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PART ONE
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Modern Bronze Store Front Company

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The fountain, just completed, was designed by Chester Beach, the museum, built about 12 years ago, was designed by Hubbell & Benes and the landscape work by Olmstead Brothers. Both the Cleveland Museum and the “Fountain of the Waters” are of white Georgia Marble. This marble is durable because it is practically impervious to moisture, it is strong, workable, has a “large scale” crystalline texture which makes it one of the most beautiful marbles produced. Many of the most prominent sculptors and architects prefer Georgia Marble for sculpture and monumental buildings.
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PERMANENT, Banner Lime Soundproof walls and ceilings actually divide a house. Those annoying, distracting, irritating sounds—so easily heard through flimsy or improperly built walls—are kept within bounds. Whether it be the peace of a family, the contentment of apartment house tenants or the comfort of hospital patients which is at stake, the building of substantial walls and ceilings is well worth while. There's lasting satisfaction in a Soundproof wall: four-inch air chamber, hemmed in by Banner Lime plaster, three coats deep. Build Substantially.

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We have prepared a booklet explaining the uses and benefits of cubicles, which we shall be glad to send to any architect, together with any specific details or information which may be required.


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*This is No. 5 of a series of color plates illustrating “Modern Floors in Modern Architecture.” The complete set of six will be sent to any architect upon request.
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1. Half-Surface and Full-Surface Butts. The "filler" of a Kalamein door rarely provides sufficient anchorage for the wood screws of a full-mortise butt. The bolts and grommet nuts with which half-surface and full-surface butts are applied fasten through the door, as is shown in the illustration at the right, and will not loosen or pull out.

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Kalamein doors with Kalamein or Pressed Steel jambs require HALF-Surface Butts.

Kalamein doors with Channel Iron jambs require FULL-Surface Butts.

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CIRCLE A PRODUCTS CORPORATION

650 South 25th Street, Newcastle, Ind. — New York Office: Farmers Loan & Trust Bldg., 475 Fifth Ave., New York
THE profession will welcome Edward F. Stevens' new and greatly enlarged edition of his book on hospitals. The subject is one which calls for expert vice, and those who have found themselves confronted with this very special problem have found, all too often, their sorrow, how difficult it is to get any exact information. The problem is so highly specialized, and information of the right construction so lacking, that this revised edition is subly welcome. The American hospital, with its close in-locking with the life of the community, is no longer the thing it was in the past. Few (the younger generation should they become famous) will have log cabins to point to as birthplaces. Hospitals may begin the formation of a host of those educators, residents, etc. who have descended to greet this world from their thresholds! To go to the hospital was a most disquieting affair within the memory of most of us. The hospital is now infinite in variety, and complete in the service of numerous types it renders to its particular community. One is reminded, on glancing through Mr. Stevens' book, of the vast strides that the medical profession has made, and of the tremendous aids that are now available to the physician in furthering his efforts to cure. In fact, at times these would seem to be an embarrassment of riches; there is a fear that the mechanics of these vast institutions we have created may be and are sweeping away that personal contact between patient and doctor which is so necessary in the treatment of many ills. The rapid strides made in the treatment of special ailments and the development and perfection of special equipment, with the sales organizations that go hand in hand with them, make the problem of selecting, placing and rating of equipment a matter of unusual difficulty. A hospital may at first glance seem to be a very simple affair,—take a hotel and back up a few operating rooms on it, and there you are. That would be found to be a very poor solution of the problem; for one thing, it is not complicated enough,—not that a well planned hospital isn't simple and direct when well studied, but a hospital is much more than floors of private rooms with a few attachments. Its organization is most complex, and in its daily routine it must function smoothly; the problem of food service, the quiet and efficient handling of supplies, and the location and selection of proper equipment, make the planning of a hospital a problem far from one susceptible of standardization by the profession.

The architect who has to design a hospital will find a new and unusual problem on his hands,—he will find a new type of client to serve. He is working in a highly specialized field, and he will shortly realize, unless he has gone through the mill, how little he knows about hospitals. To such a man, Mr. Stevens' book will be found most useful. The factors controlling the problem are the usual factors of available funds, available land, plus type and size of community to be served, etc. If it is to be a hospital for special treatment, what services must it include? These and other multi-varied requirements so change the problem that an easy solution is out of the question. The architect will want information as to construction, as to the best type of floor, wall, trim, window and hardware. He will be swamped with appliances and equipment ad nauseam. It is important that he should know everything. He will be expected to advise on matters of equipment, mechanical and installation. He will become the final arbiter between divergent medical opinions. His experience will indicate that, though architects may be difficult to get along with, there are members of other professions equally difficult to convince! To all such Mr. Stevens' book will bring sustenance and material aid. We recommend it most heartily to architects.

Mr. Stevens takes up the modern hospital in a very logical way, and his chapters, beginning with the general considerations, take up the administration department, the ward unit in the general hospitals, the various other departments, from the surgical to the psychopathic, tuberculosis, research and so forth. There are also chapters devoted to the various kinds of hospitals,—such as the small hospital and the medical school hospital,—and then he takes up in considerable detail the service portions of the building, such as the kitchen and laundry.
GRADE SCHOOL BUILDINGS; BOOK II

IN no department of architecture have the last ten years seen quite the progress which has been made with schoolhouses, a class of buildings of the first importance, since they exert a strong influence upon their communities, and by their architectural excellence or the lack of excellence they elevate or lower the architectural standards of entire districts. Study of school structures, particularly at the hands of a group of well known architects, has resulted in their being given a high degree of architectural distinction and dignity in the way of design, while study directed toward their planning and equipment has led to their being practical and convenient far beyond what was regarded as an advanced standard of efficiency anywhere in America even a few years ago.

Kensington Schoolhouse, Great Neck, N. Y.
Wesley Sherwood Bessell, Architect

THIS volume, a companion to another published in 1914, records the results of endless study and experiment in different parts of the country, summed up and presented. By illustrations of exteriors and interiors, by floor plans and carefully written descriptions and articles by well known architects and educators, the present high standard of schoolhouse design is made plain, and these results which have been achieved by a few architects and school boards are thus made possible to all architects who are interested in schoolhouse design. The compiler has selected from almost 1000 exteriors and floor plans the school buildings to be illustrated, and the volume records "a process of innovation and elimination, namely, the introduction-from time to time of features which have been deemed desirable and practical, and the elimination of things which, owing to changed school methods, are no longer required."

400 pages; 7½ x 10½ inches
Profusely Illustrated; Price $10

ROGERS & MANSON COMPANY
383 MADISON AVENUE NEW YORK

and the mechanical plant considerations, such as heating, ventilating and plumbing. One chapter is devoted details and finish, another to equipment, and finally chapter is devoted to the considerations of remodel for a hospital. The text is profusely illustrated with diagrams of the equipment for hospitals that should prove of great value to those engaged in the practical working out of the multitude of problems among the the hospital architect, the problem seems to be just one detail after another as the plan progress beyond the first stages. The work in its forms edition has come to be regarded as the authoritative guide to hospital architecture, and this revised edition make it again available to architects, more valuable than ever.


THE beginning of the greatness of present-day France may be said to have been made during the reign of Louis XIV. He mounted the French throne in his youth, and the 72 years of his long reign saw France firmly welded into unity, and with unity thus secured there came attention to the useful arts,—the arts of peace—which placed France in the foremost rank among the nations of Europe, a position which, notwithstanding all subsequent mishaps and upheavals, France still holds.

Architecturally, the reign of Louis XIV was literally without parallel. "He re-made France in his own image. With his engineers and architects, he laid out public squares, planted the trees and flowers along the walks and esplanades, built a Hotel de Ville and a National Theater in the smallest provincial capital, and had water conduits installed in the streets, built monumental fountains everywhere, laid out roads, constructed fortresses, dredged harbors. The national museums are still filled with the work of his painters, his sculptors, his decorators. He went still further. He fashioned the souls, the feelings, the minds of his countrymen. Our souls are still both heroic and gentle, as were those of the men of his day, as was his own. There is the same social quality in our attitude toward life. We need to share our sensations, to be sorrowful or elated in common. We have also the same need to think clearly, methodically, rationally, that was characteristic of the great prose writers of his age. Our democratic conceptions of life come from him.—that conception of a social order open to all men of ability, in which personal merit takes precedence over birth. Our rules of social procedure are those that he and his courtiers established. In the best sense of the word, France remains the salon which he wished it to be, modeled after the example he set at Versailles. In this biography Louis Bertrand, distinguished novelist, brilliant historian and member of the French Academy, has revolutionized both the popular and the historical conceptions of Louis XIV. Louis emerges...
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Edited by FREDERICK CHATTERTON

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Consider Gold Seal Treadlite and Marble-ized Tile—resilient, durable; in high favor with leading American architects; specified for the nation's finest buildings. Why not be satisfied?

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By all means, let us show you samples of these new spot-proof, stain-proof tiles, real aids in developing beautiful and practical interiors.

BONDED FLOORS
Resilient Floors Backed by a Guaranty Bond
a compact and classified reference. To the designer of skyscrapers, to whom the latest news is the basic source of information, and to the practitioners of the cult of radicalism to whom the one-time standard reference books and measured drawings of the world's monuments are septic, this garnering of the latest crops will prove profitable. To the dreamer, the first hundred pages picture a portent dark and terrific against the dusk!


As every student of architecture knows, the English home has been the product of centuries of evolution or development, and the study of these successive periods as they are now studied in retrospect or review constitutes in and of itself an absorbing subject. Mr. Gotch, whose name and achievements are known to all architects and architectural students, has been the author of many works upon a subject of which he has made a long and careful study. This particular work which now appears in a new and revised edition "has now definitely established itself as a standard work on its subject and has been in constant demand for a period of some 20 years. It is, in fact, one of the most readable and authoritative ever issued on the development of English domestic architecture, tracing as it does in a single volume its progress and growth from early feudal times to the dawn of the nineteenth century, which saw the termination of the Renaissance tradition. It is a graphic and absorbing narrative of which the illustrations, some 240 in all, form a unique pictorial record. They include general exterior views, interiors, features and details, doorways, window metalwork, decoration, gardens, plans, etc., and are taken from the finest photographs, drawings and old views. A vantage has been taken of the demand for a new edition to add or substitute a number of fresh illustrations, and make various useful additions to the text of the volume."


HOW TO LETTER. By Maxwell L. Heller, Chairman of the Department, Seward Park High School, New York. 64 pp., 5/2 x 8½ ins. Price $1. Bridgman, Pelham, N. Y.

The growing importance of lettering, not only in the architectural profession, but also in advertising, a several more or less allied fields, lends particular value to means by which the student may learn to letter. No one does Mr. Heller tell how to letter, but he shows how. His examples are clear, precise and definite. His text is simple, direct and convincing. This book was created for the beginning art student, but it is also a stimulating aid to the working artist, painter, and teacher. Unless one has attempted to do lettering, it is difficult to understand some of the matters which are dealt with by Mr. Heller. He explains the letter elements and their combinations; the spacing of letters; Gothic and Roman letters, both upper and lower case; the correct drawing of figures and pictorial symbols, and other more or less closely related matters. The volume also deals with the use of the brush and the making of layouts, this probably for the benefit of students interested in several different forms of advertising.
A LUXURY price—a “good buy” price—a cheap price.

But window shade prices are different: —
Suppose you want the finest, the most luxurious window shade that money can buy—for such a hotel as the Sherry-Netherland in New York, the Stevens in Chicago, the Statler in Boston. You choose Columbia Window Shades.

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AN ADDRESS BY THE PRINCE OF WALES TO THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

In thanking you sincerely for the kind way you have received this toast, and for your hospitality to me tonight, I should like to allude to one or two of the many functions of the Royal Institute of British Architects and of its service to the nation.

The two paramount objects of this Institute are to look after, first of all, architecture; and secondly, but by no means least, architects. These functions, I consider, are of great importance to the whole of our community. We none of us can escape from architecture, whether it be good, or whether it be bad. We are surrounded by architecture; we are affected by it every day of our lives. If our architects are dull and uninspired, we are condemned to live in ugly, ill-constructed buildings; we are compelled to go about our daily businesses in drab and ill-planned surroundings that are good to look at and good to dwell in, the difference in our general well being and our outlook on life is wonderful. But fostering architecture is not merely a matter of acting, so to speak, as a watch dog over existing buildings which should be preserved, or over plans of proposed buildings which should never be erected,—though both those are important functions of the Institute. No, it demands also a very watchful eye on the interests of the architect himself. To do their best work for the nation and for the empire, your members must have their material interests considered and safeguarded, and above all they must be provided with opportunities. Ask the layman this question: "What is the first essential for an architect's work?" The layman will probably answer: "Bricks and mortar, and a piece of ground to put them on." If you were to ask even an Honorary Fellow,—and how lucky that I should have achieved this great position by acclamation and not by examination,—if you were to ask me, an Honorary Fellow, what the right answer is, I should say: "Clients." The architect differs from other creative artists in this great point; he cannot begin to create until the community gives him his chance. The painter can paint a picture,—it may be a very bad picture, but he still has the hope that some silly fool will come and buy it. The musician can start playing, on the chance of collecting an audience. But the poor architect cannot go out and build a town hall or a hospital, or even a cottage, without a definite commission to do so. He cannot even start building a pig sty or a reptile house or a monkey house, unless someone has a pig, or a reptile, or a monkey to put into it. The work of the architect is not the production of drawings, but the erection of buildings. And if this country wants beautiful houses, it must employ the best architectural designers. If it wants noble public buildings, it must give the collective genius of this great profession a free opportunity to compete for them,—otherwise it cannot exist.

Mr. President, you have been kind enough to say a word about the architectural policy pursued on the Duchy of Cornwall estates, but I can assure you that this policy has not been followed solely for the good of the general public; it is also a sound business proposition. We have always found that in the erection of cottages or blocks of flats, the cheaper method is by getting architects to design them rather than by adopting stock patterns. The architect is more economical and obtains his effects by trusting to good proportions rather than to unnecessary ornament. On the Duchy of Cornwall estates we have always found that a well designed and simple building invariably gives greater pleasure to those who live in it, and,—still more important,—creates pride in the home. I would warn anybody who contemplates the erection of a building, however great or however small, of the fallacy that it is good policy to economize on the architect's fees. Speaking as a landlord, I can assure him that it is not.

The conclusion of an after-dinner speech is always a difficult matter; perhaps that is why so many speakers take such a long time in arriving at it. But the conclusion of my speech tonight is a very easy and pleasant matter. I have been allotted the privilege of presenting to Professor Ostberg the Royal Gold Medal for Architecture. The presentation of this medal is the highest honor that this country can bestow on any architect, and though the roll of those who have won it contains names which are famous all the world over, I doubt if there has ever before been more complete agreement on the choice of any recipient. By common consent, Professor Ostberg's masterpiece, the new town hall in Stockholm, is one of the greatest buildings ever produced by human genius, and I know full well that I am speaking on behalf of all British architects when I say we are very proud that our Gold Medal should be in his hands.

A CORRECTION.

The simplicity of line in this modern power station suggests strength and beauty. A striking balance is achieved without the use of cornices.

Stone & Webster Incorporated
BUILDERS
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PARKER MORSE HOOPER, A.I.A., Editor
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ROGERS & MANSON COMPANY

383 Madison Avenue, New York

Howard Myers, Pres.; James A. Rice, Vice-Pres.; Paul W. Hayes, Vice-Pres.; Robert Sweet, Sec. and Treas.

Published Monthly by

ROGERS & MANSON COMPANY

383 Madison Avenue, New York

Howard Myers, Pres.; James A. Rice, Vice-Pres.; Paul W. Hayes, Vice-Pres.; Robert Sweet, Sec. and Treas.

