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OCTOBER
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WHO'S WHO IN THIS ISSUE

HART WOOD, architect of Honolulu, whose work is illustrated in this number, was born December 26, 1880. His architectural career began in the office of Marean & Norton of Denver, Colorado, under the tutelage of Albert Junius Norton. Mr. Wood came to California in 1902 and entered the office of Bliss & Faville in the spring of 1903. He remained with this firm ten years and obtained most of his architectural training in this office. Mr. Wood served as chief designer at the time Bliss & Faville turned out the plans for the Bank of California, Columbia theater, St. Francis hotel, Savings Union Bank and Masonic Temple. In 1915 Mr. Wood formed a partnership with H. G. Simpson and this firm designed the Santa Fe building at Market and Second streets, San Francisco. In 1919 Mr. Wood went to Honolulu, where he was associated with C. W. Dickey, later forming a partnership under the name of Dickey & Wood, which partnership was discontinued after about one year and a half, when Mr. Dickey returned to the Mainland. Mr. Wood then continued the practice of architecture in Honolulu under his own name and from 1926 to 1928 he was again associated with Mr. Dickey in designing important buildings in the Islands. Mr. Wood loves his profession as indicated by his views on the subject. He says: "I cannot think of anything I would rather be than an architect. I thoroughly enjoy my work. I have four sons and hope they will all be architects."

MISS JULIAN C. MESICK, artist, whose article on Architectural Models is published in this number, was the recipient of an Honor Award at the recent San Francisco Architectural Exhib-

it. The model which won distinguished recognition is illustrated in her article. Miss Mesick spent fourteen practically continuous years in the architectural offices of Mead, Requa and Jackson, San Diego, and Charles W. McCall, Oakland, with a draftsman's full responsibility. Besides other and earlier business experience she has studied with many well known teachers and artists.

Miss Julia Morgan, architect, San Francisco, in 1920, recognized possibilities in Miss Mesick's small sculptured house model, and models for Miss Morgan have included some of the latest work in her office among which are the San Simeon ranch buildings for William Randolph Hearst. Architectural model making now claims Miss Mesick's time exclusively, which she believes a greater service to architecture. She is an active member of the San Francisco Society of Women Artists.

WILLIAM TEMPLETON JOHNSON, designer of the buildings of the United States Government for the Iberian-American Exposition at Seville, Spain, and the Junipero Serra Museum, San Diego, illustrated in this number, is a native of New York city. Mr. Johnson studied architecture at Columbia University and Atelier Laloux, Paris, France. He has practiced in San Diego for sixteen years. Among Mr. Johnson's recent buildings are the San Diego Trust and Savings Bank building, the Junipero Serra Museum, the Samuel I. Fox building, and the Fine Arts Gallery in Balboa Park which won an honor award of the Southern California Chapter of the American Institute of Architects.

H. ROY KELLEY, winner of the first grand prize in the National Better Homes Architectural Competition, is a graduate of the Architectural School at Cornell University. He also studied in the Atelier Laloux in Paris and is at the present time practicing in Pasadena, California. Mr. Kelley's success in this competition is no surprise to his friends. He has been a frequent winner in other contests of which the following are outstanding: Own Your Own Home Competition, Biscayne Boulevard Gasoline Filling Station Competition, the Competition for Biscayne Boulevard Traffic Signal and Street Lighting System, and the Chicago Tribune Five Room House Competition.

Mr. Kelley is prominent in Chapter and Club activities in Southern California, having served in official capacities in both organizations.

ROPER & GILL, structural engineers and designers of the first steel frame house in Oakland, were first associated together on construction work in 1915 in Alaska with the Alaskan Engineering Commission. They have for the past few years been specializing in structural design and superintendence. Mr. Roper is a graduate of the University of Michigan, class of 1914; Captain of Engineers during the World war and later with Stone and Webster, Inc., on the design of industrial buildings and power plants. Mr. Gill is a graduate of Stanford University, class of 1915. He spent some time with the American Bridge Company and McClintic Marshall Company in Chicago on steel structures and later was with the Pacific Gas & Electric Company. He spent several years in engineering work with oil companies in California.

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VOLUME 99

OCTOBER, 1929

NUMBER 1

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Published on the 15th of the month by

THE ARCHITECT AND ENGINEER, INC.

1662-3-4 Russ Building, San Francisco, California

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CHINESE CHRISTIAN CHURCH

The First Chinese Church of Christ, Honolulu, Hart Wood, architect, is a modern adaptation of Chinese architecture. The design was won by Mr. Wood in open competition, the program stipulating that the building should preserve a churchly atmosphere, yet be an unmistakable expression of its Chinese congregation. The architect achieved this by designing a simple auditorium with a steeple rising from the left hand corner. The steeple, however, is nothing less than a pagoda.



CHINESE CHRISTIAN CHURCH, HONOLULU
HART WOOD, ARCHITECT

The ARCHITECT AND ENGINEER

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VOLUME XCVIV

OCTOBER, 1929

NUMBER ONE

ADAPTING ORIENTAL ARCHITECTURE TO AMERICAN NEEDS

By Loraine F. Kuck

HALFWAY between America and Asia lie the Hawaiian Islands, a stepping stone between the East and the West. Their position is strategic to achieve a blend of the two great races and cultures, and that in fact, is happening. The Islands are often referred to as a laboratory where a unique ethnological experiment is taking place, and various interests, including the Rockefeller foundation, are making studies of it. Numerically, the Oriental races predominate, but politically and socially the Islands are American. Culturally, the trend has all been away from the Orient, the younger generation despising, and ignorant of, its tremendous heritage.

But in recent years, indications of an awakening to this loss have appeared. Courses in Oriental culture are offered at the local university; Oriental drama has been presented in English, and an art museum has made available examples of the finest art of the East. In architecture, a number of the most notable new buildings in Honolulu show a distinct tendency to adapt Oriental design to American needs.

Conspicuous among such buildings is the work of Hart Wood, architect, illustrated herewith. Several years ago, Mr. Wood designed a residence for Mrs. C. M. Cooke, using details of decoration derived from the Chinese. Illustrations of the house have appeared in this magazine. It was so successful that interest was stimulated in the subject, and he has since executed a number of commissions using the same theme.

Mr. Wood is known in Honolulu as one of a small group working to develop a style of architecture which shall be typical of the Islands, adapted to the special needs of the island climate and artistically expressing the peculiar environment.

His success in working out an adaptation of Chinese architectural design for use in American buildings can well be of widespread interest, since it offers suggestions for structures all over the country—Oriental gift shops, Chinese cafes and the like—where the theme is appropriate.

In Mr. Wood's work there is a notable lack of the garishness, over-ornamentation

and "weirdness" too often loosely associated with Oriental architecture. His roofs curve, it is true, but only slightly; colored tiles are used, but in a restrained manner. There is an amazing similarity, in fact, between the Hart Wood adaptations and the popular Mediterranean style. In both, the

and rectangles, entirely different from the curves and filigree work of the west.

Another characteristic form of decoration is the plaster lattice, a feature which finds many uses in a sub-tropical climate. The insertion of a grill of plaster in a plain stucco wall, the design and size being in



RESIDENCE OF GEORGES de S. CANAVARRO, HONOLULU

Hart Wood, Architect

walls are of stucco, quite plain, the roofs of tile, the whole effect one of substantial simplicity. The only difference lies in the details of ornamentation, mostly about the doors and windows.

One of the more noticeable of these decorative details is found in the designs of iron grill work, leaded windows, balcony railings and like places. Chinese designs are geometrical, mostly coordinated squares

keeping with the medium, offers one of the most charming forms of decoration imaginable.

The introduction of color by the use of tiles is interesting also, not only in tiling for the roof, but inset in the walls as decoration. Where wood is used, natural teak is preferred, and the pillars are simply slender round columns with a characteristic cross bar treatment at the top.

An outstanding example of such a building is the branch shop at Waikiki of the S. & G. Gump Company of San Francisco. It is of two story, concrete construction of pleasing design. The walls are of white stucco, the gutters, leaders and leader heads are of antique copper verde, and the

plaster grills as mentioned before. It proves a particularly effective way to use this form of decoration. Gateway openings in the walls are of quaint and unusual design, one of them being a "moon gate" which is shown in one of the illustrations. The circle motif appears again in one of the



COURT, RESIDENCE OF GEORGES de S. CANAVARRO, HONOLULU

Hart Wood, Architect

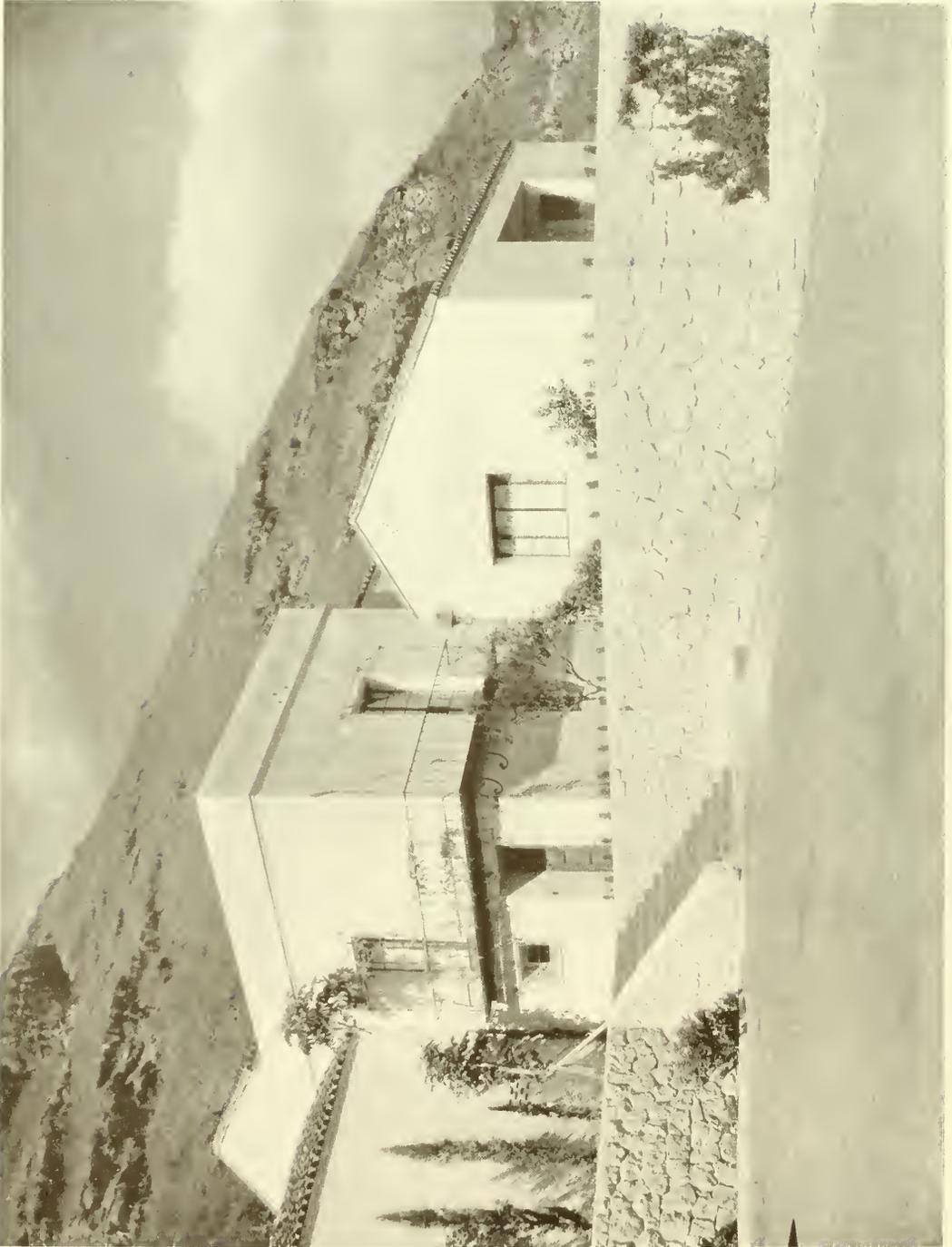
slightly curving roof of imperial blue tiles. This brilliant blue is a favorite roof color in China and one that blends well with the blue of the sub-tropical sky. No other colors than this blue, jade and white appear in the building, except the dark teakwood pillars of the entrance and railings of the several balconies.

A white plaster wall incloses three courtyards, and these walls are pierced by

windows of the shop. All the windows show the geometrical design in the shape of the panes or in grills. Balcony railings are also geometrical.

George Mellen, a Honolulu writer, describing his impressions of the Gump building, pays this tribute to Mr. Wood's versatility:

"Hart Wood, the architect, must have heard from out the fathomless reaches of



FORECOURT, RESIDENCE OF GEORGES de S. CANAVARRO, HONOLULU
HART WOOD, ARCHITECT



GALLERY, RESIDENCE OF GEORGES de S. CANAVARRO, HONOLULU
HART WOOD, ARCHITECT



DETAIL OF DOORWAY, CHINESE CHRISTIAN CHURCH, HONOLULU
HART WOOD, ARCHITECT



DETAIL, S. & G. GUMP BUILDING, HONOLULU
HART WOOD, ARCHITECT



THE S. & G. GUMP BUILDING, HONOLULU
HART WOOD, ARCHITECT



MOON GATE, S. & G. GUMP BUILDING, HONOLULU

Hart Wood, Architect

Time the yearning voice of his fellow craftsmen and perhaps, the plea of the very materials in which he wrought that, like the potter's clay, with their all-obliterated tongues, murmured — 'Gently, brother, gently, pray!' By no other thought can I account for an achievement so satisfying.

"The building is not strictly of any land or period.

"It bears the decided stamp of the Chinese, harmoniously blended with what we think of as Hawaiian architecture. Certainly it lends an air of distinction even to a section dominated by the splendid Royal Hawaiian hotel across the way. It occupies only a portion of the lot, the remaining portion being given over to high walled gar-

dens for the display of outdoor wares appropriately, where wares may be best displayed, and to an automobile court. This plan, besides giving individuality, assures ample light and air regardless of future growth adjacent and offers a delightful view toward the mountains.

"Hart Wood has taken full advantage of this setting to express in stucco walls and tile and wood that friendly charm, hospitality, spaciousness and atmosphere of welcome which we have come to expect in our recent Hawaiian buildings, whether of Spanish, Italian, English or Oriental influence. Against the exterior walls of oyster white stucco is contrasted the imperial blue of the roof tiles and the green verde an-



ITALIAN ROOM, S. & G. GUMP BUILDING, HONOLULU

Hart Wood, Architect

tique copper in gutters, leaders and leader heads. All exterior woodwork is of real Burmese teak, the rich red-black finish that is characteristic of the best Chinese furniture. The antique green of the copper work furnishes a softening transition between the roof's intense blue and the gray-white of the walls. The whole, set against a clear blue sky and the cloud-banked green tapestry of the Koolau mountains, presents a picture of rare color values.

"Ceilings in the chinaware room and the Oriental hall are rough concrete, with form marks left exposed. By treating with naphtha stains and dry colors, the texture of the concrete is preserved but given an added richness of appearance not obtainable with plaster or other methods of treatment. The

ceiling of the Spanish room is done in wood with weathered treatment in antique grays.

"Floors throughout the building have the mellowed and weathered effect naturally associated with centuries of traffic and affectionate care, an appearance most successfully stimulated by treating with acids and stains to produce amber and jade and terra cotta tones. Utilitarian fire extinguishers are placed behind teak-finished doors, with Chinese hardware. All store fixtures, cases and the like, were designed by Hart Wood, to carry out the motifs of the whole."

Quite different in its effect from this store building, is the First Chinese church of Christ, recently completed. Mr. Wood's design was won in an open competition, the competition program providing that



ORIENTAL HALL, S. & G. GUMP BUILDING, HONOLULU
Hart Wood, Architect

the building should preserve a churchly atmosphere, yet be an unmistakable expression of its Chinese congregation. The architect achieved this by designing a simple auditorium under a single roof, with a steeple rising from the left hand corner. But the roof curves sharply to the ridge, and the steeple is nothing else than a pagoda!

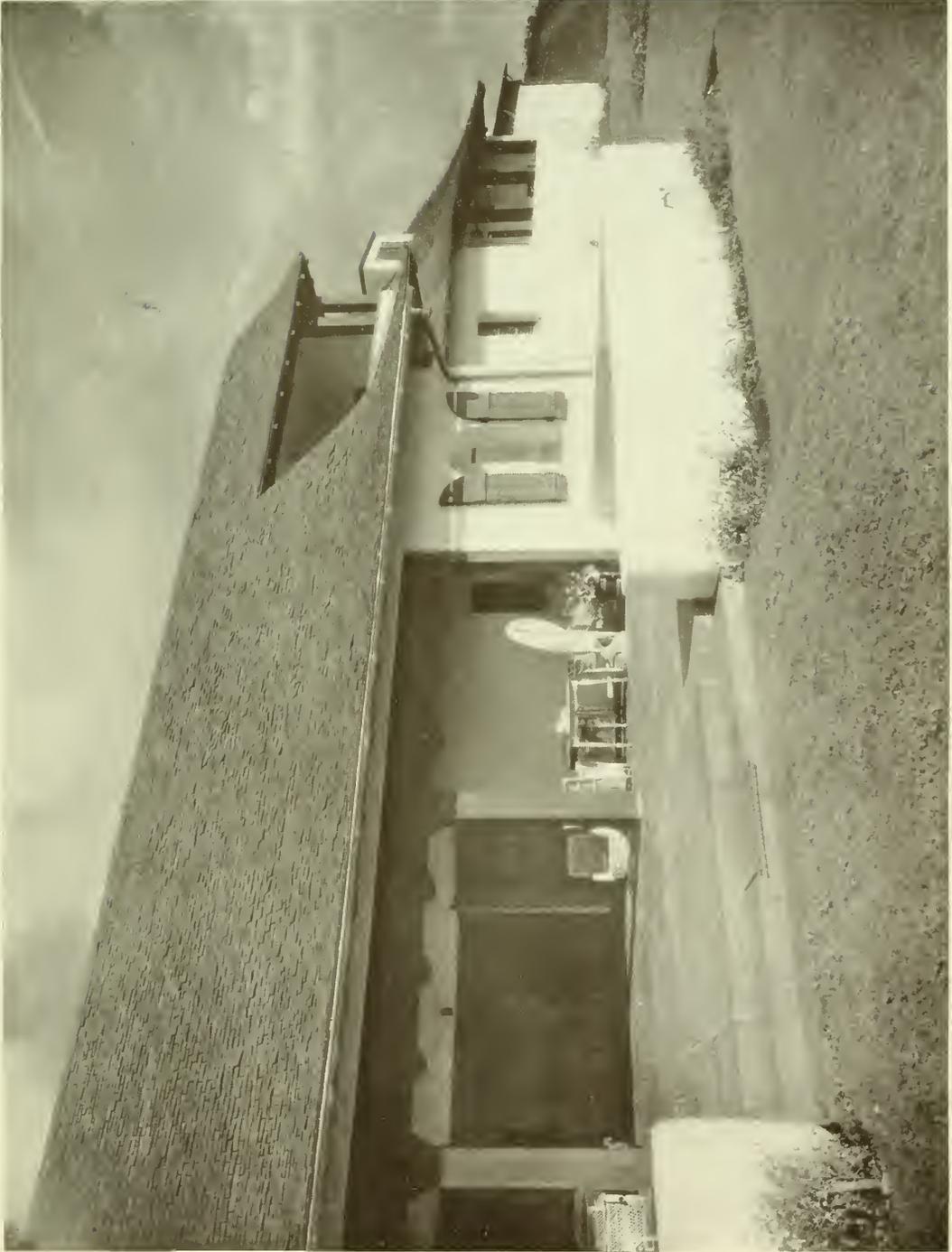
To adapt the plan of the church to island conditions, where a full sweep of the cool trade winds is desirable, the side walls of the auditorium can be opened almost completely onto parallel wide verandahs, known in the islands as "lanais." The floors are of cement in soft green tones, and the interior walls are of light green, maintaining a cool harmony.

The most conspicuous decorative features inside are two stained glass windows; one over the altar—a rose window with a Chinese lotus leaf interpretation, the other a rectangular opening over the main entrance, the central motif of which is a Chinese cross of the Nestorian type. This is one of the few surviving decorative forms of a little known sect which Marco Polo, distinguished writer, mentions in the account of his travels.

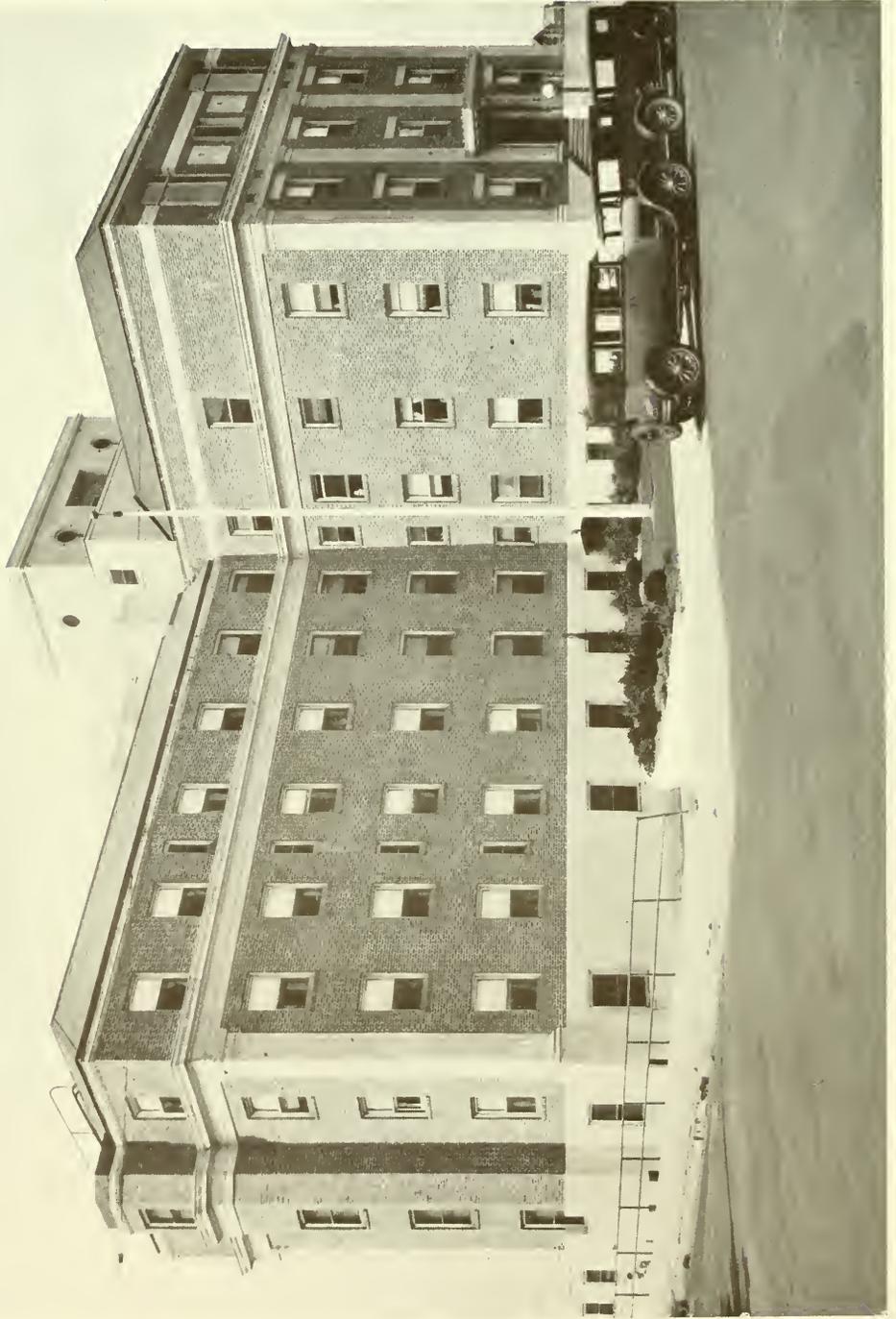
Outside, the walls are of stucco with an almost imperceptible greenish tint and terra cotta in soft green and old rose inset in a border on the rake of the gables. Similar colored tiles form the ornamentation about the main entrance door, the lintel of which ends in sharply upturned curves.



FORECOURT AND ENTRANCE TO RESIDENCE OF PAUL S. WINSLOW, HONOLULU
DICKEY & WOOD, ARCHITECTS



GARDEN FRONT, RESIDENCE OF PAUL S. WINSLOW, HONOLULU
DICKEY & WOOD, ARCHITECTS



ALAMEDA SANITARIUM, ALAMEDA, CALIFORNIA
EDWARD T. FOULKES, ARCHITECT

WILLIAM TEMPLETON JOHNSON'S EXPOSITION and MUSEUM BUILDINGS

By: Fred'k W Jones

THE buildings by William Templeton Johnson of San Diego illustrated here, are interesting examples of our modern trend toward early Spanish-American architecture. The Junipero Serra Museum is probably more ecclesiastical than the group of Exposition buildings in Seville, Spain, but all of the structures, nevertheless, reflect the architect's fine appreciation of a style that prevailed in Spain and Mexico and later was brought to California.

The Iberian-American Exposition which was inaugurated in Seville, Spain on May 9th, 1929, was promoted principally to bring about a closer relationship between Spain and Portugal and the countries they colonized in the new world. The governments invited to take part were the republics of South America and Central America, Mexico, Cuba and the United States.

The site chosen for the Exposition is the beautiful Parque Maria Luisa situated on the Guadalquivir river and but a short distance from the center of Seville. In a setting of elaborate formal gardens, the Spanish government erected four permanent buildings as a nucleus of the Exposition, and it is proposed that these may be used after the Exposition for the creation of a university. It is planned that the buildings shall remain open until July first, 1930. The climate of Seville is not unlike that of Southern California except that it is hotter during the summer months.

The buildings of the United States are three in number and occupy one of the best sites of the Exposition grounds, facing on one side the Avenida Maria Luisa, and on the other the Paseo de la Orilla del Rio along the Guadalquivir.

The principal building, a permanent structure, destined later to become the Consulate of the United States, is hexagonal in form, two of its facades being parallel to the above named parkways. It is two stories

high, constructed of brick and covered with stucco, has tile roofs and a central patio with covered porticos opening upon it. The style of architecture is Spanish Colonial. Within all the most modern American conveniences are installed, including steam heat, bath fixtures following the latest practice in the United States, electric refrigerators and washing machines, and many other devices which lighten the work of the household.

During the Exposition this building houses the exhibits of the National Museum of Fine Arts and the Smithsonian Institute. At the close of the Fair, it is adapted to become the business office of the United States Consul. A suite of rooms will be set aside for the Consul's use. There will be an apartment for the Vice Consul, and a large room on the second floor will contain a library for the use of American students who are sojourning or studying in Seville.

One of the temporary buildings houses exhibits of the various government departments which are taking part in the Exposition and the other is designed to be used for a motion picture theater so that all the activities of the United States government may be graphically shown upon the screen.

These two buildings are constructed of wood frame covered with stucco and harmonize in a general way with the main building. The grouping of the buildings is about a fore-court with a formal garden fronting the Avenida Maria Luisa.

To choose someone to design the buildings, five architects who had worked in the Spanish American style were invited to send to Washington photographs of some of their finished work which were judged by the Commissioner General with the advice of the National Commission of Fine Arts. From among the five, Mr. Johnson was chosen as architect.

The Commissioner General is Hon. Thomas E. Campbell, former governor of Arizona. The other members of the commission are George T. Cameron, San Francisco, California; Miss Helen Varick Boswell, New York, N. Y.; Judge Roderick N. Matson, Cheyenne, Wyoming; Mrs. Helen Hall Upham, Chicago, Ill.; and Miss Agnes Repplier, Philadelphia, Penn. The Junipero Serra Museum in San Di-

their curiosity must have been very great as they watched a group of buildings grow slowly before their eyes. Undoubtedly the Indians helped to make the adobes for the walls, and hauled the roof timbers from the mountains. They saw the process of building a kiln to produce tiles for floors and roofs and learned under the instruction of the friars the art of building with sun-dried bricks set up with mud mortar.



PATIO, FUTURE CONSULATE, U. S. EXPOSITION BUILDING, SEVILLE
Wm. Templeton Johnson, Architect

ego fulfills a three-fold purpose. It marks the land where first the white man settled in California, it celebrates an anniversary of a more ancient date than the founding of our nation, and it provides a home for the San Diego Historical Society.

It is interesting to ponder about the awe of the California Indians, when the white man reared the first buildings on Presido Hill. These Indians knew no shelter more substantial than the rude wickiup and

A rugged simplicity marked the design of the twenty-one missions built by the Franciscans in California. This was very natural for in design the Friars had to rely upon recollections of church architecture in Mexico and Spain, and the structures had necessarily to be simple enough to be built by priests and the soldiers with what help they could get from the Indians. Most of the buildings were constructed of adobe bricks, a few of stone. All had thick walls

and simple masses, and a sturdiness and frankness in design which gave them much charm.

The Junipero Serra Museum is designed in close sympathy with the spirit of the architecture of the missions, but built of enduring concrete. The architect has endeavored to preserve the feeling of the missions without making the building too ecclesiastical in appearance.

one end of the structure and at the other end is a vaulted library with adequate toilet and storage facilities. Open terraces completely surround the building giving access to beautiful views in three directions. At the south end of the structure there is an arcade, after the type often found in connection with the Missions. This is partly closed by a wall on the East so as to provide a shelter for visitors who wish to sit



DETAIL, FUTURE CONSULATE, U. S. EXPOSITION BUILDING, SEVILLE

Wm. Templeton Johnson, Architect

The walls are white stucco, the roofs are covered with tile of mossy shades, while the floors and steps are made of tile of a texture similar to the old ones dug from the ruins and laid in the South entry of the building. The woodwork is as simple as it must have been when made by the monks with their scanty supply of tools.

The building proper consists of a great room with an open timber roof with balconies at either end. There are offices at

under the arcade, but the three central bays are open, and provide a charming prospect looking directly up the valley to the San Diego Mission.

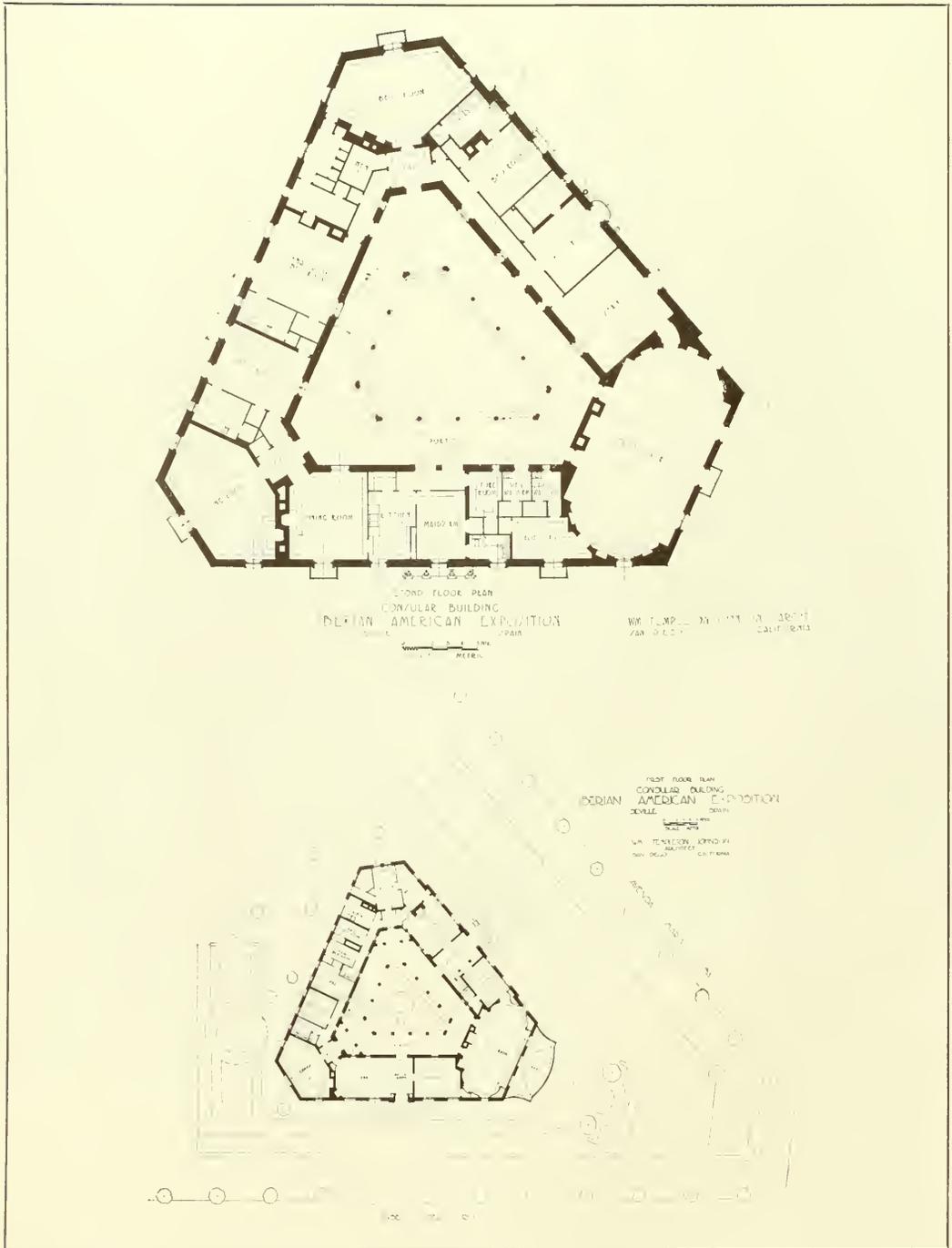
A tower seventy feet in height surmounted with a bronze weathervane—the "Bear" of California—is the crowning feature of the composition and from the balcony at the base of the dome, there is a wonderful panorama. A low wall below indicates the limits of the Spanish settlement.



DETAIL, EXHIBITION BUILDING, IBERIAN-AMERICAN EXPOSITION, SEVILLE
WM. TEMPLETON JOHNSON, ARCHITECT



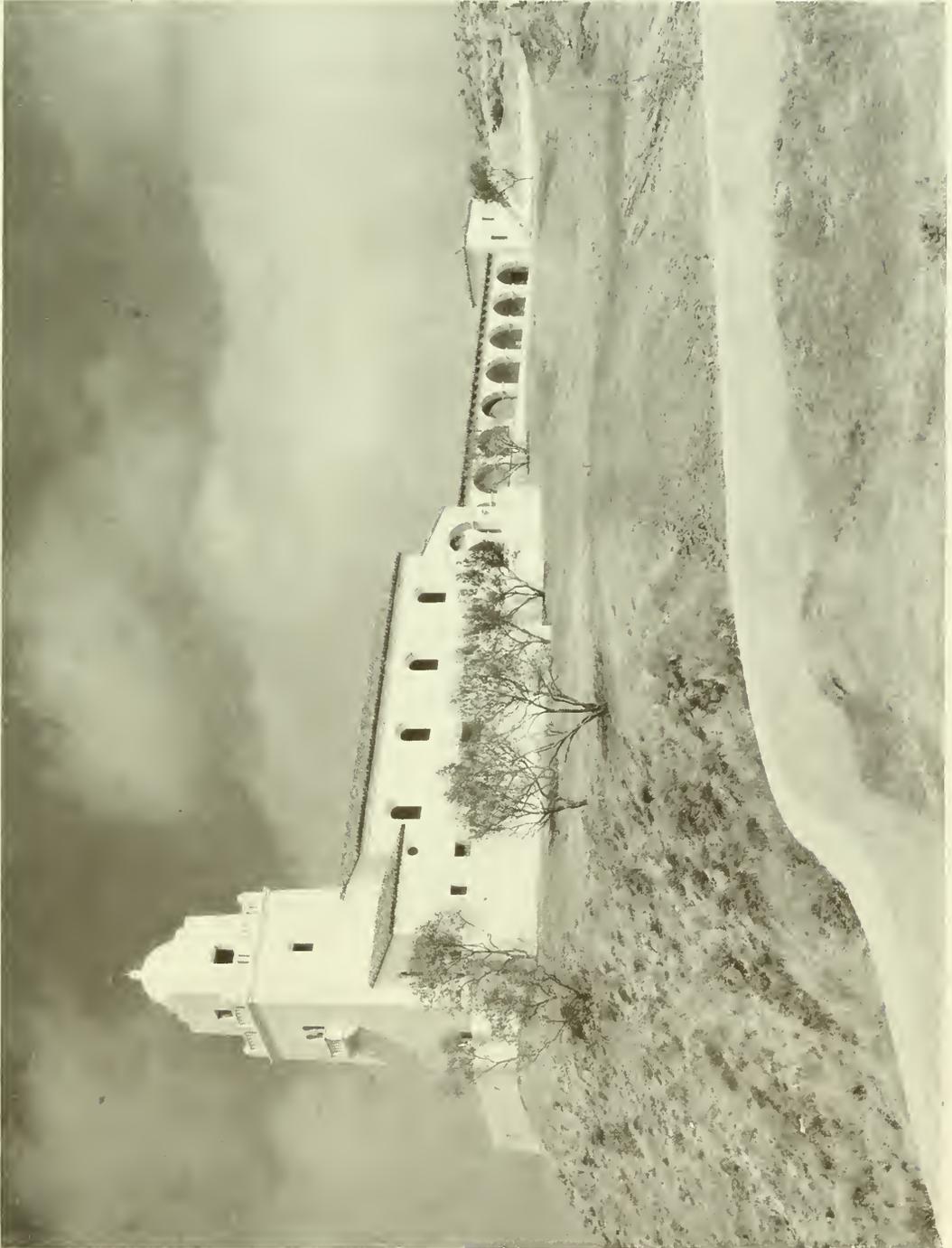
FACADE, FUTURE CONSULATE, U. S. EXPOSITION BUILDING, SEVILLE
WM. TEMPLETON JOHNSON, ARCHITECT



PLANS, FUTURE CONSULATE, U. S. EXPOSITION BUILDING, SEVILLE, SPAIN
WM. TEMPLETON JOHNSON, ARCHITECT

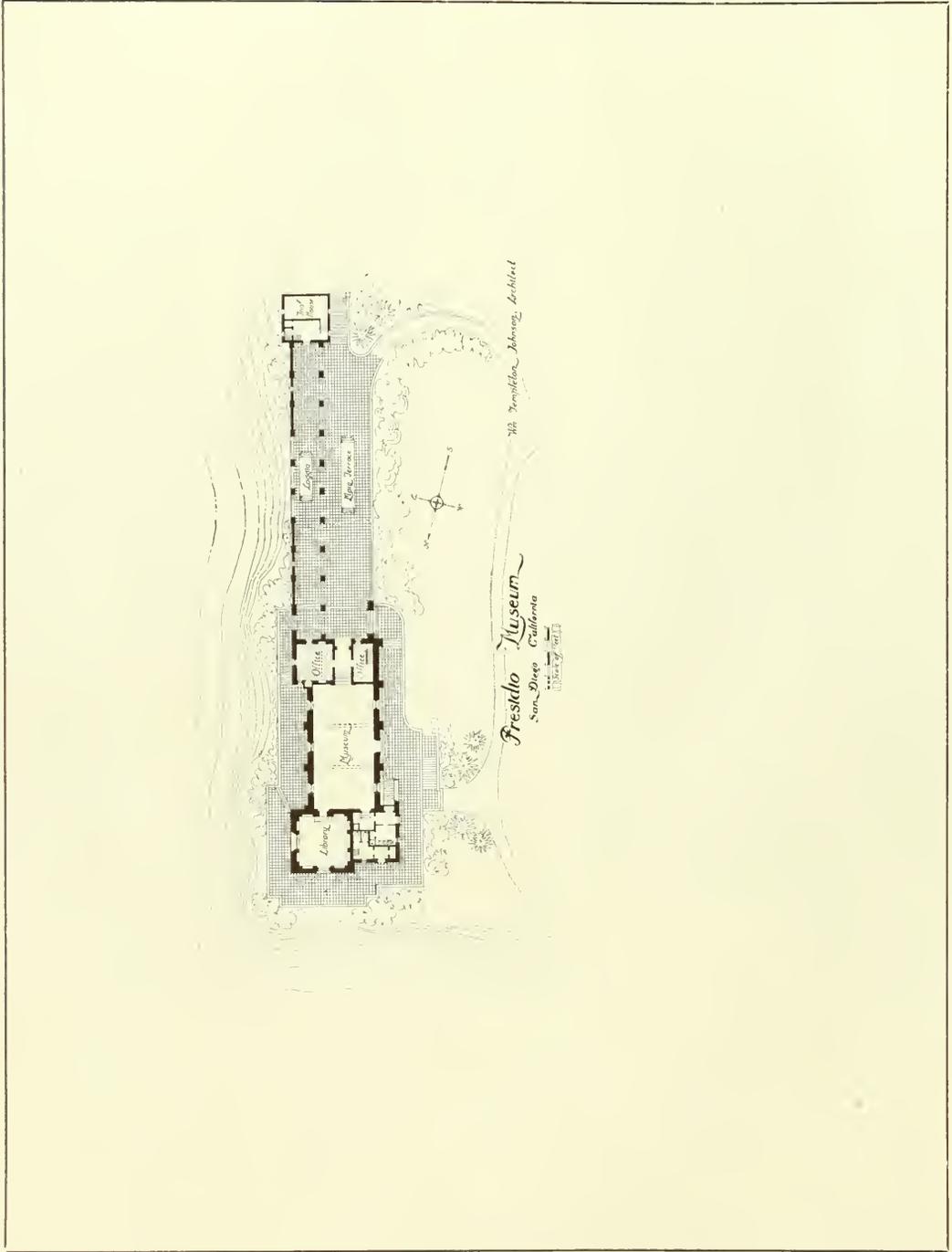


FACADE OF CINEMA BUILDING, IBERIAN-AMERICAN EXPOSITION, SEVILLE
WM. TEMPLETON JOHNSON, ARCHITECT



JUNIPERO SERRA MUSEUM, SAN DIEGO, CALIFORNIA

WM. TEMPLETON JOHNSON, ARCHITECT



PLAN, JUNIPERO SERRA MUSEUM, SAN DIEGO
WM. TEMPLETON JOHNSON, ARCHITECT



JUNIPERO SERRA MUSEUM, SAN DIEGO, CALIFORNIA
WM. TEMPLETON JOHNSON, ARCHITECT



JUNIPERO SERRA MUSEUM, SAN DIEGO, CALIFORNIA
WM. TEMPLETON JOHNSON, ARCHITECT



JUNIPERO SERRA MUSEUM, SAN DIEGO, CALIFORNIA
WM. TEMPLETON JOHNSON, ARCHITECT

COMMON BRICK in MODERN VERSIONS

By: Zoe A. Battu

TO dwell upon the ancient historical traditions of brick, its durability and fire resistant properties and its fine weathering qualities, is mere hum-drum reiteration of details, which are quite as familiar to the practicing architect as is his own name. Considering the use of such a time honored material, the present day architect is primarily concerned with three questions, namely:

First—Modern architecture, being, as it is, so vastly occupied with the uses of materials to achieve unique yet harmonized effects, does this old material (common brick) now offer sufficient variations in color, texture, unit sizes and methods of laying to create the desired, noted results?

Second—In so-called modern architecture, what are the possibilities of common brick in accenting and creating the effects of verticality, or maintaining simplicity combined with variety—the latter quality being achieved with a minimum of ornamental devices and of material other than the basic one?

Third—The cost?

Every building, of course, is a problem and law unto itself and no one building, embodying any given material, may be unconditionally offered as the ultimate solution in the use of that material. But the fact remains that the presentation and analysis of a building, in which the material in question is a basic one, is the most convincing method of arriving at a fair and satisfactory understanding of the problem involved. In the newly completed East Oakland high school, Foothill Boulevard at 87th Avenue, there exists, perhaps, the most completely convincing answer to the archi-

tect's first question. As a matter of statistics, the brick consists of 60 per cent klinkers and 40 per cent dark, hard burned, common brick. As a matter of craftsmanship, the bricks are laid in Flemish bond with mortar joints flush and, in some cases, slightly overlapping the brick surface. As a matter of artistry, the wall surface has the subtly lustrous, luxurious quality and suggestiveness of heavy draped velvet. As one views the building in the full light of the day and again by the mellowing



APARTMENT BUILDING, WARFIELD AVENUE, OAKLAND
Willis C. Lowe, Architect

light of late afternoon, the soft depth, the rich sheen, the dusky shadows so characteristic of this fabric, play upon the wall surface with alluring effect.

So admirable results are possible only by reason of the fact that common brick, as the architect finds it today, differs radically

inherent in skintling, pattern laying and various mortar joint treatments, provide the architect, for all practical purposes, with a great palette to create with almost as he will. On this account, he can no longer specify so many thousand bricks for so many feet of wall surface to be laid plainly and



SHRINE HOSPITAL FOR CRIPPLED CHILDREN, SAN FRANCISCO, CALIFORNIA

Weeks & Day, Architects

from the common brick of yesterday—plain, smooth, bland, solidly and dully colored as it was. The modern philosophy of color and texture has not been lost upon the makers of common brick. Its reds run from the deepest wine shades, through the pinks and salmon pinks to tones of purple. Browns and yellows in pastel casts are readily available; two or more colors delicately blended and mottled are every day affairs. Various irregular surface treatments create all sorts of textures. This diversity of color and surfaces, together with the possibilities

regularly. Every thousand lot must be made up of a predetermined number of light and darker bricks and klinkers. The laying, the mortar color and joint treatment must be considered in relation to color and texture and the mass effect desired — matters to which the manufacturers have given competent attention and upon whose guidance the architect may safely rely.

In the Bellevue-Staten Apartments, Bellevue and Staten Avenues, Oakland, common brick successfully enters into a distinctly modern type. Here the lines are

vertical, outlined and accented by cast stone in formalized design. By continuing the design, the brick and stone work upward to enclose chimneys, pent houses and the like, these utilitarian units are concealed and become, in reality, integral parts of the vertical scheme, rather than liabili-

ties to it—a remarkably ingenious device, destined for wider uses in apartment houses of this type.

formalized simplicity of the design as a whole. The Rosmar Manor Apartments, Lakeshore and Excelsior Avenues, Oakland, is a good example of a house, in a high class semi-residential and business neighborhood, where the problem was obviously to pro-



SIGMA PI FRATERNITY HOUSE, BERKELEY, CALIFORNIA

Frederick H. Reimers, Architect

ties to it—a remarkably ingenious device, destined for wider uses in apartment houses of this type.

The brick, as here employed, is in dark red, salmon and purple shades with 10 per cent klinkers in the face. The thousand lots were carefully made up and selected to obtain the desired color effect with the result that the brick lends a certain softness and warmth to the vertical lines, which otherwise might easily have been too rigid and forbidding. And this is accomplished without injecting any irrelevant note into the

vide a building plainly but well designed, of substantial but not too costly construction and of good appearance, so that rentals, at moderately average figures, would attract a fairly prosperous class of business and professional people, wishing a central yet desirable location.

So far as outer wall treatment is concerned, common brick in brown and reddish brown tones with 10 per cent klinkers, fulfills all these requirements to a remarkably satisfactory degree.

In the Hellman residence, San Francisco,

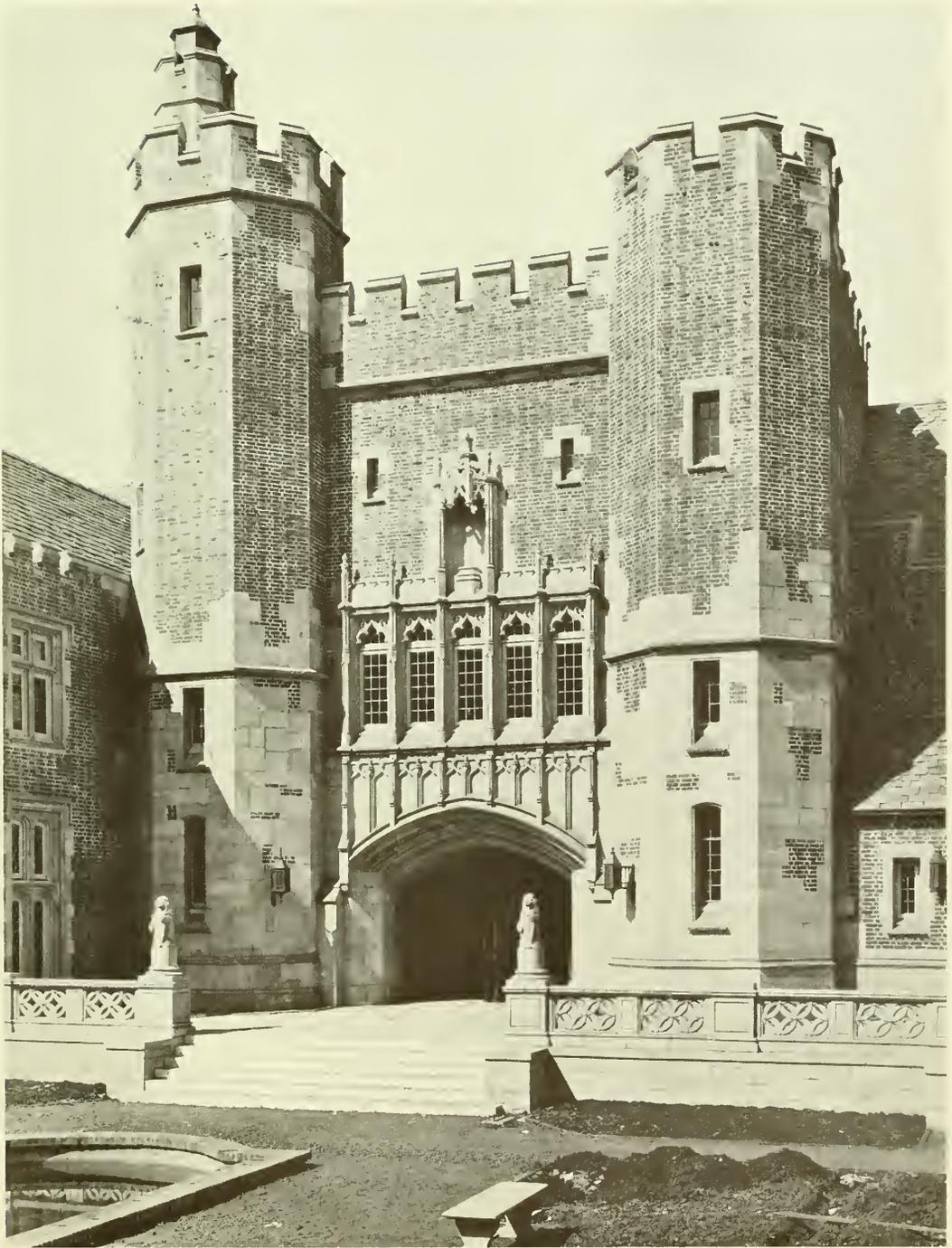
employing common brick with 20 per cent linkers, there exists an excellent example of the uses of this material in the city residence, whose appearance must be in keeping with an exclusive, substantial, sophisticated neighborhood.

From the foregoing descriptions and other buildings herewith shown, an adequate idea is gained of the adaptability of modern common brick to widely varying types of design and buildings, and it becomes apparent this material is a thoroughly desirable one for the finest types of apartment houses, schools, churches, hotels, stores and shop buildings, homes, etc. There remains only the question of cost. The general public and not infrequently the architect, labor under the delusion that brick construction is beyond financial reach, save where the funds available are more than ample for the work at hand. This impression is especially true in the West, where brick construction has not been as prevalent as in the East and Mid-West.

In schools and public buildings generally, the item of cost must invariably be closely watched, yet sound construction and distinctive appearance are equally imperative. This was the case in the East Oakland high school. The same cost requirements were present in the Bellevue-Statens and by reason of its vertical design, the question of appearances, had special significance. In both these jobs the results obtained as to appearance and construction through the use of common brick, are so conspicuously good as to require no further comment. That the material met cost requirements may thus be assumed. Cost factors in the Rosmar Manor house have already been touched upon, and from this instance, it appears that common brick is available to even the most modest structure. In the Hellman residence it is not likely that the architects were arbitrarily bound as to costs; in all probability they were quite free to use any desired material to achieve the wanted result. And yet, it may unconditionally be allowed that they could make no better choice than common brick



BELLEVUE STATEN APARTMENTS, OAKLAND, CALIFORNIA
H. C. BAUMANN, ARCHITECT



DETAIL, EAST OAKLAND HIGH SCHOOL, OAKLAND, CALIFORNIA
MILLER & WARNECKE, ARCHITECTS



DETAIL, RELIEF HOME, SAN MATEO COUNTY, CALIFORNIA

W. H. TOEPKE, ARCHITECT

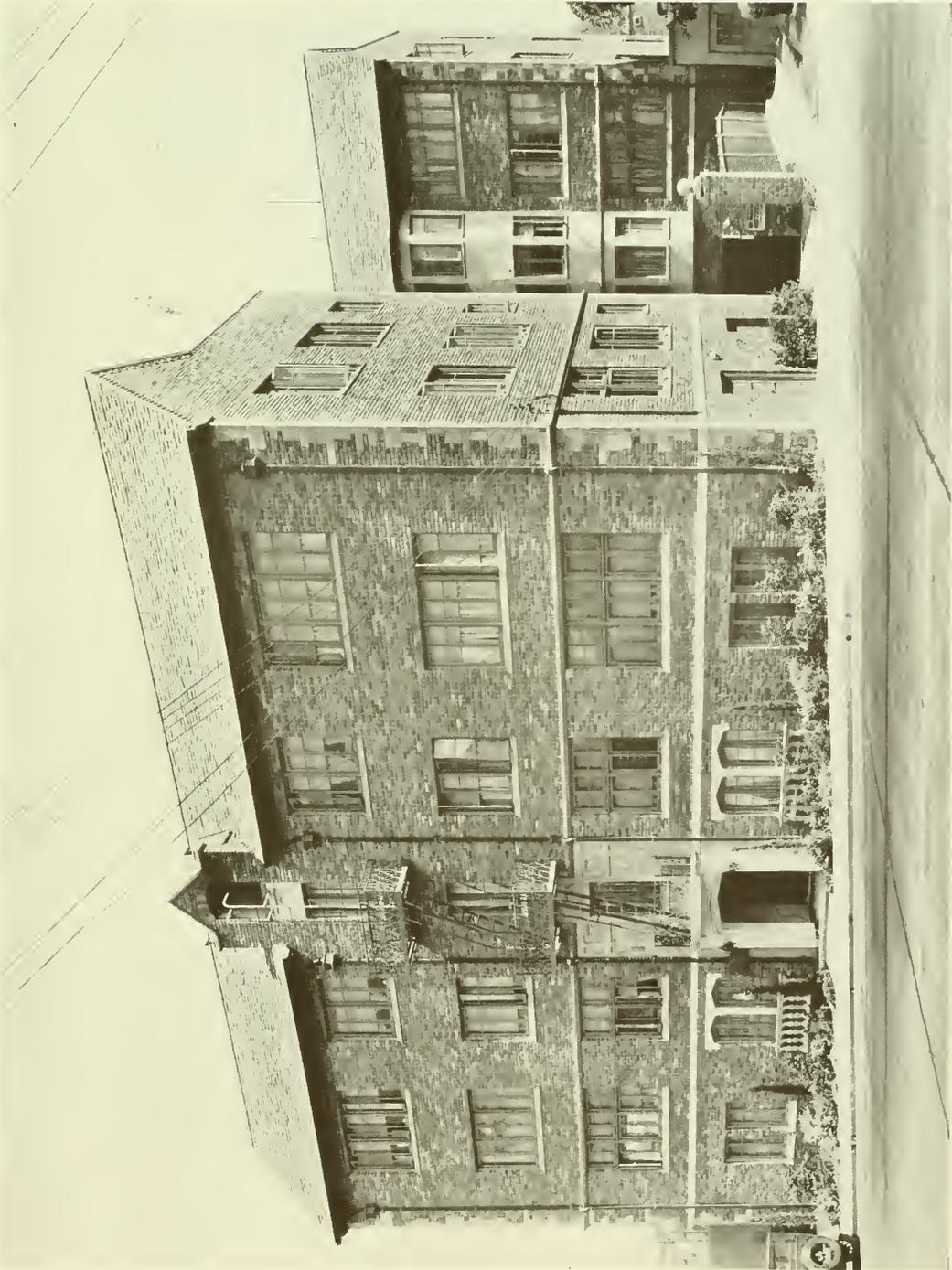


RESIDENCE OF I. W. HELLMAN, SAN FRANCISCO
WILLIS POLK & COMPANY, ARCHITECTS

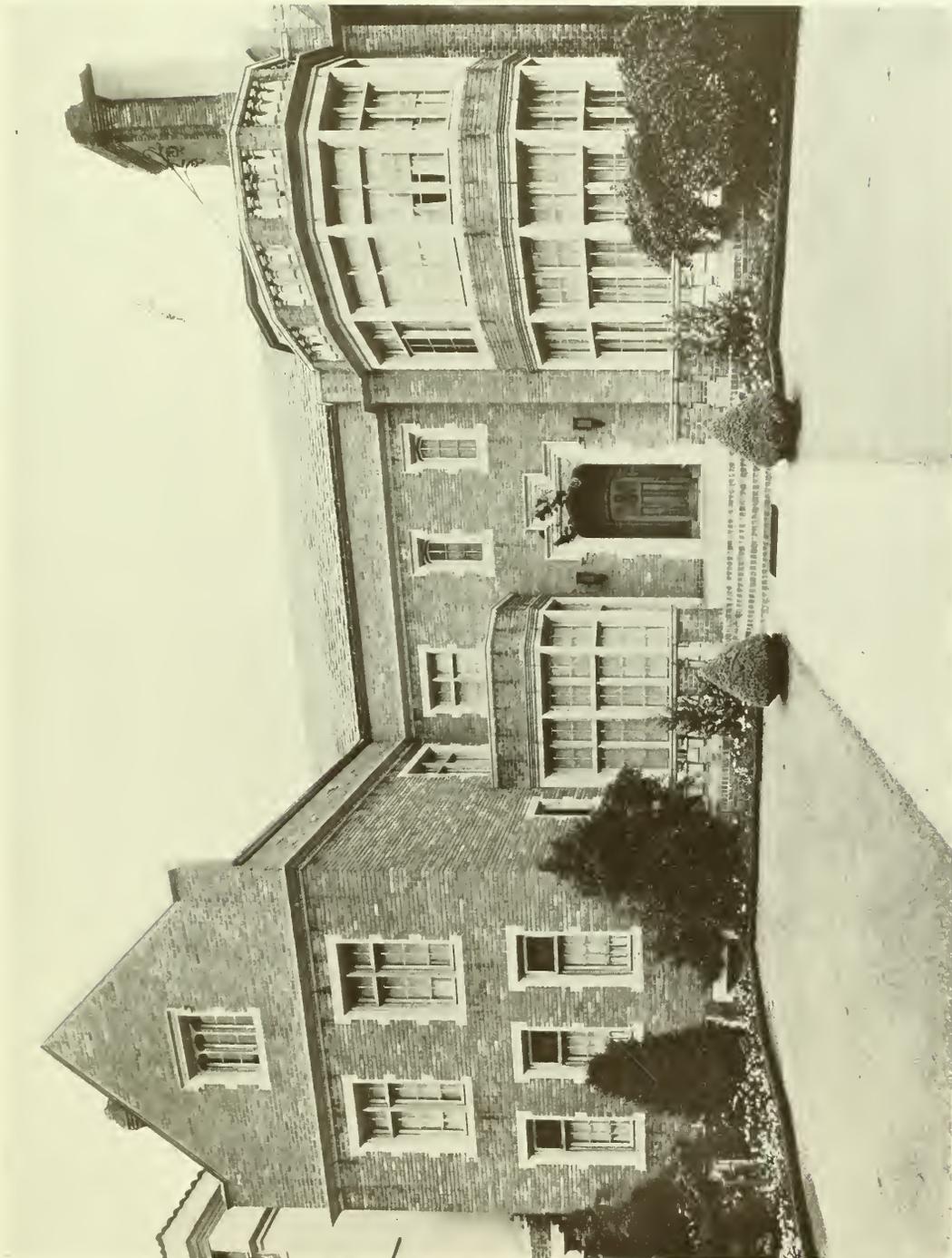


Photo by W. A. Scott

DETAIL, HOUSE IN PIEDMONT, CALIFORNIA
HARRIS C. ALLEN, ARCHITECT



ROSMAR MANOR APARTMENTS, OAKLAND, CALIFORNIA
CLAY N. BURRELL, ARCHITECT



RESIDENCE OF S. G. HINDES, SAN FRANCISCO
EDWARD G. BOLLES, ARCHITECT

PROBLEMS OF ARCHITECTURAL MODELS

*By Julian C. Mesick
Winner of AIA Honor Award, 1929.*

THE realization is dawning that models are necessary to client and architect for mutual understanding, opportunity for visualization of the project by the client and further study and checking by the architect. Clients are learning that the model's extra cost to them is money well spent. They always win—sometimes moderately; usually far beyond their expectations. Their confident feeling during construction of the job that all is well, is not the least of the benefits. They have seen the miniature and no longer rush to the architect for explanations with each new development. They more calmly await the completion day.

Models are expected today where a few years ago they were the exception, consequently their makers have had the opportunity for experimentation and real progress. Models are actually better, more useful and expressive. Today a model is not complete without color, the showing of grades, plantings, roads

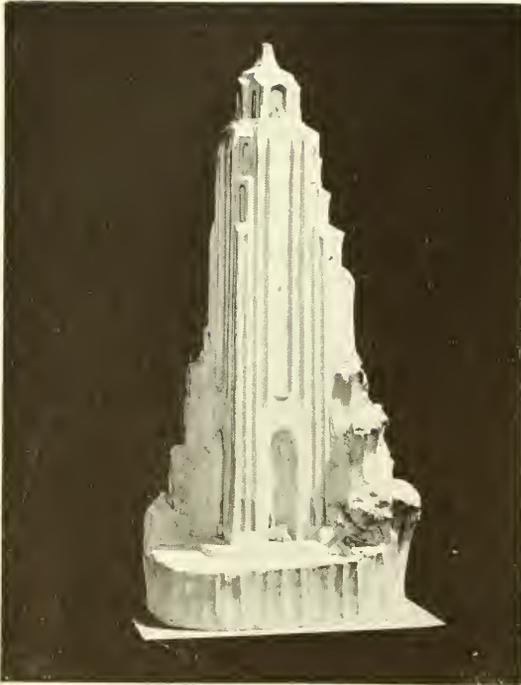
and indication of adjoining conditions affecting the problem in hand.

Many materials and varied methods have been utilized; all are worthy of consideration under certain conditions, dictated by the purpose, costs, use, etc., of the prospective model. William Harvey's book, "Models of Buildings" published in England, but locally available, outlines possibilities amazing in their scope — yet true. To these we are constantly adding by our knowledge of methods, equipment and new materials being placed on the market. We are limited only by our imagination and power of application.

We are fully aware of the tax upon an architect's time, but his understanding attention to the advantages and limitations of a model's material will greatly enhance results, be his model maker ever so competent. A maker is primarily an interpreter and will dare far more if certain he has the architect's sympathy. For instance,



TOWER OF MUTUAL PLANT, OAKLAND, CALIFORNIA
The lower part of tower and building were massed only to give a setting for the study at the top of the tower, hence their sketchiness.



STUDY FOR A MODEL, "INSPIRATION"

Fantasy by Julian C. Mesick

there are many ways of indicating openings and rendering planting. If the architect requires indication only, the model may be completed shortly with openings simply marked on. Openings on detailed models are recessed and marked or recessed and fully modeled. It is the architect's province to decide the degree of finish necessary to serve his purpose, hence his need for information on models themselves. The ratios of time required for the type of models here shown is approximately, one for the sketches, three for fairly detailed, six for complete detail, and eight to twelve for the highest practical detail. Models of precious stones, metals and ivory would of course come in a still higher class. Whatever the grade, true collaboration is needed between architect and professional model maker. For complex models in his own office an architect will need to bear even greater responsibility as the average draftsman is not equipped to know or handle any great variety of material.

Being at a Renaissance it is well to consider fundamental principals which determine a model's character. In nine years the method of building the models shown herewith has entirely changed and bids fair to change again with the development of exhibition sets. The general appearance has and will not change except as greater skill is gained, hence one hesitates to record—"I did this, thus and so."—Aims and objects remaining constant seem the important portion of the development.

First, models should permit of changes brought about by the architect's study, during their construction. The project in miniature is certain to whet the imagination of all concerned. Experiments, changes and improvements follow; the easier the better, hence the desirability of "plastics." The models of the Samuel O. Hoffman residence show this development. The model held the client's enthusiastic interest even previous to the earlier photograph. At the period of the latter one he took the model home for study. Later it was brought to date by raising the front walls, simplifying the main entrance, etc. Thus the chance of disappointments in the completed work were minimized.

These "progress" photographs are as essential as on the actual job, especially when changes are radical. Also photographs from the proper view points are severe tests of a building's design and worth making. Photographs have a way of showing up a building as others see it.

Second, models should be of as small scale and size as practical. In responsive materials as wax, clay and possibly soap, it is well to pause and consider—the practical is actually much smaller than commonly realized, and it is truly worth while to clear our minds of preconceived ideas if a model maker can demonstrate successful small scale work. In such cases, sixteenth scale for house and immediate grounds, all in an area of a few square inches has solved many problems satisfactorily. They are readily transported, taken home and literally worshipped. Many a model has served as "center" at dinner. The most critical can somehow be charmed into admiration.

At sixteenth scale, windows, doors, roofs, chimneys, in fact everything can be criticised by the architect. The necessity of large scale models has been entirely eliminated by twelfth scale for residences. Sixteenth is often ample for large important buildings. The Inspiration-fantasy model illustrated here, stands twenty-one inches high and is capable of rendering much information as a monumental or skyscraper mass. More detail is easily obtainable and without difficulty.

We cannot over-emphasize the necessity for accuracy. Small scale models may then state a problem better than a large scale one for if too large to be animated as sculpture in a short space of time, the forms become wooden and lifeless.

We were once sent to see a large model of one of San Francisco's fine classical buildings. It occupied a lonely office of which the janitor seemed to be custodian. The building's entrances were faithfully modeled, but the intervening spaces were too great to be sympathetically executed, and not yielding readily to indication, the well worked portions lost much by failure to show relationships.

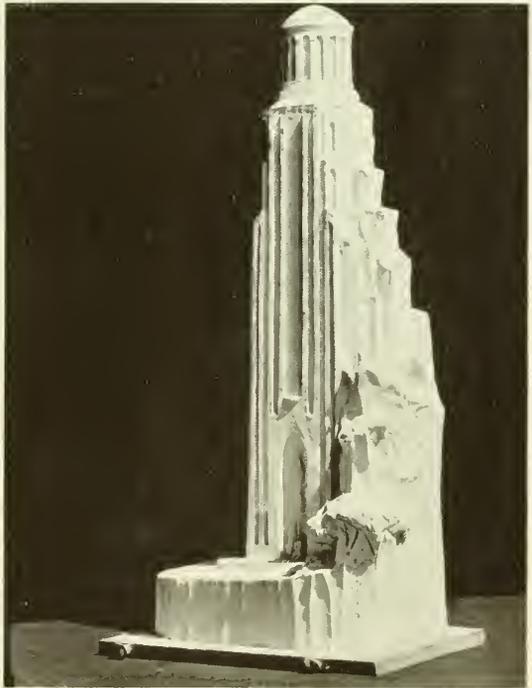
Usually a scale larger than eighth becomes "large," except for structural models, when quarter is usually ample, as shown by Grace Cathedral Chapel model (top-most of the exhibition group). Thirty-second to one hundredth scales serve well for industrial and commercial projects as in the New York terminal for the Dollar Steamship Lines. "No" scale models spontaneously modeled by the designer are best for the first rendering. The freshness of the idea is recorded here regardless of lack of sculptural skill. It is normal for architects to express themselves in form and it is not too much to hope that the habit will become more general; in sketch form at least at small scale, for their own satisfaction.

Third, models for study of design should be in full and correct color, to completely state the problem and permit accurate judgement of voids, solids, roofs, plantings, etc. Models in monotone are actually inaccurate.

Color is not difficult to obtain, even if one scorns the painted model. Color can be

incorporated into wax, clays, plasters and what-not before being used. Stains applied to the finished work give good play of color. Judgment and taste are the surest guides here; for instance all-over coats of heavy paint or shellac are nine times out of ten, fatal, artistically, yet either applied sparingly but consistently and systematically to express a definite thing may add greatly to the finished effect. On very small scale models, heavy oil paint evenly brushed, with a stiff brush, convincingly represents crimped galvanized iron roofing. Painted heads of small nails have been right for representing patent ventilators. Paints and varnishes have "scale" which must be kept correct.

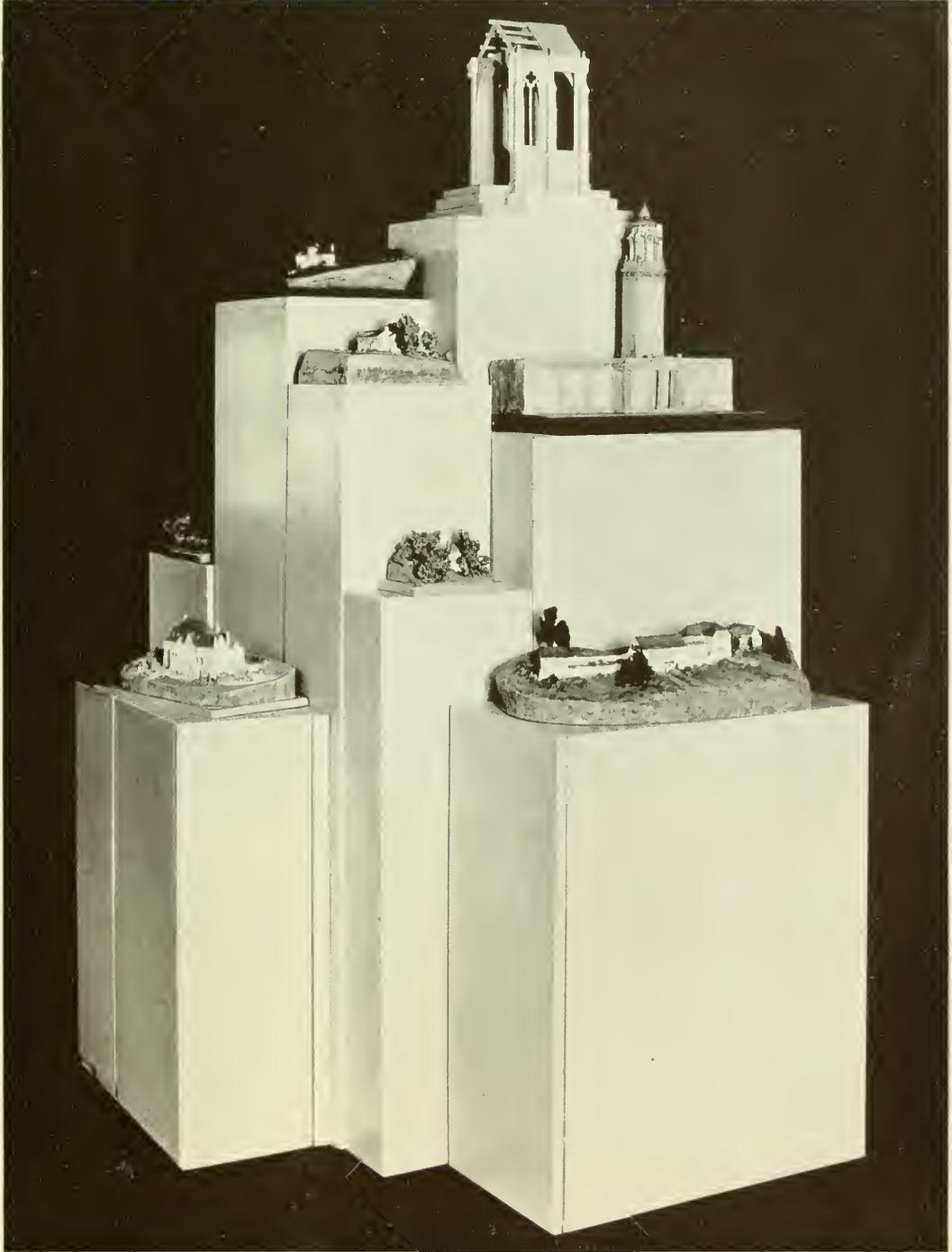
Fourth, models should have charm. Charm does not necessitate fine cabinet finish or modeling. A sketch model is as useful, legitimate and delightful as a sketch in any other medium and can be as appealing. There is no more excuse for ugly models than for ugly drawings. Though a work be limited to a few forms or lines, there is



RESTUDIED MODEL, "INSPIRATION"
Fantasy by Julian C. Mesick



View of group of models shown at the Second Biennial Honor Award Exhibition, Northern California Chapter A. I. A. Reading from left to right, and top to bottom, the models are: Residence by William I. Garren, architect; residence by Charles W. McCall, architect; Grace Cathedral Chapel, Louis P. Hobart, architect; Oakland Mortuary, Harris C. Allen, architect; residence by Walter T. Steilberg.



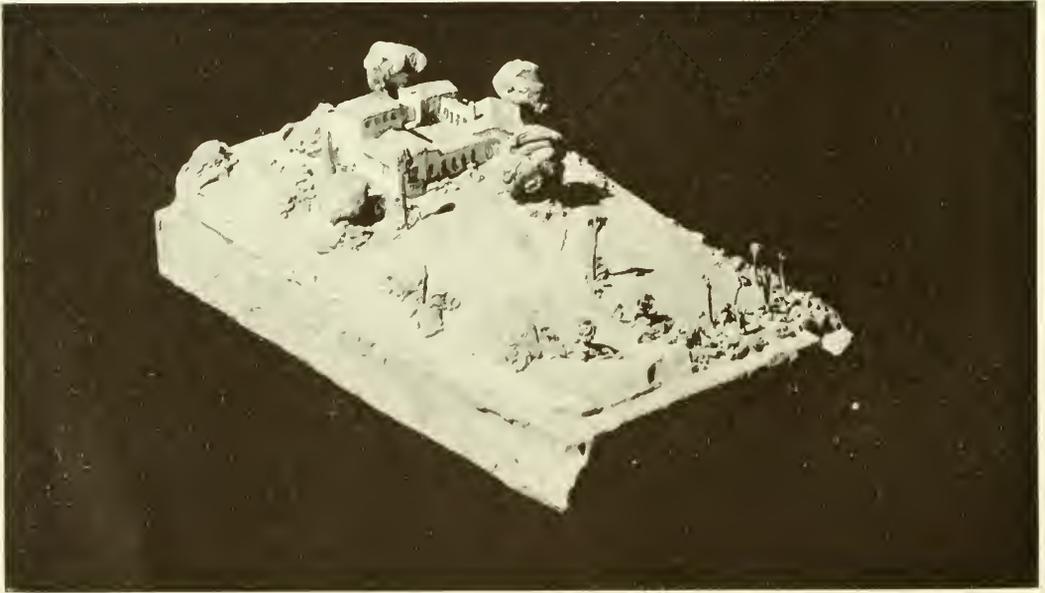
View of group of models shown at the Second Biennial Honor Award Exhibition, Northern California Chapter A. I. A. Reading from left to right, and top to bottom, the models are: Residence by Frederick H. Reimers, architect; three residences by Harris C. Allen, architect; Grace Cathedral Chapel, Louis P. Hohart, architect; Tower of Mutual Plant, Reed and Corlett, architects; residence by C. W. McCall, architect.

a graceful mode of expression, instead of balling the facts in megaphone fashion. Perfection in models should keep pace with architectural progress. As the profession is aware of the possibilities of models, the art will progress, and the unattractive model will tend to vanish.

Many graces are available: color, softened forms, carefully designed bases and

are almost invariably out of scale and unfortunate.

The same judgement should be used in constructing a model as in writing the specifications for and constructing a building. We can be content to merely follow and use material prosaically or we may feel our materials and rise to artistic heights. In a machine age? Yes—but the artist is needed



A SMALL "NO" SCALE STUDY IN CLAY FOR A COUNTRY HOUSE
Model by Julian C. Mesick

surroundings. The difference between success and failure seems very small when expressed in words, and is largely a matter of feeling for design and common art principles, expressed through a fine use of materials, but not because of the use of a certain material. Any material can be dominated and each mature artist will have his preferences, though he will usually handle other types well and consistent with his point of view. "Tis the set of the soul that determines the goal"—and gives character to the finished product.

Fifth, models should be "created" from masses of consistent raw material, making additions or deductions freely to sense out the scale and design. "Ready-made" forms as autos, and livestock built into models

more than ever to control the machine, and wring undreamed beauties from the standardized article. A fine, intelligent and discriminating use of material is essential to good work of any kind.

Materials for models should be treated as the paint on the palette, expressing the architect's idea in the same manner. Doors are not always doors, they are voids breaking a surface rhythmically or otherwise. They are patterns in black and white, light and shade or what ever our fancy conjures. Never until things cease to be virtues in themselves will models flow from the makers hand. Stunt tricks for their own sakes, and subterfuges have no more place in dignified model making than in architectural design. To regard models as sculpture has

helped the writer, perhaps it will help others.

All great art is visualized or the result of a vision. Why not construct a shadow picture to shroud the model's rough structure? By it the most discouraging project can be dragged forth to beauty. A beholder's mind is nimble and needs only a suggestion of the architect's purpose to endow

particular delivery auto, or the bracing is insufficient and wracking and even breakage occurs in travel. Special reinforcing should be considered and built-in from the beginning. Fortunately nothing is impossible, but sometimes certain construction is unwise.

Volumes could be written on the ifs, but who would bother to read? Model making



MODEL OF RESIDENCE FOR SAMUEL O. HOFFMAN, SAN FRANCISCO
Samuel Lightener Hyman and A. Appleton, Architects

the model with the sense of reality, but this reality must have been seen by the artist to be recreated for the beholder by a little paint and plaster.

Conventionalized and diagrammatic forms may become necessary when time or funds are limited—but the maker must never cease to be an artist. Suitability is the keynote; the same laws hold for all types of models for all purposes.

The available time for constructing a model, its ultimate use, its method of delivery, its distance to destination, its owner, etc., also operate to determine the most desirable type of model. These things do not loom large until one is faced by the actual problem, then woe be if a model will not go through a certain door, or into a

is, in a way, a game of personally practiced methods, because it is representative and not the real building. Some say it is a game of tricks. In a sense they are right, but we have used the words stunt tricks elsewhere and we must not confuse the difference. Stunt tricks are obvious and are called "too clever" in every day life. The legitimate trick is really a code by which a problem is stated. One is not particularly aware of these so-called tricks as they are merely language which is constantly expanded to express new problems.

The story is told of one model maker who ripped the wires from his piano because no other was available at midnight and a model must be delivered next morning. Ten chances to one the studio should

have had a proper supply of wire and the destruction was far-fetched, but—it is a good story. The needs of less common supplies do compel the use of very novel make-shifts which ride to fame.

If one is contemplating the construction of complicated models, an amateur knowledge of painting and sculpture added to that of architecture is very valuable; the more the better if one craves the top rungs of the ladder. Some help can be gained from Mr. John Rowley's book "Taxidermy and Museum Exhibition." Books on recipes and formula found at the reference desk of public libraries are "life savers" for glues, bleaches and what not. Chemistry and a knowledge of strength of materials and construction are useful here as in architectural practice. The sources of information are widespread if one possesses ability for adaptation. With a few exceptions, little is taught in the schools, and for success one is largely dependent on his own efforts, and what he can glean from scattered writings.

In other photographs accompanying this article are shown a group of working models on exhibition. Much larger and more elaborate models have been built by a similar process, and because of the small size of these, grouping was necessary to hold their place with other large work. The various levels gave each model its own setting at a proper eye line. The problems of the various models varied as their shapes and scales. The Mutual Tower model at eighth scale and shown in detail, was made to study the top of the tower only. While the mass from which it sprang was necessary for judgement, no time was spent on its detail. Thus purpose influenced presentation of each model.

As to technique, the top one is of wood and chipboard, with buttresses of cast plaster. Otherwise the flock is the outgrowth of a sculptor's technique—which is, model in clay and cast in plaster, plain or steel reinforced, colored as previously discussed. In practice this method is used only for models built for long travel or life, and has no representative in the group. In this case the clay model only was made, saving loss of detail and time by omitting the casting. To compensate for loss of strength in the mate-

rial, more care was used to keep the clay evenly moist during construction and then in working it thoroughly together. Only short reinforcing was used, that is, wire less than two inches long for specially weak places as chimneys.

To this point the process is simple and any of the models shown (except the top-most) *could* be built by it. If the clay is allowed to dry and additions become necessary, the clay must be protected against expansion. Drying should not occur until all changes are made, but if it does, the simplest way is to model the new form oversize and let it dry or carve dry clay and glue it in place with shellac. Sometimes joints can be closed by a judicious use of heavy color.

Glass is the best surface on which to work moist material. When dry the model will loosen and may then be shellaced or screwed to a wood, marble or other base.

Simple as this process is (before drying has set in), it still contains possibilities of great usefulness to the architectural designer. Any kind of a model is better than none. The picture of the exhibition study shows the condition of one simple model which served as a basis for judging the dimensions for the working drawings though it is of "no" scale "clay." Cost cutting to use stock on hand caused the only variations between model and finished exhibit.

This simple model or that of the country place, illustrated, can give important service, and their value is far beyond their cost. One sees facts in even these simple forms, not readily discernable in drawings. Thought trend is clarified and new forms spring to mind unbidden. We have already mentioned materials, and modeling tools have often been discussed by others to which one may add square and rectangular sticks for punching openings. Orange wood manicure sticks will replace most of the regular modeling tools. In fact few tools are necessary.

Studio production of models has proved satisfactory for all kinds. The architect visits the model the same as any other job under construction, or with the small types shown the model is readily taken to the office for criticism the same as any building

material. Sometimes they are left for a day or so, for special study, though this is seldom necessary as an architect makes decisions quickly.

Complex types will naturally remain the province of the studio, for the problems, at times, are enough to puzzle an engineer or artist, and will until we know all about the rigidity of structures, the control of expansion, and the chemistry of materials, as well as their discriminating use.

However the greatest good will come to architecture through the widespread use of models in simple ways in the hands of all. One may blaze a new trail, but one cannot do the world's work alone—so remember—models are easy in simple plastics. For architecture's sake, take a handful of material and try shaping the next building. An agreeable surprise is certainly in store for those who will.

DOES THE STOCK PLAN SERVE
THE OWNER WELL?

By FREDERICK JOHNSTON, Riverside, California,
in *Pencil Points*

I HEARTILY indorse the letter of the Secretary of the Architects' League of New Jersey concerning stock plans. Am of the tribe—a small house designer—which suffers difficulties because of the stock plan evil. I have been practicing for several years, receiving commissions for small constructions, while pursuing studies preparatory for larger opportunities. I am not at present certificated in this State, although I expect to gain the appendix 'come winter.'

"Does the stock plan serve the Owner well?—I meet with the stock plan frequently and have little to say in its favor. The best ones, supposedly, are those prepared, or at least sold, under the sponsorship of associations of architects; the worst are probably those prepared by firms whose main business is some child of the profession's, such as blue-printing. Parenthetically, it is a fact that the public is so ill-advised architecturally that people frequently do go to a blue-print shop seeking architectural service. In practical value

to the owner I have seen little difference between types of stock plans. Those prepared by architects are frequently developed for prize-winning in some competition, and are devoid of much evidence of earnest study from the angle of the owner's best interest. Economic use of materials and labor is given little consideration; standard milling patterns are ignored; window and door sizes are special; cabinet work is of special design (although not showing any particular or valuable improvement over designs which are stock and generally cheaper); grades of materials are frequently unsuited to the class; such features as service porches, baths, and kitchens are neglected or designed for the use of servants not contemplated by the small house owner; types of finish unsuited to the pocket-book or otherwise impractical are too frequently recommended; the effect of dimensions upon cost is rarely considered, and types of plan, etc., suited only to a portion of the United States are offered for sale in other parts without any attempt to adapt them intelligently to the owner's needs. Too many have been produced with but one thought in mind—a charming design—and availability and practical use of the plan were never considered. The drawings are too frequently made just to impress judges and possible buyers, and to the contractors are vague or incomplete; and the specifications—! I have yet to see one accompanying a stock plan which made much of an attempt to outline methods of labor or use of materials, or which afforded any protection to the owner from an unscrupulous contractor. A fine basis for a contract!

"Again, I have seen 'drawings' given away by material firms with orders for materials, which were so poorly done that I have been called upon to advise the contractors during erection, sometimes actually being paid for services by the company which gave away the plan.

"In all this stock plan idea, service valuable to the owner has never been the major consideration. It has been promulgated for selfish reasons—because it was thought that keener appreciation of good designs would help the business. And yet it has savored of the architect laying off for a moment

his lofty professional dignity to entertain himself with the problem of uplifting the common people, overlooking the idea prevalent outside the profession that anyone so desiring should have a tasteful and well built home, representing full value for every dollar spent, regardless of size. The small house owner's desire for architectural service is still ignored.

"There may be cases where the stock plan has functioned adequately but so far as my experience and observation extend, it has done more harm than good by misleading owners into thinking they can get something for nothing, that the production of a complete set of drawings and specifications for so small a thing as a chicken-coop is a matter of a half-hour's time; and that they can, without any preparation or training assume responsibility for the simplest design, adapt and alter it to individual needs, and competently supervise construction of anything that comes to hand costing less than \$35,000.

"When the lumber company he selects will give the owner a 'plan' free with an order for material, why pay even \$25.00 for one. And who is telling him the difference between these types of plans and architectural service in fact?

"Moreover the stock plan has never offered any protection to the owner in place of supervision by an architect. In fact I should say from observation that, with a stock plan and specification in hand, the owner had special need of architectural supervision service,—much as a child with a stick of dynamite needs counsel.

"*Does he get the kind of a house he should have at a fair price?*" I should say not. Allowing for exceptional cases with which I am not familiar, owners always pay more than the current market price for a given dwelling or other structure when attempting to proceed without the advice of an architect. There are so many reasons for this that I can not attempt to set them down. The basis of most of the failure is that no stock plan is satisfactory 'as is,' it must be altered and worked over even to represent a compromise between what the owner would like to have and what he can pay for. The owner will attempt to place

fixtures, etc., although really lacking the imagination to visualize them in place or use, with the result that during construction frequent alterations with the attendant extra charges are necessary. (How many times I have received a client with a plan 'all drawn out.' It is exactly what he wants—he worked it out himself. Yet after an hour's consultation we have entirely abandoned 'just what he wants' for something I have shown him to be much better under the circumstances.)

"*Is the building, when completed, as satisfactory from the standpoint of suitability of the building to its site, proper placing on the plot, plan selection of materials, etc?*" How can a stock plan be fitted to a site unknown? How can the owner know best to adapt it without training or advice? Shall we leave an immense potential field of architectural effort to the carpenter-contractor, and say that he has the training and is competent to advise the owner?

"Who creates the architect; schools—the architect himself? Or is it the people who would pay him money to do something? If asked, the average man will tell you that it is the business of the doctor to keep one well, that of the lawyer to lead one safely through the mazes of legal procedure, that of the architect to advise and otherwise protect the interest of the client in constructing real-estate improvements. It is not a doctor's business to make one beautiful, nor a lawyer's to make one wise, neither does the average man go to an architect for a pretty house only. Average man has little money to pay for beauty alone—he has, more or less of necessity, to take what of it he can get along with the result of practical and economical considerations. Why not recognize this, admit architecture as primarily a business, and give clients what they think they are entitled to—a service which has a dollar value because it produces tangible values for the owner.

"The whole idea is a libel on the profession, anyhow, for if 'plans' for a \$10,000 house can be and are produced for \$25.00, then the architect who takes a fee of 8% on a \$30,000 job is just a grafter. And it is a fact that there is a current notion (and a growing one) that the whole profession *is*

a graft. 'My boy studied it in high school' . . .

"Now as matters proceed hereabouts, a trained man can produce work for a small house owner at a saving more than covering the cost of the service. I think this field an excellent one for young men beginning the practice of architecture. Here the advanced student and beginning practitioner may obtain much valuable experience without prejudice to his clients. His production may be slow and his management of the work awkward, occasionally wiping out profits, but it is the logical field in which to begin. The savings he should make, by personal attention to each case, by intelligent study of appropriate materials and finishes, by earnest attention to a tight specification, and by bringing to bear the value of his presence on the job during supervision, should result in the beginner not only earning his fee but in making a saving for his clients more than covering the cost of his fee, as well as assuring the latter full value for every dollar spent, practical suitability, and individual charm of design.

"These jobs do not take a lot of time when the architect gives some attention to organization of his work; and once having arrived by study and experience at values for material and labor proper for this class of work, he should quickly develop facility in the handling of them, producing distinctive designs properly adjusted to the site, the needs and desires of his clients. Also not to be overlooked is the value of the educational work such a man will carry on when he has the ideals of the profession at heart. He is bound to coordinate and improve the tastes of those with whom he comes in contact, and he should, at the same time, be laying the basis of a future practice of larger opportunity in meeting the first demands of the younger generation responsible for the bulk of smaller constructions, and essentially his own.

"For myself, I have established by experience that at least in this locality a young practitioner can design a \$5,000 house, set it forth in complete drawings and specifications, and supervise its erection under a general contract gotten competitively, for a fee of 8% and frequently less; with a saving to

the owner plus many benefits, as against what that owner could accomplish if left to 'go it alone' with a stock plan. Some of those benefits are the prosecution of the whole work satisfactorily without loss of the owner's earning time or interference with his time for leisure; individuality of plan, worked out to fit exactly the owner's personality and preferences; particular charm of design arising from such a plan; full development of possibilities inherent in site and environment; and protection for the owner against fraud and malpractice.

"To sum up, Architecture, if a business as well as an art, may with advantage be applied to any sort of construction, profiting the community, the owner, and the architect alike."

NEW DEVELOPMENTS IN HEATING EQUIPMENT*

THE perfection of equipment for heating and air conditioning has progressed along four different lines: the automatic firing of the heater, the development of boilers and other heaters for oil and gas burning and for automatic stoking, the control of temperature, and the humidifying and cleansing of air. The results may be adopted singly or in combination.

A fuel that calls for little attention is gas, either natural or manufactured. Under former conditions its cost was often prohibitive; but although it is still more expensive than other fuels, the development of apparatus and a change in point of view are bringing it into increasing use.

Economy begins with the construction of the house, which should be heat-proofed with insulation in the roof and side walls, metal weather stripping in all outside openings, and tight storm sash on the exposed sides. Through a better understanding of the problem, heaters now extract more heat from a given volume of gas than was formerly possible, and through thermostatic devices no more gas is burned than

*Abstracts of an article in *Building Age* by C. Stanley Taylor, describing major developments in residence heating.

is actually needed to maintain the desired temperature.

According to modern thought, any higher cost is offset by the elimination of labor charges, by the complete absence of dust or grime, by the comfort of a reliable and continuing supply of heat, and through being connected to the gas mains, by the advantage of paying for fuel after it has been used instead of before.

Reliability of oil burners has been greatly increased, and with the development of delivery systems, the maintenance of an adequate supply of oil in the tank has become a function of the oil companies. So great is the demand for oil burners that many makes have been rushed on the market without adequate test, or by companies financially irresponsible. Selection, therefore, should be based on the strength and probable permanence of the manufacturer, proven performance, and servicing facilities.

The latest improvement in coal burning furnaces is a self-feeding magazine boiler, in which fuel is placed in a compartment at the top and passes by gravity to sloping grate bars below, according to the needs of the fire. These hold enough fuel for 24 hours' operation.

Still less labor is required with automatic stokers operating on these same fuels, which can be applied to all heaters of standard design. The fuel is placed in a hopper containing a sufficient supply for 24 hours of operation. A conveyer driven by an electric motor carries the coal to the under side of the grate and forces it up through the center, where it burns from the top downward instead of in the usual manner.

Ashes displaced by the incoming fuel fall to the ash pit, from which they are deposited in a dust-proof receptacle. A blower provides a continuous draft, and regulation of heat is accomplished by the speed of the conveyor and a faster or slower delivery of fuel to the fire. With a stoker of this type the labor of tending a heater is reduced to filling the hopper every 12 to 36 hours and removing the ash buckets once or twice a week.

