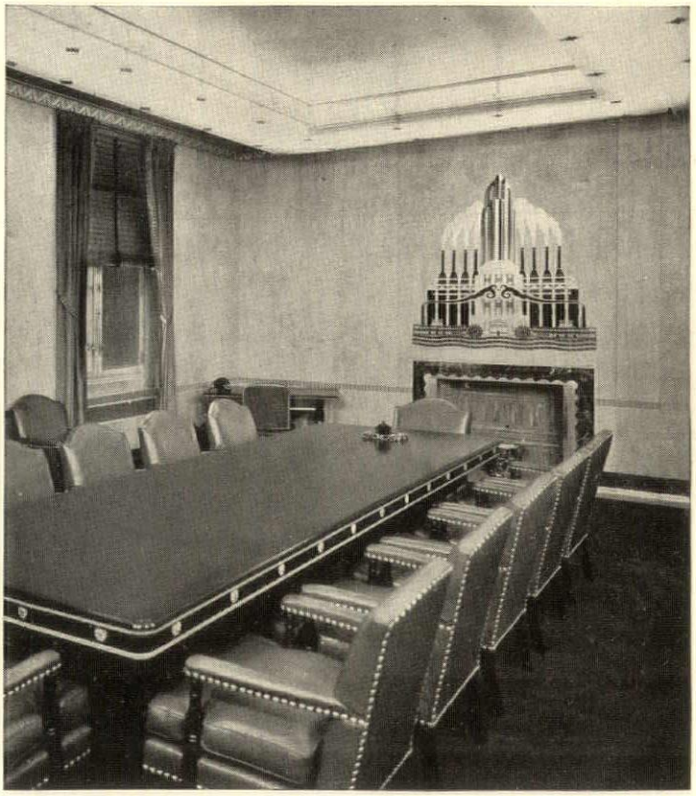
Albert Kahn, Inc.



FRINK ILLUMINATION

(*Left*) Harmonious blending of light with architecture and decorations. Note absence of distorting shadows.

(*Below*) Note symmetrical distribution of light. Why gamble on results? Consult us without obligation.



Two unretouched photographs of Frink Illumination in Federal Reserve Bank, Pittsburgh, Pa. Walker & Weeks, Architects.

The

FRINK CORPORATION

23-10 Bridge Plaza So., Long Island City, N. Y.

ARCHITECTURE'S FOR ARC

ARCHITECTS AND EVERY ONE INTERESTED WILL FIND HERE THE LATEST AND MOST UP-TO-DATE INFORMATION ON BUILDING EQUIPMENT AND ACTIVITIES IN THE INDUSTRY. THESE PUBLICATIONS MAY BE HAD BY ADDRESSING ARCHITECTURE'S SERVICE BUREAU FOR ARCHITECTS, 597 FIFTH AVENUE, NEW YORK. OUR SERVICE BUREAU WILL OBTAIN ANY OTHER CATALOGUES OR DATA YOU REQUIRE.

ROTO-WAITER

The new electric Sedgwick Roto-Waiter is something really new and really presents an economical buy. This Sedgwick invention is in line with current trend and provides at moderate cost full automatic electric dumb-waiter service. The big saving in price is made possible by a new principle in dumb-waiter design. Complicated and costly parts have been eliminated. Space requirements have been reduced. Not an inch of space above the top of car at upper landing is needed. Installation can be made in a quarter of the time previously required. Banks, clubs, drug stores, cafeterias, hotels, libraries, markets, and factories all present uses for the Roto-Waiter. Send for literature and arrange to drop in at the Sedgwick Machine Works Showroom, at 150 West 15th Street, New York City, and see this new Roto-Waiter in operation, together with other Sedgwick models for all lifting purposes, both commercial and private.

HONEYCOMB BOTTLERACKS

Here is one that you'll all send for. Herman Soellner, Inc., of 336 East 59th Street, New York City, give in their leaflet "set up and knocked down" views of their hexagonal shelving of galvanized sheet steel devised to securely hold bottles in individual cells, all within plain sight and convenient reach. Whether your cellar is "hard" or "soft" there is equal advantage in space saving and avoidance of breakage.