Yearly Subscription, Payable in Advance, U. S. A., Insular Possessions and Cuba, $7.00. Canada, $8.00. Foreign Countries in the Postal Union, $9.00

Single Copies: Quarterly Reference Numbers, $2.00; Regular Issues, $1.00. All Copies Mailed Flat

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THE MEDICAL CENTER, NEW YORK
JAMES GAMBLE ROGERS, ARCHITECT

FROM A PHOTOGRAPH BY SIGURD FISCHER

The Architectural Forum
A GLANCE at the Medical Center as it stands today,—a towering group of skyscrapers, probably unprecedented in mass as applied to the needs of one medical undertaking,—gives to the discerning observer an immediate sense of the complexity of the problem involved in its design and construction. And if that observer happens to be aware that here in this group of buildings there are to be housed 12 units,—with common interests, but widely diversified in equipment and functions, all of which must be coordinated for a joint end,—he may be further impressed with the comprehensiveness of the task which confronted the organizers and architects of the Medical Center. That in spite of complexity of function, a decided unity of effect has been achieved in the group, from the architect's standpoint, is paralleled, from the physician's angle, by an intelligent unifying of all the branches of medicine,—in the three phases of treatment, teaching and research,—accomplished by the cooperative effort of the 12 units. As indicative of the stress and difficulty of the situation for both the Joint Administrative Board of the Medical Center and the architects, it should be kept in mind that while originally the cooperating units were only two,—the Presbyterian Hospital and the College of Physicians and Surgeons,—by the time the first of the new buildings was ready for occupancy, early in 1928, this number had been increased to 11, and is now 12, by the addition of the Vanderbilt Clinic; the Sloane Hospital for Women; the Squier Urological Clinic; the Presbyterian Hospital School for Nursing; the Stephen V. Harkness Pavilion for Private Patients; the School of Dental and Oral Surgery, and the De Lamar Institute of Public Health, both of Columbia University; the Babies' Hospital of the City of New York; the Neurological Institute of New York; and the New York State Psychiatric Institute and Hospital. With plans of organization thus continually in a state of flux and with policies of cooperation between the various units repeatedly under discussion, the architects had the responsibility of crystallizing and re-crystallizing ideas and designs to meet the changing situations.

In September, 1921 the Joint Administrative Board undertook an extensive survey not only of medical, dental, nursing, and other allied schools, together with the various types of hospitals and research laboratories as they exist in this country and Europe, but also of the study of the best current medical opinion and practice in general, and of what would be the requirements if these practices were ideally correlated by institutions. As tangible evidence of the investigation, several hundred plans with data were assembled from the principal centers of medical science. At the same time, as the various units entered into their agreements with the Medical Center, their histories, needs, future aspirations, and financial situations were studied in themselves, and as they affected one another. This period of preliminary study by the staff of the Joint Administrative Board lasted for two and a half years. Specifically, the mechanism of operation in regard to the actual plans of the greater portion of the Center was this: The data were classified by institutions, by departments and sub-divisions of departments; each room was named, numbered, its function, personnel, equipment and relationship to other rooms described or estimated as far as possible, the whole finally making up a building program of several volumes. In the meantime, as fast as this material was assembled it was turned over to the architects, who with this advice produced a set of sketch plans which they presented to representatives of the particular unit involved, for the usual criticism of detail. The plans as eventually evolved included space allotments for future buildings as well as for the expansion of the present structures. In January, 1925 the ground was formally broken, and the excavations were begun.

The general layout of the buildings, as determined by certain fundamental needs of the cooperating units, may be of interest. First there was the necessity of juxtaposition and coordination of related services for the College of Physicians and Surgeons and its main teaching field, the Presbyterian Hospital, which in turn uses the laboratories of the College for service to both patients and to nurses training. These joint requirements were met by connecting the 22-story Presbyterian Hospital building (which also houses the Sloane Hospital for Women and the Squier Urological Clinic) by a stem or axis building. 
THE MEDICAL CENTER, NEW YORK
JAMES GAMBLE ROGERS, ARCHITECT

Looking Southeast from Corner Ft. Washington Avenue and 168th Street. Left Foreground, Ash-hoist Building, Ambulance Garage; Center Foreground, Service Building; Right Foreground, Harkness Pavilion; Left Background, College of Physicians and Surgeons; Center Background, Presbyterian Hospital
THE MEDICAL CENTER, NEW YORK
JAMES GAMBLE ROGERS, ARCHITECT
Service Building (Left Foreground), College of Physicians and Surgeons (Left Background), Harkness Private Pavilion (Right Foreground), Presbyterian Hospital (Right Background)
PLANS OF THE PRESBYTERIAN HOSPITAL
THE MEDICAL CENTER, NEW YORK
JAMES GAMBLE ROGERS, ARCHITECT
THE MEDICAL CENTER, NEW YORK
JAMES GAMBLE ROGERS, ARCHITECT
Patients' Entrance (On Broadway); Presbyterian Hospital in Background; Vanderbilt Clinic and School of Oral and Dental Surgery (At Right); Babies' Hospital (At Left)
THE MEDICAL CENTER, NEW YORK
JAMES GAMBLE ROGERS, ARCHITECT
Neurological Institute from Southeast (Or from Entrance to Harkness Private Pavilion)
THE MEDICAL CENTER, NEW YORK

JAMES GAMBLE ROGERS, ARCHITECT

N. Y. State Psychiatric Hospital from the Northwest on Riverside Drive Front, (Sullivan W. Jones, State Architect, To Right, Anna C. Maxwell Hall, School of Nursing Residence (James Gamble Rogers, Architect)
THE MEDICAL CENTER, NEW YORK
JAMES GAMBLE ROGERS, ARCHITECT

Upper Stories, or Tower, of State Psychiatric Institute (Sullivan W. Jones, State Architect)
with the College. Communication on every floor is immediate, the laboratories and departments of the medical school being so far as possible on the same floors as the hospital departments with which they are most intimately associated, while the axis building is used for work which concerns both institutions.

It was also obvious that the Vanderbilt Clinic building (which houses on its three top floors the School of Dental and Oral Surgery) should directly adjoin both the medical school wing (to afford accessibility for students) and the main hospital group, for which it serves as an admitting unit, its entrance being convenient to lines of transportation. Contiguous to the Presbyterian Hospital building on the west, with direct access to its operating rooms, is the Harkness Pavilion for Private Patients, and correspondingly located on the east is the Babies' Hospital, still under construction. The orientation of the group is such that all patients' quarters—wards or private rooms—have sunny exposures, while areas to the north are used for service rooms, laboratories, etc.

In the cases of the Neurological Institute of New York and the New York State Psychiatric Institute and Hospital, the nature of their specialties and certain other considerations demanded a location apart from the main group. Consequently, they were placed on the opposite side of Ft. Washington Avenue, which divides diagonally the 20-acre site. In close proximity to each other because of their related work (both are still under construction at this date), they will be connected by tunnels to the main group. The Anna C. Maxwell Hall, the residence of the Presbyterian Hospital School for Nursing, is also dissociated from the other buildings to give the nurses an ideal residence site overlooking the Hudson, and to ensure a reasonable isolation from the scene of their intensive work with the sick.

Of special interest was the building problem of the Psychiatric Institute, in that its site is on two levels, with a sheer drop of 85 feet over a cliff and retaining wall. Making an asset of this situation, Sullivan W. Jones, the State Architect at that time, so planned that the entrance from its higher level (looking toward the main group) gives access to the ten upper stories devoted to research and out-patient work, while the ten lower stories, facing the river and with the natural rock as backing, offer the greater seclusion desirable for the mentally ill.

Skyscraper construction has been used for metropolitan hospitals in numerous instances, but never to the extent to which it is used at the Medical Center. Its time-saving possibilities and its other advantages for the sick have been developed to a new degree. With 22 elevators in the main group of buildings, some of these serving as a connecting link between two or more institutions, the availability of all branches of the medical service becomes a matter of seconds. This is only one instance of the application of a modern device to the special needs of the hospital. Because of the varying heights of the buildings, roofs and terraces have lent themselves particularly well to the purposes of recreation and rest.
for convalescents, and the economy of ground space incidental to skyscraper construction has left room for a garden and campus which are of psychological as well as physical importance to the patients. These are, perhaps, from the architects' viewpoint, merely by-products.

Turning to the larger aspects of the achievement, the question may be asked: "What form has this building project assumed? Is it an adaptation of a recognized style of architecture, or is it something entirely new?" In making the fundamental designs, the architects were very closely governed by the exigencies of the various units. Furthermore, in an enterprise so vast, depending largely on private contributions, which, munificent in themselves, have nevertheless not been unlimited in proportion to the undertaking, economy was urgent. With these two factors directing and constricting the architects' plan, traditions and historic styles were abandoned. Ornamen-tation was reduced to the minimum. Even symmetry was neglected, except as it furthered the best planning of the interiors. The resulting irregular massing of skyscraper against skyscraper may be said to have, in its cumulative effect, the beauty which comes from austerity and simplicity,—from perfect adaptation to its end. So there has been created something new and outstanding in the field of design, while at the same time the profession of architecture has made a notable contribution to the world of medicine. In this connection tribute should be paid to James Gamble Rogers, architect of the Joint Administrative Board, and responsible for the main group of buildings; Henry C. Pelton and James Gamble Rogers, associated architects for the Babies' Hospital; and to Sullivan W. Jones, architect for the New York State Psychiatric Institute and Hospital.

Now to all of us who have been associated in the years of planning, there comes the hope that the efforts of the professions of medicine, architecture and building may have produced something more than a mere machine of relative perfection in its day, and that they have made possible an intellectual uniting of medical teaching, medical research, and care of the sick not accomplished heretofore. Then comes a wish that whatever step forward the Medical Center of New York may prove to be, it may be followed, as surely it must be, by other and greater advances in medical center planning in the future.

Editor's Note. As has already been explained, the Medical Center, which has attracted world-wide attention, consists at present of these units: College of Physicians and Surgeons of Columbia University; De Lamar Institute of Public Health of Columbia University; School of Dental and Oral Surgery; Presbyterian Hospital of New York; Presbyterian Hospital School of Nursing; Squier Urological Clinic; Harkness Pavilion; Neurological Institute of New York; Babies' Hospital of New York; Sloane Hospital for Women; and the Vanderbilt Clinic. The New York State Psychiatric Institute and Hospital, an institution owned and operated by the state, is also located at the Medical Center and will operate under an agreement with the Joint Board.
THE MEDICAL CENTER, NEW YORK
JAMES GAMBLE ROGERS, ARCHITECT
The Three Ward Wings from the Southwest
THE MEDICAL CENTER, NEW YORK
JAMES GAMBLE ROGERS, ARCHITECT
On the East Roof of Presbyterian Hospital, Looking West to Central Tower
THE MEDICAL CENTER, NEW YORK
JAMES GAMBLE ROGERS, ARCHITECT
Looking Up in an Angle of the South Court
GENERAL VIEW

MAIN HALL

THE COUNTRY HOSPITAL, SHANGHAI
L. E. HUDEC, ARCHITECT

FRONT ELEVATION
COST AND CONSTRUCTION DATA
Date of Completion: July, 1926.
Type of Construction: Reinforced concrete.
Exterior Walls: Stucco and stone.
Floors: Various.
Windows: Metal.
Heating: Steam.
Cost of Building, with Equipment: $1,000,000.
Number of Beds: 150.

PLANS: COUNTRY HOSPITAL, SHANGHAI
L. E. HUDEC, ARCHITECT
END ELEVATION
HIGHLAND HOSPITAL, OAKLAND, CAL.
HENRY H. MEYERS, ARCHITECT

MAIN ENTRANCE

Photos: Gabriel Moulin
COST AND CONSTRUCTION DATA

Date of Completion: January 1, 1927.
Type of Construction: Reinforced concrete.
Exterior Walls: Reinforced concrete with terra cotta and stucco.
Roof: Partly tile and partly felt and gravel composition.
Floors: Cement, tile and battleship linoleum.
Windows: Wood except in operating rooms, where metal is used; double-hung and transoms.
Heating: Central plant, steam, oil fuel. Direct radiation, except in operating unit.

Cubage of Buildings: Present buildings, 4,800,000 feet. Completed group, 6,300,000.
Cubic Feet Per Patient: 7,000.
Cost of Building, without Equipment: Present cost plus estimated cost of completion, $4,250,000.
Cost Per Cubic Foot Completely Furnished: Based on completed group, 70 cents.
Number and Cost Per Bed: Present capacity, 456 beds. Capacity when complete, 900 beds. $5,000 per bed.
Cost of Operating Per Bed Per Day: At present, $4.40; when complete, estimated $2.50.

PLANS: HIGHLAND HOSPITAL, OAKLAND, CAL.
HENRY H. MEYERS, ARCHITECT

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ADMINISTRATION BUILDING

AMBULANCE ENTRANCE
HIGHLAND HOSPITAL, OAKLAND, CAL.
HENRY H. MEYERS, ARCHITECT

Plot Plan on Back
PLOT PLAN

HIGHLAND HOSPITAL, OAKLAND, CAL.
HENRY H. MEYERS, ARCHITECT
GENERAL VIEW, HALIFAX DISTRICT HOSPITAL, DAYTONA BEACH, FLA.
CHARLES C. WILSON, ARCHITECT
STEVENS & LEE, CONSULTING ARCHITECTS
COST AND CONSTRUCTION DATA

Date of Completion: November 1, 1927.
Type of Construction: Fireproof.
Exterior Walls: Hollow tile, stucco.
Roof: Steel trusses, gypsum slab, tile, copper trim.
Floors: Reinforced concrete, ribbed joist, tile filler, tile finish.
Windows: Steel casements.
Heating: Vapor modulation, oil-burning, direct radiation.
Ventilation: Exhaust through fan in attic.
Cubage of Building: 828,930.
Cubic Feet Per Patient: Gross 7431, Minimum in room or ward, 960.
Cost of Building, Without Equipment: $519,373; or per cubic foot, 63 cents.
Cost Per Cubic Foot Completely Equipped: 69 cents.
Number and Cost Per Bed: 125 beds; cost per bed $4,595.

PLANS: HALIFAX DISTRICT HOSPITAL, DAYTONA BEACH, FLA.
CHARLES C. WILSON, ARCHITECT
STEVEN'S & LEE, CONSULTING ARCHITECTS
MAIN ENTRANCE

ENTRANCE LOBBY, HALIFAX DISTRICT HOSPITAL, DAYTONA BEACH, FLA.
CHARLES C. WILSON, ARCHITECT
ST. JOSEPH'S HOME AND HOSPITAL, SAN FRANCISCO
BAREWELL & BROWN, ARCHITECTS
COST AND CONSTRUCTION DATA
Date of Completion: May 3, 1928.
Type of Construction: Steel frame.
Exterior Walls: Curtain walls, reinforced concrete.
Roof: Concrete slab with tile roof.
Floors: Concrete with linoleum.
Windows: Double-hung, wood.
Heating: Steam heat.
Ventilation: For kitchen, toilets and operating rooms.
Cubage of Building: 1,500,000 feet.
Cubic Feet Per Patient: 7317. Actual air space per patient in patients' rooms varies from 1,000 to 2,012 cubic feet.
Cost of Building, Without Equipment: $899,000, including architects' commission.
Cost Per Cubic Foot, Completely Furnished: 63½ cents.
Number and Cost Per Bed Per Day: 205 beds at Average price of $4.