When oil burners and stokers were introduced they were applied to heaters of existing design, often with unsatisfactory results. All of the large manufacturers now offer heaters especially designed for these firings, with an increase of efficiency and the elimination of much trouble and difficulty. As necessary parts of oil burners and stokers, thermostatic regulators have been developed and improved, and where they were formerly considered to be in the luxury class, they are now recognized as an essential for comfort and economy with heating plants of every description. Properly installed, they will so control the drafts and dampers, or the fuel supply, that heat will be maintained within a degree or two of the desired temperature, and fuel consumption kept at a minimum.

One of the great advances in domestic heating has been due to a recognition of the importance of humidification, which is stated by the medical profession to have a direct bearing on the prevalence of colds and allied diseases.

Under ordinary conditions, the air of a heated house is abnormally dry, and extracts moisture from every possible source. As a result human skin and tissues are so unnaturally dried that they are susceptible to the attacks of germs that would otherwise be resisted, while the drying of woodwork, bookbindings and other articles leads to damage and destruction. A proper moistening of the air thus promotes health and is a preservative.

The correct degree of humidity will require the evaporation of a quantity of water that will depend on the outside temperature, the minimum being one gallon per day per room at 40 degrees. Evaporation must increase with lowered outside temperatures, and will be at least three gallons per day per room during zero weather. So great a quantity of water cannot be conveniently handled by tanks on the radiators, but demands the installation of special apparatus.

One such device has the appearance of an ordinary radiator enclosure, and is substituted for a steam or hot water radiator at a point from which it can influence the entire house. Its heating section is con-

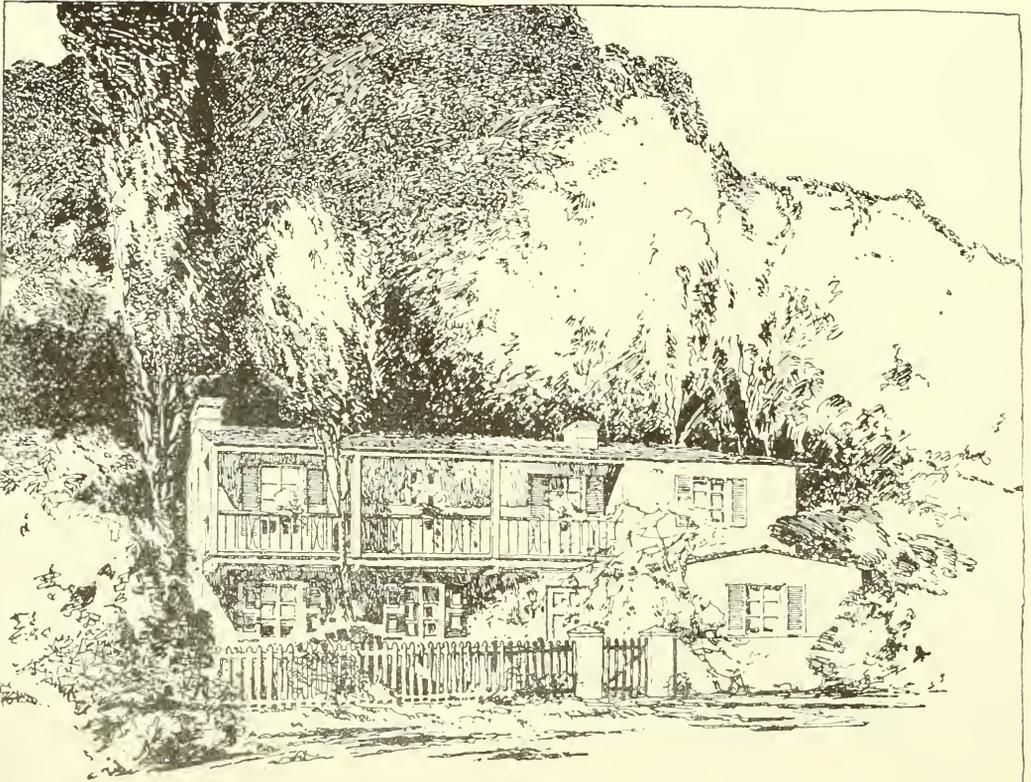
nected to the boiler and is on the principle of an automobile radiator; air is forced through it by an electric blower designed for quiet operation, and is discharged through curved passages that are moistened by a continuous flow of water from small sprays. Under maximum conditions this machine can evaporate as much as one and one-half gallons of water per hour. The degree of humidity depends on the flow of water, which is controlled by a regulator placed on a wall, while a thermostat controls the delivery of warm air by starting and stopping the motor. A further advantage of this device is that the current of air is washed and cleansed as it passes through the sprays.

Water pans are usually built into warm air heaters, but in sizes that are now known to be entirely too small; in the new designs the tanks are large and are kept filled by float valves.

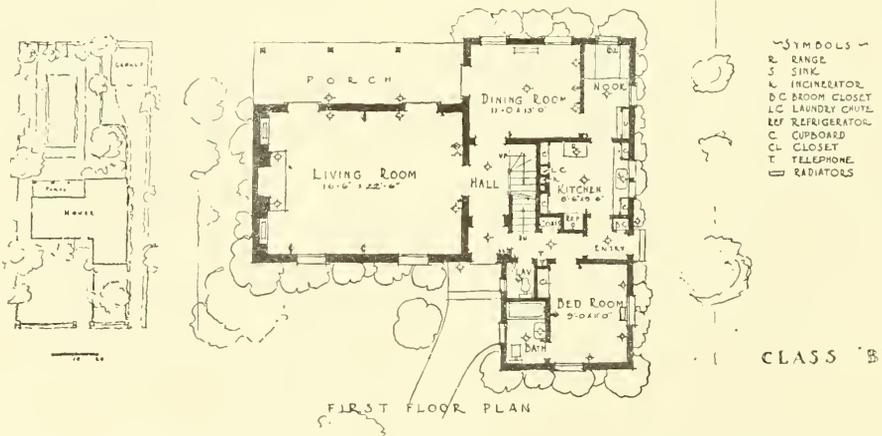
This is but one of the many improvements that have brought warm air systems to a high peak of development. The unsatisfactory service of earlier warm air systems was due in part to the feebleness

of the rising air currents; today, circulation is forced by an electric fan placed in the cool air intake. In addition to the ducts leading warm air to the registers, there is a second set by which cooled air returns for reheating, and the system thus provides a continuous circulation of air that can be maintained at any desired temperature. Under these conditions the entire volume of air can be humidified by passing it over an evaporating tank built in the heater.

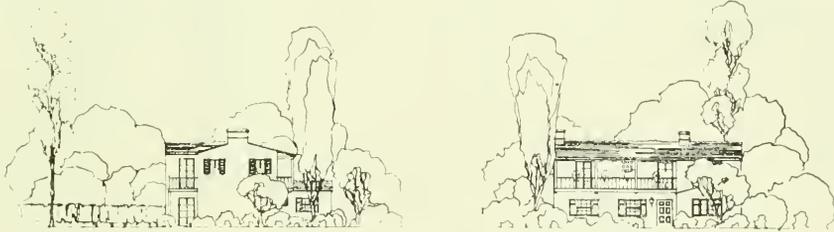
In one highly developed gas-fired system a tank kept filled with water by a float valve is placed above the flame and in the main air passage; steam that is continually being formed humidifies the air and is distributed through the house. The proportions are such that the correct degree of humidification is constantly maintained. This system further provides two filters that cleanse the air of all dust. So complete a machine as this can be useful in the summer as well as in the winter, for the running of the motor and blower will maintain through the house an invigorating circulation of air.



1929 NATIONAL BETTER HOMES
ARCHITECTURAL COMPETITION

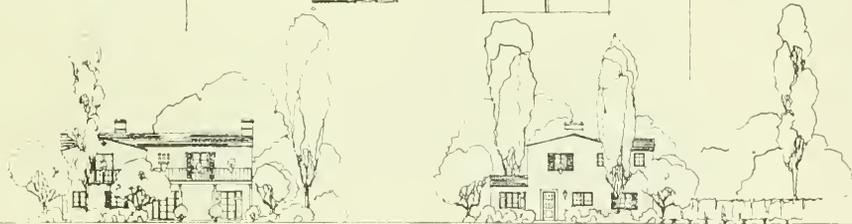
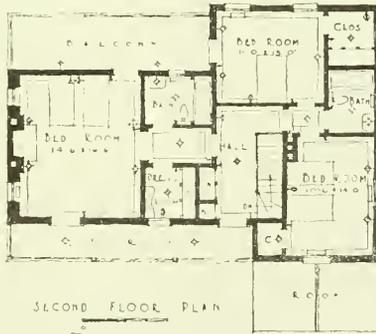


H. ROY KELLEY'S GRAND PRIZE HOUSE IN THE



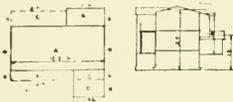
SIDE ELEVATION

FRONT ELEVATION

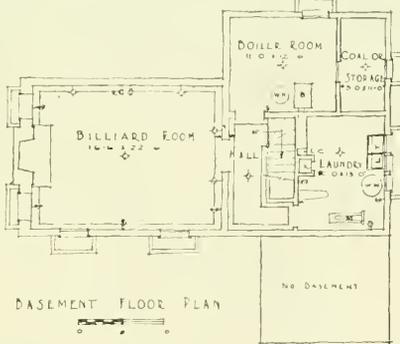


REAR ELEVATION

SIDE ELEVATION



A. WINDOW	2'-0"
B. WINDOW	4'-0"
C. WINDOW	12'-0"
D. WINDOW	14'-0"
E. WINDOW	12'-0"
F. WINDOW	12'-0"
G. WINDOW	12'-0"
H. WINDOW	12'-0"
I. WINDOW	12'-0"
J. WINDOW	12'-0"
K. WINDOW	12'-0"
L. WINDOW	12'-0"
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R. WINDOW	12'-0"
S. WINDOW	12'-0"
T. WINDOW	12'-0"
U. WINDOW	12'-0"
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X. WINDOW	12'-0"
Y. WINDOW	12'-0"
Z. WINDOW	12'-0"



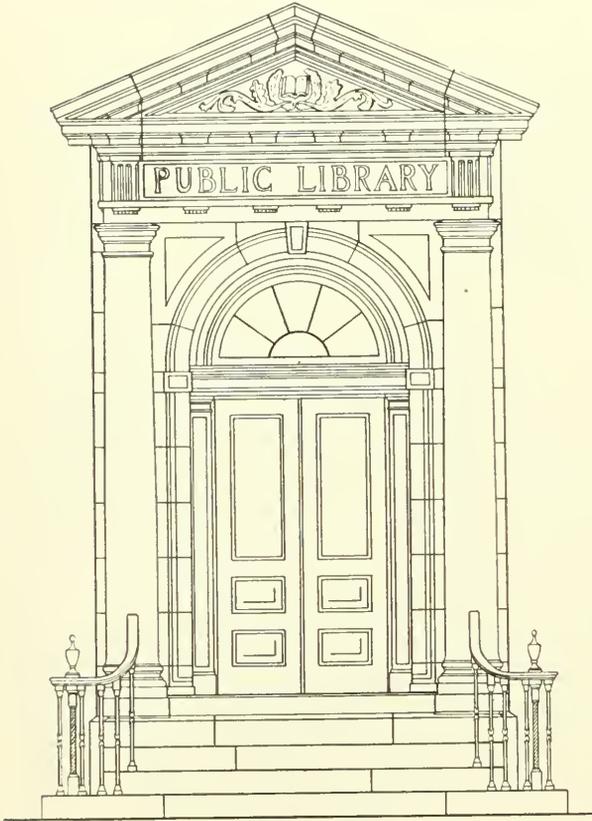
SYMBOLS

- M HANDLE
- D BOILER
- WH WATER HEATER
- L.C. LINEN CUPB.
- X INCINERATOR
- WM WASHING MACHINE
- L.T. LAUNDRY TRAYS
- RADIATORS

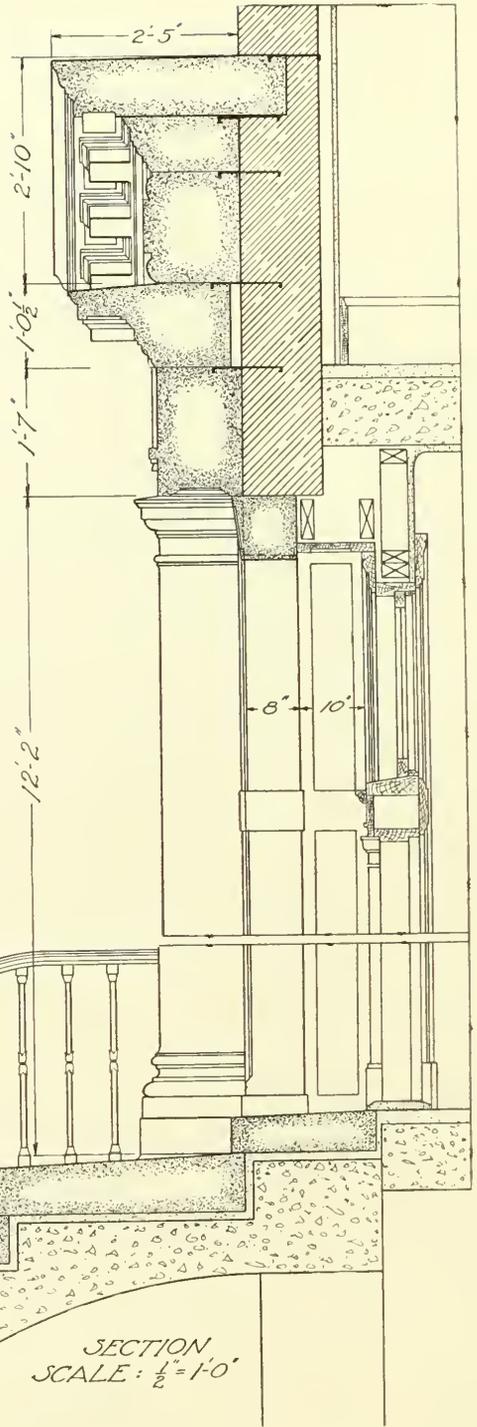
1929 NATIONAL BETTER HOMES
ARCHITECTURAL COMPETITION
CLASS B

NATIONAL BETTER HOMES CONTEST

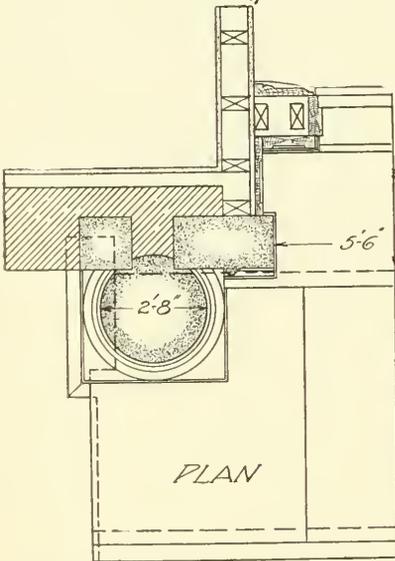
COLONIAL DOORWAY



ELEVATION
SCALE: $\frac{1}{4}'' = 1'-0''$



SECTION
SCALE: $\frac{1}{2}'' = 1'-0''$



PLAN

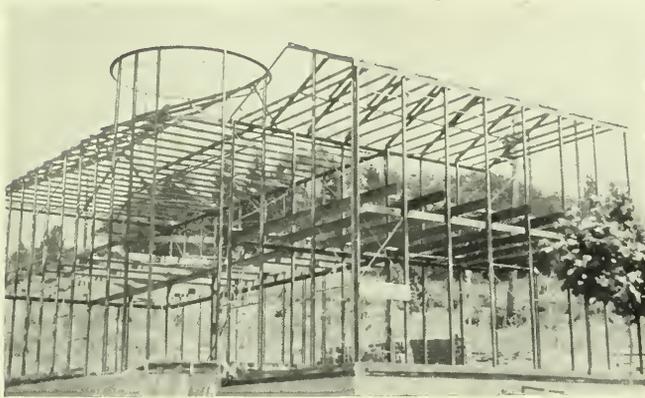
Courtesy Vermont Marble Company

DETAIL OF MARBLE FOR COLONIAL DOORWAY TO A PUBLIC LIBRARY BUILDING

ENGINEERING

and

CONSTRUCTION



STEEL FRAME FOR RESIDENCE IN PIEDMONT, CALIFORNIA
Roper and Gill, Structural Engineers

Featuring the

First Steel Frame House in Northern
California

A STEEL FRAME HOLLOW TILE HOUSE

By: G. F. Gill, CE



IT has long been a problem to combat successfully nature's destructive agents. Fire, earthquakes and such insects as the termite concern us most. Catastrophies like the Berkeley and Mill Valley fires and the Santa Barbara earthquake may be avoided if the most improved engineering methods are employed in the design and erection of our buildings.

To combat these three menaces and present a dwelling that will have beauty as

Note—Mr. Gill is a member of the firm of Roper & Gill, structural engineers, Oakland, California.

well as durability, a steel frame-hollow tile residence was designed by W. C. Tait, Jr., and the home is now being built under his supervision in St. James Wood, Piedmont, California, for J. H. L'Hommedieu Company, Inc. Miller & Warnecke, architects, of Oakland, have assisted in beautifying the house in color and design, while the structural steel details have been handled by Messrs. Roper & Gill.

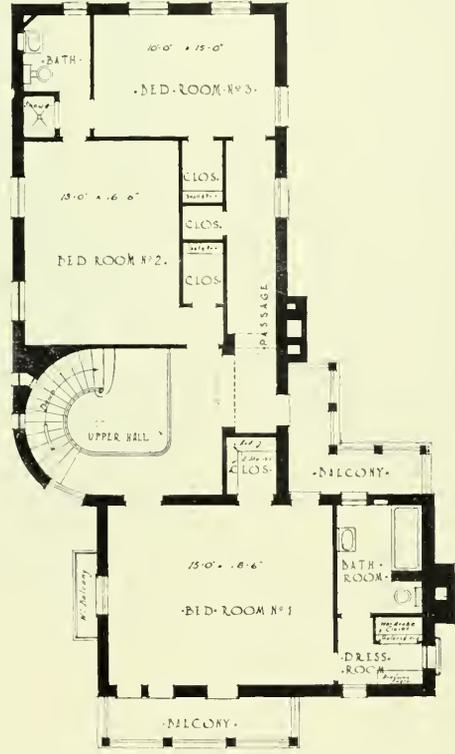
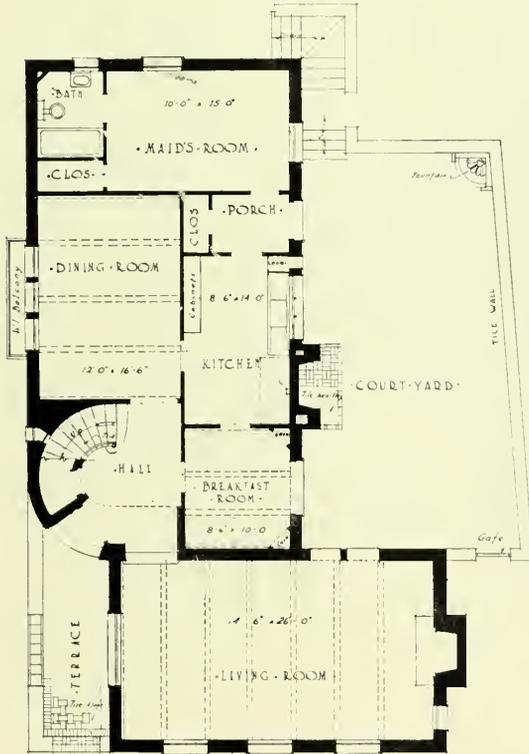
The steel frame was fabricated and erected by the Judson Pacific Company.

Exposed tile is an important feature of the construction and excellent effects are being obtained. Dickey Mastertile is being used throughout.

The wall construction consists essentially of light steel studs between two 4 inch tile walls. The bracing of the studs is accomplished by half inch rods diagonally and three-quarter inch pipe separators horizon-

consists of a two and a half inch concrete slab on steel-tex over junior beams which are structural steel shapes adaptable to light floor construction and wood flooring on sleepers. The rafters are all steel. Steel sash are used throughout.

The roof will be of terra cotta tile laid on trussed steel rafters of standard structural steel shapes. All plumbing and wiring



PLANS, STEEL FRAME, HOLLOW TILE RESIDENCE, PIEDMONT
Miller & Warnecke, Architects

tally between floors. The air space provides insulation against dampness, heat and cold. The two four-inch tile walls are tied together in alternate courses by bonding irons; the outside four inch tile wall is to be white washed and the inside tile wall is of buff color natural tile in the living room and hall and decorated with plastic paint in the remainder of the house. All ceilings are metal lath and plaster. Incidentally, this is the only place in the house where plaster is used. The first floor construction

is easily taken care of between the steel studding of the frame and between the tile. This air space between the tile walls forms excellent insulation against dampness and cold as well as heat. A sanitary feature of this house of special merit is its immunity against vermin and injurious insects which today are causing injury to homes in some localities.

The garage in the basement will provide for two cars and will be fireproof. Garage doors will be electrically controlled. Heat for this residence will be provided by an

oil burning hot air furnace.

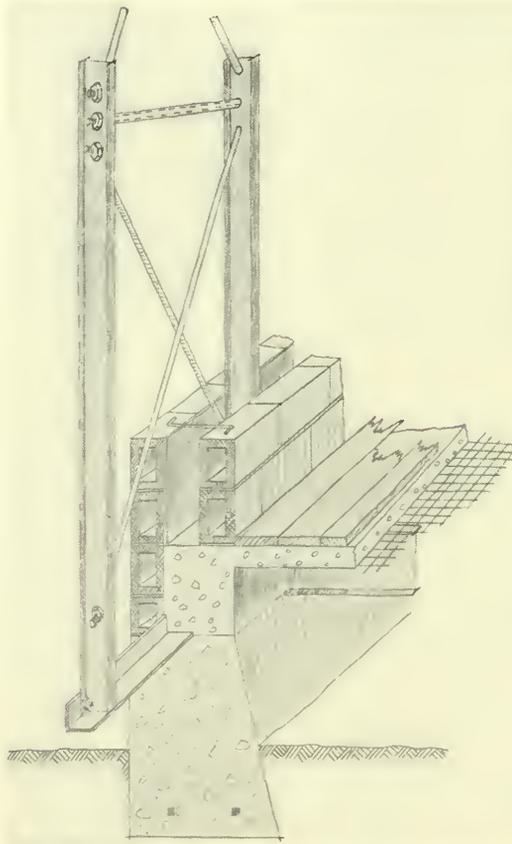
The contract price of the house exclusive of lot is 48 cents per cubic foot. The weight of the steel frame is approximately twelve and one-half tons and its cost is less than ten per cent of the cost of the house. The total original cost will not exceed ten per cent more than a wood frame house with plaster inside and out. Small maintenance cost, low insurance and negligible depreciation of the steel frame hollow tile house are some of the finer features of this type of construction.

* * *

While on the subject of steel frame construction of residences it is interesting to note the conclusions of the Connecticut Architectural League, which recently sponsored a competition for a steel frame house.

L. R. Hammond, chairman of the committee having charge of the competition, in filing his report, stated: "Many interesting things were revealed to the committee through this competition. One is a house of steel frame construction of Spanish design which was being built by W. C. Tait, Jr., at Oakland, California, under contract for 48 cents a cubic foot, as against an average price of forty-five cents for wood frame construction in Connecticut, and fifty-five to sixty cents for brick construction.

"A second is what appears to be a new method of steel frame design which would greatly simplify work of erection, and with



SECTIONAL VIEW OF WALL CONSTRUCTION,
STEEL FRAME AND HOLLOW TILE RESIDENCE,
PIEDMONT

Roper & Gill, Structural Engineers

this an alleged new method of sheathing, having what seems to be many distinct and important advantages over methods and materials now in use.

"Information obtained through this competition appears to indicate that the steel frame is the method of house construction which will, if properly developed, most nearly permit of 75 per cent of the work being done in the factory on a basis of 312 days work for 312 days pay, as against 312 days pay for 200 days work, when, as at present, 75 per cent of construction is done in the field and the rest in the factory.

"And further, the steel frame method provides opportunity for a quality of precision and coordination of all service installations, water, heat, electric power and light, ventilation, etc., with a corresponding great reduction in cost, which seems practically impossible to older methods of house construction.

"The foregoing paragraph is not meant to appear to favor the making of one or more standardized types in the factory to be shipped knocked down for erecting on the field. What appears to be required is merely easily assembled standard units permitting house designers the same, or even greater freedom in designing, than may be now had in the use of wood frame or masonry construction. It is only by competition among designers that we may hope to see the art thrive."

MODERNIZING THE HOME

HOW great numbers of Americans may modernize their homes in 1930 to make them accord with the national ideal of beautiful homes expressed by Former President Coolidge in his speech at Mountain Lake, Florida, is indicated by Gerald Lynton Kaufman of the New York Chapter of the American Institute of Architects.

Characterizing the speech as a great stimulus from the head of the nation, to the movement for bringing harmony of design and environment into every residence community, Mr. Kaufman recalls the President's remarks:

"Some of the most appealing and fascinating homes in the world are small. They may represent but little outlay and be the abode of people of moderate means, but if there dwells fine character within it will shine forth and give to all the surroundings a touch of peace and loveliness which the most spacious palace cannot surpass.

"While few have the means to present such a gorgeous display as will here strike the eye and the ear, it is well to remember that beauty is not dependent upon large areas or great heights."

Modernizing must mean far more than simply replacing the obsolete with the up-to-date; it must mean far more than an increase in comfort and convenience; and it must transcend the mere substitution of the beautiful for the ugly. The economics of modernizing concerns the resultant value of the finished home and must stand comparison with new construction involving a similar investment.

"But how can the two be compared?" asks Mr. Kaufman. "How can a homeowner weigh in the balance a contemplated expenditure of \$5,000 for modernization, as against \$25,000 for a new home, and expect to get an intelligent reading of the scales? The answer is in most cases, that he cannot; but here is where the architect may step in to adjust the balance with the weight of his own experience.

"The architect is the only disinterested expert who can advise whether or not

modernization is economically practicable in each particular instance. Mr. John Smith's house, built in 1910 and worth \$15,000 today, may be made to have a re-modernization without an appreciation of its re-sale value to the \$18,000 class.

"Who is going to tell Mr. Smith what to do, and who is going to advise Mr. Jones what to do? The manufacturers and the builders are both honest and willing advisers; the products advertised in the newspapers and magazines may be just the very things wanted, and the best of their respective kinds; the builders may give the most reasonable estimates. Yet who except the architect may stand off beside the owner and view the house from a properly disinterested perspective, to advise modernization for the Smith house and something else for his neighbor?

"Mr. Jones is not to be dismissed by the 'no' of economics; neither the manufacturers nor the builders are going to 'lose' Mr. Jones simply because he had the foresight to seek professional advice. His old house is no longer satisfactory; he considered modernization at first, but the specialist that was called in prescribed a change of climate instead of an operation.

"Jones sits down with the architect and looks over the economics of his own case. He finds out that he can take advantage of the \$15,000 market value, sell his home, and add the \$5,000 allotted for modernization to make up a \$20,000 budget for a new building. He finds out further that by securing the right kind of property and by having complete drawings and specifications prepared, he can build a new home with a \$25,000 re-sale value and 'keep up with the Smiths.'

"It seems a little more trouble and a little more loss of time in Jones' case, but it means also a sound investment with a net difference in value of \$7,000 over the idea of modernizing. The material dealers and the manufacturers will have sold him three times the amount of home-building merchandise first contemplated, the builder

will have signed a contract three times as large, with corresponding profits, and Mr. Jones himself will be \$7,000 to the good in the final value of his home.

"Meanwhile Smith has not been faring at all badly either. For modernization has been prescribed for his case and he is taking advantage of the best that is offered for the success of the operation. He has told his architect that he wishes to invest \$5,000 in his home as it now stands, and the architect has assured him of the economic soundness of the idea. Only this is not the full extent of the professional service.

"It must be decided in what way the \$5,000 can be spent to best advantage. Shall it be for a new roof, colored tile bathrooms, hardwood floors, and new shingles on the exterior? Or should a smaller sum be spent outside the house simply for restaining the roof and repainting the shingles, with the greater part of the investment devoted to brass plumbing, a new heating system, insulation of the walls, and plastering on wire lath?

"Smith's house may need one kind of modernizing and the house next to Smith's an entirely different kind. The architect helps him come to a decision, but in doing so discovers an entirely new problem confronting his client.

"Smith has now developed an economic complication; the pressure of enthusiasm and of a rising stock-market has gone to his head, and he wishes to put \$10,000 into modernization. His architect, however, realizing the superlative value of good-will over an increased commission, shows him that the additional expenditure, though it may add to the appearance and comfort of his home, will not raise the re-sale value.

"Economically speaking, \$5,000 worth of modernization will raise the market value to \$25,000 but \$10,000 worth of modernization will raise it only to \$26,000—in Smith's case. Here is where the term modernization supercedes the old idea of 'remodeling'—for in 1919 Smith would have known no way of setting a limit to his investment.

"Plans and specifications are drawn up, estimates are secured from several local

builders, and finally a contract is signed. In due time the remodeling has been finished and Smith can move back to his \$25,000 home."

The message of modernizing is the message of today, ever before the eyes of homeowners. But it should be supplemented by the qualifying message of caution, which is the word of modern economics. And who is better qualified to offer these words of caution than the architect?

A PLEA FOR GREATER PLAY GROUNDS

A nation-wide mosaic of "master city, county and regional plans," to provide for larger park and recreation areas, parkways, traffic and transportation systems, group buildings and zoning regulations, is urged by Charles H. Cheney of Los Angeles, chairman of the City and Regional Planning Committee of the American Institute of Architects.

The major objective of such plans is more breathing space in American cities, more "impressive scenery for nerve-racked, city-strained men, women and children."

California, Mr. Cheney points out, has already passed a Planning Act, which went into effect on August 1, and which makes mandatory upon each city, county and regional planning commission to make and adopt a master plan, including these various features.

"This is a distinct step forward in the progress of the country," he asserts. "It is even more forward looking than the model standard planning enabling act recommended by the Hoover Committee of the U. S. Department of Commerce in 1927, which largely inspired California's less definite Planning Act of 1927.

"Most students of social problems are familiar with a good many of the factors which must be taken into account in preparing any usable plan of city or regional development.

"We know that it is not practical to locate a school building, or the local playground for the children who are to use the school, without taking careful account of

the centers of present and future child population.

"These in turn are dependent upon the previous manner of growth of the neighborhood and its zone ordinance, which determines whether it shall continue as a residential district. Both schools and playgrounds are safer, cleaner, quieter and more attractive off of major highways.

"In a similar way all the other parts of the city's master plan really have important bearing upon this choice of location. The same is true in the larger units of the county or region.

"Now we have county zoning coming into more general use, with zoning regulations for areas desiring protection, both residential and industrial. This helps to effect sounder planning and community building.

"General principles have been developed regarding the kinds of recreation areas, school playgrounds, public playgrounds and parks, which are needed and should be included in making city, county and regional plans.

"The efficiency of a system of parks is a complicated and difficult matter to estimate, for it cannot be figured in dollars and cents like a real estate deal or any commercial project.

"At intervals about the city there should be outdoor beauty spots for the restful recreation of both old and young. Here should be found the quiet walks and the refreshing beauty of trees, shrubs, flowers and lawns, what has been called that real park quality which benefits the city dweller from youth to old age.

"In each distinct part of the city there should be a neighborhood park of from fifteen to fifty acres, forming a general adult recreation center.

"In addition to these local recreational requirements, there should be areas of great natural scenic beauty, worthy of permanent perpetuation and care, which may well be a few acres up to several hundred or even thousand acres in extent.

"Magnificent street trees are a most noticeable and refreshing asset in any community. The most forward looking have early been committed to an extensive tree planting program. This naturally requires

appointment of a tree warden, and continuous appropriations for the care of street trees.

"High class residence cities, proud of their appearance and attracting large numbers of visitors, find it profitable to create show drives and parkways, 150 to 300 feet wide and well lined with trees and flowering shrubs, connecting up the various parks and principal points of interest around the city. Chicago and Kansas City are famous for such parkways.

"A parkway is a route limited to passenger vehicles, and made exceptionally agreeable as a route of pleasure travel by every possible means, but especially by the feeling of openness that comes only with plenty of width and by an ample enfranchisement of trees, shrubs, and other plantations in the parallel wide sidewalk areas.

"There is justification for providing such a parkway or boulevard as one of the main thoroughfares of a city wherever conditions are such that commercial traffic can be taken care of in other or nearby routes, and that the amount and kind of passenger traffic over the proposed route would make the extra public enjoyment afforded by the parkway or boulevard worth its cost.

"A parkway or boulevard may be used mainly by people going to and from business and yet give them a great deal of incidental recreation and pleasure.

"Such parkway thoroughfares, as far as possible, should lead past the principal parks and scenic views of the city, showing them to the best advantage of local people.

"Width in parkways is necessary to secure ample permanent spaces for planting, which is what makes a boulevard refreshing and useful. A width of 200 to 220 feet would generally be a minimum, but more than this is usually desirable.

"In the case of all parkways, houses should be set back fifty to one hundred feet from the sidewalk, and suitable legal methods of securing this should be adopted at the time of planning.

"Acquirement of all kinds of playgrounds, parks and parkways may come to the public by gift, by lease with option to purchase, or by outright purchase.

The ARCHITECT'S VIEWPOINT

- *More Study to Roof Lines Needed*
- *Proper Charge for Services Rendered*
- *Public More Appreciative of Architect's Mission*

CONTRIBUTING EDITORS

WILLIAM C. HAYS . . . *San Francisco*
CARLETON M. WINSLOW . *Los Angeles*
HAROLD W. DOTY . . . *Portland, Ore.*
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ROOFS are the most ancient detail of man's architectural endeavors of which we have any knowledge, dating back to the remotest of prehistoric times. Roofs were man's first practical concern. He took advantage of those nature had provided by caves and dens, and later man dug holes for himself that roofs should be provided. As he improved in building technique, man saw to it that his roofs not only were skillfully constructed to serve their practical purposes, but also to be things of beauty especially when visible from the surrounding terrain. In hot countries their existence as terraces became places of romance, as Guy de Maupassant has so gracefully related, and they had singular beauty when viewed from above, and mystery when seen from below.

It was left for the last century to prostitute them to uncouth purposes and appearance until, on business structures, their clutter of tanks, pent houses, staggering telephone braces and finally illuminated signs, were enough to make the angels weep, and weep they probably did and do, if, as we surmise, they had to view them from above.

During this last generation, architects generally have done what they could to mitigate this blight and no building project of the present day would be acceptable without careful consideration being given to housing roof impedimenta with care and artistic skill. Investors in building construction are willing to pay the cost of visible roofs which conceal the mechanical needs of the habitable building below, and such roof designs have been the salvation of the skyline of the modern city.

How much the design of roofs will be affected by the development of passenger flying remains to be seen. The roofs that are now visible from below will be beautiful when viewed from above. Until the problem of landing air craft on very limited areas has been solved, flat surfaces for such purposes will not be a serious element in roof problems. The sign man will probably be the first to take advantage of the visibility of roofs from above, and unless that phase of the problem is given more serious attention than that of illuminated signs as now seen from below, another irritation will be added to our already distracted and hectic existence.

Turning to the lighter side of the subject of roofs, the medieval builders carried far the science and theory of roof design and construction, enveloping the elements in quaint phraseology. How many architects of today know offhand about such terms as straining piece, common rafter, pole-plate, puncheon, camber-beam, joggle and cogging?

* * *



VERY recent ruling by Judge Leon Y. Yankwich in the case of a suit by an architectural associateship against the Calvary Presbyterian Church is of serious interest to the profession.

The architects, Messrs. Norman F. Marsh and De Wight I. Kindig, were suing for payment based on drawings prepared for church construction which were not used; the work being done over again for a building to be considerably less in cost.

The decision, favoring the defendants, stated that architects must base their percentage of pay on the building erected and not the building originally planned. Judge

Yankwich, who has a notable reputation for clear thinking and fair mindedness, according to press reports, ruled that if a certain structure is planned and later a cheaper one is erected, the architects must use the building actually constructed on which to base their compensation.

The proceedings of the trial and the merits of the case are not at hand and the writer has no mind to analyze this particular decision but as a precedent it is generally liable to lead to considerable embarrassment on the part of architects when charging for their services. The conscientious practitioner does not desire compensation over and above what he is entitled to charge for services performed which are not of ultimate value to his client. It is often difficult to arrive at the approximate cost of work until detailed and costly drawings have been prepared, and the client's knowledge of the cost of construction, and especially that of the preparation of drawings, is frequently exceedingly vague. This applies particularly to church and residential work. There are usually three elements in this problem, the amount of money to be expended, the quantity of work to be constructed, and the quality. The architect must have control of at least one of these elements to have the results turn out satisfactory all around. If he relinquishes all of them to the average owner, he is liable in the end to be, as contemporary slang has it, "sunk."

* * *

ONE wonders sometimes why anyone in his senses wants to be an architect anyway. He enters a career of life long study, hard work and longer hours than any medical practitioner would think of putting up with. But the urge apparently comes to enough men to keep the profession going and in the end the satisfaction of seeing the result of mental stress evolved into concrete form gives comfort and pride. Homer's use of the work "architectos," derived from "archestectos," the chief fabricator, has, in the mind of the frivolous, a double meaning, especially when related to preliminary estimates. Aside from this, what does the public in general think of architects and are people learning to appreciate good architecture?

In any structure of even modest pretensions there is architectural work to be performed. Somebody must do it and the client must pay for it. If the structure is done by the speculator-builder or the carpenter-architect, there is an architectural cost which, in the end, is paid for by the purchaser or client, even though that cost is merged into other costs and the client is told that he is "saved the expense of an architect." The intelligent public knows this and is influenced accordingly. The wise client would not think of having the architectural work done thus anonymously. He knows that he needs an architect of professional standing to guard his interests and see that he gets what he is paying for. Usually he is willing to pay an architect instead of a carpenter for this service.

On the whole the public in general has a growing appreciation of the work and activities of the professional architect. This is shown to some extent by the increasing number of laymen who subscribe to the architectural journals.

Few laymen attain the heights of architectural wisdom and understanding of such men as Dr. George Ellery Hale, who contributed a beautiful essay to the Bertram Grosvenor Goodhue Book, published by the American Institute of Architects, but sound appreciation for good architecture is certainly increasing. For proof of this one has only to look about and observe the constantly improving quality of new architectural work. Without the lay clients' co-operation, this improvement would be impossible.

CARLETON MONROE WINSLOW, A. I. A., *Los Angeles, California.*

EDITORIAL CHAT

A CHICAGO architect, whose business in the course of a year runs into the millions, wrote me the other day to inquire about the possibilities of opening a Pacific Coast office, San Francisco or Los Angeles preferred. He went on to relate how much Western material the Eastern architectural magazines have been printing of late and he wondered if business was so much better here than in the East. We wrote him that without wishing to discourage his ambitions to "branch out" we could see little prospect for his success in California unless he had something already lined up to keep him busy at the outset. There are quite enough architects on the Pacific Coast now and present building conditions certainly do not warrant adding to this number. No, San Francisco, Los Angeles, Portland and Seattle do not need any more architects.

Just to impress the reader how the Eastern periodicals are featuring Pacific Coast architecture of late, let us quote a few headings from the September issue of the *American Architect* (practically all of this material, by the way, has appeared in THE ARCHITECT AND ENGINEER from time to time) House in Portland, Oregon, by A. Glenn Stanton; Home in Broadmoor by Arthur Loveless; Unitarian Church, Portland; House of J. R. Bowles, Portland; House at Beverly Hills, California; Guaranty Building and Loan Association Building, Los Angeles; Dufwin Theater, Oakland; Income Securities Building, Oakland; Las Encinas Sanitarium, Pasadena, etc., etc.

And for text matter we pick up *Pencil Points*, to find lengthy articles by California architects. Ernest Irving Freese of Los Angeles offers his ideas on the method of "Perspective Projection"; Nat Piper, President of the Long Beach Architects' League, writes about "The California Missions" and Charles Kyson of Hollywood discusses "The Architect's Profit and Production Cost."

CHARACTERIZING the development of Washington as a "clinic in architecture" where results of importance to the entire nation are being worked out, the American Institute of Architects has launched a campaign for the immediate adoption of similarly coordinated city and regional plans by every community throughout the country.

To bring before other cities the object lesson of the work accomplished through systematic layout and building in the District of Columbia, the Institute has duplicated a film made under the direction of Secretary of the Treasury Andrew W. Mellon, and through its Chapters is exhibiting it widely to groups of architects, city planners, and civic bodies. (Mr. Cheney will show this film at the Architects' Convention in Los Angeles this month.)

"Not a casual, but an amazing progress has been made in the development of the Federal City, Horace W. Peaslee, chairman of the Institute Committee on the National Capital declared in a report made public by C. Herrick Hammond of Chicago, president of the Institute.

"The extent of this progress can best be realized by comparing present conditions with conditions five years ago. In 1923 the development of Washington was handicapped not only by lack of funds, but by lack of co-ordinated, comprehensive planning. Not only was there lack of co-operation in planning, but there was a large factor of planning at cross purposes.

"At the 1923 convention, the Institute took the position that if a definite program of development were established this confusion would be eliminated, and it appointed a special committee to develop this line of procedure.

"Results have amply justified the theory. In five years almost unbelievable accomplishments have been made. The planning commission has evolved comprehensive plans for the District of Columbia and for the entire region. It has the sympathetic and active support of a corresponding Maryland Planning Commission. It has received the beginnings of support from a similar Virginia planning commission.

"The results obtained have been due in

large measure to sympathetic contact developed between the Planning Commission and the legislative bodies. In all, more than \$116,000,000 have been authorized for federal buildings and improvements in the capital.

"From a standstill, the public buildings project has jumped to a \$200,000,000 undertaking for the entire triangle between Pennsylvania Avenue, B Street and Fifteenth. Of this total, \$25,000,000 have been authorized for the purchase of the land, and \$50,000,000 toward the building development.

"An appropriation of \$5,000,000 has been made for the development of the area between the Union Station and the Capitol, including new highway connections and carrying with it authority for the development of the Mall.

"A \$25,000,000 project has been authorized for a new municipal center on the north side of Pennsylvania Avenue. Another \$14,000,000 has been authorized for the Arlington Memorial Bridge and its connections, which include the development of B Street as a memorial highway to the foot of Capitol Hill; and \$450,000,000 have been appropriated for the development of the Mount Vernon Boulevard.

"Aside from any question of appropriations, the Government is giving full consideration to the importance of having its work carried out by the ablest men it can obtain."

In this connection should be noted a changed attitude on the part of the profession. We no longer find a scramble for government work. We find instead the ablest men willing to give hugely of their time and ability without compensation.

Architects in every part of the United States should become more intimately acquainted with the momentous work of development of their Capitol, and communities should model their efforts on the steps which have been taken toward creating a city expressing the highest aspirations of the American nation.

* * *

CAN you imagine several hundred mechanics working in a machine shop or foundry clad in white trousers? What a sorry spectacle those white pants must

present at the close of a day's work! But if that is your conclusion, dear reader, you are all wrong. Read this from a pamphlet which the American Rolling Mill Company has broadcast to the world:

"Workmen garbed in white trousers are more efficient and more careful than men attired in overalls and customary laborers' clothes.

"Since that first squad dared to institute a new style in steel plant wearing apparel, the number of pairs of white duck pants have increased until about 400 men of the plant personnel are now going about their work in spotless white—and liking it.

"The idea has a psychological trend, and it will be news to many today to learn that a steel man doesn't think that psychology is some foreign language. The idea, in fact, is this: A man who is careless or slovenly about his wearing apparel will likely be slovenly about his work. Dress him up in neat clothing and you make him into a more careful worker. Likewise you find a man who is particular about his clothing and he will be particular about his work."

That's the idea of the white pants. Put white ducks on the average man and you change his character and his habits. The old saying that 'clothes make the man,' is being worked out on a large scale at the Middletown, Ohio, factory.—F. W. J.

A PLEA FOR GREATER PLAY GROUNDS

[Concluded from Page 105]

"To be a good neighbor each school and playground should be thickly planted with a screen of shrubs and trees, twenty to forty feet wide, outside the playground fence.

"It is a well established fact that residential property facing a public park gains in a few years to twenty per cent more value than property not near a park. On the other hand property facing ill-kept, unfenced and unplanted school buildings and grounds is often depreciated in value.

"It is the function of the Planning Commission to work out a common plan for all these developments, and then to guide that plan into permanent execution."

WITH *the* ARCHITECTS

OCTOBER EXHIBITIONS

During the first two weeks of October the one-man display in the exhibition rooms of the Architects Building, Fifth and Figueroa streets, Los Angeles, consisted of the work of Julian E. Garnsey, mural painter. Sketches in color for the painted decoration of walls and ceilings and photographs of executed work were shown.

Mr. Garnsey is in the second generation of decorative painters in his family. He trained in architectural design at Harvard and in painting in Paris as the pupil of Jean-Paul Laurens and Richard Miller. He was president of the Art Students League of New York in 1915-1917.

Since coming to California his commissions have included the decoration of the Automobile Club of Southern California, the Hotel Del Monte, the Central Library of Los Angeles, the Bank of Hawaii, Honolulu, and the new auditorium and library of the University of California at Los Angeles.

NEWSOM AND NEWSOM BUSY

New work in the office of Messrs. Newsom and Newsom, Federal Realty Building, Oakland, includes additional buildings at the Harold Mack ranch, near Del Monte. The main house has already been built and with the completion of the several structures being planned, the estate will be a show place in Monterey County. Alterations and additions are planned by the same architects to the A. G. Spilker ranch at Danville, Contra Costa County. The firm has completed drawings for an eight room stucco house in Piedmont for G. Henshaw.

\$250,000 SANTA MONICA HOME

Morgan, Walls and Clements, Van Nuys building, Los Angeles, have completed plans for a large residence to be built near Santa Monica for Mrs. May Rundge at an estimated cost of \$250,000. There will be forty rooms, fourteen baths, servants' quarters, etc.

ANNUAL ELECTION

The annual election of officers of the Architects' League of Hollywood will be held the second Wednesday in October. A committee composed of John Roth, chairman, V. B. McClurg and Wm. Hodges was appointed at the last meeting to make nominations.

HAS MUCH RESIDENCE WORK

The office of Edwin L. Snyder, 2101 Addison street, Berkeley, is busy on several important commissions for residence work, including a stucco house to be built on Scenic Road, Berkeley, for Dr. John A. Grennan, Jr.; a Spanish house in Claremont Pines for R. W. Croninger; an English residence on San Luis Road, Berkeley, for Dr. M. H. Grove and a house in Piedmont for S. H. Kelley. Mr. Snyder's office is also working on preliminaries for a four story reinforced concrete apartment house to be constructed on Hilgard avenue, Berkeley.

W. H. WEEKS' OFFICE ACTIVE

New work in the office of William H. Weeks, San Francisco architect, includes a \$60,000 store and apartment building in Santa Cruz for A. L. Goldstein and associates; a two-story store and apartment building in Watsonville for A. B. Beck; a \$50,000 unit to the Hollister high school; a new gymnasium for the Watsonville high school district and a commission to design the new units to the Alhambra high school in Martinez, Contra Costa county.

BERKELEY'S NEW PUBLIC LIBRARY

James W. Placheck is designing the new Berkeley public library in the modernistic style. His preliminary plans have been approved and they show a structure that promises to be unique and radically different from any public building in the university city. A portfolio of sketches, showing how Mr. Placheck developed the problem, will be featured in *THE ARCHITECT AND ENGINEER* for November. The library trustees have agreed to spend \$250,000 on the building, not including furnishings and equipment.

SAN JOSE APARTMENTS

Messrs. Binder and Curtis of San Jose have completed plans for a two story frame and stucco apartment building for Charles Rosenham. There will be ten apartments of two and three rooms each. The location is 9th street, near San Carlos, San Jose.

MEYER TO BE PRESIDENT

Frederick H. Meyer, who will shortly return from a three months trip abroad with Mrs. Meyer, is to be the new president of San Francisco Chapter A. I. A. The election will take place at the next regular meeting of the Chapter.

SAN FRANCISCO SCHOOL WORK

Messrs. Miller and Pflueger, of San Francisco, are busy on plans for a \$900,000 school building to be known as the George Washington High school and which will occupy a considerable portion of the block bounded by Geary, 30th and 32nd avenues, San Francisco. Gymnasium and shop buildings are planned for the Francisco Junior High school, S. Heiman, architect. Bakewell and Weihe are architects for new bleachers and an athletic field at the Balboa school and Shea and Shea are architects for a junior high school in Westwood Park, estimated to cost \$600,000.

GAS COMPANY TO BUILD

The Pacific Gas & Electric Company will erect a large Class B garage and gas meter repair building on the block bounded by Folsom, Shotwell, 18th and 19th streets, San Francisco. The plans have been completed by the Architectural Department of the company of which Ivan Frickstad is chief draftsman. Approximately \$500,000 will be expended on the improvements.

MEDICO DENTAL BUILDING

Earl W. Morrison has prepared plans for a Medical and Dental building, which is to be erected on the southwest corner of Commercial and Magnolia streets, Bellingham.

The brick building will cover an area 100x110 feet, the main portion being 60x110 feet. There will be stores on the ground floor. The estimated cost is \$600,000.

MEDICAL ARTS TOWER

John Graham, architect, of Seattle, with Heath, Gove & Bell, of Tacoma, as associates, has been commissioned to draw plans for the Rhodes Medical Arts Tower, twenty stories high, which is to be built above Ninth street on St. Helens avenue, Tacoma, Washington. The structure will cost \$1,250,000.

STORE BUILDING

Plans are being prepared in the offices of Messrs. Bertz, Maury and Winter, 210 Post street, San Francisco, for eleven stores to be built on 15th street, at Franklin, Oakland.

PUBLIC BATH HOUSE

Plans have been prepared by Carl Werner, architect in San Francisco, for a public bath house for the City of Alameda, to be built at the foot of Washington Park, that city.

ARCHITECT GUY BROWN BUSY

Plans are being prepared in the office of Guy Brown, Oakland architect, for a large two story Spanish house, to be built on the Moraga Road, Oakland, for Herbert Hauser. A three car garage, swimming pool, etc., have been completed on the property and construction of the house is expected to go forward immediately. Mr. Brown is also making plans for a Spanish house in Rockridge Terrace for Mrs. Ellen O'Donnell and for a one story factory and store building on 39th street, west of San Pablo avenue, Oakland.

TWO APARTMENT BUILDINGS

William K. Bartges, architect, 1611 Posen Ave., Berkeley, has plans for a three-story and basement frame and stucco apartment building to cost \$70,000. He is also preparing plans for a three-story wood frame with a one-story Class B apartment building to be erected on Bellevue avenue, Oakland, at a cost of \$50,000.

PORTLAND FACTORY

Richard Sundeleaf is architect for a building for the Jantzen Knitting Mills, East 19th between Glisen and Hoyt streets, Portland, Oregon, to cost \$125,000. The building will be of reinforced concrete construction, two stories in height, and will contain a sprinkler system.

CALIFORNIA STYLE HOME

Drawings have been completed and a contract awarded by Gardner Dailey, 425 Mason building, San Francisco, for a two story early California style residence to be built at University avenue, Palo Alto, for Mr. Manning. The approximate cost will be \$50,000. A feature of the home will be a pipe organ.

MR. ALDEN HONORED

Charles H. Alden, of Seattle, an associate editor of THE ARCHITECT AND ENGINEER, has been retained as adviser to the planning commission organized to draft a zoning ordinance for Bellingham. Mr. Alden is one of the architects most prominent in zoning and planning organization work in Seattle.

OAKLAND MERCANTILE BUILDING

Sears-Roebuck Company will erect a three-story Class A store and loft building at Telegraph Ave., Scyamore and 27th streets, Oakland, from plans by Nimmons, Carr & Wright of Chicago, Ill. The P. J. Walker Company will be in charge of construction.

PERSONALS

EDWARD H. RUSS has opened an office for the practice of architecture at 808 American Trust Building, Berkeley. Mr. Russ would like to have building material literature, catalogues, samples, etc.

S. G. JACKSON has become associated with HOWARD SCHROEDER for the practice of architecture and engineering. Their office is in the Builders' Exchange Building, 254 Hobart street, Oakland.

JAMES LINDSAY MCCREERY, who has been practicing architecture for the past two years with an office in the First National Bank Building, Berkeley, has gone to New York to further his experience in sculpture. Before returning to California Mr. McCreery will do some traveling abroad.

ARTHUR W. ANGEL has moved from 6111 Pacific Southwest Bank building to 150 S. Oak Knoll Ave., Los Angeles.

RICHARD C. FARRELL has opened an office at 11 S. Second Street, Alhambra, and desires catalogs and information on building materials.

ROBERT STANTON has resigned as president of the Pasadena Architectural Club, and has returned to University of California at Berkeley to take a post-graduate course in architecture.

GUY LYNN ROSEBROOK, San Francisco and Oakland architect, is the inventor of the Du-Trak system of washing and lubricating automobiles.

M. M. O'SHAUGHNESSY, city engineer of San Francisco, has been instructed by the Board of Supervisors to prepare estimates of cost for a subway in Market street from The Embarcadero to Valencia street.

ALBERT F. ROLLER, San Francisco architect, addressed members of the Richmond, Contra Costa County Rotary Club at the Hotel Carquinez, Richmond, Sept. 13. His topic was "Building a Skyscraper."

The architectural firm name of STODDARD & SON, following the death of its senior member, L. M. Stoddard, has been changed to GEORGE WELLINGTON STODDARD, architect and engineer. The office is in the New Orpheum theater building, Seattle.

FRED A. BRINKMAN, of Kalispell, Montana, has been appointed by Governor Erickson to the Montana State Board of Architectural Examiners. He succeeds FRED F. WILLSON, of Bozeman, who resigned.

WALTER C. FOLLAND has moved from 631 Pacific Southwest Bank building to 150 S. Oak Knoll Ave., Pasadena.

GEORGIAN STYLE RESIDENCE

Plans have been completed by Reginald D. Johnson of Los Angeles, for a Georgian style residence to be built in the Montecito district of Santa Barbara, for Mrs. Robert J. Baldwin. The estimated cost is \$250,000.

BELMONT CHAPEL

H. A. Minton, architect in San Francisco, has completed plans for a one story stucco chapel at Belmont, San Mateo County. Mr. Minton has let a contract to build a two story concrete parochial residence in Martinez for St. Catherine's Parish.

THEATER BUILDING CONTRACT

Fabre and Hildebrand, architects of San Francisco, have let contracts for the construction of a two story reinforced concrete theater at Steiner and Sutter streets, San Francisco, to cost \$50,000. The owner is H. E. Hesthal.

FACTORY BUILDING

Plans are being prepared for a concrete and hollow tile factory to be built near the Tanforan race track, San Mateo county, for Heintz and Kaufmann, 219 Natoma street, San Francisco. There will be a group of five buildings covering a six acre site.

APARTMENT BUILDING

Walter C. Falch, Hearst building, San Francisco, is completing plans for a frame and brick veneer apartment building at 20th avenue and Santiago street, San Francisco, for Edward Cornell. The estimated cost is \$20,000.

15 STORY TEXTILE BUILDING

Earl Morrison, of Seattle, is architect for a fifteen story textile building, estimated to cost \$600,000, and which is to be erected on Fifth avenue at Virginia, north of the Renfro-Wadenstein building, Seattle.

REMODEL MOUNTAIN HOUSE

E. T. Spencer, architect in the Shreve Building, San Francisco, has completed drawings for remodeling a mountain house at Glacier Point, Yosemite Valley, for the Yosemite Park and Curry Company.

CLAREMONT PINES RESIDENCE

Plans have been completed by Ward and Blohme, architects in the Alaska Commercial building, San Francisco, for a large residence in Claremont Pines, Oakland.

COMPETITIONS

CHICAGO WAR MEMORIAL

The War Memorial Committee of the City of Chicago, consisting of W. Rufus Abbott, Sewell L. Avery, Abel Davis, Milton J. Foreman, Roy D. Keehn, Robert P. Lamont, Robert R. McCormick, Julius Rosenwald, Howard P. Savage, James Simpson (ex-officio Chairman of the Chicago Plan Commission), Albert A. Sprague and Walter Strong desires to announce that a nationwide competition will be held for the Chicago War Memorial, with attractive prizes, and in accordance with the usage of the American Institute of Architects.

Programs are now being issued and judgment will be announced early in December. Under this general invitation programs may be obtained from Earl H. Reed, Jr., Professional Adviser, War Memorial Competition, 435 North Michigan avenue, Chicago, Illinois.

CHURCH DESIGN

The *Christian Herald* is conducting a competition for Protestant churches. The program calls for photographs and plans of finished churches having a total seating of 150 to 600 persons that have been completed not earlier than July 1st, 1927. The competition is restricted to new structures and will be judged on the following basis: 1—Excellence of design; 2—Adequacy of building with regard to size and needs of congregation, and the constituency for which it is responsible in ministries of worship, religious education, fellowship and recreational activities; 3—Skill in selection and use of materials; 4—Economy in space and convenience of plan; 5—Adaption to lot and orientation.

Prizes will be awarded as follows: First Prize—\$500 to the architect and \$500 to the church; Second Prize—\$150 to the architect and \$150 to the church; Third Prize—\$100 to the architect and \$100 to the church; also several honorable mentions.

The Jury of Award will consist of Harvey W. Corbett of New York, Philip Hubert Frohman of Washington, D. C., and Boston, and Elmo Cameron Lowe of Evanston, Ill. R. H. Blatter, consulting architect of the *Christian Herald* Bureau of Church Planning, will act as professional adviser.

The competition closes November 15, 1929. Copies of the program may be had upon application to the Christian Herald Association, Inc., 419 Fourth Avenue, New York.

OBITUARY

FRANK T. SHEA

The death of Frank T. Shea, one of San Francisco's pioneer architects, occurred at his home in Ross, Marin County, California, September 17th. Mr. Shea had been ill three months. His death is mourned by a wide circle of friends both in the profession and outside. Some of the most prominent buildings erected in San Francisco, including churches and parochial schools, were designed by Mr. Shea who, at different periods, was associated with his brother, Will D. Shea and John O. Lofquist.

Mr. Shea was a native of Bloomington, Illinois. He came to San Francisco when a young man, with his brother, Will D. Shea, with whom he was associated under the firm name of Shea & Shea at the time of his death. Completing his education in California, Mr. Shea attended the Beaux Arts in Paris.

Frank Shea was best known, perhaps, for the many Catholic churches he designed and built in all parts of the state. He was city architect for San Francisco two years following the fire, during which time he designed the City Hall dome, destroyed in 1906. Other work designed by him included the following churches in San Francisco: St. Brigid's, St. Vincent's de Paul, St. Paul's, St. James, Holy Cross, Star of the Sea, St. Monica's, the mortuary chapel at Holy Cross cemetery, and others, including schools and business buildings.

Mr. Shea was a member of Ignatian Council, No. 35, Young Men's Institute, San Rafael Lodge of Elks, No. 1108, and a past president of the Knights of St. Patrick.

JOHN C. POETZ

John C. Poetz, early pioneer architect of Spokane, died August 7th, following an illness of several months.

He came to Spokane before the great fire of 1889 and became a partner of Kirkland K. Cutter, now of Long Beach. Mr. Poetz was the designer of the Exchange National Bank and the Rookery Building in Spokane. He also assisted in the design of many of the city's most beautiful residences, including the F. Lewis Clark home, now owned by B. L. Gordon.

The firm of Cutter and Poetz won the gold medal at the Chicago World's Fair in 1893 for designing the most outstanding building, the Idaho, at the exposition.

JOHN A. CREUTZER

Washington State Chapter A. I. A. has lost another member in the passing of John A. Creutzer. A native

of Sweden, Mr. Creutzer came to this country as a boy, and after spending the subsequent early years of his life in Minnesota moved to Spokane and later to Seattle, where he became firmly established as an architect, winning public confidence by his conscientious industry and ability. He was respected and esteemed by all who had the privilege to work with him.

IMPRESSIVE STRUCTURE OF CONCRETE

One of Los Angeles' most substantial and attractive downtown structures—the Philharmonic Auditorium—was the first all-concrete building erected there, it is revealed in a survey just completed for the Monolith Portland Cement Company.

The auditorium was built about a quarter century ago, it is pointed out, and when its plans were announced expressions of doubt and skepticism were heard on all sides regarding its ability to withstand the elements.

"In the meantime, however, the lesson of mixtures designed for durability and with workable consistencies under the principles of the water-cement ratio law, was learned," the report states, "but still the Philharmonic Auditorium stands out as one of the city's impressive structures. In view of the feeling of doubt existing when the auditorium was built, it is interesting to note that for a number of years and at the present time more than one-half of the buildings completed or going up in Los Angeles are of reinforced concrete or steel and concrete."

From 1920 to 1925 there was an increase in the consumption of cement in the United States of 61 per cent, the heaviest increase since the five year period ending in 1910, the Monolith company's report discloses. While the gains made during the two intervening five year periods were not as large as those made between 1905 and 1910 and 1920 and 1925, it is pointed out that substantial increases also were recorded, and California and the Pacific Coast contributed more than their proportionate shares to the totals.

AIRPORT CONSTRUCTION

The speed with which airports can be built and the number that can be established in the immediate future will determine in most part the development of aviation in the next few years, according to the Division of Airports and Aeronautics Department of Commerce.

Information compiled and made available by the division shows that 1174 new airports are under proposal or construction in the United States, compared

to 1485, including government ports, which had been established up to July 31, 1929. Represented in the list of contemplated air fields are 47 states, the Territory of Alaska and the District of Columbia.

Pennsylvania, with 64 airports under proposal, is leading the nation in new development. New York and California are each planning 59 more fields, and Texas 56, it was stated.

AUTO TRAFFIC TUNNEL ASSURED

Major portion of the \$4,849,000 cost of the new low level Alameda-Contra Costa counties tunnel will be taken from the gasoline tax moneys, with Alameda county appropriating 90 per cent and Contra Costa county 10 per cent.

The State has already appropriated \$300,000 toward the project, while \$1,000,000 additional will be forthcoming from the same source for the east approach road to the tunnel, it was declared.

Negotiations are now under way for rights of ways for approaches to the tunnel from both the Alameda and Contra Costa sides.

Preliminary plans for the tunnel are in the course of preparation by the engineering staff headed by George A. Posey, Alameda county surveyor, and Ralph Arnold, Contra Costa county surveyor.

PITTSBURGH SCIENTIST ABROAD

Dr. James Aston, director of the School of Mines and Metallurgy, Carnegie Institute of Technology, is visiting his childhood home in England and combining with it business trips to Ireland and Scotland. He is visiting all the large British iron works and renewing contacts with eminent scientists from that country who have been in America witnessing the Byer's new process for manufacturing wrought iron.

In addition to his academic connections, Dr. Aston is consulting metallurgist for the A. M. Byers Company, Pittsburgh, Pa., and is inventor of their new process.

NEW WASHINGTON CHAPTER MEMBER

OGDEN FRANK BEEMAN, of Pullman, Washington, has been elected to membership in the Washington State Chapter, A. I. A.

Mr. Beeman obtained his academic training at the architectural department of the University of Minnesota and later obtained a degree in architectural engineering from the State College of Washington. He is now associated with Stanley Smith, in architectural work on the buildings for the State College.

SOCIETY *and* CLUB MEETINGS

JOINT ARCHITECTS MEETING

The Northern California Chapter, A. I. A. met in a joint gathering with the State Association of California Architects, and the Alameda County Society of Architects at the Clift Hotel, San Francisco, on the evening of September 20th. President Harris Allen presiding.

Musical selections were rendered by Austin Sperry following the dinner.

This being the occasion for the presentation of the Certificates of Award granted at the recent Biennial Honor Award Exhibition, the architects, owners, and contractors of the buildings selected, were present.

President Allen announced the ceremony with a greeting to the visitors, and reviewed the value of the exhibition, and expressed the appreciation of the Chapter to the exhibitors whose cooperation and support made it such a success.

He was followed with remarks by Mr. Carr as representative of the Industrial Association which had cooperated with the Chapter in handling the exhibit.

Announcement was then made of the awards and the certificates were presented.

The report of the nominating committee was presented with the following recommendation for officers for the coming year:

President, Frederick H. Meyer; Vice-President, Henry H. Gutterson; Secretary-Treasurer, James H. Mitchell; Director, Harris C. Allen; Director, Raymond W. Jeans.

This was the extent of Chapter business, and with an announcement of adjournment, the meeting reconvened after a short recess, under the direction of the State Association with Chairman Charles Roeth presiding.

The remainder of the evening was given to Associate matters, with a talk by Henry D. Dewell, on the Uniform Code, and short talks by officers and members on the past accomplishments and future plans of the Association. Plans were announced for the State Convention of the Association to be held in Los Angeles beginning October 11th, and other matters of general importance to the architectural profession were discussed in open forum.

The splendid response of members in attendance and the reports of the work being done, clearly indi-

cated that the Association has become a very effective and constructive organization in the one year of its existence.

J. H. M.

ALAMEDA SOCIETY OF ARCHITECTS



A business meeting of the Society was held August 5th at the Athens Club. Those present were: Messrs. Miller, Donovan, Whitton, Roeth, Allen, Corlett, Reimers and two guests, Mr. Holder and Mr. Day of the Paraffine Paint Company.

Mr. Allen stated that the regular A. I. A. meeting in September would be a joint meeting of the Chapter and the State Association.

Mr. Donovan expressed himself as in favor of the linking of the State Association, Chapter and State Board in some method of working together.

Messrs. Corlett, Miller and Donovan were appointed a nominating committee for the annual election of officers which will take place next month.

J. I. Holder spoke on "Waterproofing of Roofing." He said that the waterproof walking deck is not yet developed perfectly. Gravel is used on roofs because gravel shades the roof from the sun, thus protecting it. Walking deck over concrete construction is the easiest to build satisfactorily. The trouble with concrete over roofing is that fracturing of concrete causes failures. Soft asphaltum should be used under concrete. He said that promenade tile should not be laid over asphaltum. He recommended canvas for smaller decks, over wood construction. Over concrete composition, roofing with concrete topping should be used. He suggested the following: Build a good roof over wood, smear with asphalt, roll in gravel (no sand), then smear with asphalt and put on gravel like gravel walk; and paint with metallic paint instead of using a last coat of gravel.

F. H. R.

SAN FRANCISCO ARCHITECTURAL CLUB

The monthly meeting of the San Francisco Architectural Club was held September 4th, President Harry Langley presiding. It was uneventful except for the reading of the revised Constitution and By-Laws as submitted by the committee. But for a few points they

were approved as read and will be voted upon finally next month.

The Atelier dinner, held August 23rd, marked the close of a fine season, and was a highly successful affair, so successful in fact that similar dinners are to be held in the future at the close of each charrette. For the coming season, Mario Ciampi was elected Massier and Jim Gillen was appointed Sous-Massier. The retiring Massier presented gifts from the boys of the Atelier to their patrons, Mr. Weihe and Mr. Frick, in appreciation of their excellent instruction and guidance. The coming season promises to be the most successful in years.

Class work has already begun. C. J. Sly is conducting a class in reinforced concrete design on Friday evenings. Al Williams will have his class again in architectural details. The class in pencil sketching under Mr. Dinwiddie is drawing to a close, and there is some talk of starting a class in life drawing if the boys are not kept too busy with other work.

There was some discussion of the problem of new quarters for the club, though the present lease does not expire for a year and a half. It was thought it might be advisable to remain if possible at the present location, though some changes in the arrangements of the club rooms would be necessary if this is done.

J. E. D.

LOS ANGELES ARCHITECTURAL CLUB



The first fall meeting of the Los Angeles Architectural Club was held at the Mary Louise Tea Rooms, Los Angeles, September 17th. Recent club developments and coming architectural events of importance to members were discussed. President George P. Hales presided at the meeting and announced that the election of new officers would be held in the near future.

Reports were made regarding the various classes in architecture and the allied arts which are being held throughout the city. Of special interest was the announcement of a course arranged by the club for coaching in special branches of architecture, preparatory to the state board examinations. The course, which is free to all club members and to others by special permission, will be given by Mr. Cantell at the Frank Wiggins trade school.

Speakers of the evening were Roy Kelley, who talked on: "What Is An Architect?" and Conrad Butt, mural painter, who followed with a discussion of: "How Is An Artist?"



DESIGN FOR APARTMENT-HOTEL, SAN FRANCISCO
Albert H. Larsen, Architect

ARCHITECTS TO CONTRIBUTE

Plans to raise \$600,000 among the architects of the United States to develop the Octagon, historic Washington structure made famous by Dolly Madison, as the national center of architecture and allied arts, are announced by D. Everett Waid, of New York, chairman of the building committee of the American Institute of Architects.

It is proposed to expend \$400,000 in erecting and furnishing a library and administration building adjoining The Octagon property, 18th street and New York avenue, near the Corcoran Gallery and two blocks west from the White House. The remaining \$200,000 will be added to a building endowment fund which now aggregates \$70,000.

Architects in sixty states and cities, representing areas in which chapters of the Institute are located, have been appointed to the building committee by the president of the Institute, C. Herrick Hammond.

MANUAL OF PROFESSIONAL PRACTICE AND FEES

[Prescribed by Architects' League of Hollywood, California]

THE usual professional services of an architect consist of necessary conferences, the preparation of preliminary studies, working drawings, specifications, large scale and full size detail drawings, draft of forms of proposals and contracts, the issuance of certificates of payment and supervision of construction work. The architect endeavors to guard the owner against defect and deficiencies in the work of the contractors, but does not guarantee the performance of their contracts.

It is very essential that the architect and client thoroughly understand the difference between *supervision* and *superintendence*. Architectural supervision is the usual service consisting of time spent in the office and visits of inspection to the building during its construction, and is extraneous to the service encompassed by the drafting; said visits shall be at the discretion of the architect as and when he may deem necessary. Superintendence is continuous service on the works and is a position held by an assistant directly representing the architect. He is employed by the architect and his salary is paid by the owner in addition to the architect's fees.

The architect will, if the client so desires, make or procure preliminary estimates on the cost of the work or any part thereof and will endeavor to keep the actual cost of the work as low as may be consistent with the purpose and character of the building, and with proper workmanship and material. No estimate at any time procured or submitted by the architect is to be considered in any way a representative agreement or guarantee on the part of the architect of the correctness of such estimate or that the work can or will be done for the amount thereof.

1. The proportion allotted to each branch of the professional service is as follows, and should the works be stopped for any reason whatsoever, the architect shall be remunerated according to the services he has rendered, based upon the percentage quota for each division of service as segregated hereunder.

Sketch Plans	20%	of total fees
Working Drawings	50%	of total fees
Details	10%	of total fees
Supervision	20%	of total fees

2. The proper MINIMUM charges for such services are as follows:

(a) In the case of warehouses, factories, and large plain buildings, involving no detailed interior finish, five per cent of total cost of the works.

- (b) In the case of public buildings, schools, hospitals, libraries, office buildings, banks, hotels, clubs, apartment buildings, and other buildings, except as hereinafter mentioned, six per cent of the total cost of the works.
- (c) In the case of churches, eight per cent of the total cost of the works.
- (d) In the case of residences, ten per cent of the total cost of the works.
- (e) Alterations up to \$5,000, twenty per cent of the total cost of the works; over \$5,000, fifteen per cent (minimum) of the total cost of the works.

NOTE: The words "total cost of the works" mean the total cost of the finished and completed building, not including the architect's and engineer's fees or the salary of the clerk of the works.

3. Payments are due as follows:

- (a) A retainer fee as may be agreed upon, but it should not be less than one-half of one percent of the proposed total cost of the works.
- (b) Balance up to twenty per cent of the architect's fee based upon the estimated cost of the building upon instructions to proceed with the working drawings.
- (c) Balance up to forty-five per cent of the architect's fee as based upon the estimated total cost of the works when working drawings are half completed.
- (d) Balance up to eighty per cent of the architect's fee as based upon the estimated total cost of the works when working drawings, scale details, and specifications are completed.
- (e) Final balance, namely twenty per cent, to be paid pro rata as and when the certificates are issued by the architect to the contractor.

4. In the event of the architect being required to supervise the works under the separate contract system as distinguished from a general contract, then his fees for these extra services shall be increased at least fifty per cent of the fees agreed upon for usual architectural services.

5. For selecting and purchasing of furnishings, draperies, etc., a fee of five per cent upon the total cost of same shall be made.

6. For designing decorative interiors, fittings, furnishings, monumental or other special work outside the scope of usual architectural details, the fee will be regulated by special circumstances and conditions, but in any event not less than ten per cent of the total cost of same.
7. When it is necessary to have supervision other than the architect's usual supervision, the architect will appoint a clerk of the works whose salary shall be paid by the owner in addition to the commission paid to the architect.
8. None of the fees enumerated cover charges for professional services rendered in connection with litigation in consequences of delinquency or other causes, or insolvency of the owner or of a contractor.
9. Where heating, ventilating, mechanical, electrical and sanitary problems are of such a nature as to require the services of a specialist, the fee will be increased to cover the cost of such services. Chemical and mechanical tests, when required, shall be paid for by the owner.
10. The services of an architect do not include any legal work necessary in the preparation of contracts or any negotiations with respect to property, party walls, or such matters.
11. No deduction is made from the architect's fees on account of the use of old materials, penalty, liquidated damages or other sums withheld from payments to contractors.
12. Clients shall furnish and pay for property surveys, contour maps, building permits, and all other similar disbursements.
13. In matters calling for charges by the day, the charges per day will depend upon the architect's professional standing, but the minimum shall not be less than Fifty Dollars per day, or part of a day.
14. All the foregoing commissions and charges are for services rendered within the city or town in which the offices of the architect are situated. For services beyond these limits a charge per day for the architect's services and his assistants may be made in addition to the above mentioned minimum schedule for fees, and all his traveling and other incidental expenses shall be paid by the client.
15. If after a definite scheme has been approved the owner makes a decision, which, for its proper execution involves extra services and expenses for changes in or additions to the drawings, specifications, or other documents; or if a contract be let by cost of labor and materials plus a percentage or fixed sum; or if the architect be put to labor and expense by delays caused by the owner or a contractor or by the delinquency or insolvency of either; or as a result of damage by fire

or other casualty, he is to be equitably paid for such extra service and expense.

16. Drawings and specifications as instruments of service are the property of the architect, the copyright in the same being reserved to him, but the client is entitled to a set of prints of the plans and specifications of the building as a matter of record.

17. When labor or material is furnished by the owner below the market cost, or when old materials are used, the cost of the work is to be interpreted as the cost of all materials and labor necessary to complete the work, as such cost would have been if all materials had been new.

A NEW BUCK ANCHOR

A new buck anchor that is meeting with the hearty approval of architects and contractors, has just been put on the market by The Bull Dog Floor Clip Company of Winterset, Iowa. Besides being a labor saver, it rigidly anchors a wood buck to a clay or gypsum tile partition.

This anchor is of interest to builders in that it eliminates the use of nails, bolts, strips of metal lath and strap iron. One of the unique features of the anchor is that it engages the buck on the sides instead of at the back. The sharp pointed barbed ends are easily driven into the wood with the end of the bricklayer's trowel handle. The back portion forms an immovable truss when it is embedded in the mortar joint.

The Bull Dog buck anchor may be used to anchor almost any kind of a door or window frame to a masonry or concrete wall. It is manufactured in five different sizes, three, four and six inch regulars and three and four inch shorts. The short anchors are to be used in spaces too short for the regular anchor. The anchors are packed in cartons of two hundred and fifty each including twenty-one shorts. Complete stocks are carried by the regular distributors of the Bull Dog Floor Clip Company, the Kelley Sales Company, 557 Market street, San Francisco, being the representatives for Northern California.

JUDGES FOR COMPETITION

Officials of the Monolith Portland Cement Company of California have announced the selection of judges for the small house competition for architects, architectural draftsmen, students and others who can qualify, staged by Monolith Portland Midwest Company, an affiliated concern. Architects who will serve as judges are Arthur A. Fisher, Merrill H. Hoyt and Donald O. Weese of Denver; Walter E. Ware of Salt Lake City, and Thomas R. Kimball of Omaha. Richard S. Requa of San Diego is serving as professional advisor.

BOOK REVIEWS

By Edgar N. Kerulff

THE STYLES OF ENGLISH ARCHITECTURE by Arthur Stratton, F. R. I., B. A. Part II, Tudor and Renaissance. Published by J. B. Lippencott Company, Philadelphia, Pa. Price \$1.00.

This slender little book is the second part of the Hand Book of Styles of English Architecture and we should like to call the reader's attention to the review of Part I, which appeared in the September issue of THE ARCHITECT AND ENGINEER. We would not be in error in repeating the same praise of Part II.

Tudor architecture and that of the English renaissance is dealt with in the same inimitable manner and the illustrations alone make the book valuable as well as delightful. The outlay of two dollars to acquire these two volumes is, to the writer's mind, two dollars well invested.

ECONOMICS OF HIGHWAY BRIDGE TYPES by C. B. McCullough, B. S., LL. B; C. E. Published by the Gillette Publishing Co., 221 East 20th Street, Chicago, Illinois. Price \$5.00 net.

A neat and concise treatise on the fundamentals of ordinary highway bridge design, containing detailed drawings, sketches and photographs with costs and quantity data appended. The volume should be of service to the student of engineering for two reasons: first, as an outline of bridge economics and type selection, and secondly, the illustrations mentioned cover practically all the commonly employed types of highway bridge work. Attention is called to the fact that the discussions in this book have been prepared for the highway engineer in general, rather than for the highway bridge engineer. Cost curves and quantity data sheets will be found sufficiently general as applied to average practice.

PROCEEDINGS OF THE TWENTY-FIFTH ANNUAL CONVENTION OF THE AMERICAN CONCRETE INSTITUTE, Detroit, Michigan, February, 1929. Published by the Institute, 2970 West Grand Blvd., Detroit, Michigan.

No price is given, but all information regarding this book may be obtained by communicating with the Concrete Institute at the above address. The volume covers all the advances made in the chemistry of concrete and its manufacture together with details pertinent to the cement industry.

COLLEGE ARCHITECTURE IN AMERICA, by Charles Z. Klander and Herbert C. Wise. Published by Charles Scribner's Sons, 5-7 Fifth Avenue, New York City, N. Y. Price \$5.00.

A thoroughly comprehensive volume on a subject of vital interest to America and to American architects. In the foreword Robert L. Kelly expresses the motive of this book as being "to sound a call for better architecture at those places where the best of everything is needed—our colleges and universities." The photography is excellent and plans are shown in detail in many instances. Altogether, this volume is one to be used, referred to and enjoyed by American architects.

CONTEMPORARY AMERICAN SCULPTURE. Put out by the California Palace of the Legion of Honor, San Francisco, Calif.

A catalog of the exhibition now being held in the Legion of Honor building, San Francisco. There are biographical sketches and some excellent illustrations of examples of American sculpture. No price is given.

WROUGHT IRON IN ARCHITECTURE by Gerald K. Geerlings. Published by Charles Scribner's Sons, 597 Fifth Ave., New York City, N. Y. Price \$7.50.

A beautifully arranged book on a revived craftsmanship, with photography in keeping with the text. Contents embraces the wrought iron of the major countries of Europe, as well as a chapter on American wrought iron, twentieth century wrought iron, lighting fixtures and knockers.

The reason for this book is explained in a preface and may be considered a companion book to "Metal Crafts in Architecture." There is an excellent introduction which explains intricate details about wrought iron not readily understood by the profession and layman.

CHINA ARCHITECTS AND BUILDERS CONPENDIUM by J. T. W. Brooke, A. R. I. B. A. and R. W. Davis, North China Building, Shanghai, China.

Should be of interest to architects, engineers, builders and contractors interested in the development of the China coast cities. Is well illustrated and contains: (1) General information, land, property and building. (2) Technical information, costs and price lists. (3) A directory of architects. (4) A catalog of building materials.

THE WORK OF CRAM AND FERGUSON, Architects (Including work by Cram-Goodhue and Ferguson, with an introduction by Charles D. Maginnis. Published by The Pencil Points Press, Inc., New York.

Exquisite photography and good detail. The book is divided into the following sections — Gothic churches; Georgian churches; schools and university buildings and libraries; furniture and details; residences. There are thirty-six Gothic churches shown, six Georgian, twelve school, university and library buildings, thirteen items under furniture and details, and four residences. Plans and perspectives are shown in many instances. This new book should appeal particularly to the architect interested in ecclesiastical architecture.

BLOCK FLOORING IN BELLEVUE

Over 46,000 square feet of Cellized oak block flooring were laid in the new Bellevue Staten apartments recently opened in Oakland.

One of the features of this type of flooring is that it is installed without the use of nails. It is laid in mastic directly on the concrete.

This type of flooring is handled by the G. H. Brown Hardwood Company of Oakland, whose president and manager refers to the Bellevue installation as outstanding for two reasons: "In the first place the blocks



NEW WAREHOUSE OF GUNN, CARLE & CO., SAN FRANCISCO

NEW WAREHOUSE

Gunn, Carle & Company, one of San Francisco's pioneer building specialty houses, are now occupying their new warehouse at 10th and Brannan streets. Chas. M. Gunn is president of the company, and O. P. Shelley is vice president. The company's offices are at 444 Market street. The new warehouse, furnished with modern equipment for handling building supplies, is an indication of the progress made by the concern. The following are a few nationally known products of which Gunn, Carle & Co. are distributors: Kinneer steel rolling doors, steel reinforcing bars, West Wind ventilating units, Feralun and Bronzalun safety treads, Cabot's quilt, Cabot's shingle stains, Cabot's mortar colors, Medusa cement, Pacific 5-ply, Dayton inserts, hand split shades and concrete, brick and cement waterproofings.

add to the beauty of every room in which they are laid, and in the second place they insure absolute quiet as there is no floor made that so completely deadens all noise as this wonderful product.

"These floors are not all of the same pattern, however, as the method of laying gives the designer wide scope, and enables him to effect artistic borders and designs, varying same to suit the contours and finish of the rooms."

ROLLING STEEL DOORS

On account of increased demand for "Wilson rolling steel doors" and "Sectionfold partitions," the Wilson Corporation has increased its facilities at Los Angeles and has added to its activities the manufacture of rolling steel doors in Los Angeles.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Overtime in wage scale should be credited with time and a half, Sunday and holidays double.

Bond— $1\frac{1}{2}\%$ amount of contract.

Brickwork—

- Common, \$33 to \$40 per 1000 laid, (according to class of work).
- Face, \$100 to \$125 per 1000 laid, (according to class of work).
- Brick Steps, using pressed brick, \$1.10 lin. ft.
- Brick Walls, using pressed brick on edge, 75c sq. ft. (Foundations extra.)
- Brick Veneer on frame buildings, \$1.00 sq. ft.
- Common, f.o.b. cars, \$14.50 plus cartage.
- Face, f.o.b. cars, \$55.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. cars in carload lots).

- 3x12x12 in.....\$ 96.00 per M
- 4x12x12 in..... 108.00 per M
- 6x12x12 in..... 156.00 per M
- 8x12x12 in..... 255.00 per M

HOLLOW BUILDING TILE (f.o.b. cars in carload lots).

- 8x12x5 $\frac{1}{2}$ \$108.00
- 6x12x5 $\frac{1}{2}$ 74.00

Composition Floors — 18c to 30c per sq. ft. In large quantities, 18c per sq. ft. laid.

Rubber Tile—65c per sq. ft.

Terazzo Floors—50c to 60c per sq. ft.

Terazzo Steps—\$1.50 per lin. ft.

Mosaic Floors—80c per sq. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton.

- No. 3 rock, at bunkers.....\$1.40 per ton
- No. 4 rock, at bunkers..... 1.40 per ton
- Elliott pea gravel, at bnkr. 1.40 per ton
- Washed gravel, at bnkr. 1.40 per ton
- Elliott top gravel, at bnkr. 1.40 per ton
- City gravel, at bunkers..... 1.40 per ton
- River sand, at bunkers..... 1.00 per ton
- Delivered bank sand..... 1.00 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

- Del Monte, \$1.75 to \$3.00 per ton.
- Fan Shell Beach (car lots, f.o.b. Lake Majella), \$2.75 to \$4.00 per ton.

Cement, \$2.44 per bbl. in paper sks.
Cement (f.o.b. Job, S. F.) \$2.64 per bbl.

Cement (f.o.b. Job, Oak.), \$2.64 per bbl.

Rebate of 10 cents bbl. cash in 15 days.

- Atlas "White"\$ 8.50 per bbl.
- Forms, Labors average 22.00 per M.
- Average cost of concrete in place, exclusive of forms, 28c per cu. ft.
- 4-inch concrete basement floor.....13c to 14c per sq. ft.
- 4 $\frac{1}{2}$ -inch concrete basement floor.....14c to 15c per sq. ft.
- 2-inch rat-proofing.....6 $\frac{1}{2}$ c per sq. ft.
- Concrete Steps.....\$1.26 per lin. ft.

Dampproofing—

- Two-coat work, 20c per yard.
- Membrane waterproofing—4 layers of saturated felt, \$5.50 per square.
- Hot coating work, \$2.00 per square.

Electric Wiring — \$3.00 to \$9.00 per outlet for conduit work (including switches).

Knob and tube average \$2.25 to \$5.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, \$2600; direct automatic, about \$2500.

Excavation—

Sand, 70 cents; clay or shale, \$1.25 per yard.

Teams, \$10.00 per day.

Trucks, \$21 to \$27.50 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, \$65.00 per balcony.

Glass (consult with manufacturers)—

- Double strength window glass, 15c per square foot.
- Quartz Lite, 50c per square foot.
- Plate, 75c per square foot.
- Art, \$1.00 up per square foot.
- Wire (for skylights), 27c per square foot.
- Obscure glass, 25c per square foot.
- Note**—Add extra for setting.

Heating—

Average, \$1.80 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg.site)
Common, \$25.00 per M (average).
Common O. P. select, average, \$34.00 per M.

- 1 x 6 No. 3—Form lumber.....\$21.00 per M
- 1 x 4 No. 1 flooring 45.00 per M
- 1 x 4 No. 2 flooring 42.00 per M
- 1 x 4 No. 3 flooring 35.00 per M
- 1 x 6 No. 2 and better flooring..... 43.00 per M
- 1 $\frac{1}{4}$ x 4 and 6 No. 2 flooring..... 50.00 per M

Slash grain—

- 1 x 4 No. 2 flooring.....\$37.00 per M
- 1 x 4 No. 3 flooring 35.00 per M
- No. 1 common run to T. & G. 30.00 per M
- Lath 5.50 per M

Shingles (add cartage to prices quoted)—

- Redwood, No. 1.....\$.90 per bdle.
- Redwood, No. 2..... .75 per bdle.
- Red Cedar90 per bdle.

Hardwood Flooring (delivered to building)—

- 13-16x3 $\frac{1}{4}$ " T & G Maple.....\$135.00 M ft.
- 1-16x2 $\frac{1}{4}$ " T & G Maple..... 145.50 M ft.
- 7 $\frac{1}{2}$ x3 $\frac{1}{4}$ " sq. edge Maple..... 132.50 M ft.
- 13-16x2 $\frac{1}{4}$ " 3 $\frac{1}{2}$ x2" 5-16x2" T&G T&G Sq. Ed.
- Clr. Qtd. Oak.....\$220.00 M \$160.00 M \$178 M
- Sel. Qtd. Oak..... 150.00 M 122.00 M 131 M
- Clr. Pla. Oak..... 155.00 M 110.00 M 113 M
- Sel. Pla. Oak..... 132.00 M 79.00 M 97 M
- Clear Maple 147.00 M 101.00 M
- Laying & Finishing 16c ft. 15c ft. 13c ft.
- Wage—Floor layers, \$9.00 per day.

Building Paper—

- 1 ply per 1000 ft. roll.....\$4.00
- 2 ply per 1000 ft. roll..... 6.00
- 3 ply per 1000 ft. roll..... 9.25
- Sash cord com. No. 7.....\$ 1.05 per 100 ft.
- Sash cord com. No. 8..... 1.20 per 100 ft.
- Sash cord spot No. 7..... 1.75 per 100 ft.
- Sash cord spot No. 8..... 1.10 per 100 ft.
- Sash weights cast iron..... 57.00 toa
- Nails, \$3.25 base.
- Belgian nails, \$3.00 base.

Millwork—

- O. P. \$85.00 per 1000. R. W., \$95.00 per 1000 (delivered).
- Double hung box window frames, average, with trim, \$7.00 and up, each.
- Doors, including trim (single panel, 1 $\frac{1}{4}$ in. Ore. pine) \$7.50 and up, each.
- Doors, including trim (five panel, 1 $\frac{1}{4}$ -in. Oregon pine) \$6.50 each.
- Screen doors, \$3.50 each.
- Patent screen windows, 30c a sq. ft.
- Cases for kitchen pantries seven ft. high, per lineal ft., \$7.00 each.
- Dining room cases, \$8.00 per lineal foot.
- Labor—Rough carpentry, warehouse heavy framing (average), \$12.00 per M.
- For smaller work, average, \$25 to \$32 per 1000.

Marble—(Not set), add 50c to 65c per ft. for setting.

- Alaska\$1.40 sq. ft.
- Columbia 1.40 sq. ft.
- Golden Vein Yule Colo..... 1.70 sq. ft.
- Pink Lepanto 1.50 sq. ft.
- Italian 1.75 sq. ft.

Tennessee	1.70 sq. ft.
Verde Antique	3.00 sq. ft.

NOTE—Above quotations are for 3/4 inch waistscot in large slabs f.o.b. factory. Prices on all other classes of work should be obtained from the manufacturers.

Floor Tile—Set in place.

Verde Antique	\$2.75 sq. ft.
Tennessee	1.60 sq. ft.
Alaska	1.35 sq. ft.
Columbia	1.45 sq. ft.
Yule Colorado	1.45 sq. ft.
Travertine	1.60 sq. ft.

Painting—

Two-coat work	30c per yard
Three-coat work	40c per yard
Whitewashing	4c per yard
Cold Water Painting	8c per yard
Turpentine, 77c per gal. in cans and 72c per gal. in drums.	
Raw Linseed Oil—\$1.17 gal. in bbls.	
Boiled Linseed Oil—\$1.20 gal. in bbls.	

Cartier or Dutch Boy White Lead in Oil (in steel kegs)

	Per. Lb.
1 ton lots, 100 lbs. net weight	12 1/4c
500 lb. and less than 1 ton lots	12 1/2c
Less than 500 lb. lots.	13c

Dutch Boy Dry Red Lead and Litharge (in steel kegs)

1 ton lots, 100 lb. kegs net weight	12 1/2c
500 lb. and less than 1 ton lots	12 1/2c
Less than 500 lb. lots.	13c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lbs. net weight	13 3/4c
500 lb. and less than 1 ton lots	14c
Less than 500 lb. lots	14 1/2c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	\$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.85 lineal foot
12-inch	2.10 lineal foot

Pipe Casings — 14" long (average), \$5.00 each.

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	\$0.40
2 coats, lime mortar hard finish, wood lath	.52
2 coats, hard wall plaster, wood lath	.55
3 coats, metal lath and plaster	1.00
Keene cement on metal lath	1.25
Ceilings with 3/4 hot roll channels metal lath	.67
Ceilings with 3/4 hot roll channels metal lath plastered	1.40
Single partition 3/4 channel lath 1 side	.62
Single partition 3/4 channel lath 2 sides 2 inches thick	2.20
4-inch double partition 3/4 channel lath 2 sides	1.30
4-inch double partition 3/4 channel lath 2 sides plastered	2.45

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	\$1.00
2 coats Atlas cement, brick or concrete wall	1.25
3 coats cement finish No. 18 gauge wire mesh	1.75
3 coats Atlas finish No. 18 gauge wire mesh	2.05
Wood lath, \$6.00 per 1000	
2.5-lb. metal lath (dipped)	.17
2.5-lb. metal lath (galvanized)	.20
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.27
3/4-inch hot roll channels, \$45 per ton.	
Hardwall plaster, \$15.40 ton; \$12.95 in paper sacks (rebate 15c sack).	
Finish plaster, \$16.40 ton; in paper sacks, \$13.85 (rebate 10c sack).	

Dealer's commission, \$1.00 off above quotations.
Hydrate Lime, \$19.50 ton.
Lime, f.o.b. warehouse, \$2.25 bbl.; cars, \$2.15
Lime, bulk (ton 2000 lbs.), \$16.00 ton.
Wall Board 5 ply, \$43.00 per M.

Composition Stucco—\$1.60 to 2.00 per sq. yard (applied).