RUBBER FLOORING MAINTENANCE

If you are interested in the question of the proper method of maintaining rubber floors, send for the pamphlet recently issued by the Rubber Manufacturers Assn., Inc., of 250 West 57th Street, New York City.

KAWNEER DOORS AND STORE FRONTS

Now is a good time to present building interests with plans and data on the remodelling and modernizing of their building entrances and store fronts. In this line the recently issued leaflets from the Kawneer Company of Niles, Michigan, covering the latest developments in their metal doors and store fronts, will be useful to you.

ELLISON BALANCED DOORS

If all that the leaflet says is devoid of parental exaggeration, then the Ellison Balanced Door is ideal for entrances subject to heavy traffic. Banks, office buildings, court houses, R. R. stations, and schools all have need for this new and improved door. It can easily be opened against high wind pressure. It really is the door you have been looking for. It is manufactured by the Ellison Bronze Co., Inc., Jamestown, New York.

THE AMERICAN BRASS CO.

Has just published for your use two attractive booklets—one on "Anaconda Pipe for Water Distribution" and the other on "Screens that Meet the Test." Confidence in the permanency and rustproof qualities of Anaconda Brass Pipe is widespread. The booklet contains a discussion of the economic advantages of permanent plumbing, outlines a ten-year corrosive test, and gives recommended specifications and installation suggestions. "Screens that Meet the Test" are made of Anaconda Bronze Wire and the tests tell the story of their lasting quality. American Brass Co., Waterbury, Conn.

SERVICE BUREAU HITECTS

"PENN-MONT" FLOORS (SLATE)

Embody color, design and texture, all in good taste. The two latest designs as shown in an illustrated folder from the Structural Slate Co., of Pen Argyl, Pa., are the Penn-Mont Shadow-Cleft and the Penn-Mont Pocono. The careful selection of slate and correct combination of colors in contrast with the background of Pennsylvania Blue-Gray Slate is a feature of Penn-Mont. The illustrations in the folder are reproduced by direct color photography.

ALFOL

The Alfol Insulation Co., Chrysler Building, New York City, presents Alfol as a superior and economic insulator. It is an aluminum foil insulation. Characteristics mentioned in the leaflet we received are durability, odorless, vermin-proof, non-inflammable, light, unaffected by vibration, low in heat storage, and clean in its application. The folder deals with two forms of application and the company offers without obligation to consult on any particular insulation problem.

ESTIMATING MANUAL

Rurick Press, Inc., of 303 West 42d Street, New York City, has just published a Man-Hour Electrical Estimating Manual by Theodore Heinzerling. Three complete sets of man-hour figures are presented: Competitive, Compensative, and Conservative. There are also convenience wiring charts with engineering data. The whole is 384 pages of labor data for making and checking estimates on all types of electrical installations. The book is priced at $10.

MONEL METAL SINKS

And now a new catalogue from the International Nickel Company covering their full line of Monel Metal Sinks with detail drawings and dimensional charts—a handy book to have when you are in the midst of kitchen plans.

COPPER ROOFINGS

Is the title of a Manual, 12C2, of information for architects, issued by the Copper and Brass Research Assn., 25 Broadway, New York City. It is a completely revised and enlarged edition, this the third edition. So don't rely on the previous issue for up-to-date information on copper roofing. Make sure you have this latest manual. It includes descriptive and illustrated material on the various applications of copper roofing and gives standard specifications.

INTERNATIONAL BOILERS

The International Boiler Works Co. of East Stroudsburg, Penn., have published a useful folder on their new Type K Steel Heating Boiler—a quality boiler for homes of moderate cost. The new boiler provides three important services, a 3 in 1 unit as it were, viz., heating, hot water, and incineration. During the summer the hot-water service continues to operate controlled by an aquastat. The unit is shipped completely assembled, ready to install on the base supplied as standard equipment. Its life under normal conditions is said to be limited only by the care given to it.

HAGSTROM HARDWARE

A folder from Hagstrom Mfg. Co. of Glen Cove, Long Island, includes detail plates of special hardware for casement doors and windows.

NU-WOOD

The Wood Conversion Company mills at Cloquet, Minnesota, offer Nu-Wood an insulating lath—plaster base with V-joint. The V-joint provides a tight, rigid wall and perfect plaster bonding. It is recommended for general wall board uses, particularly good for garage and attic construction.