PLANS: ST. JOSEPH'S HOME AND HOSPITAL, SAN FRANCISCO
BAKEWELL & BROWN, ARCHITECTS
MAIN ENTRANCE AND SOUTH ELEVATION

CHILDREN'S HOSPITAL, CINCINNATI
STANLEY MATTHEWS—ELZNER & ANDERSON, ARCHITECTS
COST AND CONSTRUCTION DATA

Date of Completion: November, 1926.
Type of Construction: Reinforced concrete columns, beams and girders. Floors, concrete rib construction.
Exterior Walls: Brick above water table and concrete block facing below.
Roof: Wings are roofed with promenade tile. Remainder 3-ply felt, pitch and gravel.
Floors: Corridors, wards, etc.,—rubber tile. Stairs, baths, etc., terrazzo. Tile, cement and wood elsewhere.
Windows: Wood double-hung windows except in chapel, where casement windows were used. Special steel windows in operating room.

Heating: Vapor.
Ventilation: Forced draft.
Cubage of Building: 1,400,000 feet.
Cost of Building Without Equipment: $998,500.
Number and Cost Per Bed: 152 beds at approximately $7,000. When completed, $5,500.
Cost Per Bed Per Day: $5.63.
Cubic Feet Per Patient: 6,542, based on 214 beds, when completed.

PLANS: CHILDREN'S HOSPITAL, CINCINNATI
STANLEY MATTHEWS—ELZNER & ANDERSON, ARCHITECTS

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THE ARCHITECTURAL FORUM

PLATE 137

DECEMBER, 1928

BETH ISRAEL HOSPITAL, NEW YORK
LOUIS ALLEN ABRAMSON, ARCHITECT

809
COST AND CONSTRUCTION DATA

Year of Completion: 1928.
Type of Construction: Steel skeleton.
Exterior Walls: Brick and back-up tile.
Roof: Tile.
Floors: Terrazzo and rubber.

Windows: Steel.
Heating: Modulating.
Ventilation: Fresh air supply and exhaust.
Cubage of Building: 3,220,000 feet.
Cost of Building Without Equipment: $3,700,000.
Number of Beds: 500.

FIFTH, SIXTH AND SEVENTH FLOORS

FIRST FLOOR

PLANS: BETH ISRAEL HOSPITAL, NEW YORK
LOUIS ALLEN ABRAMSON, ARCHITECT
Date of Completion: January, 1924.
Type of Construction: Class A, reinforced concrete.
Exterior Walls: Concrete filler.
Roof: Clay tile on concrete slab.
Floors: Linoleum on concrete slabs and joists.
Windows: Wood casements.
Heating: Vacuum steam.

Ventilation: Windows.
Cubage of Building: 719,250 feet.
Cost of Building, Without Equipment: $400,000.
Cost Per Cubic Foot, Completely Furnished: 75 cents.
Number and Cost Per Bed: 160 at $3370.
Cost of Operating Per Bed Per Day: $6.46.

PLANS: HOLLYWOOD HOSPITAL, LOS ANGELES
ROBERT H. ORR, ARCHITECT
GENERAL VIEW

ENTRANCE LOBBY
HURLEY HOSPITAL, FLINT, MICH.
THIELBAR & FUGARD, ARCHITECTS

MAIN ENTRANCE

Photos, A. F. Crooks
COST AND CONSTRUCTION DATA

Date of Completion: November 1, 1928.
Type of Construction: Fireproof throughout.
Exterior Walls: Reinforced concrete frame, brick and stone exterior walls backed up with hollow tile.
Roof: Composition.
Floors: Terrazzo, rubber tile, and mastic composition.
Windows: Wood frames and sash; steel casements.
Heating: Vacuum steam.
Ventilation: Exhaust for inside toilets, supply and exhaust for operating rooms.
Cubage of Building: 2,200,000 feet.
Cubic Feet Per Patient: 7285.
Cost of Building Without Equipment: $950,000.
Number Feet and Cost Per Bed: 302 at $3146.

FIRST FLOOR

PLANS: HURLEY HOSPITAL, FLINT, MICH.
THIELBAR & FUGARD, ARCHITECTS
GENERAL VIEW

OPERATING ROOM
CALIFORNIA LUTHERAN HOSPITAL, LOS ANGELES
WALKER & EISEN, ARCHITECTS
COST AND CONSTRUCTION DATA
Date of Completion: June, 1926.
Type of Construction: Reinforced concrete.
Exterior Walls: Brick.
Roof: Gravel.
Floors: Concrete.
Windows: Wood, double-hung, except in operating rooms, where casements were used.
Heating: Low-pressure steam.
Ventilation: Operating rooms and all toilet rooms ventilated.
Cubage of Building: 1,831,400 feet.
Cubic Feet Per Patient: 6,630.
Cost of Building, Without Equipment: $1,009,000.
Cost Per Cubic Foot: 55 cents.
Cost of Operating Per Bed Per Day: $6.82.

PLANS: CALIFORNIA LUTHERAN HOSPITAL, LOS ANGELES
WALKER & EISEN, ARCHITECTS
ELEVATION ON FT. WASHINGTON AVENUE

MAIN ENTRANCE

CHAPEL WINDOWS

ST. ELIZABETH'S HOSPITAL, NEW YORK
JAMES W. O'CONNOR, ARCHITECT
COST AND CONSTRUCTION DATA

Date of Completion: October, 1927.
Type of Construction: Fireproof throughout.
Exterior Walls: Brick facing, with 8-inch bonded backup tile, furred with 1/2-inch split furring tile on inside.
Roof: Tile over roof laid into flashing blocks at all parapet walls.
Floors: Long-span reinforced concrete.

Finished Floors: Terrazzo floor and base throughout corridors, shower rooms, kitchens, etc. Maple wood flooring in patients' rooms.
Windows: Double-hung type, wood.
Heating: Vacuum steam heating system.
Ventilation: From kitchens and operating rooms only, —electric exhaust fans.
Cost of Building, Without Equipment: $739,285.79.
Number of Beds: Sixty private rooms; 40 beds in wards of 10 each.

GROUND FLOOR

PLANS: ST. ELIZABETH'S HOSPITAL, NEW YORK
JAMES W. O'CONNOR, ARCHITECT
GENERAL VIEW

ENTRANCE HALL

BETH ISRAEL HOSPITAL, BOSTON
DESMORE, LE CLEAR, & ROBBINS, ARCHITECTS

MAIN ENTRANCE

Photos: Paul J. Weber

Plans on Back
CONSTRUCTION DATA

Date of Completion: August, 1928.
Type of Construction: Brick, reinforced concrete.
Exterior Walls: Brick.
Roof: Concrete.
Floors: Concrete.
Windows: Some steel, some wood.

Heating: Steam.
Ventilation: Fans.

Cubage of Building: Ward building, 975,000; service building, 310,000; connecting corridor, 67,800; power house, 183,700; administration building, 158,000; outpatients' building, 381,000; nurses' home, 365,500.

PLANS: BETH ISRAEL HOSPITAL, BOSTON
DENSMORE, LE CLEAR & ROBBINS, ARCHITECTS
HOSPITAL OF THE GOOD SAMARITAN, LOS ANGELES
REGINALD D. JOHNSON, ARCHITECT
COST AND CONSTRUCTION DATA

Date of Completion: April 19, 1927.
Type of Construction: Reinforced concrete.
Exterior Walls: Concrete with a plaster dash coat.
Roof: Covered with tile on pitched surfaces; composition for all flat decks.
Floors: Heavy battleship linoleum used generally, with tile; wood and terrazzo where special conditions occur.
Windows: Double-hung in patients' rooms and various types of casement and special metal sash in operating rooms, service portion, etc.

Heating: Direct steam radiation.
Ventilation: Electrically operated mechanical ventilating system.
Cubage of Building, 2,300,000 feet.
Cubic Feet Per Patient: 8,014.
Cost of Building, Without Equipment: $1,240,175.
Cost Per Cubic Foot: 53 cents.
Cost of Building, Completely Furnished: $1,472,000 or 64 cents per cubic foot (not including chapel).
Number and Cost Per Bed: 287 at $5,126.

FLANS: HOSPITAL OF THE GOOD SAMARITAN, LOS ANGELES
REGINALD D. JOHNSON, ARCHITECT
CHAPLAIN
HOUSITAL OF THE GOOD SAMARITAN, LOS ANGELES
RENAUD I. JOHNSON, ARCHITECT
ENTRANCE

DECEMBER, 1928
THE ARCHITECTURAL FORUM
PLATE 144
WARD BUILDING, WILLIAM H. MAYBURY SANATORIUM, NORTHVILLE, MICH.
STRATTON & HYDE, ARCHITECTS
Although a one-story building, simple and direct in plan, the architects have created a design monumental and dignified in character. The rooms have high ceilings with air space above which keeps the temperature cool in summer. The use of brick in patterns and bands relieves the plainness of the stucco walls. Importance is given to the entrance portico by the use of engaged columns and a heavy entablature. Possibly the omission of this treatment and the substitution of brick in interesting panels between and above the openings of this portico might have contributed to a more modern spirit in the design. The planning provides for an excellent and economical disposition of available space.
A preliminary to a discussion of a program of development and an evaluation of hospital planning trends of the last few years, it is deemed essential to submit in general terms an outline of the demands that the planning of the general community hospital makes upon the individual responsible. It is, after all, the general community hospital that, with a large majority of the readers of The Architectural Forum are interested in. Proprietary hospitals have, of course, their place in the communal health scheme, but they are relatively few in number, and their problems are not as complex as those of the hospital designed to render general community service. The hospital building program is one of the most complex problems presented to the architect. This statement has ample confirmation by recognized authorities in the profession. By the large extent of mechanical costs in a hospital building a part of this complexity is accounted for, but this is by no means the real problem. The problem is the proper evaluation of the professional needs of the institution, related to the health service demands of the community. The modern hospital has ceased to be a self-contained unit. Its operation is a composite of all the requirements of the health program of the community. The individual responsible for planning must properly evaluate service needs and present to the community a finished plant, equipped within the limits of the building budget to meet the demands of all phases of the community health service.

The practice of medicine is itself becoming more and more complex. It is within the memory of many when the clinician needed no supplemental facilities to aid him in the diagnosis and treatment of disease,—when the percussion hammer (in many instances there were used instead the first and second fingers!) and the stethoscope were all that were used. That day is past. The modern practitioner of medicine relies no longer entirely on his own findings for a diagnosis. He confirms these clinical findings by the X-ray, the pathological, bacteriological, and chemical laboratory, by the electro-cardiograph, and by other services of precision, that are deemed essential to the modern practice of medicine. The equipment necessary to render these services is expensive, and the technical assistants require a high degree of training. Their proficiency in their work depends largely on there being a number of patients far greater than the average practitioner of medicine can expect. Therefore, except in isolated instances, the doctor has refrained from the development of these facilities as a part of his office equipment, and is relying upon the hospital to furnish them. Another phase is the recognition on the part of the attending physician, that scientific nursing care, proper dietary service and proper control of patients, can best be secured in the hospital. To summarize, the modern hospital is the health center of the community it serves. Its obligation to the patient and to the attending physician is to furnish every known means for the scientific diagnosis and treatment of disease. To meet that obligation, within the limited building budget of the average hospital, requires an intimate understanding of operating problems to allocate areas within the building to these services.

Selection of Site. Many readers will recall having been confronted with the necessity of properly using a site received as a gift, or a site purchased in advance of a program because it was cheap or because of expediency. It is true that with motor transportation, distances are not as important as they were formerly, but it is equally true that the proper selection of a site is exceedingly important to the future operation of a hospital. It is believed that a hospital should be closely adjacent to an artery of travel. If at all possible, it should not be located on but reasonably close to a street car line, for the convenience of visitors and the personnel of the hospital. Ideally, perhaps, from a standpoint of environment, the hospital should be located in the country, but such a selection could be made only without regard for other considerations that are of greater importance. In considering the environment, sources of air contamination must be eliminated. Adequate sewage disposal and water supply are prerequisites. The site must be sufficiently large to permit of a proper location of buildings, with adequate areas for courts. Plan the location of the first buildings thereon so that expansion of the institution may be made easily and at a minimum of cost. Evaluate the site as it relates to other hospitals in the community, to the end that there may be a reasonable geographic distribution of hospital facilities.

Type of Building. There are three general types of buildings to be considered: (1) The pavilion type; (2) the H-shaped, or modifications thereof; and (3) the multi-storied parallelogram. The pavilion type of institution has seen its ultimate development in European countries where ground values are relatively low and where operating labor costs are not as great as they are in America. It was conceived on the theory that isolation of types of disease demanded individual buildings. With our present understanding that disease may be controlled “inter-floor” as well as “inter-building,” the philosophy of this planning is dissipated. When one further realizes that land values in the average community are high, that the excess cubage contained in necessary connecting corridors produces excessive bed costs, and that the maintenance cost of this type of institution is exceedingly high, it logically follows that we see a departure from use of the pavilion type of institution. Practically, the complete elimination of the pavilion type for general hospitals has been a definite
trend of plan of the best type in the last few years.

There are grouped together for discussion many modifications of the H-type design. There is no question that this general scheme lends itself to use very efficiently, from both an operating and a construction point of view. The size of the ultimate institution should govern, in large measure, the determination as to which of these general forms is to be followed. If the various major operating facilities may be properly located, and the nursing units so planned that visual control of individual patients' units is obtained (which can all be done), it is submitted that for the hospital of 150 beds or less this general type of plan is perhaps the best that can be adopted. It will please be understood that this is a general statement only. There is no such thing as a "best type" or "best plan." Each program presents a problem unique in itself. The multi-storied parallelogram is gaining increasing favor in large centers of population, where land values are high and where the community is accustomed to up-and-down travel to a degree which is not the case in small communities. With modern elevator equipment, vertical travel is much more economical than horizontal travel. The stacking of mechanical facilities of various types that must be duplicated in many places is more economical of construction than any other plan. Therefore, we see perhaps the greatest change in hospital planning of construction than any other plan. Therefore, we must recognize its inflexibility. Modern practice recognizes that the environment which characterizes large wards is not conducive to ideal medical practice. Furthermore, large wards interfere with many schemes of development unless they are put in separate buildings. We, therefore, see the development of ward facilities in four-, six- and eight-bed rooms, with an adequate number of quiet rooms immediately adjacent so that acutely sick patients may be cared for in these isolation rooms. This is a further definite trend of planning. The incorporation of ward, semi-private and private beds in the same nursing unit presents operating problems to be avoided if possible. Where at all possible, ward, semi-private and private beds should be kept in separate nursing units. It is recognized that this is not always possible. In general the patient will be happier, and the operating personnel will be happier, if these facilities are not combined. It is desired to submit the component parts of a properly planned nursing unit, with no thought that a general scheme of planning is submitted, but merely to act as a check list. The scope of this article will not permit of a detailed discussion of each of these facilities.

**The Patient's Room.** Sufficient be it to say that the minimum areas established in the building codes of most of our states, proper relationship of bed, window and door to each other, proper consideration of ventilation and illumination, are all essential.

**Charge Nurses' Station.** This is an item of planning that is very often given insufficient understanding. The location of the charge nurses' station will reflect itself for good or for evil in the service to be rendered to the patient, visitors and the attending physician. This station should be located approximately at the center of the nursing unit. It should be close to and control the entrance to the unit from the elevator and the stairs, for control of visitors. It should be so located that there is visual control of all of the rooms of patient occupancy. The location of the nurses' call annunciator at the station is not sufficient. It should be located reasonably close to the chart room, medicine cabinet and facilities provided for the congregating of nurses when they are not occupied with the care of patients.

**Reception Room.** Another facility, the importance of which is very often overlooked, is the reception room. Even at the sacrifice of a bed, in my judgment, this room should be provided. This facility should be provided in addition to any day room facilities that may be desired for patients. It is designed to provide privacy for those near and dear to acutely sick patients, so that they may not be compelled to sit in either the patient's room or the corridors. Reference has been made in a previous paragraph to the nurses' waiting room, medicine cabinet and chart desk. These facilities may be combined and be adjacent to the charge nurses' station.