Plumbing—
From \$60.00 per fixture up, according to grade, quantity and runs.

Roofing—
"Standard" tar and gravel, \$5.25 per square for 30 squares or over.
Less than 30 squares, \$5.50 per sq. Tile, \$19.00 to \$35.00 per square.
Redwood Shingles, \$11.00 per square in place.
Cedar Shingles, \$10.50 sq. in place.
Recoat, with Gravel, \$3.00 per sq.

Sheet Metal—
Windows—Metal, \$1.85 a sq. foot.
Fire doors (average), including hardware, \$2.15 per sq. foot.

Skylights—
Copper, \$1.35 sq. ft. (not glazed).
Galvanized iron, 30c sq. ft. (not glazed).

Stone—
Granite, average, \$6.00 sq. foot in place.
Sandstone, average Blue, \$3.50; Boise, \$2.60 sq. ft. in place.
Indiana Limestone, \$2.60 per sq. ft. in place.

Store Fronts—
Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Steel Structural—\$97.50 per ton (erected). This quotation is an average for comparatively small quantities. Light truss work higher; plain beam and column work in large quantities, less.
Cost of steel for average building (erected), \$93.00 per ton.

Reinforcing—
Base price for car load lots, \$2.75 100 lbs., f.o.b. cars.
Average cost to install, \$23 per ton.

Steel Sash—
All makes, from S. F. stock, 20c to 35c per square foot.
All makes, plant shipment, 22c to 35c per square foot.
(Includes mullions and hardware.)

Tile—White glazed, 75c per foot, laid. White floor, 75c per foot, laid. Colored floor tile, \$1.00 per ft. laid. Promenade tile, 80c per sq. ft., laid.

1929 WAGE SCHEDULE FOR SAN FRANCISCO BUILDING TRADES

Craft	Journeymen Mechanics
Asbestos workers	\$ 8.00
Bricklayers	11.00
Bricklayers' hodcarriers	7.00
Cabinet workers, (shop)	7.50
Cabinet workers, (outside)	9.00

Carpenters	9.00
Cement finishers	9.00
Electric workers	9.00
Electrical fixture hangers	8.00
Elevator constructors	10.00
Elevator helpers	7.00
Engineers, portable and hoisting	9.00
Glass workers	8.50
Hardwood floormen	9.00
Housemovers	8.00
Housemiths, arch. iron, skilled all branches	9.00
Housemiths, arch. iron, not skilled all branches	8.00
Housemiths, reinforced concrete, or rodmen	9.00
Iron workers (bridge & structural) including engineers	11.00
Laborers, building (6-day week)	5.50
Lathers, channel iron	10.00
*Lathers, all other	8.50
Marble setters	10.00
Marble helpers	6.00
Marble cutters and copers	8.00
Marble bed rubbers	7.50
Marble polishers and finishers	7.00
Millmen, planing mill department	7.00
Millmen, sash and door	6.00
Millwrights	8.00
Model makers	10.00
Model casters	9.00
Mosaic and Terrazzo workers	9.00
Mosaic and Terrazzo helpers	6.00
Painters	9.00
Painters, varnishers and polishers (shop)	7.50
Painters, varnishers and polishers (outside)	9.00
Pile drivers and wharf builders	9.00
Pile drivers engineers	10.00
Plasterers	11.00
Plasterers' hodcarriers	7.50
Plumbers	10.00
Roofers, composition	8.00
Roofers, all others	8.00
Sheet metal workers	9.00
Sprinkler fitters	10.00
Steam fitters	10.00
Stair builders	9.00
Stone cutters, soft and granite	8.50
Stone setters, soft and granite	9.00
Stone carvers	8.50
Stone derrickmen	9.00
Tile setters	10.00
Tile helpers	6.00
Auto truck drivers, less than 2500 lbs.	5.50
Auto truck drivers, 2500 to 4500 lbs.	6.00
Auto truck drivers, 4500 to 6500 lbs.	6.50
Auto truck drivers, 6500 lbs. and over	7.00
General teamsters, 1 horse	5.50
General teamsters, 2 horses	6.00
General teamsters, 4 horses	6.50
Plow teamsters, 4 horses	6.50
Scrapper teamsters, 2 horses	6.00
Scrapper teamsters, 4 horses	6.00

*On wood lath if piece rates are paid they shall be not less than such an amount as will guarantee, on an average day's production of 1600 lath, the day wage set forth.

Eight hours shall constitute a day's work for all Crafts except as otherwise noted.

Plasterer's hodcarriers, bricklayers' hodcarriers, roofers, laborers, and engineers, portable and hoisting, shall start 15 minutes before other workmen, both at morning and noon.

Five and one-half days, consisting of eight hours on Monday to Friday inclusive, and four hours on Saturday forenoon shall constitute a week's work.

Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday afternoon (except laborers), Sundays from 12 midnight Saturday, and Holidays from 12 midnight of the preceding day shall be paid double time. On Saturday afternoon laborers, building, shall be paid straight time.

Where two shifts are worked in any twenty-four hours shift time shall be straight time. Where three shifts are worked, eight hours pay shall be paid for seven hours on the second and third shifts.

All work shall regularly be performed between the hours of 8 A. M. and 5 P. M., provided, that in emergencies or where premises cannot be vacated for work by mechanics until the close of business, men then reporting for work shall work at straight time; but any work performed after midnight shall be paid time and one-half except on Saturday afternoons, Sundays, and holidays, when double time shall be paid.

Recognized holidays to be New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day and Christmas Day.

Men ordered to report for work, for whom no employment is provided, shall be entitled to two hours pay.

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*Appears alternate months

WHAT'S WHAT IN MATERIALS

WHO'S WHO AMONG CONTRACTORS

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ACOUSTIC CORRECTIONS

Johns-Manville Company, all principal Coast cities.

R. Guastavino Co., represented by Albert B. Mann, Engineer, 417 Crocker Bldg., San Francisco.

"Acousti-Celotex," Western Asbestos Magnesia Co., 25 South Park, San Francisco. American Hair & Felt Co., 1615 Ditman St., Los Angeles.

AIR COMPRESSORS

Dayton, sold by Simonds Machinery Co., 816 Folsom Street, San Francisco; 520 East 4th Street, Los Angeles.

ACOUSTIC DEADENING

American Hair & Felt Co., 1615 Ditman St., Los Angeles.

ALUMINUM

Federal Ornamental Iron and Bronze Co., 16th St. and San Bruno Ave., San Francisco. Michel & Pfeiffer Iron Works, 1415 Harrison Street, San Francisco.

ARCHITECTURAL ENCAUSTIC TILE

Mangrum-Holbrook Co., Inc., 1235 Mission Street, San Francisco.

ARCHITECTURAL BRONZE

Elevator Supplies Company, Inc., Hoboken, N. J., 136 Fifth Street, San Francisco; 1120 S. Hope Street, Los Angeles.

Zouri Drawn Metals Company, Chicago Heights, Illinois, (Zouri Company of California, 1208 Howard St., San Francisco.

ARCHITECTURAL TERRA COTTA

N. Clark & Sons, 116 Natoma Street, San Francisco.

Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland. W. S. Dickey Clay Mfg. Co., San Francisco and Oakland.

ASBESTOS MATERIALS

Johns-Manville, Inc. of California, 159 Montgomery St., San Francisco. Coast Factory at Pittsburg, Calif.

Western Asbestos Magnesia Company, 25 South Park, San Francisco.

Jones Bros. Asbestos Supply Co., Inc., 500 Second St., San Francisco.

ASPHALT ROOFING

El Rey Products Company, 1633 San Pedro St., Los Angeles; 960 Seventh St., San Francisco; 65 Columbia St., Seattle; 850 E. Taylor St., Portland.

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle.

AUTOMATIC THERMOSTAT CONTROLS

Majestic Electric Appliance Company, 590 Folsom Street, San Francisco.

BEDS—WALL—CONCEALED, ETC.

Marshall & Stearns Co., Phelan Bldg., San Francisco.

BLACKBOARDS

C. F. Weber & Co., 601 Mission St., San Francisco, Los Angeles and Reno, Nevada.

BOILERS

Kewanee Boiler Co., 635 Mission St., San Francisco.

Kewanee Water Supply System, Simonds Machinery Co., 816 Folsom St., San Francisco.

BONDS FOR CONTRACTORS

Bonding Company of America, Kohl Bldg., San Francisco.

Globe Indemnity Co., 444 California St., San Francisco.

Fidelity & Casualty Co. of New York, Balfour Bldg., San Francisco.

Standard Accident Insurance Company, California Commercial Union Building, San Francisco.

BRASS GOODS, CASTINGS, ETC.

H. Mueller Manufacturing Co., 1072 Howard St., San Francisco.

BRICK—FACE, COMMON, ENAMEL, GLAZED

Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.

N. Clark & Sons, 116 Natoma Street, San Francisco.

W. S. Dickey Clay Mfg. Co., San Francisco and Oakland.

Port Costa Brick Works, 6th and Berry Sts., San Francisco.

McNear Brick Company, Monadnock Bldg., San Francisco.

Richmond Pressed Brick Co., Sharon Bldg., San Francisco. Plant at Richmond, Cal. Cannon & Co., Sacramento; 517 Call Bldg.,

San Francisco; Builders Exchange Bldg., Oakland.

BRICK AND CEMENT COATING

The Paraffine Companies, Inc., 475 Brannan St., San Francisco.

BUILT-IN FURNITURE

Built-in Fixture Company, 2608 San Pablo Ave., near Dwight Way, Berkeley, and Hoosier Store, Pacific Bldg., San Francisco.

BUILDERS' HARDWARE

"Corbin" hardware, sold by Palace Hardware Company, 581 Market St., San Francisco. Richards-Wilcox Mfg. Co., Aurora, Ill.; represented by Ewing-Lewis Company, Hunter-Dulin Bldg., San Francisco, and 408 S. Spring Street, Los Angeles.

BUILDING PAPERS

El Rey Products Company, 1633 N. San Pablo Street, Los Angeles; 960 Seventh Street, San Francisco; 65 Columbia Street, Seattle; 850 E. Taylor St., Portland, Ore. The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle. Pacific Materials Co., 444 Market St., San Francisco.

CEMENT

Atlas White, manufactured by The Atlas Portland Cement Company, 25 Broadway, New York.

Hydro-plastic cement, manufactured by Southwestern Portland Cement Company, 556 S. Spring St., Los Angeles.

Monolith Plastic Waterproof Cement Company, manufactured by Monolith Portland Cement Company, Bartlett Building, Los Angeles; 741 Monadnock Bldg., San Francisco; 1207 Public Service Bldg., Portland.

Pacific Portland Cement Co., Hunter-Dulin Bldg., San Francisco, also Portland, Ore., Los Angeles and San Jose, Calif.

Santa Cruz Portland Cement Company, Crocker Building, San Francisco.

CEMENT EXTERIOR WATERPROOF PAINT

Bass-Hunter Paint Company, San Francisco, Los Angeles, Portland, Seattle.

The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

CEMENT TESTS—CHEMICAL ENGINEERS

Robert W. Hunt Co., 251 Kearny Street, San Francisco.

CLAY PRODUCTS

N. Clark Sons, 116 Natoma Street, San Francisco.

Cannon & Co., Sacramento, Cal.; 517 Call Bldg., San Francisco.

W. S. Dickey Clay Mfg. Co., San Francisco and Oakland.

Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.

United Materials Co., Sharon Bldg., San Francisco.

COMPOSITION ROOFING

El Rey Products Company, 1633 San Pedro St., Los Angeles; 960 Seventh St., San Francisco; 65 Columbia St., Seattle; 850 E. Taylor St., Portland.

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle.

CONCRETE OR CEMENT HARDENER

Gunn, Carle & Co., Inc., 444 Market St., San Francisco.

CONCRETE REINFORCING

Soule Steel Company, Rialto Building, San Francisco.

Gunn, Carle & Co., Inc., 444 Market St., San Francisco.

Clinton Welded Wire Fabric, Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.

Pacific Coast Steel Company, Hunter-Dulin Bldg., San Francisco.

CONTRACTORS—GENERAL—

Adam-Arras Co., 185 Stevenson St., San Francisco.

F. R. Siegrist Co., 604 Williams Bldg., San Francisco.

Spivock & Spivock, Hobart Building, San Francisco, and 412 Water St., Oakland.

Vogt & Davidson, Inc., 185 Stevenson St., San Francisco, and Builders Exchange, Oakland.

K. E. Parker Company, Inc., 135 South Park, San Francisco.

Barrett & Hilp, 918 Harrison Street, San Francisco.

Lindgren-Swinerton, Inc., Standard Oil Bldg., San Francisco.

R. W. Littlefield, 337 17th Street, Oakland.

Diawiddle Construction Co., Crocker Bldg., San Francisco.

Clinton Construction Company, 923 Folsom St., San Francisco.

Monson Bros., 475 Sixth St., San Francisco.

McLeran & Co., R., Hearst Bldg., San Francisco.

Chas. D. Vezey & Sons, Builders Exchange Bldg., Oakland.

Jacks & Irvine, Call Bldg., San Francisco.

Industrial Construction Company, 815 Bryant Street, San Francisco.

Anderson & Ringrose, 320 Market Street, San Francisco.

G. P. W. Jensen, 320 Market Street, San Francisco.

CORK TILE

Congoleum-Nairn, Inc., D. N. & E. Walter & Co., San Francisco, and Broadway Department Store, Los Angeles.

Van Fleet-Precar Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

CRIBBING FOR RETAINING WALLS

Massey Concrete Products Corporation, Colton California and Spokane, Washington.

CRUSHED ROCK

Pacific Coast Aggregates, Inc., General Office, Hunter-Dulin Bldg., 111 Sutter St., San Francisco.

DAMP-PROOFING AND WATER-PROOFING

Western Asbestos Magnesia Company, 25 South Park, San Francisco.

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle.

West Coast Kalsomein Co., 710 Rives-Strong Bldg., Los Angeles, and P. O. Box C, West Berkeley.

Gunn, Carle & Co., 444 Market St., San Francisco.

DEADENING MATERIAL

"Insulite" Western Asbestos Magnesia Co., 25 South Park, San Francisco.

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle.

American Hair & Felt Co., 1615 Ditman St., Los Angeles.

Gunn, Carle & Co., 444 Market St., San Francisco.

"Torfoleum" manufactured by Mailliard & Schmiel, 203 California St., San Francisco.

DOOR CHECKS—CONCEALED

The Condor Company, 55 Sutter St., San Francisco.

DOOR CLOSERS

Norton door closer, sold by Nissen-Currier Co., 265 Minna St., San Francisco, and 302 Cole Bldg., Los Angeles.

DOOR HANGERS

Richards-Wilcox Mfg. Co., The Ewing-Lewis Co., Hunter-Dulin Bldg., San Francisco.

DOORS—FIREPROOF

Detroit Steel Products Company, 251 Kearny St., San Francisco.

Kinnear Mfg. Co., represented by Gunn, Carle & Co., 444 Market St., San Francisco.

DOORS—FREIGHT ELEVATOR

The Peelle Co., rooklyn, N. Y., represented by Persons Dwan & Co., 534 Sixth Street, San Francisco.

DOORS—HOLLOW METAL

Fire Protection Products Co., 1101 Sixteenth St., San Francisco.

Dahlstrom Metallic Door Co., Jamestown, N. Y., Coast plant, 3350 E. Stauson Ave., Los Angeles.

Forcener Cornice Works, Potrero Ave., San Francisco.

DOORS—ROLLING

Gas. G. Wilson Corporation, 605 Market St., San Francisco.

Kinnear rolling steel doors, sold by Gunn, Carle & Co., 444 Market St., San Francisco.

DRAIN PIPE AND FITTINGS

"Corrosiron" Acid Proof, manufactured by Pacific Foundry Co., Harrison and 18th St., San Francisco.

DRAPERIES AND WINDOW SHADES

D. N. & E. Walter & Co., 562 Mission Street, San Francisco.

DRINKING FOUNTAINS

Haws Sanitary Drinking Faucet Co., 1808 Harmon St., Berkeley, and C. F. Weber & Co., San Francisco and Los Angeles.

Standard-Pacific Plumbing Fixtures, 349 Sutter St., San Francisco; 919 W. 7th St., Los Angeles; 1301 5th Ave., Seattle.

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WHO'S WHO AMONG CONTRACTORS

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DUMB WAITERS

Spencer Elevator Company, 166 7th St., San Francisco.
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.

ELECTRICAL CONTRACTORS

Butte Electrical Equipment Company, 2014 Folsom St., San Francisco.
Charles A. Langlais, 472 Tehama St., San Francisco.
H. C. Read & Co., 389 Clementina St., San Francisco.

ENGINEERS—CONSULTING, ELECTRICAL, MECHANICAL

Hunter & Hudson, 41 Sutter Street, San Francisco.
Charles T. Phillips Company, Bank of Italy Bldg., San Francisco, and Roberts Bldg., Los Angeles.

ELECTRIC AIR AND WATER HEATERS

Majestic Electric Appliance Company, 590 Folsom Street, San Francisco.
Wesix Heater Company, Rialto Building, San Francisco.
Sandoval Sales Company, 415 Jessie Street, San Francisco.
Weir Electric Appliance Company, 26th and Adeline Streets, Oakland.

ELECTRIC REFRIGERATION

General Electric Refrigerator, George Belsey Company, Los Angeles, Distributor, Stores in Los Angeles, Pasadena, Glendale, Hollywood, Santa Monica and Monrovia; L. H. Bennett, Northern California Distributor, 2112 Broadway, Oakland; 318 Stockton St., San Francisco.
Wayne Home Equipment Company, Fort Wayne, Indiana, represented by Hill and Stoops, 4214 Broadway, Oakland, Calif.

ELECTRICAL SUPPLIES AND EQUIPMENT

The Fink Company, 10th Ave. at 24th St., New York; 77 O'Farrell St., San Francisco.
Drendel Electrical & Mfg. Co., 1345 Howard St., San Francisco.
Frank Adam Electric Company, 340 Fremont St., San Francisco, and 1127 Wall Street, Los Angeles; general offices, St. Louis, Mo.
Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., and First National Bank Bldg., San Francisco.
Sterling Bronze Co., Inc., 18 East 40th St., New York.

ELECTROLIERS

Northern Street Lighting Company, 389 Clementina Street, San Francisco.

ELEVATOR ENTRANCE DOORS

Dahlstrom Metallic Door Company, James-town, N. Y., Pacific Coast plant, 3350 East Slauson Ave., Los Angeles.

ELEVATORS—PASSENGER AND FREIGHT

Otis Elevator Company, Stockton and North Point, San Francisco.
Spencer Elevator Company, 166 Seventh St., San Francisco.
Westinghouse Electric and Manufacturing Company, First National Bank Bldg., San Francisco, general offices and works, Pittsburgh, Pa.
ELEVATOR SIGNALS, DOOR EQUIPMENT
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.
The Peelle Co., Brooklyn, N. Y., represented by Persons Dwan & Co., 534 Sixth Street, San Francisco.
Richards-Wilcox Mfg. Co., represented by Ewing-Lewis Company, Hunter-Dulin Bldg., San Francisco; 408 S. Spring Street, Los Angeles.

ENAMELS

Gold Seal Enamel—Bass-Heuter Paint Company, San Francisco, Los Angeles, Portland, Seattle.
EXIT DEVICES
Von Duprin, manufactured by Vonnegut Hardware Company, Indianapolis; sold by D. A. Pancoast Co., 605 Market St., San Francisco.

FENCES—WIRE AND IRON

Michel & Pfeffer Iron Works, Harrison and Tenth Sts., San Francisco.

FIRE EXTINGUISHING APPARATUS

"Lux" System, represented by Hough and Egbert, Inc., 519 Robert Dollar Building, San Francisco.
FIRE DETECTING APPARATUS
"Derby" and "Sex" Systems, represented by Hough and Egbert, Inc., 519 Robert Dollar Building, San Francisco.

FIRE ESCAPES

Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.

Western Iron Works, 141 Beale St., San Francisco.

FIRE SPRINKLERS—AUTOMATIC

Fire Protection Engineering Co., 407 Exchange Building, 369 Pine Street, San Francisco.

Grinnell Company of the Pacific, Fifth and Brannan Sts., San Francisco.

FIXTURES—BANK, OFFICE, STORE, ETC.

Home Manufacturing Company, 552 Brannan St., San Francisco.
Mullen Manufacturing Co., 64 Rausch St., San Francisco.
Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.
The Fink & Schindler Co., 228 13th St., San Francisco.

FLOORS—CORK, LINOLEUM, ETC.

Congoleum-Nairn, Inc., D. N. & E. Walter & Co., San Francisco, and Broadway Department Store, Los Angeles.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland, Seattle.

FLOOR HARDENER

Master Builders Company, Mills Bldg., San Francisco; 426 So. Spring Street, Los Angeles; also Seattle, Portland and Spokane.

FLOORS—REDWOOD BLOCK

Redwood Block Floor Company, Bryant at 18th St., San Francisco.
Pacific Redwood Floor Company, 311 California St., San Francisco, and 420 Grant Bldg., Los Angeles.

FLOOR CLIPS

Bull Dog Floor Clip Co., 557 Market St., San Francisco and Hibernian Bldg., Los Angeles.

FLOORS—HARDWOOD

Inlaid Floor Company, 600 Alameda Street, San Francisco and 4067 Watts Street, Emeryville, Oakland.
"Perfection" Brand Oak Flooring, Arkansas Oak Flooring Co., Pine Bluff, Arkansas.
J. E. Higgins Lumber Company, San Francisco.

White Brothers, 5th and Brannan streets, San Francisco; 500 High Street, Oakland.
Cellized Oak Flooring, Inc., Memphis, Tenn. Represented by Geo. H. Brown Hardwood Company, Oakland.

FREIGHT ELEVATOR DOORS

The Peelle Co., Brooklyn, N. Y., represented by Persons Dwan & Co., 534 Sixth Street, San Francisco.

FURNITURE—OFFICE, SCHOOL, CHURCH, THEATER

The Fink & Schindler Co., Inc., 218-68 13th St., San Francisco.
Home Mfg. Co., 552 Brannan Street, San Francisco.
Mullen Mfg. Co., 64 Rausch Street, San Francisco.
C. F. Weber & Co., San Francisco, Los Angeles, and Phoenix, Ariz.

GENERAL CONTRACTORS

Spivock & Spivock, Hobart Building, San Francisco.
GLASS
Cobbledick-Kibbe Glass Co., 666 Howard St., San Francisco.

GRAVEL AND SAND

Pacific Coast Aggregates, Inc., General Office, Hunter-Dulin Bldg., 111 Sutter St., San Francisco.
Del Monte White Sand, Del Monte Properties Co., Crocker Bldg., San Francisco.
GYMNASIUM EQUIPMENT—LOCKERS, ETC.
Elbery Arms Co., 583 Market St., San Francisco.

HANGERS—RELIANCE—

Graham & Norton Company, 213 Minna Street, San Francisco.

HARDWARE

Vonnegut hardware, sold by D. A. Pancoast Company, 605 Market St., San Francisco.
Palace Hardware Company, 581 Market St., San Francisco.
Richards-Wilcox Mfg. Co., represented by Ewing-Lewis Company, Hunter-Dulin Bldg., San Francisco; 408 S. Spring Street, Los Angeles.

HARDWOOD LUMBER

J. E. Higgins Lumber Co., San Francisco.
G. H. Brown Hardwood Lumber Co., 47th Ave. at E. 12th Street, Oakland.
White Brothers, 5th and Brannan streets, San Francisco; 500 High Street, Oakland.

HEATING—COAL FURNACE

Montague Range & Furnace Company, 376 Sixth St., San Francisco.

HEATING—ELECTRIC

Wesix Electric Air Heaters, manufactured and distributed by Wesix Heater Company, Rialto Building, San Francisco.
Apex Air and Water Electric Heaters, Sandoval Sales Company, 115 Jessie Street, San Francisco.
Majestic Electric Appliance Co. (bathroom heater), 590 Folsom St., San Francisco.
Weir Electric Appliance Company, 26th and Adeline Streets, Oakland.

HEATING—STEAM

Warren Webster & Company, Sharon Bldg., San Francisco, and 306 Crocker St., Los Angeles.

HEATING CONTRACTORS

Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St., San Francisco.

Hateley & Hateley, Mitau Bldg., Sacramento.
Mangrum & Otter, 827-831 Mission St., San Francisco.

W. H. Picard, 5656 College Ave., Oakland.
Luppen & Hawley, 3126-J St., Sacramento.

William F. Wilson Co., 240 Fourth St., San Francisco.

James A. Nelson, Inc., Howard and Tenth Sts., San Francisco.

Scott Company, 243 Minna St., San Francisco.

Geo. A. Schuster, 4712 Grove St., Oakland.
Herman Lawson, 465 Tehama Street, San Francisco.

HEATING EQUIPMENT

E. A. Conely, Inc., 1452 Bush Street, San Francisco.

Illinois Engineering Co., 417 Market St., San Francisco.

Warren Webster & Company, Sharon Bldg., San Francisco, and 306 Crocker St., Los Angeles.

James A. Nelson, Inc., Howard and Tenth Sts., San Francisco.

B. F. Sturtevant Co., Monadnock Bldg., San Francisco; Los Angeles, Portland, Seattle.

HOLLOW BUILDING TILE (Burned Clay)

Cannon & Co., plant at Sacramento; Call Bldg., San Francisco.

N. Clark & Sons, 112-116 Natoma Street, San Francisco; works, West Alameda, California.

Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.

W. S. Dickey Clay Mfg. Co., San Francisco and Oakland.

HOSE

The American Rubber Mfg. Co., Park Ave. and Watts St., Oakland, Calif.

HOSE RACKS AND REELS

American Rubber Mfg. Co., San Francisco, Oakland, Los Angeles and Portland, Ore.

HOSPITAL SIGNAL SYSTEMS

Chicago Signal Co., represented by Garnett Young & Co., 390 Fourth St., San Francisco.

INCINERATORS

Kerner Incinerator Company, 450 Clementina Street, San Francisco.

The Goder, sold by M. E. Hammond, Mezzanine, Pacific Bldg., San Francisco.

Kewanee Boiler Co., 635 Mission Street, San Francisco.

INDUSTRIAL LIGHTING EQUIPMENT

Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Bldg., San Francisco.

INSPECTIONS AND TESTS

Robert W. Hunt Co., 251 Kearny Street, San Francisco.

INSULATION

"Insulux" manufactured by Pacific Portland Cement Co., Hunter-Dulin Bldg., San Francisco, & 1200 Chapman Bldg., Los Angeles.
Western Asbestos Magnesia Co., 25 South Park, San Francisco.
American Hair and Felt Company, 1615 N. Ditman St., Los Angeles.

Gunn, Carle & Co., 414 Market St., San Francisco.

"Torfolux" manufactured by Mailliard & Schmiedel, 203 California St., San Francisco.

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DISAPPEARING WARDROBES

Richards-Wilcox Manufacturing Company, Aurora, Ill., announce that the company is now in a position to accept the complete responsibility of any wardrobe proposition from beginning to end, including laying out the job, manufacturing the material and erecting it.

Arrangements have been completed with the Compound and Pyrono Door Company, whereby they will manufacture their key veneered wardrobe doors exclusively.

Richards-Wilcox engineers will be glad of an opportunity to co-operate on any wardrobe problems you may have. A catalog illustrating and describing disappearing wardrobes may be had by addressing the home office.

PROVISIONAL CERTIFICATES TO PRACTICE

The following have been granted provisional certificates to practice architecture in California:

Rowland Ashby Curry, 816 West Fifth street, Los Angeles.

Frederick C. Marsh, 1864 Glenview Terrace, Altadena.

William F. McCoy, 35 South Raymond avenue, Pasadena.

John Robert Harris, 6715 Hollywood Boulevard, Los Angeles.

Rudolph Michael Schindler, 835 Kings Road, Los Angeles.

Paul W. Krempel, 415 Bank of Italy building, Los Angeles.

A "DECK OF CARDS"

An original and striking bit of advertising is being done by the Pacific Portland Cement Company. The company is mailing out a series of post cards, in two colors, which strike a new vein in building material advertising—they show no buildings, no structures of any kind.

For example, one card shows a pair of dice showing "7." The text underneath explains that cement forms only 1-7th by weight of the mass of concrete, and that it is the vital 7th.

The feature of "flowability" of cement is illustrated with an attractive waterfall. This landscape is so designed that the text forms a part of the rock breast over which the current is pouring.

The series consists of 16 cards.

BUILDING OFFICIALS CONFERENCE

DAVID H. MERRILL, formerly of the firm of Noice and Merrill, structural engineers, Los Angeles, has been made managing secretary-treasurer of the Pacific Coast Building Officials Conference with headquarters at 1101 Heartwell Building, Long Beach, California.

The Eighth annual meeting of the Pacific Coast Building Officials Conference was held in Portland, Oregon, September third to sixth, and a large group of city building officials and allied interests of the West attended.



How Bernard Maybeck would treat Myron Hunt's Pasadena Library, as visualized by Henry H. Gutterson.
Drawing Exhibited at State Convention of Architects.

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WHO'S WHO AMONG CONTRACTORS

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INSULATED WIRE

Hazard Insulated Wire Works, Wilkes-Barre, Pa., Russ Building, San Francisco, Seattle and Los Angeles.

KITCHEN EQUIPMENT

General Electric Refrigerator, L. H. Bennett, Rialto Building, San Francisco, and the George Belsey Company, Architects Building, Los Angeles.
James A. Nelson, Inc., Howard and Tenth Sts., San Francisco.
Mangrum Holbrook Company, 1235 Mission St., San Francisco.

LACQUERS

The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland and Seattle.
Bass-Hueter Paint Company, San Francisco, and all principal Coast cities.

LATHING MATERIAL—WIRE, METAL, ETC.

Genfire Steel Co., Sheldon Bldg., San Francisco; Builders' Exchange, Oakland.
Truscon Steel Co., Sharon Building, San Francisco.
Soule Steel Company, Rialto Building, San Francisco, and Los Angeles.

LAUNDRY MACHINERY AND EQUIPMENT

American Laundry Machinery Company, 921 Howard Street, San Francisco.
Troy Laundry Mach'y Co., Ltd., East Moline, Ill., and 951 Mission St., San Francisco.
Gunn, Carle & Co., 444 Market St., San Francisco.

LIGHTING FIXTURES, OUTLETS, ETC.

Westinghouse Electric and Mfg. Co., First National Bank Bldg., San Francisco; general offices and works, Pittsburgh, Pa.
The Frink Company, 369 Lexington Avenue, New York, and principal Coast cities.
Sterling Bronze Co., Inc., 18 East 40th St., New York.

LIME PRODUCTS

United States Lime Products Corp., San Francisco, Los Angeles, Portland, Ore.

LINOLEUM

William Volker & Co., 631 Howard St., San Francisco, and 2301 E. 7th St., Los Angeles.
The Paraffine Companies, factory in Oakland; office, 475 Brannan Street, San Francisco.
W. & J. Sloane, 216 Sutter Street, San Francisco.
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

Bonded Floors—Sealex Linoleum and Tile manufactured by Congoleum-Nairn, Inc., D. N. & E. Walter & Co., San Francisco; Broadway Department Store, Los Angeles.

LUMBER

G. H. Brown Hardwood Company, 1044 47th Ave., Oakland.
Pacific Mfg. Co., San Francisco, Oakland, Los Angeles and Santa Clara.
Santa Fe Lumber Co., 16 California St., San Francisco.
J. E. Higgins Lumber Company, 423 Sixth St., San Francisco.
Sunset Lumber Company, First and Oak Sts., Oakland.
White Brothers, 5th and Brannan Sts., San Francisco, and 500 High St., Oakland.
E. K. Wood Lumber Co., Frederick and King streets, Oakland.

MAIL CHUTES

Cutler Mail Chute Co., represented by Price Building Specialties Co., 683 Howard St., San Francisco and Continental Building Specialties Co., 1216 Hibernian Bldg., Los Angeles.

MARBLE

American Marble Company, 25 Columbus Square, San Francisco.
Clevis Marble Company and Mosaic Co., 1721 San Bruno Avenue, San Francisco.
Ray Cook Marble Company, foot of Powell St., Oakland.
Joseph Musto Sons-Keenan Co., 535 N. Point St., San Francisco.
Vermont Marble Co., Coast branches, San Francisco, Los Angeles and Tacoma.
Tompkins-Kiel Marble Company, 505 Fifth Ave., New York; also Chicago, Philadelphia and San Francisco.

MASONRY ANCHORS

Steeform Contracting Company, Monadnock

Bldg., San Francisco; Edwards & Wildcy Bldg., Los Angeles.

METAL COVERED DOORS

Fire Protection Products Co., 1101 Sixteenth St., San Francisco.
Forderer Cornice Works, Potrero Ave., San Francisco.

MILLWORK

The Fink & Schindler Co., Inc., 218-68 13th St., San Francisco.
Pacific Mfg. Co., San Francisco, Los Angeles, Oakland and Santa Clara.
Sunset Lumber Company, First and Oak Streets, Oakland.
Lannom Bros. Mfg. Co., Fifth and Magnolia Sts., Oakland.
Atkinson Mill & Mfg. Co., 2985 Chapman Avenue, Oakland.
Chicago Lumber Company of Washington, 66th and 69th Aves and Spencer Street, Oakland.
E. K. Wood Lumber Co., Frederick and King streets, Oakland.

MONEL METAL

"Inco" brand, distributed on the Pacific Coast by the Pacific Foundry Company, Harrison and 18th Streets, San Francisco, and Eagle Brass Foundry, Seattle, Wash.

OIL BURNERS

Rayfield Oil Burner, Coast Distributors, E. A. Cornely, Inc., 1452 Bush Street, San Francisco.
S. T. Johnson Company, 1337 Mission St., San Francisco; 940 Arlington St., Oakland; 1729 Front St., Sacramento, and 230 N. Sutter St., Stockton.
Vaughn-G. E. Witt Co., 4224-28 Hollis Street, Emeryville, Oakland.
W. S. Ray Mfg. Company, 170 Sutter St., San Francisco, and 2206 San Pablo Ave., Oakland.
Coen Company, 112 Market Street, San Francisco.
Wayne Home Equipment Company, Fort Wayne, Indiana, represented by Hill and Stoops, 4214 Broadway, Oakland, Calif.

ORNAMENTAL IRON AND BRONZE

Federal Ornamental Iron and Bronze Co., 16th St. and San Bruno Ave., San Francisco.
Michel & Pfeiffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.

PAINTING, DECORATING, ETC.

The Torney Co., 681 Geary St., San Francisco.
A. Quandt & Sons, 374 Guerrero Street, San Francisco.

PAINTS, OILS, ETC.

The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland and Seattle.
Bass-Hueter Paint Company, San Francisco, Los Angeles, Portland, Seattle.
General Paint Company, Los Angeles, San Francisco, Oakland, Seattle, Spokane and Portland.

PANEL BOARDS

Drendell Electric & Mfg. Co., 1760 Howard St., San Francisco.
Frank Adam Electric Company, 340 Fremont St., San Francisco, and 1227 Wall Street, Los Angeles; general offices, St. Louis, Mo.
Westinghouse Elec. and Mfg. Co., First National Bank Bldg., San Francisco; general offices and works, Pittsburgh, Pa.

PANELS—HARDWOOD

White Brothers, 5th and Brannan Sts., San Francisco, and 500 High St., Oakland.

PANIC EXIT DEVICES

Von Duprin, manufactured by Vonnegut Hardware Company, Indianapolis; sold by D. A. Pancoast Co., 605 Market Street, San Francisco.

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Pacific Mfg. Co., Monadnock Building, San Francisco; factory at Santa Clara.

PIPE—WROUGHT IRON

A. M. Byers Co., Pittsburgh, Pa., and Financial Center Bldg., Los Angeles.
Reading Iron Co., Reading, Pa., and Balboa Bldg., San Francisco.

PLASTER

"Empire," manufactured by Pacific Portland

Cement Co., Hunter-Dulin Building, San Francisco, Portland, San Jose and Los Angeles.

PLASTER BASE

"Celotex," Western Asbestos Magnesia Co., 25 South Park, San Francisco.

PLASTER REINFORCING

Wickwire-Spencer Steel Company, Inc., 144 Townsend St., San Francisco.

PLASTERING CONTRACTORS

A. Knowles, Call Bldg., San Francisco.
MacGruer & Company, 266 Tehama Street, San Francisco, and Pacific Mutual Bldg., Los Angeles.

PLUMBING CONTRACTORS

Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 193 Otis St., San Francisco.
Hateley & Hateley, 1710 Tenth St., Sacramento.
Herman Lawson, 465 Tehama Street, San Francisco.

Luppen & Hawley, 906 7th St., Sacramento

Scott Co., Inc., 243 Minna St., San Francisco.

Wm. F. Wilson Co., 240 Fourth Street, San Francisco.

Geo. A. Schuster, 4712 Grove St., Oakland.

W. H. Picard, 5656 College Ave., Oakland.

PLUMBING SUPPLY HOUSES

H. Mueller Manufacturing Company, 1072-76

Howard St., San Francisco.

Standard Pacific Fixtures, 349 Sutter St., San Francisco.

Clarence Drucker, manufacturers' representative, 307 Minna St., San Francisco.

PRESSED STEEL

Berger Manufacturing Co., 1120 Mission St., San Francisco.

PRESSURE REGULATORS

Vaughn-G. E. Witt Co., 4224-28 Hollis Street, Emeryville, Oakland.

PUMPING MACHINERY

Simonds Machinery Co., 816 Folsom Street, San Francisco; 520 East 4th Street, Los Angeles.

PUMPS—HAND OR POWER

Ocean Shore Iron Works, 558 Eighth St., San Francisco.

S. F. Bowser & Co., Inc., 425 Brannan St., San Francisco.

REFRIGERATORS

"General Electric," sold by the George Belsey Company, Architects' Building, Los Angeles; L. H. Bennett, Rialto Bldg., San Francisco.

REINFORCING STEEL

Soule Steel Company, Inc., Rialto Bldg., San Francisco, and Los Angeles.

Gunn, Carle & Co., Inc., 444 Market St., San Francisco.

Pacific Coast Steel Co., Hunter-Dulin Bldg., San Francisco.

United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Bldg., San Francisco.

Truscon Steel Company, Sharon Bldg., San Francisco.

ROCK AND GRAVEL

Pacific Coast Aggregates, Inc., General Office, Hunter-Dulin Bldg., 111 Sutter St., San Francisco.

ROOF MATERIALS

El Rey Products Co., 1633 San Pablo St., Los Angeles; 960 7th St., San Francisco; 65

Columbia St., Seattle; 850 E. Taylor St., Portland.

Kraftite Company, office and factory at Niles; 55 New Montgomery Street, San Francisco.

"Malthoid" and "Ruberoid," also "Pabco" 10 and 20 year roofs, manufactured by the Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland and Seattle.

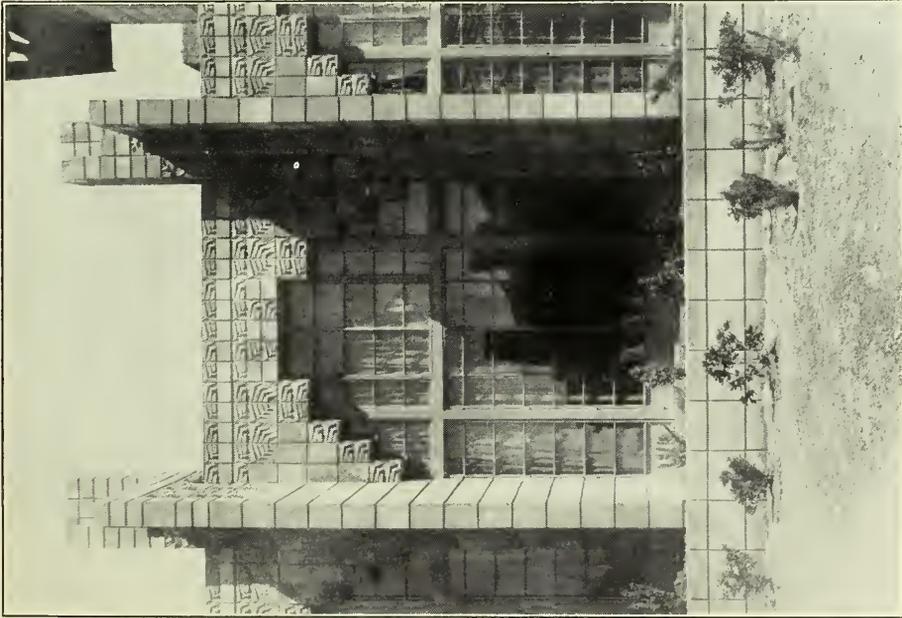
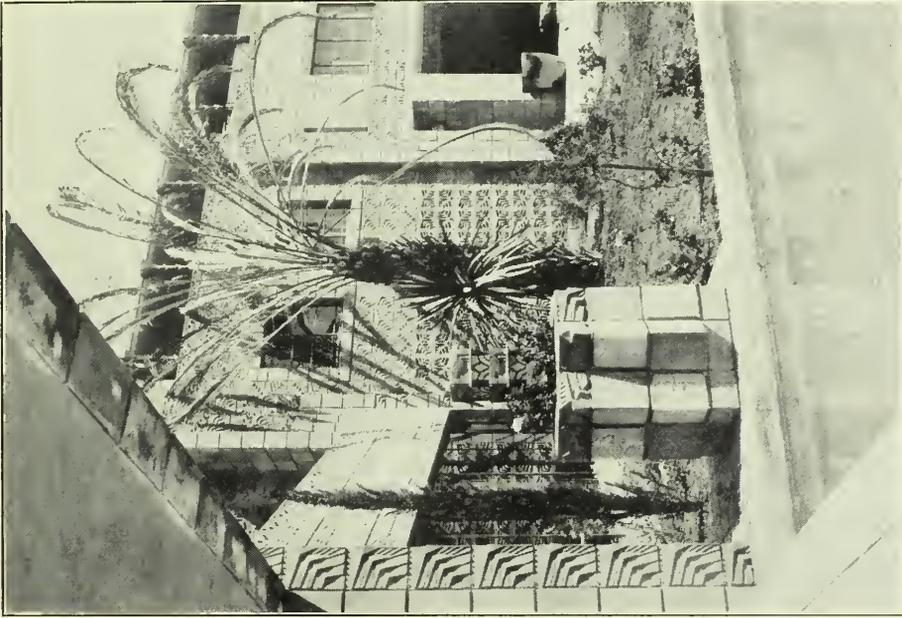
Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454

Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.

N. Clark & Sons, 112-116 Natoma Street, San Francisco; works, West Alameda, California.

W. S. Dickey Clay Mfg. Co., 604 Mission St., San Francisco.

Jones Brothers Asbestos Supply Co., 500 Second St., San Francisco.



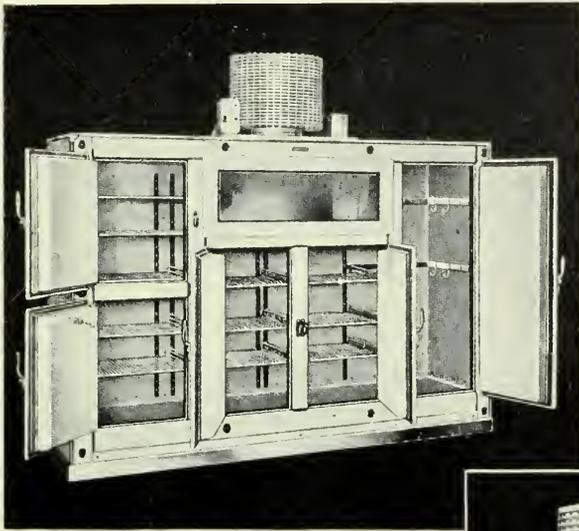
Courtesy Southwest Builder and Contractor
DETAILS, ARIZONA BILTMORE HOTEL, NEAR PHOENIX, ARIZONA
ALBERT CHARLES MacARTHUR, ARCHITECT
FRANK LLOYD WRIGHT, INVENTOR OF ART STONE BLOCK SYSTEM

WHAT'S WHAT IN MATERIALS

WHO'S WHO AMONG CONTRACTORS

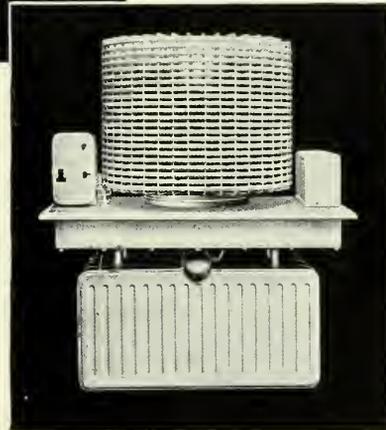
ALPHABETICAL LIST OF ADVERTISERS ON PAGE 125

- Johns-Manville Corporation of California, 159 New Montgomery St., San Francisco.
United Materials Co., Sharon Building, San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.
"Torfoleum" Insulation manufactured by Maillhard & Schmiedel, 203 California St., San Francisco.
- RUGS AND CARPETS**
W. & J. Sloane, 216 Sutter St., San Francisco.
- SAFETY TREADS**
Price-Teltz Company, 683 Howard St., San Francisco.
Gunn, Carle & Co., 444 Market St., San Francisco.
- SASH CHAINS**
American Chain Company, Inc., Bridgeport, Conn., and 425 Second St., San Francisco.
The Smith & Edge Mfg. Co., P. O. Box 1040, Bridgeport, Conn.; 506 American Bank Bldg., Los Angeles.
- SCAFFOLDING FOR CONTRACTORS**
Stelform Contracting Company, Monadnock Bldg., San Francisco; Edwards & Wildey Bldg., Los Angeles.
- SEATING—SCHOOL, THEATER, CHURCH**
Home Manufacturing Company, Inc., 552 Brannan St., San Francisco.
C. F. Weber & Co., San Francisco, Los Angeles, Phoenix, Ariz.; Reno, Nevada.
- SELF-RELEASING FIRE EXIT DEVICES**
Von Duprin, manufactured by Vonnegut Hardware Company, Indianapolis; sold by D. A. Pancoast Co., 605 Market St., San Francisco.
- SHADES**
William Volker & Co., 631 Howard Street, San Francisco; 2301 East 7th Street, Los Angeles.
- SHEATHING AND SOUND DEADENING**
Western Asbestos Magnesia Co., 25 South Park, San Francisco.
- SHEET METAL WORKS**
Forderer Cornice Works, Potrero Ave., San Francisco.
- SHOW CASES**
Home Manufacturing Company, Inc., 552 Brannan St., San Francisco.
Mullen Manufacturing Company, 64 Rausch St., San Francisco.
- SOUND ABSORBING TREATMENT**
Johns-Manville Corporation, 159 New Montgomery St., San Francisco.
- SIGNALING & PROTECTIVE SYSTEMS**
Garnett, Young & Co., 390 Fourth St., San Francisco.
- STEEL FABRIC**
Wickwire - Spencer Steel Corporation, 144 Townsend St., San Francisco.
Soule Steel Company, Rialto Bldg., San Francisco, and Los Angeles.
- STEEL FORMS**
Stelform Contracting Company, Monadnock Bldg., San Francisco; Edwards & Wildey Bldg., Los Angeles.
- STEEL TANKS**
Ocean Shore Iron Works, 55 Eighth St., San Francisco.
- STEEL LUMBER**
Genfire Steel Co., Sheldon Bldg., San Francisco; Builders' Exchange, Oakland.
- STEEL SASH**
Bayley-Springfield solid steel sash, sold by Gunn, Carle & Co., 444 Market St., San Francisco.
"Fenestra" Solid Steel Sash, manufactured by Detroit Steel Products Co., factory sales office, 526 Hunter-Dulin Bldg., San Francisco.
Berger Manufacturing Co., 1120 Mission St., San Francisco.
Michel & Pfeiffer Iron Works, 1415 Harrison St., San Francisco.
Truscen Steel Company, 74 New Montgomery St., San Francisco.
W. C. Lea, 653 South Clarence St., Los Angeles.
- STEEL—STRUCTURAL**
Bethlehem Steel Company, Pittsburg, Pa.; Matson Building, San Francisco; Pacific Building, Los Angeles; L. C. Smith Building, Seattle; American Bank Building, Portland, Oregon.
Golden Gate Iron Works, 1541 Howard St., San Francisco.
- Judson Pacific Company, C. F. Weber Bldg., Mission and Second Sts., San Francisco; shops, San Francisco and Oakland.
McChitic - Marshall Company, 621 Florida Street, San Francisco.
Herrick Iron Works, 18th and Campbell Sts., Oakland.
Pacific Coast Eng. Co., foot 14th St., Oakland
Pacific Coast Steel Co., Hunter-Dulin Bldg., San Francisco.
Palm Iron & Bridge Works, Sacramento.
Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.
Western Iron Works, 141 Beale Street, San Francisco.
- STONE**
Indiana Limestone Company, Tribune Tower, Chicago, Ill., and Crocker First National Bank Bldg., San Francisco.
- STORE FRONTS**
Zouri Dr. Wn Metals Company, Chicago Heights, Illinois. (Zouri Company of California, 1208 Howard St., San Francisco.)
- STORE FURNITURE**
Berger Manufacturing Co., 1120 Mission St., San Francisco.
- STREET LIGHTING EQUIPMENT**
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Bldg., San Francisco.
- STRUCTURAL STEEL SHAPES**
Bethlehem Steel Company, Matson Building, San Francisco; Pacific Finance Building, Los Angeles; L. C. Smith Building, Seattle; American Bank Building, Portland, Oregon.
- SWITCHES AND SWITCHBOARDS**
Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco.
Westinghouse Elec. & Mfg. Co., First Nat. Bank Bldg., San Francisco; general offices and Works, Pittsburgh, Pa.
- TELEPHONES—AUTOMATIC, PRIVATE**
Automatic Electric Inc., Chicago, Ill.; 1112 Pacific Finance Bldg., Los Angeles.
- THERMOSTATS FOR HEAT REGULATION**
Johnson Service, Milwaukee, Wis.; Rialto Building, San Francisco.
- TERRA COTTA**
N. Clark & Sons, 116 Natoma Street, San Francisco.
National Terra Cotta Society, 230 Park Avenue, New York, N. Y.
- TILE—BATHROOM AND KITCHEN**
Porcelain Tile Company, Ltd., 557 Market St., San Francisco, and 410 Madison St., Oakland.
- TILE—RUBBER, CLAY, CORK ETC.**
Rossman Corporation of California, 49 Geary Street, San Francisco, and Architects' Bldg., Los Angeles.
N. Clark & Sons, 112-116 Natoma Street, San Francisco; works, West Alameda, Cal. Congoleum-Nairn, Inc., D. N. & E. Walter & Co., San Francisco, and Broadway Department Store, Los Angeles.
Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.
Kraftile Company, factory at Niles; 55 New Montgomery Street, San Francisco.
Mangrum-Holbrook, Inc., 1235 Mission St., San Francisco.
United States Rubber Co., 300 Second St., San Francisco, and 923 Los Angeles St., Los Angeles, Calif.
- UNDERFLOOR DUCT SYSTEM**
Johns-Manville Corporation, 159 New Montgomery St., San Francisco.
- VALVES—PIPES AND FITTINGS**
Clarence Drucker, Manufacturers' Agent, 307 Minna Street, San Francisco.
Grinnell Co., Fifth and Brannan Sts., San Francisco.
Mueller Company, 1072 Howard Street, San Francisco.
Sloan Valve Company, Chicago; E. C. Whalen, 954 Western Pacific Bldg., Los Angeles; W. J. Driscoll, 482 Monadnock Bldg., San Francisco; E. C. Fallein, U. S. National Bank Bldg., Denver; S. D. Cochran, L. C. Smith Bldg., Seattle, Wash.
- VARNISHES**
Bass-Hueter Paint Company, San Francisco, Los Angeles, Portland, Seattle.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
- Hill, Hubbell & Co., Los Angeles, Oakland, Portland, Seattle and 160 Fremont St., San Francisco.
General Paint Company, Los Angeles, San Francisco, Oakland, Seattle, Spokane and Portland.
- VENETIAN BLINDS**
C. F. Weber & Company, 601 Mission St., San Francisco.
- VENTILATING EQUIPMENT**
B. F. Sturtevant Co., Monadnock Bldg., San Francisco; Los Angeles, Portland and Seattle.
- VENTILATORS**
"The Panelouvre," sold by M. E. Hammond, Pacific Bldg., San Francisco.
- VITREOUS CHINAWARE**
Standard - Pacific Plumbing Fixtures, 349 Sutter St., San Francisco; 919 W. Seventh St., Los Angeles; 1301 Fifth Ave., Seattle Wash.; 48 Fifth St., Portland, Ore.
- WATERPROOF CEMENT**
Victor Hydro-plastic waterproof cement, manufactured by Southwestern Portland Cement Co., 356 S. Spring St., Los Angeles.
- WALL BEDS, SEATS, ETC. (See Beds).**
- WIRING SYSTEM**
General Electric Company, San Francisco and all principal Coast cities.
- WATER COOLERS**
General Electric Refrigerator, L. H. Bennett, Rialto Building, San Francisco, and the George Belsey Company, Architects Building, Los Angeles.
- WATER HEATERS**
Apex Electric Hot Water Heaters, distributed by Sandoval Sales Co., 115 Jessie St., San Francisco.
Pittsburgh Water Heater Co. (gas), 478 Sutter St., San Francisco.
Roud Heater Co. (gas), 245 Mason St., San Francisco.
Wesix Heater Company, Rialto Building, San Francisco.
- WATERPROOFING**
Johns-Manville Corporation, 159 New Montgomery St., San Francisco.
Master Builders Company, Mills Bldg., San Francisco; 426 So. Spring Street, Los Angeles, (also Seattle, Portland and Spokane.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland, Seattle.
Gunn, Carle & Co., 444 Market St., San Francisco.
- WATER SOFTENERS AND FILTERS**
The Permutit Company, 440 Fourth Ave., New York City, and Balboa Bldg., San Francisco.
- WATER SUPPLY SYSTEMS**
Kewanee Water Supply System—Simonds Machinery Co., agents, 816 Folsom St., San Francisco; 520 East Fourth Street, Los Angeles.
- WINDOW SHADES**
William Volker & Co., 631 Howard Street, San Francisco; 2301 East 7th Street, Los Angeles.
W. & J. Sloane, 216 Sutter St., San Francisco.
D. N. & E. Walter & Co., 562 Mission St., San Francisco.
- WINDOWS—STEEL, REVERSIBLE, ETC.**
Campbell and Voigtman Metal Windows, distributed by Fire Protection Products Company, 1101 Sixteenth St., San Francisco.
Crittall Casement Window Company, Detroit, Mich. Badt-Falk & Co., 74 Montgomery Street, San Francisco. F. T. Crowe & Co., 216 Walker Bldg., Seattle. R. H. Hoskins, 510 Hyde Bldg., Spokane. McCracken-Ripley Co., 61 Albina Avenue, Portland. F. T. Crowe & Co., 1177 Dock Street, Tacoma, Wash. Crittall Casement Window Co., 504 Union Insurance Bldg., Los Angeles.
Hauser Window Co., 1362 Harrison St., San Francisco.
Detroit Steel Products Co., Detroit, Mich.; Hunter-Dulin Building, San Francisco and Pershing Square Building, Los Angeles.
W. C. Lea, 653 South Clarence St., Los Angeles.
- WIRING SYSTEM**
Westinghouse Electric and Manufacturing Company, First National Bank Bldg., San Francisco; general offices and works, Pittsburgh, Pa.



Package Goods

From the smallest apartment model through the largest commercial refrigerator, the package goods principle prevails. The mechanism pictured below is placed on a cabinet just the right capacity for the unit. Here is a team — simplicity and common-sense.



Household Commercial Apartment

One principle is standard throughout General Electric Refrigerators. That is the hermetically sealed mechanism. This fundamental design was selected after 15 years of research in General Electric Research Laboratories.

The correctness of this mechanism is proved by over 350,000 users and not one has paid a dollar for service or repairs.

GENERAL ELECTRIC Refrigerator

L. H. BENNETT

Rialto Building, San Francisco
Northern California and Nevada Distributor

The GEORGE BELSEY Company

Architects Building, Los Angeles
Southern California Distributor

Display Rooms and Dealers in all Principal Cities and Towns

Dickey MasTerTile

*Reinforced with
light structural
steel*

THIS new method of construction demonstrates the wide adaptability of Dickey MasTerTile. It was devised by W. C. Tait, Jr., and affords, with surprising economy, a type of residence and other small buildings that ideally meet California's needs.

It resists fire.

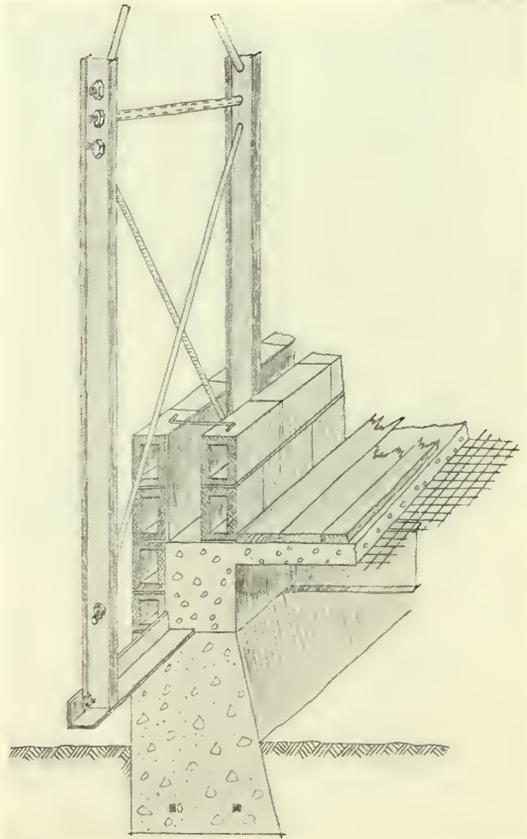
It is designed to withstand earth shocks.

It defies weather and decay.

It is proof against the depredations of wood eating termites that are becoming a problem in many sections.

And its cost is so close to the cost of good frame construction that forward thinking architects are investigating it with keen interest.

W. C. Tait, Jr. is building in St. James Wood, Piedmont, for J. H. L'Hommedieu Co., Inc., a residence that embodies his method of reinforcing Dickey MasTerTile with light structural steel beams. W. C. Tait, Jr., is the structural engineer and builder and



Roper and Gill associate structural engineers. Miller & Warnecke are the architects and engineers. Victor DeVight is the masonry contractor.

We suggest an inspection of this house now while it is in the course of construction. If this is impracticable we shall be glad to see that interested architects are supplied with data, and also to furnish them with the Dickey Tile Manual, showing other approved methods of using this standard hollow tile for load bearing and panel walls and partitions.

DICKEY MASTER TILE

W. S. DICKEY CLAY MFG. COMPANY

116 NEW MONTGOMERY STREET, SAN FRANCISCO



ARCHITECTS' BUILDING
Fifth and Figueroa Streets, Los Angeles

DIRECTORY OF ARCHITECTS AND ALLIED INTERESTS

THE ARCHITECT AND ENGINEER	Room
(R. D. Bunn, Representative)	410
ADAMS, Charles G.	1016
BASHFORD, Katherine	710
BUILDING MATERIAL EXHIBIT	First & Mezz.
COATE, Roland E.	701
DeAHNA, Manfred.	806
DODD & RICHARDS	606
EAGER, W. W.	505
HEAD, Chalfant	806
HUTCHASON, Arthur	1102
JOHNSON, Reginald D.	707
KELLEY, H. Roy	1102
KISTNER, Theodore C.	814
LOCKWOOD, Robert	512
L. A. ARCHITECTURAL CLUB	205
MARSH, Norman F.	516
MARSTON & MAYBURY	403
MITTRY, George	501
MOODY, Walter L.	312
MURRAY, Robert Dennis	502
NEWTON, H. C.	502
NOMLAND, Kemper	615
PARKER, Llewellyn A.	804
PHILLIPS, Ralph E.	603
POWELL, Herbert J.	516
RICHARD, William	607
SEDGLEY, Arlos R.	816
SIMPSON CONT. COMPANY	1007
SMITH, D. D.	516
SMITH, Glen Elwood	1210
STANTON, REED & HIBBARD	1107
STAUNTON, Wm. S. Jr.	806
WATSON, L. F.	903
WHARTON, Heth	802
WINSLOW, C. M.	1001
WITMER, David J.	903
WOOLLETT, Wm. Lee	802

ARCHITECTS FAVOR MODIFICATIONS

Seattle's limitation on building heights will probably be modified during the recodification of city ordinances that is now in progress. The Building Owners and Managers Association of Seattle, through Secretary Grosvenor Folsom, has been actively participating in the recodification work. The current bulletin reports that a committee from the Washington State Chapter of the American Institute of Architects has submitted its recommendations as to changes in the height limitations.

The proposed amendment, if adopted, would make the ordinance read:

"No fireproof building shall exceed a height of two and one-half times the width of the widest street on which the building abuts, except that buildings for occupancy may be erected above said height limit if the area of the lot occupancy does not exceed 70 per cent for the first story above the designated height; and the occupancy limit shall decrease 2 per cent for each succeeding story to an area not exceeding 25 per cent of the area of the lot, and if these portions of the building above the designated height limit are at least 25 feet from any lot line other than a street."

The present ordinance states that "No fireproof buildings shall exceed a height of two and one-half times the width of the widest street on which the building abuts, except that towers for occupancy may be erected above said height, if they are at least 25 feet from any lot line other than a street line; if they do not exceed an area of 25 per cent of the lot area, and if they do not exceed 60 feet in length or breadth."

W. E. SCHIRMER BUSY

New work in the office of W. E. Schirmer, Oakland architect, includes a three story steel frame and brick store and hotel to be built at San Pablo and Park avenues, Oakland, for the Emery Park Hotel Company, Inc., at a cost of \$130,000; alterations to the market building at 13th and Grove streets, Oakland; residence for Lionel Wachs in Los Gatos; a Spanish residence in Piedmont for V. H. Owen and alterations to offices for a client at California and Commercial streets, San Francisco.

EXPLORATION TRIP

Natt Piper, Long Beach architect, and George Parker, Jr., now of the Huntington Palisades but formerly a president of the Long Beach Art Association, are on an exploration trip to the Cliff Dwellers ruins in southern Utah and before returning will visit southern Arizona and New Mexico, where they will study the old missions.

WANTS CATALOGS

J. Robert Harris, architect and engineer, 6715 Hollywood Boulevard, Hollywood, California, wishes to obtain manufacturers' catalogues, samples, etc., to complete an A. I. A. file.



WHAT more appropriate floor for this sun-flooded kitchen and breakfast-nook than these resilient squares of "U.S." Rubber Tile—with wainscoting to match? Richly colorful—these remarkable floors of resilient rubber combine decorative beauty with outstanding practicality. "U.S." Tile is durable, noiseless, comfortable and easily cleaned. Its shining surface retains its

beauty with minimum upkeep expense and labor. "U.S." Tile is the perfected result of more than a quarter of a century experience by the United States Rubber Company in building fine floors of rubber. Our latest architectural catalog in full color is now off the press. May we send you a copy for your files?

UNITED STATES



RUBBER COMPANY

300 SECOND STREET

SAN FRANCISCO, CALIF.

Program of the Second Annual Convention

STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

BEVERLY HILLS HOTEL
BEVERLY HILLS, CALIFORNIA

FRIDAY AND SATURDAY, OCTOBER 11-12, 1929

FRIDAY, OCTOBER 11th, 1929

9:30 A. M.-10:30 A. M.—Registration of Delegates.
Meeting of State Executive Board.

10:30 A. M.-12:10 P. M.—OPENING SESSION
State Executive Chairman A. M. EDELMAN,
Chairman.

Chairman's Address.

Address of Welcome—J. C. AUSTIN, *President*, State Board Architectural Examiners, Southern District, and Vice-President Los Angeles Chamber of Commerce, introducing EDWARD E. NEWMAN, President Beverly Hills Chamber of Commerce.

Appointment of Committees:

Credentials.

Resolutions.

1930 Convention.

Report of Executive Board.

Discussion from the Floor.

Report of Secretary-Treasurer.

Announcements.

Adjournment.

12:30 P. M.-2:00 P. M.—LUNCHEON

HARRIS C. ALLEN, *President*, Northern California Chapter, American Institute of Architects, *Chairman*.

Architectural Club Quartet:

GEORGE P. HALES, HAROLD E. SHUGART,

T. W. JOHNS, R. A. CURRY.

Resume of Work on Uniform Building Code.

EDWIN BERGSTROM, *Editor-in-chief*.

Adjournment.

2:15 P. M.-5:15 P. M.—AFTERNOON SESSION

A. M. EDELMAN, *Chairman*.

The Ideal Established Architect..... H. ROY KELLEY

The Ideal Young Architect..... SUMNER P. HUNT

The Ideal Contractor..... ALBERT J. EVERS

The Ideal Editor..... WILLIAM I. GARREN

The Ideal Client (20 minutes)..... RUPERT HUGHES

The Ideal City (20 minutes)..... ROB WAGNER

Architectural Club Quartet.

FILM: "THE FUTURE DEVELOPMENT OF WASHINGTON."

CHAS. H. CHENEY, *Chairman A. I. A.*,

Committee on City and Regional Planning.

SATURDAY, OCTOBER 12th, 1929

9:30 A. M.-12:00 Noon—CLOSING SESSION

Executive Vice Chairman CHAS. F. B. ROETHL,
Chairman.

Report of Public Information Committee:

HARRIS C. ALLEN, *Chairman*, Northern Section

CHAS. H. KYSON, *Chairman*, Southern Section

Discussion from the Floor.

Resolutions.

Unfinished Business.

New Business.

Selection of 1930 Convention City.

Address: "THE NEW CONTRACTORS'

Report of Professional Betterment Committee:

LESTER W. HURD, *Chairman*, Northern Section

VINCENT PALMER, *Chairman*, Southern Section

Discussion from the Floor.

Resolutions.

Report of Educational Committee:

E. GEOFFRY BANGS, *Chairman*, Northern Section

SUMNER M. SPAULDING, *Chairman*, Southern Section

Discussion from the Floor.

Resolutions.

Unfinished Business.

Addresses—EARTHQUAKE RESISTANT CONSTRUCTION:

RIGID TYPE, HENRY D. DEWELL, *C. E.*

ELASTIC TYPE, H. J. BRUNNER, *C. E.*

Adjournment.

6:30 P. M.—BANQUET, THEME "IDEALS"

CARLTON M. WINSLOW, *Chairman*.

JOHN J. DONOVAN, *Toast Master*.

Music—Courtesy Beverly Hills Hotel.

Introduction of:

HONORABLE FRANK C. WELLER, *Senator*.

HONORABLE JAMES C. CRAWFORD, *Assemblyman*. Introducers of Bill Regulating the Practice of Architecture.

HONORABLE JAMES F. COLLINS, *Director*, Department of Professional and Vocational Standards.

BERNARD S. WAGER, *Attorney* for State Board of Architectural Examiners, Southern District.—Our New Act.

The following Toasts limited to 5 minutes, except as noted:

LAW AND ITS RELATION TO THE ARCHITECT"—WM. SIMPSON.

Address: "THE NEW ENGINEERS' LAW AND ITS RELATION TO THE ARCHITECT"—DONALD M. BAKER, *Consulting Engineer*.

Report of Legislative Committee:

WM. RICHARDS, *Chairman*, Southern Section

Discussion from the Floor.

Adjournment.

2:30 P. M.-4:30 P. M.—SIGHT SEEING TOUR

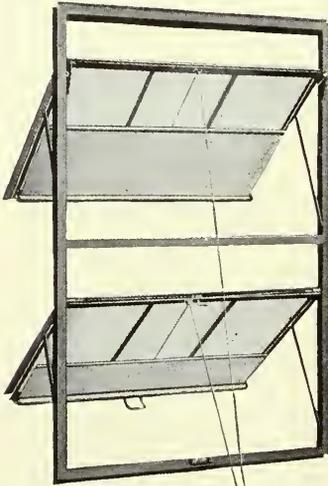
Courtesy Beverly Hills Chamber of Commerce.

4:30 P. M.—BARBECUE AND ENTERTAINMENT—UPLIFTERS' CLUB.

WM. J. DODD, *In Charge*.

NOTE: Ladies included on Saturday Afternoon and Evening.

TRUSCON DONOVAN AWNING TYPE STEEL WINDOWS



When fully drawn the individual shades on each sash act as awnings.

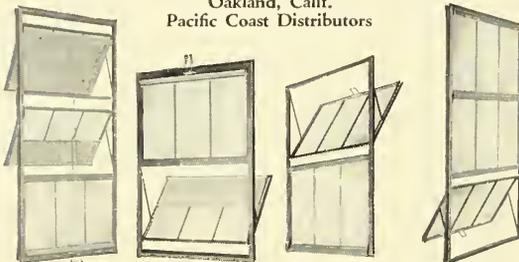
For Daylighting and Ventilation of SCHOOLS, OFFICES, EDUCATIONAL AND INSTITUTIONAL BUILDINGS

Movement of lower sash operates upper sash — no window poles required. Sunlight is reflected from shades on open windows and is diffused — no awnings required. Truscon Donovan Awning Type Windows are of high quality throughout, but due to large production are moderately priced.

Full information, quotations and literature on request.

TRUSCON STEEL CO., YOUNGSTOWN O.
PACIFIC COAST PLANT—LOS ANGELES

Pacific Coast Sales and Engineering Offices:
San Francisco, Los Angeles, Seattle, Portland
The Universal Window Company, 1916 Broadway,
Oakland, Calif.
Pacific Coast Distributors



Upper two sash open — bottom sash closed.

Bottom sash open — upper two sash closed.

Upper sash open — lower sash closed.

Upper sash closed — lower sash open.

GLADDING, McBEAN EXTEND OPERATIONS

Extending its field of operations into eastern Washington and Idaho, Gladding, McBean & Company, clay products manufacturers, announce purchase of the American Fire Brick Company, whose headquarters are in Spokane, Washington.

In making public news of the purchase, H. B. Potter, secretary of the company, said that the price paid for the American Fire Brick properties was in the neighborhood of a quarter of a million dollars. Plants of the northern concern comprise a sewer pipe, face brick and hollow ware plant at Mica, Washington, seventeen miles southeast of Spokane, and a common brick plant, offices, warehouse and sales yards in Spokane.

The American Fire Brick Company, Mr. Potter stated, is one of the oldest established and soundest concerns of its kind in the Northwest. Started several years ago with a capitalization of roughly \$13,000, it has steadily grown until, at the time of its acquisition by Gladding, McBean, its physical assets alone were estimated to be worth in the neighborhood of \$300,000.

Output of the unit, it is forecast, will be used to supply the Oregon, Washington, Montana, Idaho and British Columbia markets. At present much of the output of the Gladding, McBean Seattle plant is shipped over the mountains to the Spokane area and western Idaho, involving heavy handling and freight charges. The new unit will be operated under the Gladding, McBean name.

NEW HAWS FOUNTAIN

A new idea in home conveniences is a lavatory fountain drinking glass manufactured by Haws Sanitary Drinking Faucet Company of Berkeley, designed to replace the bathroom drinking glass. Two models are available, one for use on lavatories equipped with a combination hot and cold faucet and another for lavatories not so equipped. The obvious advantage of the device lies in its being more sanitary than the customary drinking glass, which is not only a source of possible infection but is subject to frequent breakage.

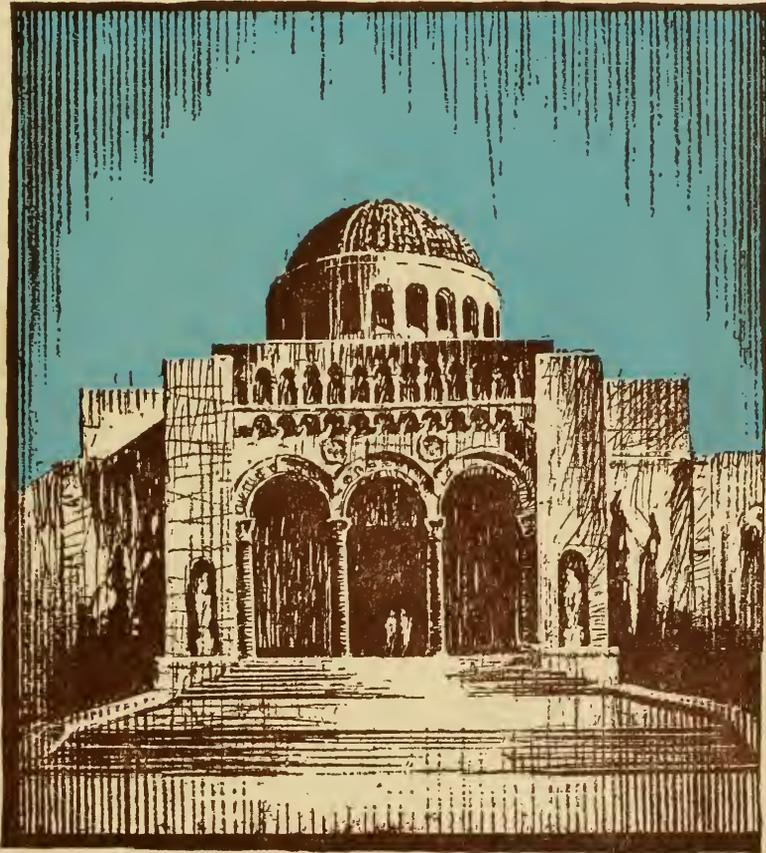
BUYS MOVIE ACTOR'S HOME

Sale to Alfred F. Smith of the former home of Charles Ray on Canyon drive in Beverly Hills is announced, the new owner to take possession shortly. While the consideration was not named, the dwelling is said to be among the most elaborate erected in Beverly Hills for members of the motion picture colony. Mr. Smith is chairman of the executive committee of the Monolith Portland Cement Company.

MERCANTILE BUILDING

The S. and W. Brand Stores Inc., will erect a six story Class A mercantile building on South Broadway, Los Angeles. The estimated cost is \$600,000.

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WHO'S WHO IN THIS ISSUE

JOHN BYERS, architect of several interesting adobe houses shown in this issue, was born in 1875 at Grand Rapids, Michigan. He was graduated from the University of Michigan in 1898 with a degree in Electrical Engineering. He was doing post graduate work at Harvard University when sent to France by the United States Commission at the Paris Exposition. From France Mr. Byers went to Montevideo in Uruguay, where, for something over a year, he taught French and English in the North American Academy. Returning to the United States, he became part owner in a military academy. After teaching for awhile Mr. Byers entered the building field, his first adobe house being in Santa Monica for Harry Johnson. This house was the initial attempt to revive the use of adobe as a recognized building material in Southern California. Mr. Byers' most notable buildings are perhaps the Brentwood Country Club and the Miles Memorial, both in Santa Monica.

CHARLES A. KOFOID, Professor of Zoology in the University of California and Chairman of the Department, writes in this issue of an attack made by termites on a city building in Santa Barbara, with E. A. Garland as co-author. Mr. Kofoid is a member of the National Academy of Sciences and of other scientific societies, also of the San Francisco Bay Marine Piling Committee, organized in 1922 in cooperation with the National Research Council and the American Wood Preservers' Association. He is Chairman of the Advisory Committee of the Termite Investigations Committee and also of the Biological Subcommittee of that enterprise.

E. A. Garland's engineering experience has been principally in irrigation and hydraulics in which lines he is an accepted authority.

FREDERICK B. FORBES, who writes on adobe construction best suited to resist earth stresses, is building inspector in the city of Beverly Hills, California. He is considered an authority in his work and is reported to be well informed on mat-

ters pertaining to building construction and building laws.

ALBERT F. ROLLER has been practicing architecture in San Francisco for the past four years. Prior to that time, Mr. Roller worked in the offices of Coxhead & Coxhead and Ward & Blohme, both San Francisco firms. He was also employed by Ripley & Davis, distinguished eastern architects. Buildings designed and completed by Mr. Roller include the San Jose mausoleum, illustrated in this issue, building for the Guarantee Building and Loan Association, Oakland, Pacific States Savings Bank building, San Diego and the Sommer & Kauffman building, San Francisco, the latter under construction.

IRVING E. PERRIN, M. E., is sales manager of the Pacific Coast Engineering Company, Oakland. After attending public schools in Richmond and Woodland, California, where Mr. Perrin attended high school, starring on the Woodland High School football team, then state champions, Mr. Perrin was employed by the Standard Oil Company where he learned his trade as an erecting and marine machinist. During the World War, Mr. Perrin enlisted in the infantry and was sent to Camp Lewis, Washington. While there he was appointed a non-commissioned officer and in addition to his activity in other sports played half-back with the football team which was then coached by the famous "Wee" Coyle of University of Washington and Jim Evenden of the Oregon Aggies. Mr. Perrin was a member of the famous 363rd Regiment, "San Francisco's Own," and took part in four major offensives in France and Belgium. After returning from France, he took a position with the shipping board as inspector of turbine machinery and later was assistant to the marine superintendent of the Pacific Coast Shipbuilding Company.

JAMES W. PLACHEK, architect of the new Berkeley Public Library building, was born in Chicago, Illinois, January 6th, 1885. Mr. Plachek began his professional career in the office of J. E. O. Pridmore in Chi-

cago. With other architects he was sent to San Francisco by the City of Chicago to investigate building conditions following the earthquake and fire of 1906. Mr. Plachek was employed in the State Department of Architecture, Sacramento, on plans for new institutions to replace those destroyed in 1906. He later worked in the City Architects' office in San Francisco, and the office of W. H. Weeks, San Francisco architect. Mr. Plachek opened an office in Berkeley in 1912 and has designed a number of the prominent buildings there including schools, firehouse, branch public libraries, Federal Land Bank and the San Mateo Congregational church. Mr. Plachek is a member of the California State Board of Architecture, Northern District.

FREDERICK L. ROEHRIG, architect for the Los Angeles Department of Water and Power, is a graduate of Cornell University, Ithaca, N. Y. After practicing in the east, Mr. Roehrig came to California and in 1885 opened offices in Los Angeles and Pasadena, where he conducted a general architectural business up to the time of the World War. Since then Mr. Roehrig has been architect for the Los Angeles Department of Water and Power.

CONVENTIONS AND EXPOSITIONS

- November to March—Exhibition of Sculpture, Legion of Honor Building, San Francisco.
- November 1—15—Architectural Exhibition of the Philadelphia Chapter of the A. I. A. and the T-Square Club, John Wanamaker Store, Philadelphia.
- November 1—15—Exhibition of work by Wittner & Watson, Architects Building, Los Angeles.
- November 9—16—Architectural and Industrial Arts Exposition, Memphis, Tennessee.
- November 13—16—American Institute of Steel Construction, Inc., Biloxi, Miss.
- January 15—30—International Exhibition of Building Trades and Allied Industries, Brussels, Belgium.
- January 27—31—International Heating and Ventilating Exposition, Commercial Museum, Philadelphia.
- March—April—International Exhibition of Housing and Modern Industrial Applied Arts, Nice, France.
- May 20—October 1—Exhibition of Modern Industrial and Decorative Arts, Stockholm, Sweden.
- May 21—23—American Institute of Architects, sixty-third convention, Mayflower Hotel, Washington, D. C.
- June—Pan-American Congress of Architects, Rio de Janeiro, Brazil.
- September—International Architects' Congress, Budapest, Hungary.



“But we shall want these windows shaded, of course” . . .

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The ARCHITECT AND ENGINEER

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VOLUME 99

NOVEMBER, 1929

NUMBER 2

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Published on the 15th of the month by

THE ARCHITECT AND ENGINEER, INC.

1662-3-4 Russ Building, San Francisco, California

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ADOBE HOUSE

John Byers of Los Angeles has done more to revive adobe construction in California than any other architect. On the back of this page is an example of Mr. Byers' work. The Johnson house at Brentwood Park is outstanding in its loveliness. It is built of adobe brick.



Photo by Charles Roberts

ADOBE HOUSE FOR HARRY JOHNSON, ESQ., BRENTWOOD PARK, CALIFORNIA
JOHN BYERS, ARCHITECT

The ARCHITECT AND ENGINEER

VOLUME XCIX

NOVEMBER, 1929

NUMBER TWO

ANCIENT ADOBE for MODERN HOMES

By
Marc N Goodnow

WHILE every permanent material of which houses are built may have written its own romance down through the ages, it is doubtful if any can lay claim to a more romantic past than the very simple, sun-baked mud brick commonly known as adobe, or, as the Mexicans still call it, the *adobero*. Humble beyond words, this crude, strong earthen block once played a highly significant part in the rearing of a Christian civilization on the Pacific slope. Moulded by the hands of devout Indian workmen, it became the chief support for the

walls of the historic chain of California missions erected by Fra Junipero Serra and his band of holy men, as well as for the enclosure and shelter of those early rambling

haciendas where black-eyed señoritas and dashing dons played the game of love.

Though the missions of the good padres reflect in spirit and design the characters of their builders, one cannot be charged with blasphemy who attributes their permanence and much of their architectural feeling to the simple art of the zealous convert to the faith. For to the skillful hands of these



PORCH ARCADE, BAKER RANCH HOUSE, SAUGUS
Charles H. Peters, Architect

patient artisans was entrusted the mixing and moulding of the adobe bricks and the warm red tiles that formed the principal constituents of house and edifice alike. To them was given the task of creating these monuments to which we look today for much of our inspiration in domestic architecture in the southwestern states.

a number of such houses that have been given back their youth with repaired chinks, rebuilt portions of walls and roofs, the support of fallen keystones and lintels and completely new dresses of white stucco.

While Monterey may boast of more good old adobes than any other city of the state,



CASA ADOBE FLORES, RANCHO SAN PASQUAL, SOUTH PASADENA

Photo by Hiller before Restoration

As the poetry and romance of the mission days faded, however, the lustre of the adobe house dimmed into the commonplace, its identity was almost completely lost in the flood of conglomerate styles and periods. And the missions fared little better until California regained her architectural consciousness and set about their restoration, when the adobe houses became also the subject of friendly attention. Now there are

here and there throughout California one comes upon these old beacons of a former period and feels repaid for his visit. Some generous soul has responded to the call of romance, and the house, with all its historic characteristics quite discernible, stands quaint and brilliant—a regenerate body radiating its old time spirit of traditional good breeding.

The term "adobe style" has more than

once been associated with these houses, but a close study of the architectural factors involved will show a very close resemblance to the Mexican or the Spanish, especially the ranch type of Spanish, and that any line of distinction is drawn with difficulty and uncertainty. There were, of course, very thick walls, with plain, hand-smoothed sur-

dows, and an ornamental iron gate at the entrance of his house or garden. If his home was of the two story type, he included a balcony with wooden spindles, unless his purse could be made to cover a railing or grille of ornamental iron. Also, he used polychrome tiles, for even that art had been brought to Mexico and Spanish California



CASA ADOBE FLORES, RESTORED BY MRS. CLARA E. NOYES

Carleton M. Winslow, Architect

faces. Also, there was the flat, red-tiled roof, though in the north shingles or shakes were widely used, with such additional features as squat chimneys and sometimes a tower, probably of Moorish precedent. And, of course, the inner or private garden.

Even the builder of the very humble adobe house was artist enough to add to his plain surfaced walls such ornamental features as iron grilles or rejas across his win-

by the padres and their consorts.

Inside the house there were at first no changes from the Spanish type, although certain features soon began to undergo a development. Perhaps the most notable was the fireplace which now became broad and deep, as in the early American manner, with the hearth serving for cooking, baking and warming.

The restoration movement begun ten

years ago, which created a new warmth of feeling toward the old adobe house, is also responsible for the number of new adobe houses being erected in cities and on ranches of California and adjoining states where soil is suitable for the manufacture of adobe bricks. In many inland cities the adobe has been found to be both practical and artistic. The community of Adelanto, on

still a form of house construction and, where properly done, a very charming form.

In the hands of a trained craftsman, this type of building material lends itself to picturesque effects of traditional and historic beauty. Because of the character of the bricks themselves, it is, of course, less prim and precise; but there is an easy plas-



RANCH HOUSE OF ROY A. BAKER, SAUGUS, CALIFORNIA

Charles S. Peters, Architect

the edge of the Mojave desert, is practically an adobe city, the thick walls required in the construction of the houses being regarded as particularly valuable as a protection against both heat and cold. John Byers, architect of Santa Monica, whose earlier training was among the Spanish peoples of South America, has designed and erected no less than thirty such homes in Southern California. These examples, together with those that may be found in large numbers in Arizona, New Mexico and Texas, give some basis for the statement that adobe is

particularly suitable to the Spanish type of architecture. It is, also, a facile medium, offering possibilities at times not found in more commonly used materials. It seems to call for dignity rather than temperamental jazz in its expression, but for all that it is a spontaneous medium, sometimes evoking a surprising quality of humanness. At any rate, good adobe houses grow old gracefully and beautifully. In that respect they may act as an antidote for some of the less desirable modern building tendencies.

With the revival of interest in the use of adobe bricks there have come some slight changes or improvements in the methods of their manufacture. The primitive Mexican or Indian churned his "muck" or mixture of mud and straw with his bare feet, but it is now more common and less expensive to make the mix with a hoe, or even a motor-driven mixing machine.

crumble as they dry and very heavy clay soils will crack and break. Black, heavy gumbo soils, so frequently referred to as adobe soils, generally are not suitable for making adobe bricks as they too frequently crack when dry. A loam soil with some clay in it is said to be better. A heavy clay soil may sometimes be prevented from cracking by mixing in sand when working



ADOBE RESIDENCE OF MRS. F. H. DORHAM, SANTA MONICA

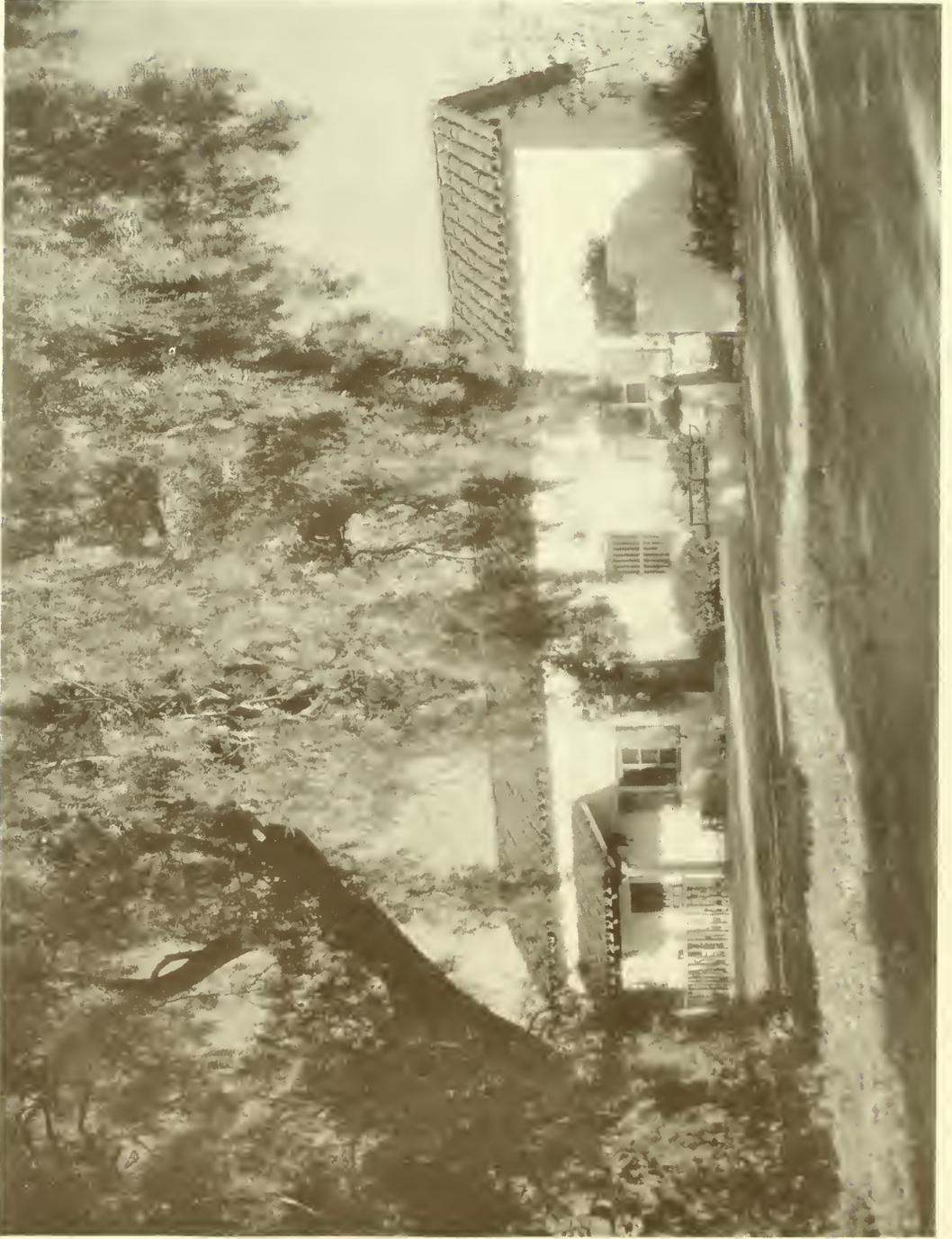
John Byers, Architect

The character of the soil, of course, has much to do with the strength and general serviceability of adobe bricks. As a matter of fact, a wide variety of soils, except very light sandy soils and very heavy clay soils, may be used for construction purposes. There are many different kinds of soils in the Southwest where adobe construction is practiced and all of these are adaptable to this use.

It is principally necessary that the soil be the kind that will dry hard after puddling with water. Very sandy soils will

with water. An experienced adobe maker will either know the soil at a glance or make sure of his results by experimenting before the actual work on the job begins.

One of the advantages of using adobe lies in the fact that it may be taken from the site of the house itself. Usually it is found to be more expensive than other forms of building material when the cost of hauling must be added to its manufacture. When the site offers available material, however, the manufacture of the brick becomes one step in the process of excavating.



THE AZUNA ADOBE (RESTORED) RANCHO SANTA FE, CALIFORNIA

In the preparation of adobe, water is allowed to run for several hours on the site, and after the ground has been thoroughly soaked the workmen chop the surface with hoes. About six inches of the surface is thus thoroughly puddled and shoveled into piles for working up into brick material,

cess that takes place with the mixing of straw or grass with the wet mud. An "adobero" is one who kneads, and the frame in which he moulds the adobe bricks goes by the same name. The frame or mould has two compartments without a bottom and is placed on smooth ground and then filled



RANCH HOUSE FOR KEMPER CAMPBELL, VICTORVILLE, CALIFORNIA

John Byers, Architect

while the water is turned back again for the next layer.

The raw material or mud from the site is then thoroughly mixed with short-length straw or manure. The manure is not really such, but is more properly the sort of wet straw mixed with manure which might be thrown out of the horse stalls in the morning. If this is not available, dried grass may be used as a binder.

The word "adobe" is derived from "adobar," meaning to knead, which is a pro-

cess that takes place with the mixing of straw or grass with the wet mud. It is brought to the adobero on the stretcher or "pariguela."

The frames vary, of course, according to the size of the bricks to be made, but generally they are constructed of two compartments and are lined with metal to receive adobes measuring 4x14x20 inches. If the mud is not too wet the frame is slipped from the brick and used for moulding the next set of two. The Mexican workman ex-

pects the owner to supply these frames, as well as all other tools, and makes an habitual practice of coming to work with nothing but a pair of hands.

The bricks are allowed to dry in the sun for from four to ten days, until hard enough to turn upon their edges. This process the Mexican calls "cantear" (cant-ee-are) and

or three days, or else a canopy or other water-shed is provided.

In a week's time the brick are ready to be ricked, still on edge, for the adobe has very little tensile strength and breaks easily under a slight weight even when dry if not well supported over its entire area. When laid in mortar, the adobe can withstand a



RANCH HOUSE FOR KEMPER CAMPBELL, VICTORVILLE, CALIFORNIA

John Byers, Architect

it is rather a delicate one, too. It means tilting the brick one against another to prevent their falling down and at the same time removing any lumps of dirt that may cling to their under side. In this position there is danger of loss in the event of a continued rain, for the base of the adobe would be undermined and the bricks would fall and break. For this reason the adobes are usually not turned upon edge until there is ample assurance of dry weather for two

load of 1800 pounds per square foot. Some builders even claim that when properly made and cured the bricks withstand the same pressure that common clay bricks are often subjected to without giving way.

For the work of making and drying the adobes, the Mexican in the Southwest usually receives four cents a brick, with an additional cent for stacking them in ricks and covering them. His count for the day's work is in adoberos: 200 adoberos, for ex-

ample, which is a fair day's work, will equal 400 bricks.

One who has designed and built many adobe houses of one and two stories builds his walls 20 inches thick on a solid concrete foundation, laying the adobe bricks in cement mortar. At the second story line a reinforced concrete girder is laid all around

bolts. This type of construction is sturdy and has never yet given trouble.

A sufficient time is given the wall to dry before it is covered with twenty gauge wire nailed to the adobe bricks with eight penny nails and the stucco coat applied. The interior walls may be furred or treated directly with hardwall plaster. Furring, as



RANCH HOUSE FOR KEMPER CAMPBELL, VICTORVILLE, CALIFORNIA

John Byers, Architect

the building. This girder is in the shape of the letter "L," the vertical portion being about 14 inches square to carry the weight of the second story wall, the horizontal portion being 6 inches wide and 4 inches thick to form a base for a 2x6 inch redwood plate supporting floor joists 2x8 inches. The continuation of the wall above the second floor is 14 inches in width, the top of which is covered with a redwood plate 2x12 inches, bolted every 6 feet with $\frac{1}{2}$ inch x 10 inch

a matter of fact, provides the same insulation on adobe that it does on brick, and is usually done in the better houses. The old Mexican way was to slick up both exterior and interior walls with a coating of mud, following it with a treatment of linseed oil and possibly crude kalsomine or whitewash. This method does not of course meet modern needs.

Before the plaster is applied, however, the walls should be allowed to dry thor-



Photo by Charles Roberts

RANCH HOUSE FOR KEMPER CAMPBELL, VICTORVILLE, CALIFORNIA
JOHN BYERS, ARCHITECT



LIVING ROOM, RANCH HOUSE FOR KEMPER CAMPBELL, VICTORVILLE
JOHN BYERS, ARCHITECT

oughly—a matter of from one to two weeks, and provision made for plumbing and wiring. Pipes can be set in the walls by carving out grooves to fit them into; they are then covered with plaster and hidden as effectively as in any other type of construction. Electric wires are best carried in a pipe embedded in the wall and covered with plaster.

There is an absence of wood trim in most adobe houses for the type is itself severely plain. Door and window casings are unnecessary and really out of place. A two-by-six frame set in window or door opening is all that is needed for attaching doors and windows. Picture mouldings and mop boards are impractical as nails do not hold well in adobe unless they are of the very large sizes.

The writer recently visited a splendid type of Spanish ranch house built of adobe bricks reinforced with regular deformed reinforcing bars. This is the home of Roy A. Baker at Saugus, California. The adobe bricks for this house were made by machine and after the baking period were dipped in a solution of asphaltum thinned down with gasoline to a consistency of house paint to render them impervious to water. In their manufacture, the tops of the bricks were made slightly concave, while the centers were grooved to receive the reinforcing rods. Also, they were cut

back the width of a lath at top and bottom to give them additional space for mortar joints.

These adobes were laid in cement mortar and the exterior was plastered with three coats of cement stucco troweled to a typical Spanish finish. The interior was plastered with hardwall plaster against the adobe brick themselves. Their surface, together with the asphaltum, gave a perfect bond.

As to the practicability of adobe construction in the Southwest there can be little doubt. And if one is to believe reports of the United States Department of Agriculture there is just as much practicability in the use of adobe in Washington, D. C., New Jersey, Missouri, Indiana, Illinois, Canada, Kansas and North Dakota, where test houses have been constructed with satisfactory results. Even in mountainous or hillside locations adobe can be used, provided there is the proper soil and opportunity to anchor the foundations securely.

Wherever it may be located, the adobe house, at least in California, is redolent of the soil. As a native form of construction, it may embody not only safety, economy and permanence, but artistic merit and suitability to the setting. The determining factors are, principally, sound workmanship and adherence to those traditions that surround the material itself.

EARTHQUAKE RESISTING ADOBE CONSTRUCTION

*By: Frederick B. Forbes
Building Inspector, Beverly Hills*

I HAVE recently read several articles in the current magazines advocating the use of adobe construction. Now there are a number of ways in which adobe may be utilized to form the walls of buildings, and I do not agree with some of the authors on their particular methods of using it.

The generally accepted method is the old California style of thick walls formed of sun dried bricks laid in mud. Such walls would be allowed to be constructed only outside of the limits of the principal cities, as most of the Building Codes rightly prohibit this class of construction on the grounds of safety.

It has been repeatedly demonstrated in every earthquake that adobe bearing walls, regardless of their thickness, are almost certain to collapse. The ruins of the Missions up and down the Coast and the buildings in the zone of the recent Santa Barbara earthquake prove this. However, by modifying the construction it is possible to get all the temperature resisting advantages and the architectural appearance of adobe and still have it safe.

To those of you who are familiar with the Central American use of "horcones hinchados con barro" the following will be superfluous as there is no originality claimed for the idea. The author was brought up in the State of New Mexico and spent some years as a mining engineer in Central America. While there he noted the adobe buildings that were successfully resisting the frequent earthquakes that visit those countries. These buildings had decay resisting hardwood frames to carry the weight of the roof, and the adobe walls

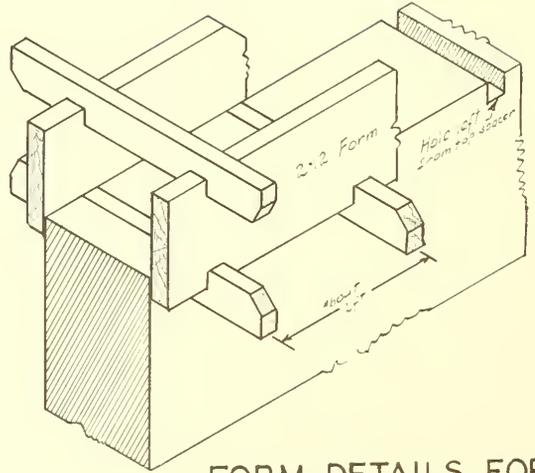
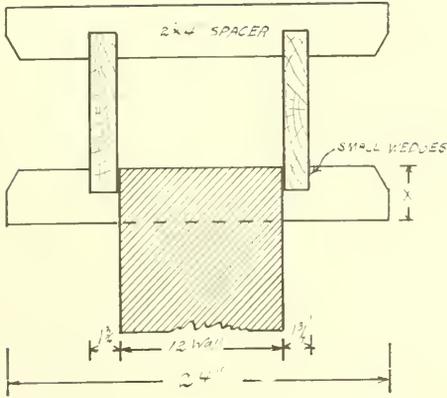
were only filler walls. The problem is to adopt this scheme to our conditions without too much expense.

Three available materials were considered for the frame: steel, reinforced concrete, and creosoted wood. The first two are impractical for ordinary house construction. They require an engineering design and skilled labor in the erection; this is not true of the wood.

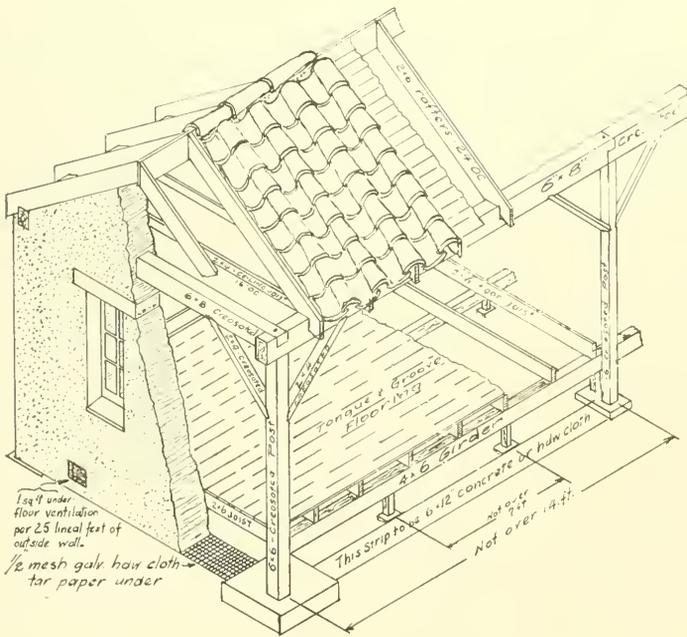
Creosote impregnated (not painted on the outside) timbers cost about fifty-four dollars per thousand board feet; for a small house with a perimeter of one hundred and fifty feet, about nine hundred board feet would be needed, a cost of forty-eight dollars. A good part of this could be saved by reducing the thickness of the walls from eighteen inches to twelve.

The strength of the frame was computed on an "earthquake factor" of ten per cent. This requires six inch by six inch posts not over fourteen feet on centers and knee braced by two inch by four inch braces two feet down from the top and the same out on the beam. All corners to be mitred and drift bolted. The illustrations show this better than an explanation.

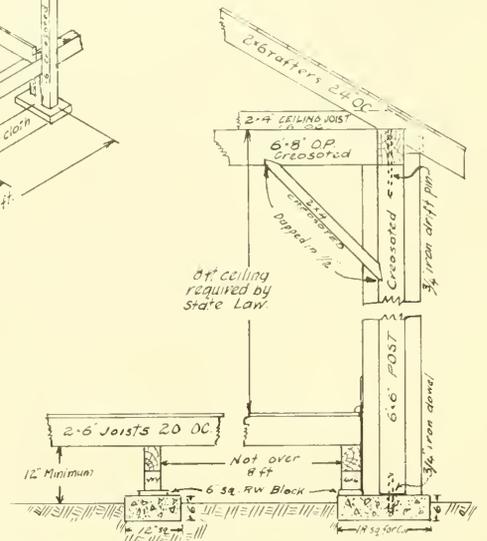
Now for the filler walls. Here is a choice of two ways to build them: by the California style of bricks laid in mud or by a system of forms such as is done in concrete work. Which of these is best depends largely upon the climate. The shrinkage in adobe continues until it is entirely dried out, so the form method is only suitable for a hot dry location. The author saw a two story adobe house, without frame, constructed by the form method in New Mex-



FORM DETAILS FOR
POURING WALLS



SECTIONALIZED VIEW
SHOWING CONSTRUCTION



DETAILS AND SECTION SHOWING METHOD OF ADOBE CONSTRUCTION

BY FREDERICK B. FORBES

ico in 1908. It was stuccoed on the outside and has developed fewer cracks than the ordinary wood frame stucco house of equal age. The secret lay in three things: first, a dry climate; second, making each "lift" only about ten inches thick; and third taking about three months to pour the walls. For most people who wish to get the house finished as soon as possible, the brick method will be more suitable although more expensive. There are several ways to mix the adobe; the easiest is to plow up a small area; bank it, turn in the water and drive horses back and forth through it. If no horses are handy other ways will have to be found.

For those who are interested in the form method, a detailed drawing is given. This is self explanatory. The planks are held on the "two by four" spacers in the walls and filled with the mixture of adobe and straw. When this has hardened, the planks and top spacers are removed; the spacers turned over in the slots left in the wall, the planks placed on them, the bottom spacer knocked through the wall and used again for the top. The holes are later patched up. It is usually necessary to use small wedges in the spacers to hold the planks as the slots become worn.

Foundations. If you live in the city you will probably be required to put in the standard concrete foundation for a masonry wall. If you live in the country where there are no building laws, you can set the six inch by six inch posts, as shown in the illustration, on three quarter inch iron dowels set in concrete piers, eight inches thick and eighteen inches square for the corner ones, and eighteen inches square for the ones midway. These are placed so the posts carrying the floor girders also rest on them. Between the piers, clean off the ground, lay strips of tar paper the width of wall, to prevent dampness soaking up and then strips of hardware cloth of half inch mesh cut the width of the wall on top of the tar paper. The adobe filler walls go on these. If this screen is not used and the wall is built directly on the ground, gophers and squirrels may dig up into it. There must also be one or two intermediate piers

twelve inches square for the support of the girder carrying the floor joists.

Here are a few miscellaneous hints toward good construction:

Let the walls settle for a year, if you can, before putting on the outside stucco coat. Then cover the surface with eight penny nails four or five inches apart to act as a key for the stucco.

Don't forget to leave at least one square foot of ventilation for each twenty five running feet of wall for the underfloor space. This is a State Law requirement and is little enough to prevent "dry rot."

Do not attempt to set the ends of the floor joists in the wall, but keep them three quarters of an inch away.

Paint the backs of the door and window frames with a good coat of hot tar before setting them.

For lintels use an eight inch reinforced concrete beam. The mix should be one part cement, two and one half parts sand and three and one half parts crushed rock. Mix twice dry and twice wet. Then place three three-eighths inch square reinforcing rods about an inch from the bottom. This will support an opening four feet wide. A similar beam may be placed over the under floor vent openings.

The balance of the construction may be better understood by referring to the accompanying drawings.

* * *

After reading Mr. Forbes' article, the Editor submitted the manuscript to John Byers, than whom there is no better authority in California on adobe construction, and asked for his opinion. Mr. Byers' reply is printed herewith and while he coincides with Mr. Forbes in the main, he does not advocate this type of construction for houses costing in excess of \$7,000.

"I have your letter of some days past, and have gone over Mr. Forbes' article on "Earthquake Resisting Adobe Construction." It is interesting of course and sounds very plausible.

"His method of laying up a rammed dirt wall is virtually the old French method called "pise de terre." My opinion is that when one resorts to various other support-

ing members and uses the adobe merely as a filler wall between those supporting members, the thing is no longer sincere, and has lost a great deal of its charm. However, its value as a heat and cold resistant is still there.

"In the Miles Memorial, which I have just finished in Santa Monica, I would have been allowed to have used adobe bricks as a filler wall, with "H" steel columns for support and a sprandrel beam construction. We later, however, changed the material to stone-tile.

"I believe that such construction, particularly the rammed dirt method, as shown by Mr. Forbes' sketch of form details, would be particularly desirable in such places as the Imperial Valley or some of our hot regions in and about Los Angeles, for small farmhouse buildings where the rancher would be his own architect and builder, but would have little value, if any, in houses above seven thousand dollars."

AIRPORTS AND THE ARCHITECT

When Rudyard Kipling wrote "With the Night Mail, a story of 2,000 A. D." he did not know that he was describing an age which would come to pass while he was still living. The Air Mail is a fact now and we see the motto from Herodotus carved over the entrance of the New York Post Office: "Neither snow, nor rain, nor heat, nor gloom of night stays these couriers from the swift completion of their appointed rounds."

This motto is fitting, and to follow it literally the airplane demands airports. There must be airports for the passenger and express service, which inevitably follow the mail service.

Who shall design our airports—and related sections of their environs which call for design?

In a discussion on this question the Chairman of the A. I. A. Committee on City, Community, and Regional Planning, E. J. Russell, of St. Louis, said that in his opinion the architect should be the designer of airports—for obvious reasons.

In the possibility that there may be other air-minded architects like Mr. Russell, who may have opportunities to design airports or to take an active part in their development, we call attention to the Aeronautics Branch of the Department of Commerce. This Bureau is sponsoring aviation on behalf of the Federal Government, and has issued a number of publications which are of great value.

Particular reference is made to the paper entitled "Designing Safe and Adequate Airports." This is a comprehensive study by Harry H. Blee, Chief of the Airport Section of the Department of Commerce, and contains seventeen pages of text and illustrations. In this article Mr. Blee says: "After determining this general layout, a comprehensive plan covering the ultimate development of the airport should be prepared, special attention being given to the proper coordination of all activities on the airport, to suitable architectural treatment, and to appropriate landscaping, etc."

Other publications of the Aeronautics Branch are "Civil Aeronautics in the United States," a comprehensive review of present conditions; an "Aeronautics Trade Directory," intended for the technical man; an "Airway Map of the United States," current today, and obsolete tomorrow because of the rapidly expanding airway system; "Airports and Landing Fields," a list of municipalities in which airports are in existence or proposed; "Report of Airway Marking Committee," a bulletin which outlines good marking practice in airway development; "Air Traffic Rules," a bulletin of eleven pages with some graphic illustrations; "Airports: Types of Management, Rentals, Concessions, Field Rules," a document of great value which covers airport management, airport fees and rentals, the airport and the operator, airport field rules, model uniform city ordinances, and suggested field rules.

The Aeronautics Branch also publishes a bulletin entitled "Domestic Air News." Architects seriously interested should request this publication—by letter addressed to the Aeronautics Branch of the Department of Commerce, Washington, D. C.

THE OAK HILL MAUSOLEUM

By
Albert F. Roller, Architect

SERENELY at the top of a hill beyond the turmoil and glamour of the City of San Jose stands the stately Oak Hill Mausoleum.

This permanent abode escapes many of the undesired characteristics of ground burial. There is a soundness that wind, rain and storm cannot affect, nor the ravages of time efface; and in after years future generations shall see in this type of imperishable monument the deep respect that we should hold for our beloved dead.

In order to secure the imposing hill top for the structure overlooking a wide expanse of the fertile Santa Clara Valley, a tract of approximately eighty-nine acres was purchased by the Cemetery Association.

Tests revealed a formation of hard blue sand serpentine and every pier and footing is on a foundation of solid rock.

The building is of heavy reinforced concrete construction. The main walls, floors and roof were designed independent of the crypt structures within. The crypt blocs are supported on footings individual from the building foundations and

every attention was given by H. J. Brunner in the structural design to make the crypts as secure as possible from any damage by earthquakes or by the elements.

No wood was employed in the permanent construction of the building and wherever exposed metals were found necessary only copper or bronze were used.

The building, of Romanesque influence, is approached by wide level roadways through broad expanses of green lawns and fragrant flowers, and on entering one passes through a rotunda thirty feet in diameter

and fifty-two feet high which has been dedicated as a chapel where committal services may be held.

From the rotunda, in an easterly and westerly direction, extend the two main crypt corridors the full length of the building. From the rotunda also two wide stairways lead to the columbarium or niche rooms provided for urn or cremation interment.

The building contains 600 standard and couch crypts on the main floor and 850 niches on the columbarium floor.

The exterior of the building is ex-



OAK HILL MAUSOLEUM, SAN JOSE, CALIFORNIA
Albert F. Roller, Architect

cuted in cast stone and cement plaster. Entrance steps and vestibule floor are of Roman Travertine.

Polished red granite columns and pilasters with bases of Verde antique marble support the three entrance arches.

The walls and dome of the rotunda are of cast limestone. The floor is of Travertine as are the floors of the crypt corridors and niche rooms.

cement are faced with marble and plate glass set in frames of cast bronze. In these spaces, in an atmosphere created by careful selection of color and tintured with the soft scent of sweet flowers, a visitor may enjoy the comfort of communion with loved ones whose precious dust there reposes.

The most vital consideration in any community mausoleum where hundreds of bodies are interred, is ventilation, not only



OAK HILL MAUSOLEUM, SAN JOSE, CALIFORNIA

Albert F. Roller, Architect

In the main corridors the tiers of crypts are faced with Botticino marble with pilasters, rails and bases of Tavernelle. By selection of these materials the funereal atmosphere so often found in buildings of this type was entirely eliminated. To further create an atmosphere of warmth and cheerfulness an abundance of daylight and sunshine has been admitted to filter through art glass windows and ceiling lights creating a myriad play of color on the warm tones of the marble lined corridors.

The niche rooms on the columbarium floor encircling the rotunda are clad in marble and the niches constructed of cast

of the crypts but of the corridors and circulating spaces.

In this building a constant circulation of fresh air has been provided for each individual crypt by means of an inch and three-quarter inlet at the bottom of one end of the crypt and the same size outlet at the top at the opposite end.

These vent pipes were cast into the reinforced concrete crypt walls, the inlets extending six inches below the bottom of the floor beams and pulling air from the excavated area under the building. The outlets extend into a plenum chamber formed by the space between the top of the crypt tiers

and the roof slab and from which the air is drawn by numerous suction ventilators.

The strictest precaution was taken to absolutely seal the air exhausted from the crypts into the plenum chambers from any other space or portion of the building.

This system of ventilation was adopted after careful investigation of all prevailing methods and it has proven entirely satisfactory, absolutely dispelling the theory

say the least, a serious defect in the building.

Therefore exhaustive laboratory tests were made of the different types of suction ventilators as it was essential that ventilators be used that admitted a minimum of down draft.

A complete system of floodlighting has been installed and because of the commanding elevation of the building site the building, being visible at night to both north



NIGHT VIEW, OAK HILL MAUSOLEUM, SAN JOSE, CALIFORNIA
 Albert F. Roller, Architect

that chemicals of any kind are required to properly ventilate a crypt or prevent odors.

A rapid change of air has also been accomplished in all of the corridor spaces without mechanical means by placing large free area grilles at frequent intervals in the walls close to the floor, and providing large suction type ventilators in the roof connected with ducts to the grilles in the ceilings of the corridors.

It being impossible to isolate on the roof the ventilators that pull the air from the crypts and those that are ventilating the corridors, it becomes obvious that a down draft from one to the other would be, to

and south bound highway traffic, is clearly defined in a blaze of white light against a black sky.

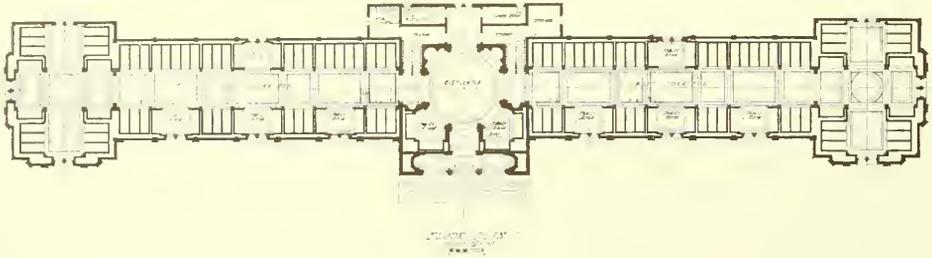
Future additions to the structure have been carefully studied and planned, the present building being but the nucleus of a complete project which, when finished, will contain about 3000 crypts.

A beautiful landscaping plan by Horace Cotton has also been developed and when the extensions to the structure and the Memorial Park surrounding it have been laid out and planted it will present a project that will forever remain a monument to the loved ones who have passed on.



Photo by Moulin

OAK HILL MAUSOLEUM, SAN JOSE, CALIFORNIA
ALBERT F. ROLLER, ARCHITECT



PLAN, OAK HILL MAUSOLEUM, SAN JOSE, CALIFORNIA
ALBERT F. ROLLER, ARCHITECT



NIGHT VIEW, OAK HILL MAUSOLEUM, SAN JOSE, CALIFORNIA
ALBERT F. ROLLER, ARCHITECT



DETAIL OF ENTRANCE, OAK HILL MAUSOLEUM, SAN JOSE, CALIFORNIA
ALBERT F. ROLLER, ARCHITECT



MAIN ENTRANCE DOORWAY, OAK HILL MAUSOLEUM, SAN JOSE, CALIFORNIA
ALBERT F. ROLLER, ARCHITECT



ROTUNDA, OAK HILL MAUSOLEUM, SAN JOSE, CALIFORNIA
ALBERT F. ROLLER, ARCHITECT

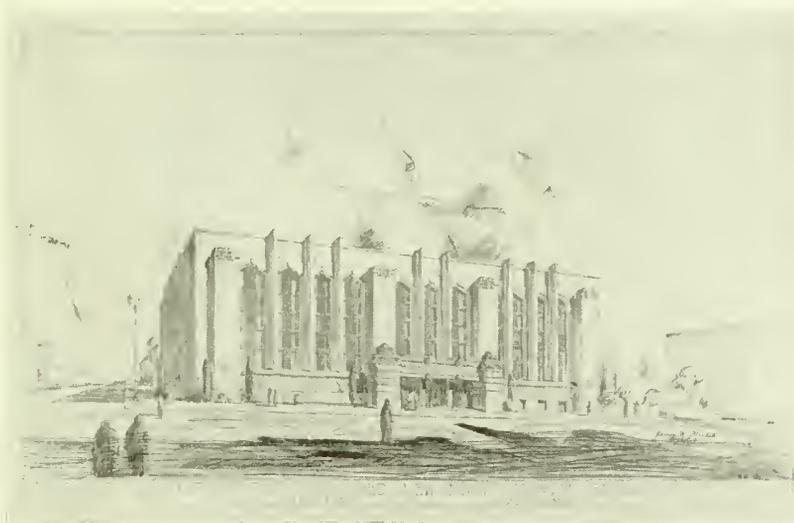


UPPER PART OF ROTUNDA, OAK HILL MAUSOLEUM, SAN JOSE, CALIFORNIA
ALBERT F. ROLLER, ARCHITECT



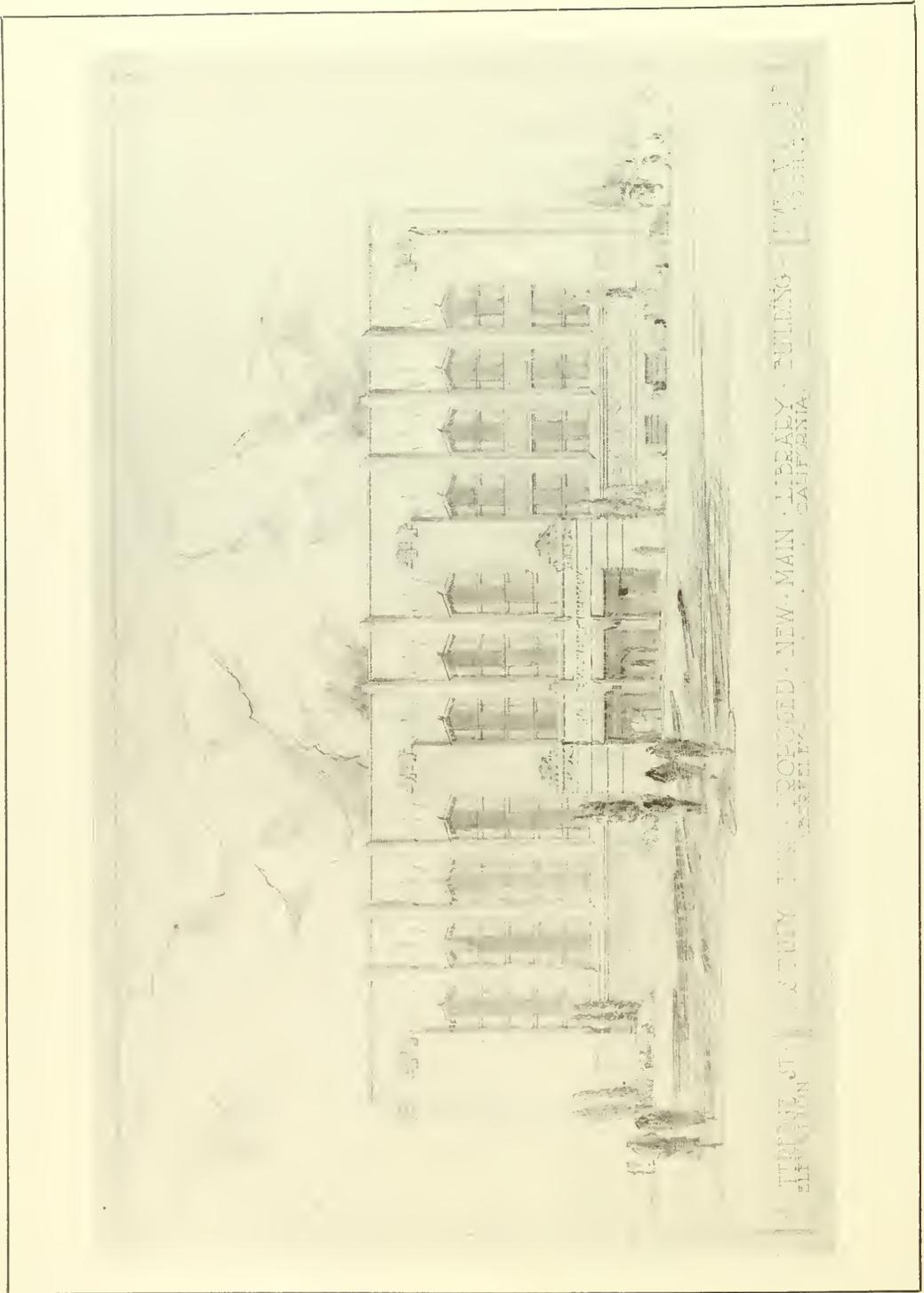
Marble by Vermont Marble Company

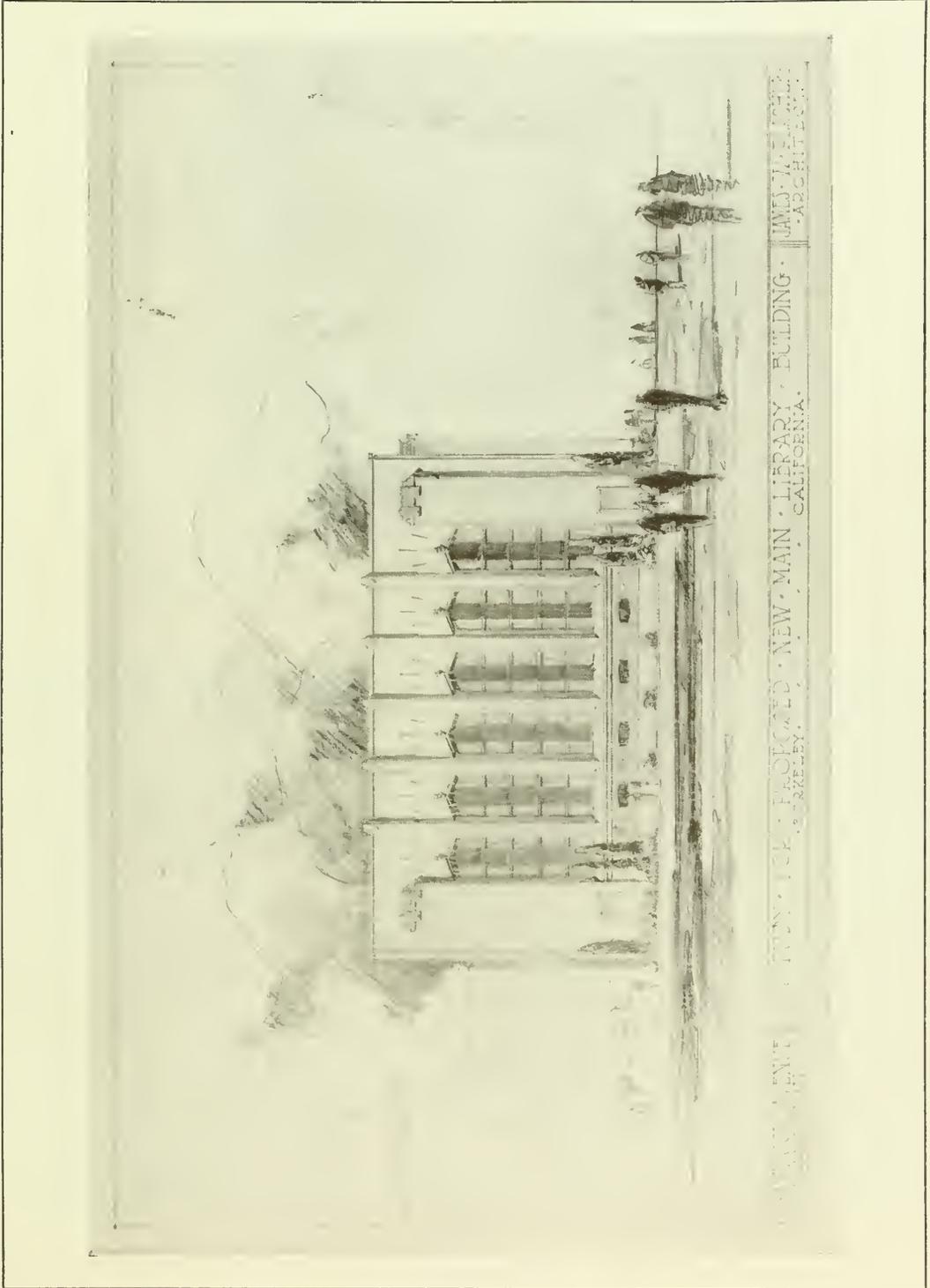
CRYPT CORRIDOR, OAK HILL MAUSOLEUM, SAN JOSE, CALIFORNIA
ALBERT F. ROLLER, ARCHITECT



PORTFOLIO · OF · SKETCHES
BERKELEY · PUBLIC · LIBRARY

JAMES · W · PLACHEK · A · I · A
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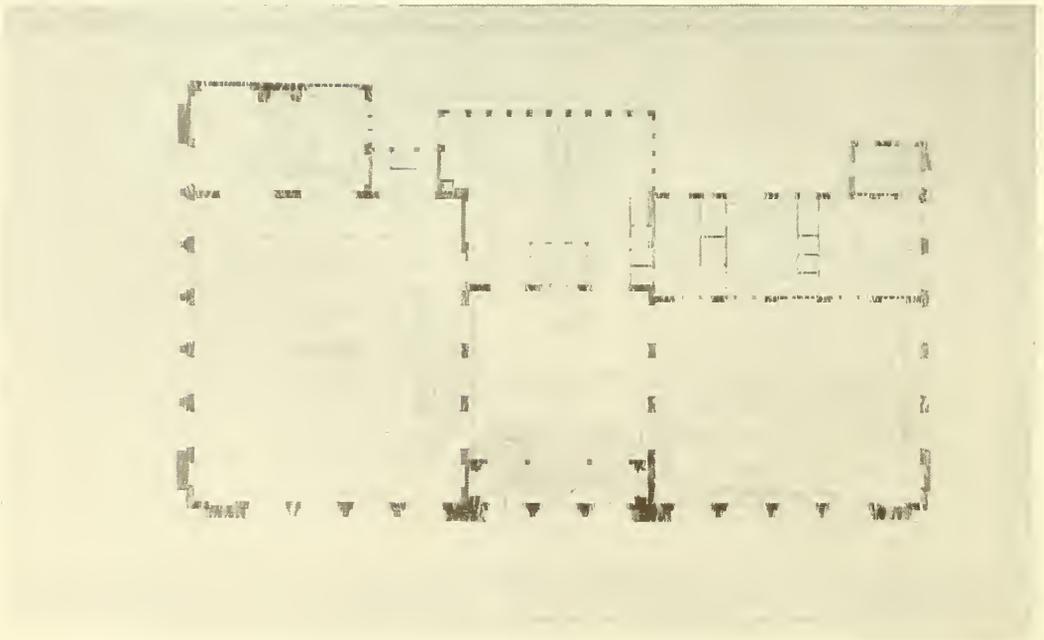




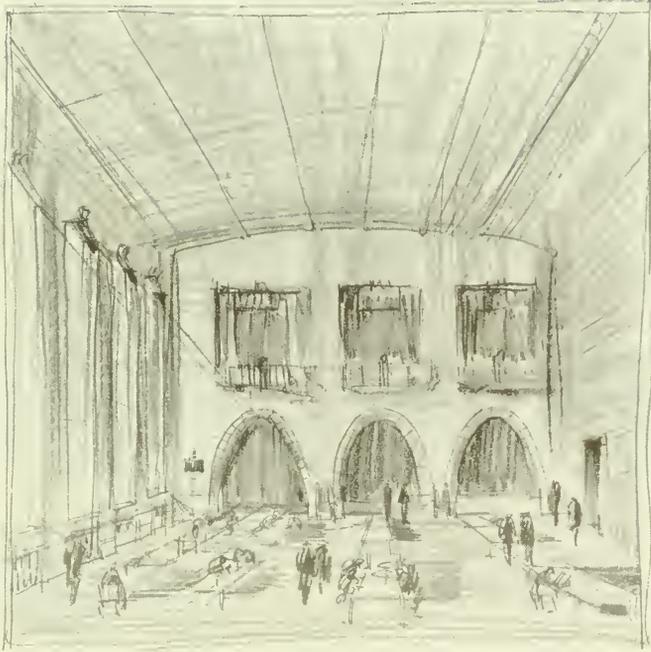
UNIVERSITY OF CALIFORNIA LIBRARY BUILDING - BERKELEY, CALIFORNIA. ARCHITECT: JAMES W. FLETCHER



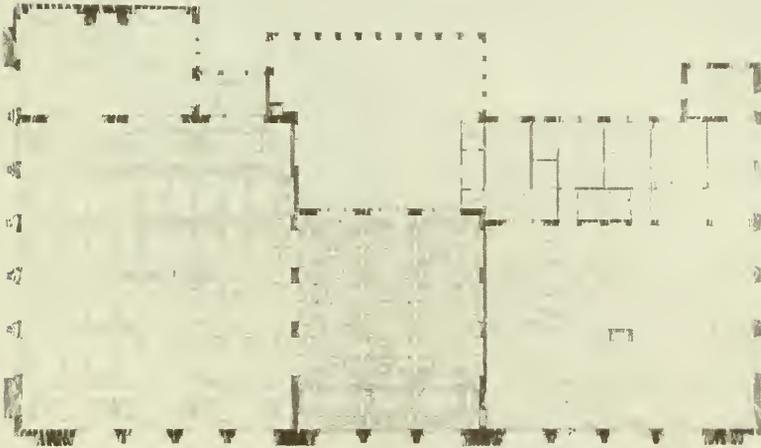
SKETCH OF MAIN READING ROOM, PUBLIC LIBRARY BUILDING, BERKELEY
James W. Plachek, Architect



GROUND FLOOR PLAN, PUBLIC LIBRARY BUILDING, BERKELEY
James W. Plachek, Architect



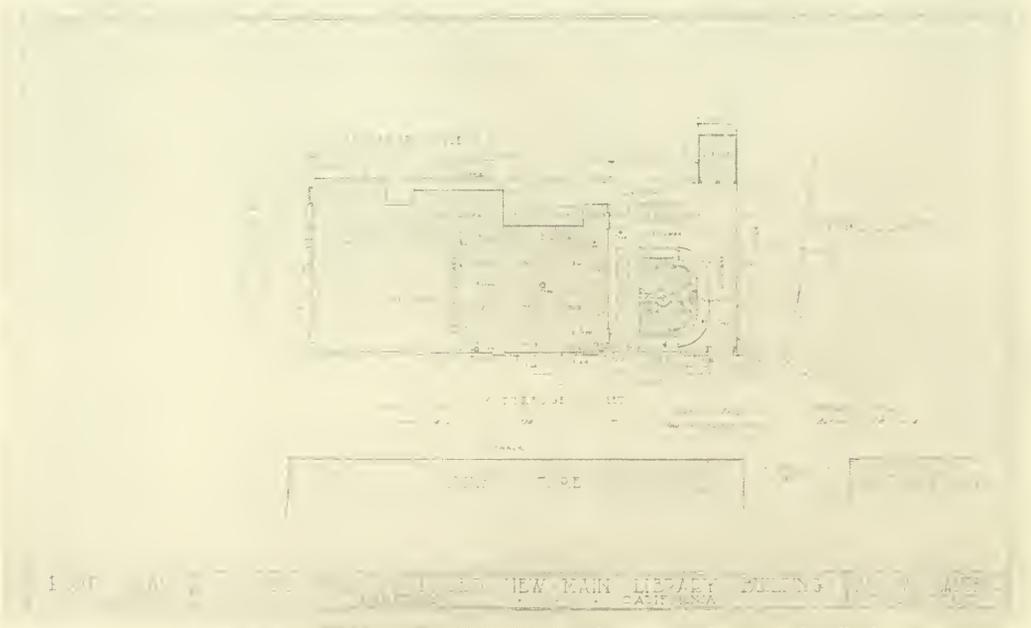
SKETCH OF MAIN READING ROOM, PUBLIC LIBRARY BUILDING, BERKELEY
James W. Plachek, Architect



SECOND FLOOR PLAN, PUBLIC LIBRARY BUILDING, BERKELEY
James W. Plachek, Architect



ROUGH SKETCHES, STREET ELEVATION, PUBLIC LIBRARY BUILDING, BERKELEY
James W. Plachek, Architect



PLOT PLAN, BERKELEY PUBLIC LIBRARY
James W. Plachek, Architect

LOS ANGELES POWER and LIGHT PLANTS

By
Fred'k. L. Roehrig, Architect

FEW people realize that the city of Los Angeles possesses the largest municipally owned electric utility in the United States; and moreover her electric equipment is housed in structures befitting the pride she has manifested in her churches, libraries, and other civic buildings.

In previous issues we have illustrated many of these public buildings, but as yet none of the industrial structures erected by the Department of Water and Power during the last decade have been published. Apparently it has been the aim of the Department to make its buildings not merely a housing for electrical equipment but that they shall have an architectural expression of dignity and repose in keeping with their function, and at the same time be an aesthetic asset to the neighborhood

in which they stand. To this end the Department has selected designs of simple lines, good proportions and employing only one constructive principle of square headed openings.

The construction of these buildings is reinforced concrete walls and floor slabs,

or steel frames enclosed in brickwork. The plans are usually rectangular, having flat roofs to facilitate the entrance of line wires. The exteriors are mostly stuccoed and what little ornament is employed is precast stone placed to accentuate constructive details and masses.

A few of the many generating and distributing structures erected by the Department of Water and Power are shown here. San Francisquito Power Plant No. 2, a hydro-electric generating station 43 miles north of



TRINITY STREET DISTRIBUTING STATION

Fred'k. L. Roehrig, Architect



BUILDING FOR MUNICIPAL POWER AND LIGHT COMPANY, LOS ANGELES

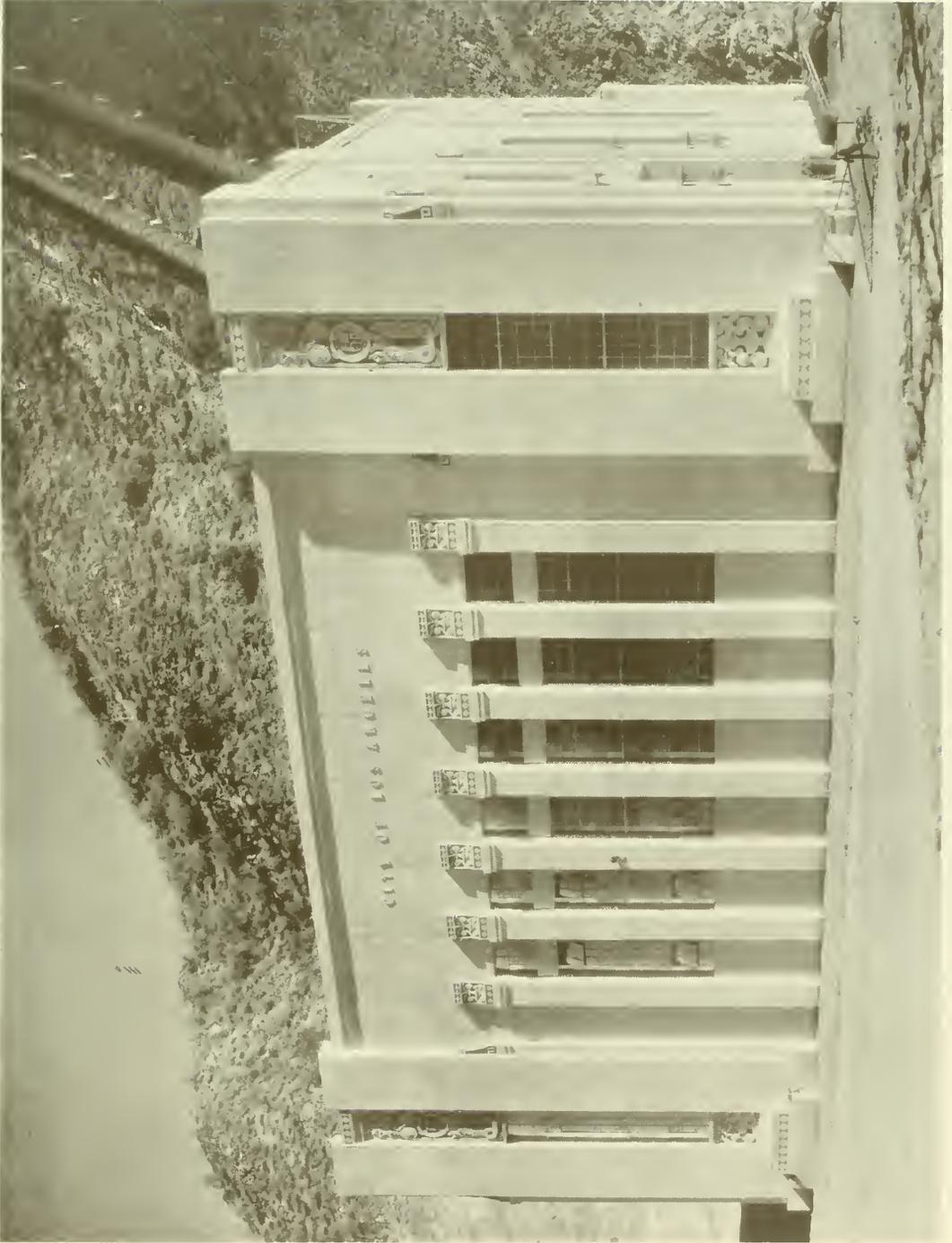
Fred'k. L. Roehrig, Architect

Los Angeles, has lately been finished, and is now delivering electricity over 110,000 volt transmission lines to the receiving stations in the city. The exterior of this building is designed along lines showing a vertical treatment accentuated with bold ornament in keeping with the ruggedness of the canyon in which the building stands.

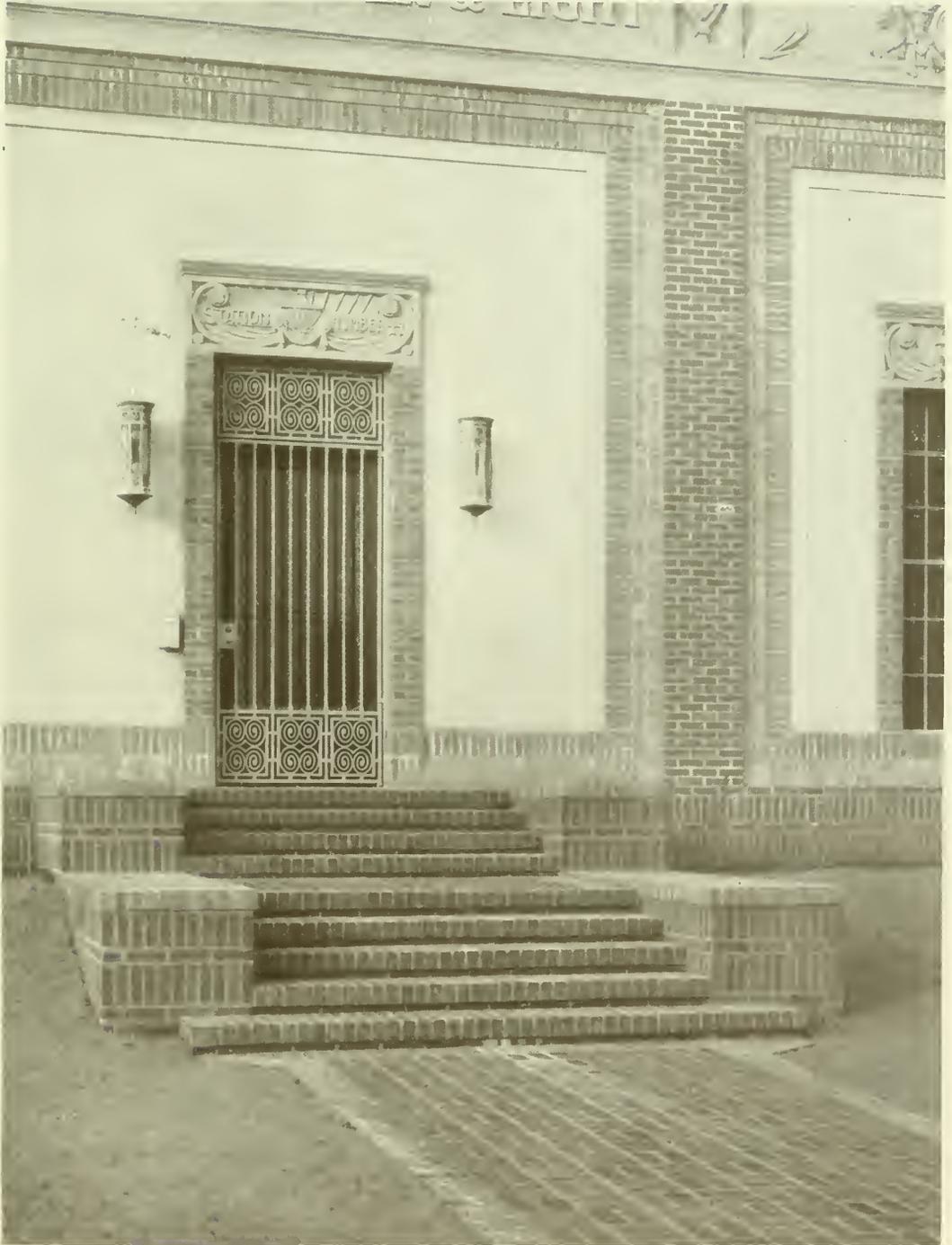
At the receiving stations, one of which is located at 1020 East 95th street and known as Station B, the electrical energy is stepped down to a lower voltage of 33,000 volts. The plan of this building is such as to call for an exterior of horizontal masses. The walls are dressed down with a surface grinder, but still leaving the form marks to give surface texture. From the receiving stations the current is transmitted to the distributing stations. The distributing station No. 44, located at 911 Lincoln Boule-

vard, is of steel frame with enclosing walls of ruffle brick. The trimmings of windows, borders of panels, bases, etc., are of red, purple and tan ruffle brick, while the panels are common brick covered with buff stucco. The frieze, just below the cornice, is pre-cast stone harmonizing with the color of the stucco panels. The seal of Los Angeles is made use of as a decorative feature, flanked by lions symbolical of power. The wrought iron gates at the various entrances add strength and interest to the composition.

Some of the distributing stations are two stories with one story wings housing the transformers, and it is from these various distributing stations that the overhead circuits of various voltages go out to consumers to provide the industries and homes with power and light.



SAN FRANCISQUITO POWER PLANT, NUMBER TWO, LOS ANGELES
FRED'K. L. ROEHRIG, ARCHITECT



LINCOLN BOULEVARD DISTRIBUTING STATION, LOS ANGELES
FRED'K. L. ROHRIG, ARCHITECT

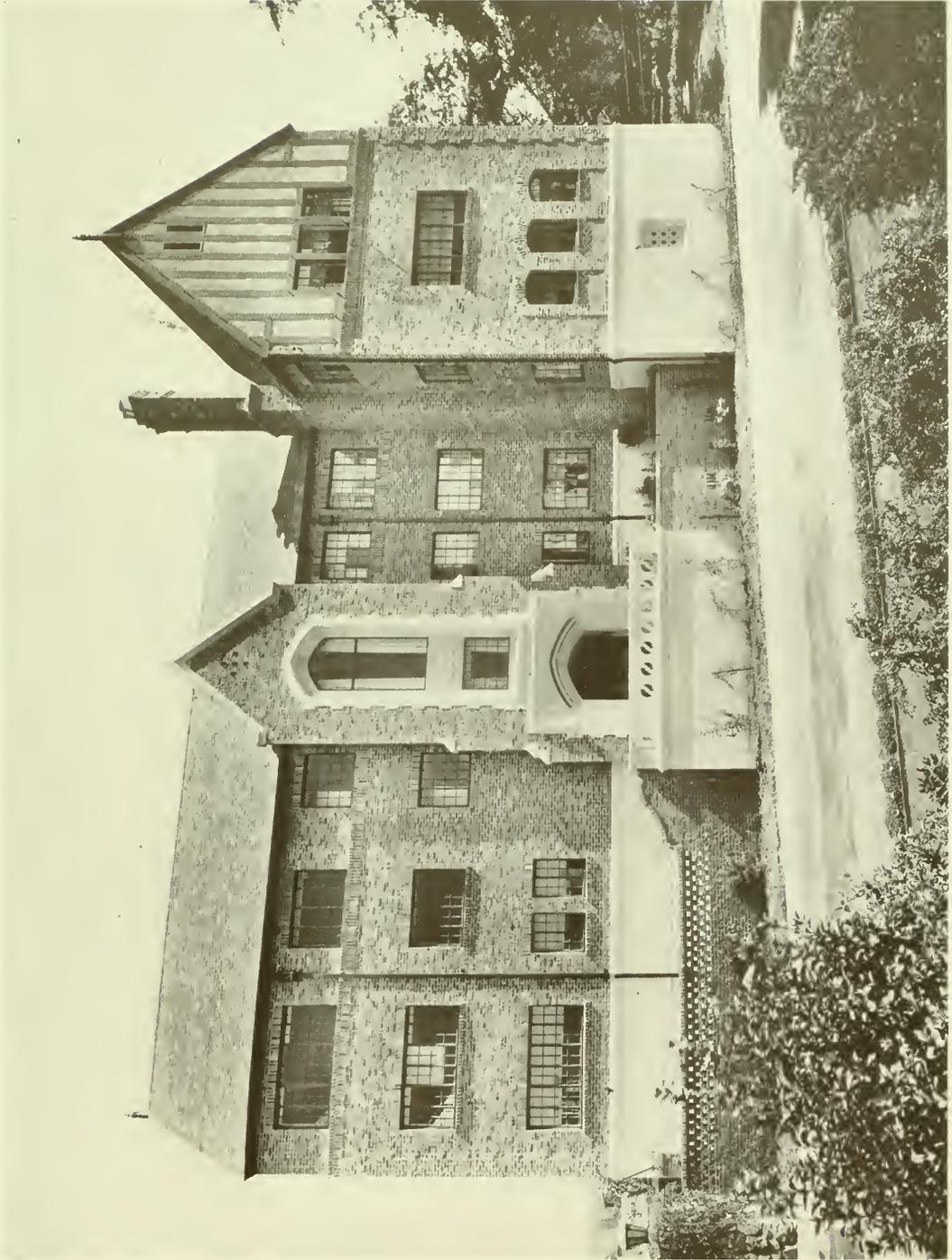


Other Pictures and Plans will appear in the December Number

BUILDING FOR BULLOCK'S WILSHIRE BOULEVARD STORE, LOS ANGELES
JOHN AND DONALD B. PARKINSON, ARCHITECTS



RESIDENCE OF J. E. MARCOUX, SAN FRANCISCO, CALIFORNIA
H. C. BAUMANN, ARCHITECT



CLUB DRIVE APARTMENTS, BROADWAY TERRACE, OAKLAND
R. F. KIEFER, ARCHITECT

MODE of ATTACK of the SOUND-WOOD TERMITE on a CITY BUILDING

*By: Chas. Atwood Kofoid and
E. A. Garland*

THE three main types of termites attacking buildings on the Pacific Coast are the Rotten-Wood Termite (*Termopsis*), the Subterranean Termite (*Reticulitermes*) and the Sound-Wood Termite (*Kalotermes*). Each has certain limitations due to its instinctive habits of life, each attacks in a different manner, and each has its distinctive geographical range. All these kinds of termites occur over large areas of the Pacific Coast, and *Reticulitermes* throughout most of the United States in dead timber in the forests, and all of them establish colonies in wooden structures, posts, and poles.

The Rotten-Wood Termite thrives best where ground connections of the timbers afford sufficient moisture, though their burrows may extend far into perfectly seasoned wood of long standing. It may even attack water tanks on the roof of a seven-story building.

The Subterranean termite maintains connections with the earth, whence it invades mud-sills, porch timbers, foundations, the butts of posts and poles, and eventually the superstructures above. It may even work its way through mortar or cement rich in lime to woodwork above. After early fall rains it will be found emerging in the middle of the day in the winged or alate stage from the earth, cracks in brick or cement walks, often at considerable distances from any wooden structures.

The Sound-Wood Termite is wholly independent of any connection with the earth. It enters poles, fences, and buildings at all levels above the earth up to at least three stories. Its upper limits of flight are not known, but may bear some relationship to

the level of origin of the swarm. This species, because of its independence of the earth and of soil moisture, is capable of attack upon buildings whose wood is well isolated from soil contacts.

Its mode of attack is for the royal pair, a king and queen, swarming from old colonies more abundantly after fall rains than at other times, to enter some crack or crevice such as that about a window or door casing, or under shingles, or tiles, or in a check in the siding (Fig. 1). A new colony is thus established which in time extends operations by driving its burrows beyond the original site of infestation. This work is done by the young of the colony in *Kalotermes*, which has no distinctive and permanent worker caste. As the young increase in number the number of burrows entering into the wood increases. Supplemental reproductive pairs may be added to the colony from its own progeny and these still further increase the labor supply.

An example of an attack upon a brick business building in a prominent city on this coast has recently come to light. The entire ramifications of the colony were followed out in the process of its extermination. It presented so many points of interest and seems to be so typical of the work of this species that a presentation of the facts is of general interest to architects and engineers, as well as to owners of infested buildings, and to contractors engaged in ridding premises of the Sound-Wood Termite.

The structure attacked was a two-story brick building erected in 1888 (Fig. 2). At one side of the building there had been an outside stairway on brick walls leading

to the second floor, beneath which wood was stored. Later this was transformed into a flat-roofed store-room with a sky light, but the door above was retained and the opening closed by a sliding fire door.

The building was occupied by a furniture store. On the second floor was a thick wool carpet with a heavy felt mat beneath it. The floor was of Douglas fir, resting on the redwood false floor and this in turn on 2"x16" Douglas fir joists 50 feet long, with bridging along the brick wall, and two 2"x16" 8-foot scabs extending out from the brick wall along each joist. The fire door, the door jambs, and door sill were of redwood.

The first observation of the presence of termites in this building was noticed about August 28th in the second floor near an outside door. Pellets were noticed underneath an antique birch cabinet. Each time the cabinet was moved to sweep the carpet there would be a new pile of pellets and upon close examination holes were seen through the wool carpet which covered the entire floor, and small holes penetrating the 1x4 tongue and groove Douglas fir flooring were observed. There were four different locations where holes were observed through the carpet and felt floor covering. Upon removing the carpet and felt covering and the first floor, holes were observed penetrating the redwood subfloor. Upon removing the subfloor there were holes penetrating the 2x16 Douglas fir floor joists. A section of the floor was then removed at either side of the outside door about four feet in width, and for half or about 25 feet of the width of the second floor, which floor was about fifty feet in width. The termites had attacked nine of the 2x16 scabs on either side of the floor joists for their full length of eight feet. Also two of the main floor joists had been attacked for about 23 feet. Only two sections of the 1x4 Douglas fir flooring had been attacked, extending about 18 feet in one direction from the door and about 10 feet in the other direction. The termites had crossed one joint in the Douglas fir flooring, but no more.

The solid bridging between the floor joists near the door were the most severely

attacked, two of them having been damaged at least 50%, the other damage being in no place in excess of 10%.

The redwood door jambs around and over the top of the outside door, as mentioned above, had been penetrated with one or two holes clear around the casing and the first two inches next to the floor of one side of the door jamb had been damaged to about 25%.

The bottom inch strip on the metal covered sliding fire door had been penetrated for its full width. This and the door jambs were the only two instances where redwood had been attacked.

Two of the front legs of the chest were resting directly over the two pieces of infested flooring. Each leg had a single hole penetrating into the bottom. One leg seemed to be more infested than the other and was removed from the chest, creosote poured into the hole, and in a few minutes was turned right side up and tapped with the result that approximately 500 termites came from within the leg. The other leg was apparently not badly attacked.

The selection of two boards only out of the many available in the Douglas fir flooring and the passage from one to another across the end but not from side to side is also quite characteristic.

The selection of two joists only and of nine consecutive scabs and the omission of three of the joists included between them is a unique illustration of the preference of the termites for particular pieces of wood. It is quite probable that this run of adjacent scabs was cut from the same timber, or at least from the same log. They may well have been from the same one as that from which the two joists which were attacked were sawed. In any event our observations on attacks by termites upon wooden structures are quite generally characterized by the fact that, given the choice of timbers in the path of their ravages, they enter some timbers and leave others, even though in location, appearance, and kind of wood the timbers are similar. Factors, such as the hardness of the wood, the amount of its resin, its age in the tree, and its chemical

the size detected on exploration. It is probable that at least several years were required for such long extensions of the colony into the joists and floor, as were found.

The colony was exterminated in part by the removal of the infested pieces and in part by the injection of creosote into the burrows through small auger holes at intervals into the timbers.

It appears from the selection made by *Kaloterme*s that Douglas fir is more to its taste than redwood, that some Douglas fir timbers are more attractive than others, and that redwood will be traversed (jamb and false floor) to get to other timber, or will be taken (fire door) when other wood is not in contact with it.

Prevention of attacks such as this by the Sound-Wood Termite on buildings such as this may be afforded by careful attention to certain details of construction. In the first place, there should be a perfect bond made between the mortar and the door jambs and window frames which should not be disturbed in the later finishing of the opening. In the second place, there should be close jointing of the wood members around all openings and a complete coverage of all joints and checks by putty and paint. Under these conditions of good construction the swarming king and queen will find it difficult to get a point of entrance into the wood used in the building.

The attack of *Kaloterme*s on the bridging along the brick wall and into the end of joists and scabs extending from this wall is an illustration of their sensitiveness to areas where there are slight differences in moisture. Laboratory tests of termites show that they are exceedingly sensitive to the slightest difference in moisture content of the air and will very quickly go to the region of greater moisture content. Brick walls, during the rainy season, accumulate a slight amount of moisture and retain it for some length of time. The ends of timbers in contact with this region are thus favorably located for termite attack.

Types of construction in which the ends of such timbers have ventilation provided by a small air chamber around their sides and at the rear of their ends are recommended in Appendix W-1 on Termite Pro-

tection in the Building Code of the National Lumbermen's Association. This space provides for more circulation of air and dissipation of the moisture and thus reduces somewhat the attractiveness of this region to termites.

The fact that the area beneath the stairs had been at one time used for storage of wood for fuel suggests the possibility of the introduction of *Kaloterme*s in oak wood, which sometimes happens, but such wood is usually cut up to such an extent that the ants quickly get access to the termites and eradicate them. The entrance of the king and queen in a crevice around the opening at the swarming season is much more probable than the migration of termites from stored wood into the door some feet above the wood. Good construction can undoubtedly greatly reduce the incidence of termite attack upon buildings. Every center of infestation eliminated in a community reduces the probability of the spread of the infestation elsewhere.

SOUNDPROOFING APARTMENT HOUSES

INCREASING evidence is appearing to show that the great mass of apartment renters and owners in this country is becoming conscious of the evil of noise and will soon be demanding in no uncertain terms that apartment homes be properly soundproofed.

Increasing noise in both city and country is bringing this about. The radio amongst other things is constantly creating trouble between tenants in apartment houses because of the disturbance it creates in rooms adjoining those in which it is intended to be heard.

Not only in preventing passage of sound from room to room, but in making each individual room more quiet and sound-absorbent, do we find increased activity on the part of apartment builders who realize this growing interest in silence on the part of the public.

Sound absorption and sound-proofing are very closely linked but they should not be confused. To reduce noises in corridors,

lobbies and other public parts of the building, builders may employ materials which have the property of absorbing some of the sound waves as a blotter absorbs ink, rather than reflecting them.

Many ordinary materials used in walls, floors and ceilings reflect sound almost as perfectly as a mirror reflects light so that even a slight noise is amplified and reverberates through the place. Thus much noise may be eliminated by using resilient floor material such as linoleum, rubber, cork, composition, etc. Walls and ceilings may be made sound-absorbent by the use of some of the new materials such as special plasters which absorb from 10 to 30 per cent of the sound that strikes them, and by using special tiles, wallboards and felts specially prepared for this purpose.

It is obvious that by using sound-absorbent materials in the rooms where noises originate, the original evil is much lessened right at the start. However, the chief problem that has confronted builders in the past has been that of preventing the passage of sound from one room to another.

Laboratory experiments and researches of many kinds have been carried on in the past few years to determine the effectiveness of various suggested methods for accomplishing good sound-proofing. Probably the most thorough and reliable tests of this type were conducted by the U. S. Bureau of Standards.

One of the things that most of the laboratory examinations have shown is that many of the old-time methods used by builders to get soundproofing were based on incorrect theories and really did very little good. One common mistake has been to place sound absorbing material in partitions without paying much attention to corner supports and structural members. The tests show that practically all sound energy is transmitted from room to room by these means and if they are not taken into consideration very little good is done.

Experiments seem to show that practically all noises are transmitted from one apartment to another in two principal ways. In the first they cause the walls themselves to vibrate so that both sides of a solid wall

or one that has solid connections between its surfaces, act like a diaphragm and re-create sound waves on the other side.

The second way in which sound passes through walls occurs through those of hollow construction. The wave action is like that of a drum; the surface between studs or other solid members receives sound waves on one side which are transmitted to the enclosed air space. This air vibrates and starts the other wall surface vibrating similarly. If the two surfaces are not connected by any solid member, however, the transmission of sound is very slight.

The walls alone, of course, are not the only conductors of sound. Floors must be taken into consideration and properly soundproofed. In apartments of fireproof construction where floors are reinforced by concrete or steel, the most successful results seem to come from floating the finished floor on some flexible material and hanging a suspended ceiling beneath, also using flexible or sound absorbing connections.

Staggered floor joists may be employed where wood floor beams are used in securing proper soundproofing. The usual number of floor beams are used to support the floor but between them a second set of beams or joists at a slightly lower level are placed to which the ceiling is applied.

The feature of this method is that no physical connection exists between the members supporting the two surfaces. A flexible sound insulating material such as hair felt or some other flexible, fibrous form of insulating material may be woven in and out between the beams carrying the floor and over the tops of those carrying the ceiling.

This system is quite effective and is still further improved by weaving a layer of similar material under the finished floor.

As a result of the exhaustive laboratory studies conducted a number of very effective soundproofing systems have been perfected and are now being offered by the various manufacturers who supply materials. As a rule, the company contracts to soundproof the structure and very often guarantees the results. The builder thus has available a reliable engineering service

and may have his building soundproofed by individuals with a thorough understanding of the problems involved.

Of course there are many other things to consider in planning a silent apartment other than the actual construction of floors and walls. The architectural design is so very important that this should receive first consideration. Very often an air vent will act as a perfect resonator and carry sound from one part of the building to the other. It should be recognized that doors or other openings are effective transmitters of sound and steps should be taken to make them soundproof.

They may be made partly so by use of weatherstripping or felt around the edges. Where complete silence is to be obtained the best method seems to be the use of two doors, one on each side of the wall. In other cases it is usually possible to use a built-up door which contains an asbestos or other filler in the core which will prevent passage of sound.

The successful soundproofing systems now available to builders carry the findings of research men into practical use. In all cases they insulate the partitions from the floors and ceilings and from rigid walls and columns by the use of flexible and sound-absorbing devices of one kind or another.

One patented system employs metal chairs with a seat of hair felt. These metal chairs carry the partitions, while similar

chairs are used to support furring strips on the sides of the walls or sleepers along the floors. Another type of felted device is used to suspend the plastered ceiling from the structural members. These units are employed in conjunction with either metal or wood studs for non-bearing partitions, placing these members in staggered rows for walls, with a layer of felt woven in and out between them.

The same principles are used in another patented system which employs spring metal clips to perform the same functions as the felt seated supports in the other. This method is used with gypsum tile or masonry walls, or with wood or metal studs. Used with this is a filler in powdered form which is interspersed between the plaster interior surface and the gypsum tile.

Through use of this system the plastered wall is held away from the partition by means of the resilient clips and allowed to vibrate freely. These vibrations are taken up by the insulative fill and as a result the atmospheric motion is absorbed before it even gets to the gypsum partition tile.

The outstanding fact about soundproofing is that it is a coming feature of the apartment building which architects and builders can hardly afford to neglect. Methods and materials are now on the market which are really efficient and a growing fund of information is available.—*Building Age*.



BUILDING FOR STANFORD AUTO COMPANY, PALO ALTO
Photo Taken Before Alterations



BUILDING FOR STANFORD AUTO COMPANY, PALO ALTO
Birge N. Clark, Architect

OUTLYING SHOPPING CENTERS

By CHAS. H. CHENEY, *City Planner*

THE importance of local neighborhood business or convenience centers to all the outlying residential areas of any city is very great. These local business centers, and similar centers in all our cities, have been established almost invariably at important crossroads of traffic. To succeed local stores must be where people can most conveniently get to them from several directions, in order to provide enough customers for profitable service.

In questioning shopkeepers of these local centers, in many cities during the course of zoning hearings, I find that most of them expect to get their trade within six or eight blocks of their establishment. Larger local centers will cater to and reach a much wider circle, but one still comparatively local to the center.

Through traffic coming from a long distance seldom has as much purchasing power as the local traffic. In fact we seem to have an exaggerated idea of both the volume and importance of through traffic to local stores, except for restaurants, garages and oil stations.

In a town of 500 population, the only business center is at the railroad station, or bus station about the crossroads and about 250 feet of store frontage will actually be in use.

In a local center of 5000 people, the 2500 feet of store frontage needed cannot profitably shoestring out along just the two main streets which ordinarily form the crossroads that created the center, and will tend to spill over into side streets, with perhaps one or two nuclei of local centers, forming in the outskirts.

In a city of 50,000, with 25,000 front feet of store frontage ordinarily necessary

there should be already six or eight well established outlying local centers.

In a city of 500,000 there will be found from 30 to 100 of these neighborhood centers, of variable size because they have been uncontrolled. There will also be a lot of falsely located and scattered store units, placed at inconvenient and therefore unsuccessful points by speculators who had little or no knowledge of the traffic necessary to store livelihood. These are the non-conforming uses of the belated zoning now being done in most of our cities.

Of course the number and character of local store centers will vary with the local characteristics of cities. Thus congested tenement house cities like New York and San Francisco tend to develop local business centers at so many corners of street car or traffic streets as to make the line of stores more or less continuous.

Single family detached home cities like Los Angeles and many middle western cities have lesser need of centers so close together and business units are more likely to congregate at well established crossroads much further apart.

There is the same danger of shoestring speculators, however, unless proper zoning regulations clearly confine the location of business buildings to reasonably limited areas. This can be done either by private restriction or by municipal zone ordinance.

Zoning, in fact, is the most important foundation for the proper layout of local business centers. Concentrated centers are more successful than long drawn out ones, scattered over a wide area.

Real estate developers who can control by protective restrictions several hundred, or better, several thousand acres of suburban development have a great opportunity to limit the total number of stores to something less than 5 per cent of the number of buildings anticipated in their district, thereby insuring the reasonable success of the businesses which come into the district.

DOMESTICATING ART

By

Richard F. Bach

IN a droning textile mill, one of the many turning out dress and curtain fabrics in one of our thriving commercial centers, a designer fought against time and inimical surroundings in the search for novelties to please a jaded trade. It was summer, but the work before him had to do with fabrics to be sold the ensuing winter. On his table were pattern books, samples of goods, certain standard books of references, and some acceptable sketches. But he was disgruntled; in his sketches he had brought together the thoughts of many days, with a few nights at home thrown in; he had organized forms and lines into attractive harmonies; he had marshalled colors that others thought bewitching. Yet to his practised eye there was something lacking, and his dissatisfaction grew as he beheld in imagination thousands of yards of the goods bearing his design issuing from unthinking machines. In his ears was the din of the looms and outside the office windows sounded the clang of passing surface cars, the grating of changing gears at the traffic crossing. It was useless to try longer; the drawings were pigeon-holed for the day.

Still pondering the problem of color, the designer sought the less frequented streets on his way homeward. Near a deserted shack lay a pile of rotting logs; decay had crumbled parts of them to tinder and in the irregularities of the pile were deep shadows. A score of times had he passed this spot and seen but a heap of dank timber, but this evening a queer light in the shadows of the pile arrested his attention. There he saw a radiance of faint blue and brilliant yellow, now soft as silken velvet,

now shining with metallic hardness. With an exclamation the designer stood still; his eye promptly fixed the colors in his memory while his mind was busied with ways and means of obtaining in his goods the contrast of textures which he had caught in the phosphorescence of crumbling wood. As he stepped back he destroyed with a careless kick a number of toadstools. Dull brown on top, several of these showed an under surface of elusive pink, streaked with crimson. The artist drew breath, for the design had in one glance lost all its difficulties.

The night found him at work again. The forms of the old design remained, but the colors were new. Out of the colors he had seen in the most ordinary things he concocted a ravishing combination; with the aid of other experts in the mill he then worked out texture variations. The result was a triumph; the looms seemed not to rattle but to hum rythmically as they wove it. Fifty thousand yards were woven and sucked up by a greedy market; and another fifty thousand, before piracy of the pattern by other mills had so stultified the design that the original maker gave it up. Out of a designer's conscientious scruples and the unseen beauties of commonplace things had come not only a commercially successful pattern, but a fabric that brought pleasure to thousands that bought it.

Such designers there are, with every human weakness and virtue, in scores of mills and factories and reeking workshops. They make designs for woven laces, printed wall papers, for velvets and cretonnes, for neckties and lampshades, for rugs, advertisements, china and bracelets, for no end of

things of daily utility which, without such attractive design, you and I would never want to own. These designers, men and women, find their inspiration in many ways, but more often than we think or know they find their motives and colors in commonplace things.

So we find a designer of lighting fixtures, for instance, who discovered a form for the shade of a wall bracket as well as new colors for glass in the shape and quiet of the mountain laurel blossom. So also we find a worker in stone whose treatment of brown sandstone carvings suggested itself in a dead oak leaf thrown by the wind against a curbstone and there partly covered with mud washed in by a recent rain. And again, the scenic designer whose effects for a stage backdrop were given him almost ready made in the gasoline stain upon a moist pavement, where reflections had made a parti-colored sunburst of radiating lights.

Designers of all times have found their inspiration in the commonplaces of nature, as well as in the gorgeous plumage of birds or the most resplendent colors of flowers. For us their handiwork is preserved in museums of art, which in turn also serve the designers of today in the preparation of silks for costume, the furniture and other things that constitute the decorative and industrial arts. In museums designers of today find in concentrated form the craftsmanship of their peers and masters of other days. Each has written in slowly fading color and in materials that have defied centuries of human wear and tear the story of his own time, its beliefs, hopes and daily routine.

In these records of past life also the artist of today seeks inspiration, coming upon it in Indian rugs or Persian lacquered book-covers, if he happens to be a designer of ribbons for Palm Beach or Southampton; or perhaps in a Spanish fan, if he happens to be a designer of costume laces; or in Japanese armor, if his work is to design sport skirts. And occasionally a consummate artist will leave pad and pencil at home and browse among past glories to assimilate a general tone or character of style. Such was the costume designer who sat for hours in the Persian room at the Metropolitan Mu-

seum, seeking no definite motive, but carrying away with her the inspiration which became the keynote for a sequence of creations in gowns and evening wraps.

But for each such designer that we have here mentioned a hundred go unknown; for each design that captures a market there are a thousand that remain unsung. As one painting may be just a landscape while another is a Corot, so it is also in the arts of the book and of the stage. And again, for each designer there are a hundred thousand who buy his work, or the product in which it is incorporated. For each creator of art there are a hundred thousand appreciators, and they show their ability to appreciate design by their selections in the stores. To this extent they, too, are designers; in this way you and I exercise that discrimination which also guides the creating artist or designer. Above all do we function as designers in the selection and arrangement of our home interiors and of our clothes. In these is character written indelibly. Yet these are too often among the neglected, unstudied ordinary things which hold endless possibilities where unseen beauties lurk.

As the designer found unseen beauties in the commonplaces that for others offered not even passing interest so may we find in the making of home interiors an intellectual enjoyment and a mental satisfaction that will bring new pleasures into life. The choice of wallpapers, for instance, may be a humdrum job, but consider it in connection with hangings, with prints to be hung against it, with colors in rugs or chair coverings, and it becomes a significant undertaking; significant not only in controlling relationship to all other items of furnishing, but significant also in its contribution to the building up of a background of culture against which your daily life is lived and seen by others.

You may say "I know nothing of art," yet you must select objects of art for the home; you cannot dodge design in common things. You may say "I know what I like," and I reply that this is the beginning of taste. Find out what the best artists and the most cultured people like and you will see how their standards are based upon this same expression, with the sole difference

that they "know what they like" because what they like is founded upon forms, color combinations and styles of art that have been tested by time and long usage among nations. Art is servant in ordinary to man; there is no item of personal or home adornment that can do without it and survive.

That is why the designer finds his inspirations so readily in the unseen beauties of the commonplace; the things he designs are destined to become the common places of human environment. The common places of life build character, and by the same token, the common places of home environment make for citizenship in youth and cultural standards in the maturity of later years. What the child sees his parents use he considers right and will imitate; a parlor chair with green plush covering and a carved back that defies comfort becomes a definite factor in his standard of home furnishing. His father's silk shirt in five color tints as setting for a cravat of five color shades is not the best criterion upon which to base selection of his own apparel. The chromo of fruit or fish that so often hangs above the sideboard will not prompt him to select the color print of a painting by Abbey or Sargent for his own room at school. Will he read Conrad or Locke if he has seen only a movie weekly and a magazine called "Peppy Tales" at home? Home is the bedrock for all man-made standards that contribute toward a sane outlook upon life. A home environment based upon studied selection of every item of furnishings and decoration makes for peace of mind, which is the foundation of progress.

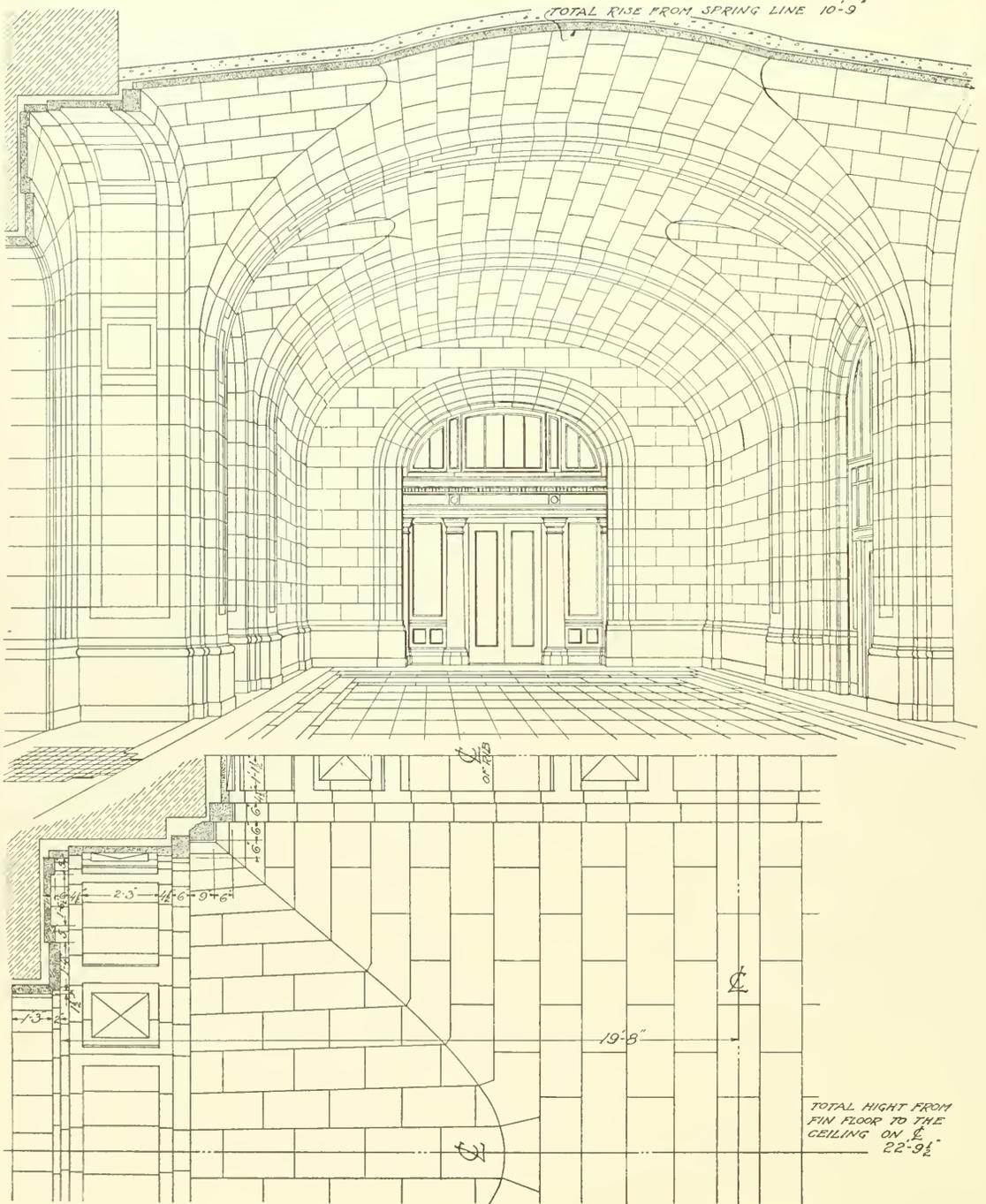
Antiques do not make a home nor do reproductions. In art, as in other ways of life, things are not good because they are old, or seem to be. The good things of here and now express our own time; use them. Careful judgment is needed. If you are to make of the home a work of art representing your own ideals, every piece must be of good material, well made and well designed. To obtain your good will a thousand factories equipped with the most complicated machinery man has ever devised for any purpose are daily converting wood and clay, fibres, skins and hides and myriad forms of

vegetable life into objects of industrial art. An ordinary button bought by the dozen on a card, representing a year's work and some ninety processes of manipulation, is shown you in the store as but one of a score of designs. A simple cretonne pattern is ready in many shops in several colors, yet there must be prospective orders for ten thousand yards of it before the textile printing machine can be set in motion.

When one craftsman made the whole of a piece his entire effort went into it; when that craftsman grew to importance and hired assistants his work became the product of a shop, but still handmade. Little by little he found ways and means of shortening his labors without detriment to his product. Finally machines were devised to do much of his work for him; in fact, the huge populations of today can be provided in no other way with the things they need. Soon the machine became the master and we find men almost believing it could do their thinking for them. Quick production displaced sound production and industrial art became an ugly thing. With the ugliness of the individual pieces available it became impossible to furnish homes attractively. Standards of culture slumped.

Today we find ourselves on the upgrade again. We have discovered the limitations of these great factories and have learned something of their real advantages; we are using their fine machines as tools, holding them to their task, but counting upon our designers and material experts to check on them, to feed them properly. Designs are improving in scores of products used in home furnishings and clothing. We are beginning again to see art in these fields, to renew the assurance that art is not limited to paintings, sculpture and sometimes buildings, to poetry, music and sometimes theatres and the dance. Let us keep step with this revival of standards in the industrial, the decorative, or shall I say the domestic arts.

We have to aid us two great agencies: the museum of art and the store. One preserves the fine things of other days, the other offers in fascinating variety the designs, good and bad, of the throbbing present.



Courtesy Vermont Marble Company

DETAIL SHOWING MARBLE FLOOR, WALLS, AND CEILING IN ENTRANCE HALL OF
HAMILTON COUNTY COURT HOUSE, CINCINNATI, OHIO

RANKIN, KELLOGG & CRANE, ARCHITECTS

ENGINEERING
and
CONSTRUCTION



BELLEVUE-STATENS APARTMENTS, OAKLAND
H. C. Baumann, Architect

Featuring
Steel Frame Designed to Resist Earthquake
and Fire

A STEEL FRAME DESIGNED TO RESIST EARTHQUAKE and FIRE

By
I. E. Perrin

THE Bellevue-Staten Apartments, recently completed, and situated on the northern shores of Lake Merritt, Oakland, California, is admittedly one of the finest structures of its kind on the Pacific Coast. Rising sixteen stories from the ground, this apartment stands majestically over all other

surrounding buildings being the tallest structure in the Lake district, and with the exception of the city hall, the highest in Oakland.

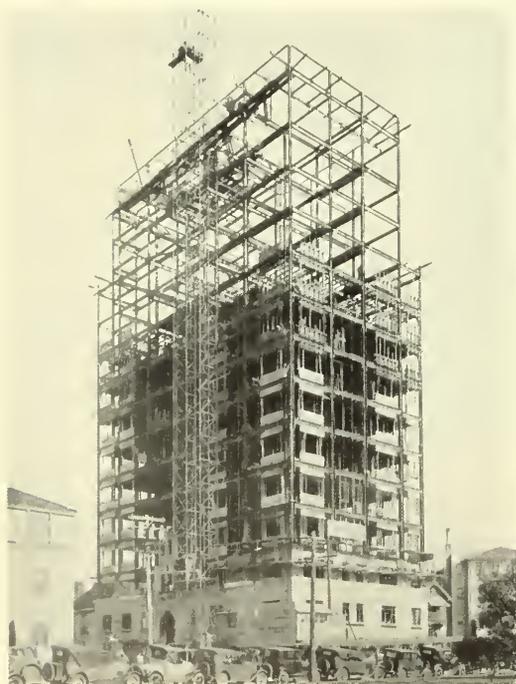
In deciding on the structural frame, great care was exercised in the selection of materials best suited to withstand earthquake shocks. It was found that this could be best accomplished by the use of a structural steel frame.

Sixteen and fourteen inch Bethlehem rolled steel columns were used throughout with Bethlehem eye beam and girder beams for the floor construction.

Specially designed brackets were used for beam and column connections throughout the building, these brackets providing the necessary lateral stiffness for the building during any earthquake shock.

An unusual construction feature was that no piling was necessary under the piers as hard pan was found a few feet beneath the surface. The north shore of Lake Merritt is less than a block from the site and it was at first thought that the driving of piles would be necessary, which is the condition on most construction contracts near the lake.

The Pacific Coast Engineering Co., of Oakland, fabricated and erected the structural steel frame in the record time of eighty days from the signing of the contract. This was remarkable time considering the fact that the plain steel had to be rolled in the East and shipped through the Panama Canal to the Coast before being



STEEL FRAME OF BELLEVUE-STATEN APARTMENTS, OAKLAND

fabricated. There are approximately 1,750,000 pounds of structural steel in this building. The shapes were rolled by the Bethlehem Steel Co., at Bethlehem, Pa., and shipped via Calmar Line vessels to Oakland. The boats docked at the newly constructed wharves of the Port of Oakland and the plain steel was reshipped via rail to the shops of the Pacific Coast Engineering Company for fabrication.

* * *

The State Board of Harbor Commissioners having realized the permanency and durability of structural steel, are now incorporating this type of construction in the building of all their new warehouses on the San Francisco waterfront.

An unusual feature in connection with the construction of the warehouse itself is the method used in building the sidewalls. Concrete slabs are cast in wooden forms on the ground adjacent to the side walls of the building. These slabs are reinforced with deformed bars and range in size from eight feet to 26 feet long by five feet high. After curing for a period of 30 days the precast slabs are stripped and cleaned and prepared for erection.

After the structural steel frame is erected a poured-in-place-wall one foot high is cast on two sides and one end of the building, forming a base on which to set the precast slabs.

The precast slabs are then placed one upon the other from the concrete base to the roof, forming the sides of the building. The front, or inshore end, of the building is cast in ornamental concrete.

The slabs are held in place in the following manner:

Malleable iron inserts are cast into the slabs to take a T head bolt. As the slabs are being erected the head of the bolt is placed in the insert and turned, forming a lock. These bolts occur slightly to one side of the flange of the column and a malleable iron offset washer is placed on the bolt, at the same time grasping the flange of the steel column. The four bolts in the slab are then tightened with a lock washer and a nut. Where the slabs set one upon the other a groove the full length is cast and bot-



STEEL FRAME WAREHOUSE ON WATERFRONT,
SAN FRANCISCO

tom. As the slabs are being placed a coil spring is laid in this groove and grouted in, the spring acting as an expansion joint. The steel frame itself must be erected with the greatest of accuracy as the engineers require that the outside face of all columns be within one sixteenth of an inch in line. This is necessary as the precast slabs lay flush against the column flanges and any misalignment may put severe stresses in the slab, eventually cracking same.

The Pacific Coast Engineering Company recently completed the erection of 1500 tons of structural steel for the four warehouses on Pier No. 45 and also handled and erected 1450 precast slabs for the general contractors, MacDonald and Kahn.

The company at the present time is furnishing and erecting about 1000 tons of structural steel for the two warehouses on Pier No. 48, San Francisco. These two warehouses will have a total of 700 precast slabs. Lochiel M. King is the general contractor on this last improvement.

The ARCHITECT'S VIEWPOINT

- *Home Owners Confused by Magazine Articles*
- *More Ament the Modern Trend*
- *Stock Plans Again Under Discussion*

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HERE have long been conflicting opinions among the architects about the factors that would improve architecture the most. Some men have said that we can only expect to see better buildings when we have better architects, while others argue that an enlightened public will be the cause of a new renaissance in architecture. One thing is certain, and that is, in the main the public will be served, and the architect of ability cannot get far without an appreciative, if small, following.

Although the lay taste is improving, its improvement has not kept pace with the advancement that architecture has made in America in recent years. In every large city in this country there are clever and able architects who are not doing nearly as much work as they should do, simply because their design is too restrained and fine for the taste of the average man who builds.

The various magazines, especially those like *House Beautiful*, *House and Garden*, *Arts and Decoration*, and others that reach a large number of lay readers, have accomplished much in improving taste in architecture. This moulding of public taste is a real task, considering the difficulty of presenting material so that it will be of greatest value to architecture. Extreme care has to be taken in the selection of photographic examples, otherwise the effort has a reverse effect and is damaging.

There has been a tendency for magazines reaching the public to a considerable extent, to popularize certain details of architecture, such as "period rooms," "textured walls," "modernistic furnishings," and so on, illustrating examples without the statement that these things are not to be copied, and that they must not be brought together, or the result will be a hodge-podge. Almost every architect has had some fair client bring to him, and to his dismay, photographs clipped from magazines, of a fireplace, a stairway, a window, a fence, a roof line, all to be incorporated in her new home. The fair client was not wholly to blame, for her impression of architecture was based on what she had read and seen in the magazines. She had been led to believe that the producing of beautiful architecture was a selective process. It is but only in selecting the architect.

No attempt should be made to give a greatly boiled down, highly concentrated course in architecture to the layman, for as some sage has said, "A little knowledge is a dangerous thing." A lady who had studied architecture in this concentrated form went to an architect's office with her husband to talk about their contemplated home. She took with her some sketch floor plans, which she had made. The architect noted that there were no dimensions marked thereon and that the Living Room and the Pantry were identical in

size. Being a diplomat, he asked how large the Living Room was to be. The fair client said "Twenty by forty." Whereupon the architect asked, "But surely you do not want the Pantry twenty by forty?" Here the husband interrupted for the first time, and said, "Grace, dear, you had better insist on having your sketches carried out as you have drawn them, you have worked so hard."

* * *

ONE phase of the present modernistic tendency in design which is most refreshing to some, is that it is such an effective counter-irritant for "antiqueing," which had reached a virulent state, the high temperature mark being "skintled brick work." All of the beautiful old textures which came naturally, such as the adzing of timbers, the lichen covered sagging roofs, the moss covered stone walls, crudely built, had inspired our architects. They were carried away with a desire to bring back the past, which led them into a maze of self conscious monkey shins. All proper regard for material was lost. They smeared and they cracked, they nicked and they gouged, they destroyed and then repaired. The skilled artisan was told he would have to learn to play havoc with his material instead of using it in a sensible way. No cottage hearth was complete without its iron pot on the crane, a blunderbuss hanging above, and a spinning wheel nearby.

The modernist makes the statement that self-imposed dilapidation has no place in this age, the day of the radio and airplane. Things shall be made practical, efficient and shipshape. We will not have to fear that all romance will be lost, even if the romance of a turreted wall and a drawbridge will be. A new and different interest will take its place.

* * *

THE remarks made in the last contribution to this column by this writer concerning stock plans were directed chiefly against a privately owned corporation which conducted a recent house competition. Although the houses in the first book this organization published were small, many of the prize and mention designs in the last competition would cost twenty thousand dollars and more to construct.

It is contended that a house of this size is of sufficient import to warrant the employ of an architect, at least from the architect's standpoint, and especially from a Portland, Oregon, architect's standpoint. The standpoint being that of making a living. It is my prediction that if plan bureaus, institutes and similar corporations are properly encouraged in the future, plans for any type of building will be available in the same way, and at bargain prices. Then what will become of the architect?

Another contributor to this column stated that the plan bureau stock plans were comparable to ready made clothes and filled the same sort of need. In the case of very small houses this undoubtedly is true, and especially in the sparsely populated areas of our country. However, in the cities there are usually many young architects who can and do design comparatively small houses, and in their case the advertisement in the tailor's window tells the story. "You pay for a tailor-made suit, why not have one?"

HAROLD W. DOTY, A. I. A., Portland, Ore.