**Ward Serving Kitchen.** Irrespective of whether centralized or decentralized dietary service is contemplated, there is a need of a ward serving kitchen planned to fit the type of service to be provided.

**Utility Rooms.** At this point we come to consideration of one of the pronounced trends of planning.
in the last few years. We have heard a great deal about individual utility facilities for each patient, and have been presented with many plans for providing these units, some of them very meritorious. There is no desire to interpret the correctness or incorrectness of providing individual utility facilities for each patient or for each room of patient occupancy. Suffice it to say that whether this scheme or whether the scheme of providing central utility facilities for a given number of rooms is followed, it should be borne in mind that utility facilities must be located so that they are reasonably close to each patient’s bed. It would seem proper to say that not to exceed 75 feet of travel should be necessary from a utility unit to any patient’s bed. If individual units are planned, there is a need quite aside from these individual units for a central utility and work room, with facilities for sterilization and storage. There is no desire to submit a plan of this room. It is desired, however, to emphasize that seeming extravagance, by the inclusion of all facilities requisite for proper care, in reality is not extravagance, but is merely an assurance of a higher type of nursing service to patients, by providing facilities that expedite the service and minimize the energy necessary to render it.

No nursing unit ever had an adequate supply of storage facilities. This may be construed as an exaggerated statement, but it is believed that it can be successfully defended. Most of us who plan hospitals, no matter what our experience, realize the value of adequate supply closet space. There is submitted a list of these facilities for general supplies,—stretchers; treatment trays; linen room; flowers; maids’ hopper facilities. May I emphasize the need for a properly planned flower closet? How many of us have gone through the corridors of a hospital at night and seen flowers from patients’ rooms out in the corridor, subject to the abuse of such a practice!

Mention has not been made, and it is desirable that it be made, of the need for public toilet facilities for each nursing unit. The provision of these facilities is required by law in some states, but experience dictates that they should be provided in all institutions. There is a growing tendency to increase the proportion of rooms with baths. It is my judgment that such a trend should be discouraged. It not only increases the cost of construction, but it also adds a definite burden to the operating cost, all of which would be justified if the facilities were used by the patients; but as a matter of fact, most of these baths are for the patients’ relatives and friends, and for nurses assigned to the care of the patients.

Operating Suites. It is too often true that the planning of the operating room is given a degree of study and an importance attached to this facility beyond the importance attached to other equally as necessary facilities in other parts of the institution. It should not be inferred that less care should be given in the planning of the operating room, but it is believed that there is a tendency to develop operating rooms beyond the real requirements of institutions. The type of staff that the hospital is to have must be determined in advance of planning the operating room. If it is to be a restricted group of men who are to do the operative work of the institution, then a relatively small operating suite may be developed. If, on the other hand, it is to be an open staff, then there immediately comes the need of the development of a larger number of individual operating rooms. Therefore, an attempt to establish a ratio of operating rooms to beds is impossible in a general article. It is desired to call attention to the fact that the efficiency of an operating suite lies very largely in the proper planning of the suite, and the allocation of an adequate area within the suite to work rooms, sterilizing rooms and other than strictly operating rooms. Surgeons are recognizing more and more that huge rooms are not requisite to good operative practice,—that quite the contrary is the case. Operating rooms in some institutions have an area of as low as 250 square feet. This, however, is believed to be a bit too small.

Another change in the thought of surgeons is the installation of skylights. They are depending more and more on properly installed artificial light, recognizing that its source is more constant and dependable. Without skylights, operating rooms need not be on top floors, but may be related closer to other facilities. Operating rooms for many years were planned as simply as possible, with the elimination of all fixed equipment in the room, on the theory that the simpler the room the more easily could surgical technique be maintained. We then saw a period of development in which built-in cabinets, sterilizing facilities, plumbing and items of a comparable nature were included in the room. This had its day, and now we see a trend toward the simplification of operating rooms again and a recognition that the operating room is not the place for the storage of supplies, sterilizers, wash-up sinks and items of this type. These details are now being located in separate rooms rather than in the operating room.

Prose and poetry have made the white hospital wall traditional, up to a few short years ago white was considered the only acceptable color to be used. Quite aside from the harmful effect on the patients (and that this harm has been definitely demonstrated is not subject to discussion) was the unfortunate effect that this hyper-aseptic atmosphere created on everyone. The acceptance of color and the introduction of warm color schemes into the institution, to my mind, is one of the main things which have come out of the last ten years of thought in hospital planning. There is no question that the white tile floor, walls and ceiling of the operating room could not have been more trying if they had been designed for that purpose. Restful colored tile dispels in a measure the exceedingly fearsome environment of an operating room for a patient. More important still, it increases decidedly the efficiency of the surgeon. It took surgeons a long time to accept this change and to agree to the installation of colored
operating rooms, but I question if any of them would go back to the old dazzling white rooms.

**X-ray Facilities.** The X-ray as a means of diagnosis and treatment is a relatively new thing in medical practice, but it has been developed to a stage where it is absolutely essential to modern hospital practice. A few short years ago if the hospital provided for Roentgenological service for fractures, it had fulfilled its obligation. Today the surgeon uses the X-ray machine no more than the internist or pediatrician. Diagnosis of diseases of the soft tissues is an integral part of the duties of the Roentgenologist. Machines for the treatment of certain forms of pathology have reached a marked degree of efficiency. Formerly it was the practice to locate the X-ray room in the basement, in some out of the way space that could not be used for anything else. This was good enough. Today the Roentgenologist's value and the demands made upon him by the clinician compel the location of the department at the center of the professional activities of the institution.

It is suggested that rather than install many pieces of apparatus in a large room, small cubicles be provided for each piece of apparatus, providing a flexibility of usage and an ease of operation that are not provided for in the first plan. Important items to consider in an X-ray department are proper ventilation, protection against the Roentgen rays, illumination, installation of supplemental wiring, and the furnishing of separate power service to the department. Close proximity to the surgery rooms is a prerequisite for certain types of treatment. The department should be properly serviced by elevators, in a multi-storied building, and have a waiting room and record facilities within the unit. Care should be taken to provide facilities for the storage of films and plates that will meet requirements of underwriters.

**Department of Laboratories.** Perhaps the most revolutionary change in hospital planning is the thought that is being given to laboratory facilities. This, of course, is due to the demands of the clinician for a type of laboratory service in keeping with an improved understanding of the needs of this type of facilities in the proper diagnosis and therapy of disease. It would be folly to develop laboratory facilities beyond the demands of the clinical staff, but wise planning will include a laboratory development in excess of the present-day recognized need of the staff, on the theory that the next few years will see an increasing demand rather than a diminution, and that without physical space allotted, the meeting of these demands will be difficult. As part of the wisdom of planning, it is suggested, as in the X-ray department, that small rooms for various types of service be developed rather than that an attempt be made to incorporate all of the facilities in one large room.

**Electro-cardiograph Facilities.** A change in thought in the last few years has eliminated use of special conduit systems and special systems of wiring for
the development of heart stations on nursing units, and has substituted the portable machine for bedside electro-cardiography. The central heart station need not be elaborate. The needs are not many, but if the clinician demands the service, it should be furnished. **Metabolism Room.** There has been a tendency to place this room close to the laboratory facilities rather than close to patients' rooms. It would seem that it is better, and it is advocated to place this room near the latter. A certain amount of metabolism work can of course be done in the individual rooms, but it is believed desirable that there be a metabolism station where the major part of the work may be done.

No attempt has been made to list in detail here all of the professional and quasi-professional facilities requisite to modern hospital work, but enough has been presented to demonstrate why such a small ratio of the hospital's total cubage is occupied by patients. An intensive study of this ratio and an interpretation of its correctness has been made by a member of the American Institute of Architects (the only study of its kind that has ever been made, to my knowledge) of large groups of plans and has been presented to interested groups in the form of colored slides with computed ratios. This study presents in a very graphic way the complexity of hospital planning and proves that very seldom is more than 25 per cent of the total area of a building devoted actually to the bed care of patients.

**Dietary Facilities.** In this department we have seen another startling change in planning. The internist today recognizes the therapeutic value of properly prepared and balanced diet, with the result that the professional dietitian trained in food values and competent to interpret clinical needs is more and more taking the place of the steward or the chef, who formerly controlled the diet destinies of an institution. The importance of special diets has materially increased, with the consequent necessity for a larger diet kitchen. This diet kitchen should be located closely to the general kitchen, permitting of ease of supervision, but it should be a detached unit of operation. The development of centralized food service, designed to reduce to a minimum the handling of foods, is perhaps the most significant trend in operation in the last few years. This type of service immediately calls for a change in thought on the part of those planning the general kitchen. Therefore, before the kitchen plan can be evolved, it is necessary that there be a very specific statement from the operating personnel as to the type of service to be rendered and the development of a plan around that scheme. Without this scheme of operation, no efficient kitchen scheme can be planned.

**Storage Facilities.** Just a few words to emphasize that the efficiency or inefficiency of a hospital rests very largely upon the provision of properly located and adequate storage facilities. An interpretation of what is adequate cannot be made in a general statement, but too much stress cannot be placed on it.
Administrative Facilities. Plan a large, commodious lobby, and then use every means possible in the development of a pleasant, cheerful atmosphere in that lobby. First impressions are always lasting impressions. It is desired to point out that the major heads of departments of an institution are handling problems that require privacy, and it would seem desirable to provide private offices for them. The telephone switchboard should never be located in the front office. It should be placed at a point where privacy may be assured. Do not overlook the necessity of providing adequate rest and cloak rooms for the attending staff, special nurses and female personnel.

Admitting and Emergency Rooms. With traffic increasing and the demands made on most of our hospitals for an increasingly large amount of emergency service, it is necessary to provide proper emergency facilities. An interpretation of the term "proper," again, is impossible, in a general statement. This paragraph is inserted to bring to the attention a need which is becoming increasingly great. It would seem logical that the admitting service of the institution should be adjacent to the emergency suite. This is not always possible nor desirable, but the suggestion is offered as one solution of the problem.

Housing of Personnel. A great many of our institutions follow, as a matter of expediency, the housing of nursing personnel in parts of the hospital. This is believed to be extremely undesirable, both from the standpoint of cost of building and from the standpoint of the effect upon the personnel. There is a great divergence of thought as to whether or not hospitals should house their personnel. It is not within the scope of this article to discuss this question, but it is desired to submit that the policy of the hospital must be established before the plan of development may be made, and that this policy having been adopted, such facilities as are deemed requisite for the housing of personnel may be provided. If it is desired to house various groups of a hospital's personnel, it should be borne in mind that recreational facilities, such as reception rooms, etc., must be provided for each group and sex, quite aside from any recreational or educational facilities that are provided for the student or graduate nurses.

It must be apparent that the presentation of a subject of this scope, within the restrictions of space allotted here, can be made only in general terms. It is hoped that the foregoing discussion has in a measure emphasized the complexity of the problem confronting the individual responsible for the development of a set of plans for a general hospital. These problems require an interpretative study of many phases, quite outside the realm of the architect's experience. Just as the ventilating engineer, the structural steel engineer, and other technical advisers are called into a study on structural problems, so should the operating point of view hold a very prominent place in the study of the type and size of building and the character of service to be included therein. This point of view cannot be too strongly emphasized. When one considers that efficiency of planning has a direct, continuous effect upon the type of service rendered, and when one sees the many instances in which hospitals have been developed without thought of operating problems, one cannot but feel that the architect must fortify himself, with every known means, to prevent inexcusable waste in construction and inexcusable lack of efficiency in the operating institution, the result of poor planning. The obligation to secure maximum efficiency is sacred. Institutions of healing touch the very foundations of our social structure more intimately than any other phase of social endeavor, with the possible exception of the Church. They are universally restricted in funds, for construction and for operation. Therefore, the conservation of funds will mean a more efficient health service and a better community.

The Duluth Clinic
W. C. Agnew, Architect
By referring to the plot plan, it will be seen that St. Vincent's Hospital occupies a block of land, approximately 300 by 350 feet, and as planned consists of a group of five buildings, three of which are completed; the remaining two units will be commenced in the near future. The completed buildings are the main building, or hospital proper; the sisters' home containing chapel, dormitories and living quarters, and dormitory for the female servants; the boiler house and laundry, containing machinery for refrigeration, laundry, boilers and other accessories for heating, hot water apparatus and emergency generator for electric light. In addition to and connected with this building there are 30 rooms for the male servants. The nurses' home has not yet been built, but plans have been prepared for a five-story building containing 150 sleeping rooms, library, living room, waiting room, office, trunk room, classroom for class of 35, assembly room for 300, and small chemistry classroom. The outpatients' clinic building has not yet been planned.

All the buildings are of reinforced concrete construction and are fireproof throughout. Exterior wall surfaces are of cement stucco, finished with various textures. Terrazzo has been extensively used in the hospital and dormitory buildings. Floors of all rooms and corridors, bathrooms and lavatories, stairs and stair landings, the bases in rooms and corridors, around toilet stalls and on walls of dressing rooms are of this material; the only exceptions made are in the X-ray department and lavatory, where rubber tile has been used as a floor covering, and in the operating rooms, in which all floors and walls are covered with a special sanitary tile. Owing to the plastic condition of terrazzo during its application, many very practical uses were devised,—for instance, the use of a continuous ledge formed on the base along one wall of every patient's room to prevent the bed from coming in contact with the wall. This may seem a trivial detail, but in the maintenance of a hospital it is really of considerable importance. Again, instead of using marble or metal for window stools, terrazzo was employed and found to be a very practical substitute. Most of the plastering in the buildings is of lime and Keene's cement. All surfaces are troweled smooth, and all projections and angles neatly rounded to 3/4-inch radius. All interior door frames are of steel finished with lacquer, corners are rounded to a 2-inch radius, and the usual trim has been omitted. Door stops extend to within 3 inches of the floor, and the terrazzo base is carried around the jams, making continuous sanitary surfaces with round corners, which are easily cleaned.

All doors are of the "flush" type, veneered with quarter-sawed white oak, stained and lacquered. A few of the patients' rooms have baths attached, but where these are lacking, toilet compartments have been provided. The equipment and appointments of these toilets and bathrooms are rather interesting.
PLANS: ST. VINCENT'S HOSPITAL, LOS ANGELES
JOHN C. AUSTIN AND FREDERIC M. ASHLEY, ARCHITECTS
PLANS: ST. VINCENT'S HOSPITAL, LOS ANGELES
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PLANS: ST. VINCENT'S HOSPITAL, LOS ANGELES
JOHN C. AUSTIN AND FREDERIC M. ASHLEY, ARCHITECTS
and worthy of study, owing to the fact that few if any other hospitals are similarly equipped. For instance, every water closet, in addition to having a flush valve, is fitted with hot and cold “bidet” jets, and the bowl has lugs cast in the porcelain to support the bed pan during the process of cleaning, the pans being specially made to fit in the tops of the bowls. Every bathroom and lavatory adjoining a patient’s room is provided with a cabinet lined with sanitary tile and thoroughly vented, the front being enclosed with monel metal doors. These cabinets contain a complete equipment, consisting of all appliances needed for the proper care of the patient, making it unnecessary for the nurse to leave the patient. These appliances are not allowed to be taken from the room except for being sterilized.