EDITORIAL CHAT

DURING the past forty years, American architecture has undergone a very marked transformation and we have progressed from a period when architecture was of a style which was solely of foreign extraction to the present when our buildings can rightfully be called magnificent achievements of a design and treatment which is distinctly American.

The buildings which were erected in the latter part of the 19th century, gave expression principally to French architecture. American architects of the time had, to a large degree, received their training in Parisian schools as France was foremost in architectural education and it was quite natural for the architects to reflect this influence in American buildings. It was a period when architectural treatment of buildings found expression in curves and the buildings were adorned with pinnacles, turrets and bay windows. Decorative sculpture was the vogue and architects were given the greatest freedom in ornamentation with the result that the structures were developed along monumental lines with little thought given to the fundamentals of utilitarian design.

Following this period, fashion turned to examples of classical renaissance. This type of archeological architecture with its Doric, Ionic and Corinthian columns enjoyed its greatest development in our eastern cities, but saw its principal application in buildings which were more or less of an institutional character.

William E. Malm, President of the Cleveland Association of Building Owners and Managers, in a recent address at Boston before the National Association of Real Estate Boards, credits the architects of Chicago with being first to break away from Old World architecture and substituting a style which is undeniably American both in design and plans. To quote Mr. Malm:

"The best architecture has always been the product of slow evolution from traditionally accepted forms, and from the con-

glomerate mass of many styles emerged the present office building which is truly American in design, treatment and mechanical layout. It derives its beauty from simplification of mass treatment and not from detailed embellishments, and further demonstrates the architect's ability to fulfill modern needs in forms of genuine beauty. As it is not cumbered with festoons and garlands and lacks unsightly cornices and massive columns, this type of building will not present to the owners of the future the serious problem of modernization which the old building does today. When the present structures approach the end of their economic life they will be more amendable to rehabilitation, due principally to their steel frame and simplicity of treatment.

"Architectural change has closely followed the development of new materials and improved mechanical equipment and there is no stopping the upward progress of present structures. They spring from fundamental necessity and not from fancy. In them has been incorporated every type of material and mechanical creation which makes for greater economy in the construction, long life, improved plan efficiency and low maintenance cost, and they are being developed with a keen appreciation of symmetry and beauty."

* * *

WHYY not an Architectural and Industrial Arts Exposition in San Francisco? The combined Pacific Coast Chapters of the American Institute of Architects could lend their support just as the combined Southern Chapters of the Institute sponsored the Exposition now in full swing at Memphis, Tenn. The affair is intended to acquaint the public with development of better architecture in the South, in which, it is said, great strides have been made in recent years as the result of an artistic awakening.

During the Exposition the Board of Directors of the Institute will hold sessions, President C. Herrick Hammond of Chicago presiding. Questions affecting architecture nationally will be taken up. Edwin Bergstrom of Los Angeles, treasurer of the Institute, will submit a report as chairman

of the Committee on Constitution and By-Laws.

Other events of the week are a regional conference of all the Southern Chapters, and sessions of the Producers' Council, which is composed of manufacturers with headquarters in New York, and with which the Institute is affiliated.

The Exposition, which, the announcement stated, "means the birth of a new day for architecture and the allied arts in the South," most assuredly should be followed by similar expositions in other regions of the United States.

The exhibits include examples of the work of the architects, and of displays embracing building materials, and examples of craftsmanship. The Exposition should afford recognition of the architect, the contractor, and the artisan. Gold medals will be awarded for meritorious achievement. Public lectures on architecture, painting, sculpture, and the allied arts will be given.

* * *

I WAS amused reading the impressions of the editor of *Architecture* of his recent trip to the Pacific Coast. He says Carleton Winslow told him to be sure and "take in" Agua Caliente, "the Deauville of America." Am curious to know how Mr. Winslow enjoyed ye editor's description of the resort. Several hundred words were used to describe his air passage to the Mexican border but only twenty-one words were needed to sum up his impressions of Agua Caliente: "The so-called 'American Deauville' failed to interest me, once my supposed reservation had been repudiated by a harassed room clerk." And he's not the first one who has failed to connect for overnight accommodation in the Mexican town. The same trouble was experienced at Tia Juana and our friend of the Fourth Estate beat it across the border to the United States without further sight-seeing.

This New York editor seemed not wholly pleased with his visit to San Francisco. He writes of calling upon architects, most of whom "appeared elsewhere at the moment." (The date of his visit was August 15th, a time when most of the architects are absent on their vacations). Referring to

some of the buildings which he observed while in San Francisco, the following paragraphs are interesting:

"Lewis Hobart is completing a rather unusual combination of tall hotel and a Methodist church out near the Civic Center.

"A tall building with windows at the corners, such as is the modern manner in Germany and Holland, is being essayed by Miller & Pflueger. The latter have worked out what seems to be an unusually successful expression of reinforced concrete frame with terra-cotta facing in their Physician's and Dentists' Building on Sutter street. There is an equivalent of eight floors of ramp garage below, parking all done on the gentle ramp itself, with offices, laboratories etc., above. Here the vertical lines set apart the corner bays of windows in a much more logical way than the curved horizontal used abroad."

—F. W. J.

ARE AMERICAN BUILDINGS DESIGNED FOR PERMANENCY?

(Editor in Stone Magazine)

American buildings are not designed for permanency, according to no less an authority than Harvey Wiley Corbett, the architect, who made the statement before the Indianapolis Building Congress at a recent dinner. He said that American architecture differed from European in this respect of permanency. We do not know whether Mr. Corbett, or any other authority, has sought to stabilize our American population or to curb real estate markets and development in order to make buildings more permanent. Like all other observers of American architectural trends, Mr. Corbett must realize that in America we have none of the traditions that make for permanency or which bind individuals to localities. Whole cities move in this country, business sections change almost overnight, residential districts spring up, enjoy temporary popularity and then their lights fade and others attract home seekers. Only in staid old communities can it be said that American residences are more or less permanent and it is in them that the best American residential architecture is seen. In a generation or so we will begin to develop those traditions that have made European home architecture stable and permanent and, even now, we find the new era opening out before us with a wonderful opportunity to create and build for the future with materials like those used in the old homes of Europe about which Mr. Corbett refers.

WITH *the* ARCHITECTS

PRIVATE AUDITORIUM

Construction is going forward on an auditorium for the Whittell estate in Woodside to cost \$75,000. Plans were drawn by A. H. Knoll, architect, with offices in the Hearst building, San Francisco, who has also been commissioned to remodel the residence of S. S. Saslaw in Atherton. Included in this work will be additions and improvements in the gardens and bronze entrance gates.

SPANISH RESIDENCE, SAN FRANCISCO

Masten and Hurd, 310 Post street, San Francisco, have completed plans for an \$18,000 Spanish type residence in St. Francis Wood, San Francisco, for Jules H. Bernheim. These same architects have prepared plans for an automobile sales building and garage, contract for which has been let to Barrett and Hilp.

MIRA VISTA RESIDENCES

An Italian type residence is being designed by James T. Narbett and Son of Richmond, for E. M. Downer, 570 Excelsior avenue, Oakland. The house will have ten rooms and three baths and will be built in the Mira Vista tract. A second house in this tract is being designed for M. Hazelton.

CONCRETE HOSPITAL BUILDING

Working drawings are practically completed for a reinforced concrete hospital to be built at Ventura, for the Big Sisters Hospital Association. The architects are John C. Austin and Frederic M. Ashley, Chamber of Commerce building, Los Angeles.

OAKLAND BANK BUILDING

Plans are being prepared by Albert F. Roller of San Francisco, for a \$60,000 two story concrete and terra cotta bank building on Broadway, between 13th and 14th streets, Oakland, for the Pacific States Savings & Loan Society.

LIVE STOCK BUILDING

The State Fair Grounds, Sacramento, will be improved the coming year with a new live stock building now being designed in the office of the State Architect, George B. McDougall, Sacramento. There is an appropriation of \$200,000 for this structure.

CHRISTIAN SCIENCE CHURCH

Morris H. Whitehouse and associates, with C. H. Wallwork as consulting architect and A. H. T. Williams as structural engineer, are preparing plans for a new Christian Science Church which will be Italian in design, of reinforced concrete with veneer and terra cotta trim, and clay tile roof.

SACRAMENTO APARTMENT HOUSE

Eugene J. Seadler of Sacramento, has completed plans for a five story concrete apartment building which will be built on the northwest corner of 15th and "N" streets, Sacramento, by a group of San Francisco and Los Angeles capitalists. The investment will cost \$250,000.

JUNIOR HIGH SCHOOL BUILDINGS

Messrs. Shea and Shea, San Francisco architects, are completing working drawings for a \$400,000 group of Junior High school buildings, for the City of San Francisco. Besides classrooms, there will be an auditorium and gymnasium.

STOCK BROKERAGE OFFICE

A new stock broker's office will soon join the ever increasing number along Montgomery street, when McCreery and Finnell, open their new quarters, designed by S. Heiman. The improvements will cost approximately \$12,500.

HONORED BY HOOVER

William Adams Delano, president of the New York chapter of the American Institute of Architects, has been named by President Hoover as a member of the National Capital Park and Planning Commission.

LOS ANGELES MAUSOLEUM

In Los Angeles, at Calvary Cemetery, an all Italian marble and bronze mausoleum is being constructed by Arnold Constable, San Francisco, architect, for Miss Trixie Freganza. The ultimate cost will be \$9000.

\$46,000 SAUSALITO HOME

A \$46,000 residence is soon to be constructed in Sausalito for Mr. Scatena, from plans by Charles Strothoff. The contract has been awarded to Jacks and Irvine.

DESIGN APARTMENT BUILDINGS

Irvine and Ebbets, Call building, San Francisco, have completed plans for a three story frame and stucco apartment building, to go on North Point street, east of Broderick, San Francisco, for B. Rasmussen. The building will cost \$40,000.

H. L. Lindeman will be the owner of a \$50,000 apartment building in the Marina district, from plans by Messrs. Irvine and Ebbets.

Edward Jose is building two six-story Class A steel and concrete apartment buildings at Gough and Jackson streets, San Francisco, at a cost of \$750,000. Plans for both buildings were prepared by Messrs. Irvine and Ebbets.

 WARREN WINS

The Louvain Tribunal recently pronounced judgment in favor of Whitney Warren, New York architect, who designed the reconstructed Louvain University, in his dispute with the University over an inscription to be placed on a ballustrade of the library. The inscription which commemorated the destruction of the University by "Teutonic fury" was considered objectionable because it tended to revive memories of war-time hatred.

 ARCHITECTURAL APPRECIATION

The Architectural Department of the University of Washington began its academic year Tuesday, October 1st, with an enrollment of considerably over two hundred. A popular course conducted by the Architectural Department and open to all students of the University is in Architectural Appreciation for which 157 students have already enrolled.

 WM. P. DAWSON

William P. Dawson, 40, Los Angeles architect, died suddenly at Santa Monica as the result of a heart attack. Mr. Dawson was a graduate of the University of Pennsylvania. He came to Los Angeles in 1923 from Portland, Ore., where he had practiced his profession for several years, and at the time of his death was associated with Charles F. Plummer.

 GARREN TO LECTURE

William I. Garren, architect, will give a series of illustrated lectures on Modern Architecture in the Blanding Sloan Puppet theater, 718 Montgomery street, San Francisco, on the first three Wednesdays of November.

PERSONALS

WALTER T. STEILBERG, Berkeley architect, addressed the Channing Club of Berkeley, October 6th, on the subject "Considerations of Design in Modern Architecture."

HOWARD G. BISSELL, architect, Stockton, announces dissolution of the partnership existing between himself and F. V. MAYO. Mr. Bissell will continue to maintain offices at 421 East Main street, Stockton.

JOHN DEVEREUX YORK, architect, is now located in Phoenix, Ariz., and has established an office at 91 Columbus Avenue. He desires catalogs and samples of building materials.

HOUGHTON SAWYER, architect, formerly located in the Hearst building, San Francisco, has opened new offices at 337 17th street, Oakland.

JOS. L. STEWART, architect, announces the removal of his office from 703 Market street to 211 Holbrook building, San Francisco.

S. HEIMAN, formerly at 57 Post street, San Francisco, is now occupying offices with CARL WERNER at 605 Market street. Mr. Lamb, formerly in the office of Mr. Werner, is now in the office of Edwards & Schary, at the same address.

ROBERT H. ORR has been appointed a member of the Los Angeles Building and Safety Commission to succeed C. E. Noerenberg, who has been a member of the commission for the last four years, his term having expired.

 CERTIFICATE TO PRACTICE

Under the heading "Certificates" of the Rules and Regulations of the California State Board of Architectural Examiners, Section II, appears the following: "The District Boards shall, after granting provisional certificates to applicants, publish the names of such applicants in an architectural or daily building journal, appearing in both districts of the State. The following person was granted a provisional certificate at a meeting of the State Board September 24th, 1929:

W. L. Schmolle, 519 California street, San Francisco.

 GRANTED CERTIFICATES

At the meeting of the State Board of Architectural Examiners, Northern District, on October 29th, 1929, the following were granted Provisional certificates: Harold F. Genss, 2249 Ward street, Berkeley, and Earl R. MacDonald, 194 John street, Oakland.

SAN JOSE COMMERCIAL BUILDING

Plans have been completed and bids have been taken in the office of George De Colmesnil, Nevada Bank building, San Francisco, for a \$65,000 store and loft building in San Jose, which has been leased to the Sears-Roebuck Company. Mr. De Colmesnil has also prepared sketches for a four story reinforced concrete department store building in San Jose, for Hale Brothers, Inc. Construction of this latter building, however, will not go forward until some time next year.

SIX STORY APARTMENT BUILDING

Casebolt Dakin, architect, with offices at 319-13th street, Oakland, has completed drawings for a six story steel frame and concrete apartment building to be built for himself and Harry Schuster, on Park Boulevard and Emerson street, Oakland. There will be twenty-five residence apartments, and a thirty-six car garage. The improvements are estimated to cost \$200,000.

OAKLAND TIRE SERVICE STATION

Plans are being completed by C. W. McCall, 140+ Franklin street, Oakland, for a one story and basement Class A service and display building, for the Firestone Tire & Rubber Company. It will be built near the old St. Mary's College property on Broadway, near 30th street, Oakland. Plans for this \$100,000 structure will be out for bids, November 15th.

NEW SAN FRANCISCO FACTORY

Meese and Gottfried Company have awarded a contract to the Austin Company of California to design and erect a group of reinforced concrete factory buildings on Paul avenue, near San Bruno, San Mateo County. The estimated cost of the new plant is several hundred thousand dollars.

SAN LEANDRO STORE BUILDING

E. W. Cannon, Oakland architect, has completed plans for a one story brick and tile store building to be erected on the site of the old Estudillo house, one of the landmarks of San Leandro, Alameda County. The property is owned by the Sylvian Godchaux Estate, E. E. Kahn, trustee.

NEW SAN FRANCISCO SCHOOL

William H. Crim, Jr., has been commissioned to prepare plans for a Class A Junior high school building, to be built at 25th and Noe streets, San Francisco, at a cost not to exceed \$650,000.

HEADS MUNICIPAL LEAGUE

Gordon Whitnall, director of the Los Angeles City Planning Commission, has been elected president of the League of California Municipalities. Mr. Whitnall is planning important activities to be carried out under his administration. Henry S. Gierlich, city engineer of Monrovia and president of the City and County Engineers' Association, was elected president of the Engineers' and Street Superintendents' Section of the League of California Municipalities. Long Beach was selected as the place for holding the 1930 convention.

BANK BUILDING

Messrs. Tourtellotte & Hummel are architects for the Grants Pass and Josephine bank and office building, to cost \$50,000. Plans call for a structure of classical design, changing the present 50x50 foot building to cover an area 100x50 feet.

LOS ANGELES OFFICE BUILDING

Plans are being prepared in the office of S. Charles Lee, Los Angeles, for a three story and basement reinforced concrete store and office building at Wilshire Boulevard and Kingsley Drive, Los Angeles, for S. Malsman. The estimated cost is \$150,000.

SIX STORY HOTEL, VENICE

Harrison B. Traver, 1008 West 6th street, Los Angeles, has completed drawings for a six story Class A hotel for Phillip Goldberg. The estimated cost is \$125,000. The location is the southwest corner of Windward avenue and Trolleyway, Venice.

BRICK HOTEL, LOS ANGELES

James F. Fay is the owner of a four story brick hotel, to be built at 551 South Oxford avenue, Los Angeles, from plans by Gable and Wyant, Los Angeles architects. There will be 160 rooms.

MONTEREY COUNTY BUNGALOW COURT

Plans have been completed by Clay N. Burrell of Oakland for a brick bungalow court in Monterey for Mrs. Henrietta Pierce. There will be eight four room apartments. The estimated cost is \$35,000.

CARMEL BANK BUILDING

Plans have been completed in the office of H. H. Winner, San Francisco, for a \$50,000 reinforced concrete bank building at Carmel for the Monterey County Trust & Savings Bank.

COMPETITIONS

WAR MEMORIAL—CHICAGO

Final announcement to all architects residing in the United States:

The Chicago War Memorial Committee, a group of leading citizens, offers a first prize of \$20,000 and a second prize of \$5,000 to designers of a War Memorial to be located on the shore of Lake Michigan at the extension of Congress street.

The Jury of Award will be Mr. Abbott, Col. McCormick, Col. Savage, Mr. Simpson and Col. Sprague as lay members, and Harvey W. Corbett, Ernest R. Graham, John Mead Howells and Dean Everett V. Meeks as professional members.

The War Memorial Committee of the City of Chicago proposes to erect a memorial dedicated to those who served in the great World War. It will occupy a most important position on the shore of Lake Michigan and at the termination of Congress street, the principal axis of the city of the future.

It is the desire of the committee to obtain a design which, when built, will adequately memorialize the sacrifices of all who served in the war and in a manner relating not inharmoniously to the adjacent architectural and landscape elements of Grant Park and the Yacht Harbor.

The competition is to be nation-wide and is open to qualified architects residing in the United States. Eleven architectural firms are especially invited to submit designs and they will receive compensation of \$1,000, but other competing architects will receive no compensation other than the opportunity to win one of the prizes. Those invited to compete are:

Raymond H. Hood, Voorhees, Gmelin & Walker, Paul Cret, H. Van Buren Magonigle, James Gamble Rogers, Eliel Saarinen, Burnham Brothers, Nimmons, Carr & Wright, Holabird & Root, Bennett, Parsons & Frost, and Benjamin H. Marshall.

The committee has appointed Earl H. Reed, Jr., 435 North Michigan Avenue, as its professional adviser in the conduct of the competition. Those wishing to participate are instructed to file application with Mr. Reed. Drawings are to be sent to him and must be received not later than 12 o'clock noon on November 25, 1929.

WINS FIRST PRIZE

E. Mussa, member of the office staff of Bennett & Haskell, submitted the winning design for a music shell to be built in Memorial Park, Pasadena. The

competition was confined to members of the Pasadena Architectural Club. The jury consisted of Robert L. Dougherty, Ernest A. Batchelder, Myron Hunt, Edgar Maybury and Alson Clark. The shell will be 65 feet long and contain about 1200 square feet of stage space.

MORE ARCHITECTURAL EXHIBITS

A special exhibition of the work of David J. Witmer and Loyal F. Watson, Los Angeles architects, will occupy the exhibition rooms of the Architects building, Los Angeles, November 1st to November 15th. The last two weeks in November will witness the work of Wallace Neff, well-known Pasadena architect, on display in the same locality.

Messrs. Witmer and Watson recently won national recognition in the Small House Competition, held by the *House Beautiful* Magazine. They were two of the five California architects who won Honorable Mentions. They plan to display about 100 photographs and sketches of recent and proposed work. Witmer & Watson do not adhere to any one particular type but excel in various styles of architecture.

Wallace Neff's exhibit promises to be one of the most interesting and successful ones of the year. It will consist of sketches, photographs and colored renderings of some of the best known residences in Pasadena, Beverly Hills, Los Angeles and surrounding territory.

Richard Requa's exhibition of "Picturesque Old World Architecture," created quite a sensation in the Exhibition Rooms of the Architects building, October 15th to 30th. Mr. Requa is a San Diego architect, and recently spent considerable time in Southern Europe and Northern Africa, photographing historic places, graceful and unusual wrought iron balconies, stairways and gateways. He obtained some exquisite shots of the Alcazar Gardens, Seville, the Alhambra, interiors of old palaces, such as the Duke of Alba's in Seville, quaint little villages, and exteriors of stately cathedrals.

LOS ANGELES CLUB BUILDING

Plans are being prepared in the office of Roland E. Coate, Architects' building, Los Angeles, for a new \$300,000 building for the Automobile Club of Southern California.

HUNTINGTON PARK SCHOOL

George M. Lindsey and Erwood P. Eiden, associated, Los Angeles, have completed plans for the new Huntington Park Union High school building, estimated to cost \$300,000.

SOCIETY *and* CLUB MEETINGS

CONVENTION OF STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

THE second annual convention of the State Association of California Architects was held at the Beverly Hills Hotel October 11th and 12th. Architects from every section of the state were present and from the interest and enthusiasm manifested in the meetings, it would seem that the Association is destined to become an important and influential factor in the building activities of California.

* * *

The last two conventions have been so successful that the members have commenced to plan for the next one already. W. O. Raiguel, former San Francisco architect, and now practicing on the Monterey Peninsula, was present at the *Del Monte Next Year* convention to advance the cause of Del Monte as the place of meeting in 1930. Because of its beautiful scenery and romantic atmosphere the delegates were unanimous in their selection of Del Monte as the scene of the next convention.

* * *

Outstanding features of the Beverly Hills meeting were the endorsement of a proposal for compulsory education in the fine arts and architecture, approval of a movement to secure more practical curriculum and higher standards in architectural education, decision to publish standard documents for the special use of California architects in conformity to the amended law regulating the practice of architecture and a discussion of earthquake-resistant construction.

* * *

Three business sessions of the convention were held, two Friday and one Saturday morning. That on Friday morning was devoted to opening formalities, the *Three Business Sessions Held* address of the state executive chairman, A. M. Edelman, the report of the secretary-treasurer, W. I. Garren of San Francisco, and the appointment of committees. The delegates to the convention were welcomed to Beverly Hills by Treasurer Scanlan of the

Beverly Hills Chamber of Commerce, who was introduced by John C. Austin, vice-president of the Los Angeles Chamber of Commerce. The report of the secretary-treasurer showed a substantial balance in the funds of both the Southern and Northern Sections.

* * *

Announcement was made of the appointment of the following committees:

Credentials—Henry P. Sabin, Los Angeles, chairman; Ralph Flewelling, Beverly Hills, *Committees Are Named* and E. L. Norberg, San Mateo.

Resolutions—Henry C. Collins, Palo Alto, chairman; Leonard F. Starks, Sacramento; John S. Seibert, San Diego, and D. J. Witmer, Los Angeles.

Constitution and by-laws—R. C. Farrell, Los Angeles, chairman.

Place for 1930 convention—Harris C. Allen, San Francisco, chairman; E. F. Flanders, Sacramento; W. O. Raiguel, Del Monte; Myron Hunt, Los Angeles, and L. N. Crawford, Santa Monica.

* * *

Some of the high lights of President A. M. Edelman's address follow:

"The Committee on Professional Betterment has *President Given Fine Support* made a wonderful effort to organize a speakers' bureau; but I regret to report that they have not received the support they should have received from the members in the way of offers to appear before organizations for the purpose of speaking on architectural subjects. As a matter of fact, only about 5 per cent of the total membership replied to the questionnaire sent out by the speakers' bureau, asking the members for information on subjects on which they wished to talk. I recommend that this committee should receive your full co-operation which it must have, in order to be successful.

"Let me at this time also make special reference to the fine spirit of co-operation shown by Messrs. H. F. Withey, Sydney Orme, R. A. Curry, Kenneth Mac-

November, 1929

Donald, Jr., and Harry Hayden Whitely for the hearty response they have made in giving talks over the radio through the School of Architecture of the University of Southern California.

"The University of Southern California is endeavoring in this manner to interest and educate the public as to what architecture is; likewise the value of an architect's service and also how to protect the heritage of natural beauty of our state, and to assure the commonwealth that by engaging the services of able architects, structures designed by them will enhance and protect that natural endowment. I heartily endorse this movement and I recommend that all members who can should assist the University of Southern California in its endeavors.

* * *

"Our Legislative Committee has not been called on to do a great deal of work during the past year for the reason that prior to the time of its appointment the amendments to the new act had been very thoroughly discussed by the Executive Board; and after the appointment of the Legislative Committee it was felt that it would not be advisable to turn over to them at the eleventh hour any work in connection with amendments to the old act. But I can assure the committee that during the coming year its members will be asked to give the new act a thorough going over with a view of having amendments ready to present to the Legislature at its next session, and I recommend that all members send in to the committee such suggestions for amendments they may desire."

* * *

Edwin Bergstrom, one of the editors of the Uniform Building Code for California, was the principal speaker at the luncheon Friday noon. Mr. Bergstrom outlined the history of the movement for the uniform code which had its inception with the Pacific Coast Building Officials' Conference and was subsequently taken up by the California Development Association, now the State Chamber of Commerce, as a solution of a critical situation in the building field caused by exorbitant rates for earthquake insurance imposed by underwriters following the Santa Barbara earthquake. The immediate result of this action was a substantial reduction in earthquake insurance rates with a promise of further readjustment when the uniform code is completed and put into effect.

At the Friday afternoon meeting reports were heard from the Professional Betterment Committee followed by a discussion of earthquake-resistant construction. Lester W. Hurd, chairman of the committee for the Northern Section, presented the report of the Professional Betterment Committee, which explained at length what had been done in the matter of preparing standard documents for the special use of California architects under the revised law regulating the practice of architecture. The committee recommended that these documents be published either by the American Institute of Architects or by the state association, and urged that competent legal advice be secured in their final preparation.

Two reports were submitted from the Committee on Education, one by Geoffrey Bangs, chairman for the Northern District, and the other by Sumner M. Spaulding, chairman for the Southern Section. Mr. Bangs reviewed the committee's study of the architectural courses in various institutions and the work attempted along this line in the public schools, pointing out the opportunities for improvement.

Mr. Spaulding proposed in his report compulsory education in the fine arts and architecture and presented an argument of this plan of creating public appreciation of architecture.

Charles F. B. Roeth of Oakland presided at the Saturday morning session. The report of the Committee on Public Information was presented by the chairmen of the Northern and Southern Sections.

* * *

William Simpson of the William Simpson Construction Co., Los Angeles, spoke on "The New Contractors' License Law and Its Relations to the Architect."

He summarized the provisions of the law and urged the co-operation of architects in its enforcement. Answering questions regarding the law, Mr. Simpson stated the Registrar of Contractors had ruled that an architect supervising construction under segregated contracts would not be considered a contractor.

Resolutions were adopted accepting the recommendation of the Professional Betterment Committee, authorizing the executive board to arrange for publication of the standard documents for the special use of California architects, in event the American Institute of Architects does not desire to publish them; endorsing the recommendations of the Committee on Education and sanctioning the plan of the Committee on

Public Information for publication of an architectural page in leading daily papers in the north and the south.

* * *

A paper on "Earthquake-Resistant Construction—Rigid Type," prepared by Henry D. Dewell, consulting engineer of San Francisco, and one of the editors of the Uniform Building Code now being drafted under the auspices of the California State Chamber of Commerce, was read by Melville Dozier, Jr., member of the American Society of Civil Engineers, Mr. Dewell being unable to attend.

H. J. Brunnier of San Francisco, scheduled to speak for the "Rigid Type" of earthquake-resistant construction, declared that he was not prepared to commit himself to any particular type, contenting himself with pointing out the lack of convincing proof as to just what an earthquake force is and how to combat it. He said that even the Japanese engineers, who had taken such a definite stand in favor of rigid construction, had admitted they were not so certain that their views or their assumptions were correct. Mr. Brunnier recognized the advisability of designing against lateral force, but had no definite theory or suggestion to offer that he regarded as commensurate with the problems involved.

* * *

John J. Donovan of Oakland will head the organization for the coming year, having been elected chairman of the executive board. A. M. Edelman of Los Angeles, who served as chairman of the executive board of the State Association for the coming year are: John J. Donovan of Oakland, representing the State Board of Architectural Examiners, for the Northern District, and A. M. Edelman of Los Angeles, representing the board for the Southern District.

Members of the executive board of the State Association for the coming year are: John J. Donovan of Oakland, representing the State Board of Architectural Examiners, for the Northern District, and A. M. Edelman of Los Angeles, representing the board for the Southern District.

John C. Austin, Los Angeles, representing the American Institute of Architects for the Southern Section, and William I. Garren of San Francisco, representing the A. I. A. for the Northern Section.

Charles B. Roeth of Oakland and Mark T. Jorgensen of San Francisco representing the architects at large for the Northern Section.

Natt Piper of Long Beach and R. C. Farrell of Los Angeles, representing the architects at large for the Southern Section.

Carelton M. Winslow, member THE ARCHITECT AND ENGINEER editorial staff, chairman of the convention banquet, introduced John J. Donovan of Oakland as the toastmaster.

Banquet Proves Fitting Climax Among the guests were Senator Frank C. Weller of Glendale, Assemblyman James C. Crawford of Burbank, James F. Collins, director of the new State Department of Professional and Vocational Standards, under whose supervision the Act Regulating the Practice of Architecture will be administered, E. T. McGann, deputy city prosecutor of Los Angeles, and Bernard S. Wager, attorney for the State Board of Architectural Examiners, Southern District.

A. S. Nibecker of Los Angeles responded in a humorous vein to the toast, "The Ideal Established Architect," substituting for H. Roy Kelley who had been called east by the death of his mother. William I. Garren of San Francisco responded humorously to the toast, "The Ideal Editor," and Rupert Hughes of literary fame convulsed his audience with a rollicking ramble on "The Ideal Client."

A talk on "The Future Development of Washington," illustrated with pictures, given by Charles H. Cheney, chairman of the A. I. A. Committee on Regional and City Planning, concluded the program.

* * *

Responding to the toast, "The Ideal Established Architect," A. S. Nibecker, architect of the Los Angeles Board of Education, said:

The Ideal Established Architect "When I was commissioned yesterday to handle this subject, my first thought was that I need not prepare anything beforehand. I just felt that somehow here was a subject full of possibilities and one that anyone could enthuse over, "The Ideal Established Architect."

"Here is a fellow-creature endowed with the genius to create and to build for man's comfort—enterprise and aesthetic enrichment—the diverse work of architecture which we see today. Here was a man working for a noble ideal, without selfish thought of gain or fame, striving with untiring zeal to promote civic betterment and the fine arts.

"Here was a man who by his example hopes to promote education and creativeness by taking into his office the budding young graduate, bidding him to use his library, periodicals and pencils, and personally assisting him with problems in design, even on work which the young man has secured to do outside of working hours.

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"Here is a man who always offered to do a piece of work at a theoretically impossible fee; who *never* says to a prospective client who wishes to build a monumental structure for \$1.25 a square foot, 'Mr. Dough, we shall be glad to make you some free sketches; although we may have to modify the project slightly, I am sure it can be done for the money.'"

"He will often mention the name of some deserving young architect for a project which he considers too small for his attention, tactfully suggesting that he cannot afford to take anything less than a \$50,000 commission and offers only praise for the work of a competitive younger architect when his name is timidly mentioned by a client or contractor. Yes, here is a specialist doing only civic centers, Federal buildings, capital buildings, union stations, memorial buildings and churches.

"Arriving at his office at 10:30 a. m. each day except Wednesdays and Saturdays, which days are reserved entirely for golf and other forms of recreation, he greets the fair ones in the outer office with a smile and retires to his private office and first glancing over the schedule showing the value of work now in the office, he prepares to go through the jobs which are offered through the mail. Throwing aside the soap factory and various shops and flats, he checks the desirable projects and requests the daily report of the office manager.

"Then he is ready to interview callers, and they are always received in the order of their appearance, for he does not instruct his secretary to send in Mr. Spivens ahead of all the others just because he is Mr. Spivens of the Senate.

"Here is a man who is always glad to receive every draftsman seeking a job and never replies, 'but for the lack of space he would be glad to put him on.' He even listens to the suggestions of the structural and mechanical engineers that some reasonable space be allowed for beams, pipes, etc.; in fact, he even treats engineers as human beings—though some vague doubt may exist.

"Here is a drafting room equipped with plush top stools, lounges and radios for baseball results, where overtime is paid for double, and time clocks not allowed.

"He leaves the office at 12:30 p. m. and stops at the Wiltmore for lunch, proceeding to the Doe Rey Country Club for the afternoon's golf, where many large projects are born.

"Besides golf he has a hobby of some sort. It might be stamp collecting. This hobby can keep mind alert

and cause material men and others to wait long unless they have an appointment.

"There are many such "Ideal Established Architects," and it behooves all young architects starting on the hard climb to take heed and first get wealthy."

* * *

"The Ideal Young Architect" as seen by Sumner P. Hunt of Los Angeles, is described herewith:

"When I was a young architect, only a few years ago, it was the custom of preachers *The Ideal Young Architect* to use a text as an inspiration for their sermon. I am following that custom.

"When I was asked to say something about the ideal young architect, I was badly scared, as I always am when I am told I have to talk. While wondering what I should make the theme of my little talk I remembered something Robert Louis Stevenson had said that made a strong impression on me and which quotation I have always kept where I could look at it occasionally for the good it might do me. Here it is:

"To be honest, to be kind, to earn a little and spend a little less; to make, upon the whole, a family happier by his presence; to renounce when that shall be necessary and not be embittered; to keep a few friends, but these without capitulation; above all, on the same given conditions, to keep friends with himself—here is a task for all that man has of fortitude and delicacy."

"I believe the young architect who would adopt that quotation from Stevenson as a creed, substituting for the word 'family' his partners, his office force, his contractors and his clients, being honest and kind with them all, thus assuring that help from his associates without which no architect can succeed; spending a little less than he earns, because the knowledge of a small cash balance keeps one's mind free to think about worthwhile things; learning that when he has to give in to his clients' wishes it is at least an even bet that, if he is not embittered by this, his production will be the better for the change from his own conception; remembering that the object of creative art is to express something, and it might be a relief to observers to occasionally see a successful expression of the client's personality rather than the continued expression of a clever designer; keeping his friends without surrendering his own individuality; keeping his own self respect without being egotistical.

"This would be the ideal young architect and, providing he didn't become careless about his creed, he might grow up to be an ideal old architect."

Responding to the toast, "The Ideal Contractor," Albert J. Evers of San Francisco said:

"Some weeks ago a certain distinguished gentleman who presides over the destiny of one *The Ideal Contractor* of our leading architectural magazines called me up and told me that I would be expected to say something at the convention dinner; that the committee had or would assign me a subject. He may even have told me the subject, but, as one does, I neglected my duty and gave little further thought to the whole matter, postponing the evil day, as it were. Today, I tried to think of what to say; tonight I realize that I'm up a tree. Am I to attempt the impossible; am I to conjure up a word picture of a heavenly being never to be realized in the flesh? I now strongly suspect that the committee was kidding me when they asked me to speak on "The Ideal Contractor." They probably knew this abstract ideal business would stump me.

"Now, of course, we all know a lot of contractors, and taking them in a large way and as you find them, a pretty good lot of fellows they are too. But *an ideal contractor!* What do you suppose we would do with one if we caught him, and who would be the judge as to whether or not he were or were not 'ideal!' Probably standards would differ radically, and one who might seem absolutely perfect, ne plus ultra a veritable Sir Galahad to me, would be just another contractor to John Donovan or Pierre Davis. Some ideal seekers would undoubtedly want a contractor who would draw his own scale and full-size details and also superintend his own work.

"I think, however, we can all agree that there are certain things, certain qualities, which any and all contractors must have who wish to be ideal. Undoubtedly, they should have plenty of good cigars and a handy locker which unlocks easily. Those are inherent qualities which they must have. Then again, they should always agree with the architect's estimate and put in a figure a little below said estimate; and to be super-ideal, they should be like a pianola—you feed them a set of plans and the building is built without further worry on the part of the architect!

"But after you have these qualities enumerated what comes next? It is just possible we may have to establish different classes of ideals. Our ideal contractor for the neighbor's garage may not be the ideal contractor for that 20-story building we thought we had, but for which we are informed from reliable sources some other fellow is now finishing the drawings.

"What is an ideal, anyway? We've heard the word

so much tonight. Here it is on the program, again and again. I would say that an ideal is the dream of perfection—or something so good that it doesn't exist! But we can hope for it! Surely, hope springs eternal.

"And what about contractors? We think of building contractors, but really 'contractors' in a larger sense cover a much wider field. Almost any person who promises to do something for another is a contractor—provided the other fellow understands what it's all about and says, 'All right, go ahead.' When a youth says, 'Will you?' and she says, 'Yes' that's a contract and oh boy, it's a big one. If you consider it that way, maybe we're all contractors in one way or another.

"We all promise to do things for others and if they say 'O. K., go ahead,' we have a contract to fulfill, and bringing the old ideal subject up again, isn't the ideal contractor the man who does fulfill all of the obligations which he undertakes—to the owner, to his fellow-men and to himself? The best of professional service, ethical relations within his profession, unselfish work for his community, and a just return for honest effort—that seems an ideal contractor to me."

* * *

After a sightseeing trip in the afternoon the 200 delegates were entertained at the Uplifters' Club at Santa Monica, where one of its famous barbecued dinners was served. A peppy vaudeville show was later put on for the guests gathered in the great campfire circle, under the direction of W. J. Dodd.

NEW OFFICERS ELECTED

The new officers of the Society of Architects of Alameda County were elected and duly installed October 7th. They are: President, Ralph Wastell; Vice President, Edward T. Foulkes; Secretary-Treasurer, E. G. Bangs; Directors, Jas. T. Narbett and W. R. Yelland; Advisor for State Association, Chas. E. Roeth.

READ BOOKS ON ARCHITECTURE

Books of architecture form the subjects of the latest unit of the "Reading With a Purpose" series of the American Library Association to be placed on the shelves of the Livermore Library. The themes included are "The Enjoyment of Architecture," by Taitob F. Hamlin; "Form In Civilization," by W. R. Lethaby; "Architecture and Democracy," by Claude Bragdon; "The Autobiography of An Idea," by Louis H. Sullivan, and "A History of Architecture," by Fiske Campbell and George H. Egdell.

NORTHERN BIRDS FLY SOUTH

TIME—Wednesday afternoon, 3:00 P. M., October 9, 1929

LOCATION—Alameda Air Port, Oakland and San Francisco Station, Maddux Air Line

THE PARTY—William I. Garren, Mark T. Jorgensen, Albert J. Evers, Charles F. B. Roeth, Henry Collins, Harris Allen, Lester Hurd, E. G. Bangs, John J. Donovan, (the writer of this Log), and our genial and hospitable host, Harry Hennings of the General Roofing Company.

The bunch have asked me to write the log of our trip from Oakland to Los Angeles to attend the Second Annual Convention of the State Association of California Architects.

We arrived at the Alameda Air Port at 3 o'clock; scheduled to leave at 3:15 P. M. A few of us who have never been in the air inspect the ship and look upon it somewhat with awe, for our safety in a few minutes will be resting with it. It is a Ford, three motor, all metal ship, most modern in design and equipment.

From now on I shall record the log as events and incidents occur. Before doing that however, I must express the sensation as we step into the ship. One or two of us are a little apprehensive, slightly uncertain; we believe it will be all right but there seems to be a convicted man's doubt. We are not quite so sure that we want all the thrills that go with a ride and an event of this kind. However, we are off!

3:15 P. M.—We have left the ground this minute and are in the air, rising so easily and gradually that it seems as though we are sitting in a great arm chair being gently and gradually carried out into space by a hidden but friendly Hercules. The ease and steadiness is now a little alarming as the motion is so regular that the ship seems to have stopped. At this minute there is a feeling of apprehension, for as I look out the window from the rear seat, the pneumatic landing wheels have stopped turning and it appears as though we are stationarily suspended in the air and the two pilots are now looking at each other. They are in conversation, but it is not the kind of conversation I imagine. They are passing some remark, then another look from the window and the sense of danger has passed because I now see we are moving upward and forward. At the moment of which I just described, we were probably five hundred feet above the waters of the Bay and it seemed as though the ship had stopped and the next instant that we might go crashing down. But here again, is an example of hysteria born of fear.

It is now only a few minutes since we started and the indicators show we are traveling about seventy miles an hour and are about two thousand feet high and going higher.

3:30 P. M.—San Mateo is just below us, we are about 6300 feet high. San Mateo and Belmont where I have built buildings, usually requires an hour's journey by automobile and yet we have been only fifteen minutes in the air.

Now, we are just southwest of San Jose and jogging along at 110 miles an hour, still 6300 feet high. What a sight it is overlooking this rolling country of hills and valleys, which seem at this great height to be no more than minia-

ture hillocks and hollows; and the trees which we discern, appear to be hardly more than small miniature shrubs that might be used on a small model exhibiting a home and its garden.

The movement of the plane is so steady it is hard to realize we are moving at 110 miles an hour, due to the height from the land and the remoteness of landmarks which give relativity to motion.

Now, just a word about the plane. It is most interesting within and without—all metal, of Ford make and having three 425 horse power engines each costing approximately \$8000.00 and they tell me that the ship and its equipment costs in the neighborhood of \$60,000.00. From its accomplishment it is very easy to understand these costs. We have two pilots and a courier in uniform.

3:50 P. M.—We have just been served some ginger ale which is a little out of the ordinary, and at 6400 feet above the earth.

3:55 P. M.—or forty minutes since leaving the Airport. We are approaching what appears to be a spot between Gilroy and Salinas. Think of it! Almost a hundred miles in forty minutes; a journey I frequently make by automobile in approximately three hours.

Now the gang begins to sing and while there is a din from the motors, the merriment of the party rises above the noises of this mechanical contraption. We are having a loving cup now—a little more ginger ale and we know that the ship is safe. Wonderful ginger ale!

What a thrill we are getting. The gang is in good spirits and a genial host is busy most graciously to make us feel happy and especially the "keeper of the log," as they now call me, for he knew of my qualms and apprehensions and doubts about making the trip. For once we all share the thought we are on top of the world looking down upon it with wonder, knowing full well that we have to return to it if we are to get anywhere. Then comes a thought of those at home counting the minutes until we arrive at our destination when they will receive a telephone message from each and every man to his own telling them of the safe arrival and a word or two of the wonderful thrills. Then we sense something else, and that is that while they are dependent upon us for much of their happiness, we on board ship are very dependent upon them for our continued and permanent happiness.

4:27 P. M.—We are still on our way as we can tell by the shadow of the plane upon the ground and the hills and valleys that we pass. We are now passing over a small town, the name of which the courier doesn't know, but that doesn't matter. As we ride we seem to think the day of the train and the auto are not exactly gone, probably never will be gone, because there is a great convenience and pleasure to both, but it is a dead certainty to us here that for rapid and comfortable travel, the aeroplane has arrived.

A little incident comes up which adds to the interest. One of the party gets slightly indisposed, having partaken of corned beef and cabbage and I think ice cream just before leaving. Rare judgment on the wrong side of the diet list.

We have now risen to the height of 6500 feet. How infinite and great is it all! As we look down over the world and upon Mother Earth, we are passing over a most wonderful expanse of territory which is dotted with farms, ranches and homes, all of which we can see, because it is possible from this height to see within an area of a circle thirty to forty miles in radius. Land seems so abundant and so plentiful that it is almost unimportant; and it is from this distance and in our minds and estimation and that of others miles away, except to the man who owns it. All this gives us a sense of humility of mind as to our own unimportance and what a small part we play in the big game of life and how little we should think of ourselves. I suppose this may be counted a lesson leading towards the sense of realization of the many possibilities of man and life.

4:55 P. M.—Just passing Coalinga about two hundred miles from Oakland and San Francisco. We have been out just an hour and forty-five minutes. Think of it, a good day's travel by train and yet this distance and time is nothing to what has been done by flyers in endurance and speed tests.

Mark Jorgensen has just remarked that while we are traveling at the rate of 110 miles an hour it seems as though we are standing still because of the steadiness of the ship. The great height from the earth and the distance from us gives us very little sense of measurement.

Another word about the ship. It contains eleven seats for passengers and one for the courier who corresponds to the Pullman Conductor on a railroad train. On the interior there are electric lights controlled by the pilots. The seats are most comfortable and can be converted into reclining positions. Curiously to us, the baggage is stored in the wings and the windows are arranged at a level and below the eyes so that there is no obstruction to outward vision. We are all sensing a feeling of comfort and freedom from dust and a sense of safety that equals that of the train or perhaps the baby carriage.

5:19 P. M.—Approaching Bakersfield and the courier informs us that within an hour we will arrive in Los Angeles. He is wrong because we arrived just a few minutes after six o'clock. As we look down on Bakersfield it seems to us at this height to be a beautifully well-laid out city. The Airport from the distance is well done. Then we see the race track, the high school buildings, the athletic field and other evidences of man's work on the ground.

We are not far from the Ridge.

We learn that the names of the pilots are Captain George Allen and his co-pilot K. N. Blaney and the name of our obliging courier is John Dennis Williamson. I am struck with this middle name because I have had a number of relatives of that name and they were all good men.

We have just gotten word from the pilots that as we go over the Ridge we must sit down and remain seated until we are well passed it, also that we do this as we are about to land, which wont be long now. Someone remarks, "Do they know their stuff?" I and the rest of us say, "They do." How we appreciate their consideration and guardianship of our safety and we all realize that in caring for our lives they are caring for their own as well, for their lives are just as precious to them as ours are to us.

There seems to be quite a solicitation on the part of our host at this time that we shall be not only comfortable but well provided for in edibles and other delightful refresh-

ments so that while the sunset glow is cheering and cheerful, the glow within is almost as luminous.

5:30 P. M.—We are 8500 feet above hard pan and still going at 110 miles an hour with no tail wind, whatever that may be. Now we are above the clouds. How beautiful they look; like veils of clear white. We ask what does it all mean—it is more than a thrill, it is beyond that which we call wonderful. We are still above the clouds looking at earth through them, then we see off to the distance three chocolate drops—the peaks of the Tehachapi mountains poking their noses above the veils. At this moment we are directly over a great cloud or fog bank; it seems more like clouds than fog and these three points of the mountains stand out. We are about 1200 or 1500 feet above these peaks and they seem to be about 200 or 500 feet above the clouds. These peaks some day will have beacons on their tops to aid aviators in their flight.

We have passed the bank of clouds and are again viewing what seems to be a rolling, rollicking country covered with vegetation. We are all Balboas now, he had nothing on us in thrills of discoveries.

Now we come to another bank of clouds. This time they seem like finely-washed cotton just before it is converted into cloth; soft and downy-like. We observe the clouds moving in sections and quite companionable. Now again they seem like a veil shielding Mother Earth.

5:40 P. M.—Altitude 8500 feet. The ship is rocking a little but not unpleasantly. The courier tells me we have struck an air pocket. It is bumping a little but not much. We have dropped about 100 feet, the bumps are not hard to take and we still feel safe.

Down below we see a highway. It looks like a highway that might be forty feet wide because three automobiles are passing one point, yet the road seems hardly more than a dark gray thread.

We cross another road and now we are approaching the Ridge Route.

5:45 P. M.—Oh Boy! As we come over the mountains and see the sun set, what a wonderful view it is!

We are now crossing Antelope Valley, the western end of the Mojave Desert. This Valley once was famous for its antelopes. Thousands of them existed here probably for centuries, but they are now extinct and they tell me there are none to be found.

5:48 P. M.—We are at the summit of the Tehachapi mountains and are starting on a long, gradual glide towards Glendale and should be in within half an hour. We are still traveling over a rolling country and are passing close to the fatal St. Francis Dam and see the path of those waters which wrought such terrible destruction of life and property. Just to the left we see a white-coated building and are told that was the power house, a ghostly tombstone. We can see the clay deposits and the washouts and brown streaks and cuts left by the great flood of waters rushing to the sea.

Now we see the Richfield Oil Company's tower beacons, they are on the right with red Neon lights flashing to show the way to the airport.

Again we see the path of the destroying waters from the St. Francis Dam. They tell me the cuts in some places are two miles wide showing the tremendous force of the waters as they rushed to the sea.

5:55 P. M.—The motors are tuning down as now we are

gliding towards the airport, but only a little. We have dropped from an altitude of 9500 feet to 6000. Bill Garren tells me we are gliding at a 10% decline.

It is almost six o'clock. Dusk is falling rapidly and were it not for the lights below we would know not where we are. All below is now vaguely vanishing due to darkness. Everything seems spotty. Now we come to a great flood of light, we see indications of homes and regular markings of man's civilization and development.

Still the altitude is 6000 feet and the time is now 6:01 P. M. Saugus is on our right, lit like a Christmas tree. Rows and rows of lights mark the highways and the streets and again we are impressed with the development of land and earth by the hand of man.

Now we are over Van Nuys and Lankershim, small suburbs of Los Angeles. We are ten minutes out and about twenty miles away from Glendale, which is about twelve miles from the heart of Los Angeles. San Fernando is now on the right. Hollywood too, lighted like a fair, but we are lit too with enthusiasm and from the way we feel they must see us as clearly as we see them.

We are told to sit down. We are to land in a minute. We begin to circle and see Hollywood first on the right and then on the left. We are dropping. One more circle, then a bump up into the air, to miss something I suppose and now we are dropping again and are circling towards the left. We are about to land. No, the pilots are circling to get what might be called the lay of the wind so as to head into what they call a sock or bag, the idea being to head the plane right plumb into the wind so as to make the landing easy.

We are here.

We landed before we knew it. We are out of the plane and are thrilled once more to have our feet on good old earth where we belong, using the air as a means to get from one place to another. There is great handshaking, fine expressions of good fellowship. We rush to the telephones and messages are sent by ten good and hearty men to the loved ones at home that we are here and something has happened which is an epoch in our lives. We have made our first trip by the air route, at least most of us, and we are delighted we have had the experience and that we are safe.

And what a feeling of gratitude we hold towards our genial host who thought out all this and chartered the ship for us.

Now we pass on in automobiles to the hotel where we plan to have two day's convention of work, pleasure and meeting with the good fellows of the profession, for after this Convention we will arrive home with the realization that there are no better men in the world than our fellow architects; no finer characters nor can there be a finer sense of fellowship exemplified as they show towards one another.

The memories of all this are indelibly impressed. It was a great trip!

—J. J. D.

WASHINGTON STATE CHAPTER A. I. A.

The following members of the Washington State Chapter, Seattle, have been appointed on Institute Committees for the current year 1929-30: A. H. Albertson, special committee on constitution and by-laws; Charles H. Alden, standing committee on competitions and special committee on foreign relations; Charles H.

Bebb, special committee on historic monuments and natural resources; Carl F. Gould, standing committee on national capitol; John Graham, standing committee on contracts; Arthur L. Loveless, special committee on honor awards; James H. Schack, standing committee on practice; Joshua H. Vogel, standing committee on structural service, and Andrew Willatzen, special committee on industrial relations.

DESIGNED HALL DECORATIONS

Messrs. Ward and Blohme, San Francisco architects, designed the decorations for the American Bankers Association ball in the San Francisco Civic Auditorium last month. The aim of the architects was to maintain as near a typical California color scheme as was compatible with the occasion. The auditorium color scheme was orange and green with California poppies and redwoods. Orchestras were hidden in a cove of real redwoods with a background of green and gold curtains and the balcony and pipe organ facings were of light green and gold with shields of the American Bankers Association. There were thirty-three chandelier lights designed as baskets of poppies and supplemented with Chinese lanterns. The Polk street hall was the supper room. The side walls were hung with Spanish tapestries and urns of flowers from Golden Gate Park were used profusely. Larkin street hall was used as the promenade and lounge with tapestry decorations and bowers harmonizing with the general scheme. The three halls presented a very delightful aspect.

DOMINICAN COLLEGE BUILDING

Architect Arnold Constable has been commissioned by the Dominican College, San Rafael, to prepare plans for a new academic and library building.

Designed in the style of the Italian Renaissance, the building will be of reinforced concrete construction and will cost \$150,000. There will be twelve classrooms and a library. The latter will run through the second and third floors.

RICHMOND CANNERY

Plans are being prepared by William Knowles of Oakland, for a \$200,000 cannery at Richmond, Contra Costa county, California, for the Felice Perrelli Cannery Company, Inc., of San Jose and Gilroy.

DESIGNING SPANISH RESIDENCE

A \$25,000 Spanish type residence is planned for Hampton Highlands, Oakland, by W. E. Schirmer and Irwin M. Johnson, associated architects, 700-21st street, Oakland. Edward Babue is the owner.

NORTHERN CALIFORNIA CHAPTER, A. I. A.

The regular meeting of the Northern California Chapter, A. I. A., was held at the University of California in Berkeley on October 29th. Many members took the opportunity of visiting the various buildings about the campus prior to the hour of meeting.

Through the kindness of Warren Perry, it was arranged that the architects should meet at the Faculty Club where dinner was served.

The following members were present: Messrs. Allen, Gutterson, Bakewell, Coxhead, Howard, Bangs, Jorgensen, Maury, Bruce, Wyckoff, Hays, Appleton, Reimers, Ashley, Hildebrand, Wurster, Perry, Yeland, Klinkhart, Jeans, Hurd, Mitchell.

Guests present were: Messrs. Harry Hennings, Charles Roeth, Andrew Hass, Edwin H. Snyder, Arthur Jory and Morton Hansen.

The meeting was called to order by President Harris Allen. The minutes of the previous meeting were approved and published.

This being the annual meeting, Mr. Allen delivered his report and called for the reports of other officers and committees as follows: Secretary-Treasurer, James Mitchell; Committee on Competitions, William C. Hays, Chairman; Exhibits Committee, Raymond W. Jeans, Chairman; Historic Monuments Committee, Ernest Coxhead, Chairman; Fine Arts Committee, Fred Ashley, Chairman; Membership Committee, Henry Gutterson, Chairman; Industrial Relations Committee, Harry W. Michelson, Chairman.

The above reports were filed with the Secretary.

There being no nominations in addition to the ticket presented by the nominating committee at the September meeting, the following were unanimously elected to office: Frederick H. Meyer, President; Henry H. Gutterson, Vice-President; James H. Mitchell, Secretary-Treasurer; Harris C. Allen, Director, three years; Raymond W. Jeans, Director, three years.

A letter from Alfred Granger, chairman of the A. I. A. Committee on Plan of Washington, was read, wherein receipt was acknowledged of the Northern California Chapter's resolution pertaining to the Capitol development, and appreciation was expressed of the Chapter's attitude in this matter. Remarks were made by Mr. Howard and Mr. Hays.

It was moved, seconded and carried that a communication be sent to the San Francisco Junior Chamber of Commerce, requesting a conference to discuss the Fire Prevention and Safety Ordinance proposed by the Chamber.

It was moved, seconded and carried that a communication be sent to the San Francisco Board of Educa-

BOOK REVIEWS

By Edgar N. Kierulff

MECHANICAL EQUIPMENT OF BUILDINGS, (Vol. I—Heating and Ventilation) By Harding & Willard. Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York City. Price \$10.00.

This is the new second edition, completely rewritten and revised. All obsolete material has been eliminated and the most recent information, the result of research and new findings, has been set forth. An excellent handbook of reference on one of the vital problems of today's building. Engineers and specification writers should find this volume most valuable. The charts, diagrams and plates are well drawn.

WROUGHT IRON AND ITS DECORATIVE USE, by Maxwell Ayrton and Arnold Silcock, FF, R. I. B. A. Published by Charles Scribner's Sons, New York. Price \$14.50.

A large beautifully arranged book on an all absorbing topic. The place held by decorative wrought iron in today's architecture is a high one and good, sound books on the subject are invaluable. The illustrations are splendid. Sketches and details enliven the chapter on General History and that containing the introduction. The examples used have been drawn from various sources with English wrought iron predominating. The book is well bound, particularly for constant use and the type is of good size and readable. An altogether excellent addition to any architectural library.

tion expressing an endorsement by the Chapter of the policy of the board in the matter of school construction in San Francisco.

Warren C. Perry, as director of the School of Architecture, welcomed the architects and in speaking of the work being accomplished in the school, outlined the policy and methods of teaching, and the attitude of the students.

Adjourning to the Architecture Building, the members enjoyed moving about through the various rooms, where the students were at work, and then on to the exhibit hall where some time was spent in viewing the many projects, sketches, and order plates, on display.

Several very enjoyable bits of entertainment, and the pleasant mingling with the students, made the evening a very happy occasion.—J. H. M.

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(Organized 1857)

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RETAINER FEES

The following anecdote is illuminating, but is not particularly flattering to one of the world's oldest professions. It rather indicates the desirability of a retaining fee. One of the members of the Architects' League of Hollywood happened to overhear a conversation somewhat as follows: Two real estate salesmen were discussing the possibility of selling a piece of property. "Now to make this sale we'll have to get some sketches of the building to go on the lot," said the first high-pressure conversationalist. "I know," said the second, "but we'll have to pay for them and who's going to put up the money?" "Pay for them!" said the first scandalized geographical merchant. "I should say not, we'll get some poor sap of an architect to make them for nothing, and hand him a fast line about his getting the job."

STEEL OFFICIAL PROMOTED

M. E. Danford, for more than seven years works manager of the Middletown division of the American Rolling Mill Company has been appointed assistant vice president of the company.

Mr. Danford started his career with the American Rolling Mill Company in 1910 as superintendent of the open hearth department of the central works plant. He is a member of the Iron and Steel Institute and well known in the steel industry.

REDUCTIONS IN STEEL WINDOWS

Truscon Steel Company announces the following new discounts effective immediately to apply on their steel window and door products:

On Engineering Products

Orders listing \$ 0 to \$ 400	.....45%	Dis.
Orders listing 400 to 1,000	.....50%	Dis.
Orders listing 1,000 to 2,000	.....50%—5%	Dis.
Orders listing 2,000 to 3,000	.....50%—10%	Dis.
Orders listing 3,000 to 6,000	.....50%—15%	Dis.
Orders listing 6,000 to 10,000	.....50%—20%	Dis.
Orders listing 10,000 to 20,000	.....50%—25%	Dis.
Orders listing 20,000 and over	.....50%—30%	Dis.

On Commodity Products

Orders listing \$ 0 to \$ 300	.....List
Orders listing 300 to 500	.....10% Discount
Orders listing 500 to 1,000	.....15% Discount
Orders listing 1,000 to 2,000	.....20% Discount
Orders listing 2,000 and over	.....25% Discount

These new price levels constitute substantial reductions on commodity products which are effective to the consumer. These reductions are made possible by economies in production resulting from standardization and large volume, combined with lowered distribution costs.

The steel window industry is operating in a fair volume and a firm market. All manufacturers are co-operating in the new Solid Section Steel Window Association in eliminating bad business practices, in bringing about standardization and elimination of waste and in establishing business like distribution methods and policies.

NEW TILE COMPANY

Porstelain Tile Co., Ltd., announces the opening of permanent display rooms and offices at 66 Twelfth street, San Francisco, for the distribution and sale of Porstelain tile, a product made of porcelain enameled steel. The tile is strong and durable and is free from cracking or chipping. Once installed it will retain its original color and beauty, declare the manufacturers. The new company is headed by Joseph B. Fratessa, president and Albert L. Anderson, vice-president. J. S. Fratessa is construction superintendent for the company.

ENGINEERS' REGISTRATION BOARD

H. J. Brunner, San Francisco structural engineer and president of the California State Automobile Association, has been named by Governor Young as one of three members of the first state board for registration of civil engineers.

Albert Givan of Sacramento, chief engineer and general manager of the Sacramento Utility District, and Donald M. Baker, consulting engineer of Los Angeles, are other members of the board.

The board members will receive no salary. However, the law appropriates \$3600 a year for a secretary who may or may not be a member of the board.

WHAT'S WHAT IN MATERIALS

WHO'S WHO AMONG CONTRACTORS

ALPHABETICAL LIST OF ADVERTISERS ON PAGE 126

ACOUSTIC CORRECTIONS

Johns-Manville Company, all principal Coast cities.

R. Gustavino Co., represented by Albert B. Mann, Engineer, 417 Crocker Bldg., San Francisco.

"Acousti-Celotex," Western Asbestos Magnesia Co., 25 South Park, San Francisco.
American Hair & Felt Co., 1615 Ditman St., Los Angeles.

AIR COMPRESSORS

Duxton, sold by Simonds Machinery Co., 816 Folsom Street, San Francisco; 520 East 4th Street, Los Angeles.

ACOUSTIC DEADENING

American Hair & Felt Co., 1615 Ditman St., Los Angeles.

ART METAL

Federal Ornamental Iron and Bronze Co., 16th St., and San Bruno Ave., San Francisco.
Michel & Pfeiffer Iron Works, 1415 Harrison Street, San Francisco.

ARCHITECTURAL ENCAUSTIC TILE

Mangrum-Hollbrook Co., Inc., 1235 Mission Street, San Francisco.

ARCHITECTURAL BRONZE

Elevator Supplies Company, Inc., Hoboken, N. J.; 186 Fifth Street, San Francisco; 1129 S. Hope Street, Los Angeles.

Zouri Drawn Metals Company, Chicago Heights, Illinois, (Zouri Company of California, 1208 Howard St., San Francisco.

ARCHITECTURAL TERRA COTTA

N. Clark & Sons, 116 Natoma Street, San Francisco.

Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland
W. S. Dickey Clay Mfg. Co., San Francisco and Oakland.

ASBESTOS MATERIALS

Johns-Manville, Inc., of California, 159 Montgomery St., San Francisco. Coast Factory at Pittsburg, Calif.

Western Asbestos Magnesia Company, 25 South Park, San Francisco.

Jones Bros. Asbestos Supply Co., Inc., 500 Second St., San Francisco.

ASPHALT ROOFING

El Rey Products Company, 1633 San Pedro St., Los Angeles; 960 Seventh St., San Francisco; 65 Columbia St., Seattle; 850 E. Taylor St., Portland.

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle.

AUTOMATIC THERMOSTAT CONTROLS

Majestic Electric Appliance Company, 590 Folsom Street, San Francisco.

BEDS—WALL—CONCEALED, ETC.

Marshall & Stearns Co., Fhlan Bldg., San Francisco.

BLACKBOARDS

C. F. Weber & Co., 601 Mission St., San Francisco, Los Angeles and Reno, Nevada.

BOILERS

Kewanee Boiler Co., 635 Mission St., San Francisco.

Kewanee Water Supply System, Simonds Machinery Co., 816 Folsom St., San Francisco.

Consolidated Steel Corporation, 1290 N. Main St., Los Angeles.

BONDS FOR CONTRACTORS

Bonding Company of America, Kohl Bldg., San Francisco.

Globe Indemnity Co., 444 California St., San Francisco.

Fidelity & Casualty Co. of New York, Balfour Bldg., San Francisco.

Standard Accident Insurance Company, California Commercial Union Building, San Francisco.

BRASS GOODS, CASTINGS, ETC.

H. Mueller Manufacturing Co., 1072 Howard St., San Francisco.

BRICK—FACE, COMMON, ENAMEL, GLAZED

Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.
N. Clark & Sons, 116 Natoma Street, San Francisco.

W. S. Dickey Clay Mfg. Co., San Francisco and Oakland.

Port Costa Brick Works, 6th and Berry Sts., San Francisco.

McNear Brick Company, Monadnock Bldg., San Francisco.

Richmond Pressed Brick Co., Sharon Bldg., San Francisco. Plant at Richmond, Cal.
Cannon & Co., Sacramento; 517 Call Bldg., San Francisco; Builders Exchange Bldg., Oakland.

BRICK AND CEMENT COATING

The Paraffine Companies, Inc., 475 Brannan St., San Francisco.

BUILT-IN FURNITURE

Built-in Fixture Company, 2608 San Pablo Ave., near Dwight Way, Berkeley, and Hoosier Store, Pacific Bldg., San Francisco.

BUILDERS' HARDWARE

"Corbin" hardware, sold by Palace Hardware Company, 581 Market St., San Francisco.

Richards-Wilcox Mfg. Co., Aurora, Ill., represented by Ewing-Lewis Company, Hunter-Dulin Bldg., San Francisco, and 408 S. Spring Street, Los Angeles.

BUILDING PAPERS

El Rey Products Company, 1633 N. San Pablo Street, Los Angeles; 960 Seventh Street, San Francisco; 65 Columbia Street, Seattle; 850 E. Taylor St., Portland, Ore.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Pacific Materials Co., 444 Market St., San Francisco.

CARPETS AND RUGS IMPORTED

Reed-Costikyan, Inc., 485 Fifth Ave., New York City, with offices at 442 Post St., San Francisco and 816 South Figueroa St., Los Angeles.

CEMENT

Atlas White, manufactured by The Atlas Portland Cement Company, 25 Broadway, New York.

Hydro-plastic cement, manufactured by Southwestern Portland Cement Company, 356 S. Spring St., Los Angeles

Pacific Portland Cement Co., Hunter-Dulin Bldg., San Francisco, also Portland, Ore., Los Angeles and San Jose, Calif.
Santa Cruz Portland Cement Company, Crocker Building, San Francisco.

CEMENT EXTERIOR WATERPROOF PAINT

Bass-Heuter Paint Company, San Francisco, Los Angeles, Portland, Seattle.

The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

CEMENT TESTS—CHEMICAL ENGINEERS

Robert W. Hunt Co., 251 Kearny Street, San Francisco.

CLAY PRODUCTS

N. Clark Sons, 116 Natoma Street, San Francisco.

Cannon & Co., Sacramento, Cal.; 517 Call Bldg., San Francisco.

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Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.

United Materials Co., Sharon Bldg., San Francisco.

COMPOSITION ROOFING

El Rey Products Company, 1633 San Pedro St., Los Angeles; 960 Seventh St., San Francisco; 65 Columbia St., Seattle; 850 E. Taylor St., Portland.

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle.

CONCRETE OR CEMENT HARDENER

Gunn, Carle & Co., Inc., 444 Market St., San Francisco.

CONCRETE REINFORCING

Soule Steel Company, Kialto Building, San Francisco.

Gunn, Carle & Co., Inc., 444 Market St., San Francisco.

Clinton Welded Wire Fabric, Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.

Pacific Coast Steel Company, Hunter-Dulin Bldg., San Francisco.

CONTRACTORS—GENERAL—

Adam-Arras Co., 185 Stevenson St., San Francisco.

F. R. Siegrist Co., 604 Williams Bldg., San Francisco.

Spivock & Spivock, Hobart Building, San Francisco, and 412 Water St., Oakland.

Vort & Davidson, Inc., 185 Stevenson St., San Francisco, and Builders Exchange, Oakland.

K. E. Parker Company, Inc., 135 South Park, San Francisco.

Barrett & Hilp, 918 Harrison Street, San Francisco.

Lindgren-Swinerton, Inc., Standard Oil Bldg., San Francisco.

R. W. Littlefield, 337 17th Street, Oakland.
Dinwiddie Construction Co., Crocker Bldg., San Francisco.

Clinton Construction Company, 923 Folsom St., San Francisco.

Monson Bros., 475 Sixth St., San Francisco.

McLeran & Co., R., Hearst Bldg., San Francisco.

Chas. D. Vezey & Sons, Builders Exchange Bldg., Oakland.

Jacks & Irvine, Call Bldg., San Francisco.

Industrial Construction Company, 815 Bryant Street, San Francisco.

Anderson & Ringrose, 320 Market Street, San Francisco.

G. P. W. Jensen, 320 Market Street, San Francisco.

CORK TILE

Congoleum-Nairn, Inc., D. N. & E. Walter & Co., San Francisco, and Broadway Department Store, Los Angeles.

Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

CRIBBING FOR RETAINING WALLS

Massey Concrete Products Corporation, Colton California and Spokane, Washington.

DAMP-PROOFING AND WATER-PROOFING

Western Asbestos Magnesia Company, 25 South Park, San Francisco.

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle.

Gunn, Carle & Co., 444 Market St., San Francisco.

DEADENING MATERIAL

"Insulite" Western Asbestos Magnesia Co., 25 South Park, San Francisco.

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle.

American Hair & Felt Co., 1615 Ditman St., Los Angeles.

Gunn, Carle & Co., 444 Market St., San Francisco.

DEADENING MATERIAL

"Torfoleum" manufactured by Mailliard & Schmiedel, 203 California St., San Francisco.

DOOR CHECKS—CONCEALED

The Condoor Company, 58 Sutter St., San Francisco.

DOOR CLOSERS

Norton door closer, sold by Nissen-Currier Co., 265 Minna St., San Francisco, and 302 Colo Bldg., Los Angeles.

DOOR HANGERS

Richards-Wilcox Mfg. Co., The Ewing-Lewis Co., Hunter-Dulin Bldg., San Francisco.

DOORS—FIREPROOF

Detroit Steel Products Company, 251 Kearny St., San Francisco.

Kinnear Mfg. Co., represented by Gunn, Carle & Co., 444 Market St., San Francisco.

DOORS—FREIGHT ELEVATOR

The Peelle Co., Brooklyn, N. Y., represented by Persons Dwan & Co., 534 Sixth Street, San Francisco.

DOORS—HOLLOW METAL

Fire Protection Products Co., 1101 Sixteenth St., San Francisco.

Dahlstrom Metallic Door Co., Jamestown, N. Y., Coast plant, 3350 E. Slauson Ave., Los Angeles.

Forderer Cornice Works, Potrero Ave., San Francisco.

DOORS—ROLLING

Jas. G. Wilson Corporation, 605 Market St., San Francisco.

Kinnear rolling steel doors, sold by Gunn, Carle & Co., 444 Market St., San Francisco.

DRAIN PIPE AND FITTINGS

"Corrosion" Acid Proof manufactured by Pacific Foundry Co., Harrison and 18th Sts., San Francisco.

DRAPERIES AND WINDOW SHADES

D. N. & E. Walter & Co., 562 Mission Street, San Francisco.

DRINKING FOUNTAINS

Haws Sanitary Drinking Faucet Co., 1808

Hammont St., Berkeley, and C. F. Weber & Co., San Francisco and Los Angeles.

Standard-Pacific Plumbing Fixtures, 349 Sutter St., San Francisco; 919 W. 7th St., Los Angeles; 1301 5th Ave., Seattle.

Wash.; 48 5th St., Portland, Ore.

DUMB WAITERS

Spencer Elevator Company, 166 7th St., San Francisco.

WHAT'S WHAT IN MATERIALS

WHO'S WHO AMONG CONTRACTORS

ALPHABETICAL LIST OF ADVERTISERS ON PAGE 126

- Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.
- ELECTRICAL CONTRACTORS**
Butte Electrical Equipment Company, 2014 Folsom St., San Francisco.
Charles A. Langlais, 472 Tehama St., San Francisco.
H. C. Reed & Co., 389 Clementina St., San Francisco.
- ENGINEERS—CONSULTING, ELECTRICAL, MECHANICAL**
Hunter & Hudson, 41 Sutter Street, San Francisco.
Charles T. Phillips Company, Bank of Italy Bldg., San Francisco, and Roberts Bldg., Los Angeles.
- ELECTRIC AIR AND WATER HEATERS**
Majestic Electric Appliance Company, 590 Folsom Street, San Francisco.
Wesix Heater Company, Rialto Building, San Francisco.
Sandoval Sales Company, 415 Jessie Street, San Francisco.
Weir Electric Appliance Company, 26th and Adeline Streets, Oakland.
- ELECTRIC REFRIGERATION**
General Electric Refrigerator, George Belsey Company, Los Angeles, Distributor, Stores in Los Angeles, Pasadena, Glendale, Hollywood, Santa Monica and Monrovia; L. H. Bennett, Northern California Distributor, 2112 Broadway, Oakland; 318 Stockton St., San Francisco.
Wayne Home Equipment Company, Fort Wayne, Indiana, represented by Hill and Stoops, 4214 Broadway, Oakland, Calif.
- ELECTRICAL SUPPLIES AND EQUIPMENT**
The Frink Company, 10th Ave. at 24th St., New York; 77 O'Farrell St., San Francisco
Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco.
Frank Adam Electric Company, 340 Fremont St., San Francisco, and 1127 Wall Street, Los Angeles; general offices, St. Louis, Mo.
Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., and First National Bank Bldg., San Francisco.
Sterling Bronze Co., Inc., 18 East 40th St., New York.
- ELECTROLIERS**
Northern Street Lighting Company, 389 Clementina Street San Francisco.
- ELEVATOR ENTRANCE DOORS**
Dahlstrom Metallic Door Company, Jamestown, N. Y., Pacific Coast plant, 3350 East Slauson Ave., Los Angeles.
- ELEVATORS—PASSENGER AND FREIGHT**
Otis Elevator Company, Stockton and North Point, San Francisco.
Spencer Elevator Company, 166 Seventh St., San Francisco.
Westinghouse Electric and Manufacturing Company, First National Bank Bldg., San Francisco, general offices and works, Pittsburgh, Pa.
Consolidated Steel Corporation, 1200 N. Main St., Los Angeles.
- ELEVATOR SIGNALS, DOOR EQUIPMENT**
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.
The Peelle Co., Brooklyn, N. Y., represented by Persons Dwan & Co., 534 Sixth Street, San Francisco.
Richards-Wilcox Mfg. Co., represented by Ewing-Lewis Company, Hunter-Dulin Bldg., San Francisco; 408 S. Spring Street, Los Angeles.
- ENAMELS**
Gold Seal Enamel—Bass-Heuter Paint Company, San Francisco, Los Angeles, Portland, Seattle.
- EXIT DEVICES**
Von Duprin, manufactured by Vonnegut Hardware Company, Indianapolis; sold by D. A. Pancoast Co., 605 Market St., San Francisco.
- FENCES—WIRE AND IRON**
Michel & Pfeffer Iron Works, Harrison and Tenth Sts., San Francisco.
- FIRE EXTINGUISHING APPARATUS**
"Lux" System, represented by Hough and Eberth, Inc., 519 Robert Dollar Building, San Francisco.
- FIRE DETECTING APPARATUS**
"Herby" and "Selex" Systems, represented by Hough and Eberth, Inc., 519 Robert Dollar Building, San Francisco.
- FIRE ESCAPES**
Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
- Western Iron Works, 141 Beale St., San Francisco.
- FIRE SPRINKLERS—AUTOMATIC**
Fire Protection Engineering Co., 407 Exchange Building, 369 Pine Street, San Francisco.
Grinnell Company of the Pacific, Fifth and Brannan Sts., San Francisco.
- FIXTURES—BANK, OFFICE, STORE, ETC.**
Home Manufacturing Company, 562 Brannan St., San Francisco.
Mullen Manufacturing Co., 64 Rausch St., San Francisco.
Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.
The Fink & Schindler Co., 228 13th St., San Francisco.
- FLOORS—CORK, LINOLEUM, ETC.**
Congoleum-Nairn, Inc., D. N. & E. Walter & Co., San Francisco, and Broadway Department Store, Los Angeles.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland, Seattle.
- FLOOR HARDENER**
Master Builders Company, Mills Bldg., San Francisco; 426 So. Spring Street, Los Angeles; also Seattle, Portland and Spokane.
- FLOORS—REDWOOD BLOCK**
Redwood Block Floor Company, Bryant at 18th St., San Francisco.
Pacific Redwood Floor Company, 311 California St., San Francisco, and 420 Grant Bldg., Los Angeles.
- FLOOR CLIPS**
Bull Dog Floor Clip Co., 557 Market St., San Francisco and Hibernian Bldg., Los Angeles.
- FLOORS—HARDWOOD**
Inlaid Floor Company, 600 Alameda Street, San Francisco and 4067 Watts Street, Emeryville, Oakland.
"Perfection" Brand Oak Flooring, Arkansas Oak Flooring Co., Pine Bluff, Arkansas.
J. E. Higgins Lumber Company, San Francisco.
White Brothers, 5th and Brannan streets, San Francisco; 500 High Street, Oakland.
Cellized Oak Flooring, Inc., Memphis, Tenn. Represented by Geo. H. Brown Hardwood Company, Oakland.
- FREIGHT ELEVATOR DOORS**
The Peelle Co., Brooklyn, N. Y., represented by Persons Dwan & Co., 534 Sixth Street, San Francisco.
- FURNITURE—OFFICE, SCHOOL, CHURCH, THEATER**
The Fink & Schindler Co., Inc., 218-68 13th St., San Francisco.
Home Mfg. Co., 552 Brannan Street, San Francisco.
Mullen Mfg. Co., 64 Rausch Street, San Francisco.
C. F. Weber & Co., San Francisco, Los Angeles, and Phoenix, Ariz.
- GENERAL CONTRACTORS**
Spivock & Spivock, Hobart Building, San Francisco.
- GLASS**
Cobbledick-Kibbe Glass Co., 666 Howard St., San Francisco.
- GRAVEL AND SAND**
Del Monte White Sand, Del Monte Properties Co., Crocker Bldg., San Francisco.
- GYMNASIUM EQUIPMENT—LOCKERS, ETC.**
Elbery Arms Co., 583 Market St., San Francisco.
- HANGERS—RELIANCE—**
Graham & Norton Company, 213 Minna Street, San Francisco.
- HARDWARE**
Vonnegut hardware, sold by D. A. Pancoast Company, 605 Market St., San Francisco.
Palace Hardware Company, 581 Market St., San Francisco.
Richards-Wilcox Mfg. Co., represented by Ewing-Lewis Company, Hunter-Dulin Bldg., San Francisco; 408 S. Spring Street, Los Angeles.
- HARDWOOD LUMBER**
J. E. Higgins Lumber Co., San Francisco.
G. H. Brown Hardwood Lumber Co., 47th Ave. at E. 12th Street, Oakland.
White Brothers, 5th and Brannan streets, San Francisco; 500 High Street, Oakland.
- HEATING—COAL FURNACE**
Montague Range & Furnace Company, 376 Sixth St., San Francisco.
- HEATING—ELECTRIC**
Wesix Electric Air Heaters, manufactured and distributed by Wesix Heater Company, Rialto Building, San Francisco.
Apex Air and Water Electric Heaters, Sandoval Sales Company, 115 Jessie Street, San Francisco.
Majestic Electric Appliance Co. (bathroom heater), 690 Folsom St., San Francisco.
Weir Electric Appliance Company, 26th and Adeline Streets, Oakland.
- HEATING—STEAM**
Warren Webster & Company, Sharon Bldg., San Francisco, and 306 Crocker St., Los Angeles.
- HEATING CONTRACTORS**
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St., San Francisco.
Hateley & Hateley, Mitau Bldg., Sacramento.
Mangrum & Otter, 827-831 Mission St., San Francisco.
W. H. Picard, 5656 College Ave., Oakland.
Luppen & Hawley, 3126-J St., Sacramento.
William F. Wilson Co., 240 Fourth St., San Francisco.
James A. Nelson, Inc., Howard and Tenth Sts., San Francisco.
Scott Company, 243 Minna St., San Francisco.
Geo. A. Schuster, 4712 Grove St., Oakland.
Herman Lawson, 465 Tehama Street, San Francisco.
- HEATING EQUIPMENT**
E. A. Cornely, Inc., 1452 Bush Street, San Francisco.
Illinois Engineering Co., 417 Market St., San Francisco.
Warren Webster & Company, Sharon Bldg., San Francisco, and 306 Crocker St., Los Angeles.
James A. Nelson, Inc., Howard and Tenth Sts., San Francisco.
B. F. Sturtevant Co., Monadnock Bldg., San Francisco; Los Angeles, Portland, Seattle.
- HOLLOW BUILDING TILE (Burned Clay)**
Cannon & Co., plant at Sacramento; Call Bldg., San Francisco.
N. Clark & Sons, 112-116 Natoma Street, San Francisco; works, West Alameda, California.
Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.
W. S. Dickey Clay Mfg. Co., San Francisco and Oakland.
- HOSE**
The American Rubber Mfg. Co., Park Ave. and Watts St., Oakland, Calif.
- HOSE RACKS AND REELS**
American Rubber Mfg. Co., San Francisco, Oakland, Los Angeles and Portland, Ore.
- HOSPITAL SIGNAL SYSTEMS**
Chicago Signal Co., represented by Garnett Young & Co., 390 Fourth St., San Francisco.
- INCINERATORS**
The Goder, sold by M. E. Hammond, Mezzanine, Pacific Bldg., San Francisco.
Kewanee Boiler Co., 635 Mission Street, San Francisco.
- INDUSTRIAL LIGHTING EQUIPMENT**
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Bldg., San Francisco.
- INSPECTIONS AND TESTS**
Robert W. Hunt Co., 251 Kearny Street, San Francisco.
- INSULATION**
"Insulex" manufactured by Pacific Portland Cement Co., Hunter-Dulin Bldg., San Francisco, & 1200 Chapman Bldg., Los Angeles.
Western Asbestos Magnesia Co., 25 South Park, San Francisco.
American Hair and Felt Company, 1615 N. Ditman St., Los Angeles.
Gunn, Carle & Co., 444 Market St., San Francisco.
"Torfoleum" manufactured by Mailliard & Schmiedell, 203 California St., San Francisco.

WHAT'S WHAT IN MATERIALS

WHO'S WHO AMONG CONTRACTORS

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- INSULATED WIRE**
Hazard Insulated Wire Works, Wilkes-Barre, Pa., Russ Building, San Francisco, Seattle and Los Angeles.
- KITCHEN EQUIPMENT**
General Electric Refrigerator, L. H. Bennett, Rialto Building, San Francisco, and the George Belsey Company, Architects Building, Los Angeles.
James A. Nelson, Inc., Howard and Tenth Sts., San Francisco.
Mangrum Holbrook Company, 1235 Mission St., San Francisco.
- LACQUERS**
The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland and Seattle.
Bass-Hueter Paint Company, San Francisco, and all principal Coast cities.
- LATHING MATERIAL—WIRE, METAL, ETC.**
Genfire Steel Co., Sheldon Bldg., San Francisco; Builders' Exchange, Oakland.
Truscon Steel Co., Sharon Building, San Francisco.
Soule Steel Company, Rialto Building, San Francisco, and Los Angeles.
- LAUNDRY MACHINERY AND EQUIPMENT**
American Laundry Machinery Company, 921 Howard Street, San Francisco.
Troy Laundry Mach'y Co., Ltd., East Moline, Ill., and 951 Mission St., San Francisco.
Gunn, Carle & Co., 444 Market St., San Francisco.
- LIGHTING FIXTURES, OUTLETS, ETC.**
Westinghouse Electric and Mfg. Co., First National Bank Bldg., San Francisco; general offices and works, Pittsburgh, Pa.
The Frink Company, 369 Lexington Avenue, New York, and principal Coast cities.
Sterling Bronze Co., Inc., 18 East 40th St., New York.
- LIME PRODUCTS**
United States Lime Products Corp., San Francisco, Los Angeles, Portland, Ore.
- LINOLEUM**
William Volker & Co., 631 Howard St., San Francisco, and 2301 E. 7th St., Los Angeles.
The Paraffine Companies, factory in Oakland; office, 475 Brannan Street, San Francisco.
W. & J. Sloane, 216 Sutter Street, San Francisco.
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.
Bonded Floors—Sealex Linoleum and Tile manufactured by Congoleum-Nairn, Inc., D. N. & E. Walter & Co., San Francisco; Broadway Department Store, Los Angeles.
- LUMBER**
G. H. Brown Hardwood Company, 1044 4th Ave., Oakland.
Pacific Mfg. Co., San Francisco, Oakland, Los Angeles and Santa Clara.
Santa Fe Lumber Co., 16 California St., San Francisco.
J. E. Higgins Lumber Company, 423 Sixth St., San Francisco.
Sunset Lumber Company, First and Oak Sts., Oakland.
White Brothers, 5th and Brannan Sts., San Francisco, and 500 High St., Oakland.
E. K. Wood Lumber Co., Frederick and King streets, Oakland.
- MAIL CHUTES**
Cutler Mail Chute Co., represented by Price Building Specialties Co., 683 Howard St., San Francisco and Continental Building Specialties Co., 1216 Hibernian Bldg., Los Angeles.
- MARBLE**
American Marble Company, 25 Columbus Square, San Francisco.
Cervi Marble Company and Mosaic Co., 1721 San Bruno Avenue, San Francisco.
Ray Cook Marble Company, foot of Powell St., Oakland.
Joseph Musto Sona-Keenan Co., 535 N. Point St., San Francisco.
Vermont Marble Co., Coast branches, San Francisco, Los Angeles and Tacoma.
Tompkins-Kiel Marble Company, 505 Fifth Ave., New York; also Chicago, Philadelphia and San Francisco.
- MASONRY ANCHORS**
Steelform Contracting Company, Monadnock Bldg., San Francisco; Edwards & Willey Bldg., Los Angeles.
- METAL COVERED DOORS**
Fire Protection Products Co., 1101 Sixteenth St., San Francisco.
Forderer Cornice Works, Potrero Ave., San Francisco.
- MILLWORK**
The Fink & Schindler Co., Inc., 218-68 13th St., San Francisco.
Pacific Mfg. Co., San Francisco, Los Angeles, Oakland and Santa Clara.
Sunset Lumber Company, First and Oak Streets, Oakland.
Lannon Bros. Mfg. Co., Fifth and Magnolia Sts., Oakland.
Atkinson Mill & Mfg. Co., 2985 Chapman Avenue, Oakland.
Chicago Lumber Company of Washington, 66th and 69th Aves and Spencer Street, Oakland.
E. K. Wood Lumber Co., Frederick and King streets, Oakland.
- MONEL METAL**
"Inco" brand, distributed on the Pacific Coast by the Pacific Foundry Company, Harrison and 18th Streets, San Francisco, and Eagle Brass Foundry, Seattle, Wash.
- OIL BURNERS**
Rayfield Oil Burner, Coast Distributors, E. A. Cornely, Inc., 1452 Bush Street, San Francisco.
S. T. Johnson Company, 1337 Mission St., San Francisco; 940 Arlington St., Oakland; 1729 Front St., Sacramento, and 230 N. Sutter St., Stockton.
Vaughn-G. E. Witt Co., 4224-28 Hollis Street, Emeryville, Oakland.
W. S. Ray Mfg. Company, 170 Sutter St., San Francisco, and 2206 San Pablo Ave., Oakland.
Coen Company, 112 Market Street, San Francisco.
Wayne Home Equipment Company, Fort Wayne, Indiana, represented by Hill and Stoops, 4214 Broadway, Oakland, Calif.
- ORNAMENTAL IRON AND BRONZE**
Federal Ornamental Iron and Bronze Co., 16th St. and San Bruno Ave., San Francisco.
Michel & Pfeiffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
- PAINTING, DECORATING, ETC.**
The Tormey Co., 681 Geary St., San Francisco.
A. Quandt & Sons, 374 Guerrero Street, San Francisco.
- PAINTS, OILS, ETC.**
The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland and Seattle.
Bass-Hueter Paint Company, San Francisco, Los Angeles, Portland, Seattle.
General Paint Company, Los Angeles, San Francisco, Oakland, Seattle, Spokane and Portland.
- PANEL BOARDS**
Drendell Electric & Mfg. Co., 1760 Howard St., San Francisco.
Frank Adam Electric Company, 340 Fremont St., San Francisco, and 1127 Wall Street, Los Angeles; general offices, St. Louis, Mo.
Westinghouse Elec. and Mfg. Co., First National Bank Bldg., San Francisco; general offices and works, Pittsburgh, Pa.
- PANELS—HARDWOOD**
White Brothers, 5th and Brannan Sts., San Francisco, and 500 High St., Oakland.
- PANIC EXIT DEVICES**
Von Duprin, manufactured by Vonnegut Hardware Company, Indianapolis; sold by D. A. Pancoast Co., 605 Market Street, San Francisco.
- PARTITIONS—MOVABLE OFFICE**
Dahlstrom Metallic Door Company, Jamestown, N. Y., Coast plant, 3350 E. Shaulson Ave., Los Angeles.
Pacific Mfg. Co., Monadnock Building, San Francisco; factory at Santa Clara.
- PIPE—WROUGHT IRON**
A. M. Byers Co., Pittsburgh, Pa., and Financial Center Bldg., Los Angeles.
Reading Iron Co., Reading, Pa., and Balboa Bldg., San Francisco.
- PLASTER**
"Empire," manufactured by Pacific Portland Cement Co., Hunter-Dulin Building, San Francisco, Portland, San Jose and Los Angeles.
- PLASTER BASE**
"Celotex," Western Asbestos Magnesia Co., 25 South Park, San Francisco.
- PLASTER REINFORCING**
Wickwire-Spencer Steel Company, Inc., 144 Townsend St., San Francisco.
- PLASTERING CONTRACTORS**
A. Knowles, Call Bldg., San Francisco.
MacGruer & Company, 266 Tehama Street, San Francisco, and Pacific Mutual Bldg., Los Angeles.
- PLUMBING CONTRACTORS**
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 193 Otis St., San Francisco.
Hateley & Hateley, 1710 Tenth St., Sacramento.
Herman Lawson, 465 Tehama Street, San Francisco.
Luppen & Hawley, 906 7th St., Sacramento.
Scott Co., Inc., 243 Minna St., San Francisco.
Wm. F. Wilson Co., 240 Fourth Street, San Francisco.
Geo. A. Schuster, 4712 Grove St., Oakland.
W. H. Picard, 5656 College Ave., Oakland.
- PLUMBING SUPPLY HOUSES**
H. Mueller Manufacturing Company, 1072-76 Howard St., San Francisco.
Standard Pacific Fixtures, 349 Sutter St., San Francisco.
Clarence Drucker, manufacturers' representative, 307 Minna St., San Francisco.
- PRESSED STEEL**
Berzer Manufacturing Co., 1120 Mission St., San Francisco.
- PRESSURE REGULATORS**
Vaughn-G. E. Witt Co., 4224-28 Hollis Street, Emeryville, Oakland.
- PUMPING MACHINERY**
Simonds Machinery Co., 816 Folsom Street, San Francisco; 620 East 4th Street, Los Angeles.
- PUMPS—HAND OR POWER**
Ocean Shore Iron Works, 558 Eighth St., San Francisco.
S. F. Bowser & Co., Inc., 425 Brannan St., San Francisco.
- REFRIGERATORS**
"General Electric," sold by the George Belsey Company, Architects' Building, Los Angeles; L. H. Bennett, Rialto Bldg., San Francisco.
- REINFORCING STEEL**
Soule Steel Company, Inc., Rialto Bldg., San Francisco, and Los Angeles.
Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
Pacific Coast Steel Co., Hunter-Dulin Bldg., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Bldg., San Francisco.
Truscon Steel Company, Sharon Bldg., San Francisco.
- ROOF MATERIALS**
El Rey Products Co., 1633 San Pablo St., Los Angeles; 960 7th St., San Francisco; 65 Columbia St., Seattle; 850 E. Taylor St., Portland.
Kraftite Company, office and factory at Niles; 55 New Montgomery Street, San Francisco.
"Malthoid" and "Ruberooid," also "Pabco" 10 and 20 year roofs, manufactured by the Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland and Seattle.
Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.
N. Clark & Sons, 112-116 Natoma Street, San Francisco; works, West Alameda, California.
W. S. Dickey Clay Mfg. Co., 604 Mission St., San Francisco.
Jones Brothers Asbestos Supply Co., 500 Second St., San Francisco.
Johns-Manville Corporation of California, 159 New Montgomery St., San Francisco.
United Materials Co., Sharon Building, San Francisco.

INSTITUTE FAVORS "HONOR AWARDS"

A system of honor awards, "creating year by year a visible history of the advance of architecture in the nation's cities," is being developed by the American Institute of Architects.

A definite plan governing the determination of exceptional architectural merit has been adopted, and will be carried out by chapters all over the country, it is announced by C. Herrick Hammond of Chicago, president of the Institute.

The plan, Mr. Hammond said, represents nationwide extension under uniform control of honor award programs already sponsored by chapters in New York, Chicago, Los Angeles and other cities. The results, he pointed out, have justified the effort, as evidenced in awakened interest in good architecture and noticeable improvement in the quality of buildings recently erected.

The Minnesota Chapter, Mr. Hammond also announced, has decided to issue awards for the best in Minneapolis architecture. Similar action, it is expected, will be taken by other chapters so that eventually distinction in architecture will annually receive public recognition throughout the United States.

The aim of the Institute, as stated by Mr. Hammond, is to "encourage the appreciation of architecture, of allied arts of design, and of the industrial arts." Fundamentally, he declared, the system will constitute a comprehensive scheme of education in good design, educational value being paramount.

The honor plan was framed by a special committee of the Institute of which David J. Witmer of Los Angeles is chairman. Other members are:

Joseph D. Leland, Boston; Raymond Hood, New York; John P. B. Sinkler, Philadelphia; Nat G. Walker, Ft. Meyers, Fla.; Pierre Blouke, Chicago; George W. Spearl, St. Louis; Ralph H. Cameron, San Antonio; Arthur Loveless, Seattle; Raymond W. Jeans, San Francisco.

Awards will be determined by a jury selected by the Executive Committee of the Chapter from nominations made by the Chapter Committee on Honor Awards. Each jury is to consist of three corporate members of the Institute not members of the awarding chapter.

The awards apply to plan, function, and design in the following groupings: Dwellings, multiple dwellings, commercial buildings, quasi-public buildings, public schools, public buildings.

Additional awards will be made in the following groups: Group planning, city, community, and regional planning, landscape, memorials, any of the fine arts, any of the applied arts, any of the industrial arts as distinguished from the applied arts.

"A wide distribution of classification," said the committee's report to the Board of Directors of the Institute, "does not make for a complicated program in operation. There are many types, for instance, of commercial buildings. This activity is educational and does not seek primarily to honor the creating artist.

"Therefore, if a splitting up of a group can be made whereby into each section of that group can be placed buildings of like trait so that they can be judged without conflict with buildings of a similar classification but with a different primary trait, the educational value will be furthered and the operation of the program simplified."

NEW CITY ENGINEER FOR BERKELEY

Harry Goodridge, for four years assistant city engineer of Berkeley, has been named city engineer succeeding the late Col. A. J. Eddy. Mr. Goodridge is a graduate of the University of Toronto. In 1912 he received the degree of bachelor of applied science after completing post-graduate work in hydraulics. In 1920 he was employed by the Foundation Company at Richmond during the construction of the new refinery. While working in the office of George A. Posey, county surveyor, Mr. Goodridge had charge of the construction of the sewer systems for Niles, Newark, Irvington and Centerville. After leaving the county office, he became assistant city engineer of Berkeley.

OIL BURNER SHOW

Hundreds of home owners, architects and builders throughout the San Francisco bay district, attended the first Oil Burner Show to be held in Oakland, California, according to C. H. Beebe, sales promotion manager of the S. T. Johnson Co.

The exhibition celebrated the Johnson Company's 25th anniversary as pioneer manufacturers of a complete line of oil burning equipment for every heating and power purpose.

One of the features of the show was the silver cut-away model of the new electrically ignited Johnson automatic oil burner, as well as the successive Johnson burners from the early days of their manufacture.

Each evening a motion picture entitled, "A New Freedom in Home Heating" was shown. This picture was a non-technical presentation of the advantages of automatic oil heat, and the production of Johnson oil burners in the company's Oakland factory.

COLONIAL HOUSE

Plans have been prepared by Willis Lowe, Oakland architect, for an \$18,000 Colonial residence at Lakeshore Highlands, Oakland, for O. E. Nelson.

WHAT'S WHAT IN MATERIALS

WHO'S WHO AMONG CONTRACTORS

ALPHABETICAL LIST OF ADVERTISERS ON PAGE 126

ROOF MATERIALS—(Continued)

Western Asbestos Magnesia Company, 25 South Park, San Francisco.

"Torfoleum" Insulation manufactured by Malliarl & Schmiedel, 203 California St., San Francisco.

Pioneer Paper Co., 5500 South Alameda, Los Angeles; Hearst Bldg., San Francisco; offices in Portland, Seattle, Salt Lake City, Spokane and Denver.

RUGS AND CARPETS—IMPORTED

Kent-Costlyan, Inc., 485 Fifth Ave., New York City, with offices at 412 Post St., San Francisco and 816 South Figueroa St., Los Angeles.

W. & J. Sloane, 216 Sutter St., San Francisco.

SAFETY TRENDS

Price-Teltz Company, 683 Howard St., San Francisco.

Gunn, Carle & Co., 444 Market St., San Francisco.

SASH CHAINS

American Chain Company, Inc., Bridgeport, Conn., and 425 Second St., San Francisco. The Smith & Egge Mfg. Co., P. O. Box 1040, Bridgeport, Conn.; 606 American Bank Bldg., Los Angeles.

SCAFFOLDING FOR CONTRACTORS

Steefform Contracting Company, Monadnock Bldg., San Francisco; Edwards & Wildy Bldg., Los Angeles.

SEATING—SCHOOL, THEATER, CHURCH

Home Manufacturing Company, Inc., 552 Brannan St., San Francisco.

C. F. Weber & Co., San Francisco, Los Angeles, Phoenix, Ariz.; Reno, Nevada.

SELF-RELEASING FIRE EXIT DEVICES

Von Dupria, manufactured by Vonnegut Hardware Company, Indianapolis; sold by D. A. Pancost Co., 605 Market St., San Francisco.

SHADES

William Volker & Co., 631 Howard Street, San Francisco; 2301 East 7th Street, Los Angeles.

SHEATHING AND SOUND DEADENING

Western Asbestos Magnesia Co., 25 South Park, San Francisco.

SHEET METAL WORKS

Forderer Cornice Works, Potrero Ave., San Francisco.

SHOW CASES

Home Manufacturing Company, Inc., 552 Brannan St., San Francisco. Mullen Manufacturing Company, 64 Rausch St., San Francisco.

SOUND ABSORBING TREATMENT

Johns-Manville Corporation, 159 New Montgomery St., San Francisco.

SIGNALING & PROTECTIVE SYSTEMS

Garnett, Young & Co., 390 Fourth St., San Francisco.

STEEL FABRIC

Wickwire—Spencer Steel Corporation, 144 Townsend St., San Francisco.

Soule Steel Company, Rialto Bldg., San Francisco, and Los Angeles.

STEEL FORMS

Steefform Contracting Company, Monadnock Bldg., San Francisco; Edwards & Wildy Bldg., Los Angeles.

STEEL TANKS

Ocean Shore Iron Works, 55 Eighth St., San Francisco.

STEEL LUMBER

Genfire Steel Co., Sheldon Bldg., San Francisco; Builders' Exchange, Oakland.

STEEL SASH

Bayley-Springfield solid steel sash, sold by Gunn, Carle & Co., 444 Market St., San Francisco.

"Fenestra" Solid Steel Sash, manufactured by Detroit Steel Products Co., factory sales office, 526 Hunter-Dulin Bldg., San Francisco.

Berger Manufacturing Co., 1120 Mission St., San Francisco.

Michel & Pfeiffer Iron Works, 1415 Harrison St., San Francisco.

Truscon Steel Company, 74 New Montgomery St., San Francisco.

W. C. Lea, 653 South Clarence St., Los Angeles.

STEEL—STRUCTURAL

Bethlehem Steel Company, Pittsburg, Pa.; Matson Building, San Francisco; Pacific Building, Los Angeles; L. C. Smith Building, Seattle; American Bank Building, Portland, Oregon.

Golden Gate Iron Works, 1541 Howard St., San Francisco.

Judson Pacific Company, C. F. Weber Bldg., Mission and Second Sts., San Francisco; shops, San Francisco and Oakland.

McClintic—Marshall Company, 621 Florida Street, San Francisco.

Herriek Iron Works, 18th and Campbell Sts., Oakland.

Pacific Coast Eng. Co., foot 14th St., Oakland Pacific Coast Steel Co., Hunter-Dulin Bldg., San Francisco.

Palm Iron & Bridge Works, Sacramento. Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.

Western Iron Works, 141 Beale Street, San Francisco.

Consolidated Steel Corporation, 1200 N. Main St., Los Angeles.

STONE

Indiana Limestone Company, Tribune Tower, Chicago, Ill., and Crocker First National Bank Bldg., San Francisco.

STORE FRONTS

Zouri Dr.-wn Metals Company, Chicago Heights, Illinois. (Zouri Company of California 1208 Howard St., San Francisco.)

STORE FURNITURE

Berger Manufacturing Co., 1120 Mission St., San Francisco.

STREET LIGHTING EQUIPMENT

Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Bldg., San Francisco.

STRUCTURAL STEEL SHAPES

Bethlehem Steel Company, Matson Building, San Francisco; Pacific Finance Building, Los Angeles; L. C. Smith Building, Seattle; American Bank Building, Portland, Oregon.

SWITCHES AND SWITCHBOARDS

Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco.

Westinghouse Elec. & Mfg. Co., First Nat. Bank Bldg., San Francisco; general offices and works, Pittsburgh, Pa.

TELEPHONES—AUTOMATIC, PRIVATE

Automatic Electric Inc., Chicago, Ill.; 1112 Pacific Finance Bldg., Los Angeles.

THERMOSTATS FOR HEAT REGULATION

Johnson Service, Milwaukee, Wis.; Rialto Building, San Francisco.

TERRA COTTA

N. Clark & Sons, 116 Natoma Street, San Francisco.

National Terra Cotta Society, 230 Park Avenue, New York, N. Y.

TILE—BATHROOM AND KITCHEN

Porcelain Tile Company, Ltd., 557 Market St., San Francisco, and 410 Madison St., Oakland.

TILE—RUBBER, CLAY, CORK ETC.

Rossman Corporation of California, 49 Geary Street, San Francisco, and Architects' Bldg., Los Angeles.

N. Clark & Sons, 112-116 Natoma Street, San Francisco; works, West Alameda. Cal. Congoleum-Nairn, Inc., D. N. & E. Walter & Co., San Francisco, and Broadway Department Store, Los Angeles.

Cladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.

Kraftite Company, factory at Niles; 55 New Montgomery Street, San Francisco.

Mannum-Hollbrook, Inc., 1235 Mission St., San Francisco.

United States Rubber Co., 300 Second St., San Francisco, and 923 Los Angeles St., Los Angeles, Calif.

UNDERFLOOR DUCT SYSTEM

Johns-Manville Corporation, 159 New Montgomery St., San Francisco.

VALVES—PIPES AND FITTINGS

Clarence Drucker, Manufacturers' Agent, 307 Minna Street, San Francisco.

Grimmel Co., Fifth and Brannan Sts., San Francisco.

Mueller Company, 1072 Howard Street, San Francisco.

Sloan Valve Company, Chicago; E. C. Whalen, 954 Western Pacific Bldg., Los Angeles; W. J. Driscoll, 482 Monadnock Bldg., San Francisco; E. C. Fallow, U. S. National Bank Bldg., Denver; S. D. Cochran, L. C. Smith Bldg., Seattle, Wash.

VARNISHES

Bass-Huetter Print Company, San Francisco, Los Angeles, Portland, Seattle.

The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle. Hill, Hubbell & Co., Los Angeles, Oakland, Portland, Seattle and 160 Fremont St., San Francisco.

General Paint Company, Los Angeles, San Francisco, Oakland, Seattle, Spokane and Portland.

VENETIAN BLINDS

C. F. Weber & Company, 601 Mission St., San Francisco.

VENTILATING EQUIPMENT

B. F. Sturtevant Co., Monadnock Bldg., San Francisco; Los Angeles, Portland and Seattle.

VENTILATORS

"The Panclouvre," sold by M. E. Hammond, Pacific Bldg., San Francisco.

VITREOUS CHINAWARE

Standard—Pacific Plumbing Fixtures, 349 Sutter St., San Francisco; 919 W. Seventh St., Los Angeles; 1301 Fifth Ave., Seattle Wash.; 48 Fifth St., Portland, Ore.

WATERPROOF CEMENT

Victor Hydro-plastic waterproof cement, manufactured by Southwestern Portland Cement Co., 356 S. Spring St., Los Angeles.

WALL BEDS, SEATS, ETC. (See Beds).

WIRING SYSTEM

General Electric Company, San Francisco and all principal Coast cities.

WATER COOLERS

General Electric Refrigerator, L. H. Bennett, Rialto Building, San Francisco, and the George Belsey Company, Architects Building, Los Angeles.

WATER HEATERS

Apex Electric Hot Water Heaters, distributed by Sandoval Sales Co., 115 Jessie St., San Francisco.

Pittsburgh Water Heater Co. (gas), 478 Sutter St., San Francisco.

Ruud Heater Co. (gas), 245 Mason St., San Francisco.

Westix Heater Company, Rialto Building, San Francisco.

WATERPROOFING

Johns-Manville Corporation, 159 New Montgomery St., San Francisco.

Master Builders Company, Mills Bldg., San Francisco; 426 So. Spring Street, Los Angeles. (also Seattle, Portland and Spokane.)

The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland, Seattle.

Gunn, Carle & Co., 444 Market St., San Francisco.

WATER SOFTENERS AND FILTERS

The Permutit Company, 440 Fourth Ave., New York City, and Balboa Bldg., San Francisco.

WATER SUPPLY SYSTEMS

Keenecore Water Supply System—Simonds Machinery Co. agents, 816 Folsom St., San Francisco; 520 East Fourth Street, Los Angeles.

WINDOW SHADES

William Volker & Co., 631 Howard Street, San Francisco; 2301 East 7th Street, Los Angeles.

W. & J. Sloane, 216 Sutter St., San Francisco.

D. N. & E. Walter & Co., 562 Mission St., San Francisco.

WINDOWS—STEEL, REVERSIBLE, ETC.

Campbell and Voigtmann Metal Windows, distributed by Fire Protection Products Company, 1101 Sixteenth St., San Francisco.

Crittall Casement Window Company, Detroit, Mich. Badt-Falk & Co., 74 Montgomery Street, San Francisco. F. T. Crowe & Co., 216 Walker Bldg., Seattle.

H. J. Hoskins, 510 Hyde Bldg., Spokane. McCracken-Ripley Co., 61 Albina Avenue, Portland. F. T. Crowe & Co., 1177 Dock Street, Tacoma, Wash. Crittall Casement Window Co., 504 Union Insurance Bldg., Los Angeles.

Hauser Window Co., 1362 Harrison St., San Francisco.

Detroit Steel Products Co., Detroit, Mich.; Hunter-Dulin Building, San Francisco and Pershing Square Building, Los Angeles.

W. C. Lea, 653 South Clarence St., Los Angeles.

WIRING SYSTEM

Westinghouse Electric and Manufacturing Company, First National Bank Bldg., San Francisco; general offices and works

Pittsburgh, Pa.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Overtime in wage scale should be credited with time and a half, Sunday and holidays double.

Bond— $1\frac{1}{2}\%$ amount of contract.

Brickwork—

Common, \$33 to \$40 per 1000 laid, (according to class of work).
Face, \$100 to \$125 per 1000 laid, (according to class of work).
Brick Steps, using pressed brick, \$1.10 lin. ft.
Brick Walls, using pressed brick on edge, 75c sq. ft. (Foundations extra.)
Brick Veneer on frame buildings, \$1.00 sq. ft.
Common, f.o.b. cars, \$14.50 plus cartage.
Face, f.o.b. cars, \$55.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. cars in carload lots).

3x12x12 in. \$ 96.00 per M
4x12x12 in. 108.00 per M
6x12x12 in. 156.00 per M
8x12x12 in. 255.00 per M

HOLLOW BUILDING TILE (f.o.b. cars in carload lots).

8x12x5 $\frac{1}{2}$ \$108.00
6x12x5 $\frac{1}{2}$ 74.00

Composition Floors — 15c to 30c per sq. ft. In large quantities, 18c per sq. ft. laid.

Rubber Tile—65c per sq. ft.

Terazzo Floors—50c to 60c per sq. ft.
Terazzo Steps—\$1.50 per lin. ft.
Mosaic Floors—80c per sq. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton.

No. 3 rock, at bunkers.....\$1.40 per ton
No. 4 rock, at bunkers..... 1.40 per ton
Eliott pea gravel, at bnkrs. 1.40 per ton
Washed gravel, at bnkrs. 1.40 per ton
Eliott top gravel, at bnkrs. 1.40 per ton
City gravel, at bunkers..... 1.40 per ton
River sand, at bunkers..... 1.00 per ton
Delivered bank sand..... 1.00 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

Del Monte, \$1.75 to \$3.00 per ton.
Fan Shell Beach (car lots, f.o.b. Lake Majella), \$2.75 to \$4.00 per ton.

Cement, \$2.44 per bbl. in paper sks.
Cement (f.o.b. Job, S. F.) \$2.64 per bbl.

Cement (f.o.b. Job, Oak.), \$2.64 per bbl.

Rebate of 10 cents bbl. cash in 15 days.

Atlas "White"\$ 8.50 per bbl.
Forms, Labors average 22.00 per M.
Average cost of concrete in place, exclusive of forms, 28c per cu. ft.
4-inch concrete basement floor.....13c to 14c per sq. ft.
4 $\frac{1}{2}$ -inch concrete basement floor.....14c to 15c per sq. ft.
2-inch rat-proofing.....6 $\frac{1}{2}$ c per sq. ft.
Concrete Steps.....\$1.26 per lin. ft.

Dampproofing—

Two-coat work, 20c per yard.
Membrane waterproofing—4 layers of saturated felt, \$5.50 per square.
Hot coating work, \$2.00 per square.

Electric Wiring — \$3.00 to \$9.00 per outlet for conduit work (including switches).
Knob and tube average \$2.25 to \$5.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, \$2600; direct automatic, about \$2500.

Excavation—

Sand, 70 cents; clay or shale, \$1.25 per yard.
Teams, \$10.00 per day.
Trucks, \$21 to \$27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, \$65.00 per balcony.

Glass (consult with manufacturers)—

Double strength window glass, 15c per square foot.
Quartz Lite, 50c per square foot.
Plate, 75c per square foot.
Art, \$1.00 up per square foot.
Wire (for skylights), 27c per square foot.
Obscure glass, 25c per square foot.
Note—Add extra for setting.

Heating—

Average, \$1.80 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg.site)
Common, \$25.00 per M (average).
Common O. P. select, average, \$34.00 per M.

1 x 6 No. 3—Form lumber.....\$21.00 per M
1 x 4 No. 1 flooring 45.00 per M
1 x 4 No. 2 flooring 42.00 per M
1 x 4 No. 3 flooring 35.00 per M
1 x 6 No. 2 and better flooring..... 43.00 per M
1 $\frac{1}{4}$ x 4 and 6 No. 2 flooring..... 50.00 per M

Shingles grain—

1 x 4 No. 2 flooring.....\$37.00 per M
1 x 4 No. 3 flooring 35.00 per M
No. 1 common run to T. & G. 30.00 per M
Lath 5.50 per M

Shingles (add cartage to prices quoted)—

Redwood, No. 1.....\$.90 per bdle.
Redwood, No. 2..... .75 per bdle.
Red Cedar90 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3 $\frac{1}{4}$ " T & G Maple.....\$135.00 M ft.
1-16x2 $\frac{1}{4}$ " T & G Maple..... 145.50 M ft.
7 $\frac{1}{2}$ x3 $\frac{1}{2}$ " sq. edge Maple..... 132.50 M ft.
13-16x2 $\frac{1}{4}$ " 3 $\frac{1}{2}$ x2" 5-16x2" T&G Sq. Ed.
Chr. Qtd. Oak.....\$220.00 M \$160.00 M \$178 M
Sel. Qtd. Oak..... 150.00 M 122.00 M 131 M
Chr. Pla. Oak..... 155.00 M 119.00 M 113 M
Sel. Pla. Oak..... 132.00 M 79.00 M 97 M
Clear Maple 147.00 M 101.00 M
Laying & Finishing 16c ft. 15c ft. 13c ft.
Wage—Floor layers, \$9.00 per day.

Building Paper—

1 ply per 1000 ft. roll.....\$4.00
2 ply per 1000 ft. roll..... 6.00
3 ply per 1000 ft. roll..... 9.25
Sash cord com. No. 7.....\$ 1.05 per 100 ft.
Sash cord com. No. 8..... 1.20 per 100 ft.
Sash cord spot No. 7..... 1.75 per 100 ft.
Sash cord spot No. 8..... 1.10 per 100 ft.
Sash weights cast iron..... 57.00 ton
Nails, \$3.25 base.
Belgian nails, \$3.00 base.

Millwork—

O. P. \$85.00 per 1000. R. W., \$95.00 per 1000 (delivered).
Double hung box window frames, average, with trim, \$7.00 and up, each.
Doors, including trim (single panel, 1 $\frac{1}{4}$ in. Ore. pine) \$7.50 and up, each.
Doors, including trim (five panel, 1 $\frac{3}{4}$ -in. Oregon pine) \$6.50 each.
Screen doors, \$3.50 each.
Patent screen windows, 30c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., \$7.00 each.
Dining room cases, \$8.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average), \$12.00 per M.
For smaller work, average, \$25 to \$32 per 1000.

Marble—(Not set), add 50c to 65c per ft. for setting.

Alaska\$1.40 sq. ft.
Columbia 1.40 sq. ft.
Golden Vein Yule Colo..... 1.70 sq. ft.
Pink Lepanto 1.50 sq. ft.
Italian 1.75 sq. ft.

Tennessee 1.70 sq. ft.
 Verde Antique 3.00 sq. ft.
 NOTE—Above quotations are for ¾ inch waists—
 in large slabs f.o.b. factory. Prices
 on all other classes of work should be
 obtained from the manufacturers.

Floor Tile—Set in place.

Verde Antique \$2.75 sq. ft.
 Tennessee 1.60 sq. ft.
 Alaska 1.35 sq. ft.
 Columbia 1.45 sq. ft.
 Yule Colorado 1.45 sq. ft.
 Travertine 1.60 sq. ft.

Painting—

Two-coat work 30c per yard
 Three-coat work 40c per yard
 Whitewashing 4c per yard
 Cold Water Painting 8c per yard
 Turpentine, 90c per gal. in cans and
 75c per gal. in drums.
 Raw Linseed Oil—\$1.34 gal. in bbls.
 Boiled Linseed Oil—\$1.37 gal. in bbls.

Cartier or Dutch Boy White Lead in Oil (in steel kegs)

Per. Lb.
 1 ton lots, 100 lbs. net weight 12¼c
 500 lb. and less than 1 ton lots 13c
 Less than 500 lb. lots 13½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs)

1 ton lots, 100 lb. kegs net weight 12¼c
 500 lb. and less than 1 ton lots 13c
 Less than 500 lb. lots 13½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lbs. net weight 14¼c
 500 lb. and less than 1 ton lots 14½c
 Less than 500 lb. lots 14¾c
 Note—Accessibility and conditions
 cause wide variance of costs.

Patent Chimneys—

6-inch \$1.00 lineal foot
 8-inch 1.50 lineal foot
 10-inch 1.85 lineal foot
 12-inch 2.10 lineal foot

Pipe Casings — 14" long (average), \$5.00 each.

Plastering—Interior—

1 coat, brown mortar only, wood lath. Yard
 2 coats, lime mortar hard finish, wood
 lath \$2
 2 coats, hard wall plaster, wood lath55
 3 coats, metal lath and plaster 1.00
 Keene cement on metal lath 1.25
 Ceilings with ¼ hot roll channels
 metal lath67
 Ceilings with ¾ hot roll channels
 metal lath plastered 1.40
 Shingle partition ¾ channel lath 1 side62
 Single partition ¾ channel lath 2
 sides 2 inches thick 2.20
 4-inch double partition ¾ channel
 lath 2 sides 1.30
 4-inch double partition ¾ channel
 lath 2 sides plastered 2.45

Plastering—Exterior—

2 coats cement finish, brick or con-
 crete wall \$1.00
 2 coats Atlas cement, brick or con-
 crete wall 1.25
 3 coats cement finish No. 18 gauge
 wire mesh 1.75
 3 coats Atlas finish No. 18 gauge
 wire mesh 2.05
 Wood lath, \$6.00 per 1000.
 2.5-lb. metal lath (dipped)17
 2.5-lb. metal lath (galvanized)20
 3.4-lb. metal lath (dipped)22
 3.4-lb. metal lath (galvanized)27
 ¾-inch hot roll channels, \$45 per ton.
 Hardwall plaster, \$15.40 ton; \$12.95 in
 paper sacks (rebate 15c sack).
 Finish plaster, \$16.40 ton; in paper sacks,
 \$13.85 (rebate 10c sack).

Dealer's commission, \$1.00 off above
 quotations.
 Hydrate Lime, \$19.50 ton.
 Lime, f.o.b. warehouse, \$2.25 bbl.; cars, \$2.15
 Lime, bulk (ton 2000 lbs.), \$16.00 ton,
 Wall Board 5 ply, \$43.00 per M.

Composition Stucco—\$1.60 to 2.00 per sq. yard (applied).

Plumbing—

From \$60.00 per fixture up, accord-
 ing to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, \$5.25 per
 square for 30 squares or over.
 Less than 30 squares, \$5.50 per sq.
 Tile, \$19.00 to \$35.00 per square.
 Redwood Shingles, \$11.00 per square
 in place.
 Cedar Shingles, \$10.50 sq. in place.
 Recoat, with Gravel, \$3.00 per sq.

Sheet Metal—

Windows—Metal, \$1.85 a sq. foot.
 Fire doors (average), including
 hardware, \$2.15 per sq. foot.

Skylights—

Copper, \$1.35 sq. ft. (not glazed).
 Galvanized iron, 30c sq. ft. (not
 glazed).

Stone—

Granite, average, \$6.00 sq. foot in
 place.
 Sandstone, average Blue, \$3.50;
 Boise, \$2.60 sq. ft. in place.
 Indiana Limestone, \$2.60 per sq. ft.
 in place.

Store Fronts—

Copper sash bars for store fronts,
 corner, center and around sides,
 will average 75c per lineal foot.
 Note—Consult with agents.

Steel Structural—\$95.00 per ton erected.
 This quotation is an average
 for comparatively small quantities
 Light truss work higher; plain beam
 and column work in large quan-
 tities, less.
 Cost of steel for average building
 (erected), \$91.00 per ton.

Reinforcing—

Base price for car load lots, \$2.60
 100 lbs. f.o.b. cars.
 Average cost to install, \$23 per ton.

Steel Sash—

All makes, from S. F. stock, 20c to
 35c per square foot.
 All makes, plant shipment, 22c to
 35c per square foot.
 (Includes mullions and hardware.)

Tile—White glazed, 75c per foot, laid.
 White floor, 75c per foot, laid.
 Colored floor tile, \$1.00 per ft. laid.
 Promenade tile, 80c per sq. ft., laid.

1929 WAGE SCHEDULE
 FOR SAN FRANCISCO
 BUILDING TRADES

Craft	Journeymen Mechanics
Asbestos workers	\$ 8.00
Bricklayers	11.00
Bricklayers' hodcarriers	7.00
Cabinet workers, (shop)	7.50
Cabinet workers, (outside)	9.00

Carpenters	9.00
Cement finishers	9.00
Electric workers	9.00
Electrical fixture hangers	8.00
Elevator constructors	10.00
Elevator helpers	7.00
Engineers, portable and hoisting	9.00
Glass workers	8.50
Hardwood floormen	9.00
Housemovers	8.00
Housemiths, arch. iron, skilled all branches	9.00
Housemiths, arch. iron, not skilled all branches	8.00
Housemiths, reinforced concrete, or rodmen	9.00
Iron workers (bridge & structural) including engineers	11.00
Laborers, building (6-day week)	5.50
Lathers, channel iron	10.00
*Lathers, all other	8.50
Marble setters	10.00
Marble helpers	6.00
Marble cutters and copers	7.50
Marble bed rubbers	7.00
Marble polishers and finishers	7.00
Millmen, planing mill department	7.00
Millmen, saw and door	6.00
Millwrights	8.00
Model makers	10.00
Model casters	9.00
Mosaic and Terrazzo workers	9.00
Mosaic and Terrazzo helpers	9.00
Painters	9.00
Painters, varnishers and polishers (shop)	7.50
Painters, varnishers and polishers (outside)	9.00
Pile drivers and wharf builders	9.00
Pile drivers engineers	10.00
Plasterers' hodcarriers	11.00
Plasterers' hodcarriers	7.50
Plumbers	10.00
Roofers, composition	8.00
Roofers, all others	9.00
Sheet metal workers	9.00
Sprinkler fitters	10.00
Steam fitters	10.00
Stair builders	9.00
Stone cutters, soft and granite	8.50
Stone setters, soft and granite	9.00
Stone carvers	8.50
Stone derrickmen	9.00
Tile setters	10.00
The helpers	6.00
Auto truck drivers, less than 2500 lbs.	5.50
Auto truck drivers, 2500 to 4500 lbs.	6.00
Auto truck drivers, 4500 to 6500 lbs.	6.50
Auto truck drivers, 6500 lbs. and over	7.00
General teamsters, 1 horse	5.50
General teamsters, 2 horses	6.00
General teamsters, 4 horses	6.50
Plow teamsters, 4 horses	6.50
Scrapers teamsters, 2 horses	6.00
Scrapers teamsters, 4 horses	6.00

*On wood lath if piece rates are paid they shall be not less than such an amount as will guarantee, on an average day's production of 1600 lath, the day wage set forth.

Eight hours shall constitute a day's work for all Crafts except as otherwise noted.

Plasterer's hodcarriers, bricklayers' hodcarriers, roofers, laborers, and engineers, portable and hoisting, shall start 15 minutes before other workmen, both at morning and noon.

Five and one-half days, consisting of eight hours on Monday to Friday inclusive, and four hours on Saturday forenoon shall constitute a week's work.

Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday afternoon (except laborers), Sundays from 12 midnight Saturday, and Holidays from 12 midnight of the preceding day shall be paid double time. On Saturday afternoon laborers, building, shall be paid straight time.

Where two shifts are worked in any twenty-four hours shift time shall be straight time. Where three shifts are worked, eight hours pay shall be paid for seven hours on the second and third shifts.

All work shall regularly be performed between the hours of 8 A. M. and 5 P. M., provided, that in emergencies or where premises cannot be vacated for work by mechanics until the close of business, men then reporting for work shall work at straight time; but any work performed after midnight shall be paid time and one-half except on Saturday afternoons, Sundays, and holidays, when double time shall be paid.

Recognized holidays to be New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day and Christmas Day.

Men ordered to report for work, for whom no employment is provided, shall be entitled to two hours pay.

PACIFIC FOUNDRY COMPANY BUYS MORE PROPERTY TO MEET NEEDS OF GROWING BUSINESS

EXPANSION of one of San Francisco's largest industries is announced by the management of the Pacific Foundry Company. With the acquisition of the properties of the Link Belt, Meese & Gottfried Company at Nineteenth and Harrison streets, the Pacific Foundry Company becomes owner of one of the most pretentious manufacturing plants in the Bay region.

The holding acquired is improved with three two-story brick buildings occupying ground with a frontage of 245 feet on Nineteenth street by 137 feet 6 inches on both Harrison street and Treat avenue.

The Pacific Foundry Company occupies practically all of the rest of this block up to Twentieth street, the area being 332 by 243 feet. On the west side of Treat avenue they also own 75 by 122 feet 6 inches, as well as the southwest corner of Harrison street and Treat avenue, which is 150 by 120 feet.

In addition the foundry has a holding on Folsom street opposite the block where the Pacific Gas and Electric Company is building its mammoth \$11,000,000 steam generating plant.

Business of the Pacific Foundry Company has grown tremendously since the firm was first established in 1902 by the late Edward J. Fowler. It found immediate demand for its products and has been forced to expand several times, and during the last five years there has been a 50 per cent increase in business, according to an officer of the company.

Products from its two modernly equipped foundries, machine shop and pattern shop, are distributed throughout the entire United States. Roasting furnaces are being built for such nationally known concerns as the United States Steel Corporation, Penzoil Company, Standard Oil of New Jersey, and many other oil companies.

The foundry company has developed a large market for monel metal and nickel for which it is the exclusive distributor on the Pacific Coast, representing the International Nickel Company, Inc. Other nationally known metals manufactured under their own trade mark are corrossion, pycrost and flintcast.

Some of the most important installations of corrossion on the Pacific Coast have been made by the Pacific Foundry Company. The Pacific Foundry Company operates a New York office at 551 Fifth avenue and through this Eastern branch the company has placed many important contracts for corrossion, including practically all the public buildings in the Atlantic States.

The officers of the company are Arthur H. Fleming, president; Henry J. Hartley, vice president; Dudley Baird, vice president; Walter Schroeder, treasurer. Charles Kelly, secretary, and John S. Fowler, assistant secretary.



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SAN FRANCISCO

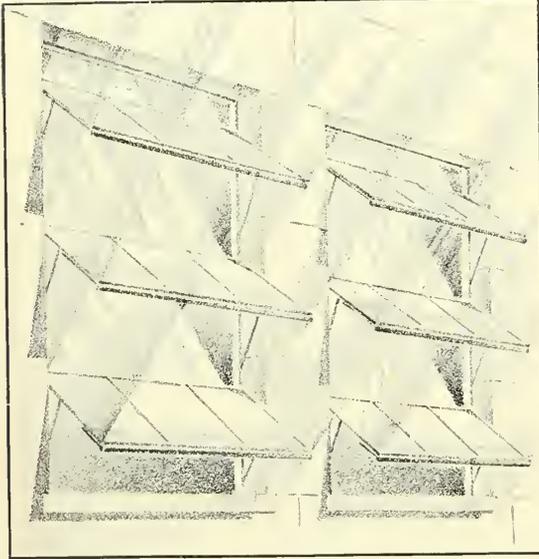
ARCHITECTS' BUILDING

Fifth and Figueroa Streets, Los Angeles

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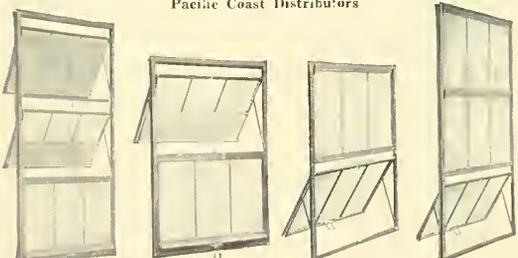
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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of The Architect and Engineer, published monthly at San Francisco, Calif., for October 1, 1929.

State of California, City and County of San Francisco, ss.:

Before me, a notary public in and for the state and county aforesaid, personally appeared W. J. L. Kierulff, who, having been duly sworn according to law, deposes and says that he is the Business Manager of The Architect and Engineer, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (if daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, The Architect and Engineer, Inc., 1662 Russ Bldg., San Francisco, Calif.

Editor, F. W. Jones, 1662 Russ Bldg., San Francisco, Calif.

Managing Editor—None.

Business manager, W. J. L. Kierulff, 1662 Russ Bldg., San Francisco, Calif.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

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4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is. (This information is required from daily publications only.)

W. J. L. KIERULFF, President.

Sworn to and subscribed before me this 26th day of September, 1929.

(Seal) W. W. HEALEY.

(My commission expires August 29, 1933.)

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The
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DECEMBER
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Building
Los Angeles



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Los Angeles



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Building
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WHO'S WHO IN THIS ISSUE

A. H. ALBERTSON, architect of Seattle, is a native of Hope, Warren county, N. J., where he was born April 14th, 1872. He is a graduate of architecture from Columbia University. He received his early architectural training in the offices of Clinton & Russell and Howells and Stokes, New York City. He removed to Seattle in 1907 as member of the firm of Howells and Stokes, A. H. Albertson, associate. It was while a member of this firm that the Royal Insurance building was erected in San Francisco. Later the firm became known as Howells and Albertson, then A. H. Albertson, architect, and finally A. H. Albertson and Associates. In the Spanish-American war Mr. Albertson participated in the battle of San Juan Hill and the siege of Santiago, Cuba. He is the author of the Seattle Tenement House Code enacted in 1913, which was responsible for the elimination of slum conditions in Seattle and was also responsible for the earliest American set-back law for high buildings. Mr. Albertson was chairman of the Building Code Commission in 1922, member of the Federal Fair Rentals Commission, 1917-19, director of the American Institute of Architects, 1926-29, and director of the Social Welfare League, Seattle. Other buildings besides the Northern Life Tower designed by his office, are the Security Bank building, Olympia, Municipal building, Everett, Cornish School of Music and the Becker building, Aberdeen.

JOHN PARKINSON AND DONALD B. PARKINSON, architects of the Bullock's Wilshire Boulevard Store building, Los Angeles, are one of the best known architectural firms in Southern California, the elder Parkinson having practiced his profession there for more than a quarter of a century. Donald B. Parkinson was born August 10th, 1895, and according to his father, was "educated with difficulty in the Los Angeles public schools." (Editor's Note: John Parkinson always has enjoyed a fine sense of humor.) Donald B. Parkinson entered the Department of Architecture, Massachusetts Institute of Technology in 1914 and in 1917-18 he did service in the United States Army Air Corps. He spent the years 1920-21 abroad and upon returning to the United States became identified as a member of the firm of John Parkinson and Donald B. Parkinson. Recent examples of their work, besides Bullock's Wilshire building, include the Title Insurance Building and Wilshire Medical building, Los Angeles; Spreckels building, San Diego; California Bank build-

ing, Beverly Hills. Work under construction includes the Banks-Huntley building, the Los Angeles branch of the Federal Reserve Bank, executive building for the Southern California Telephone Company and the First National Bank, Beverly Hills.

THOMAS W. LAMB, architect of New York City, who, with H. A. Minton, associate, designed the new Fox theater in San Francisco, is one of the foremost theater architects in the country. For more than twenty years he has been designing theaters, both for the legitimate stage and the movies, throughout the United States, including the E. F. Albee theater, Cincinnati, Midland theater, Kansas City, Oasis theater, Brooklyn, N. Y., State theater, Syracuse, N. Y., Ohio theater, Columbus, Ohio, and the Capitol and Fox theaters in San Francisco. Mr. Lamb has been designing theaters for William Fox since 1909. His first was the old City theater on 14th street, New York City. Speaking of his commission to do this work, Mr. Lamb is quoted as saying: "It is needless to remind you that motion picture projection was not the art then that it is today and I feel quite sure that not even the men who then were engaged in building up chains of theaters had any idea that motion pictures were destined ultimately to supplant in the public favor all other forms of theater entertainment."

A. H. MINTON, who was associated with Mr. Lamb in the design of the new Fox theater, San Francisco, received his professional training at Harvard University, School of Architecture, and later in the offices of W. D. Shea and the City Engineer, San Francisco. He has been practicing architecture since 1911 and for the past seven or eight years has had charge of the design of all of the branch bank buildings for the Bank of Italy.

A. A. FRASER, C. E., who contributes to the Engineering and Construction Department in this issue, is branch manager of the Genfire Steel Company, with offices in the Sheldon building, San Francisco. Mr. Fraser is an associate member of the American Society of Civil Engineers and a graduate of the University of Colorado. In 1916 he was commissioned in the British Royal Flying Corps and was discharged as a captain in 1919. Mr. Fraser now holds a commission in the American Reserve Corps of Engineers. In 1920 he was engaged in engineering work in San-

ta Domingo and Haiti. Returning to the United States the following year, he spent several years in engineering work for the Portland Cement Association, the Austin Company and as superintendent of construction for the Axelrod Construction Company of New York City. For the past five years he has been associated with the Genfire Steel Company of Youngstown, Ohio.

HAROLD H. WEEKS, whose sketches are reproduced in other pages of this issue, is a member of the staff of W. H. Weeks, architect of San Francisco, in whose office he received his early architectural training. During this period Valere Di Mari acted as an added stimulant in Mr. Weeks' development in designing and water coloring. Mr. Weeks served his country in the army for sixteen months, fourteen of which were spent in France. Part of this time he was in Blois, the heart of the Chateau region, where he was engaged in laying out prisoner of war camps. Returning from France he took a special course in architecture at the University of Pennsylvania. Also, anticipating a trip to Europe or Mexico, he took up sketching, mainly in water colors. The early part of this year Mr. Weeks visited Mexico where he made a great many fine water colors and pencil sketches. Most of his recent sketches are in pencil, those made in some of California's old mining towns being especially interesting.

CONVENTIONS AND EXHIBITIONS

- January 1—(last day) All American Sculptural Exhibition, Legion of Honor Building, San Francisco.
- January 18—30—International Exhibition of Building Trades and Allied Industries, Brussels, Belgium.
- January 27—31—International Heating and Ventilating Exposition, Commercial Museum, Philadelphia.
- March 31-April 5th—Twelfth Annual Home Show, Grand Central Palace, New York City.
- March—April—International Exhibition of Housing and Modern Industrial Applied Arts, Nice, France.
- April 15-May 10—Third Annual Decorative Art Exhibition, Women's City Club, 465 Post street, San Francisco.
- May 20—October 1—Exhibition of Modern Industrial and Decorative Arts, Stockholm, Sweden.
- May 21—23—American Institute of Architects, sixty-third convention, Mayflower Hotel, Washington, D. C.
- June—Pan-American Congress of Architects, Rio de Janeiro, Brazil.
- September—International Architects' Congress, Budapest, Hungary.

"IT HAS MADE A DIFFERENCE OF A DOLLAR A WINDOW TO ME."

THE CLIENT, "I want to congratulate you on this job. It has been 100 per cent."

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THE CLIENT, "It isn't only the design and the major details that have been well handled . . . it's all the many little things that you didn't forget."

THE ARCHITECT, "Didn't someone say that it's the looking out for little things that makes for perfection?"

THE CLIENT, "Yes, that's it. Take the matter of shading those windows, for instance. It was overlooked in my last building, and it cost me a pretty penny to get those windows shaded. But this time that simple shading plan you worked out made shades no problem at all. I figure it made a difference of a dollar a window to me."

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The ARCHITECT AND ENGINEER

Since 1905

VOLUME 99

DECEMBER, 1929

NUMBER 3

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Published on the 15th of the month by

THE ARCHITECT AND ENGINEER, INC.

1662-3-4 Russ Building., San Francisco, California

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Subscriptions—United States, \$4.00 a year; single copy, \$1.00. Canada, \$5.00 a year. All other foreign countries, \$6.00 a year.

“A Growing Public Sentiment for the Use of Stone”

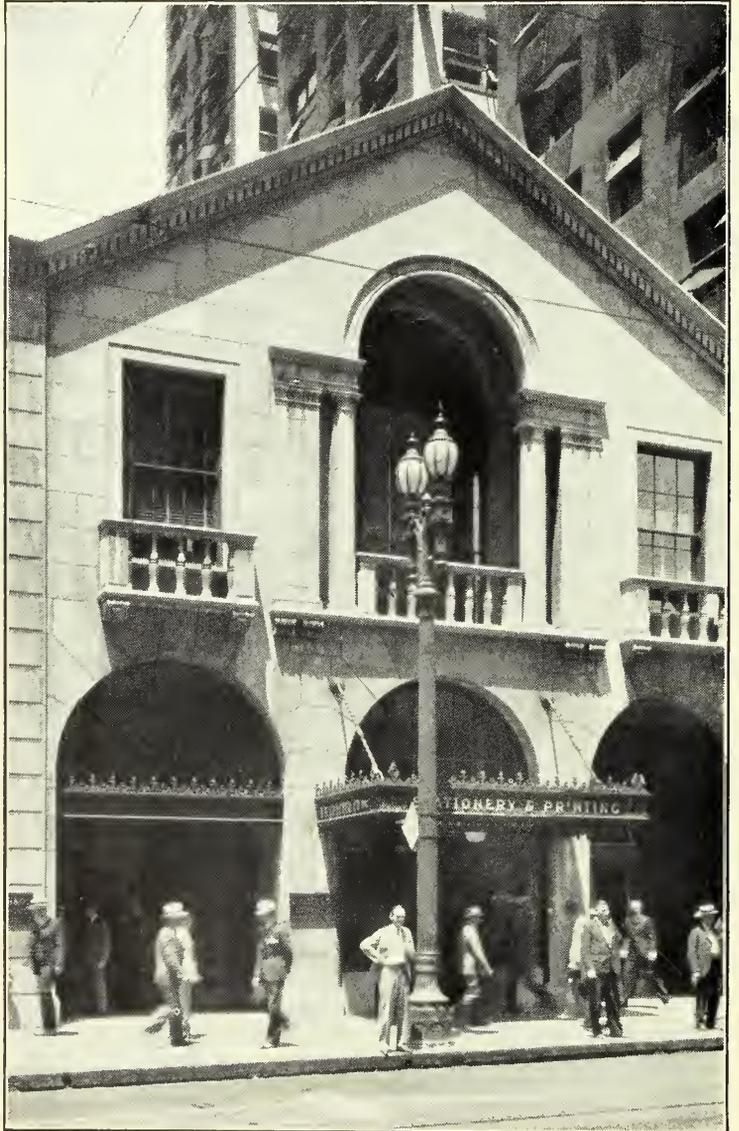
THESE are the words of the president of the Chicago South Park Board in explaining why his board insisted upon using natural stone throughout in the rehabilitation of Chicago's famous Fine Arts Building, relic of the World's Fair. "I have been converted by public opinion," he said.

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BUILDING WITH A PERSONALITY

The Northern Life Tower, Seattle, Washington, has been well named "The Building With a Personality." It is no spontaneous dream from out the ether; it is a work of labor. Not only is it a building of personality, it is a building of individuality. Its success from an architectural viewpoint was apparent from the day of completion. Its success commercially has been demonstrated in a period of just nine months. The building is eighty per cent occupied, the office area being seventy per cent occupied.



NORTHERN LIFE TOWER, SEATTLE, WASHINGTON
A. H. ALBERTSON, WILSON & RICHARDSON, ARCHITECTS



MAIN LOBBY, NORTHERN LIFE TOWER, SEATTLE, WASHINGTON

A. H. Albertson, Wilson & Richardson, Architects

conceived as a tunnel carved out of the solid, the side walls polished, the floor worn smooth and the ceiling incised and decorated as a civilized caveman might do it.

"Environment had something to do with this. Seattle is almost surrounded by bodies of water with ranges of rugged mountains and higher peaks marking the horizon. In the course of many climbs among these mountains, rock masses, towering pylons and broken spires were discovered, strongly suggestive of powerful though crude architectural bulk of the receding type. If it were possible to secure and reveal in the building some of the massive, enduring and inspiring character of these neighboring Cascades and Olympics, the effort would be well rewarded; and now that the capstone is laid and the flags unfurled, the degree to which the effort has availed rests with the mercies of the public and the savants to appraise.

"Our traditional architectural forms

mostly have antecedents in the vegetable world. The Greek Temple in its various parts had a timber prototype. The Corinthian capital, and most other ornamental forms, early and late, came from the vegetable kingdom. On the other hand it was natural that the Northern Life Tower, taking inspiration from the stronger elements of its surroundings, should be influenced by the eternal hills.

"The building was conceived as rising out of the ground, not as sitting traditionally upon the surface as a part of the earth rather than a thing apart from it. The piers start below the ground and rising uninterrupted shoot slick and clean to their consummation. The colors are earthy — like natural earth and rock colors, and quite similar in order to enhance the monolith and thereby solidity and permanency. The base story of granite, the brickwork, the terra cotta, the window frames and even the cement sidewalk are similar in tone. The



SIDE AND REAR, NORTHERN LIFE TOWER
A. H. Albertson, Wilson & Richardson, Architects

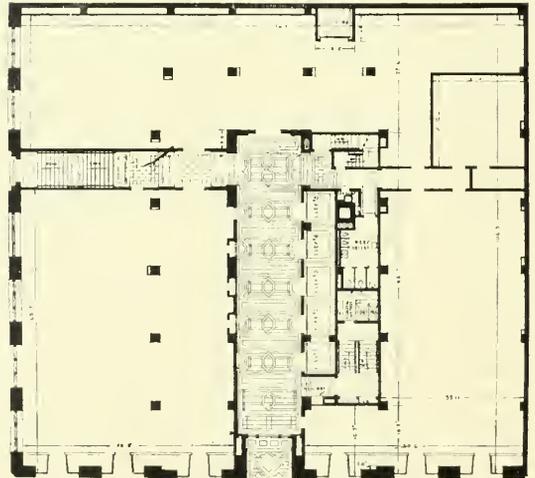
building was largely designed in the model with the drawings keeping pace. Doubtless this is helpful in getting away from flat *facades* designed on flat paper and more readily permits an understanding of the meaning and massing of materials. By these and other means was a sense of solidity, permanency and power sought.

"To accomplish the qualities inherent in the second set of controlling words, representing imagination was, as always, more difficult to achieve. It is to be taken as a matter of course that the monetary invest-

ment will first be made to produce a profit on the enterprise; but when, above and beyond this, it is the high purpose and ambition of a business to be of broad social benefit to the community and to record and express this altruistic desire in a building which appeals to the higher appreciation of the community, then it is the function of the architect also to express this high purpose by molding his materials into noble and inspiring form as far as he is able to do so.

"This is altruism or aspiration and to accomplish this certain theories were put into effect. The sense of elevation or aspiration may be gotten by producing a design which gives an uplifting sense to the eye and mind. The design is primarily a composition in vertical piers which soar without interruption from the sidewalk to the flagpole except, of course, the minor hesitations that are introduced towards the top to announce that the completion of the soaring movement is approaching.

"The piers are conceived as cycles of vertical pulsation or of mounting and surmounting surges decreasing upwards in motion and vigor, finally coming to rest against the block of the top story. The first great



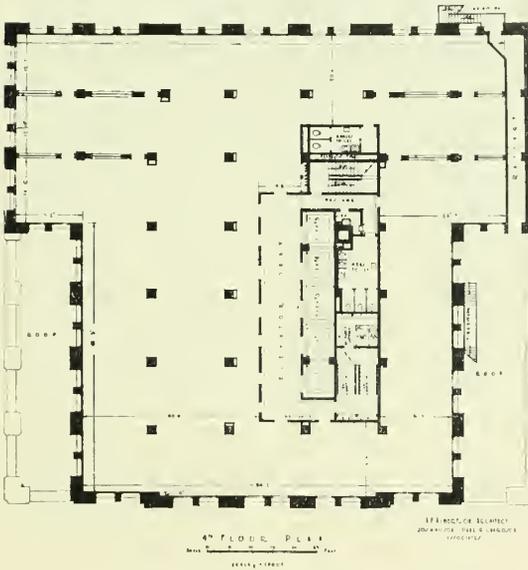
FIRST FLOOR PLAN, NORTHERN LIFE TOWER

primary surge sends the corner piers twenty stories clear where the motion hesitates, slows down and reforms in a two-story pier movement. From there the secondary surge carries them to the 25th floor. Again they hesitate and reform and then mount upward in a short and final surge echoed by two or three minor cessation movements. The movement of the inside piers is the same as the corner piers up to the twentieth floor after which the alternating sweeps and hesitations are of a slightly longer duration bringing them to their completion at a higher point against the block of the top story, thus seeking to produce an interest of harmony between the two varying sets of pier movements. The long sweeps and interruptions may be likened to the back-step in a dance or to the recurrent note in a musical theme.

"To emphasize the dominance and sweep of the piers they were made as deep as possible by omitting the curtain walls, except as the recessed spandrels may be considered as such. The solid metal window frames are set between and directly against the piers and by the omission of the curtain walls and placing the metal frames even with the in-



SIDE AND REAR, NORTHERN LIFE TOWER
A. H. Albertson, Wilson & Richardson, Architects



FOURTH FLOOR PLAN, NORTHERN LIFE TOWER

side plaster the depth of the piers is thereby much increased beyond the usual window depth. The proportion between the small mullion piers and the large piers is such as to divert the attention from the small piers and enhance the strength and motion of the large piers, and by dividing the windows with a single narrow vertical division the height motion of the small piers is in turn enhanced.

"In order to give the piers full swing no horizontal lines were introduced at the ground floor, second floor or any other



Photo by Albert and Alda Jourdan

LOWER STORY PIERS, NORTHERN LIFE TOWER, SEATTLE, WASHINGTON

A. H. ALBERTSON, WILSON & RICHARDSON, ARCHITECTS

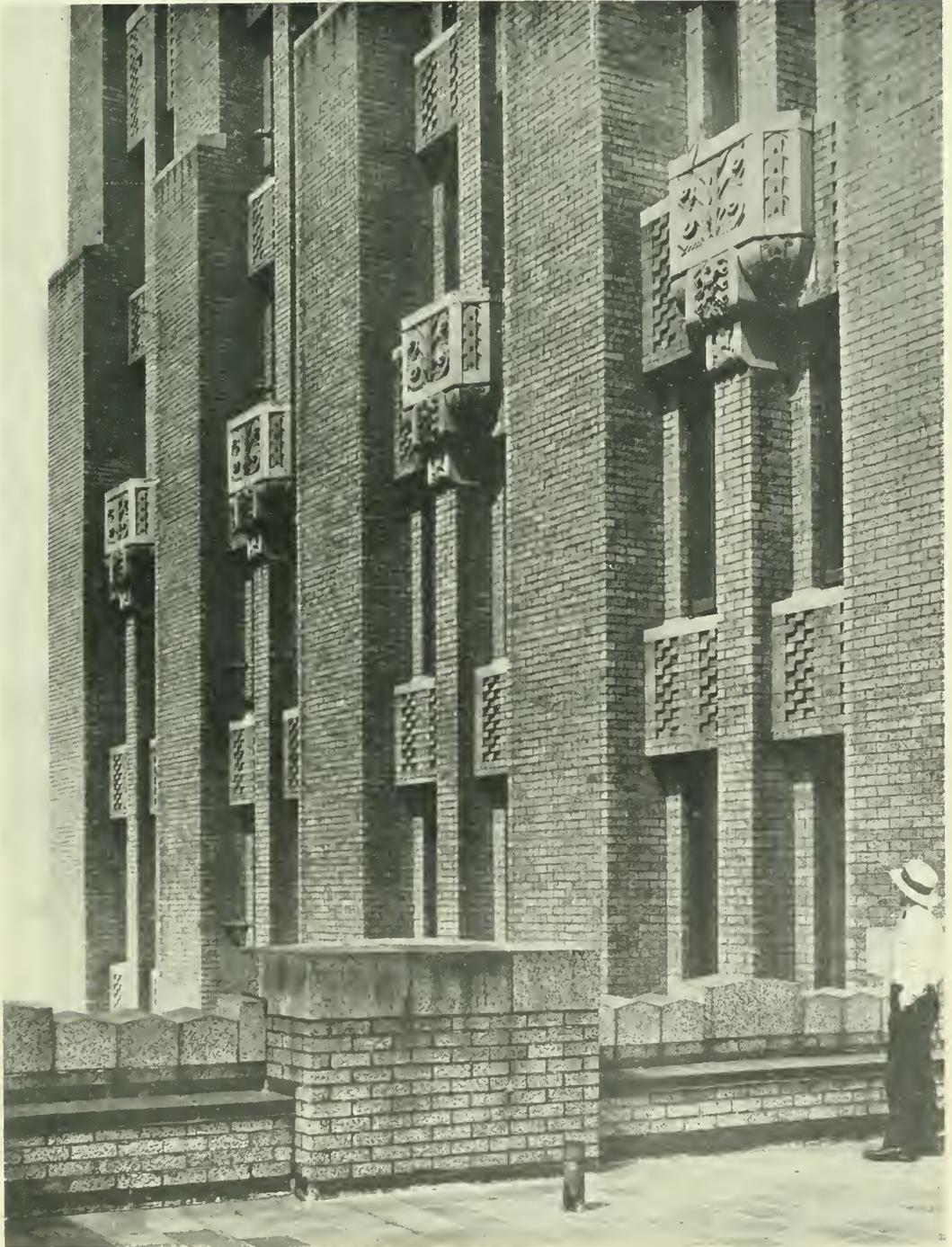
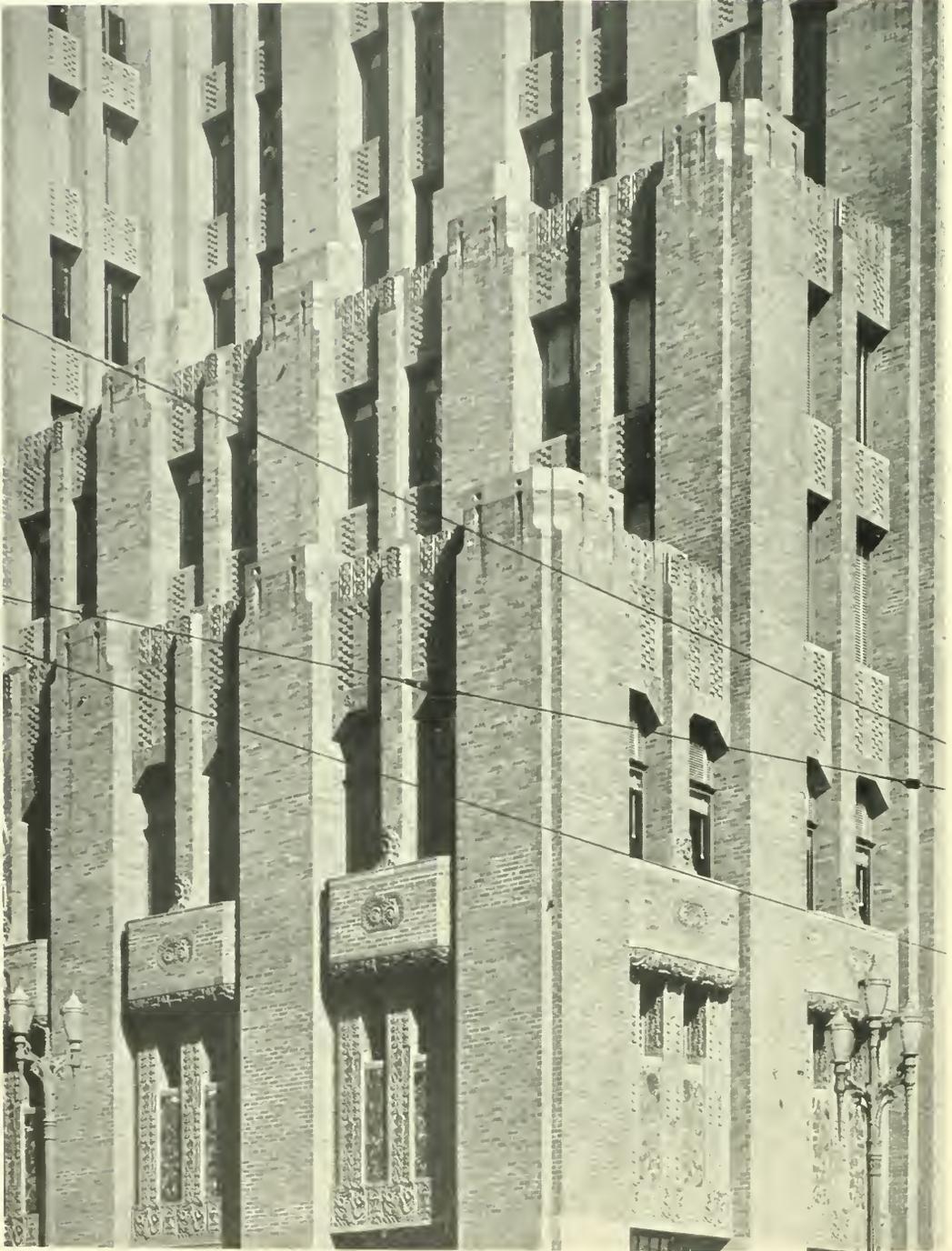


Photo by Albert and Alda Jourdan

PIERS, 17th FLOOR (Showing Flood Lighting Balconies) NORTHERN LIFE TOWER
A. H. ALBERTSON, WILSON & RICHARDSON, ARCHITECTS



PIERS AT STREET INTERSECTION, NORTHERN LIFE TOWER, SEATTLE
A. H. ALBERTSON, WILSON & RICHARDSON, ARCHITECTS

floor; no base, no spandrel band, not even a moulding. There was great temptation during the period of design to introduce the usual horizontal bands at the base of the building, just as in most buildings the ground story is treated as a horizontal unit spreading the load of the building over the ground. To overcome the horizontal line and box effect where the setbacks occur, the piers run up beyond the setback before they are drawn in. Without this solution the undesirable horizontal lines would inevitably predominate. Of course, the setbacks and the entasis of the corners of the building add to strength and solidity. Towards the top it will be noticed the corner piers are drawn in at a level lower than the tops of the piers between. In perspective, this rounds the sharp corners of the building at the setbacks much as the corners of crags are worn off by the elements.

"The treatment of the skyline is unusual in that no ornament whatever is used near the top of the building—no cornice, balustrade, battlement, cheneau or frieze. It is believed that the absence of ornament at the top prevents the eye from arresting at that point and therefore does not interrupt the sense of continuing elevation and uplift.

"Possibly the greatest feeling of upward motion and aspiration comes from the grading of the brickwork from darker at the bottom to lighter at the top. It ranges from an iron ore color at the bottom to a light tan at the top. The terra cotta, sparingly used, was made of approximately the same graded colors as its neighboring brickwork, dark at the bottom and light at the top. The mortar joints also are darker than the brick at the bottom, graded to lighter than the brick at the top. Due to the height of the building, the grading of the brickwork is necessarily very gradual and therefore not conspicuous and while the effect is consid-

erable it may not always be consciously seen though always felt.

"As far as known, this is the first important building attempting to secure benefits from gradation in color. Here again the influence of the environment appears. During changing sky conditions the neighboring bodies of water frequently show sharp gradation in color values, shading from bright tints in the distance down to dark tones in the foreground. It was such a scene looking down on Lake Washington on the edge of the city that first suggested the gradation of color in the Northern Life Tower. Mt. Rainier, the greatest neighboring landmark, is always white at the top with perpetual snow and grades in strength of color downward into the deep evergreen of the forests below. Before arriving at a decision to grade the building, these pronounced natural examples were actively discussed and appraised. In fact, everything in nature shows some variations in color, nothing is flat. The colorist knows that.

"The building stands over the Great Northern Railway tunnel some sixty feet below the foundations. A reinforced concrete mat, about five feet thick, was poured in a continuous operation over the entire Tower area. The structural frame is of steel although reinforced concrete was given serious consideration. All of the materials of reinforced concrete are local products while the heavier structural steel was brought from the East. For that and other reasons, nearly all important buildings in this vicinity, except the highest, are constructed of reinforced concrete.

"The building was built under the Seattle setback law, which was the earliest one in the United States. It is constructed of the same material on four sides and no utilities, such as fire escapes, sacks, roof tank or elevator penthouse were allowed to obtrude."

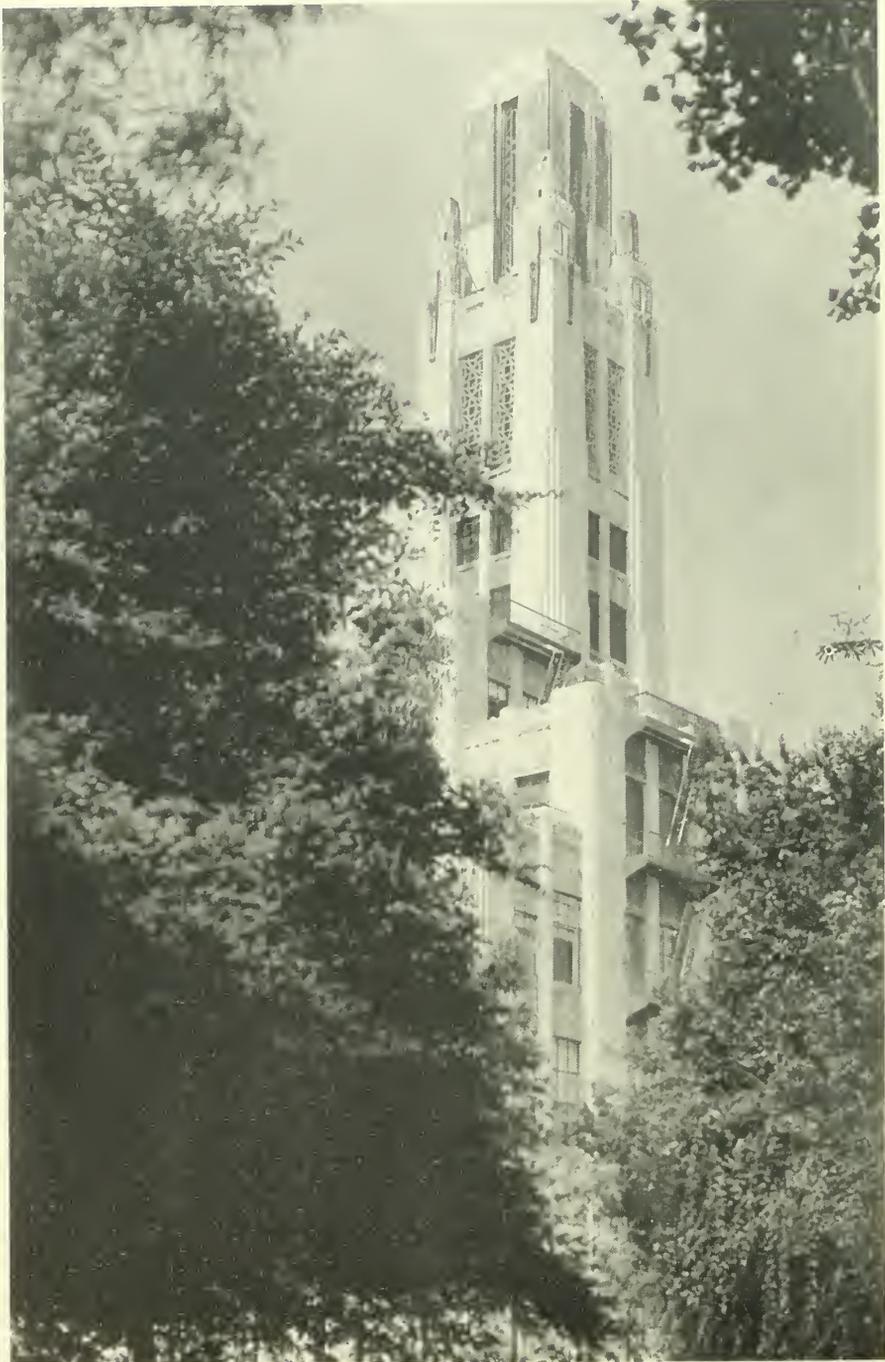


Photo by Ernest M. Pratt

TOWER FROM REAR, BULLOCK'S WILSHIRE STORE, LOS ANGELES

JOHN AND DONALD B. PARKINSON, ARCHITECTS

BULLOCK'S WILSHIRE BOULEVARD STORE ~ LOS ANGELES

BULLOCK'S Wilshire building, Los Angeles, was designed to house the present activities of the store with a view to future expansion. As the store owns a very large piece of property adjoining the building on the south, and as the foundations and columns are designed for full limit height over the present area of the building, the horizontal and vertical extensions thus made possible will undoubtedly care for the Store's needs for many years to come.

Owing to the strategic location on Wilshire Boulevard it was found desirable to create a tower on the building for the advertising value such a lofty landmark would possess. The Los Angeles Building Ordinance permits of but a 150 foot building height limit. However, in addition to this height, the law permits six feet of roof construction, 35 feet of penthouse construction and 50 feet of sign construction, making a total possible legal height of 241 feet. The penthouse structure can be used

only for tanks and machinery, while the sign structure must be for advertising purposes only. As the law further restricts the sign structure to the use of sheet metal and light steel members this feature, to a great extent, determined the design of the entire building. It was thought undesirable to paint the upper 50 feet of the tower in imitation of terra cotta masonry used in the lower stories of the building and as it was most desirable to tie the crowning feature

of the tower into the remainder of the building, the metal finish of the so-called sign structure was carried through all of the spandrels, thereby determining to a great extent the actual forms used in the design as well as the color. The green of oxidized copper and the buff colored terra cotta that were selected, form a combination of color that seems to fit in very happily with the California atmosphere.

A serious effort was made in the design to keep it as structural as possible, also to confine the orna-



ENTRANCE GATES TO PARKING SPACE, BULLOCK'S WILSHIRE STORE, LOS ANGELES



BULLOCK'S WILSHIRE STORE, LOS ANGELES
JOHN AND DONALD B. PARKINSON, ARCHITECTS

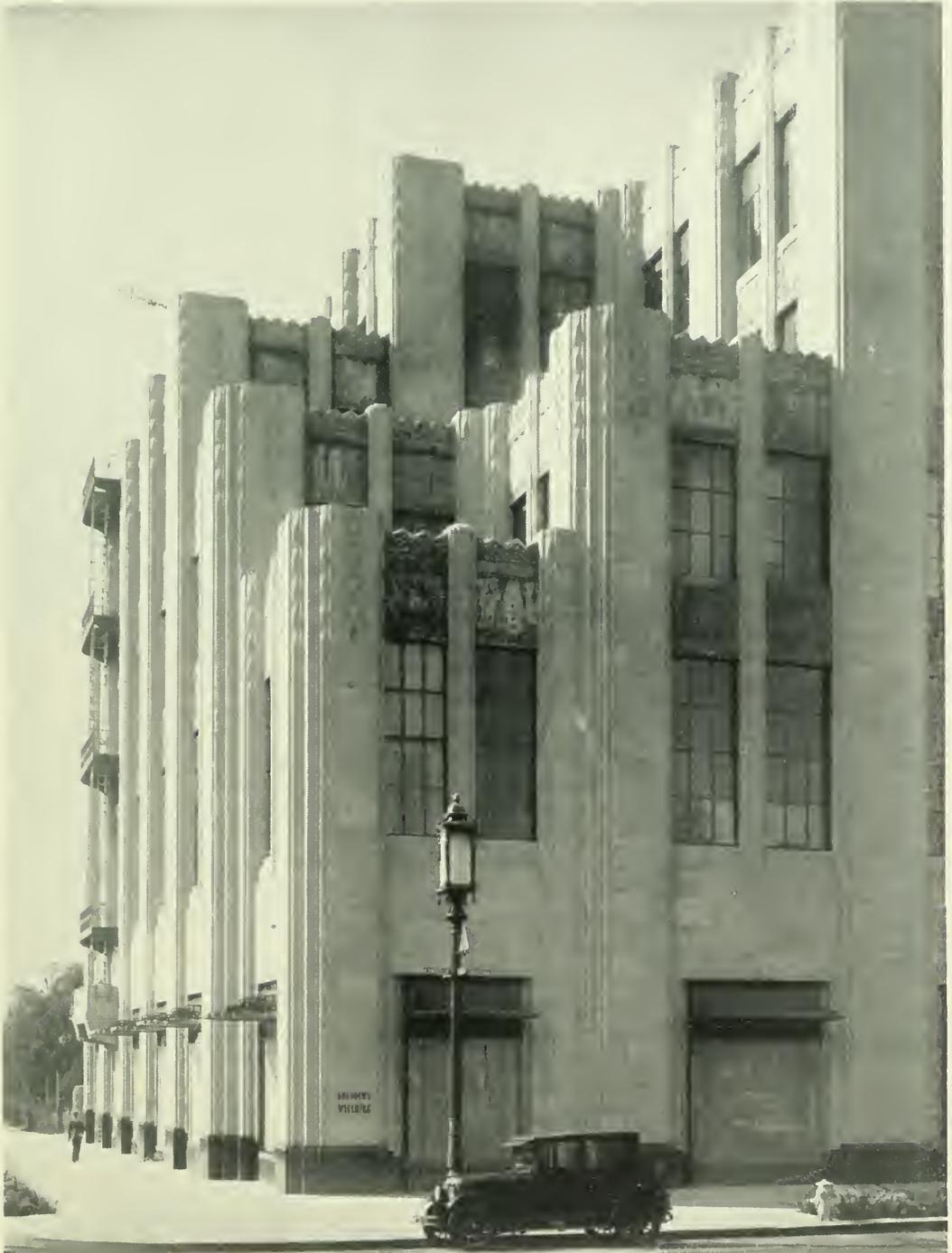


Photo by Ernest M. Pratt

A STUDY IN MODERN MASS, BULLOCK'S WILSHIRE STORE, LOS ANGELES
JOHN AND DONALD B. PARKINSON, ARCHITECTS



PORTE COCHERE, BULLOCK'S WILSHIRE STORE, LOS ANGELES
John and Donald B. Parkinson, Architects



ENTRANCE TO RIDING SHOP

ment to geometrical forms which seem to fit this type of building much better than foliated or other forms drawn from the accepted architectural styles.

The physical dimensions of the building are Wilshire Boulevard frontage 294'-6", depth 153'-2", floor area 198,889 sq. ft., cubical contents 4,723,759 cu. ft.

The entire interior of the building has been carried out in the modern trend by Feil and Paradise, interior decorators, collaborating with J. D. Peters. Modernists say it represents the best that has been done in Los Angeles in recent months. William I. Garren, editor of the Modern Art Department of this magazine paid a hurried visit to the building while attending the recent Architect's Convention. He was most favorably impressed.

"To my mind it is one of the most consistently modern creations in large retail stores in this country," said Mr. Garren. "There has been a handling of materials that reflects a fine sense of their natural



INTERIOR OF PORTE COCHERE, BULLOCK'S WILSHIRE STORE, LOS ANGELES
John and Donald B. Parkinson, Architects

beauty. The use of light in the designing has been very satisfactorily worked out, forming combined architectural and illuminating compositions.

"The furniture and display cases show that the designers and creators of the interior have worked in very close co-operation and have achieved an orderly and beautiful display of merchandise that takes its place with proper relation to the surrounding architecture. Throughout, the beautiful craftsmanship is evident, reflecting in the assembly of the materials an appreciation of modern form and principal of design.

"Retail merchandising offers a fruitful field for originality on the part of the modernist. The success of this particular store from a merchandising standpoint, aside from architecture, is clearly shown in the crowds surging around the building at night and through it during the day and that all California is talking about it."



TYPICAL DISPLAY WINDOWS



ELEVATOR LOBBY, BULLOCK'S WILSHIRE STORE, LOS ANGELES
Feil and Paradise, Interior Designers, Collaborating with J. D. Peters



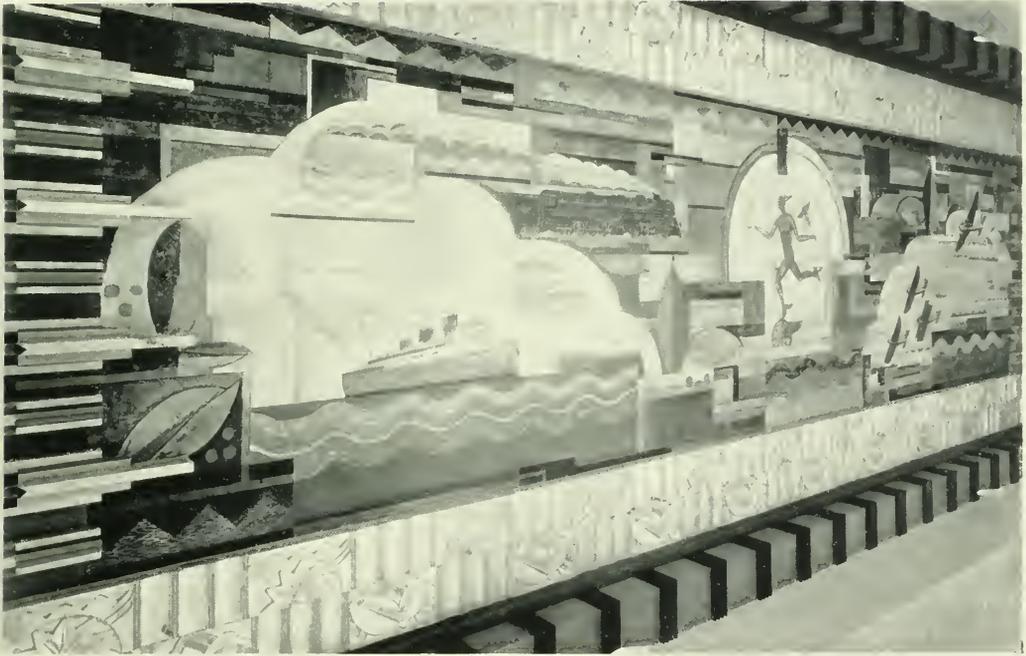
TOILETRIES DEPARTMENT, FIRST FLOOR LOBBY,
BULLOCK'S WILSHIRE STORE

NORTHERN CALIFORNIA CHAPTER, A. I. A.

THE regular meeting of the Northern California Chapter, A. I. A., was held at the Clift Hotel on November 26th, at 6:30 p. m., President Frederick H. Meyer presiding. The following members were present: Messrs. Hurd, Evers, McCool, Weihe, Gutterson, Magee, Bruce, Hildebrand, Garren, Johnson, Michelsen, Allen, Meyer, Mitchell, Ashley, Maury, Coxhead, Bakewell, Howard, Jeans, Bertz, Wyckoff, Dean, Clarke, Donovan, McSweeney, Osborn, and Jorgensen. Guests present were: Messrs. Roeth, Schalk and Kent.

This being the occasion of Mr. Allen's retiring from the presidency after two years of valuable service, a token of appreciation was presented to him by Mr. Gutterson in behalf of the Chapter.

Mr. Meyer, in proceeding with the program, desired the Chapter to know of his surprise upon returning from a trip to Europe to find that during his absence he had



CEILING OF PORTE COCHERE, BULLOCK'S WILSHIRE STORE, LOS ANGELES

John and Donald B. Parkinson, Architects

been elevated to the presidency. Continuing his remarks, he gave a glowing account of his travels, what he saw, and the impressions made upon him.

Fred Ashley gave an enlightening talk on cost accounting in an architect's office. Large charts had been prepared and hung so that all could see. They showed exactly how the problem has been solved and how the system is operated in the office of Ashley, Evers & Hayes. Step by step, one job was carried through to show the cost of operation at any particular stage, and final determination of profit at completion.

The talk was followed by a wide range of discussion and questioning by those present. Some explained their own system, whereby they had been able to establish, with reasonable accuracy, the cost of their operations. It was interesting to note the respective variance with Mr. Ashley's plan—all however, attaining approximately the same result by different methods.—J. H. M.



SPORTS WEAR DEPARTMENT, BULLOCK'S WILSHIRE STORE, LOS ANGELES



ENTRANCE AT BASE OF TOWER, BULLOCK'S WILSHIRE STORE, LOS ANGELES
JOHN AND DONALD B. PARKINSON, ARCHITECTS

SOME HIGH LIGHTS in MOTION PICTURE THEATER DESIGN

PROBABLY no architect in the United States is better known as an authority in theater design than Thomas W. Lamb of New York. As the architect of the new Fox theater in San Francisco, which is pictured in this issue of this magazine, his views on theater architecture, given herewith, are of added interest. Mr. Lamb has been planning play houses for nearly a quarter of a century and he says when he recalls the days of his early practice and the little thought builders then gave to architectural styles in contrast to the exceptional beauty and efficiency of the modern theater, he becomes impressed with the value of such comparison as a background for a story of the great rise of motion pictures as a popular entertainment and cultural force.

"It is needless to remind you," says Mr. Lamb, "that motion picture projection was not the art then that it is today, and I feel quite sure that not even the men who then were engaged in building up chains of theaters had any idea that motion pictures were destined ultimately to supplant in the public favor all other forms of theater entertainment.

"Many of my architect friends have from time to time referred to me as the disciple of the Adam Period in theater design. It is quite true that for many years I have used the works of James and Robert Adam as the background for my interiors. This I did because I felt that this style of decoration most ably reflected the moods and preferences of the American people.

"Of late years, however, I felt that there was an underlying demand for something more gay, more flashy—a development for which there is much precedent in the his-

tory of architecture. For this reason I began to favor in my designs an entirely different style, leaning towards the periods of Louis XVI and the very rich productions in the Italian Baroque style.

"During the course of years in which I have specialized in the planning and building of motion picture theaters, architecture has become so important that the interiors of the theaters now are really educational for all those who are interested in this art, in decorative painting, modeling, etc. It is most essential today for the architect to follow a style to the most minute detail if he wishes to avoid the lash of criticism administered by the students of this wonderful profession.

"There is every reason for the architect to welcome such a condition of affairs. With thousands and thousands of young people intensely interested in the arts, the theater architect is assured of a wide and discriminating public for his productions. The motion picture theater—resort of the multitudes—as much as any public building or institution, should be the background to give these students a reference for their study and development. This very fact places upon the theater architect an obligation to excel in his work and to strive to do his part in the popularization of the art to which he devotes his talents.

"I have visited very many of the newest theaters throughout the country and I note with gratification that each and every one of the various factors involved in the building and operation of motion picture theaters strive to improve upon each other's theaters from time to time. This fact is most strikingly apparent in such features as retiring rooms, smoking rooms and



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lounges, very little considered five or six years ago, but which today figure as a most important part of the plan and decoration of the theater itself.

"These public rooms are designed in special periods of architecture, and the furnishings, which years ago were bought on a budget system for the lowest amount possible, now are being selected most carefully to suit the style in which the rooms are designed. This added attention to detail I am sure is one of which the public is most appreciative.

"I have noted with great interest the development of the neighborhood theaters throughout the country. These houses, seating approximately 2,500 people are indeed interesting and form an important feature of the neighborhood life of every community in which they are found.

"One of my architect friends has been very successful in presenting to the public through the medium of the motion picture, a theater of a type called the "Atmospheric Theater," wherein sky effects are used in place of the usual ornate ceilings, and the sidewalls of the auditorium indicate scenes of the interiors of patios and beautifully decorated garden walls.

"The new idea of the elevating orchestra pit has certainly proved a great improvement. Years ago, the patrons of the balcony had only a partial view of the orchestra, and since theater owners expend large sums for the purpose of having fine orchestras and through advertising develop a popular interest in them, the plan to lift the pit up into such position that all the musicians may be seen from all parts of the house is most practical from the standpoint of the showman.

"There have been a great many innovations and special ideas brought about in the lighting system of theaters. However, the idea of the three-color houses on the interior has been, more or less, eliminated—with the exception of such three-colors being used in the main ceiling dome and always on the stage.

"Another very important change has taken place in the decoration of theaters. On account of the new styles embodied,

such as Hindu, Chinese, Romanesque, Spanish, etc., it was necessary to introduce colors into the theater.

"The decorative scheme is the most essential part of the house after the architectural background has been set, and the quality of this decoration, though inspired by the architect, is largely left for the decorator to complete.

"In the theater people come to be entertained, but in order that they may be entertained, it is wise to put them in a receptive and friendly frame of mind. This the decorator can do much toward accomplishing.

"We use a great deal of gold because it is the acme of wealth, warmth and coziness. Theophilus Hansen, the great decorator of Vienna, in the latter part of the last century, once made the remark that we cannot use too much gold for it is pleasing and harmonious with any other conceivable color.

"To make our audience receptive and interested, we must cut them off from the rest of the city life and take them into a rich and self-contained auditorium, where their minds are freed from their usual occupations and customary thoughts. In order to do this, it is necessary to present to their eyes a general scheme quite different from their daily environment.

"It does not seem wise to bring the people directly into the full richness and intensity of the decorative scheme, so it is customary to work up to this intensity through various stages. The outer vestibules only give a faint indication of the richness of the interior, and as we pass through lobbies and foyers, the full tone of color and gold is gradually attained, the lighter colors in the vestibules and foyers; the darker and richer colors in the auditorium. It is one of the most quieting and soothing effects that can be striven for in a large interior. We all appreciate the almost narcotic effect of gazing at the waves at sea, or through the leaves of a forest, or at the stars at night. So with the large vaulted and coffered ceilings one is quite overawed by the immensity thereof, by its fineness of detail and by its endless repetition."



Chas. T. Phillips, Mechanical and Electrical Engineer

FOX THEATER, SAN FRANCISCO, CALIFORNIA
THOS. W. LAMB, ARCHITECT; H. A. MINTON, ASSOCIATE



Photo by Waters

GRAND LOBBY, FOX THEATER, SAN FRANCISCO, CALIFORNIA
THOS. W. LAMB, ARCHITECT; H. A. MINTON, ASSOCIATE



GRAND STAIRWAY, FOX THEATER, SAN FRANCISCO
THOS. W. LAMB, ARCHITECT; H. A. MINTON, ASSOCIATE



CORRIDOR, SECOND MEZZANINE, FOX THEATER, SAN FRANCISCO
THOS. W. LAMB, ARCHITECT; H. A. MINTON, ASSOCIATE

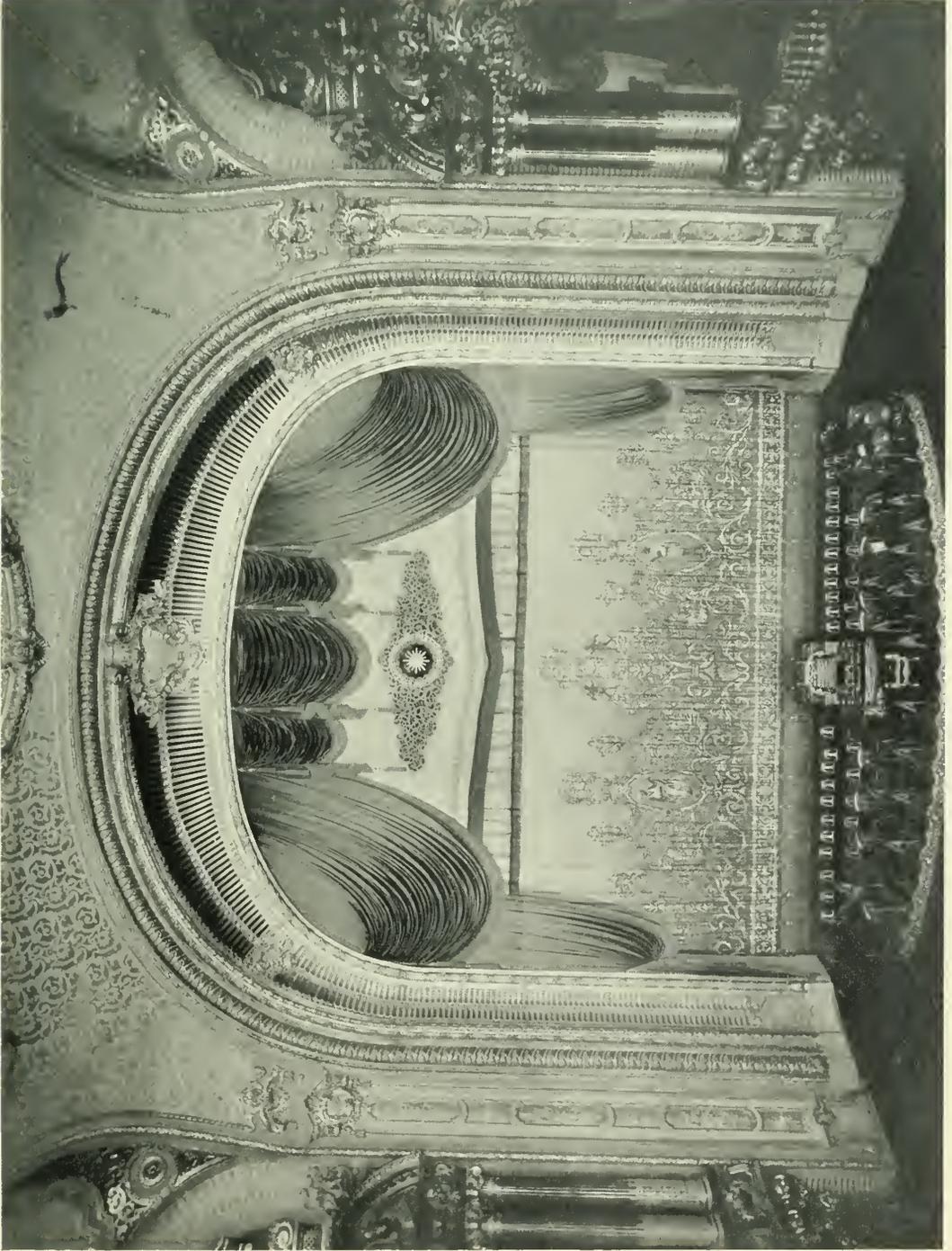


Photo by Waters

ORGAN CONSOLE, MEZZANINE FLOOR, FOX THEATER, SAN FRANCISCO
THOS. W. LAMB, ARCHITECT; H. A. MINTON, ASSOCIATE



ORGAN SCREEN, PROSCENIUM ARCH, FOX THEATER, SAN FRANCISCO
THOS. W. LAMB, ARCHITECT; H. A. MINTON, ASSOCIATE



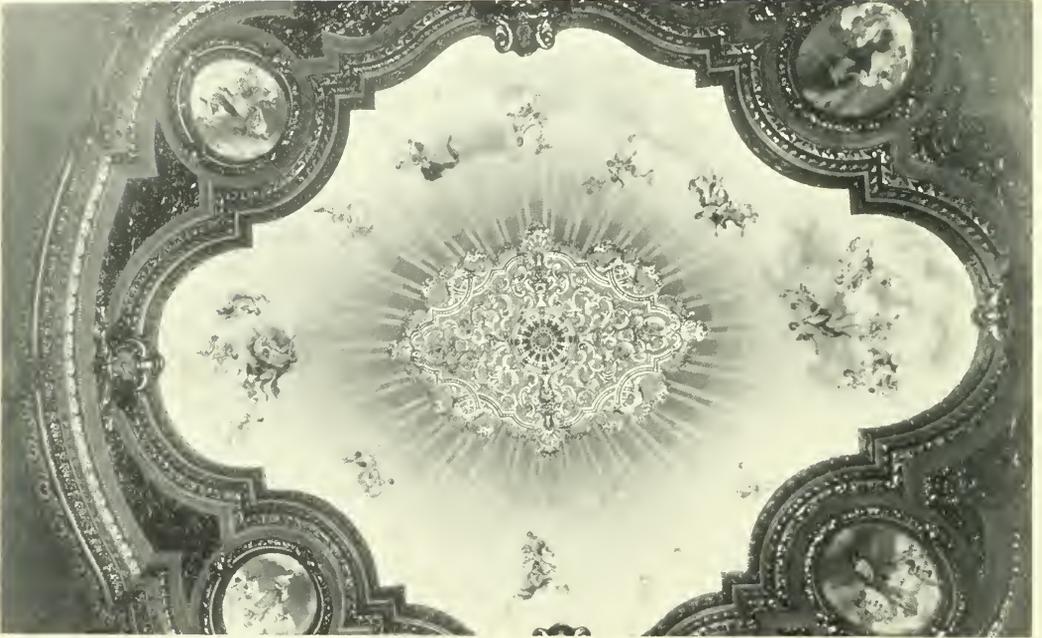
PROSCENIUM ARCH AND ORCHESTRA PIT, FOX THEATER, SAN FRANCISCO
THOS. W. LAMB, ARCHITECT; H. A. MINTON, ASSOCIATE



WOMEN'S LOUNGE, FOX THEATER, SAN FRANCISCO
Thos. W. Lamb, Architect; H. A. Minton, Associate



WOMEN'S COSMETIC ROOM, FOX THEATER, SAN FRANCISCO
Thos. W. Lamb, Architect; H. A. Minton, Associate



CEILING IN MAIN AUDITORIUM, FOX THEATER, SAN FRANCISCO
Thos. W. Lamb, Architect; H. A. Minton, Associate



MEN'S SMOKING ROOM, FOX THEATER, SAN FRANCISCO
Thos. W. Lamb, Architect; H. A. Minton, Associate

JUST WHAT DOES AN ARCHITECT DO FOR HIS CLIENT?

THE services of a present-day architect are commonly divided into five stages. These are often called the five fundamental functions of an architect and are described as follows in a pamphlet recently issued by the Illinois Society of Architects:

1—"PRELIMINARY STUDIES", which are really the diagnosis of the building problem, proceed first with the careful questioning of the client as to that which he wishes to accomplish. In this study the architect must be sufficiently familiar with human desire to read between spoken words the unexpressed wish.

And to these wishes he must add those things which his own skill and experience dictate as essential to the full, up-to-date solution of the client's problem, such as location of rooms to assure convenience and comfort, straight-line routing of materials in industrial buildings, etc.

In studying these problems the architect must also consider site conditions, present and future land values, relationship to transportation, adjoining property conditions, public utilities, including sewerage, gas, water, heat, electricity, etc.

After the plan scheme is worked out, the architect must then design a building dress that shall be a logical interpretation of the plan—pleasing in aspect, harmonious in color combination, and at a cost appropriate to character of use and neighborhood standards.

The architect next prepares an approximate estimate of cost. This is based on floor areas, volume and similar tentative factors. No accurate estimate can be made until working drawings and specifications determine actual quantities of material and labor.

At this point the architect consults with the client as to whether he wishes to proceed with the original scheme as outlined, or if it should be modified to reduce cost, or to increase efficiency or ornamentation.

Should changes be desired, they are worked out in preliminary form and a new approximate estimate prepared.

NOTE: Standard forms of agreement between the architect and his client provide that "Preliminary Studies" shall be modified and remodified by the architect until the client's problems have been solved. During this period the client may, within reason, change his mind as to a given project as many times as he desires, and without involving himself in extra expense. This "Preliminary Study" work usually represents about one-fifth of the architect's complete service.

2—"WORKING DRAWINGS" to scale are now made up. In this second important function of an architect, he prepares drawings which indicate sizes of parts, designation of materials, etc.

NOTE: On this work the architect employs numbers of draftsmen and engineers, and salaries and material expense, as well as chances of error, are so great that marked changes cannot be made except at extra cost to the client. Since "Working Drawings" are perfected in a sort of evolutionary process, to disturb the regular continuity of office program very greatly increases the chances of duplications, omissions, or miscalculations. It is best for the client to make haste slowly on the preliminary design, then leave the "Working Drawings" severely alone. "Working Drawings" represent about three-tenths of an architect's entire service.