Between the ceiling of the sixth story and the floor of the seventh, an intermediate story 6 feet 6 inches high has been provided and is utilized as a pipe loft. Piping serving all floors up to the sixth story ceiling constitutes one system, and all above this level another system. In this pipe loft the vents from all fixtures are assembled in groups and carried through shafts to the roof. Mechanical vent systems are installed to exhaust the air from all vertical shafts occurring at the back of the lines of bath and toilet rooms. Independent vent systems are used to exhaust the air from operating rooms, laboratories, and other departments on the seventh floor, where special ventilation is necessary. It was found advisable to keep supply and waste systems of operating rooms and laboratories independent of all others, owing to the fact that there is more trouble developing in these departments than in the ordinary operation of the hospital. In addition to the plumbing system of the seventh floor, there are special gas lines conducting various kinds of gas to the operating rooms, and a complete system of steam lines to the sterilizers. All sterilizing apparatus adjacent to operating rooms is concealed in special compartments, so that only the valves and nozzles are exposed on the faces of the operating room walls. All these compartments are thoroughly ventilated. The continuing vertical shafts from sub-basement ceiling level to the pipe loft above the sixth story at the back of every line of plumbing fixtures, and the pipe distributing loft, make it possible to repair or remove any or every pipe without interference with the operation of the hospital. Also the pipe loft immediately below the surgery floor makes it possible to install any new sanitary, electrical or ventilating appliance that may be discovered or invented, and found to be desirable, without disturbing the structural elements of the building.

There is a complete system of tunnels extending from the power house and the laundry to and under every building, equal in width and location to the corridors in the upper stories of each building.
DECEMBER, 1928

THE ARCHITECTURAL FORUM

PLATE 145

GENERAL VIEW

Photos, Harold H. Costain

MAIN ENTRANCE
ST. LUKES CONVALESCENT HOSPITAL, GREENWICH, CONN.
WILLIAM S. GREGORY, ARCHITECT; ERNEST FLagg, CONSULTING ARCHITECT

841
COST AND CONSTRUCTION DATA

Year of Completion: 1927.
Type of Construction: Fireproof.
Exterior Walls: Basement, concrete; upper stories, hollow tile with facings in brick and stone.
Floors: Linoleum, cemented directly to concrete and wax finished.
Windows: Wood.
Heating: Steam vapor system.

Ventilation: Mechanical for kitchen, toilets and baths.
Cubage of Building: 689,000 feet.
Cubic Feet Per Patient: 8600.
Cost of Building, Without Furnishings: 70 cents per cubic foot.
Cost Per Cubic Foot Completely Furnished: 80 cents.
Number and Cost Per Bed: 80 at $6,890.

PLANS: ST. LUKE'S CONVALESCENT HOSPITAL, GREENWICH, CONN.
WILLIAM S. GREGORY, ARCHITECT
ERNEST FLagg, CONSULTING ARCHITECT
PATIENTS' OPEN AIR COURT

MAIN ENTRANCE LOBBY
ST. LUKES CONVALESCENT HOSPITAL, GREENWICH, CONN.
WILLIAM S. GREGORY, ARCHITECT; ERNEST FLAIG, CONSULTING ENGINEER
GENERAL VIEW

ENTRANCE HALL
GREEN'S EYE HOSPITAL, SAN FRANCISCO
FREDERICK H. MEYER, ARCHITECT

MAIN ENTRANCE
Plans on Back
Date of Completion: April, 1928.
Type of Construction: Reinforced concrete.
Exterior Walls: 12-inch reinforced concrete.
Roof: Wood frame covered with tile.
Floors: Concrete slabs, tile and linoleum finish.
Windows: Wood frames and sash; metal in operating suite.
Heating: Steam heat, direct radiation, oil-burning boilers.
Ventilation: In operating rooms and baths.
Cubage of Building: 375,186 feet.
Cost of Building, Without Equipment: $208,000.
ENTRANCE FRONT

REAR ELEVATION
TUBERCULOSIS HOSPITAL, PHILMONT, N. Y.
TOOKER & MARSH, ARCHITECTS

Photos. Paul J. Weber
COST AND CONSTRUCTION DATA

Year of Completion: 1919.
Type of Construction: Frame.
Exterior Walls: Frame.
Roof: Slate.
Floors: Wood, and canvas over wood.
Heating: Low-pressure steam.
Cost of Building, Without Equipment: $90,000.

PLANS: TUBERCULOSIS HOSPITAL, PHILMONT, N. Y.
TOOKER & MARSH, ARCHITECTS
ENTRANCE ELEVATION

END AND REAR ELEVATIONS
COTTAGE HOSPITAL, GROSSE POINTE, MICH.
STEVENS & LEE, ARCHITECTS
COST AND CONSTRUCTION DATA

Date of Completion: November 1, 1928.
Type of Construction: First class, fireproof.
Exterior Walls: Brick, painted white.
Roof: Brown tile.
Floors: Rubber, terrazzo, linoleum.
Windows: Metal sash.
Heating: Direct steam.
Ventilation: Gravity, with fan for kitchen, and operating room ventilation.
Cubage of Building: 471,000 feet.
Cubic Feet Per Patient: 9450.
Cost of Building Without Equipment: $266,000.
Cost Per Cubic Foot: 56 cents.
Number and Cost Per Bed: 50 beds—$5,300 per bed.

PLANS: COTTAGE HOSPITAL, GROSSE POINTE, MICH.
STEVEN S & LEE, ARCHITECTS
GENERAL VIEW

OUTSIDE PAVILIONS
SOLEMAR HOSPITAL, SOUTH DARTMOUTH, MASS.
KENDALL, TAYLOR & CO., ARCHITECTS

Photos, Paul J. Weber

Plans on Back
COST AND CONSTRUCTION DATA

Date of Completion: June, 1924.
Type of Construction: First and second class.
Exterior Walls: Tile and stucco.
Roof: Slate and flat.
Floors: Terrazzo and linoleum.
Windows: Wood sash, double-hung.
Heating: Steam, vacuum system, separate power plant.
Ventilation: Local fans.
Cubage of Building: hospital, 310,000; boiler house, 27,130; garage 12,420 feet.
Cubic Feet Per Patient: 6,000.
Cost of Building Without Equipment: $295,044.
Number of beds: 50.

PLANS: SOLEMAR HOSPITAL, SOUTH DARTMOUTH, MASS.
KENDALL, TAYLOR & CO., ARCHITECTS
MILLS MEMORIAL HOSPITAL, SAN MATEO, CAL.
LEWIS P. HOBART, ARCHITECT
Year of Completion: 1927.
Type of Construction: Reinforced concrete.
Exterior Walls: Concrete with stucco finish.
Roof: Slate.
Floors: Concrete, tile finish in corridor and living rooms.

Heating: Low-pressure steam.
Ventilation: Forced draft.
Cubage of Building: 612,730 feet.
Cost of Building, Without Equipment: $418,170.
Number of Beds: 80.

MILLS MEMORIAL HOSPITAL, SAN MATEO, CAL.
LEWIS P. HOBART, ARCHITECT
GENERAL VIEW

JEWISH HOSPITAL, ST. LOUIS
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS
BASEMENT

PLANS: JEWISH HOSPITAL, ST. LOUIS
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS
COST AND CONSTRUCTION DATA

Year of Completion: 1924.
Type of Construction: Reinforced concrete.
Exterior Walls: Brick, limestone trim.
Roof: Slate.
Floors: Oak, linoleum, tile.
Windows: Double-hung wood.
Heating: Vacuum steam.
Ventilation: Natural, except for exhaust fans in kitchen and sterilizing room.

Cubage of Building: 762,000 feet.
Cubic Feet Per Patient: 6,800.
Cost per Cubic Foot, Including Fixed Equipment: 37.8 cents.
Number and Cost Per Bed: 112 beds at $2,570.
Cost of Operating Per Bed Per Day: $4.50.

FOURTH FLOOR

THIRD FLOOR

SECOND FLOOR

FIRST FLOOR

BASEMENT

PLANS: GENERAL HOSPITAL, LINCOLN, NEB.
DAVIS & WILSON, ARCHITECTS
ROBINSON MEMORIAL BUILDING, HOMEOPATHIC HOSPITAL, BOSTON
KENDALL, TAYLOR & CO., ARCHITECTS
CONSTRUCTION DATA

Date of Completion: November, 1915.
Type of Construction: First class.
Exterior Walls: Brick and limestone.
Roof: Flat.
Floors: Gypsum slab, tile, terrazzo and linoleum.
Heating: Steam.
Cubage of Building: 616,760 feet.
Cost of Building, Without Equipment: $275,000.
Number of Beds: 84.

PLANS: ROBINSON MEMORIAL BUILDING, HOMEOPATHIC HOSPITAL, BOSTON
KENDALL, TAYLOR & CO., ARCHITECTS
COST AND CONSTRUCTION DATA

Date of Completion: February 1, 1927.
Type of Construction: Fireproof (one-way terra cotta.)
Exterior Walls: Brick.
Roof: Tar and gravel on concrete, and copper on concrete.
Floors: Tile and concrete construction; tile and rubber in upper floors.
Windows: Wood.

Heating: Steam from main plant.
Ventilation: Mechanical.
Cubage of Building: 736,700 feet.
Cubic Feet Per Patient: 1,500.
Cost of Building, Without Equipment: 66½ cents per cubic foot.
Cost per Cubic Foot, Completely Furnished: 95 cents.
Number and Cost Per Bed: 67 beds at $10,000 each.

PLANS: PALMER MEMORIAL HOSPITAL, BOSTON
ERNEST W. DEARING, ARCHITECT
COST AND CONSTRUCTION DATA

Year of Completion: 1923.
Type of Construction: Reinforced concrete.
Exterior Walls: Concrete, faced with brick.
Roof: Copper shingles and tar and gravel.
Floors: Cement and mastic.
Windows: Wood.
Heating: Forced hot water.
Ventilation: No ventilation except in kitchen.
Cubage of Building: 535,000 feet.
Cubic Feet Per Patient: 8,900.
Cost of Building, Without Equipment: $263,750.
Cost Per Cubic Foot, Completely Furnished: 56 cents.

MAIN FLOOR

GROUND FLOOR

PLANS: SHRINERS' HOSPITAL, PORTLAND, ORE.
SUTTON & WHITNEY, ARCHITECTS
OUT PATIENTS' ENTRANCE, SHRINERS' HOSPITAL, PORTLAND, ORE.
SUTTON & WHITNEY, ARCHITECTS
GENERAL CONSIDERATIONS IN PLANNING A SMALL HOSPITAL

BY
H. ELDRIDGE HANNAFORD
OF SAMUEL HANNAFORD & SONS, ARCHITECTS

THIS article will touch on the major general considerations in the development of a small hospital program and the grouping and arrangement of the various component units. Plans on pages 874 and 875 are to exemplify a few of the general principles which governed the planning of one particular hospital, but which apply with equal force to hospitals twice or three times the size.

Site. This important factor is too often not given sufficient consideration, and where possible the architect should give to the building committee every assistance in selecting a proper site. In the final analysis, the location of a hospital is the only part of the undertaking that may be considered as permanent. Buildings deteriorate structurally and become obsolete. Equipment wears out, becomes antiquated and must be replaced. It is obvious, therefore, that great care and sound judgment should be exercised in selecting the hospital's location.

Briefly, the factors entering into a wise decision in the choice of a hospital site are:
1. Quiet,
2. Clean Air,
3. Absence of Insects,
4. Suitable Outlook,
5. Accessibility,
6. Permanency,
7. Additions,
8. Costs.—Original Cost and Maintenance Cost.

Quiet can be secured by avoiding locations in close proximity to railroads, street car lines, factories and places of public assembly, such as churches, schools and playgrounds. Clean air, free from smoke, dust and odors, can be secured by avoiding manufacturing neighborhoods, railroad yards, and locations near much traveled or unsurfaced highways. Absence of insects, especially flies and mosquitoes, can be obtained by choosing a location at least half a mile from stables, stock yards, swamps or marshy places that cannot be controlled or drained. A suitable outlook is one that is restful and attractive. The sick and convalescent should not have to look out from rooms or verandas facing upon crowded streets or busy manufacturing sections. Rest is a universal remedy for all diseases, and it is too inexpensive for the sick not to have it in abundance. Beautiful natural scenery, fields, woods and distant hills, are very definite aids in hastening the convalescence of the hospital patient. Accessibility is obtained by locating the hospital as near as possible to the center of the population area to be served. It goes without saying that the hospital should be on a good road or roads and of easy access at all times. Permanency can be obtained by avoiding districts that are likely, in time, to change in character, or which may possibly develop into commercial or manufacturing centers. Additions to the hospital should be given their due weight in a final choice.
PLANS: TYPICAL SMALL GENERAL HOSPITAL FOR THE DUKE ENDOWMENT, CHARLOTTE, N. C.
SAMUEL HANNAFORD & SONS, ARCHITECTS
PLANS: TYPICAL SMALL GENERAL HOSPITAL FOR THE DUKE ENDOWMENT, CHARLOTTE, N. C.
SAMUEL HANNAFORD & SONS, ARCHITECTS
It has been the history of nearly every hospital that its growth has far exceeded the expectations of those who had the original project in their charge. To select a site that does not permit of possible enlargements and additions is to make a mistake that may prove ultimately very costly. Costs almost always influence the choice of a hospital location. Sometimes a site may be donated by some generous citizen, but while the gift should of course be appreciated, it is not always wise to allow a free site to overshadow the many other considerations which should be given their due weight in a final choice.

Adaptability. In working out a hospital program and in evolving the general plans, the matter of adaptability must be always in the minds of those developing the project. First of all, the hospital must be adapted to the community’s purse. Too often one sees a hospital which in itself may be ideal, and yet be so extravagantly planned and equipped as to be beyond the financial range of the community which it is supposed to serve. Such a hospital does not fill, to the fullest extent, its true function. A hospital should be carefully adapted to the size of the community which it is to serve, and the project should not be over-developed at the outset. The minimum bed capacity required should be determined, and the first unit be built to meet these demands, without, however, losing sight of possibility of future expansion as the needs arise. Every hospital should be designed with an eye to future additions and expansions, either in the form of wings, or separate buildings, properly located and fitted into the general plan. It is always preferable to expand laterally rather than vertically, as it can readily be seen that vertical expansion of an existing building interferes in a great many ways with the operating of the existing units. This applies particularly to extensions of plumbing and heating lines, stairways, elevator shafts and the like.

In the planning of general services, it should constantly be borne in mind that as extensions to the original building are made, increased demand will develop for the services. All such services as heating equipment, food service, main kitchen and diet rooms, utility rooms, laboratories, X-ray and operating departments should, where possible, be so sized originally as to take care of the additional demands when extensions are made. It is often possible to locate general services so that they will be central to the first unit as well as to future extensions. The matter of orientation of a hospital should be given the most careful consideration, and the building should be so located and adapted to the site as to secure sunlight in all of the patients’ rooms for at least a part of each day. The power plant should be so arranged that the prevailing winds will blow all smoke and vapors away from the hospital. The surgical department should be so orientated that the
Typical Small General Hospital for the Duke Endowment
Samuel Hannaford & Sons, Architects

major operating rooms have either a north or western exposure. While it is true that the north exposure is preferable, a western exposure has become acceptable, due to the fact that more than 90 per cent of major surgical work is done before noon.

Choice of Materials and General Considerations.

Unless a hospital is definitely determined to be a one-story building, with one-story extensions later, only a fireproof type should be considered. The advantages of this type of construction are manifest, even though the initial cost is somewhat higher than a composite or non-fireproof structure. Some of the more important advantages of fireproof construction are:

1. Safety of Patients.
2. Permanence and Low Depreciation.
4. Superior Sanitary Qualities.
5. Low Insurance Rates.

Assuming that the fireproof type of hospital has been determined upon, the various factors which should influence the selection of material through the building are in general:

1. Permanency,
2. Suitability for Type of Service,
3. Ease of Maintenance and Repair,
4. Availability in Local Markets,
5. Cost.—Original Cost and Maintenance Cost.

The item of cost is purposely put last for several reasons. First, the lasting qualities and satisfactory service of any material are remembered long after its initial price is forgotten. Second, any material which needs constant attention and thereby creates perpetual maintenance and upkeep cost is too expensive to consider, even if such a material should cost nothing originally. Third, true economy is not merely buying cheaply, but spending so wisely as to secure for every dollar spent the greatest returns possible in terms of service and low upkeep cost.

In order to keep the cost of a hospital to the economic minimum consistent with efficient administration, all component parts should be given most careful study. Floor space and cubic contents should be carefully considered, both from the standpoint of efficient administration and minimum maintenance and upkeep expense. All rooms should be sized and developed from the functional arrangement of the room, and all equipment should be carefully thought out and its location pre-determined on the drawings. Ceiling heights need not be greater than 9 feet. Every surplus inch of height in the building not only increases the original cost, but must be heated and kept clean, thus creating continuous maintenance expense. All units must be properly correlated, and in locating the service units, it should be borne in mind that the service units in question should be so located as to satisfactorily accomplish two things,—first, the location must be convenient
MEDICAL AND SURGICAL BUILDING FOR BETHESDA HOSPITAL, CINCINNATI
SAMUEL HANNAPORD & SONS, ARCHITECTS

THIRD FLOOR

SEVENTH FLOOR

BASEMENT

FIRST FLOOR
to the patients' rooms served by this unit, and secondly, the service unit should be so situated as to reduce to the minimum all nursing travel, and thus accelerate the nursing service, making each nurse more effective, and improving the hospital's service.

With regard to exterior design, it is never good policy to permit the exterior to influence the planning of a hospital. The exterior must be a dignified, frank and logical expression of the plan. While this is true with regard to all types of buildings, it is particularly true with regard to a hospital, because, after all, a hospital has but one purpose,—namely, to cure the sick; and a well planned, efficient and convenient hospital will accomplish this in less time and at a lower expense than will an inefficient type.

The importance, therefore, of plan and general arrangement is paramount, and takes precedence over every other consideration until a satisfactory plan is worked out.

Service and Service Relations. No type of building requires so many service facilities to properly function as a hospital. In addition to the matter of services, the problem of traffic, both to and within the hospital, must not be lost sight of. In general there are five separate and distinct types of traffic converging at a hospital, and in the south a sixth type of traffic must be taken care of. In brief, this traffic divides itself thus:

1. Ambulant In-patients and Visiting Public.
2. Ambulance and Stretcher In-patients.
3. Out-patients.
4. Hospital Personnel and Staff,
5. Supplies,
and in the south, the sixth type of traffic, Colored In-patients.

The hospital must be so planned as to provide for the efficient handling of the various types of traffic without their conflicting, crossing or interfering, one with another. By consulting the various plans in connection with this article, it can be seen how the matter of traffic has been worked out. The small hospital illustrating this article was designed for a rural county in the south, and the general types of traffic are taken care of in this manner: White hospital patients (that is, patients who are able to walk to the hospital, but who will remain in the hospital for some time) and the visiting white public, enter the hospital at the central front entrance on the first floor. Ambulance and stretcher cases enter at the rear central entrance on the basement floor. The colored in-patients are segregated in a suite on the first floor, reached by a separate entrance at the end of the building, this entrance being also used exclusively by ambulant colored in-patients and the visiting colored public. The outpatients (patients who merely visit the hospital for treatment) enter the basement at one end of the building, the white and colored out-patients being separated by assigning different days for their visits. All personnel can enter and leave the building through the front central entrance, or, preferably, the entrance on the first floor at the opposite end of the building from the colored entrance, or the rear central entrance in the basement. Supplies enter the building at a rear entrance in the basement, located near one end and of easy access to the main kitchen and store rooms. Under this general plan, as illustrated by the cuts, it can be seen that the crossing or interference between various types of traffic is eliminated or at least reduced to the minimum.

To be efficient, a hospital must have adequate service facilities properly located, so that all work can be done with the minimum loss of time and the least amount of effort by the hospital personnel. Some hospitals make the mistake of sacrificing service spaces in order to increase the number of patients' beds. This is a serious error, an error which it may be costly to rectify later, and it is far better to frankly face the fact that adequate service facilities must be installed than to under-service the building in order to slightly increase the bed capacity and then render a second class service at considerable expense year after year for as long as the building exists.

General services are, briefly, those services which are necessary to the entire hospital, such as stairs, elevators, dumbwaiters, incinerator, linen chute, main kitchen, boiler room, laundry, X-ray department, laboratory, pharmacy and emergency room. General services should be so located as to be central and convenient. Stairs should be central to the area served and easily accessible at all times. Where possible, stairs should be so located as to serve not only existing areas, but to be central to future extensions. Stairs should also be so distributed as to divide up equally the possible demands on them. Elevators should be located as near the center of the hospital as possible and should be in direct connection with, or easily accessible to, the ambulance entry, emergency room, main kitchen and public waiting room. While the drawings in this article show but one elevator, it is preferable, where funds permit, to install at least two, as this not only makes for a better classification of traffic in the elevators, but also provides a spare elevator should one, in an emergency, fail. Dumbwaiters should be centrally located and should furnish the vertical connection between the main diet kitchen and the service pantries on the various patients' floors.

Incinerator shaft and linen chute should be located near the center of the building so as to be about equi-distant from the extreme ends of the various floors. If possible, the linen chute should discharge in or near the laundry, although this is not absolutely essential. The main kitchen and diet kitchen should be located in the basement (provided adequate ventilation can be secured), and should be near or directly connected with the supply entrance and the elevators. The boiler room, if within the building, should be located near the supply or service entrance and should be in fairly close proximity to the kitchen. If funds are available, however, it is a better plan to locate the boiler room in either a separate building or wing,
and have it independently serviced in every respect.

The laundry, if within the building, can be located in the basement at the most convenient point. A good location for the laundry is under the children’s ward, as this class of patients is not so easily disturbed by the noise of the laundry’s operations. It is, however, good practice to consider the sound-proofing of the laundry ceiling, if within the building. A better scheme is to locate the laundry in a separate building or wing, usually over the boiler room, if the boiler room is also detached from the main building, as should always be the case where possible.

The X-ray, laboratory and pharmacy may be located in any one of several places, depending on the service demands. It is usually customary to locate the X-ray department and the laboratory on the surgical floor, and a great many hospital superintendents prefer this location. On the accompanying drawings, however, the X-ray, laboratory and pharmacy have been located in the basement in connection with the out-patient department. This location is satisfactory, inasmuch as these services are of great importance in connection with diagnostic and treatment work. It will also be noted on the plans that the X-ray department is convenient to the emergency room, as it very often happens that it is desirable to use the X-ray in connection with accident cases, particularly fractures. The emergency room, as the name implies, is designed to care for the sudden arrival of an unexpected case, such as an accident, poison, burn, or sunstroke case. This room should be closely related to the ambulance entrance and to the elevators to give it the greatest usefulness.

Special services are those service units which serve only a portion of the building, such as the floor nurses’ station, the chart room, floor utility rooms, floor service pantries, and public toilets and bathrooms on the various patients’ floors. The floor nurses’ station and chart room should be located at such a point on each floor that the floor supervisor will have visual control of the entire floor. From this station the nurse in charge should be able to see the full length of the corridors and should have full view of elevators, stairs and other floor services. Since all patients’ charts will be kept under the floor supervisor’s control, it is also important to locate the nurses’ station and chart room at a point as nearly at the center of the floor areas as possible. The utility room should be as nearly as possible equi-distant from the most remote rooms in this area. If possible, it is well to locate this particular service at a point where it will be central to future extensions as well as to present units. The utility room is probably the most important floor service of all and should be given most careful study, both as to location and arrangement of equipment. Floor service pantries should be centrally located for the same reason as given for utility room locations, but in addition to this, proper consideration must be given to the vertical connection with the main kitchen and main diet

kitchen by means of dumbwaiter or elevator. Public toilets and bathrooms need not be centrally located, but such a location is preferable. By the term “public toilet and bathroom” is meant, of course, those rooms which serve the needs of patients occupying rooms without private toilet and bath facilities.

The foregoing represents, in a broad, general way, the main or basic considerations in planning any hospital, and has to do principally with inter-relationship of units, with regard to both areas and vertical connections. At the outset of the development of any hospital project, the architect; the hospital superintendent or the chairman of the building committee should confer with a hospital consultant of recognized ability and should carefully determine the bed capacity required and the general extent of the various services and departments. The surgical and medical units should be carefully considered, and the number of operating rooms and delivery rooms determined upon. The next step in developing the problem is for the architect and consultant to properly locate and inter-relate the various component parts of the plan, paying particular attention to the location of general and special services in relation to areas served thereby. After a general assignment of the major spaces has been made, each department should then be given careful study; furniture and equipment should be planned out in the most efficient manner, and department or room sizes should then be determined from this functional arrangement; doors and windows should be located so as to most efficiently serve each unit throughout the hospital. Having carefully studied and planned each department, the matter of detailing and arranging for the various details of furniture, specialties and equipment should then be studied. In designing equipment, etc., bear in mind these main factors:

1. Equipment must be substantial in all respects and designed to withstand hard wear.
2. It must be designed and installed so as to be at all times easy to keep clean.
3. All projecting ledges, mouldings, etc., where dust may accumulate must be eliminated. Tops of cases or lockers should be furred in.
4. Where possible, equipment should be set up on sanitary bases of an impervious material, such as tile or terrazzo, so as to close up all joints or open spaces between the equipment and the floor, and also to permit mopping up the floor without damaging or defacing equipment, and also to reduce the costs of labor.

After all, the development of a properly planned hospital is merely the clear visualizing of hospital needs and pre-determining an exact program. From there on, common sense, painstaking care (particularly for little details), and an accurate knowledge of hospital technique and hospital requirements on the part of the architect will carry him successfully through. Success, however, let it be emphasized, is gained only by constant vigilance and attention to details apparently trivial but which are important.
DEACONESS' HOSPITAL, CINCINNATI
SAMUEL HANNAFORD & SONS, ARCHITECTS
A TYPICAL FLOOR

FIRST FLOOR

PLANS: GRANT HOSPITAL NURSES' HOME, CHICAGO
SCHMIDT, GARDEN & ERIKSON, ARCHITECTS
NURSES' HOME, SOUTH SIDE HOSPITAL, BAYSHORE, N. Y.
ROBERT D. KOHN AND CHARLES BUTLER, ARCHITECTS
GENERAL VIEW

NURSES' HOME, STATE HOSPITAL, ANNA, ILL.
EDGAR MARTIN, ARCHITECT
PLANS: NURSES' HOME, STATE HOSPITAL, ANNA, ILL.
EDGAR MARTIN, ARCHITECT
THE PLANNING AND ARRANGEMENT OF AN EYE HOSPITAL
BY FREDERICK H. MEYER, ARCHITECT

The modern general hospital, through the influence of specialized medical service, has been so developed that it satisfactorily cares for most general or special hospital cases. However, it has been found that eye cases, by their very nature, are better cared for and yield to treatment with greater rapidity when brought to a separate institution.

Eye patients in most cases are not ill, nor are they in a great amount of discomfort other than having their eyes bandaged. The very fact of having both eyes bandaged, as is necessary following the majority of eye operations, makes the patient very sensitive to surrounding sounds. He hears things, yet he cannot tell what is going on, and his nervous system is affected. The usual noises that cannot be avoided in a general hospital may so annoy him and cause such aggravated fear as to seriously retard the recovery of an eye patient. When cared for in an institution devoted exclusively to ophthalmology, the patient is less disturbed, is happier and the post-operative recovery period is materially shortened. These are the facts that led to the establishment of Green's Eye Hospital in San Francisco, by Drs. Aaron and Louis Green. It is an institution that is devoted exclusively to ophthalmology, and is divided into two distinct departments. One department cares for the ambulatory cases, the patients who come in for examination and treatment. The other department is the surgical and hospital section.

The site of Green's Eye Hospital is on a corner, and the L-shaped building partly encloses a semi-formal terraced garden through which one approaches the first floor entrance lobby formed by the juncture of the two wings. By placing the two wings of the building away from the street, quiet and privacy as well as the maximum of air and sunshine have been insured. Directly accessible from the entrance lobby is that section of the building devoted to the doctors' offices and treatment room. Here are found the waiting room; the office of the nurse who arranges appointments and conducts the patients to the various treatment rooms; the five refracting rooms and surrounding treatment rooms; the room for special apparatus; the X-ray room and the laboratory all easily accessible to out-patients.

The nature of eye examination and treatment required careful planning of this section of the building. The basic unit in plan is the office or refracting room, from which radiate the small treatment rooms and rooms for dilating and for administering washes and for housing the special apparatus. The work necessitates at times the occupancy of all the rooms by patients undergoing some phase of treatment, and it is obvious that the unit must be arranged so as to permit the maximum amount of intercommunication with the minimum number of steps on the part of the doctor. When more than one unit is used, as is often the case in Green's Hospital, the problem is more difficult, for intercommunication between the various units must be maintained to insure an economical and flexible working arrangement. An efficient arrangement has been produced in this particular hospital by grouping the five refracting rooms in almost a circular formation with the groups of treatment rooms separating them. The refracting rooms are equipped with all essential apparatus pertaining to ophthalmology and are of the correct length for proper refraction. The windows are equipped with darkening shades, electrically operated from one shaft, and controlled by a single switch so that all the shades in a room may be raised or lowered simultaneously at the will of the doctor. Adjacent to the refracting and treatment rooms is the X-ray department with its dark room and a room suitable for the viewing and storage of plates. Also there is a small but completely equipped laboratory for research work. In conjunction with the examination and treatment department, but not directly connected with it, are the drug dispensary and the optician's suite. The optician's suite is a complete unit in itself with offices, waiting and fitting rooms, and connected directly with a large daylight-flooded grinding and work room in the basement.

A feature of Green's Hospital is the part-pay dispensary located on the ground floor and accessible through a separate street entrance. This dispensary cares for ambulatory patients who cannot afford the regular fees and yet who do not need or care to attend a free clinic. It is a complete unit in itself, consisting of office and waiting room, refracting and examination rooms, and drug dispensary.

The entire second floor is given over to surgical and hospital uses with all the usual utilities of a general hospital. The diet kitchen is served from the large, well lighted main kitchen located on the ground floor. The surgical suite, in the north wing, contains two standard-sized operating rooms, individually heated and ventilated and fully equipped. In connection with the suite are the wash-up and sterilizing room, work rooms and dressing rooms. Private bedrooms and rooms of two, three and four beds occupy the remaining area of the second floor. Throughout these rooms, and in fact throughout the entire hospital, every effort has been made to create a cheerful and attractive atmosphere. "Hospital white" has been studiously avoided. In its place are seen bright, harmonious colors in the walls, the tile and linoleum floors, in the woodwork, in the draperies and furnishings, and in the lighting fixtures.

A detail of inestimable value to eye patients is the complete radio installation throughout the building. Every bed has its radio outlet, and all the waiting
rooms and other public rooms are similarly equipped and controlled from a master station. This has proved a great boon to the patients who, through the nature of their disability, are deprived of the usual hospital pastime,—reading. The installation of a dictograph 'phone system in all the bedrooms is another interesting feature. Each room is connected with the nurses' station, and the patient simply takes the receiver or microphone from its place adjoining the bed. On receiving the double signal of light and soft buzz on the board at the central station, the nurse opens the key switch and the conversation is carried on by microphone and loud speaker. This system saves the nurses many needless steps.

In the creation of this building two thoughts were uppermost in the mind of the architect. One was to so plan the structure that the doctors could carry on their work with the utmost efficiency and economy of time and labor. The other was to give the building that atmosphere more suggestive of a luxurious and exclusive club or hotel than that of a hospital. Establishing a specialized institution is more or less a new adventure in the far west, but the faith of the founders is such that provisions have been made for future extensive additions which will more than double the capacity of the hospital and which will doubtless be built during the next few years to come.
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Kernet Incinerator Company, 715 E. Water St., Milwaukee, Wis.