3—"SPECIFICATIONS," carefully worded and covering all items of information not set forth in the drawings, is the next task of the architect. Before writing these specifications he must review catalogs of materials, inspect and test samples of materials and devices, interview salesmen and compare market prices, determine what is best suited for the job, and act throughout as the client's purchasing agent.

NOTE: Before a building is completed and furnished ready for use 25 or more contracts are usually let. And as five bids are commonly required on each contract, 125 or more interviews are necessary. Upon receipt of the bids by the architect they must be opened, read and tabulated—a task that often involves several days' work. "Specifications" commonly represent about one-tenth of the total work of the architect.

4—"SCALE AND FULL-SIZED DETAILS" of the work are then prepared by

the architect. These include all the necessary supplementary drawings required to enable the builder to so provide and shape his material that it may be placed in the building with minimum delay and chances for error.

NOTE: In this process of detailing the architect considers the best methods of assembling parts to avoid the evil effects of shrinking and swelling, easy motion of moving parts, water-proof and dust-tight qualities, etc. In these drawings, too, he gives particular attention to details of carved ornament, etc., which assure the beauty of the building. Correct details not only reduce cost of construction, but greatly increase the comfort and convenience of the building. "Details" represent about one-tenth of the total work of the architect.

5—"GENERAL SUPERVISION OF THE WORK" is the fifth and final step. This consists of drawing properly-worded construction contracts between the owner and contractor, also such inspection by the architect or his deputy of work in process to assure conformance with specifications. The architect's supervision also includes the careful auditing of the contractor's accounts from month to month, issuance of certificates to the owner concerning the amount due the contractor, from time to time, securing statements from contractors as required by Mechanics Lien Law, and safeguarding the interests of the owner in many other ways.

NOTE: "General Supervision of Work" (not including the continuous service of a clerk-of-the-works), where contracts are let on the general contract basis, commonly requires about three-tenths of the architect's total service. If, however, the work is let on separate contract basis it involves considerable extra expense for service on the part of the architect, including the continuous service of the clerk-of-the-works, and is paid for in addition to his regular fee. Rightly rendered, however, this additional service will save the owner—in cost and efficiency of the building—several times the supplementary fee.

A CENSUS OF SKYSCRAPERS

THAT high buildings are not confined exclusively to the larger cities is shown in a survey recently completed by the Thompson-Starrett Company, of New York, covering 173 cities of the United States having a population of 50,000 or more. Of these, 36 have one or more buildings over 20 stories high. On the other hand, 42 cities have no buildings as high as 10

stories, and 59 cities have less than five such buildings.

The survey reveals that there are in this country 4,778 buildings 10 stories or more in height, and of these only 377 are more than 20 stories high. Approximately half of all buildings between 10 and 20 stories and of those over 20 stories are located in New York. In the entire Northwest from the Great Lakes to the Coast are nine cities having five or more buildings of ten stories or more. Seattle leads with 43 buildings; Minneapolis is second with 35, Portland is third with 25, Milwaukee fourth with 15 and Des Moines is fifth with 14.

New York has 188 buildings over 20 stories, Chicago has 65 and Philadelphia is third with 22. Only six cities have 100 or more buildings over 10 stories high.

There are 10 buildings in the country taller than 500 feet and five others are in the course of construction. The highest is the Woolworth building, whose 792 feet has not been surpassed in 16 years. This mantle of supremacy will pass this year to the Chrysler building, which will rise 808 feet above the sidewalk, but shortly thereafter the Bank of Manhattan building, mounting to a height of 836 feet, will claim the distinction of the loftiest building in the world.

List of Cities With Five or More Buildings of Ten Stories or Over

City	Bldgs. Bldgs. 10-20 21 Stys. Stys. or More	City	Bldgs. Bldgs. 10-20 21 Stys. Stys. or More
Albany, N. Y.	9 2	Nashville, Tenn.	17 0
Atlanta, Ga.	17 1	Newark, N. J.	18 3
Atlantic City, N. J.	21 0	New Haven, Conn.	5 0
Baltimore, Md.	36 1	New Orleans, La.	21 1
Beaumont, Texas	5 1	New York, N. Y.	2,291 188
Birmingham, Ala.	13 1	Oakland, Calif.	14 1
Boston, Mass.	102 2	Oklahoma City, Okla.	20 2
Chicago, Ill.	354 65	Omaha, Neb.	9 0
Cincinnati, Ohio	24 2	Peoria, Ill.	12 0
Cleveland, Ohio	40 4	Philadelphia, Pa.	98 22
Columbus, Ohio	16 1	Phoenix, Ariz.	5 0
Dallas, Texas	31 1	Pittsburgh, Pa.	52 15
Dayton, Ohio	15 0	Portland, Ore.	25 0
Denver, Colo.	9 0	Providence, R. I.	5 1
Des Moines, Iowa	14 0	Richmond, Va.	20 1
Detroit, Mich.	102 19	Rochester, N. Y.	12 0
Duluth, Minn.	5 0	Sacramento, Calif.	7 0
Ft. Worth, Texas	11 3	St. Louis, Mo.	83 3
Galveston, Texas	5 0	St. Paul, Minn.	7 0
Houston, Texas	24 5	Salt Lake City, Utah	10 0
Indianapolis, Ind.	23 0	San Antonio, Texas	21 3
Jacksonville, Fla.	14 0	San Diego, Calif.	8 0
Jersey City, N. J.	16 0	San Francisco, Calif.	45 8
Johnstown, Pa.	5 0	Seattle, Wash.	41 2
Kalamazoo, Mich.	5 0	Springfield, Ill.	5 0
Kansas City, Mo.	60 2	Stockton, Calif.	6 0
Knoxville, Tenn.	6 0	Syracuse, N. Y.	4 1
Little Rock, Ark.	6 0	Tacoma, Wash.	6 0
Long Beach, Calif.	14 0	Tampa, Fla.	11 0
Los Angeles, Calif.	134 1	Toledo, Ohio	6 1
Louisville, Ky.	17 0	Tulsa, Okla.	37 2
Memphis, Tenn.	23 1	Washington, D. C.	20 0
Miami, Fla.	25 1	Wheeling, W. Va.	6 0
Milwaukee, Wis.	15 1	Wichita, Kans.	14 0
Minneapolis, Minn.	32 3	Wilkes-Barre, Pa.	5 0
Montgomery, Ala.	5 0	Youngstown, Ohio	5 0

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EARTHQUAKE RESISTING BUILDINGS RIGID TYPE

By Henry D Dewell, C.E.

THESE are two schools of thought with respect to the proper method of furnishing earthquake resistance to buildings. One holds that buildings should be designed to be as rigid as possible; the second argues that more effective resistance results from designing the building to be flexible, either throughout its height or in certain portions only. Thus, we have those who would provide a definite flexibility in the lower portions only of the building columns. This type of construction is sometimes termed "flexible first story" construction.

This paper presents the salient features of the rigid type of structure; a brief exposition of its underlying principles of design and its limitations; and in addition, points out what are believed to be the weaknesses of the "flexible" construction.

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more dependent upon the ratio of height to least lateral dimension. Perhaps one hundred and fifty feet may be placed as a tentative value.

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I believe that the following extracts from the preface of Dr. Naito's treatise will be of interest.

"Along with the advance of the world and the progress in construction work, large buildings for factories, warehouses, and particularly for office buildings, are now built. Although these buildings are constructed of timber, reinforced concrete, and structural steel, nearly all of them are built as "framed structures." Even though buildings with structural frames have been considered to offer great resistance to earthquakes, accurate and practical methods for their design against lateral shock have not

*NOTE—A paper read at the annual convention of the State Association of California Architects.

the architect. These include all the necessary supplementary drawings required to enable the builder to so provide and shape his material that it may be placed in the building with minimum delay and chances for error.

NOTE: In this process of detailing the architect considers the best methods of assembling parts to avoid the evil effects of shrinking and swelling, easy motion of moving parts, water-proof and dust-tight qualities, etc. In these drawings, too, he gives particular attention to details of carved ornament, etc., which assure the beauty of the building. Correct details not only reduce cost of construction, but greatly increase the comfort and convenience of the building. "Details" represent about one-tenth of the total work of the architect.

5—"GENERAL SUPERVISION OF THE WORK" is the fifth and final step. This consists of drawing properly-worded construction contracts between the owner and contractor, also such inspection by the architect or his deputy of work in process to assure conformance with specifications. The architect's supervision also includes the careful auditing of the contractor's accounts from month to month, issuance of certificates to the owner concerning the amount due the contractor, from time to time, securing statements from contractors as required by Mechanics Lien Law, and safeguarding the interests of the owner in many other ways.

NOTE: "General Supervision of Work" (not including the continuous service of a clerk-of-the-works), where contracts are let on the general contract basis, commonly requires about three-tenths of the architect's total service. If, however, the work is let on separate contract basis it involves considerable extra expense for service on the part of the architect, including the continuous service of the clerk-of-the-works, and is paid for in addition to his regular fee. Rightly rendered, however, this additional service will save the owner—in cost and efficiency of the building—several times the supplementary fee.

A CENSUS OF SKYSCRAPERS

THAT high buildings are not confined exclusively to the larger cities is shown in a survey recently completed by the Thompson-Starrett Company, of New York, covering 173 cities of the United States having a population of 50,000 or more. Of these, 36 have one or more buildings over 20 stories high. On the other hand, 42 cities have no buildings as high as 10

stories, and 59 cities have less than five such buildings.

The survey reveals that there are in this country 4,778 buildings 10 stories or more in height, and of these only 377 are more than 20 stories high. Approximately half of all buildings between 10 and 20 stories and of those over 20 stories are located in New York. In the entire Northwest from the Great Lakes to the Coast are nine cities having five or more buildings of ten stories or more. Seattle leads with 43 buildings; Minneapolis is second with 35, Portland is third with 25, Milwaukee fourth with 15 and Des Moines is fifth with 14.

New York has 188 buildings over 20 stories, Chicago has 65 and Philadelphia is third with 22. Only six cities have 100 or more buildings over 10 stories high.

There are 10 buildings in the country taller than 500 feet and five others are in the course of construction. The highest is the Woolworth building, whose 792 feet has not been surpassed in 16 years. This mantle of supremacy will pass this year to the Chrysler building, which will rise 808 feet above the sidewalk, but shortly thereafter the Bank of Manhattan building, mounting to a height of 836 feet, will claim the distinction of the loftiest building in the world.

List of Cities With Five or More Buildings of Ten Stories or Over

City	Bldgs. 10-20 Stys.	Bldgs. 21 Stys. or More	City	Bldgs. 10-20 Stys.	Bldgs. 21 Stys. or More
Albany, N. Y.	9	2	Nashville, Tenn.	17	0
Atlanta, Ga.	17	1	Newark, N. J.	18	3
Atlantic City, N. J.	21	0	New Haven, Conn.	5	0
Baltimore, Md.	36	1	New Orleans, La.	21	1
Beaumont, Texas	5	1	New York, N. Y.	2,291	188
Birmingham, Ala.	13	1	Oakland, Calif.	14	1
Boston, Mass.	102	2	Oklahoma City, Okla.	20	2
Chicago, Ill.	384	63	Omaha, Neb.	9	0
Cincinnati, Ohio	24	2	Peoria, Ill.	12	0
Cleveland, Ohio	40	4	Philadelphia, Pa.	98	22
Columbus, Ohio	16	1	Phoenix, Ariz.	5	0
Dallas, Texas	31	1	Pittsburgh, Pa.	52	15
Dayton, Ohio	15	0	Portland, Ore.	25	0
Denver, Colo.	9	0	Providence, R. I.	5	1
Des Moines, Iowa	14	0	Richmond, Va.	20	1
Detroit, Mich.	102	19	Rochester, N. Y.	12	0
Duluth, Minn.	5	0	Sacramento, Calif.	7	0
Ft. Worth, Texas	11	3	St. Louis, Mo.	83	3
Galveston, Texas	5	0	St. Paul, Minn.	7	0
Houston, Texas	24	5	Salt Lake City, Utah	10	0
Indianapolis, Ind.	23	0	San Antonio, Texas	21	3
Jacksonville, Fla.	14	0	San Diego, Calif.	8	0
Jersey City, N. J.	16	0	San Francisco, Calif.	45	8
Johnstown, Pa.	5	0	Seattle, Wash.	41	2
Kalamazoo, Mich.	5	0	Springfield, Ill.	5	0
Kansas City, Mo.	60	2	Stockton, Calif.	6	0
Knoxville, Tenn.	6	0	Syracuse, N. Y.	4	1
Little Rock, Ark.	6	0	Tacoma, Wash.	6	0
Long Beach, Calif.	14	0	Tampa, Fla.	11	0
Los Angeles, Calif.	134	1	Toledo, Ohio	6	1
Louisville, Ky.	17	0	Tulsa, Okla.	37	2
Memphis, Tenn.	23	1	Washington, D. C.	20	0
Miami, Fla.	25	1	Wheeling, W. Va.	6	0
Milwaukee, Wis.	15	1	Wichita, Kans.	14	0
Minneapolis, Minn.	32	3	Wilkes-Barre, Pa.	5	0
Montgomery, Ala.	5	0	Youngstown, Ohio	5	0

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more dependent upon the ratio of height to least lateral dimension. Perhaps one hundred and fifty feet may be placed as a tentative value.

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been published, — a matter very much to be regretted. During the year 1920 the writer applied the results of his study of this type of construction to the design of the Kobe Branch Office of Osaka Shosen Kaisha (an eight story steel framed building including basement, designed by Setsu Watanabe), and publicly presented a part of this work before a meeting of the Construction Society in the fall of that year. Since then the author has applied his methods to the design of structures in several different steel framed or reinforced concrete types of tall buildings; such as the Osaka Takashimaya Dry Goods Store (an eight story reinforced concrete building, including basement, designed by Shinichiro Okada); the Tokyo Jit-sugo-no-Nippon Sha. (a six story reinforced concrete building, including basement, designed by Koichi Sato); the Tokyo Kogyo Bank (an eight story steel framed building, including basement, designed by Setsu Watanabe); and the main office building of Osaka Shosen Co. (a nine story reinforced concrete building, including basement, designed by Setsu Watanabe). Some of those buildings have been completed, but others are still under construction.

“Although the intensity of shock due to the earthquake of April 26, 1922, was only 0.066 g. (about two feet per second per second) in the downtown district, the damage done to the new buildings in the vicinity of Marunouchi was very conspicuous. Particularly the damage done to buildings constructed by American methods was of marked degree. The American method, which revolutionized the Japanese construction and contracting business by simpleness in structure, speed in time of construction, and economy in cost, had weak as well as strong points. American methods affected the construction business greatly in both good and bad ways. The sacrifice of high prices paid for this. The great amount of money spent in the supplementary reinforcing of such buildings can be said to have been well repaid. It is considered our duty to take their strong points and with them supplement our weaknesses so that we may be able to construct *rigid* buildings quickly and economically.”

The fundamental principles of design of the rigid type of construction will now be set forth.

I. The building should be designed to be as stiff as is reasonably and economically possible, so that its natural period of vibration will be much smaller than that period of vibration which is believed to be the most probable for that portion of the earthquake wave known to cause the heaviest destruction. The generally accepted values of the period of a destructive earthquake range from a period somewhat in excess of one second to a period of two or three seconds. Therefore, the endeavor should be made to design a building that will have a period of vibration appreciably less than one second.

(a) Under the assumptions of Principle I, all parts of the building will simultaneously have accelerations of the same sign; that is, in the same direction.

II. The total lateral force acting upon the building will be the product of the weight of the building by the ratio of the maximum acceleration of the earthquake to the acceleration of gravity. Thus, if the total weight of the building is 1,000,000 lbs., and the maximum acceleration of the earthquake is taken at three feet per second per second, the total lateral force of the earthquake on the building is 1,000,000 lbs. $\times 3/32.2 = 94,000$ lbs.

III. The total lateral force of the earthquake is to be distributed, in the structural design of the building, to the various vertical structural elements which can offer resistance to such lateral forces, in proportion to their relative capacities to resist such forces. (Such vertical resisting structural elements are walls, interior braced partition walls, and interior bents formed by columns and the floor girders connecting them, together with such bracing as may be given to these structural bents.)

IV. These various vertical resisting elements are then to be designed to resist the loads that are found to come upon them.

V. The foundations are to be designed to resist the additional loads brought upon

them by earthquake resisting structural bents. Special consideration is to be given to the columns and foundations thereof at the corners of the building.

. VI. Symmetry of arrangement of the resisting frames is a desideratum.

Principle III may well be examined in detail although its logic is almost self-evident. Although it is as true for wind forces as for forces due to earthquakes, few buildings have been designed in accordance therewith, even for wind resistance.

The roof and floors of most buildings are quite stiff in a horizontal direction. Floors of reinforced concrete may be regarded as practically rigid against a lateral force. What deflections they may suffer under the application of such lateral force are of an order much higher than the first. Therefore such a floor acted upon by a lateral force may be considered to be in effect a rigid horizontal plate. As such floor moves in a horizontal direction, and assuming that there is no tendency for it to rotate horizontally, every part of that floor moves in the same direction a uniform amount. Therefore, the intersection of that floor with every vertical structural element passing through the floor moves an equal amount in the same direction. Therefore every vertical structural frame or bent resisting the lateral force is deflected the same amount at any one floor level. Of two vertical frames, one very stiff and the second somewhat flexible, it is obvious that a much greater force will be required to deflect the stiff frame than to deflect the flexible frame the same amount. Expressed in another manner, and in accordance with the principles of structural mechanics, the natural distribution of a lateral force to a system of resisting structural elements will be in proportion to the respective rigidities of those structural elements.

The theoretical application of this principle to a building is comparatively simple. It is necessary to evaluate the rigidities of the various structural elements. As has been said before, such vertical resisting elements consist of (1) the walls, together with their

structural framing, (2) the interior bents which are formed by a line of columns connected by floor girders, and (3) such lines of interior partition walls as may be advantageously given unusual stiffness. To determine such rigidities, the *relative* deflection of these various types of vertical resisting frames must be found. Observe the use of the word "relative." The determination of the actual deflection of one of these resisting elements is difficult, due to uncertain factors, such as the moduli of elasticity in shear and in flexure of the materials of which walls are composed, and the unknown rigidities of the various connections of the frame. It is reasonable to say, however, that the errors due to these uncertainties are probably a constant for all the frames involved, and that consequently the *ratios* of the computed deflections of the various types of structural bents are approximately correct. Dr. Naito has, in his text, worked out the relative deflections of various types of structural framed bents, including those which are incorporated in solid walls of masonry, and those which are incorporated in masonry walls with openings. The method which he has used to determine these relative deflections is that commonly known as the "Slope Deflection Method." Both deflections due to moment and those due to shear, the latter being very important, are considered.

Given any one building, then, the first step is to compute the total weight of the building. The next problem is the computation of the total lateral force on the building. This total lateral force is distributed to the various floors of the building in proportion to the weight of the structure above the respective floors. The relative deflections of the exterior wall bents, of the interior framed bents, and of the interior braced partitions are then to be found. The total lateral force at any one floor is then distributed to these vertical bents in proportion to their respective rigidities and the design of the members and the connections of such bents made accordingly.

From what has been said it will be obvious that the resultant of the resistance of

the various vertical bents should coincide with the resultant of the lateral force. In other words, the structural resisting elements should be symmetrically arranged about the center of gravity of the weight of the building. If this provision is not fulfilled there will be a tendency of the building to rotate and certain resisting frames will be required to resist shears and moments due to the tendency to rotation in addition to the reactions of the lateral forces. Buildings situated on street corners, and consequently having two solid rear walls, and two street walls, with store fronts in the first story thereof, are particularly difficult to handle on account of the tendency to rotation under lateral shock.

From what has been said it will be apparent that the exterior walls, with their framing, have a very high rigidity as compared to the interior framed bents; and that the walls in the average building must resist the greater portion of the lateral force. In one building quoted as an illustration by Dr. Naito, he has found that a "wall bent" absorbed eight times as much of the lateral force as did a typical interior bent. At the same time, it will also be apparent that the wall bents can very easily be given tremendous strength with but little increase in cost over the ordinary construction. Also, since the interior bents can resist but a small portion of the lateral force, it will usually be found that connections but little stiffer than the standard connections will be sufficient to resist the induced stresses. Thus the rigid type of construction is not only logical, but it lends itself to economical construction.

The conception of the rigid type of building as such has just been outlined, will explain the splendid behaviour of many buildings in the San Francisco and Santa Barbara earthquakes of 1906 and 1925 respectively; buildings in San Francisco like the Palace Hotel and the old Appraisers Building and buildings in Santa Barbara like the Fugazi Bank, the Pacific Southwest Trust & Savings Bank and the warehouse of the Montecito Van and Storage Company.

Several buildings designed by Dr. Naito and others in accordance with these principles withstood the Tokyo earthquake without appreciable damage. Examples of such buildings are the Nippon Kogyo building, the Jitsugyo building, the Kabukiza (Ancient Play theatre), the Yasuda Hozensha (Eiraku building) and the Marunouchi Central Telegraph Building.

This paper may be concluded by pointing out the weaknesses of the flexible type of building. I have said that every building has a natural period of vibration of its own, the amount of which is dependent not only upon its height and lateral dimensions but upon the nature and strength of its framing. Should the earthquake wave have a period of vibration agreeing with that of the natural period of the building resonance must occur; and resonance, if continued but for a few vibrations, will probably destroy the building. It is not necessary for such resonance that there be exact agreement between the two periods of vibration. If such periods approach agreement, the effect of resonance will be realized. The fact must also be remembered that every vibrating structure has not merely a fundamental period of vibration but also harmonics. Therefore, to be sure that there is no danger of resonance between the earthquake wave and the building, assurance must be had that the period of vibration of the earthquake will be different not only from the fundamental period of vibration of the building but also from its second harmonic period at least. The proponents of the flexible type of construction argue that the danger of resonance rests upon the assumption that the earthquake wave is of simple harmonic type, and point out that the seismograms of earthquakes clearly show that the wave as recorded is far from being of simple harmonic type. While it is true that the earthquake wave as we know it is not of simple harmonic type but is one of constantly changing periods and amplitudes, it is also true that there may be portions of the wave which have a number of swings of constant period. In fact, evidence seems to indicate that this phenomenon is realized. I have studied the seismogram of the east-west

component of the great Tokyo earthquake of 1923. I have plotted the variation of the periods of the "principal portion" of this wave with respect to time, and I have found that, while there are recorded a great number of periods of different values, there does occur a succession of periods of constant amount. With these facts in mind, I believe that those who rest the safety of their design upon the assumption that there can be no resonance between the period of the earthquake and that of the structure are not on stable ground. The preceding comments with respect to the flexible type of construction are general and apply with equal force to those buildings which are designed as flexible throughout their height and to those buildings which are rather commonly known as of the "flexible first story type." The designer of the flexible first story building so proportions the first story columns that they may withstand, without excessive overstrain, a predetermined deflection which is assumed to be the maximum that can occur with an earthquake of destructive intensity. On the other hand, the designer of the rigid type of construction plans his building to resist an assumed maximum earthquake acceleration. Uncertainty exists with respect to both the maximum acceleration to be anticipated and the maximum amplitude to be expected in an earthquake of destructive intensity. Such values of earthquake accelerations as have been advanced as representing those of destructive earthquakes have either been computed from computations from seismographic records or by judgment of the movement of the earth as recorded by displaced objects. It is generally recognized that the amplitudes as recorded by seismographs must be used with caution, due to the tendency of every seismograph to exaggerate periods, that approach the natural period of the instrument. To be dependable, a seismographic record must have been made by an instrument which was properly damped. The older Japanese seismograms were made by instruments which were not properly damped and results predicated upon their use must be employed with caution. It is my opinion

that the values of acceleration which are generally associated with destructive earthquakes are probably much more accurate than the values of the amplitudes which are assumed to have occurred. For this reason I believe that the building which is designed consistently and logically as a rigid structure to resist a reasonable earthquake acceleration is a much safer structure than the flexible type of building which must run the risk of possible resonance and thus having to withstand amplitudes greater than the designer has assumed. The Carillo Hotel in Santa Barbara, is often mentioned as an excellent example of the "flexible first story" type of building. Such a building may be comparatively safe from earthquakes having a very short period of vibration, but is in danger when subjected to oscillations having periods in excess of one second. Santa Barbara was subjected to a shock of short period type, for the epicenter of the earthquake was near by. What would have happened to the Carillo Hotel had it been in San Francisco in April, 1906, is possibly conjectural, but I believe that it would have collapsed.

It remains to be said that the rigid type of construction is particularly applicable to buildings of relatively low height. When its methods are applied to buildings of great height, its efficiency is decreased. Just how the high office building will behave in a destructive earthquake can only be determined by actual experience. We know that in San Francisco buildings with a height of about eighteen stories and whose frames had been consistently designed for wind pressure of from thirty to fifty pounds per square foot of superficial area, and which were well braced, successfully withstood that shock. For example, the Claus Spreckels Building at the corner of Third and Market Streets, 18 stories in height, was designed for a wind pressure of 50 lbs. per square foot. It survived the earthquake with apparently no damage to its structural frame and with but minor damage to its walls. What would have happened to a building thirty-two stories in height is problematical.

THE VALUE of VENTILATION in ACOUSTICS

*By E. L. Beard,
Acoustical Engineer*

THE controlling and harmonizing of sound waves, of the acoustical values of various applications of sound are at this time being given foremost attention by architects and designers. With so many varied applications, acoustics applied, becomes a practical service.

There are many factors that make for correct acoustics of auditoriums. Some of these are here enumerated:

One of the first principles of sound movement resolves itself around the air movement. To illustrate this, let us refer to the simple experiment of a vacuum container equipped with an ordinary door bell. On pushing the button the bell tapper can be seen to vibrate but no sound is heard. Then air is admitted to the container, and the bell is heard. This shows us conclusively that air is necessary for sound. Air being the prime factor in sound, we have four facts in relation thereto: the direction of the air movement; the velocity; the quality or purity of the air; and the distribution of the air over a given area.

The direction of the air movement influences the direction of the sound waves. For instance, standing out of doors with your back to the wind the voice will travel further and clearer, and with greater velocity than facing against the wind. Also should one person stand on one side of the street and another on the other side, the wind blowing up or down the street, the sound will be perceptibly cut off or retarded. This shows us the air movement should be in the general direction in which we wish the sound to travel - namely, from the stage

or front of the house to the rear, or towards the audience.

Should the air movement in an auditorium be across or opposite to the desired direction of the sound movement distortion and lack of amplification will result.

The second point is the velocity of the air movement. The speed of the wind will indicate the velocity of the sound in that the greater the air velocity, the further the sound will travel, or the faster the time.

In auditoriums the amplification, or time, may be increased by increasing the air movement, or speeding up the exhaust fans.

The third point is the quality of the air, which determines the tone value. For instance, in the mountains the voice is very clear, in the city not so clear and in a poorly ventilated room the tones are muffled or flat. So it is apparent that an adequate supply of pure air is essential for good tonal qualities.

The fourth point is the distribution of the air. As the air movement determines the sound movement, it is necessary that all the air in the room be kept in constant motion in a given general direction, so as to avoid dead air spots, which cause distortion of tone and unequal sound distribution.

Improper ventilation gives us lack of amplification, or slow time, distortion of tone, inaudibility, unequal distribution of sound, and poor tonal values.

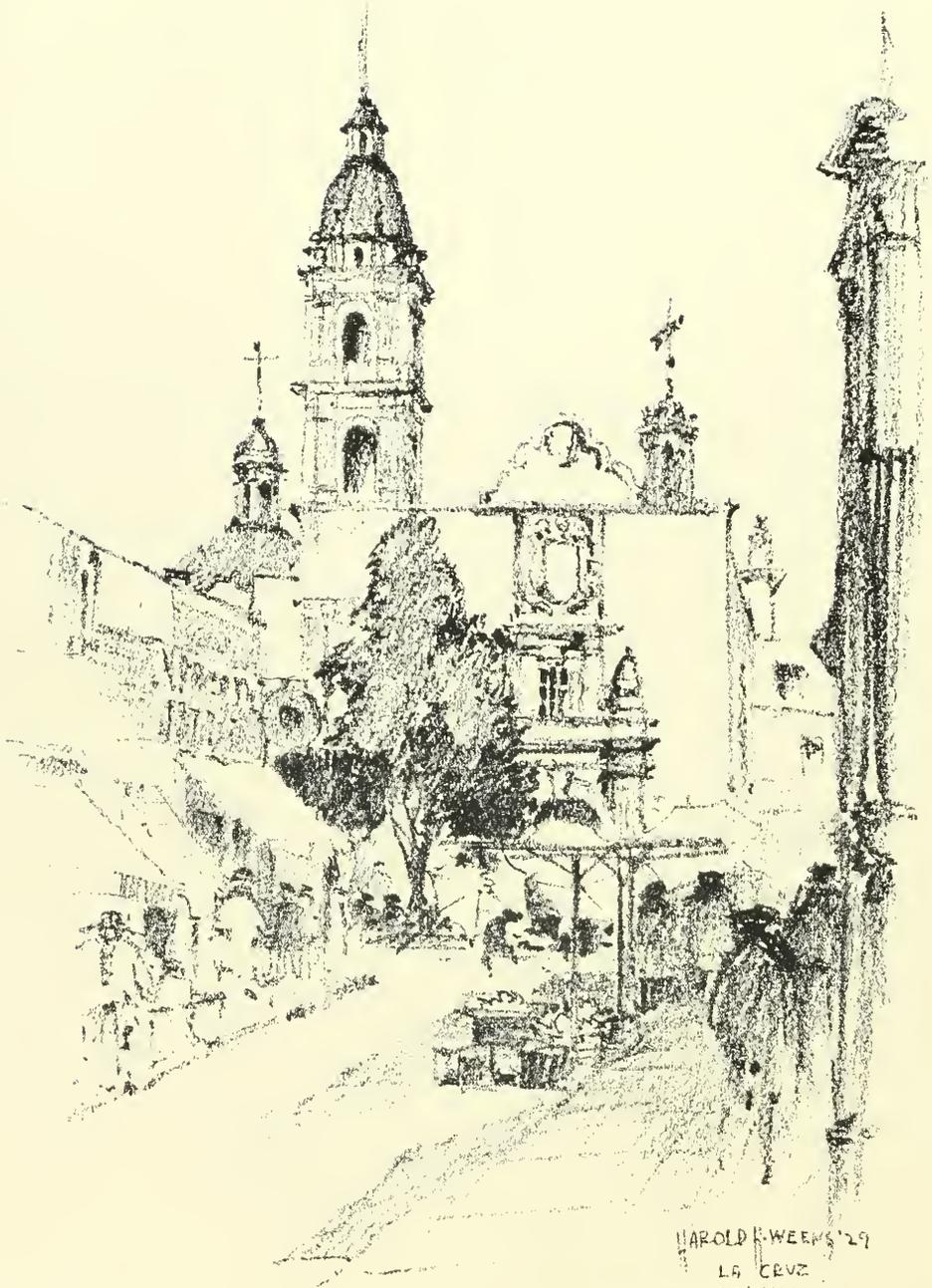
Proper ventilation gives us correct time, ample amplification, correct tones, audibility, and equal distribution of sound in all parts of the auditorium.

Portfolio of Sketches

by

HAROLD H. WEEKS



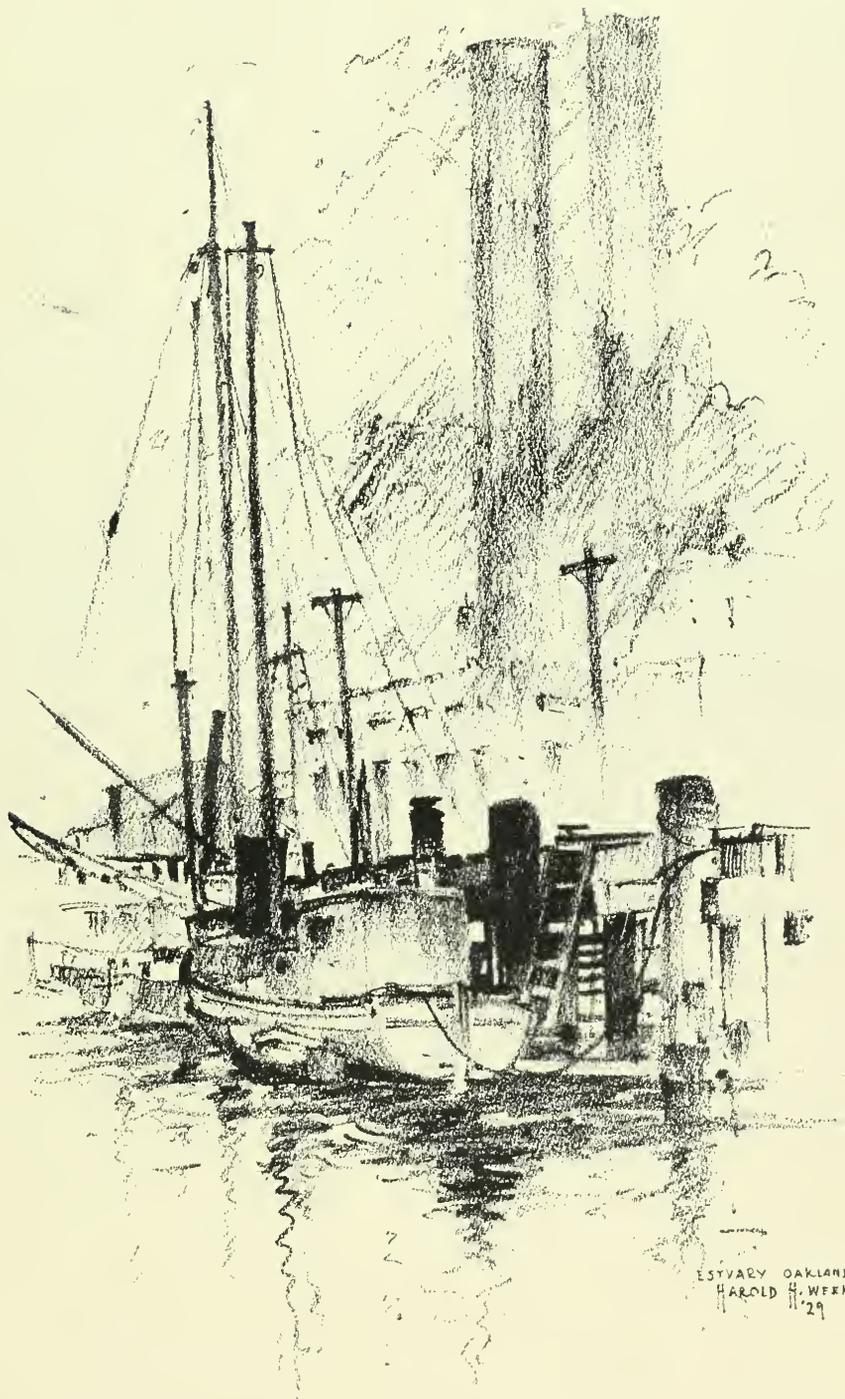




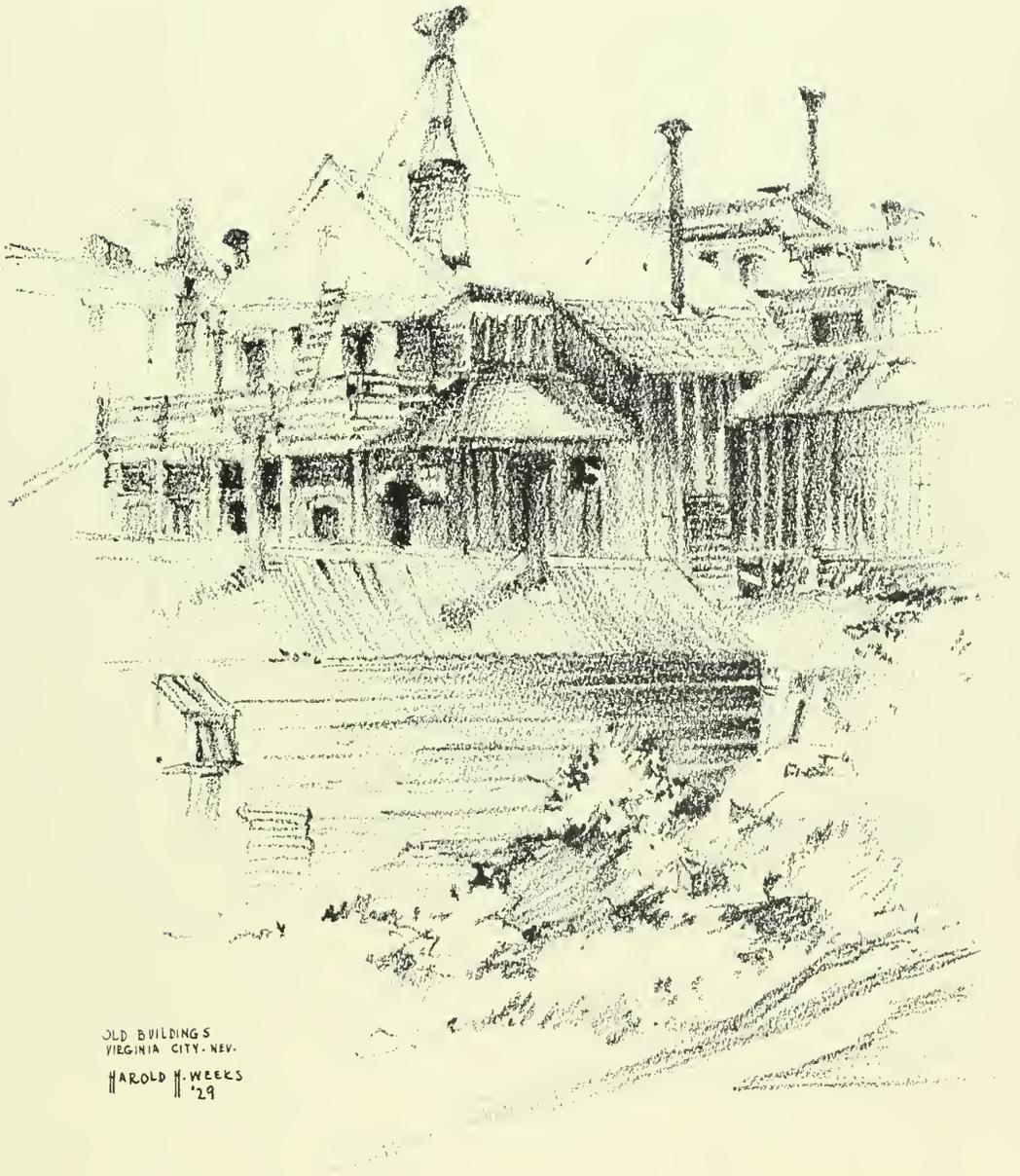
THE CATHEDRAL
OF QUERETARO
W. G. DE WEESSER



PORTAL PROGRESS
CELAYA

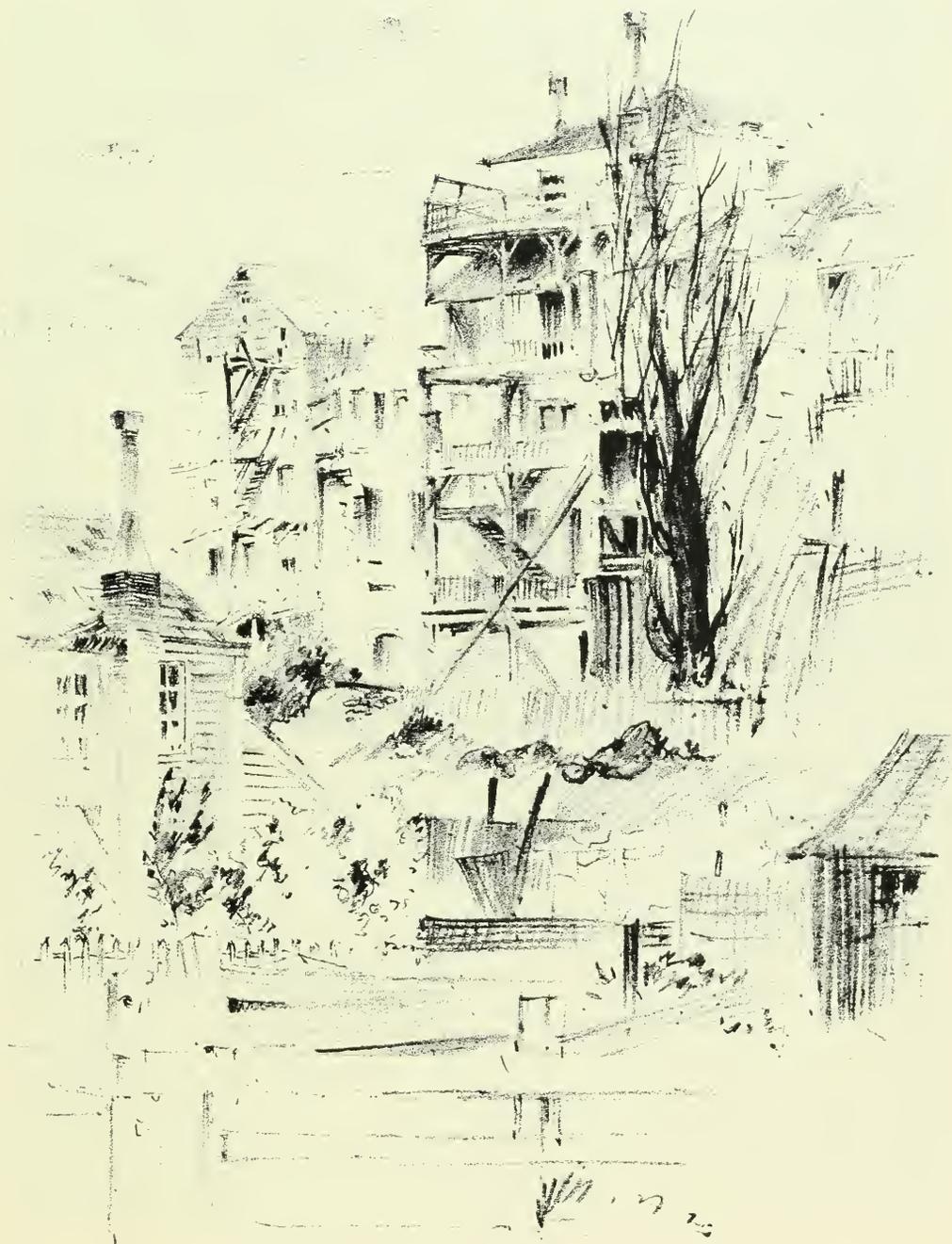


ESTUARY OAKLAND
HAROLD H. WEEKS
1929



OLD BUILDINGS
VIRGINIA CITY, NEV.

HAROLD H. WEEKS
'29



HAROLD M. WEEKS
129.

COMSTOCK LODGING HOUSE
VIRGINIA CITY, NEVADA



OFFICE BUILDING OF CARL JULES WEYL, HOLLYWOOD, CALIFORNIA
CARL JULES WEYL, ARCHITECT

AN ARCHITECT'S STUDIO

By
Marc N Goodnow

THE factor of efficiency in the architectural profession applies not only to the skill and ability of the architect himself, but to the layout and conduct of his office. The most expert of designers may meet failure in his efforts when confusion or disorder prevail in various rooms, when there is a lack of convenient circulation as between rooms, or when the necessary privacy for each department of the business is absent.

Whether the architect's business is large or small, good planning of room arrangement and equipment is sure to result in increased efficiency. Indeed, this factor may readily bring in more business—and better business. An architect recently told the writer that his investment in larger and more tastefully decorated quarters had been returned to him several times over by reason of its sales effect on his clients.

"In the old quarters it was hard to maintain system and order, much less create an atmosphere that made the client feel that he was

getting real ability or value for his money. Also," he continued, "I had a great deal of free sketching to do in order to get business. The office looked as if I needed the money and that led people to expect an expensive amount of accommodation.

"But in these new quarters my customers seem to be impressed with the surroundings—and they expect to pay for what they get. They don't haggle. They also get the idea that because I have done an attractive office for myself, I can do the same for them. And they do not ask me to prepare free plans or sketches for them, as in the old days. In fact, I have gained a better class of clients since the change."

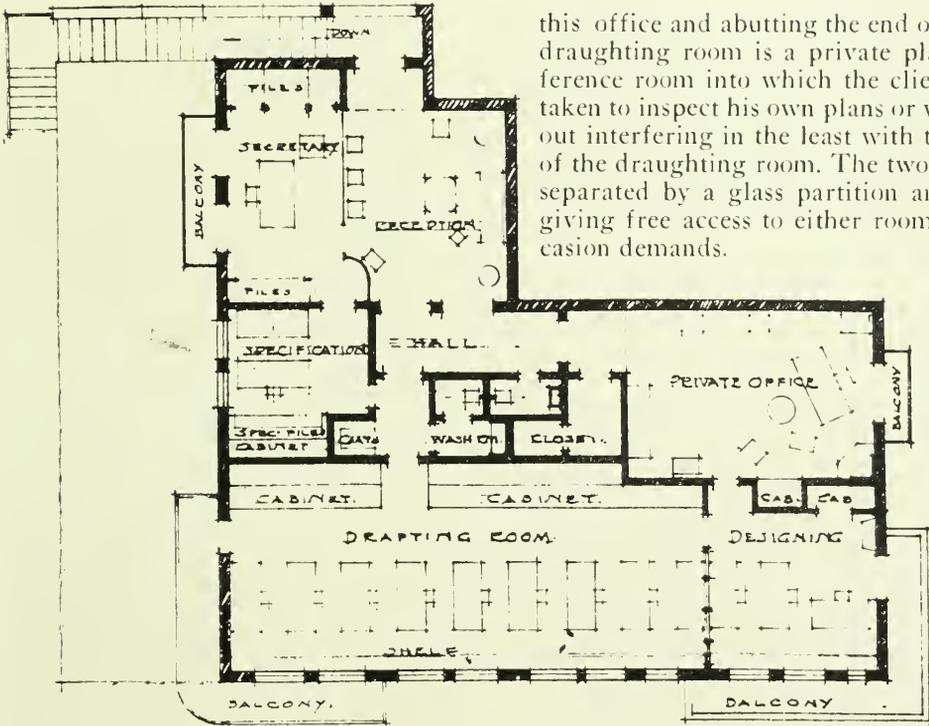
As can be seen in the photographs accompanying this article, Carl Jules Weyl had this same thought in mind when he planned his architectural offices on the second floor of the Hollywood Chamber of Commerce building, which he had designed. Having worked in a number of the larger architectural offices of the country, he had gathered



ENTRANCE TO OFFICE OF CARL JULES WEYL.
Carl Jules Weyl, Architect



BUILDING CONTAINING OFFICES OF CARL JULES WEYL, HOLLYWOOD
CARL JULES WEYL, ARCHITECT



this office and abutting the end of the main draughting room is a private plan or conference room into which the client may be taken to inspect his own plans or work without interfering in the least with the routine of the draughting room. The two rooms are separated by a glass partition and a door, giving free access to either room when occasion demands.

- FLOOR PLAN -

OFFICE OF CARL JULES WEYL, HOLLYWOOD
Carl Jules Weyl, Architect

many ideas as to layout and room arrangement which he adapted to his own purpose, with results that have more than paid for the financial outlay.

The purpose here was twofold: First, to offer the client an attractive atmosphere that would raise the architect in his estimation, and at the same time provide both comfort and convenience in conference or inspection of his work. Second, to carry on the office routine under the most favorable conditions, undisturbed by any distracting influences. Both ends have been admirably served by an arrangement of rooms that, while completely separating the business from the production department, also permits their intimate contact, when that is desirable.

Leading from the left of the reception room is a short hall connecting that room with Mr. Weyl's private office. Adjoining

The draughting room, which is 16 feet wide, has been placed to receive its lighting from the north. Individual tables stand at right angles to the windows, with a passage way between the end of the table and a line of cupboards along the inside wall. Covers are provided for the tables, so that after the day's work all tools are placed in their proper drawers or on hooks and the room is tidy for the next day.

The planning of the inside wall equipment of the draughting room offers an efficient method of storage for all kinds of material, as well as a convenient rest for plans, books and other reference items or tools during the day. The lower compartment, with doors, under the waist-high shelf, is composed of a series of shallow sliding drawers in which plans, sketches and other flat pieces are stored. Above the main shelf is a series of closed-in cupboards, shelf-



PATIO, OFFICE OF CARL JULES WEYL, HOLLYWOOD
CARL JULES WEYL, ARCHITECT



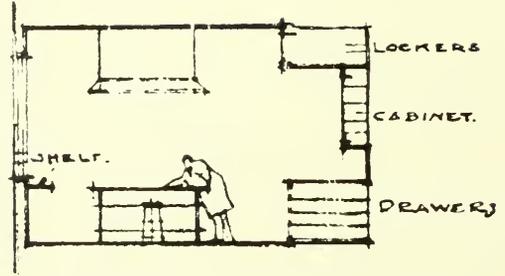
RECEPTION HALL, OFFICE OF CARL JULES WEYL, HOLLYWOOD
Carl Jules Weyl, Architect



PRIVATE OFFICE OF CARL JULES WEYL, HOLLYWOOD
Carl Jules Weyl, Architect

lined, for the reception of books, magazines and other articles in current daily use. Along the ceiling is a row of deep cupboards containing books, magazines, plans and other materials not in current use but close at hand for ready reference. The arrangement makes it possible to contain all the necessary paraphernalia for the conduct of a draughting room almost at arm's reach, and yet to protect it from dust and the disorder that would prevail if it were not shut away by doors. As many as eight draughtsmen work in this room without confusion or interference with each other.

To the right of the reception room is provided a small room with table, chair and cupboards for blueprints and specifications, which serves the contractor or subcontractor and the draughtsmen in charge of the job in much the same way as the private conference room serves the architect and his client. This room is entered from the



SECTION THE DRAFTING ROOM

outer office through a half-door with shelf or table top. It is also reached through a door from the draughting room. These quarters insure the seclusion that make for rapid, concentrated handling of the day's work.

The reception room and private office are done in a definite Mediterranean note, with gothic arches; wide plank floors; wrought iron grilles, fences and gates; heavy carved chests and leather-seated



DRAFTING ROOM, OFFICE OF CARL JULES WEYL, HOLLYWOOD
Carl Jules Weyl, Architect

chairs. Though the quarters may be said to be only moderate in size, their decoration and furnishing radiate an atmosphere that

to the efficiency of the principal as well as to that of his entire staff.

THE OFFICE LAYOUT

The office layout of Carl Jules Weyl, architect, of Los Angeles, is arranged in such a manner that there is direct communication from the private office of the architect to the designing room and to the drafting room. There is also convenient access from the drafting room to the specifications and contractor's room and to the desk of the secretary.

The designing and drafting rooms are so located that the northern exposure gives them the most desirable light. These rooms are 16'-0" wide, allowing only one drafting table of 3'-6" wide and 6'-0" long. A trough extends the entire length of the drafting room at table height. This is used for drafting tools and accessories, thus enabling the draftsmen to use their tables only for their drawings and as a result, keeping the drawings clean. Between this shelf and the table there is a distance of 2'-0" which allows the men to walk around their table.

Between the end of the table and the cabinets, which run the entire length of the drafting room, a passage of 4'-0" allows one to pull out the drawers, and have ample space to pass by. These cabinets mentioned above comprise the following: One 4'-0" deep and 3'-6" high, forming a counter and used as a reference table; above this, another cabinet 14" deep against the wall and used for such drafting room references as catalogues, samples, and books; then, above this, next to the ceiling is a continuous locker space used for filing finished work.

THE DESIGN

In making this office of Spanish design, it was the intention of the architect to create the same impression on those who enter it that one receives when entering the Patio court and the stairway leading to the office. The furniture is similar in design to that which one might find in the library of a private home. Drawings in the private office are kept in high chests, thus keeping in character with the rest of the room. The stationery and files are kept in cupboards, hidden behind large doors of solid wood fitted into the wall.

WEST AHEAD OF EAST IN PARKING FACILITIES

ELIMINATION of skyscrapers, parking bans and trick traffic regulations are being bandied about on every side as solutions of the congestion wrought by the automobile. Eliminate the skyscraper, and we take a step back to the decentralization existing before the telephone, the railroad and the steamship. Put a ban on parking, and the use of motor cars is discouraged in the district with the result that people will, when they can, stop elsewhere. Trick traffic regulations, such as those prevailing in the New York theatrical district, succeed in reducing congestion by reducing the number of automobiles that use the streets.

We might as well accept the fact that the automobile is here to stay and that space must be provided for it, especially since in typical cities motor cars carry from twenty-five to seventy-five per cent of the people entering the central area. We cannot step back. We must step forward, says a writer in the *American Architect*.

The solution that is coming to be regarded as at least among the most logical, outside of the streets themselves, is to design buildings that have garage space in them. Here, the West is far ahead of the East, possibly because there a larger portion of the working population use the motor car for transportation to work. For instance, the majority of class A office buildings constructed in Los Angeles within the past two years have some sort of internal storage facilities for automobiles. The thirty story Russ Building in San Francisco has two floors devoted to the housing of its tenants' motor cars. The 22 story Medico Dental building (450 Sutter street, San Francisco) has ten floors set aside for automobile parking. The Pure Oil Building in Chicago takes care of 600 cars by using the court for garage purposes to a height of twenty stories. [Please turn to Page 101]

is both business-like and artistic, and, because of the elements of planning and separation, they contribute in no small measure

KNOWING and TREATING TREE DISEASES

By: G.H. Collingwood in American Forests

LESS spectacular than forest fires, less spectacular even than insect pests, is the battle being waged against tree diseases that spread often unnoticed through the forest. Their menace is appreciated by few, yet tree diseases are drawing increasingly upon America's timber resources.

Disease may be defined as an unbalancing of normal functions. This may be the result of insect attacks or by climatic, biological or soil conditions, but this article will deal with tree diseases as caused by fungi and mistletoe. The profession of forest pathology is comparable to the profession of medicine, but, in spite of advances that have been made, is still in its infancy. It is comparable with the medical profession a century ago, when crude practices of disease control, rather than prophylactic measures based on exact knowledge, maintained. "Forest sanitation" and "forest hygiene" are phrases we are going to hear more and more as wiser forest policies are enforced.

As in the case of insects, many of our most disastrous and menacing tree diseases have been unwittingly imported from foreign lands. The United States depends largely upon federal and state quarantine measures to prevent the importation and spread of foreign tree diseases, but these have not been wholly successful. White pine blister rust, larch canker and chestnut blight are three outstanding examples, and the Dutch elm disease, although it has not been recognized in this country, presents a serious problem. It has caused the death of thousands of elms in Holland, Germany and England and is a constant threat to the elms of this country. About 7,500 fungous diseases destructive to trees and plants on other continents have not yet reached the United States, but many of them will arrive unless careful barriers are maintained.

Newly introduced diseases can sometimes be eradicated by destroying all infected trees and by maintaining an absolute embargo on trees from the danger zones. Shipment of timber products must often be restricted also. Chestnut blight and Dutch elm disease are examples of fungi that can be transported in lumber products for some time after manufacture.

Chestnut blight was imported on young trees from Asia, sometime prior to 1904. It got beyond control early in the battle and has spread over practically the entire range of our American chestnut. Probably, within another generation the entire native species will be wiped out. While prompt detection of the disease and ruthless destruction of all infected specimens might have halted its march, no control suitable for checking its spread was devised after it got under way.

Inadequate safeguards were responsible for the importation and spread of white pine blister rust. Its introduction into North America might have been prevented had the Federal Plant Quarantine Act been in effect twenty years ago. The disease is believed to have originated in northern Asia and to have been brought into Europe by way of Russia, on young trees planted in botanical gardens. From Russia it has been tentatively traced to botanical gardens in European cities, such as flourished from 1750 to 1850, sponsored by wealthy noblemen, physicians and rulers. Since little was known of fungi and their distribution, foreign plants were freely introduced by exchanges and conditions were ideal for spreading plant diseases.

As early as 1898 blister rust was recognized at an important nursery center in Belgium that traded into Germany, France and other countries, including the United States.

It was first discovered in this country in 1906 on white pines imported by a Massachusetts firm. A total of about 226 lots, all containing infected stock, were definitely traced to one German firm. Dr. Karl von Tubeuf, a professor at the University of Munich, warned that diseased stock was being distributed freely throughout Germany by this nursery and tried unsuccessfully to have the plant traffic controlled.

White pine blister rust is a fungous disease that requires an intermediate host for its development and spread. Herein lies the secret of its control. The disease cannot spread from one pine to another, but must have the leaves of currant or gooseberry bushes as stepping stones. From infected pines the spores spread to currant and gooseberry bushes. When these intermediate hosts are destroyed its ravages are stemmed. On pines the disease evidences itself in canker spots along the bark—swollen patches with a greenish yellow discoloration about the edges. After about three years orange-colored blisters filled with millions of spores break through the canker. The spores are scattered on the wind for hundreds of yards and out of the many turned loose, a few fall upon the leaves of currants or gooseberries. The broken bark around the blister dies, but the fungus grows on in the live bark, producing new blisters each spring. "Spring spores" form orange-yellow spots on the under surfaces of the leaves of currants and gooseberries. Later these same leaves develop hair-like growths called "fall spores" which are carried back to the pines.

Blister rust at the present time is found in the white pine forests of the New England states, in New York, New Jersey, Pennsylvania, Michigan, Wisconsin, Minnesota, as well as in the western white pine forests of Idaho, Washington and Oregon. It is also found in British Columbia, Ontario, Quebec, Nova Scotia and Prince Edward Island, Canada. In these forests it attacks and kills white pines of all sizes. In a badly infected region it is often known by the rust colored "flags" of diseased and dying branches. The greatest menace of the white pine blister rust is to the young growth, but too many large trees have also

been killed for one to doubt its potency. Since the white pines represent timber resources of at least \$550,000,000 and since it is highly desirable for artificial planting, the importance of controlling the rust is apparent.

White pine stands can be protected by uprooting all currant and gooseberry bushes within infecting distance—nine hundred feet under average conditions. The bushes can be uprooted either by hand or with a grub hoe, but the work of eradication must be systematic and thorough. Crews of two or more men are effective, but one or two careful workings of an area are essential. Recent studies have shown dip oil and fuel oil to be effective in killing off currant and gooseberry bushes. This is applied by men carrying knapsack spray pumps, similar to fire extinguishers.

During the past eleven years nearly seven million acres of land in New England and New York have been made safe for white pine by cleaning off the currant and gooseberry bushes at an average cost of twenty-one cents an acre.

Another unwanted immigrant is the European larch canker, a disease recently discovered in Massachusetts and Rhode Island. Its appearance has greatly agitated forest pathologists, because while it mutilates and kills American and European larches, like other imported pests, it behaves differently in this country. It has gone beyond the larches and attacks Douglas fir and yellow pine, two of the most important timber trees of this country. Should the disease escape control it could spread through the larch forests to the great forest regions of the northwest, for the larches form a bridge for it across northern United States and Canada to the Pacific Coast.

Control consists of cutting down and burning infected trees as fast as these are found and a rigid quarantine prohibiting the movement of seedlings and timber of affected species from the two states. Scientists from the United States Department of Agriculture have been assigned to study the disease and neighboring states are being scoured to determine whether there are any

additional infections outside the known danger zone.

Larch canker is similar to chestnut blight and is equipped to spread rapidly. It attacks through the bark, forming a canker which quickly girdles and kills small trees. Large ones are killed more slowly. The ugly growths on the trunks spoil the wood for timber and so weaken the trees that they are subject to insect attacks or snap during a storm or under the weight of snow. The disease spreads from one tree to the next and the spores may be carried by the wind, insects, birds or small animals. Resin flowing from the point of the wound sometimes covers the trunk for a distance of ten or fifteen feet.

A comparatively new and little known disease is Woodgate rust, so called because it was first discovered on Scotch pines at Woodgate, New York. This disease attacks only hard pines, producing knob-shaped swellings, or galls, on the stems and branches. It stunts and malforms the trees, eventually killing them. This fungus has no alternate host but spreads directly from tree to tree which makes control difficult and expensive. Thus far it has been confined to New York State, but several of the Southern pines are particularly susceptible to it. This fact coupled with its power to spread from tree to tree causes some forest pathologists to refer to it as our most menacing pine disease.

Damping-off, a disease of the nursery, causes heavy losses in thickly sown beds of conifer seedlings. It is caused by a variety of fungi whose classification is still incomplete, and is often confused with damage caused by wind and heat. In the latter case, however, the shriveled base of the stem is light colored and above the ground line while in damping off the stem is dark in appearance and shows an extension of decay at the roots.

Damping-off can be partially controlled by sowing seed less densely, by avoiding heavy or excessively wet soil, and by good ventilation in the seed bed. Fall sowing or very early spring sowing in northern nurseries is also recommended rather than late spring sowing. Some growers have found

that sub-soil from the forest, used as a surfacing for conifer beds, acts as a preventative. However, there are so many different fungi that cause the disease at different times and places that it is impossible to recommend any one treatment as generally effective. The large-scale grower will find it profitable to experiment with different treatments on small seed plots to determine for himself the best method of control and the proper concentration of any chemical disinfectant that may have been employed successfully elsewhere.

Tests conducted over a period of years have shown solutions of sulfuric acid to be effective, but because of its corrosive tendencies its use has sometimes had disastrous results. Aluminum sulfate at the rate of one-half ounce to a square foot has been recommended as a non-corrosive substitute. Good results have followed when it is applied to the bed at the time of seed sowing. It can be dissolved in water and sprinkled onto the soil or the powder can be scattered and washed in with water. The cost is reasonable and like sulfuric acid it helps keep down weeds. When neither acid or sulfate seem effective, formaldehyde at the rate of three-eighths of a fluid ounce to a square foot will sometimes solve the problem. This should be dissolved in water and applied ten days before sowing. Other mixtures that have been used successfully include compounds of mercury and Bordeaux mixture.

From the point of view of the forest pathologist, mistletoe departs from its romantic place as a Christmas decoration, and is recognized in some of the western areas as a forest enemy comparable only to fire. The mistletoes belong to the group of higher plants having roots, stems, green foliage and flowers, but as a result of their parasitic life they have scarcely any root system, depending for food and moisture upon their host, which they gradually kill. They grow upon broad leafed trees as well as pines and are common over all the southern forests, from east to west. They are particularly destructive among the pines. "Witches' brooms" in pines are often caused by mistletoe.

Fortunately the death of the host tree also causes the death of the parasitic mistletoe.

This indicates that cutting of mistletoe infected trees may prove a practicable method of control. Trees along highways and on private properties may be helped by pruning the infected limbs.

Leaf and twig blights caused by different fungi result in injury to several broad leaved trees. Infection is usually indicated by a blotch on the leaf running along the principal veins. The sycamore shows the disease by dead and dying leaves and twig tips early in the spring, when the tree buds. A badly infected tree looks as if it had been scorched. In wet weather the undersides of the leaves will be found covered with cream colored spots about the size of a pinhead. These contain spores. When the leaves of the tree fall, additional spores develop, maturing in the spring. It is not known which set of spores cause the infection of new leaves. Usually the tree is able to put out an entire new crop of leaves late in the summer, but repeated defoliations stunt it and sometimes kill it.

With a little care, infected trees can be cured and saved. All the leaves should be raked up from beneath the tree and all dead or cankered twigs should be pruned. Leaves and twigs alike should be burned. The control efforts will be more effective if the tree is sprayed with Bordeaux mixture in the spring before the buds burst and again about a week later. A rainy season will encourage the development of spores, so a third and fourth application should be made at intervals of two weeks. The foliage should be completely drenched. This treatment will apply to many other leaf diseases on broad leaved trees.

The diseases considered in this article have been those of leaves and bark, but no less important are those that penetrate the trunk and those that attack the roots. Shelf-

like fruiting bodies on tree trunks, and "toad stools" at the base of trees are often evidence of wood destroying mycelia at work beneath the bark. They are the cause of what the lumberman often calls "heart rot" and "red rot" in sawlogs. Once they attack the trees little can be done to control them, so the best way is to keep the trees in the woods growing as naturally and healthily as possible. Often fire is the forerunner of these fungus attacks. Had the tree been able to stand unharmed there would have been no opening in the bark for the fungus spore to enter. Moreover, the burning of the soil cover may reduce the capacity of the tree to resist attacks of these parasitic fungi.

WEST AHEAD OF EAST
IN PARKING FACILITIES

[Continued from Page 97]

Any solution of the traffic problem, to be a real solution, must tend to bring people into a locality—not keep them out. Only so can business in such localities have the most favorable opportunities for growth.

In the solution discussed, the architect must take the lead. He is the designer, the man who can bring beauty and utility together. His suggestions as to how garage facilities can be incorporated in an office building may well turn what otherwise would be a difficult structure to rent into one for which there is a waiting list.

As an example, take the Chrysler Building, the Lincoln Building, the Daily News Building—all incompleted skyscrapers within a stone's throw of each other in New York City's congested section. If one building had garage facilities, would it rent more easily than the others? Ask the tenant. He knows.

STEEL JOISTS for RESIDENCE FLOORS

By
A. A. Fraser, C. E.

ARCHITECTS who make a specialty of designing houses of the better type have long been confronted with the problem of using for their floor joists a material that would eliminate shrinkage, one of the most destructive agents encountered in residence construction, and yet keep their costs within a minimum increase over that of wood joists which are now commonly used and in which shrinkage and its attendant destruction is inevitable.

In designing a residence for N. F. Baldocchi, in Sea Cliff avenue, San Francisco, the architects, Messrs. Bertz, Winter and Maury, devoted considerable time and study to this problem and finally adopted for their floor framing, a series of plate girder joists, which would eliminate all possibility of shrinkage.

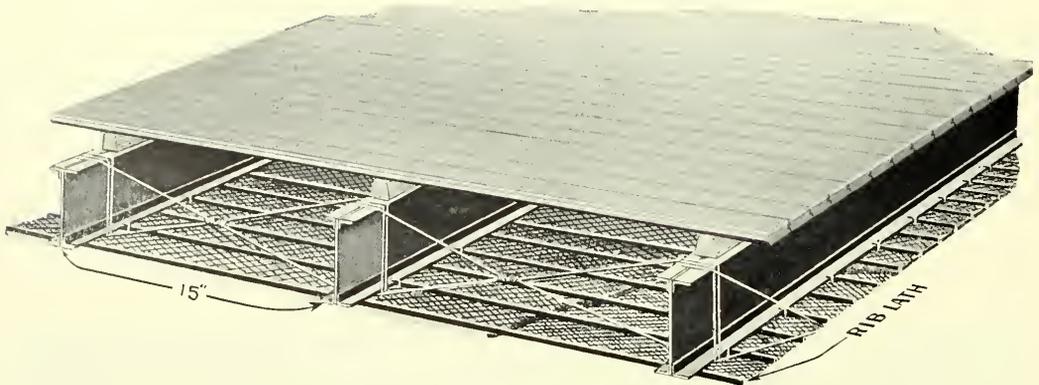
While the use of steel joists in floor construction is a practice of long standing, this use has heretofore been confined to structures of the commercial type, such as hotels, office buildings, apartment houses and schools, the thought being prevalent in the minds of architects that the cost of this material for residence construction was prohibitive.

Once plate girder joists were decided upon for the Baldocchi house, the question of design was given special attention. A study of the accompanying floor plan will show that this residence is not of the ordi-

nary type of architecture, very few of the rooms, there being eighteen in all, are typical and the necessity of supporting upon the floor framing an unusual number of bearing partitions was paramount. This condition was quickly solved after an investigation of the load carrying capacity of plate girder joists showed that a shallow depth joist, 7 inches in fact, would carry all the required superimposed loads. In their design, Messrs. Bertz, Winters and Maury, called for a wood sub-floor and an oak finished floor supported on wood screeds bolted to the joists. The top and bottom flanges of plate girder joists being made of hot rolled sections, lend themselves to this type of construction and insure a rigid base for the screeds and finished floor. The joists were spaced 15 inches c. to c., anchored at the ends to the supporting structural members by means of bolts and beam clips and securely bridged every six feet with 14-gauge galvanized wire bridging. A further tie was secured by anchoring to the outside walls all joists running parallel to them.

Shrinkage in the floor framing of a residence is not only a concern of the architect and owner, but so completely affects the component parts of the building and plays havoc with the finished work of the structure, ruining the most carefully plastered walls, cracking and pulling finished trim and racking window installations, that a solution of this problem is of keen interest

*NOTE: Mr. Fraser, Assoc. M. Am. C. E., is Branch Manager of the Genfire Steel Company, San Francisco.

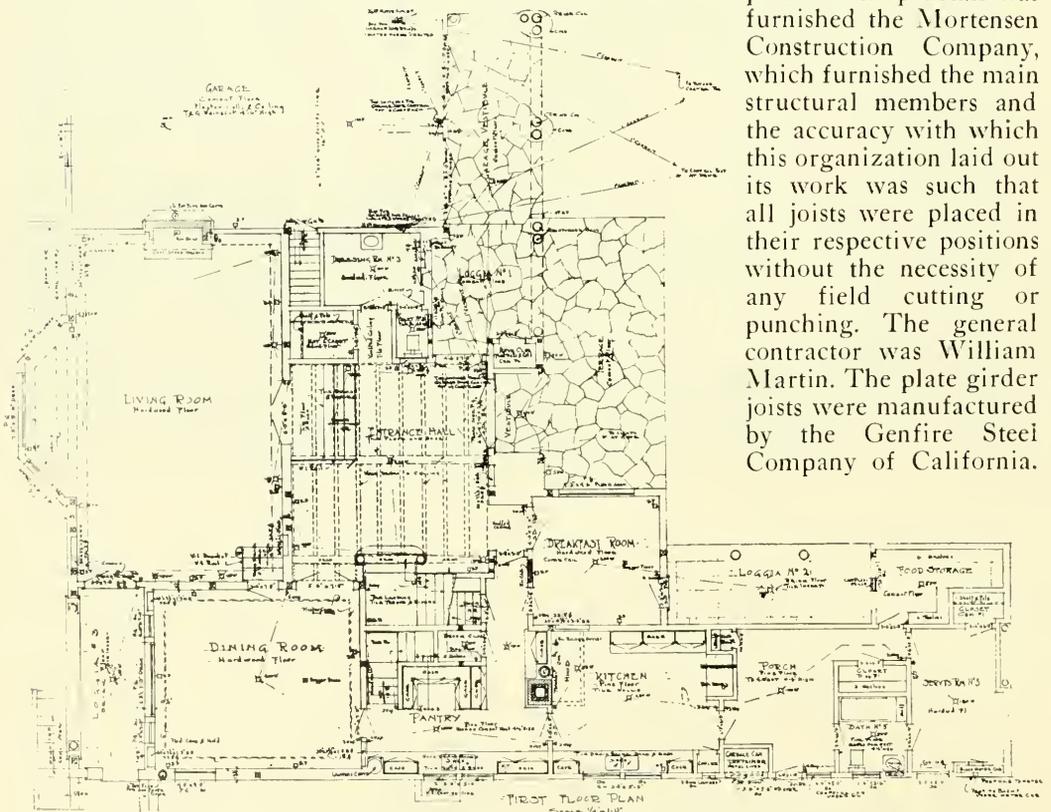


TYPICAL FLOOR CONSTRUCTION USED THROUGHOUT RESIDENCE OF N. F. BALDOCCHI

The ease and rapidity with which the joists were erected deserves mentioning. Each joist being detailed on the architect's

plans and all bolt holes and connections being definitely shown, the shop fabrication developed into an easy problem. A floor

plan and shop detail was furnished the Mortensen Construction Company, which furnished the main structural members and the accuracy with which this organization laid out its work was such that all joists were placed in their respective positions without the necessity of any field cutting or punching. The general contractor was William Martin. The plate girder joists were manufactured by the Genfire Steel Company of California.



PLAN, RESIDENCE FOR N. F. BALDOCCHI, SEA CLIFF, SAN FRANCISCO
 Bertz, Winter & Maury, Architects

RELATIONS *of* ENGINEER *to* ARCHITECT

SO much has been written and said about the engineer's relation to the architect, mostly partisan and propaganda written from the point of view of either engineer or architect, that no attempt will be made here to review all phases of the subject. We may be content with touching the high spots only, realizing the liability to a mixture of good and bad in any of the methods proposed. The very fact that there has been so much discussion pro and con in the past should serve to indicate that there is as yet no hard and fast rule governing all cases.

It should be no task to make out a strong case for either engineer or architect. Much depends upon the personalities of those involved—engineer, owner or architect, the class of work, and the particular job in mind. Some engineers would prefer to deal direct with the owner, others with the architect, and each of these possibly would have preference in some cases to the contrary.

The principal argument advanced for having the engineer under the control of the architect is that the owner is thereby relieved of a great deal of responsibility and has only the one party to deal with who is responsible for the full completion and co-ordination of the several branches of the work. However, the owner, by not coming into direct contact with the equipment work, has no assurance of what he is getting or that this branch of the work is receiving proper consideration. He may hear less of disputes and the work may suffer accordingly, differences which practically cease to exist when it is understood that the owner will act as final judge and give each a fair hearing.

The owner has appropriated a certain sum of money for the entire building project and should act as judge for the proper apportionment of this money to each trade. It may be confusing to some owners to decide rival claims, but most men of means have had experience and realize, in a gen-

eral way, the character of the service given and the grade of equipment ordinarily used in a building of the proposed type. Owners, as a rule, are capable of perceiving logic, and engineers with sufficient ability should have no trouble in convincing an owner as to the truth of their arguments. More often the owner, having no prejudices, is easier convinced.

The engineer may have no more responsibility under this arrangement than he does when under control of the architect, for the latter, in case of trouble, is apt to shift the whole responsibility for the engineering on the engineer's shoulders. Of course where the owner is a corporation, the engineer may find it better to work for the architect, for the corporation may contain interested or opinionated individuals with axes to grind on theories, types of systems and products to use. It all goes back to the individual, as previously stated.

There is no working agreement between engineers and architects whereby each might be confined to their own particular field with better economic results to all. Co-operation in the minds of many means only a friendly interest and avoidance of conflict whenever the interests of the two parties concerned are identical. Self-preservation compels the architectural viewpoint to subordinate economy and utility in engineering to the finer points of beauty and arrangement of the building. The result is that the engineering essentials often suffer and have their usefulness impaired, and, in a great many cases, without the architect appreciating this fact.

Perhaps an interior decorator should not work apart from the direction of the architect, else the decorator might spoil the effect of marble and tile by his color scheme. Harmonious effects of the two artists are required and one must conform to the other but the case of the engineer is different, though it goes without saying that the engi-

neer should co-ordinate his equipment with the building which the architect designs. Unfortunately, this requirement often develops a difference between engineer and architect as to how far utility should be subordinated to beauty.

For example, to the mind of the engineer the class of building may not be marred by the placing of runouts to radiators at the ceiling. In the opinion of the architect these should be concealed, yet when concealed there is often very little room for installation or expansion and the chances of trouble due to careless workmanship in tight places, is great unless extreme vigilance in supervision is exercised. How far should one give way to others in cases of this kind? Does the engineer have his way? He does not. Who takes the responsibility of failure? Foolish question, the engineer, of course.

Some architects who uphold the rules of their own profession by maintaining their fee do not hesitate to cut the engineer's fee, thus placing at an unfair advantage the other architect who, selecting the best of engineering talent, will neither cut his own fee nor that of the engineer. Again, though an architect is entitled to some percentage of the cost of mechanical equipment for correlating architectural and engineering plans and specifications and for other duties familiar to all of us, he is not always entitled to the higher percentages which he asks of the owner. The architect's demand for extra large fees on the cost of mechanical equipment has sometimes resulted in the owner separating the architectural and engineering work, paying to the architect and engineer a full fee on the work of each.

Some engineers contend that the construction of a building is mainly an engineering problem and should be in the hands of an engineer who should retain an architect to add to the structure the desired touches of beauty.

Coming to the question of engineers working in the office of the architect, it is a fact that a vast amount of architectural work is required to warrant the maintenance of an engineering department. The volume of work in one office however, is not, as a rule, sufficient to maintain expensive and high-

grade talent. Engineers temporarily taken on during the rush receive no attention and are left to their own devices, for the office is too busy at such times. As a consequence, the office has no settled policy or established in engineering design.

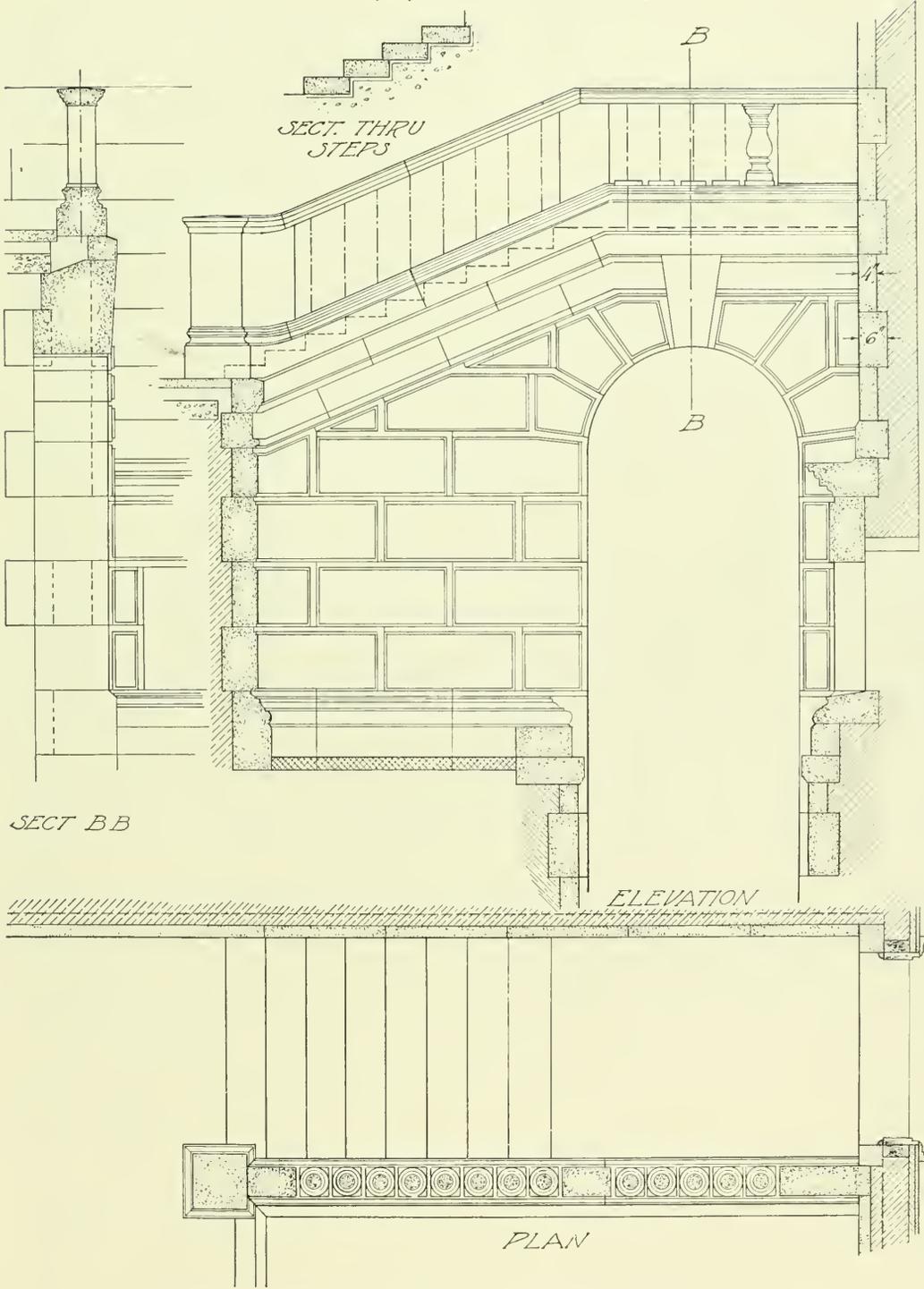
Where an architect maintains an engineering department it is not unusual to find engineering requirements subordinated to the architectural requirements of the chief designer who may be temperamental to the extreme and one so directly in his power as those within the same office is too near home. The unfortunate engineer in this predicament has less chance of influencing the chief designer than if he came from the office of some consulting engineer which the architect might otherwise retain.

If anything, it would be reasonable to expect that the architect, in order to maintain his engineering department, should also take in engineering work for buildings on which he does not act in the capacity of architect. This is just another way of proving that the reverse should be the case; that is, the engineer should maintain an architectural department for beautifying the building which he also equips and through this department do architectural work upon buildings with which he has no connection as engineer.

Architecture is an art developed through the centuries, compared to which the mechanical services of buildings is in its infancy. This accounts for the predominance of the architect, but building equipment, now and for some time, has been developed to the point where the engineering requirements of buildings should be determined entirely by the engineer and without the restraining hand of the architect.

At the present time the engineering requirements of buildings, where not designed by the owners' engineering department, or by the builder or sales engineer for the architect or owner, is usually done by the consulting engineer, under the control of the architect. There is no doubt that such work is done satisfactorily in a great number of cases and that a number of engineers seem content to work this way or else are indifferent to the situation.

TERRACE WORK



SCALE - ONE QUARTER INCH EQUALS ONE FOOT

MEASURED DRAWING FOR MARBLE TERRACE WORK, ARLINGTON MEMORIAL AMPHITHEATER, ARLINGTON, VA.

CARRERE & HASTINGS, ARCHITECTS

The ARCHITECT'S VIEWPOINT

- ¶ *The Architect's Equipment.*
- ¶ *The Practical and Aesthetic.*
- ¶ *Professional Spirit and Collaboration.*
- ¶ *Business-like Basis for Service.*

CONTRIBUTING EDITORS

- WILLIAM C. HAYS . . . *San Francisco*
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CONTEMPORARY says the Prorege of Arcopia in the fanciful tale by Henry B. Fuller, the graceful writer, who has so recently departed from among us, "is one who presented the highest union of the practical and aesthetic, who walks with his feet upon the earth and his head among the clouds, and wielded all the forces that art might offer—the rhythm of music, the glow of painting, the rotund pomp of sculpture, the graceful certitudes of geometry, the clearness and directness and force of rigorous logic."

Although these are but the casual words of a character in fiction, we would probably accept them as denoting fundamental qualifications in the architect of today as well as in the time of the Chevalier of Pensieri-Vani who furnished the title for Mr. Fuller's story. We might even go back still further into the past to the time of Imperial Rome when the building construction then undertaken would appear to particularly demand that architecture be considered in a comprehensive manner, including its practical phases. "One who professes himself an architect," said our old friend Vitruvius, speaking in the days of Augustus Caesar, "should be both naturally gifted and amenable to instruction. Let him be educated, skillful with the pencil, instructed in geometry, know much history, have followed the philosophers with attention, understand music, have some knowledge of medicine, know the opinions of the jurists, and be acquainted with astronomy and the theory of the heavens."

* * *

EVEN these fundamental principles named by Vitruvius would appear to find a place in the equipment of the architect of today. Architectural composition requires rhythm as in music, plans for housing demand that consideration be given to the public health or sanitation, which may be considered as one with practice of medicine, legal rights involve the opinions of the jurists and for the theory of the heavens, we have orientation as affecting sunlight. Today, as always, we should recognize that in the architect we must have "the union of the practical and aesthetic" that no work of architecture is possible unless based on practical considerations, and that there is no architecture without aesthetic expression. In maintaining "the practical and aesthetic" however, in their proper relations, there seems to be need for "clearness and directness of rigorous logic" to keep the architect in his true position and the public from classifying him as a visionary artist or a merely utilitarian constructor.

While the architect is called upon continually to defend his position as a practical man, he cannot ignore the fact that his profession is one of the major fine arts. All of these major fine arts—architecture, painting, sculpture, music and poetry—have a practical and scientific basis; painting in the basic suggestions from natural facts, music and poetry founded on rhythm and harmony. Architecture on its practical side has so many complex factors with which to contend that it becomes hard for the aesthetic to hold its

true position, and for the architect to maintain his standing as the artist and at the same time that of a practical planner, constructor and generally level-headed man of affairs.

* * *

WHAT this dissertation is really leading up to is a consideration of how an architect can or should practice his comprehensive and confusing profession; for it is a profession, whatever individual practitioners may attempt to do to it. Being a profession would it not be worth while for it to collaborate with other professions, in trying to uphold and coordinate the professional spirit? It collaborates with the artist and the craftsman in attempting to secure a coordination in aesthetics and the contractor and engineer in more practical contacts, why not with other professions, such as law and medicine, in trying to get a clear concept of professionalism and uniform methods of professional procedure?

Some years ago a group of high-minded architects, doctors, lawyers and other professional men, made an effort to do this through an organization created largely for this purpose. It was an "Association of Professional Men's Clubs" made up of Chapters in various cities, somewhat analagous to the American Institute of Architects. The altruism of such an organization is difficult to translate into practical accomplishment, but in suggesting and attempting to establish a common ground of professionalism, we believe that much good was accomplished and a reference to the professional idea given on the outside cover of the published proceedings of the Second Annual Convention might well supplement our statement of the architect's equipment. This was called the "Paradox of Professionalism" and was substantially as follows: "The professional man is an amateur. He does his work because he loves it. He does it well because he cares about it enough to give it all his attention and all his devotion. But he also loves his work because he believes that through it he may serve the best interests of his fellow men, and he loves them with a deep sincerity that is the dominating motive of his life."

* * *

ALTHOUGH pitched in a high altruistic key, is not this basically true of the architect? The main aim of the architect, as well as of any other professional man, is service. He sells nothing else, and his service of course should be disinterestedly in the interest of the client whatever compensation the architect may receive or hope to receive therefor. The architect's service, in one respect at least, appears to be differently considered from that of the doctor or lawyer. With doctors and lawyers, the patient or client expects to get his disinterested service and to pay for it. The architect on the contrary is expected to advise free of cost, taking a gamble on whether he can land a job and thereby secure some compensation. The public consequently are inclined not to consult an architect until their minds are made up, fearing they will be committed to a program of expenditure which they neither should undertake or can afford.

In place of the public being led to believe that the architect will be influenced by future conditional prospects of financial return, would it not be better by placing advice on more of a business basis to remove from the inquirer's mind suspicion of any antagonistic interest when he seeks to determine from the architect whether a building should or should not be undertaken and how it should be done? To this business-like basis for professional service, free advice, free sketches and informal competitions are opposed, and if the architect would avoid such obstacles and steadfastly adhere to the main idea of disinterestedly serving the public, would not many of the problems disappear, and the architectural profession be the gainer in the end, financially as well as in dignity and in the satisfaction resulting from the maintainance of its true purpose?

CHARLES H. ALDEN, F. A. I. A., Seattle, Washington.

EDITORIAL CHAT

NO two buildings of the commercial type, erected on the Pacific Coast in recent years, have aroused so much interest and brought forth so much favorable comment as the Northern Life Tower in Seattle, Washington, and the Wilshire Boulevard Bullock Store Building in Los Angeles. Both structures, just completed, are of the step-back type with architecture strongly reflecting the modern trend. The Seattle building was designed by A. H. Albertson, with whom was associated Joseph W. Wilson and Paul Richardson. San Francisco architects, who have seen the Northern Life Tower say there is none more imposing or impressive west of Chicago. The Bullock building in Los Angeles was designed by John and Donald Parkinson and this structure was the center of great interest during the recent Architect's Convention in that city. Interesting photographs of both of these buildings are shown in this issue.

* * *

A RECENT copy of the official organ of the San Francisco Olympic Club contained a full page half-tone picture of what was declared to be a model of the accepted drawing of the club's new building. There were things about this picture not altogether pleasing from an architectural view point, and there was naturally considerable speculation as to why it was shown. It seems that the model was nothing more than a birthday cake and was not made with the intention of being an accurate reproduction of the architect's work. Naturally the architects were somewhat perturbed when they learned of the publication of the model. In talking to Mr. Baur, one of the architects, the writer was assured that the final design will be a vast improvement over the cake-model.

EVERY year about this time the architect and draftsman has the impulse to design a holiday greeting card for his little circle of friends. To do something original is everyone's ambition, yet everything under the sun seems to have been tried. The obvious thing to do is to ring some change in the true Christmas idea. This was attempted last year in some modernistic designs but they were cold and painfully unsentimental. The real significance of the season—the celebration of our Saviour's birth, should not be overlooked. Any one of the circumstances attending this event may be appropriately used. The Three Wise Men making their way to Bethlehem, guided by the Star in the East, their adoration of the Christ Child, the flight into Egypt,—any of these is capable of being decoratively delineated without being unduly plagiaristic as to design.

Closely associated with this idea is the expression of religious observance achieved by representation of the entrance of a church or of its interior with a ceremony going on. Candles, seven-branched candelabra, and other symbolizations of churchly celebration may also be used to suggest this phase of Christmas. The Santa-Claus legend has furnished a set of Christmas ideas but a more popular notion is that of Christmas Good Cheer as indicated by suggestions of feasting and revelry. A rotund, mediaevally-clad page bearing a flaming boar's head, roast pig, or plum pudding, or perchance a brimming bowl of punch or ale has been often used to express this conception of the holiday, and will be used again as long as gustatory appreciation endures.

The old custom of singing carols gives us another subject for timely picturization. A band of serenaders singing in the street under brightly lighted windows always makes a pleasingly seasonable scene for a card and can be worked up in a variety of ways.

WITH *the* ARCHITECTS

LANDSCAPE ARCHITECTURE

The Pacific Coast Chapter of the American Society of Landscape Architects, in conjunction with the sculpturers of the Pacific coast, are planning an exhibition of Landscape Architecture and Sculpture to be held in the Architects' Building in Los Angeles during the month of January. Further details with reference to this exhibit will be forthcoming at a later date, according to J. W. Gregg, Secretary of the Pacific Coast Chapter, American Society of Landscape Architects.

SCHOOL ARCHITECTS NAMED

The Santa Cruz Board of Education has named the following architects to design school buildings which are to be built from the proceeds of a recent bond election:

Mission Hill Junior High School—John J. Donovan, Oakland.

Laurel School—William H. Weeks, San Francisco and Oakland.

Gault School—Alfred I. Coffey, San Francisco.

LOS ANGELES AIRPORT TERMINAL

One of the largest contracts to be awarded for a single project in Los Angeles in recent years is an airport terminal and industrial building at Jefferson and Main streets, for the El Travia Industrial Terminal Corporation. The George A. Fuller Company of New York received the contract on their bid of \$10,500,000. The plans for the various structures were prepared by O. R. Angelillo, 6600 Lexington avenue, Los Angeles.

TWELVE STORY BUILDING

A \$2,000,000 store and office building, twelve stories in height, is to be built on the south side of Wilshire Boulevard, near Cochrane street, Los Angeles, for the Dominguez Estate Company, from plans by Morgan, Walls and Clements, Van Nuys building, Los Angeles.

NEWSPAPER BUILDING

Rollin S. Tuttle has completed plans for a two-story reinforced concrete newspaper building for the Los Gatos Mail-News. The same architect is preparing plans for a Japanese church, Watsonville.

FRAME APARTMENT HOUSE

Albert H. Larsen, 447 Sutter street, San Francisco, has completed drawings for a three story and basement frame apartment building for Joseph Greenback. It is estimated to cost \$60,000. The location is the north side of Union street, west of Steiner, San Francisco.

For the same owner, Mr. Larsen has completed plans for a theater, store and apartment building in Paso Robles, estimated to cost \$165,000.

W. H. RATCLIFF BUSY

New work in the office of W. H. Ratcliff, Jr., Berkeley, includes a steel frame and concrete commercial garage at Oxford and Madison streets, for the Regents of the University of California, and a church and Sunday school group at Virginia street and Scenic avenue, Berkeley, for the University Christian Church. The latter project will cost in the neighborhood of \$200,000.

SAN LEANDRO BUILDING

Plans have been completed by E. W. Cannon of Oakland for a two story steel frame and brick store and office building to be built on the site of the Estudilla house in San Leandro. There will be six stores and twenty-two offices. The improvements will cost \$60,000.

BERKELEY APARTMENT HOUSE

Ernest Flores, architect of Oakland, has prepared plans for a \$50,000 frame apartment house to be built on Blake street, Berkeley, for Clyde N. Sage. There will be sixty rooms divided into suites of two and three rooms each.

BANK BUILDING

Plans are being prepared in the office of Albert F. Roller, Crocker First National Bank building, San Francisco, for a one story reinforced concrete bank building for the Bank of America, at St. Helena, Napa county, California.