Garbage and Waste Disposal for Apartment Buildings, folder, 8½ x 11 ins. Illustrated. Describes principle and design of Kernet-Chatm-fed Incinerator for apartments and gives list of buildings where it has been installed.

Sanitary Disposal of Waste in Hospitals. Booklet, 4 x 9 ins. 12 pp. Illustrated. Shows how this necessary part of hospital service is taken care of with the Kernetor. Gives list of hospitals where it has been installed.


INSULATING LUMBER

Masonite Corporation, 131 West Washington St., Chicago, Ill.

Booklet, 32 pp., 8½ x 11 ins. Illustrated. Gives complete specifications for use of insulating lumber and details of construction involving its use.

INSULATION


Advanced Form Insulation. Booklet, 8½ x 11 ins. Illustrated. Deals with Sarco Self-Contained Insulation.

B. F. Sturtevant Company, New York City.


Filing Folder for Pipe Covering Data. Made in accordance with A. I. A. rules.

The Lineal House Makes a Comfortable Home. 5 x 7 ins. 32 pp. Illustrated.

Armstrong's Insulation Board. Booklet, 8½ x 11 ins. Illustrated. Describes and discusses use of insulation for structural purposes.

Cahill, Inc., South Boston, Mass.

Cahill's Insulating Quiet. Booklet, 7½ x 10½ ins. 24 pp. Illustrated. Deals with a valuable type of insulation.

Structural Gypsum Corporation, Linden, N. J.


JOISTS

Bates Expanded Steel Truss Co., East Chicago, Ind.

Catalog No. 4. Booklet, 32 pp., 8½ x 11 ins. Illustrated. Gives details of sizes and gives sources of joists.

Gopher Steel Company, Youngstown, Ohio.

Steel Joists, 8½ x 11 ins. 32 pp. A. I. A. File Number 13G. Illustrated. Complete data on T-Bar and Plate-Geber Joists, including construction details and specifications.

KITCHEN EQUIPMENT

The International Nickel Company, 67 Wall St., New York, N. Y. National Kitchen and Catering Applications of Monel Metal. Booklet, 8½ x 11 ins. 22 pp. Illustrated. Gives types of equipment in which Monel Metal is used, with service data and sources of equipment.

Pick & Company, Albert, 208 W. Randolph St., Chicago, Ill.

School Caterer's Portfolio. 17 x 11 ins. 46 pp. Illustrated. An exhaustive study of the problems of school feeding, with copious illustrations and blue prints. Very valuable to the architect. School Caterer's Booklet, 9 x 6 ins. Illustrated. The design and equipment of school caterers with photographs of installation and plans for standardized outfits.

LABORATORY EQUIPMENT

Albertson & Bond Co., 213 East 22nd Street, New York City.

Booklet, 8½ x 11½ ins., 36 pp. Stone for laboratory equipment, shatterproof windows, stair treads, etc.

Burrin Company, Dayton, Ohio.


LANTERNS

Toobisher, Arthur, 19 E. 57th St., New York.

High Quality Luminaires. Booklet, 5½ x 8½ ins. 20 pp. Illustrated in Black and White. With price list. Lanterns appropriate for exterior and interior use, designed in new and old models and meeting the requirements of modern lighting.
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SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—Continued from page 60

LATH, METAL AND REINFORCING

Georgia Lath Company, Youngstown, Ohio.


National Steel Fabric Co., Pittsburgh.


Steeldata Sheet No. 1. Folder, 8 pp. 85 x 11 ins. Illustrated. Special mortars for concrete on sheet steel. Steeldata Sheet No. 2. Folder, 8 pp. 85 x 11 ins. Illustrated. Special mortars for concrete on sheet steel. Steeldata Sheet No. 1. Folder, 8 pp. 85 x 11 ins. Illustrated. Steel data for sheet pans with top round edges.

Steeldata Sheet No. 2. Folder, 8 pp. 85 x 11 ins. Illustrated. Steel data for sheet pans with flat top edges.

Steel Lath for Hinges. Brochure. 24 pp. 9 x 12 ins. Contains actual samples of several materials and complete data regarding their uses.

Northwestern Expanded Metal Co., 1224 Old Colony Building, Chicago.

Northwestern Expanded Metal Products. Booklet, 85 x 104 ins. 20 pp. Fully illustrated, and describes different products of this company, such as Knowlton metal part, 24th Century Corrugated, Plastic-saver and Langan lath channels, etc. Longspan ½-inch Rib Lath. Folder, 4 pp. 85 x 11 ins. Illustrated. Deals with a new type of V-Rib expanded metal.

A. I. Sample Book. Round volume, 85 x 11 ins. Contains actual samples of several materials and complete data regarding their uses.


Truscon Steel Company, Youngstown, Ohio.

Truscon Steel Catalog. 123 pp. Illustrated. Catalog of fine plaster ornaments.

Laundry Chutes

American Laundry Machinery Co., Norwood Station, Cincinnati, Ohio. Practical and Service Manuals and Handbooks. Instructions for setting up, etc. 85 x 11 ins. Valuable data regarding an important subject.

Library Equipment

Art Metal Construction Co., Jamestown, N. Y.


Library Bureau Division, Remington Rand, N. Truwada, N. Y. Like Stepping into a Story Book. Booklet. 24 pp. 9 x 12 ins. Deals with equipment of Los Angeles Public Library.

Lighting Equipment

The Fresnel Co., Inc., 26th St. and 20th Ave., New York City.

Catalog 413, 85 x 11 ins. 46 pp. Photographs and scaled cross-sections of standard back-to-back lamps, covers and marlatt re-ectors, double and single desk reflectors and Polartile Signs.


Tubshuter, 133 East 57th St., New York.


Lumber

Nation Lumber Mfrs. Assn., Washington, D. C.

Use of Lumber on the Farm. Booklet, 38 pp. 85 x 11 ins. Illustrated.

Mail Chutes

Cutler-Mall Chute Company, Rochester, N. Y.

Cutler-Mall Chute Model F. Booklet. 4 x 9 1/2 ins. 8 pp. Illustrated.

Mantels

Arthur H. Odhner, 119 E. 57th St., New York, N. Y.


Marble

The Georgia Marble Company, Tate, Ga., New York Office, 128 Pine Street.

Why Georgia Marble is Better. Booklet. 39 x 6 ins. Gives analysis, physical qualities, comparison of absorption with iron, lead, etc.

Convincing Proof. 39 x 6 ins. 8 pp. Classified list of buildings and structures in which Georgia Marble has been used, with names of Architects and Sculptors.

Marble—Continued

Harper House, Atlanta, Atlanta; Senior High School and Junior College, Muskegon, Mich. Folders, 4 pp. 85 x 11 ins. Details.

Metals

The International Nickel Company, 57 Wall St., New York, N. Y.


A. I. Sample Book. Round volume, 85 x 11 ins. Contains actual samples of several materials and complete data regarding their uses.


Oriental Plaster


Pains, Stains, Varnishes and Wood Finishes

Cahot, Inc., Samuel, Boston, Mass.

Painting Concrete and Stucco Surfaces. Bulletin No. 1. 4 x 8 1/2 ins. 16 pp. Illustrated.

National Lead Company, 111 Broadway, New York, N. Y.


Pratt & Lambert, Inc., Buffalo, N. Y.


Shaw-Wellsman Company, 601 Canal Rd., Cleveland, Ohio.

Painting Concrete and Stucco Surfaces. Bulletin No. 1. 85 x 11 ins. 8 pp. Illustrated. A complete treatise with complete specifications on the subject of Painting of Concrete and Stucco Surfaces. Color chips of paint shown in bulletin.

Enamel Finish for Interior and Exterior Surfaces. Catalog No. 2. 85 x 11 ins. 12 pp. Illustrated. Thorough discussion, in substance, complete specifications for securing the most satisfactory enamel finish on interior and exterior walls and trim. Painting and Decorating of Interior Walls. Bulletin No. 3. 85 x 11 ins. 20 pp. Illustrated. An excellent reference book on Flat Wall Finish, including texture effects, which are taking the country by storm. Every architect should have one on file. Prospects for Paints for Metal Surfaces. Bulletin No. 4. 8 1/2 x 11 ins. 12 pp. Illustrated. A highly technical subject treated in an understandable manner, with prices of mantels and illustrations and prices of fireplace equipment.

Sonneborn Sons, Inc., Dept. 4, 116 Fifth Avenue, New York.


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SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—Continued from page 64

STONE, BUILDING—Continued


STORE FRONTS

Brasco Manufacturing Co., 5025-35 South Wabash Avenue, Chicago, Ill. Catalog No. 31. Series B. All-Copper Construction. Illustrated brochure. 20 pp. 8½ x 11 ins. Deals with store fronts of a high class.

Brasco Copper Store Fronts. Catalog No. 22. Series B. Brasco Standard Construction. Illustrated brochure. 16 pp. 8½ x 11 ins. Complete data on an important type of building.

Detailed Data. Set of seven sheets: printed on tracing paper, showing full sized details and suggestions for store front design, enclosed in envelope suitable for filing. Folds to 8½ x 11 ins.

Davis Solid Architectural Bronze Sash. Set of six sheets, printed on tracing paper, giving full sized details and suggestions for designing of special bronze store front construction, enclosed in envelope suitable for filing. Folds to 8½ x 11 ins.


Kawneer Construction in Solid Bronze or Copper. Booklet, 64 pp. 8½ x 11 ins. Illustrated. Complete data on the subject.


Zouri Safety Key-Set Metal Company, Chicago, Illinois. Illustrated. A treatise on the subject of hollow tile as used for building early European and modern American examples. Excellent illustrations in color.


TERRA COTTA


Color. A. Architecture. Revised, Edition. Permanently bound volume, 8½ x 12¼ ins., containing a treatise upon the basic problems of color in architectural design, and a complete catalogue of the early European and modern American examples. Excellent illustrations in color.

Present Day Schools. 8½ x 11 ins. 32 pp. Illustrating 42 examples of school architecture with article upon school building design by James O. Betelle, A. I. A.

Better Banks. 8½ x 11 ins. 32 pp. Illustrating many banking buildings in terra cotta with an article on its use in bank design by Alfred C. Blissom, Architect.

TILE, HOLLOW


Standard Fireproofing Bulletin 171. 8½ x 11 ins. 32 pp. Illustrated. A treatise on the subject of hollow tile as used for floors, girders, column and beam covering and similar construction.


Nasco Unibacker Tile Bulletin. 8½ x 11 ins. 4 pp. Illustrated.


Nasco Face Tile for the Up-to-Date. Farm Bulletin. 8½ x 11 ins.

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SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—Continued from page 66

VALVES
Crane Co., 836 S. Michigan Ave., Chicago, Ill.
No. 51, General Catalog. Illustrated. Describes the complete line of valves.
C. A. Dunham Co., 410 East Ohio St., Chicago.
The Dunham Packless Radiator Valve Brochure, 12 pp., 8 x 11 ins. Data on an important type of valve.
Jenkins Bros., 80 White St., New York.
Jenkins Valves for Plumbing Service. Booklet. 46 x 7/4 ins., 16 pp. Illustrated. Description of Jenkins Brass Globe, Angle Check and Gate Valves commonly used in home plumbing, and Iron Body Valves used for larger plumbing installations.

VENETIAN BLINDS
Venetian Blinds. 7 x 11 ins. 44 pp. Illustrated. Describes the "Burlington" Venetian blinds, method of operation, advantages of installation to obtain perfect control of light in the room.

VENTILATION
American Blower Co., Detroit, Mich.
American Blower Blowers. Booklet. 28 pp., 8'/4 x 11 ins. Data on an important line of blowers.
Duriron Company, Dayton, Ohio
American Pneumatic Fans. Folder. 8 x 10'/2 ins. 8 pp. Data regarding fans for ventilation of laboratory fume hoods.
Specification Form for Acid-proof Exhaust Fans. Folder. 8 x 10'/2 ins.
Globe Ventilator Company, 205 River St., Troy, N. Y.
Globe Ventilators Catalog. 6 x 9 ins. 32 pp. Illustrated brochure on complete line of globe ventilators, as to sizes, dimensions, gauges of material and table of capacities. It illustrates many different buildings on which "Globe" ventilators are in successful service, showing their adaptability to meet varying requirements.
Stillion Filter Corporation, Rochester, N. Y.

WATERPROOFING
Genfire Steel Company, Youngstown, Ohio.
Master Builders Company, Cleveland, Ohio.
Waterproofing and Dampproofing and Allied Products. Sheets in loose index file, 9 x 22 ins. Valuable data on different types of materials for protection against dampness.
Waterproofing and Dampproofing Booklet. 8'/4 x 11 ins. Complete descriptions and detailed specifications for materials used in building with concrete.
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Somsen Bros., Inc., L., 116 Fifth Ave., New York, N. Y.
The Vorton Mig. Co., 1728 West 37th St., Cleveland, Ohio.
Par-Lock Specification "Form D" for waterproofing surfaces to be finished with Portland cement or tile.
Par-Lock Specification "Forms E and G" membrane waterproofing of basements, tunnels, swimming pools, tanks to resist hydrostatic pressure.
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WEATHER STRIPS
Atthey Company, 603 West 66th St., Chicago.
Weather stripping with a Cloth Weather Contact. Booklet. 26 pp., 8'/4 x 11 ins. Illustrated. Data on an important type of weather stripping.

WINDOWS
The Kawneer Company, Niles, Mich.
Kawneer Solid Nickel Steel Windows. In casement and weight-hung types and in drop-down transom types. Portfolio, 12 pp., 9 x 11'/2 ins. Illustrated, and with demonstrator.
Lupton Casement Catalog. 12-A. Booklet, 48 pp., 8'/4 x 11 ins. Illustrated and describes windows suitable for manufacturing buildings.

WINDOWS, CASEMENT
Crittall Casement Window Co., 10951 Hearn Ave., Detroit, Mich.
Catalog No. 22. 9 x 12 ins. 76 pp. Illustrated. Photographs of actual work accompanied by scale details for casements and composite steel windows for banks, office buildings, hospitals and residences.
Genfire Steel Company, Youngstown, Ohio.
Hope & Sons, Henry, 103 Park Ave., New York, N. Y.
Catalog No. 1294 x 1805 ins. 30 pp. Illustrated. Full size details of outward and inward opening casements.

The Kawneer Company, Niles, Mich.
Kawneer Solid Nickel Steel Windows. In casement and weight-hung types and in drop-down transom type. Portfolio, 12 pp., 9 x 11'/2 ins. Illustrated, and with demonstrator.
Lupton Casement of Copper Steel. Catalog C-217. Booklet. 20 pp., 8'/4 x 11 ins. Illustrated brochure on casements, particularly for residences.
Lupton Heavy Casements. Detail Sheet No. 101, 4 pp., 8'/4 x 11 ins. Details and specifications only.
Casement Window Hardware. Booklet, 24 pp., 8'/4 x 11 ins. Illustrated. Shows typical installations, detail drawings, construction details, blueprints if desired. Describes AIR-way Multifold Window Hardware.
Architectural Details. Booklet. 8'/4 x 11 ins. 16 pp. Tables of specifications and typical details of different types of constructions.
List of Parts for Assembly. Booklet. 8'/4 x 11 ins. 16 pp. Full list of parts for different units.

WINDOW SHADES AND ROLLERS
Columbia Mills, Inc., 225 Fifth Avenue, New York.
Window Shade Data Book. Folder, 28 pp., 8'/4 x 11 ins. Illustrated.

WINDOWS, STEEL AND BRONZE
Genfire Steel Company, Youngstown, Ohio.
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Truscon Steel Company, Youngstown, Ohio.
Drafting Room Standards. Book. 8'/4 x 11 ins. 120 pages of mechanical drawings showing drafting room standards, specifications and construction details of Truscon Steel Windows, Steel Blinds, Steel Doors and Mechanization of Drafting Room.
Continuous Steel windows and Mechanical Operators. Catalog 126. Booklet, 22 pp., 8'/4 x 11 ins. Illustrated.

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Curtis Companies Service Bureau, Clinton, Iowa.
B Better Built Homes. Vols. XV-XVIII, incl. Booklet. 9 x 12 ins. 40 pp. Illustrated. Designs for houses, from five to eight rooms, respectively, in several anthem types, by Trowbridge & Ackerman, architects, for the Curtis Companies.
Airplane Hangar Construction. Booklet, 24 pp., 8'/4 x 11 ins. Use of lumber for hangars.
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REVIEWS OF MANUFACTURERS' PUBLICATIONS


The building of hotels, some of average size and many upon a colossal scale, which has been going on in all parts of the United States during the last few years, has brought with it the development of firms which specialize in their furnishing and outfitting. The concern formed by the consolidation of these two large firms is among the leaders in this field, and its catalogs and other publications are of great interest to architects, builders and interior decorators. This particular publication has to do with furnishing the great variety of details required in hotels, restaurants and institutions, not only the numerous small objects needed but also such larger details as ranges, steam tables, lunch counters, display cases, key and letter racks, metal bedsteads and such floor coverings as rugs and linoleums of different kinds.

AMERICAN RADIATOR COMPANY, 40 West 40th Street, New York. "IN-AIRID, the Invisible Air Valve."

When one portion of a heated radiator persistently remains cold, it is quite possible that in that particular part of the radiator there is stored a quantity of air, which of course prevents the penetration of steam. When new type radiatia is used on one-pipe steam installations, the steam has a tendency to travel through the top nipples and down the air valve before all the air has been vented. This trapped air greatly reduces the heat output of the radiators, often to such an extent that additional sections are added—and needlessly, for the real trouble is caused, not by insufficient heating surface, but by trapped air—complete venting. The new IN-AIRID prevents short circuiting and assures complete radiator venting because it is designed with a haffle disc that fits tightly into the top nipple connection of the last section. It is this distinctive IN-AIRID feature that forces the steam to travel the last section before it can come in contact with the valve and, in doing so, close it.


The regulation of heat has brought about the use of mechanism which, as a writer in The Forum has recently said, almost seems to possess human intelligence. This valuable booklet, for example, deals with an important, highly developed detail which would seem to be the last word in apparatus for controlling heat. "In old style systems of heat regulation, a room thermostat turns the fire on at 70, and holds it on until the temperature reaches 72 at the thermostat. But even then the fire is often shut off too soon, and it is probable that the temperature is not up to the comfort level before the thermostat again turns the fire on. This hot and cold radiator nuisance has caused a great deal of dissatisfaction because it automatically compensates the boiler for conditions which must be and are invariably taken into account, and among these one of the most important is the prevention, as far as possible, of heat losses. This booklet deals with just this. "Builders who have long puzzled over the problem of the right kind of material to choose in order to insure winter comfort at the lowest cost have in this hand-book the economics of dwelling insulation a valuable manual which treats of the heat-retentive properties of various materials in wall, floor and roof construction. It gives actually figures and formulas, and points out the advantages of each particular style of apparatus and how large and small plants are using the equipment to best advantage. Almost 100 actual installations of C-H. presses are illustrated in the booklet.

AMERICAN RADIATOR COMPANY, 40 West 40th Street, New York. "How Shall I Heat My Home?"

The comfort and in fact the practicality of a building, and particularly a residence structure of any kind, depend upon the heating system used. The efficient heating is of course a matter which must be decided in view of many conditions, and therefore there attaches a special value to this booklet, which aims to help in the question of heating—by hot air, steam, and hot water. The booklet illustrates and describes the heating apparatus offered by the American Radiator Company for supplying heat by different methods, and several pages are devoted to illustrating and describing water heaters of different kinds. The last page of the brochure lists the different types,—almost all cities and towns of any importance,—where the products described in this booklet may be seen and fully examined.

THE CUTLER-HAMMER MFG. CO., Milwaukee, Wis. "Keeping Pace in the Newspaper Plant."

To the unintiated the workings of a newspaper are wrapped in mystery. One sometimes marvels at the speed with which news is collected or reported and then almost instantly presented in printed form for perusal. It is quite evident, of course, that much of the efficiency service is due to the smooth functioning of printing presses, and yet one hardly realizes how vast and how intricate these presses are until there are seen illustrations of these tri- pi eom n a阐释卵on mechanism. This booklet deals with just this. Issued by a firm which manufactures presses of the first importance, it covers far more than a mere description of the process of production. The Cutler-Hammer apparatus for newspaper conveyors and other items developed by C-H. It points out the advantages of each particular style of apparatus and shows how large and small plants are using the equipment to best advantage. Almost 100 actual installations of C-H. presses are illustrated in the booklet.


Whatever may be the type of the building which an architect may design and a contractor erect, there are some considerations which must be and are invariably taken into account, and among these one of the most important is the prevention, as far as possible, of heat losses. This booklet deals with just this. "Builders who have long puzzled over the problem of the right kind of material to choose in order to insure winter comfort at the lowest cost have in this hand-book the economics of dwelling insulation a valuable manual which treats of the heat-retentive properties of various materials in wall, floor and roof construction. It gives actually figures and formulas, and points out the advantages of each particular style of apparatus and how large and small plants are using the equipment to best advantage. Almost 100 actual installations of C-H. presses are illustrated in the booklet.

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How suddenly they come! Night storms with terrific winds... straining, tearing, shattering... It's then that casements must be safe... rigid against the wind, yet easy to close in a moment. For outswung casements must withstand sudden as well as average stresses. And that's where Win-Dor Operators and Stays prove their utility. Win-Dor controlled casements are always rigidly and automatically locked in position... yet they move easily, smoothly, at a touch! And Win-Dor devices offer more than mere utility. This Series 25 Win-Dor Operator is remarkably handsome in design, convenient in use, moderate in cost. It solves the inside-screening problem in an utterly unobtrusive and thoroughly efficient way: Casement-control through the screen, through any screen. In fact, all Win-Dor hardware is specifically designed to solve definite problems that you meet every day and win quick appreciation among your clients. A helpful booklet, rather more than a catalog, will be promptly forwarded upon request. Or Sweet's will give summarized specifications.

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REVIEWS OF MANUFACTURERS' PUBLICATIONS


Lighting fixtures play a very important part in the design not only of interiors but of exteriors as well, and should always be kept in harmony with the best architectural scheme, for improperly selected lighting fixtures have a cheapening effect that is out of all proportion to their size, and which is very noticeable in a great number of modern buildings. The choice of lighting fixtures should be carefully considered as that of any other feature of the design. The Celestialite Division of the Gleason-Tiebout Glass Company has a new line of decorated globes which follow the highest ideals in design. The various styles are each represented by a characteristic motif fused into the glass of such a manner as to be absolutely permanent. These designs are beautiful in their simplicity and are designed to harmonize with settings done in Gothic, Spanish, Colonial, Italian, Grecian, Romanesque, Georgian and other styles. These fixtures are shown in a catalog issued by the Gleason-Tiebout Company, called "A New Line of Decorated Celestialite Globes. The various globes are shown in reproduction, both in plan and in elevation.


This brochure or booklet presents a concise study of the waterproofing materials supplied by the Johns-Manville company, including cost for supplying which the Johns-Manville Corporation is responsible. It should be thought of only in the case of actual infiltration of water due to pressure from surface seepage and the proximity of water in volume which sets up hydrostatic pressure. Every other case of protection against infiltration of water comes under the heading of dampproofing. Dampproofing is protection against moisture where no actual water pressure is encountered. Waterproofing materials supplied by the Johns-Manville Corporation are shown in reproduction, both in plan and in elevation.


"Hotpoint Electric Air Heaters." Data on an appliance. From the standpoint of design as well as that of utility, electric heating has many advantages. The heat units occupy a very small space, and in the case of those built by the Edison Electric Appliance Company, they are beautifully designed and consist of both built-in heaters and heating cabinets. These resemble the high grade metal furniture now so extensively used in homes and offices. The standard finish is baked brown mahogany with a gold stripe outlining the toe. Special custom-built designs in two-tone finishes are also available in a variety of colors. The built-in units may be placed in any regular 4-inch partition, and in this way they effect a great saving in floor and wall space and make it unnecessary to have unsightly radiators standing about the rooms. One valuable feature of the Hotpoint Heater is that it operates at a comparatively low temperature, in such a way that the warm air is forced out into the room instead of ascending directly to the ceiling, as is the case when it is heated too suddenly. This prevents the walls above the heater becoming scalded, as there is no ascending air current, and particles of dust are not burned by coming in contact with glowing coils. In the booklet "Hotpoint Electric Air Heaters for the Home," stock and special models of these heaters are shown in full color as well as in colored illustrations showing these heaters in connection with interior arrangements, giving an idea of the manner in which they harmonize with beautiful surroundings.


The wide and constantly increasing use which is being made of marble, for exteriors as well as for interiors, render it extremely important that it be properly cared for with the proper treatment of the material. It is of course quite necessary that marble, whether in the form of stone or of castings, be kept clean, but the cleaning need not involve damaging the material, which unfortunately it only too often does. This little brochure is intended chiefly for the guidance of those concerned with care of marble when used for exteriors, though it does not entirely neglect the upkeep of the material when used for exteriors. The booklet describes in condensed form certain materials, and so on on the surface of walls or floors." With these definitions to form a sort of text, the booklet goes on to discuss in detail the use of waterproofing materials, and so on on the surface of walls or floors. Waterproofing is a broad term, often misapplied to the prevention of dampness appearing on the surface of walls or floors. With these definitions to form a sort of text, the booklet goes on to discuss in detail the use of waterproofing materials, and so on on the surface of walls or floors. Waterproofing is a broad term, often misapplied to the prevention of dampness appearing on the surface of walls or floors. Waterproofing is a broad term, often misapplied to the prevention of dampness appearing on the surface of walls or floors.


"Light from charming lanterns is as becoming to dark doorways as smiles to dull faces, transfiguring them into radiant beauty. It is a symbol and a sign that beyond the door there will be found light hearts and merry voices; a family whose warm cordiality overlows in the message of the lamps." This is a quotation from a little booklet published by The Artistic Lighting Equipment Association in the interest of better exterior lighting for American homes. It expresses admirably the great importance of having the exterior as well as the interior of the home cheerfully and beautifully lighted. In ancient times, when securing light was a much more difficult problem than it is today, people were required by public decree to hang out lights at their doorways during the hours of darkness, and it is from these "hanthorns," beautifully designed in a great variety of patterns, that many of our most attractive modern lighting fixtures are adapted. They are made in sturdy waterproof materials, suited to every possible spot in the grounds where light is needed. Many interesting pen and ink sketches appear in the booklet, and together with the cleverly written text thereof, give an idea of the importance of having well lighted houses and grounds. The association which publishes the booklet is a voluntary organization made up of the leading equipment manufacturers and distributors for the purpose of advancing through cooperative effort a better knowledge of the use and the value of lighting equipment.
The interesting and highly successful method of operating room illumination shown on this page is worthy of your careful study. To meet the requirements of illumination similar to that obtained from daylight a reflector was recessed into the intersection of the ceiling and skylight, surrounding the skylight opening and producing an intense flood of light. The light, coming from all directions eliminates harsh shadows as shown in the lower photograph. Specially imported diffusing glass helps shadow elimination. Note that the distance of lamps from the operating table overcomes the heat problem. . . . The Frink Corporation, 365 Lexington Avenue, New York City.
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Medical Science chooses CREMAX

MINDFUL of the exacting requirements of the medical profession as to lighting, designers of the Medical Science Building, Columbus, Ohio, chose Cremax Globes.

Cremax, newest development of Macbeth Laboratories, is ideally suited to artificial illumination of buildings where correct, as well as artistic lighting is essential. Instead of the cold white light formerly used extensively, Cremax transmits a warm, mellow-toned light in adequate quantity. Cremax light is thoroughly diffused, eliminating sharp shadow. The absence of excessive surface brightness on Cremax Globes eliminates harsh glare.

Cremax represents the new idea in lighting—artistic and at the same time practical. Macbeth Engineers will be glad to assist architects and building managers in designing and installing correct lighting systems. A demonstration of Cremax will be arranged on request. Macbeth-Evans Glass Company, Department J, Charleroi, Pa.
Exterior Lighting Fixtures
Faithful in Design
Modern in Application

In exterior lighting fixtures, the Smyser-Royer Company has brought into reality the ideas and designs created by many of America's foremost architects. These lighting fixtures are harmonized with the architect's conception without sacrificing correct and efficient illumination. Only a sympathetic grasp of the architect's viewpoint has enabled Smyser-Royer to carry out the idea behind every design successfully and in detail.

Catalogue "J" illustrating over 300 different designs will be mailed to recognized architects upon request.

Lamp Posts  :-:  Lanterns  :-:  Brackets

SMYSER-ROYER CO.

Main Office and Works: YORK, PA.
PHILADELPHIA OFFICE: 3700 WALNUT STREET

No. 432
Scale: \( \frac{1}{8} '' = 1'0'' \)
2'4\( \frac{1}{2}'' \) high overall

No. 433
Scale: \( \frac{3}{4}'' = 1'0'' \)
8' high overall
Characteristic Wall Tones
Through the Medium of Acme Brick

This splendid building is faced with Acme Brick from our Perla kilns.

Their mellowed ivory tones successfully maintain the spirit of the design in a weather-resistant burned clay product.

Thirty-seven years in the art of brick-making and ten Acme-owned-and-operated plants enable us to offer "a brick for every type, a color for every color scheme."

ACME BRICK

Let us help you solve your color schemes in Permanent and Colorful Acme Face Brick—everlastingly beautiful

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Established 1891
Manufacturers of the Products We Sell

Plants, Offices and Displays Throughout the South

WELL BURNED CLAYS NEVER DECAY—SPECIFY ACME
The Restoration of an Authentic Wall Treatment

Once it was limited to great mansions—the use of beautiful decorative mouldings for cornices, wall panels, chair rails, etc. Then hand carving became so expensive that for many years carved wood mouldings have seldom been used except in the wealthier homes.

Recently, however, the use of decorative mouldings in wood has been restored... since the introduction of Driwood Period Mouldings in Ornamented Wood. For their remarkably low cost makes them available for the small home or large mansion, for apartments, for educational institutions and public buildings, hotels, lobbies, etc.

Driwood Mouldings rival in depth and beauty the original hand-carved mouldings from which they drew their inspiration. They may be used in a single room or throughout an entire home. They are adaptable to many types of interiors. Thus, the illustration above shows the use of Driwood mouldings in a dining room furnished in the Louis XVI period.

Facts For the Architect

Material—Driwood Period Mouldings are neither composition nor plaster—hence will not chip or crack. They are wood—ornamented wood. Can be furnished promptly in poplar and red gum. Also to order in Mahogany, walnut, or any other wood. Obtainable if desired in Flaimpruf, the permanently fire-safe wood.

Finish—Driwood Mouldings can be finished in white, in color, or to match any wood. The mouldings in poplar are particularly suited for use in white or painted. Red gum is recommended where a walnut or mahogany stained finish is desired.

Design—Driwood Mouldings are made in 119 individual designs—offering the architect limitless opportunities for original combinations.

You will be interested in the Driwood Catalog showing photographs of the 119 Driwood designs in 81 suggested assemblies. We shall be glad to send you a copy on request.

HENRY KLEIN & CO., INC.
with which are consolidated the IMPROVED OFFICE PARTITION CO. and DRIWOOD CORP. Est. 1909
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New York Office: Dept. D, 11 East 37th Street
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and Pittsburgh

Section of ceiling cornice... one of many photographs shown in the Driwood Catalog.