SAN JOSE BUILDING

The office of W. H. Weeks has completed plans for alterations and additions to the Paul Masson building, San Jose, estimated cost of which is \$50,000.

BLACK GRANITE BUILDING

A building that will be unique in San Francisco, in that it will have a black granite facade, is being planned by Messrs. O'Brien and Peugh, to occupy a portion of the site of the old San Francisco Stock Exchange on Montgomery street, near California. The structure is to be two stories, mezzanine and basement and has already been leased to the Chapman-De Wolfe Company, stock brokers. Alongside of this building will be a seventeen story bank and office structure, now being designed by the same architects.

COURSE IN ARCHITECTURE

The special course in architecture and structural engineering, conducted by M. T. Cantell, architect and engineer, at the Frank Wiggins Trade School, Sixteenth and Olive streets, Los Angeles, for draftsmen and designers who contemplate taking the State Board of Architects' examination for certification, is held Tuesday and Thursday evenings of each week. The course consists of the primary subjects as named by the State Board of Architects in the requirements for examination.

ARCHITECTURAL PARTNERSHIP

The architectural firms of C. Frank Mahon and Lunberg & Eckvall have joined forces and will be known hereafter as Lundberg, Mahon & Eckvall, with architectural and engineering offices in Tacoma and in Seattle, in the same locations as the individual architects have heretofore occupied.

OAKLAND APARTMENTS

Chester H. Treichel, American Bank building, Oakland, has completed plans for a three story and basement frame and stucco apartment building at 13th avenue and East 36th street, Oakland, for A. C. Nelson. There will be twelve four and five room apartments.

MARINE HOSPITAL, SAN FRANCISCO

Plans are expected to arrive from Washington this month for a six story Class A marine hospital for the United States government. The structure is to be built in the Presidio of San Francisco, at an estimated cost of \$1,500,000.

DESIGNING FACTORY

Guy L. Brown, American Bank building, Oakland, is completing plans for a one story steel frame factory to be built in Emeryville for the Standard Acetyne Gasoline Company. It will cost in the neighborhood of \$10,000.

SAN RAFAEL APARTMENTS

S. Heiman, architect of San Francisco, has completed plans for a three story and basement frame and stucco apartment building to be erected at 5th and B streets, San Rafael, Marin County, California, for Robert Dollar. The approximate cost is \$100,000. The building has been designed in the Italian type and will contain twenty-two apartments with garage and all modern conveniences.

CLASS A THEATER

Forrest J. DeGriffin, 226 Northwestern avenue, Los Angeles, is preparing plans for a Class A theater, store and office building for Earl L. White. The location is the southeast corner of Magnolia boulevard and Hollywood Way. The auditorium will seat 2000 and it has been leased to the West Coast Theaters, Inc.

BERKELEY RESIDENCES

Plans have been completed in the office of Edwin L. Snyder for an English type residence in Claremont Pines, Berkeley, for C. N. White; also, a country farm house for Mrs. R. W. Croninger and a residence in North Cragmont for Joseph H. Jackson.

SEATTLE SKYSCRAPER

An eighteen story Class A apartment building is to be built at 9th and University avenues, for the Chancellor Apartments, Inc. Louis Baeder, Securities building, Seattle, is the architect. The improvements will cost \$2,000,000.

ATHLETIC CLUB BUILDING

Plans are being prepared by Sherwood Ford, Lyon building, Seattle, for a class A club building at 6th avenue and Union street, Seattle, for the Washington Athletic Club. Improvements will cost \$2,000,000.

SEATTLE HOSPITAL

Schack and Young, Central building, Seattle, are preparing plans for a fifteen story Class A reinforced concrete, stone, brick and terra cotta hospital for the Seattle General Hospital Association. The building will cost \$1,500,000.

ATHERTON COUNTRY HOUSE

Clarence A. Tantau, architect of San Francisco, is completing plans for a reinforced concrete country house at Atherton, San Mateo county, for Mrs. Carl Raiss. The house will cost between \$60,000 and \$70,000.

SPANISH RESIDENCE

Grimes & Schoening, architects of San Mateo, have completed plans for a Spanish house in Baywood, near San Mateo, to cost \$18,000. They have also prepared plans for two brick veneer houses in the same district for Robert Smith. This firm has two apartment house projects in their office, one of which is a \$250,000 six-story building, to be built in Baywood, and the other a three-story frame and stucco apartment building in the same district. The owner of the latter is J. Steuer.

SIX-STORY APARTMENT BUILDING

Herman Hogrefe, 140 Greenwich street, San Francisco, is the owner of a six-story Class C apartment building, with Class A garage, to be built on the southwest corner of California and Octavia streets, San Francisco, from plans by Edward E. Young. The building will contain one hundred and eight rooms and will cost \$250,000.

H. A. MINTON BUSY

New work in the office of H. A. Minton, Underwood building, San Francisco, includes a dormitory and refractory building at Santa Clara College, a branch bank at Santa Rosa for the Bank of Italy and a creamery building at Watsonville for Resetar Brothers.

CLASS A HOSPITAL

Preliminary sketches have been approved for a seven-story Class A hospital to be built on the northwest corner of Hoover street and Willowbrook avenue, Los Angeles, for Sylvan Lodge Hospital Association. The architect is William E. Flannery.

ALAMEDA GARAGE

A contract has been let by A. Hewettson, architect, with offices at 526 Powell street, San Francisco, for the construction of a one-story and basement steel and brick auto sales building and garage in Alameda for the Dietz Motor Car Company.

EIGHTEEN ROOM APARTMENT

Wood, Flores and Ward, architects of Oakland, have completed plans for an apartment building to contain eighteen two and four room apartments for M. C. Blake. The location is Blake street and Chilton Way.

GRANTED CERTIFICATES

At the October 29th meeting of the State Board of Architectural Examiners, Southern District, the following were granted provisional certificates:

Gilbert T. Lord, 4947 Marathon street, and Charles A. Stone, 2219 Juliet street, Los Angeles.

The following list were granted provisional certificates at a special meeting held October 1:

Nathan Lindell Coleman, 1558 North Vine street, and Douglas Honnold, 1747 Cahuenga avenue, Los Angeles.

The State Board of Examiners, Northern District, granted provisional certificates on October 29 as follows: Harold F. Gens, 2249 Ward street, Berkeley, and Earl R. MacDonald, 194 John street, Oakland.

APPRECIATION

Editor THE ARCHITECT AND ENGINEER,
San Francisco:

The members attending the Second Annual Convention of this Association passed a vote of appreciation to the management of THE ARCHITECT AND ENGINEER for the many courtesies extended to the Association during the past year.

Again thanking you for the interest you have taken in the advancement of the Association and assuring you of our full co-operation in the future, I remain,

Yours very truly,

STATE ASSOCIATION OF CALIFORNIA
ARCHITECTS, SOUTHERN SECTION

By RICHARD C. FARRELL, *Secretary-Treasurer.*

PRESIDENT NAMES DELANO

Appointment by President Hoover of William Adams Delano, President of the New York Chapter of the American Institute of Architects, as a member of the National Capital Park and Planning Commission is announced. Mr. Delano succeeds the late Milton B. Medary of Philadelphia, former president of the Institute, who was named to the Commission by President Coolidge in 1926.

Mr. Delano will officially represent the profession of architecture in the development of the Plan of Washington, which is actively sponsored by Secretary Andrew W. Mellon of the Treasury Department, and for which Congress has authorized an expenditure of \$75,000,000.

Selection of Mr. Delano to succeed Mr. Medary as Chairman of the Institute's Committee on Public Works was also announced by the President of the Institute, C. Herrick Hammond of Chicago.

PERSONALS

VICTOR GALBRAITH, Stockton architect, received honorable mention and a cash award of \$50 in the Common Brick Manufacturers' Association second common brick school building competition, which ended recently. His submission was a perspective and floor plans of the Fairchild School on Roberts Island road, near Stockton.

HOWARD GILKEY, landscape architect, has been retained by the Kern county supervisors to make a general plan and supervise the development of the Kern river park, eight miles from Bakersfield.

CHARLES H. ALDEN, architect, has moved to 6153 Arcade Building, Seattle, Washington.

FREDERICK H. MEYER, newly elected president of the Northern California Chapter, A. I. A., has returned from an enjoyable trip abroad. He was accompanied by Mrs. Meyer.

W. K. DANIELS, deputy-chief of the Division of Architecture, State of California, has been granted a certificate to practice architecture by the State Board of Architectural Examiners, northern district.

WRIGHT & GENTRY have moved from 315 Marine Bank Building, Long Beach, to 537 Jergens Trust Building, Long Beach.

KENNETH A. GORDON has moved from 200 E. Colorado street, Pasadena, to 175 E. Green street, Pasadena.

P. P. LEWIS has moved from 1905 Wilshire boulevard to 205 Administraton Building, West Los Angeles.

HARLD O. SEXSMITH and WALTER W. WADE have dissolved partnership. Mr. Sexsmith will continue the practice of architecture at 6636 Hollywood boulevard, Los Angeles.

J. C. LONGUEVILLE has established a new office at 1616 Chelsea Road, San Marino.

ROBERT M. FARRINGTON has moved from 1313 Wilshire boulevard, Beverly Hills, to 218 N. Beverly Drive, Beverly Hills.

GOVERNOR MAKES APPOINTMENTS

Governor C. C. Young has made the following appointments on the California State Board of Architecture: Northern District, Henry H. Gutterson of San Francisco and Berkeley to succeed James W. Plachek; James S. Dean, Sacramento, and John J. Donovan, Oakland, incumbents; Southern District, Louis J. Gill of San Diego to succeed William H. Wheeler; John Parkinson and John C. Austin, Los Angeles, incumbents.

COMPETITIONS

FELLOWSHIP CONTESTS

The American Academy in Rome has announced its annual competitions for fellowships in architecture, landscape architecture, painting, sculpture and musical composition.

The competitions are open to unmarried men not over 30 years of age who are citizens of the United States. The stipend of each fellowship is \$1500 a year with an allowance of \$500 for transportation to and from Rome and \$150 to \$300 for materials and incidental expenses. Residence and studio are provided at the Academy, and the total estimated value of each fellowship is about \$2500 a year for three years, with opportunity for extensive travel.

The Grand Central Art Galleries of New York City will present free membership in the Galleries to the painter and sculptor who win the Rome prize and fulfill the obligations of the fellowship.

Entries for competitions will be received until March first. Circular of information and application blanks may be obtained by addressing Roscoe Guernsey, Executive Secretary, American Academy in Rome, 101 Park avenue, New York, N. Y.

COLLECTIVE BID HELD ILLEGAL

The proposal of the Allied Architects' Association, submitted to the Board of Commissioners, District of Columbia, to enter into a contract to do all of their architectural work for the government of the District of Columbia, has been disapproved by the Comptroller General.

In a decision transmitted to the district commissioners, the comptroller general cited the legal obstacles to the plan proposed. If approved, it would provide award of the contract to the association as a unit, instead of individual bids from architects for architectural work, he said.

It was also pointed out that approval of such a proposition would establish a precedent and thus open the way for other organizations representing manufacturers of various lines, to bid collectively instead of the manufacturers dealing direct with the government, which is the practice now followed by bidders on government supplies.

Under the law, it was explained, bidders for contracts must have open and free competition, and contracts can be awarded only to the lowest responsible bidder.

CONTRACTORS PENALIZED

After having been fined \$800 for violations of the law prohibiting the employment of anyone for more than eight hours in a single day on public work on complaint of the State Labor Commissioner, Anderson & Johnson, school contractors, were penalized \$940 for the same offenses by the San Diego Board of Education. In the justice's court only \$100 of the \$800 fine was exacted, the balance of the penalty being suspended, due to a showing by the contractors that it was their first public works contract and they were unaware of the law. This was done under the amendment to the law passed by the California Legislature of 1927, permitting adjustments to be made in such cases instead of exacting \$10 a day fine for each offense arbitrarily set in the original statute.

The \$10 per day penalty was exacted by the San Diego Board of Education as a forfeit for violation of the contract between the board and contractors, the contract calling for observance of the law as on all public works job. Protest was made by the contractors through their attorney that they were being penalized twice for the same offense. On advice of the district attorney, however, the board assessed the full penalty for the 94 reported offenses, their legal advisor holding they had no power to remit or reduce the amount.

THOMAS HASTINGS

Thomas Hastings, aged 69, one of the foremost of American architects, died at New York October 23. Mr. Hastings had undergone an operation for appendicitis, and seemed to be recovering up to a short time before his death. He was a member of the firm of Carrere & Hastings, which designed the Ponce de Leon and Alcazar Hotels at St. Augustine, Fla., the New York public library and other notable public buildings.

ARE LICENSED ARCHITECTS NOW

At the meeting of the State Board of Architectural Examiners, Northern district, Tuesday, November 26th, the following were granted Provisional Certificates to practice architecture in California: John E. Dinwiddie, 2815 Oak Knoll, Berkeley; Guy O. Koopp, P. O. Box 644, Carmel; Walter C. Clifford, 1253 Clay street, San Francisco; Edmund J. Resing, 488 Pine street, San Francisco.

SAN RAFAEL SCHOOL

Plans are being completed in the office of N. W. Sexton, de Young building, San Francisco, for a concrete gymnasium for the San Rafael high school.



PROPOSED CITY-COUNTY BUILDING, TACOMA,
WASHINGTON

TACOMA CITY-COUNTY BUILDING

The Tacoma Architects, Inc., have prepared preliminary plans for a proposed new City-County building, Tacoma. The corporation is composed of a group of Washington State Chapter members in Tacoma, organized for the purpose of securing better architectural results in the building of public structures. The commendable work of this group in re-planning a fire alarm station is well known.

The group of buildings proposed contains the Public Utilities building, for which working drawings are now being made, and the proposed future development of a group which would provide for the ultimate needs of the city and county as their activities expand and as they need to be housed in buildings less antiquated and more conveniently arranged.

STATE to SPEND MILLIONS for NEW BUILDINGS IN 1930

WE have to thank W. K. Daniels, deputy chief of the Division of Architecture, state of California, for the following excellent description of the work of this important state department, together with a forecast of future construction work under its jurisdiction:

"A summation of the volume of work the Division of Architecture handles perhaps warrants a brief on its organization.

"The Division of Architecture is a division of the State Department of Public Works. It consists of a chief of division, assistant architect, deputy chief of division, chief architectural draftsman and draftsmen, structural engineers, mechanical engineers, electrical engineers, civil engineers, estimators, specification writers, superintendents of construction, accountants, clerks and stenographers, having a total personnel of 85.

"The duties of the Division are to make plans and specifications for all new buildings of a value in excess of \$1,000 at the various state institutions; to let contracts for and superintend their erection, or, in case satisfactory contracts cannot be made, to construct the buildings by day labor; to care for all alterations and repairs to existing buildings, on the same basis where the amount involved is in excess of \$1,000.00; to design and install all heating, lighting, ventilating, refrigerating, water supply, mechanical and electrical plants of every nature—whether changes, extensions, or original; survey grounds, lay out walks, drives, and roads; provide water supply, sewer and drainage systems, requiring the design and construction of dams, reservoirs, pipe lines, wells, pumping plants, ditches, sewage treatment and disposal plants and drains.

"Construction activities are scattered from Mount Shasta to San Diego, there being over 50 different places to care for, which fact illuminates the wide field of operation and magnitude of supervision not to mention the problem of securing necessary data, information, approvals, etc., before proceeding with a project.

"A great many of the state institutions are small cities within themselves and require buildings of about every nature and type. When you consider the state hospitals for insane and narcotic addicts, prisons, colleges, armories, military camps, industrial schools and

other institutions, the magnitude of the type of structures and their auxiliaries demanded is apparent.

"It is the policy of the state to erect permanent buildings consisting for the major part of reinforced concrete structures. Brick is used to some extent chiefly where the design of buildings erected previously has set a precedent. Clay tile roofs are favored with some slate and asbestos shingles. Some of the smaller structures, such as physicians' residences, are of frame construction. Building materials are chosen that meet our requirements both as to economy and practicability.

"During the year 1929 the Division of Architecture will have completed in the office a total construction valuation of approximately \$3,200,000 representing approximately 170 projects of varied descriptions and sizes of which 80 per cent is being or will be constructed by the contract method.

"I wish to call your attention to the institution names "New State Hospital," "Institution for Women," and "Prison for First Offenders." These will be new institutions and the sites have not at this date been selected.

"Following is a list of some of the major projects for which plans are being prepared and which will go forward early in 1930:"

Ward building, Pacific Colony	\$ 60,000
Physician's cottage, Pacific Colony	10,000
Long Beach Armory	75,000
Industrial building, Napa Hospital	7,500
Cannery at Agnew Hospital	15,000
Laundry, San Quentin Prison	75,000
Warehouse, San Quentin	100,000
Kitchen and equipment, Whittier school	85,000
General shop building, Whittier school	45,000
Guard house, Veteran's Home	16,000
Hospital building, Stockton Hospital	100,000
Ward building, Narcotic hospital	40,000
Industrial shop and gymnasium, Narcotic hospital	20,000
Industrial building, Stockton Hospital	25,000
Ward attendants' quarters, Agnew Hospital	225,000
Kitchen commissary and steam plant, Agnew Hospital	97,500
Physician's cottage, Agnew Hospital	10,000
Science and art building, Santa Barbara College	120,000
Annex to School for Blind	49,000
Kitchen and commissary, New State Hospital	120,000
Four ward buildings, New State Hospital	350,000
Steam plant, New State Hospital	85,000
Remodel Administration building, Folsom Prison	20,000
Quarters for Infirm Females, Patton Hospital	42,000
Pathological laboratory, Agnew Hospital	80,000
Annex to Girls' Home, School for Blind	9,500
Sewage disposal, New State Hospital	65,000
Laundry, New State Hospital	65,000
Attendants' Quarters, Administration building and Superintendent's cottage, New State Hospital	120,000
Two barracks building, Veteran's Home	340,000
Water supply system, Preston School	70,000
Athletic field and house, Santa Barbara College	10,000
New wings, San Francisco State College	325,000
Ward buildings, Mendocino Hospital	116,000
Physician's cottage, Napa Hospital	10,000
Physician's cottage, Sonoma Home	10,000
Commissary building, Sonoma Home	26,000
Service building, San Diego College	56,000
Two ward buildings, Mendocino Hospital	165,000
Guard cottages, San Quentin Prison	25,000

Sewage disposal system, Folsom Prison	50,000
Boiler equipment, Folsom Prison	20,000
Industrial building, Mendocino Hospital	20,000
Physician's cottage, Stockton Hospital	10,000
Laundry addition, Sonoma Home	10,000
Hospital unit, Pacific Colony	125,000
Administration building, Pacific Colony	55,000
Industrial shop building, Preston School	37,700
Superintendent's cottage Preston School	25,000
Assembly hall, Chico College	180,000
Gymnasium, San Jose College	130,000
Boys' and girls' dormitory and community house, School for the Deaf	300,000
Training School, Humboldt College	90,000
Annex to Boys' Dormitory, School for Blind	9,500
Administration bldg., Institute for Women and steam plant	180,000
Jute Mill and prison walls, San Quentin	100,000
Extension dining room, San Quentin	50,000
New prison for first offenders	300,000
Industrial bldg., Institute for Women, warehouse, farm buildings and laundry	70,000

MAMMOTH STEEL BRIDGE PLANNED

A bridge with towers exceeding the height of the Woolworth building in New York City will be constructed in commemoration of the American soldiers who fought in France, according to D. B. Steinman, consulting engineer, in an address before the recent convention of the American Institute of Steel Construction. Dr. Steinman reviewed the past fifty years of bridge building, years during which steel was available, and described some of the most massive bridge structures in the world.

The Liberty bridge, across the Narrows on New York harbor, he said, will be 4500 feet between the main spans and 235 feet above high water. The main span of the proposed bridge will be 1000 feet longer than the main span of the Hudson River bridge now building, which, in turn is twice the span of the next greatest bridge.

The towers will each be 800 feet high, and the main cables from which the bridge is to be suspended will measure 48 inches in diameter, each containing 48,000 wires, and the strength of the wire will be 240,000 pounds per square inch. The towers will be artistically designed in steel and unadorned, he said, and the whole structure will express the "Spirit of Steel." Observation platforms crown the towers, which will be equipped with a carillon of bells, and beacon lights.

RETURNS TO SAN FRANCISCO

Stanton Willard has returned to the San Francisco office of Gladding, McBean & Co. to handle promotional sales of all architectural products. During the past year he was in charge of the decorative tile department at the Los Angeles office of the company.

Mr. Willard will establish a studio here to cooperate with architects in the use of terra-cotta, tile, etc.

A certified architect, Mr. Willard had eastern experience with York & Sawyer of New York, and spent eleven years with Bliss & Faville, of San Francisco, so he is well acquainted in the profession.

ONCE AGAIN—DO WE BUILD FOR THE FUTURE?

(*The Latch String*)

"When we build, let us think of building—forever."
—John Ruskin,

The sentiment is noble, but is the sense good?

Factory construction forty years ago was so different from modern standards that the old buildings are nearly worthless. Only the walls of apartments twenty-five years old have any value. To make them habitable, rentable, and economically valuable the interiors must be rebuilt. Even houses, a generation old, are inadequate and require extensive overhauling.

An automobile, although built to last a lifetime, is a monstrosity in fifteen years. A ten-year-old dress suit, even if designed by a king's tailor, makes the wearer look like a character from a Dickens' novel. A woman's dress is unwearable in three years.

Look at the pictures of the gay nineties. If the furniture, bric-a-brac and clothing, shown in a sketch, were offered for sale at auction, the highest bid would be less than \$10.

What is the conclusion?

With history warning us that change is as certain as the tides, is it wise to pretend that we are building our house for our great-grandchildren? Would such an attitude be foolish?

REAL ESTATE BOND EXCHANGE WOULD BENEFIT BUILDING CONDITIONS

(*Bulletin, Illinois Society of Architects*)

During recent weeks there has been a general slowing up of contemplated improvements due in a very large measure to the impossibility of financing speculative projects. The investing public is in the stock market and apparently is not interested in real estate bonds, and of course the bankers *cannot afford* to carry real estate bonds with an interest rate from 6% to 6½%, as their surplus funds may be also invested in the call loan money market or otherwise that will net a much larger return, as well as being invested in more liquid assets.

What is urgently needed in Chicago is a real estate bond exchange, similar to the exchange planned for New York City. At present the average net return on real estate investments is greater than the average return of even the best listed stock based upon present market prices. The difficulty is that real estate bonds are not liquid and there is no way in which these bonds may now be disposed of except by private sale.

The plan being developed in New York City will be watched with great interest.

SOCIETY *and* CLUB MEETINGS

SOUTHERN CALIFORNIA CHAPTER

H. Roy Kelley and Harrison Clark, winners of the first and second prizes in the National Better Homes Architectural Competition, were the guests of honor at a joint meeting of the Southern California Chapter of the American Institute of Architects and the Los Angeles Architectural Club, held Tuesday evening, November 12th, at the University Club, Los Angeles. John Steven McGroarty, author of the Mission Play, was the principal speaker and told of the achievements and influence of the padres who designed and built the California missions.

George P. Hales, president of the Los Angeles Architectural Club; Pierpont Davis, president of the Southern California Chapter, A. I. A., and David J. Witmer, chairman of the judging committee, National Better Homes Competition, also participated in conducting the program for the evening.

After the dinner the members and guests adjourned to the exhibit rooms in the Architects' Building, where the exhibit of all prize-winning and honorable mention designs in the National Better Homes Architectural Competition was formally opened.

At the business session of the Southern California Chapter, A. I. A., the nominating committee reported that nominations for officers for the next year had been made as follows: H. C. Chambers for president, Donald B. Parkinson for vice-president, H. Roy Kelley for secretary, Ralph C. Flewelling for treasurer, and Gordon B. Kaufmann for director for three-year term.

WASHINGTON STATE CHAPTER

Washington State Chapter held its first regular meeting after the summer series at the College Club, Seattle, Thursday evening, October 3. There was a good attendance and after the usual social gathering and dinner the meeting was called to order by President Ford. The minutes of the previous meeting were read and approved as was also the treasurer's report, paving the way for reports of committees.

Mr. Myers, in reporting for the Committee on Civic Design, stated that plans had been made by the Chapter for the architectural treatment of the water tower in Woodland Park and that the money for its construction had been appropriated. A change of city administration, however, had appeared to leave the

matter in abeyance. Mr. Myers and Mr. Albertson had spent considerable time trying to get some action by the city, but it was apparent that in some quarters opposition had developed.

Mr. Vogel, reporting for the Committee on Publicity, said that he was trying to get short biographies of all members so that they would be immediately available for publicity purposes whenever a member had accomplished something that provided good copy. He also stated that Mr. Aitken had written letters to a large number of producers of building material, asking them to insert a clause in their advertising, advising prospective owners to employ architects.

A proposed amendment to the Constitution of the Chapter, changing the name of the Executive Committee to that of Executive Board was read.

Mr. Vogel spoke about a movement that had been initiated among local architects to confer with the City Building Department, urging it to require that application for permits be accompanied by properly designed construction drawings. The practice of having the Department supply the deficiencies in designs made by the builders was contributing largely to the congestion in the Building Department office. On motion of Mr. Albertson, it was voted that this matter be referred to the Committee on Ordinances.

A motion was passed directing the secretary to write a letter to the Armstrong Linoleum Company objecting to the plan of service they offered as cheapening the services of an architect.

Mr. Gould was then introduced and presented an illustrated talk on Washington and the L'Enfant Plan.

WASHINGTON STATE SOCIETY

The October meeting of the Washington State Society of Architects was held at the Hotel Gowman, Seattle, on the evening of October 3rd.

Resolutions were passed favoring a low-level betterment of facilities for travel between Puget Sound and the portion of the State of Washington immediately east of the Cascades.

John S. Hudson, architect, was the principal speaker of the evening. He spoke upon the Cascade Tunnel, following which this resolution was unanimously passed:

WHEREAS cheap and rapid transit is the most vital business affecting the human race, and

Whereas the Cascade barrier seriously obstructs easy transportation from one section of our state to another, and

In view of the fact that competition in the saving of time in all modes of travel is of transcendent importance, and

Whereas this transportation factor will determine the destiny of the competitive ports of the Pacific Coast, and especially will this factor direct and control passenger and freight traffic to and from the great interior, as well as from coast to coast and between Europe and Asia;

IT IS NOW RESOLVED, that it is the sense of this association that we favor a separate and low-level electrically operated tunnel through the Cascade barrier under the snow-line, situated as nearly as possible in the center of the state and capable of uninterrupted use by all forms of traffic demands, for both the state and the nation.

Washington State Society of Architects
Wm. J. Jones, President
O. F. Nelson, Secretary.

The November meeting took the form of a dinner at the Gowman Hotel on the evening of November 7th.

L. A. ARCHITECTURAL CLUB NOTES

(From the *Lintel*)



At the October meeting of the Los Angeles Architectural Club, C. J. Derrick said that the *Engineer* is the Architect after all.

* * *

Richard S. Requa showed four reels of motion pictures and thereby proved that the psychologist is right in his contention that man loves mystery. In his pictures of North Africa where the veiled ladies of the harem passed, the eager murmurs of the members rose to a strident clamor; everything was left to the imagination, nothing was in evidence. Later, in his picture of Spain, where the prevailing costume of the American ladies left nothing whatever to the imagination, snores were heard at frequent intervals. In the words of the Psalmist: "Woman, woman, thy charm is mystery."

* * *

The Club wishes to thank Stanley Johnson for his generous contribution. Two water colors, one a picturesque corner in old Los Angeles, the other an architectural subject, are now hanging in the Club offices. Members are invited to drop in and inspect

them, and at the same time decide on which wall they would like to hang some little sketch of theirs

* * *

A recent visitor to our Clubrooms was J. E. Dinwiddie, a director of the San Francisco Architectural Club, (and cover designer for *THE ARCHITECT AND ENGINEER*). He appeared much interested in our spacious (?) quarters and browsed about for some little time. We asked him for news of his own organization and were much impressed when he told us the San Francisco Club occupied three floors (floors, not rooms)—one for recreation purposes, with writing desks, card tables, etc.; the basement containing the assembly hall for meetings and banquets, and the top floor given over to the Atelier. However, he consoled us by saying that what we lacked in space we made up for in efficiency; that they had no such business-like employment bureau, no centralized club office where information may be had at all times, and no man-sized publication, such as the "*Lintel*."

* * *

It looks like First Mention and medals for the Atelier this year. In spite of football the men have produced thirteen sketch problems and twelve analytiques and projects. Nick Brandt seems to be leading in the race—perhaps we have another Fuller in the bunch, although the results are not yet known. The Atelier is looking for new quarters. Any information will be appreciated by Al Sellman-Berger, Sous-massier. The Atelier thanks Mr. George Hales for his cooperation at their recent meeting.

* * *

The summer heat isn't the only thing that remains with us; the quiet period in architectural offices seems to have continued into the fall. The Bureau does its best, but come on, you architects! Our records the past four months show that over ninety per cent of the calls for draftsmen *received* by the Bureau, are *filled* by the Bureau. We can supply men even in specialized lines such as mechanical engineering, mural painting, surveying. As for draftsmen—we have them!

* * *

President Hales is on the search for club members musically inclined. Those who can play any instrument—banjo, violin and all the rest of the list—please emerge from that modest obscurity and leave your name at the club offices or get in touch with George Hales.

ROMANCE OF PLASTER AND PLASTERING

Authors and illustrators and poets have for years woven a romantic glamor about the mason, the concrete worker and those brawny giants we have admired in posters and art magazines supposed to represent an idealized human being known as a steel erector. But somehow or other, heretofore, the public has never been given the opportunity of properly appraising the importance of the plasterer and of plaster in the building industry.

However, this dereliction has now been remedied as indicated by a bulletin issued by the Pacific Portland Cement Company, Los Angeles, Portland, Seattle and San Diego.

The Bulletin, a handsome specimen of printing, is appropriately titled: "A World Famous Builder Talks About the Importance of the Right Plaster." Then it quotes excerpts from the book "Skyscrapers," written by one of the world's master builders, Col. W. A. Starrett, Vice President of the Starrett Bros., Inc., New York. Col Starrett's tribute occupies the entire first page of the Bulletin.

STEEL INDUSTRY IS PROSPEROUS

Structural steel was never selling better in the history of the country, declared Charles F. Abbott, executive director, in his report to the Seventh Annual Convention of the American Institute of Steel Construction. Mr. Abbott pointed out that in 1921 some 1,188,600 tons of structural steel were sold in the United States, whereas this year the tonnage will probably exceed 3,955,880. This growth in the business has resulted despite the fact that there has been a decline of some nine per cent in all building operations during 1929.

Standard specifications and more rational use of structural steel promoted by the Institute has in part effected this great change. Furthermore there has been a tremendous increase in bridge building and aggressive work is being done toward promoting the use of steel in hangars, residences and dams. The time is now ripe, he said to "rationalize output."

CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces an open competitive examination for Junior Engineer (Structural Steel and Concrete).

Applications for junior engineer qualified in structural steel and concrete must be on file with the Civil Service Commission at Washington, D. C., not later than February 4, 1930. Detailed information may be obtained from your nearest postmaster.

FOX THEATER HEATING

James A. Nelson Co., Inc., 10th and Howard streets, San Francisco, installed the heating and ventilating plant in the new Fox theater, illustrated in this issue. This is one of the most exacting ventilating installations to be made in a San Francisco building in recent years and the company is receiving much praise for its work. The method of ventilation is different than that used in most theaters in that the air comes in from the ceiling and is forced out beneath the seats. This is known as the down draft system, and the system employed is just the opposite to that customarily used.

Another contract of considerable importance recently completed by the James A. Nelson Company, is the heating and ventilating of the new Capwell store, Oakland. This contract amounted to \$175,000. The Nelson Company has recently been awarded a contract for heating and ventilating the new Shell Oil Building, San Francisco, at an approximate figure of \$250,000.

ELECTRIC EQUIPMENT, FOX THEATER

All of the more important electrical equipment in the new Fox Theater, San Francisco, was supplied by the Westinghouse Electric & Manufacturing Company, the installation being made by the Alta Electric Company of San Francisco, electrical contractors on the job. The equipment included Westinghouse motors for the ventilation features which are said to be the most elaborate to be found in any playhouse on the Pacific Coast.

The lighting system, including the special effects produced on the stage, has been pronounced one of the most unusual of its type ever installed in a theater. Through the use of a gigantic Westinghouse Multi-Pre-Set switchboard, all lighting effects are set up in advance and controlled automatically, to be synchronized not only with the film presentation but with the entire program.

BOOK FOR ROOFING CONTRACTORS

"Erection Data and Specifications on Truscon Ferrobord Armco Ingot Iron Roofdeck," is the name of a new booklet just issued by Truscon Steel Company. It is for the practical roofer and roofing contractor who handles Ferrobord roofdeck. It tells him how to install this metal roofdeck quickly and economically to give a thoroughly modern, insulated, waterproof, firesafe and permanent roof.

OIL BURNING EQUIPMENT

E. A. Cornely, Inc., 1452 Bush street, San Francisco, for many years prominent in selling and installing oil burning equipment in homes, hotels and apartment houses, has added Enterprise fuel oil burners to his lines. Referring to acquisition of this line of high grade burners, Mr. Cornely says:

"We will be none the less active in handling Rayfield automatic burners, with which we have been prominently identified in the past, because for those types of installation where we have been recommending Rayfields nothing is their equal. This change simply means that we will handle two burners in the place of one.

"For installations where Rayfield is not adaptable Enterprise will enable us to supply exactly the equipment needed, and vice versa; thus at all times we can fill the needs of any construction or enterprise requiring oil burning equipment and meet those needs with the kind of equipment which will solve the heating problem most economically and efficiently."

The territory in which the Cornely company will act as distributors of Enterprise burners includes San Francisco, San Mateo and Marin Counties.

Enterprise burners are made in San Francisco, where a large plant is maintained.

DECORATIVE ART EXHIBITION

The third decorative art exhibition sponsored by the San Francisco Society of Women Artists and the Women's City Club will be held at the Women's City Club, 465 Post street, San Francisco, in April. Ceramics, frescoes, furniture, textiles, screens, hand tooled leather, metal work, sculpture, wall decorations and wood carvings by California artists will be shown. Any artist desiring to exhibit a complete unit of decoration in an alcove must submit plans or sketches to the Art Committee not later than January 1, 1930.

In order to develop additional units of decoration, artists are urged to collaborate with other artists who are working in different mediums from their own. Anyone desiring to supplement his exhibit in this way with work in another medium may receive information regarding the work of other artists by communicating with Miss Rose Pauson, 2510 Jackson street, San Francisco. The art committee is composed of Rose Pauson, chairman; Anna Dodge Bailhache, Forrest L. Brissey, Junius Cravens, Helen Forbes, William I. Garren, Marian Hartwell, Florence Richardson, Rudolph Schaeffer, Jacques Schnier, Walter L. Steilberg and Ruth Cravath Wakefield.

OAKLAND ARCHITECTS HONORED

Messrs. Miller and Warnecke, architects of Oakland, received two prize awards for their East Oakland High School building, in the national competition conducted by the Common Brick Manufacturers' Association of America. The double honor comprised the grand prize and first award in the large school class, open to architects who have produced school buildings of common brick material during the year. Each prize amounted to \$500; a total award for the Oakland men of \$1000.

The contest was judged by J. Meyrick Colley of Louisville, Ky.; Howard Dwight Smith of Columbus, Ohio, and Link, Weber & Bowers, Pittsburgh, Pa. It involved plans and designs for schools of two classes and for a grand prize for the best production with consideration of the two classes. The Oakland architects submitted their plans and photographs of the East Oakland High School in the class having cubic content of 700,000 cubic feet or more. First prize in the smaller brick schools class also went to California architects, Dean & Dean of Sacramento, for their handling of the Clarksburg High School.

GOES TO SPOKANE

After many years in San Francisco James S. Cole, vice-president of Gladding, McBean & Co., has been transferred to Spokane to take permanent charge of a plant recently acquired by this company. Mr. Cole entered the employ of Gladding, McBean & Co. twenty-one years ago, and has served at the Lincoln plant in Placer County and in Los Angeles as well as in San Francisco. He has had a distinguished part in extending the use of terra-cotta as a building material over the entire Pacific coast. The acquisition of the American Fire Brick Co. of Spokane led to Mr. Cole's transfer to the Northwest.

INSULATION

Johns-Manville insulating board is described and pictured in a standard size brochure just published by the company that has been recognized as an authority on the subject of insulation for over seventy years. Architects will find much useful information in this booklet which may be had for the asking. Some of the interesting chapters have these headings: "Our Home Must be a Livable Home," "Proper Insulation is a Friend to Your Furnace," "Enjoy a Livable Cool House in Hot Weather," "Uses of J.-M. Insulating Board," and "Beautiful Interiors with J.-M. Insulating Board."

MANY CONTRACTORS GRANTED LICENSES

Approximately 12,500 licenses have been issued under the new law providing for the registration of contractors in California, according to James F. Collins, director of the Department of Professional and Vocational Standards. Letters have been sent out to all listed contractors who have not filed applications for a license, warning them to do so.

Only about a dozen complaints against contractors under the new law have been filed with the registrar. Most of these were in connection with contracts which originated prior to August 14, 1929, the day on which the new law became effective and hence could not be considered. Others involved matters which did not come within the scope or meaning of the statute. None of the complaints were submitted in the proper form, the law requiring that they be duly certified, which means that they shall be sworn to before a notary public. Persons making complaints are admonished to have them drawn in proper form with complete information. The small number of complaints filed has surprised the registrar. He interprets it as evidence of the strong moral effect of the legislation.

Many requests for interpretation of the law have been received by Registrar Collins. Some of these have been referred to the state attorney general for an opinion. In others, rulings have been made by the registrar. Following is the reply of the registrar to three questions put up to him by the Orange County Builders' Exchange:

"No. 1. Is it necessary for a hardwood floor finisher to have a contractor's license when he agrees to do the work for a set price per square yard, but does not hire men and can be discharged by the original floor contractor?"

"In this case it appears that the individual is rendering a personal service and it will be the policy of this office not to require a license. However, should this man take a contract in excess of \$200, wherein he employed labor and became responsible for materials and payrolls and compensation insurance, he would be designated a contractor under the provisions of the law of this department.

"No. 2. Are partners liable if they have a contractor's license and then dissolve partnership? Should this license be cancelled and both take out another license?"

"In the case of a dissolution of partnership, where the contractor's license is issued in the name of the partnership, the license would become inoperative and would be cancelled upon the statement of the dissolution by the partners. It would not be legal for either party to use same. There is no provision in the law whereby we can transfer a license. In order to use a partnership license it will be necessary for one of the

partners to have the right to operate under the name in which the license is issued.

"No. 3. Is it necessary for a water well driller (contractor) to carry a contractor's license, or will he be exempt under Sec. 2, paragraph B?"

"This question calls for one of the border line interpretations in the law. It would appear that so long as a well driller performed work as set forth in the exemption clause, paragraph B of Sec. 2, of the contractor's registration law, he would not require a license. It would seem, however, that legitimate operators in this field should not stand on the technicality of the law, but should rather support the general intent by applying for a license."

Paragraph B of Sec. 2 referred to above, exempts "construction operations incidental to the construction and repair of irrigation and drainage ditches of regularly constituted irrigation districts, reclamation districts, or to the farming, dairying, agriculture, viticulture, horticulture or stock or poultry raising."

Answering an inquiry regarding apparent conflict of state and local license laws, the Registrar wrote: "The state law cannot be considered to eliminate the necessity of contractors complying with local regulations that may be created in addition. Each recognized subdivision of the state of California has certain powers, among which are the right to regulate business within their community within constitutional limits. Every contractor in California will require a state license under the state. Any additional regulations that require him to comply therewith in the locality in which he works will place upon him legal obligations that might cause complaint for violations thereof to be made to the Registrar of Contractors affecting his state license thereby."

Many inquiries have been received by the Registrar as to whether persons building for themselves on their own property with the expectation of selling and not for personal occupancy are amenable to the law. In all his replies the Registrar has pointed out that it was the intent of the law that such builders should be licensed. This opinion has been reinforced by the following ruling given to the department by the state attorney general:

"If it appears from the facts of the case before you that an unlicensed builder has not in good faith built the house for his own use, but has built it for the purpose of speculation, then we believe that your department should hold the builder has unlawfully engaged in the contracting business.

"You also ask whether an unlicensed contractor would be permitted to file a lien, and if so, what his



Christmas Greetings

to ARCHITECT & ENGINEER

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BOARD OF DIRECTORS

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status would be before the court in suing upon the lien. Section 1667 of the Civil Code provides that a contract is not lawful which is contrary to an express provision of law. Since the contract is unlawful, it is our opinion that an unlicensed contractor may not claim the benefits of a lien afforded by Sec. 1187 of the Code of Civil Procedure."

A CENSUS OF SKYSCRAPERS

[Continued from page 72]

Commenting on the above statistics, prepared by the Thompson-Starrett Company, Charles W. Smith, executive secretary of the Building Owners and Managers Association of San Francisco, calls attention to a serious error in the San Francisco compilation. Mr. Smith's letter to the Thompson-Starrett Company follows:

"Our attention has been attracted to articles appearing in the *American City*, the *Literary Digest* and other magazines quoting from your 'Census of Skyscrapers.' In this tabulation you state that San Francisco has 45 buildings in the 10 to 20 story class and eight buildings of 21 stories or more. In another connection you make a statement that only six cities have 100 buildings or more over 10 stories high. We are not in position to judge as to the accuracy of your survey as regards other cities, but so far as San Francisco is concerned it is grossly erroneous. San Francisco, by actual count, has 105 buildings in the 10 to 20 story class and eight buildings in the 21 and over group. (This latter group does not include a 28-story building for which the steel is well nigh erected.) I might make the further statement that 19 of the buildings listed in the 10 to 20 story group are between 15 and 20 stories.

"Your statement with reference to the six cities having 100 or more buildings over 10 stories will have to be changed to seven inasmuch as San Francisco has 113 such buildings.

"I would be interested to know how this survey was conducted in San Francisco, and I would make the suggestion that if information was gathered from other cities in the same manner, it would be well to have the whole survey gone over to determine whether other cities may not have been erroneously classified.

"In view of the fact that our city has been shown up in an improper light in your survey, which will undoubtedly receive further wide publicity, we respectfully request that you send out a correction to publications that have received the release.

Yours very truly,

BUILDING OWNERS & MANAGERS ASSN.

(Signed)

"Chas. W. Smith,
"Executive Secretary."

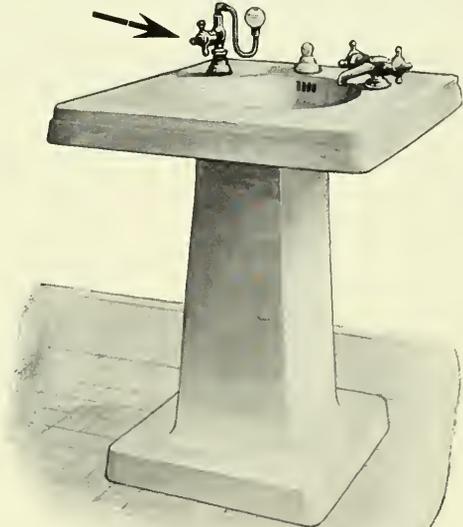
SMALL MESH LATH

Truscon Steel Company has published a new pamphlet describing small mesh diamond lath, a new product of Truscon. The lath is distinctive in that it saves plaster from waste and reduces erection costs, while serving as a positive reinforcement for all kinds of interior plastic construction.

"BETTER BUILDINGS"

The Clay Products Institute of California has published an attractive four page bulletin called "Better Buildings." Its contents is of interest to those who would use clay products in their buildings. Norman W. Kelch is editor.

MODEL NO. 2 DRINKING FAUCET SHOWN



A NEW CONVENIENCE
Haws Drinking Faucets for bathroom use

**HAWS SANITARY
DRINKING FAUCET
COMPANY** 1808 HARMON ST.
BERKELEY, CAL. U.S.A.

It pays to modernize all drinking water problems with HAWS
Sanitary Drinking Fountains.

WHAT'S WHAT IN MATERIALS

WHO'S WHO AMONG CONTRACTORS

ALPHABETICAL LIST OF ADVERTISERS ON PAGE 164

ACOUSTIC CORRECTIONS

Johns-Manville Company, all principal Coast cities.

R. Guastavino Co., represented by Albert B. Mann, Engineer, 417 Crocker Bldg., San Francisco.

"Acousti-Celotex," Western Asbestos Magnesia Co., 25 South Park, San Francisco.
American Hair & Felt Co., 1615 Ditman St., Los Angeles.

AIR COMPRESSORS

Dayton, sold by Simonds Machinery Co., 816 Folsom Street, San Francisco; 520 East 4th Street, Los Angeles.

ACOUSTIC DEADENING

American Hair & Felt Co., 1615 Ditman St., Los Angeles.

ART METAL

Federal Ornamental Iron and Bronze Co., 16th St. and San Bruno Ave., San Francisco.
Michel & Pfeiffer Iron Works, 1415 Harrison Street, San Francisco.

ARCHITECTURAL ENCAUSTIC TILE

Mangrum-Holbrook Co., Inc., 1235 Mission Street, San Francisco.

ARCHITECTURAL BRONZE

Elevator Supplies Company, Inc., Hoboken, N. J.; 136 Fifth Street, San Francisco; 1120 S. Hope Street, Los Angeles.

Zouri Drawn Metals Company, Chicago Heights, Illinois. (Zouri Company of California, 1208 Howard St., San Francisco.)

ARCHITECTURAL TERRA COTTA

N. Clark & Sons, 116 Natoma Street, San Francisco.

Cladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.
W. S. Dickey Clay Mfg. Co., San Francisco and Oakland.

ASBESTOS MATERIALS

Johns-Manville, Inc., of California, 150 Montgomery St., San Francisco. Coast Factory at Pittsburg, Calif.

Western Asbestos Magnesia Company, 25 South Park, San Francisco.

Jones Bros. Asbestos Supply Co., Inc., 500 Second St., San Francisco.

ASPHALT ROOFING

El Rey Products Company, 1633 San Pedro St., Los Angeles; 960 Seventh St., San Francisco; 65 Columbia St., Seattle; 850 E. Taylor St., Portland.

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle.

AUTOMATIC THERMOSTAT CONTROLS

Majestic Electric Appliance Company, 590 Folsom Street, San Francisco.

BEDS—WALL—CONCEALED, ETC.

Marshall & Stearns Co., Phelan Bldg., San Francisco.

BLACKBOARDS

C. F. Weber & Co., 601 Mission St., San Francisco, Los Angeles and Reno, Nevada.

BOILERS

Kewanee Boiler Co., 635 Mission St., San Francisco.

Kewanee Water Supply System, Simonds Machinery Co., 816 Folsom St., San Francisco.

Consolidated Steel Corporation, 1200 N. Main St., Los Angeles.

BONDS FOR CONTRACTORS

Bonding Company of America, Kohl Bldg., San Francisco.

Globe Indemnity Co., 444 California St., San Francisco.

Fidelity & Casualty Co. of New York, Balfour Bldg., San Francisco.

Standard Accident Insurance Company, California Commercial Union Building, San Francisco.

BRASS GOODS, CASTINGS, ETC.

H. Mueller Manufacturing Co., 1072 Howard St., San Francisco.

BRICK—FACE, COMMON, ENAMEL, GLAZED

Cladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.

N. Clark & Sons, 116 Natoma Street, San Francisco.

W. S. Dickey Clay Mfg. Co., San Francisco and Oakland.

Port Costa Brick Works, 6th and Berry Sts., San Francisco.

McNear Brick Company, Monadnock Bldg., San Francisco.

Richmond Pressed Brick Co., Sharon Bldg., San Francisco. Plant at Richmond, Cal.
Cannon & Co., Sacramento; 517 Call Bldg., San Francisco; Builders Exchange Bldg., Oakland.

BRICK AND CEMENT COATING

The Paraffine Companies, Inc., 475 Brannan St., San Francisco.

BUILT-IN FURNITURE

Built-in Fixture Company, 2608 San Pablo Ave., near Dwight Way, Berkeley, and Hoosier Store, Pacific Bldg., San Francisco.

BUILDERS' HARDWARE

"Corbin" hardware, sold by Palace Hardware Company, 581 Market St., San Francisco.
Richards-Wilcox Mfg. Co., Aurora, Ill.; represented by Ewing-Lewis Company, Hunter-Dulin Bldg., San Francisco, and 408 S. Spring Street, Los Angeles.

BUILDING PAPERS

El Rey Products Company, 1633 N. San Pablo Street, Los Angeles; 960 Seventh Street, San Francisco; 65 Columbia Street, Seattle; 850 E. Taylor St., Portland, Ore.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Pacific Materials Co., 444 Market St., San Francisco.

The Sisakraft Co., 205 W. Wacker Drive, Chicago, Ill., 35 New Montgomery St., San Francisco, and Hammond Lumber Co., Los Angeles.

CARPETS AND RUGS—IMPORTED

Kent-Costikyan, Inc., 485 Fifth Ave., New York City, with offices at 442 Post St., San Francisco and 816 South Figueroa St., Los Angeles.

CEMENT

Atlas White, manufactured by The Atlas Portland Cement Company, 25 Broadway, New York.

Hydro-plastic cement, manufactured by Southwestern Portland Cement Company, 356 S. Spring St., Los Angeles.

Pacific Portland Cement Co., Hunter-Dulin Bldg., San Francisco, also Portland, Ore., Los Angeles and San Jose, Calif.
Santa Cruz Portland Cement Company, Crocker Building, San Francisco.

CEMENT EXTERIOR WATERPROOF PAINT
Bass-Hunter Paint Company, San Francisco, Los Angeles, Portland, Seattle.

The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

CEMENT TESTS—CHEMICAL ENGINEERS
Robert W. Hunt Co., 251 Kearny Street, San Francisco.

CLAY PRODUCTS

N. Clark & Sons, 116 Natoma Street, San Francisco.

Cannon & Co., Sacramento, Cal.; 517 Call Bldg., San Francisco.

W. S. Dickey Clay Mfg. Co., San Francisco and Oakland.

Cladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.

United Materials Co., Sharon Bldg., San Francisco.

COMPOSITION ROOFING

El Rey Products Company, 1633 San Pedro St., Los Angeles; 960 Seventh St., San Francisco; 65 Columbia St., Seattle; 850 E. Taylor St., Portland.

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle.

CONCRETE OR CEMENT HARDENER
Gunn, Carle & Co., Inc., 444 Market St., San Francisco.

CONCRETE REINFORCING
Soule Steel Company, Rialto Building, San Francisco.

Gunn, Carle & Co., Inc., 444 Market St., San Francisco.

Clinton Welded Wire Fabric, Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.

Pacific Coast Steel Company, Hunter-Dulin Bldg., San Francisco.

CONTRACTORS—GENERAL—
Adam-Arras Co., 185 Stevenson St., San Francisco.

F. R. Siegrist Co., 604 Williams Bldg., San Francisco.

Spivock & Spivock, Hobart Building, San Francisco, and 412 Water St., Oakland.

Vort & Davidson, Inc., 185 Stevenson St., San Francisco, and Builders Exchange, Oakland.

K. E. Parker Company, Inc., 135 South Park, San Francisco.

Barrett & Hlip, 918 Harrison Street, San Francisco.

Lindgren-Swinerton, Inc., Standard Oil Bldg., San Francisco.

R. W. Littlefield, 337 17th Street, Oakland.

Dinwiddie Construction Co., Crocker Bldg., San Francisco.

Clinton Construction Company, 923 Folsom St., San Francisco.

Monson Bros., 475 Sixth St., San Francisco.

McLeran & Co., R., Hearst Bldg., San Francisco.

Chas. D. Vezey & Sons, Builders Exchange Bldg., Oakland.

Jacks & Irvine, Call Bldg., San Francisco.

Industrial Construction Company, 815 Bryant Street, San Francisco.

Anderson & Ringrose, 320 Market Street, San Francisco.

G. P. W. Jensen, 320 Market Street, San Francisco.

CORK TILE

Congoleum-Nairn, Inc., D. N. & E. Walter & Co., San Francisco, and Broadway Department Store, Los Angeles.

Van Fleet-Freer Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

CRIBBING FOR RETAINING WALLS

Massey Concrete Products Corporation, Colton California and Spokane, Washington.

DAMP-PROOFING AND WATER-PROOFING
Western Asbestos Magnesia Company, 25 South Park, San Francisco.

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle.

Gunn, Carle & Co., 444 Market St., San Francisco.

DEADENING MATERIAL

"Insulite" Western Asbestos Magnesia Co., 25 South Park, San Francisco.

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle.

American Hair & Felt Co., 1615 Ditman St., Los Angeles.

Gunn, Carle & Co., 444 Market St., San Francisco.

"Torfoleum" distributed by Mailliard & Schneidell, 203 California St., San Francisco.

DOOR CHECKS—CONCEALED
The Condor Company, 58 Sutter St., San Francisco.

DOOR CLOSERS
Norton door closer, sold by Nissen-Currier Co., 265 Minna St., San Francisco, and 302 Co. Bldg., Los Angeles.

DOOR HANGERS
Richards-Wilcox Mfg. Co., The Ewing-Lewis Co., Hunter-Dulin Bldg., San Francisco.

DOORS—FIREPROOF
Detroit Steel Products Company, 251 Kearny St., San Francisco.

Kinners Mfg. Co., represented by Gunn, Carle & Co., 444 Market St., San Francisco.

DOORS—FREIGHT ELEVATOR
The Peelle Co., rooklyn, N. Y., represented by Persons Dwan & Co., 534 Sixth Street, San Francisco.

DOORS—HOLLOW METAL
Fire Protection Products Co., 1101 Sixteenth St., San Francisco.

Dahlstrom Metallic Door Co., Jamestown, N. Y., Coast plant, 3350 E. Slauson Ave., Los Angeles.

Forderer Cornice Works, Potrero Ave., San Francisco.

DOORS—ROLLING
Jas. G. Wilson Corporation, 605 Market St., San Francisco.

Kinners rolling steel doors, sold by Gunn, Carle & Co., 444 Market St., San Francisco.

DRAIN PIPE AND FITTINGS
"Corrosiron" Acid Proof, manufactured by Pacific Foundry Co., Harrison and 18th Sts., San Francisco.

DRAPERIES AND WINDOW SHADES
D. N. & E. Walter & Co., 562 Mission Street, San Francisco.

DRINKING FOUNTAINS
Haws Sanitary Drinking Faucet Co., 1808 Harmon St., Berkeley, and C. F. Weber & Co., San Francisco and Los Angeles.

Standard-Pacific Plumbing Fixtures, 348 Sutter St., San Francisco; 919 W. 7th St., Los Angeles; 1301 6th Ave., Seattle, Wash.; 48 5th St., Portland, Ore.

DUMB WAITERS
Spencer Elevator Company, 166 7th St., San Francisco.

WHAT'S WHAT IN MATERIALS

WHO'S WHO AMONG CONTRACTORS

ALPHABETICAL LIST OF ADVERTISERS ON PAGE 164

- Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.
- ELECTRICAL CONTRACTORS**
Butte Electrical Equipment Company, 2014 Folsom St., San Francisco.
Charles A. Langlais, 472 Tehama St., San Francisco.
H. C. Reed & Co., 389 Clementina St., San Francisco.
- ENGINEERS—CONSULTING, ELECTRICAL, MECHANICAL**
Hunter & Hudson, 41 Sutter Street, San Francisco.
Charles T. Phillips Company, Bank of Italy Bldg., San Francisco, and Roberts Bldg., Los Angeles.
- ELECTRIC AIR AND WATER HEATERS**
Majestic Electric Appliance Company, 690 Folsom Street, San Francisco.
Sandoval Sales Company, 415 Jessie Street, San Francisco.
Weir Electric Appliance Company, 26th and Adeline Streets, Oakland.
Wesix electric air heaters, manufactured and distributed by Wesix Inc., 390 First street, San Francisco.
- ELECTRIC REFRIGERATION**
General Electric Refrigerator, George Belsey Company, Los Angeles, Distributor, Stores in Los Angeles, Pasadena, Glendale, Hollywood, Santa Monica and Monrovia; L. H. Bennett, Northern California Distributor, 2112 Broadway, Oakland; 318 Stockton St., San Francisco.
Wayne Home Equipment Company, Fort Wayne, Indiana, represented by Hill and Stoops, 4214 Broadway, Oakland, Calif.
- ELECTRICAL SUPPLIES AND EQUIPMENT**
The Frink Company, 10th Ave. at 24th St., New York; 77 O'Farrell St., San Francisco
Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco.
Frank Adam Electric Company, 340 Fremont St., San Francisco, and 1127 Wall Street, Los Angeles; general offices, St. Louis, Mo.
Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., and First National Bank Bldg., San Francisco.
Sterling Bronze Co., Inc., 18 East 40th St., New York.
- ELECTROLIERS**
Northern Street Lighting Company, 389 Clementina Street, San Francisco.
- ELEVATOR ENTRANCE DOORS**
Dahlstrom Metallic Door Company, Jamestown, N. Y.; Pacific Coast plant, 3350 East Slauson Ave., Los Angeles.
- ELEVATORS—PASSENGER AND FREIGHT**
Otis Elevator Company, Stockton and North Point, San Francisco.
Spencer Elevator Company, 166 Seventh St., San Francisco.
Westinghouse Electric and Manufacturing Company, First National Bank Bldg., San Francisco, general offices and works, Pittsburgh, Pa.
Consolidated Steel Corporation, 1200 N. Main St., Los Angeles.
- ELEVATOR SIGNALS, DOOR EQUIPMENT**
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.
The Peelle Co., Brooklyn, N. Y., represented by Persons Dwan & Co., 534 Sixth Street, San Francisco.
Richards-Wilcox Mfg. Co., represented by Ewing-Lewis Company, Hunter-Dulin Bldg., San Francisco; 408 S. Spring Street, Los Angeles.
- ENAMELS**
Gold Seal Enamel—Bass-Heuter Paint Company, San Francisco, Los Angeles, Portland, Seattle.
- EXIT DEVICES**
Von Duprin, manufactured by Vonnegut Hardware Company, Indianapolis; sold by D. A. Pancoast Co., 605 Market St., San Francisco.
- FENCES—WIRE AND IRON**
Michel & Pfeffer Iron Works, Harrison and Tenth Sts., San Francisco.
- FIRE EXTINGUISHING APPARATUS**
"Lux" System, represented by Hough and Egbert, Inc., 519 Robert Dollar Building, San Francisco.
- FIRE DETECTING APPARATUS**
"Dobby" and "Selsco" Systems, represented by Hough and Egbert, Inc., 519 Robert Dollar Building, San Francisco.
- FIRE ESCAPES**
Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
- Western Iron Works, 141 Beale St., San Francisco.
- FIRE SPRINKLERS—AUTOMATIC**
Fire Protection Engineering Co., 407 Exchange Building, 369 Pine Street, San Francisco.
Grinnell Company of the Pacific, Fifth and Brannan Sts., San Francisco.
- FIXTURES—BANK, OFFICE, STORE, ETC.**
Home Manufacturing Company, 552 Brannan St., San Francisco.
Mullen Manufacturing Co., 64 Rausch St., San Francisco.
Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.
The Fink & Schindler Co., 228 13th St., San Francisco.
- FLOORS—CORK, LINOLEUM, ETC.**
Consongleum-Nairn, Inc., D. N. & E. Walter & Co., San Francisco, and Broadway Department Store, Los Angeles.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland, Seattle.
- FLOOR HARDENER**
Master Builders Company, Mills Bldg., San Francisco; 426 So. Spring Street, Los Angeles; also Seattle, Portland and Spokane.
- FLOORS—REDWOOD BLOCK**
Redwood Block Floor Company, Bryant at 18th St., San Francisco.
- FLOOR CLIPS**
Bull Dog Floor Clip Co., 557 Market St., San Francisco and Hibernian Bldg., Los Angeles.
- FLOORS—HARDWOOD**
Inlaid Floor Company, 600 Alameda Street, San Francisco and 4067 Watts Street, Emeryville, Oakland.
"Perfection" Brand Oak Flooring, Arkansas Oak Flooring Co., Pine Bluff, Arkansas.
J. E. Higgins Lumber Company, San Francisco.
White Brothers, 5th and Brannan streets, San Francisco; 500 High Street, Oakland.
Cellized Oak Flooring, Inc., Memphis, Tenn. Represented by Geo. H. Brown Hardwood Company, Oakland.
- FREIGHT ELEVATOR DOORS**
The Peelle Co., Brooklyn, N. Y., represented by Persons Dwan & Co., 534 Sixth Street, San Francisco.
- FURNITURE—OFFICE, SCHOOL, CHURCH, THEATER**
The Fink & Schindler Co., Inc., 218-68 13th St., San Francisco.
Home Mfg. Co., 552 Brannan Street, San Francisco.
Mullen Mfg. Co., 64 Rausch Street, San Francisco.
C. F. Weber & Co., San Francisco, Los Angeles, and Phoenix, Ariz.
- GENERAL CONTRACTORS**
Spivock & Spivock, Hobart Building, San Francisco.
- GLASS**
Cobbledick-Kibbe Glass Co., 666 Howard St., San Francisco.
- GRAVEL AND SAND**
Del Monte White Sand, Del Monte Properties Co., Crocker Bldg., San Francisco.
- GYMNASIUM EQUIPMENT—LOCKERS, ETC.**
Ellery Arms Co., 583 Market St., San Francisco.
- HANGERS—RELIANCE—**
Graham & Norton Company, 213 Minna Street, San Francisco.
- HARDWARE**
Vonnegut hardware, sold by D. A. Pancoast Company, 605 Market St., San Francisco.
Palace Hardware Company, 581 Market St., San Francisco.
Richards-Wilcox Mfg. Co., represented by Ewing-Lewis Company, Hunter-Dulin Bldg., San Francisco; 408 S. Spring Street, Los Angeles.
- HARDWOOD LUMBER**
J. E. Higgins Lumber Co., San Francisco.
G. H. Brown Hardwood Lumber Co., 47th Ave. at E. 12th Street, Oakland.
White Brothers, 5th and Brannan streets, San Francisco; 500 High Street, Oakland.
- HEATING—COAL FURNACE**
Montague Range & Furnace Company, 376 Sixth St., San Francisco.
- HEATERS ELECTRIC**
Apex Air and Water Electric Heaters, Sandoval Sales Company, 115 Jessie Street, San Francisco.
Majestic Electric Appliance Co. (bathroom heater), 590 Folsom St., San Francisco.
Weir Electric Appliance Company, 26th and Adeline Streets, Oakland.
- HEATING—ELECTRIC**
Wesix electric air heaters, manufactured and distributed by Wesix Inc., 390 First Street, San Francisco.
- HEATING—STEAM**
Warren Webster & Company, Sharon Bldg., San Francisco, and 306 Crocker St., Los Angeles.
- HEATING CONTRACTORS**
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St., San Francisco.
Hateley & Hateley, Mitau Bldg., Sacramento.
Mangrum & Otter, 827-831 Mission St., San Francisco.
W. H. Picard, 5656 College Ave., Oakland.
Luppen & Hawley, 3126-J St., Sacramento.
William F. Wilson Co., 240 Fourth St., San Francisco.
James A. Nelson, Inc., Howard and Tenth Sts., San Francisco.
Scott Company, 243 Minna St., San Francisco.
Geo. A. Schuster, 4712 Grove St., Oakland.
Herman Lawson, 465 Tehama Street, San Francisco.
- HEATING EQUIPMENT**
E. A. Cornely, Inc., 1452 Bush Street, San Francisco.
Illinois Engineering Co., 417 Market St., San Francisco.
Warren Webster & Company, Sharon Bldg., San Francisco, and 306 Crocker St., Los Angeles.
James A. Nelson, Inc., Howard and Tenth Sts., San Francisco.
B. F. Sturtevant Co., Monadnock Bldg., San Francisco; Los Angeles, Portland, Seattle.
- HOLLOW BUILDING TILE (Burned Clay)**
Cannon & Co., plant at Sacramento; Call Bldg., San Francisco.
N. Clark & Sons, 112-116 Natoma Street, San Francisco; works, West Alameda, California.
Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.
W. S. Dickey Clay Mfg. Co., San Francisco and Oakland.
- HOSE**
The American Rubber Mfg. Co., Park Ave. and Watts St., Oakland, Calif.
- HOSE RACKS AND REELS**
American Rubber Mfg. Co., San Francisco, Oakland, Los Angeles and Portland, Ore.
- HOSPITAL SIGNAL SYSTEMS**
Chicago Signal Co., represented by Garnett Young & Co., 390 Fourth St., San Francisco.
- INCINERATORS**
The Goder, sold by M. E. Hammond, Mezzanine, Pacific Bldg., San Francisco.
Kewanee Boiler Co., 635 Mission Street, San Francisco.
- INDUSTRIAL LIGHTING EQUIPMENT**
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Bldg., San Francisco.
- INSPECTIONS AND TESTS**
Robert W. Hunt Co., 251 Kearny Street, San Francisco.
- INSULATION**
"Insulex" manufactured by Pacific Portland Cement Co., Hunter-Dulin Bldg., San Francisco, & 1200 Chapman Bldg., Los Angeles.
Western Asbestos Magnesia Co., 25 South Park, San Francisco.
American Hair and Felt Company, 1615 N. Ditman St., Los Angeles.
Gunn, Carle & Co., 444 Market St., San Francisco.
"Torfoleum" distributed by Mailliard & Schmeidell, 203 California St., San Francisco.

WHAT'S WHAT IN MATERIALS

WHO'S WHO AMONG CONTRACTORS

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INSULATED WIRE

Hazard Insulated Wire Works, Wilkes-Barre, Pa., Russ Building, San Francisco, Seattle and Los Angeles.

KITCHEN EQUIPMENT

General Electric Refrigerator, L. H. Bennett, Rialto Building, San Francisco, and the George Belsey Company, Architects Building, Los Angeles.
James A. Nelson, Inc., Howard and Tenth Sts., San Francisco.
Mangrum Holbrook Company, 1235 Mission St., San Francisco.

LACQUERS

The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland and Seattle.
Bass-Hueter Paint Company, San Francisco, and all principal Coast cities.

LATHING MATERIAL—WIRE, METAL ETC.

Genfire Steel Co., Sheldon Bldg., San Francisco; Builders' Exchange, Oakland.
Truscon Steel Co., Sharon Building, San Francisco.

Soule Steel Company, Rialto Building, San Francisco, and Los Angeles.

LAUNDRY MACHINERY AND EQUIPMENT

American Laundry Machinery Company, 921 Howard Street, San Francisco.

Troy Laundry Mach'y Co., Ltd., East Moline, Ill., and 951 Mission St., San Francisco.
Gunn, Carle & Co., 444 Market St., San Francisco.

LIGHTING FIXTURES, OUTLETS, ETC.

Westinghouse Electric and Mfg. Co., First National Bank Bldg., San Francisco; general offices and works, Pittsburgh, Pa.
The Frink Company, 369 Lexington Avenue, New York, and principal Coast cities.
Sterling Bronze Co., Inc., 18 East 40th St., New York.

LIME PRODUCTS

United States Lime Products Corp., San Francisco, Los Angeles, Portland, Ore.

LINOLEUM

William Volker & Co., 631 Howard St., San Francisco, and 2301 E. 7th St., Los Angeles.

The Paraffine Companies, factory in Oakland; office, 475 Brannan Street, San Francisco.

W. & J. Sloane, 216 Sutter Street, San Francisco.

Van Fleet-Freear Company, 557 Howard St., San Francisco, and 3307 Wishire Boulevard, Los Angeles.

Bonded Floors-Seales Linoleum and Tile manufactured by Congoleum-Nairn, Inc., D. N. & E. Walter & Co., San Francisco; Broadway Department Store, Los Angeles.

LUMBER

G. H. Brown Hardwood Company, 1044 47th Ave., Oakland.

Pacific Mfg. Co., San Francisco, Oakland, Los Angeles and Santa Clara.

Santa Fe Lumber Co., 16 California St., San Francisco.

J. E. Higgins Lumber Company, 423 Sixth St., San Francisco.

Sunset Lumber Company, First and Oak Sts., Oakland.

White Brothers, 5th and Brannan Sts., San Francisco, and 500 High St., Oakland.

E. K. Wood Lumber Co., Frederick and King streets, Oakland.
Port Orford Cedar Products Co., Marshfield, Oregon, represented by Dent & Russell, Inc., Porter Bldg., Portland, Oregon.

MAIL CHUTES

Cutler Mail Chute Co., represented by Price Building Specialties Co., 683 Howard St., San Francisco and Continental Building Specialties Co., 1216 Hibernian Bldg., Los Angeles.

MARBLE

American Marble Company, 25 Columbus Square, San Francisco.

Cervi Marble Company and Mosaic Co., 1721 San Bruno Avenue, San Francisco.

Ray Cook Marble Company, foot of Powell St., Oakland.

Joseph Musto Sons-Keenan Co., 535 N. Point St., San Francisco.

Vermont Marble Co., Coast branches, San Francisco, Los Angeles and Tacoma.

Tompkins-Kiel Marble Company, 505 Fifth Ave., New York; also Chicago, Philadelphia and San Francisco.

MASONRY ANCHORS

Steelform Contracting Company, Monadnock

Bldg., San Francisco; Edwards & Wildey Bldg., Los Angeles.

METAL COVERED DOORS

Fire Protection Products Co., 1101 Sixteenth St., San Francisco.
Forderer Cornice Works, Potrero Ave., San Francisco.

MILLWORK

The Fink & Schindler Co., Inc., 218-63 13th St., San Francisco.
Pacific Mfg. Co., San Francisco, Los Angeles, Oakland and Santa Clara.
Sunset Lumber Company, First and Oak Streets, Oakland.
Lannom Bros. Mfg. Co., Fifth and Magnolia Sts., Oakland.
Atkinson Mill & Mfg. Co., 2985 Chapman Avenue, Oakland.
Chicago Lumber Company of Washington, 66th and 69th Aves and Spencer Street, Oakland.
E. K. Wood Lumber Co., Frederick and King streets, Oakland.

MONEL METAL

"Inco" brand, distributed on the Pacific Coast by the Pacific Foundry Company, Harrison and 18th Streets, San Francisco, and Eagle Brass Foundry, Seattle, Wash.

OIL BURNERS

Rayfield Oil Burner, Coast Distributors, E. A. Cornely, Inc., 1452 Bush Street, San Francisco.

S. T. Johnson Company, 1337 Mission St., San Francisco; 940 Arlington St., Oakland; 1729 Front St., Sacramento, and 230 N. Sutter St., Stockton.

Vaughn-G. E. Witt Co., 4224-28 Hollis Street, Emeryville, Oakland.

W. S. Ray Mfg. Company, 170 Sutter St., San Francisco, and 2206 San Pablo Ave., Oakland.

Coen Company, 112 Market Street, San Francisco.

Wayne Home Equipment Company, Fort Wayne, Indiana, represented by Hill and Stoops, 4214 Broadway, Oakland, Calif.

ORNAMENTAL IRON AND BRONZE

Federal Ornamental Iron and Bronze Co., 16th St. and San Bruno Ave., San Francisco.

Michel & Pfeiffer Iron Works, 1415 Harrison St., San Francisco.

Palm Iron & Bridge Works, Sacramento.

PAINTING, DECORATING, ETC.

The Torney Co., 681 Geary St., San Francisco.

A. Quandt & Sons, 374 Guerrero Street, San Francisco.

PAINTS, OILS, ETC.

The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland and Seattle.

Bass-Hueter Paint Company, San Francisco, Los Angeles, Portland, Seattle.

General Paint Company, Los Angeles, San Francisco, Oakland, Seattle, Spokane and Portland.

PANEL BOARDS

Drendell Electric & Mfg. Co., 1760 Howard St., San Francisco.

Frank Adam Electric Company, 340 Fremont St., San Francisco, and 1127 Wall Street, Los Angeles; general offices, St. Louis, Mo.
Westinghouse Elec. and Mfg. Co., First National Bank Bldg., San Francisco; general offices and works, Pittsburgh, Pa.

PANELS—HARDWOOD

White Brothers, 5th and Brannan Sts., San Francisco, and 500 High St., Oakland.

PANIC EXIT DEVICES

Von Duprin, manufactured by Vonnegut Hardware Company, Indianapolis; sold by D. A. Pancoast Co., 605 Market Street, San Francisco.

PARTITIONS—MOVABLE OFFICE

Dahlstrom Metallic Door Company, Jamestown, N. Y., Coast plant, 3350 E. Slauson Ave., Los Angeles.

Pacific Mfg. Co., Monadnock Building, San Francisco; factory at Santa Clara.

PIPE—WROUGHT IRON

A. M. Byers Co., Pittsburgh, Pa., and Financial Center Bldg., Los Angeles.

Reading Iron Co., Reading, Pa., and Babboa Bldg., San Francisco.

PLASTER

"Empire," manufactured by Pacific Portland

Cement Co., Hunter-Dulin Building, San Francisco, Portland, San Jose and Los Angeles.

PLASTER BASE

"Celotex," Western Asbestos Magnesia Co., 25 South Park, San Francisco.

PLASTER REINFORCING

Wickwire-Spencer Steel Company, Inc., 144 Townsend St., San Francisco.

PLASTERING CONTRACTORS

A. Knowles, Call Bldg., San Francisco.
MacGruer & Company, 266 Tehama Street, San Francisco, and Pacific Mutual Bldg., Los Angeles.

PLUMBING CONTRACTORS

Alex Coleman, 706 Ellis St., San Francisco.
Gilleys-Schmid Company, 193 Otis St., San Francisco.

Hateley & Hateley, 1710 Tenth St., Sacramento.

Herman Lawson, 465 Tehama Street, San Francisco.

Luppen & Hawley, 906 7th St., Sacramento.
Scott Co., Inc., 243 Minna St., San Francisco.

Wm. F. Wilson Co., 240 Fourth Street, San Francisco.

Geo. A. Schuster, 4712 Grove St., Oakland.
W. H. Picard, 5656 College Ave., Oakland.

PLUMBING SUPPLY HOUSES

H. Mueller Manufacturing Company, 1072-76 Howard St., San Francisco.

Standard Pacific Fixtures, 349 Sutter St., San Francisco.

Clarence Drucker, manufacturers' representative, 307 Minna St., San Francisco.

PLYWOOD

Port Orford Cedar Products Co., Marshfield, Oregon, represented by Dent & Russell, Inc., Porter Bldg., Portland, Oregon.

PRESSED STEEL

Berger Manufacturing Co., 1120 Mission St., San Francisco.

PRESSURE REGULATORS

Vaughn-G. E. Witt Co., 4224-28 Hollis Street, Emeryville, Oakland.

PUMPING MACHINERY

Simonds Machinery Co., 816 Folsom Street, San Francisco; 520 East 4th Street, Los Angeles.

PUMPS—HAND OR POWER

Ocean Shore Iron Works, 558 Eighth St., San Francisco.

S. F. Bowser & Co., Inc., 425 Brannan St., San Francisco.

REFRIGERATORS

"General Electric," sold by the George Belsey Company, Architects' Building, Los Angeles; L. H. Bennett, Rialto Bldg., San Francisco.

REINFORCING STEEL

Soule Steel Company, Inc., Rialto Bldg., San Francisco, and Los Angeles.

Gunn, Carle & Co., Inc., 444 Market St., San Francisco.

Pacific Coast Steel Co., Hunter-Dulin Bldg., San Francisco.

United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Bldg., San Francisco.

Truscon Steel Company, Sharon Bldg., San Francisco.

ROOF MATERIALS

El Rey Products Co., 1633 San Pablo St., Los Angeles; 960 7th St., San Francisco; 65 Columbia St., Seattle; 850 E. Taylor St., Portland.

Kraftite Company, office and factory at Niles; 55 New Montgomery Street, San Francisco.

"Malthoid" and "Ruberoid," also "Pabco" 10 and 20 year roofs, manufactured by the Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland and Seattle.

Gladning, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.

N. Clark & Sons, 112-116 Natoma Street, San Francisco; works, West Alameda, California.

W. S. Dickey Clay Mfg. Co., 604 Mission St., San Francisco.

Jones Brothers Asbestos Supply Co., 500 Second St., San Francisco.

Johns-Manville Corporation of California, 159 New Montgomery St., San Francisco.

United Materials Co., Sharon Building, San Francisco.

WHAT'S WHAT IN MATERIALS

WHO'S WHO AMONG CONTRACTORS

ALPHABETICAL LIST OF ADVERTISERS ON PAGE 164

ROOF MATERIALS—(Continued)

Western Asbestos Magnesia Company, 25 South Park, San Francisco.
 "Torfoleum" Insulation manufactured by Mailliard & Schmiedel, 203 California St., San Francisco.
 Pioneer Paper Co., 5500 South Alameda, Los Angeles; Hearst Bldg., San Francisco; offices in Portland, Seattle, Salt Lake City, Spokane and Denver.
RUGS AND CARPETS—IMPORTED
 Kent-Costikyan, Inc., 485 Fifth Ave., New York City, with offices at 442 Post St., San Francisco and 816 South Figueroa St., Los Angeles.
 W. & J. Sloane, 216 Sutter St., San Francisco.
SAFETY TREADS
 Price-Teltz Company, 683 Howard St., San Francisco.
 Gunn, Carle & Co., 444 Market St., San Francisco.
SASH CHAINS
 American Chain Company, Inc., Bridgeport, Conn., and 425 Second St., San Francisco.
 The Smith & Egge Mfg. Co., P. O. Box 1040, Bridgeport, Conn.; 506 American Bank Bldg., Los Angeles.
SCAFFOLDING FOR CONTRACTORS
 Steelform Contracting Company, Monadnock Bldg., San Francisco; Edwards & Willey Bldg., Los Angeles.
SEATING—SCHOOL, THEATER, CHURCH
 Home Manufacturing Company, Inc., 552 Brannan St., San Francisco.
 C. F. Weber & Co., San Francisco, Los Angeles, Phoenix, Ariz.; Reno, Nevada.
SELF-RELEASING FIRE EXIT DEVICES
 Von Duprin, manufactured by Vonnegut Hardware Company, Indianapolis; sold by D. A. Pancoast Co., 605 Market St., San Francisco.
SHADES
 William Volker & Co., 631 Howard Street, San Francisco; 2301 East 7th Street, Los Angeles.
SHEATHING AND SOUND DEADENING
 Western Asbestos Magnesia Co., 25 South Park, San Francisco.
SHEET METAL WORKS
 Forderer Cornice Works, Potrero Ave., San Francisco.
SHOW CASES
 Home Manufacturing Company, Inc., 552 Brannan St., San Francisco.
 Mullen Manufacturing Company, 64 Rausch St., San Francisco.
SOUND ABSORBING TREATMENT
 Johns-Manville Corporation, 159 New Montgomery St., San Francisco.
SIGNALING & PROTECTIVE SYSTEMS
 Garnett, Young & Co., 390 Fourth St., San Francisco.
STEEL FABRIC
 Wickwire - Spencer Steel Corporation, 144 Townsend St., San Francisco.
 Soule Steel Company, Rialto Bldg., San Francisco, and Los Angeles.
STEEL FORMS
 Steelform Contracting Company, Monadnock Bldg., San Francisco; Edwards & Willey Bldg., Los Angeles.
STEEL TANKS
 Ocean Shore Iron Works, 55 Eighth St., San Francisco.
STEEL LUMBER
 Genfire Steel Co., Sheldon Bldg., San Francisco; Builders' Exchange, Oakland.
STEEL SASH
 Bayley-Springfield solid steel sash, sold by Gunn, Carle & Co., 444 Market St., San Francisco.
 "Fenestra" Solid Steel Sash, manufactured by Detroit Steel Products Co., factory sales office, 526 Hunter-Dulin Bldg., San Francisco.
 Berger Manufacturing Co., 1120 Mission St., San Francisco.
 Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
 Truscon Steel Company, 74 New Montgomery St., San Francisco.
 W. C. Lea, 653 South Clarence St., Los Angeles.
STEEL—STRUCTURAL
 Bethlehem Steel Company, Pittsburg, Pa., Matson Building, San Francisco; Pacific Building, Los Angeles; L. C. Smith Building, Portland, Seattle; American Bank Building, Portland, Oregon.
 Golden Gate Iron Works, 1541 Howard St., San Francisco.

Judson Pacific Company, C. F. Weber Bldg., Mission and Second Sts., San Francisco; shops, San Francisco and Oakland.
 McClintic - Marshall Company, 621 Florida Street, San Francisco.
 Herrick Iron Works, 18th and Campbell Sts., Oakland.
 Pacific Coast Eng. Co., foot 14th St., Oakland
 Pacific Coast Steel Co., Hunter-Dulin Bldg., San Francisco.
 Palm Iron & Bridge Works, Sacramento.
 Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.
 Western Iron Works, 141 Beale Street, San Francisco.
 Consolidated Steel Corporation, 1200 N. Main St., Los Angeles.
STONE
 Indiana Limestone Company, Tribune Tower, Chicago, Ill., and Crocker First National Bank Bldg., San Francisco.
STORE FRONTS
 Zouri Down Metals Company, Chicago Heights, Illinois. (Zouri Company of California, 1208 Howard St., San Francisco.)
STORE FURNITURE
 Berger Manufacturing Co., 1120 Mission St., San Francisco.
STREET LIGHTING EQUIPMENT
 Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Bldg., San Francisco.
STRUCTURAL STEEL SHAPES
 Bethlehem Steel Company, Matson Building, San Francisco; Pacific Finance Building, Los Angeles; L. C. Smith Building, Seattle; American Bank Building, Portland, Oregon.
SWITCHES AND SWITCHBOARDS
 Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco.
 Westinghouse Elec. & Mfg. Co., First Nat. Bank Bldg., San Francisco; general offices and works, Pittsburgh, Pa.
TELEPHONES—AUTOMATIC, PRIVATE
 Automatic Electric Inc., Chicago, Ill.; 1112 Pacific Finance Bldg., Los Angeles.
THERMOSTATS FOR HEAT REGULATION
 Johnson Service, Milwaukee, Wis.; Rialto Building, San Francisco.
TERRA COTTA
 N. Clark & Sons, 116 Natoma Street, San Francisco.
 National Terra Cotta Society, 230 Park Avenue, New York, N. Y.
TILE—BATHROOM AND KITCHEN
 Porcelain Tile Company, Ltd., 557 Market St., San Francisco, and 410 Madison St., Oakland.
TILE—RUBBER, CLAY, CORK ETC.
 Rossmann Corporation of California, 49 Geary Street, San Francisco, and Architects' Bldg., Los Angeles.
 N. Clark & Sons, 112-116 Natoma Street, San Francisco; works, West Alameda, Cal. Congoleum-Nairn, Inc., D. N. & E. Walter & Co., San Francisco, and Broadway Department Store, Los Angeles.
 Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; 1500 First Ave. South, Seattle; 454 Everett St., Portland; 15th and Dock Sts., Tacoma, and 22nd and Market Sts., Oakland.
 Kraftite Company, factory at Niles; 55 New Montgomery Street, San Francisco.
 Mangrum-Holbrook, Inc., 1235 Mission St., San Francisco.
 United States Rubber Co., 300 Second St., San Francisco, and 923 Los Angeles St., Los Angeles, Calif.
 Armstrong Cork Tile, sold by Van Fleet-Freear Co., 557 Howard Street, San Francisco; 3307 Wilshire Boulevard, Los Angeles.
UNDERFLOOR DUCT SYSTEM
 Johns-Manville Corporation, 159 New Montgomery St., San Francisco.
VALVES—PIPES AND FITTINGS
 Clarence Drucker, Manufacturers' Agent, 307 Minna Street, San Francisco.
 Grinnell Co., Fifth and Brannan Sts., San Francisco.
 Mueller Company, 1072 Howard Street, San Francisco.
 Sloan Valve Company, Chicago; E. C. Whalen, 954 Western Pacific Bldg., Los Angeles; W. J. Driscoll, 482 Monadnock Bldg., San Francisco; E. C. Fellein, U. S.

National Bank Bldg., Denver; S. D. Cochran, L. C. Smith Bldg., Seattle, Wash.
VARNISHES
 Bass-Hueter Paint Company, San Francisco, Los Angeles, Portland, Seattle.
 The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
VENETIAN BLINDS
 C. F. Weber & Company, 601 Mission St., San Francisco.
VENTILATING EQUIPMENT
 B. F. Sturtevant Co., Monadnock Bldg., San Francisco; Los Angeles, Portland and Seattle.
VENTILATORS
 "The Panelouvre," sold by M. E. Hammond, Pacific Bldg., San Francisco.
VITREOUS CHINAWARE
 Standard - Pacific Plumbing Fixtures, 349 Sutter St., San Francisco; 919 W. Seventh St., Los Angeles; 1301 Fifth Ave., Seattle Wash.; 43 Fifth St., Portland, Ore.
WATERPROOF CEMENT
 Victor Hydro-plastic waterproof cement, manufactured by Southwestern Portland Cement Co., 356 S. Spring St., Los Angeles.
WALL BEDS, SEATS, ETC. (See Beds).
WIRING SYSTEM
 General Electric Company, San Francisco and all principal Coast cities.
WATER COOLERS
 General Electric Refrigerator, L. H. Bennett, Rialto Building, San Francisco, and the George Belsey Company, Architects Building, Los Angeles.
WATER HEATERS
 Apex Electric Hot Water Heaters, distributed by Sandoval Sales Co., 115 Jessie St., San Francisco.
 Pittsburgh Water Heater Co. (gas), 478 Sutter St., San Francisco.
 Ruud Heater Co. (gas), 245 Mason St., San Francisco.
 Wesix Heater Company, Rialto Building, San Francisco.
WATERPROOFING
 Johns-Manville Corporation, 159 New Montgomery St., San Francisco.
 Master Builders Company, Mills Bldg., San Francisco; 426 So. Spring Street, Los Angeles, (also Seattle, Portland and Spokane.
 The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland, Seattle.
 Gunn, Carle & Co., 444 Market St., San Francisco.
WATER SOFTENERS AND FILTERS
 The Permutit Company, 440 Fourth Ave., New York City, and Balboa Bldg., San Francisco.
WATER SUPPLY SYSTEMS
 Kewanee Water Supply System—Simonds Machinery Co., agents, 816 Folsom St., San Francisco; 520 East Fourth Street, Los Angeles.
WINDOW SHADES
 William Volker & Co., 631 Howard Street, San Francisco; 2301 East 7th Street, Los Angeles.
 W. & J. Sloane, 216 Sutter St., San Francisco.
 D. N. & E. Walter & Co., 562 Mission St., San Francisco.
WINDOWS—STEEL REVERSIBLE, ETC.
 Campbell and Voigtmann Metal Windows, distributed by Fire Protection Products Company, 1101 Sixteenth St., San Francisco.
 Crittall Casement Window Company, Detroit, Mich. Badt-Falk & Co., 74 Montgomery Street, San Francisco. F. T. Crowe & Co., 216 Walker Bldg., Spokane. R. H. Hoskins, 510 Hyde Bldg., Spokane. McCracken-Ripley Co., 61 Albina Avenue, Portland. F. T. Crowe & Co., 1177 Dock Street, Tacoma, Wash. Crittall Casement Window Co., 504 Union Insurance Bldg., Los Angeles.
 Hauser Window Co., 1362 Harrison St., San Francisco.
 Detroit Steel Products Co., Detroit, Mich.; Hunter-Dulin Building, San Francisco and Pershing Square Building, Los Angeles.
 W. C. Lea, 653 South Clarence St., Los Angeles.
WIRING SYSTEM
 Westinghouse Electric and Manufacturing Company, First National Bank Bldg., San Francisco; general offices and works, Pittsburgh, Pa.



PIONEER 10 YEAR GUARANTEED ROOFS

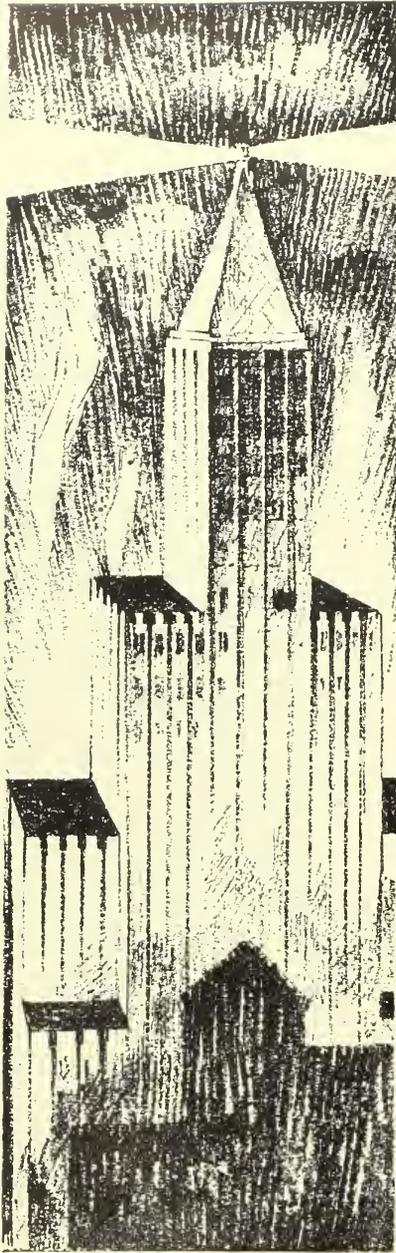
Meet Your Responsibility for
Roofing Protection!

THE roof on your modern structure will do one of two things...it will give the protection and service you expect...or it will not!

You can't afford the time to make certain about the roof...and you can't afford to gamble...but you can put the complete responsibility on PIONEER 10 YEAR GUARANTEED ROOF Specifications!

In every Pioneer 10 Year Guaranteed Roof, you will get the finest roofing materials that can be manufactured...they will be applied in strict accordance with time tested specifications by an authorized roofing contractor. The finished job will be subjected to the most rigid examination that can be devised...the Pioneer Inspection Test. You receive the guarantee from the manufacturer...with the added security of semi-annual inspections by the Pioneer Engineering Department.

These are among the reasons why so many western architects consider Pioneer 10 Year Guaranteed Roofs are the best insurance they can obtain for their clients.



HAVE YOU SEEN THE NEW
PIONEER ROC-WOOD
SHINGLES?

Here's a wonderful material for roofs of distinctive beauty and real protection! Tapered, thick-butted clearwood shingles in random widths...coated with asphalt and surfaced with non-fading crushed rock. Samples on request.

PIONEER PAPER CO.

Established 1888
MANUFACTURERS

507 Hearst Bldg.
SAN FRANCISCO, CALIF. Kearney 3788

1217 Spalding Bldg.
PORTLAND, OREGON
Bdwy. 8129

859 Dexter Horton Bldg.
SEATTLE, WASHINGTON
Main 5842

55th and Alameda
LOS ANGELES, CALIF. Lafayette 2111

424 Simons Block
SPOKANE, WASHINGTON
Main 5435

525 U. S. Natl. Bank Bldg.
DENVER, COLORADO
Keystone 7653

722 Contin't'l. Natl. Bank Bld
SALT LAKE CITY, UTAH
Wasatch 7924

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Overtime in wage scale should be credited with time and a half, Sunday and holidays double.

Bond— $1\frac{1}{2}\%$ amount of contract.

Brickwork—

- Common, \$33 to \$40 per 1000 laid, (according to class of work).
- Face, \$100 to \$125 per 1000 laid, (according to class of work).
- Brick Steps, using pressed brick, \$1.10 lin. ft.
- Brick Walls, using pressed brick on edge, 75c sq. ft. (Foundations extra.)
- Brick Veneer on frame buildings, \$1.00 sq. ft.
- Common, f.o.b. cars, \$14.50 plus cartage.
- Face, f.o.b. cars, \$55.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. cars in carload lots).

- 3x12x12 in. \$ 96.00 per M
- 4x12x12 in. 108.00 per M
- 6x12x12 in. 156.00 per M
- 8x12x12 in. 255.00 per M

HOLLOW BUILDING TILE (f.o.b. cars in carload lots).

- 8x12x5 $\frac{1}{2}$ \$108.00
- 6x12x5 $\frac{1}{2}$ 74.00

Composition Floors — 18c to 30c per sq. ft. In large quantities, 18c per sq. ft. laid.

Rubber Tile—65c per sq. ft.

Terazzo Floors—50c to 60c per sq. ft.

Terazzo Steps—\$1.50 per lin. ft.

Mosaic Floors—80c per sq. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton.

- No. 3 rock, at bunkers.....\$1.40 per ton
- No. 4 rock, at bunkers..... 1.40 per ton
- Elliott pea gravel, at bnkrs. 1.40 per ton
- Washed gravel, at bnkrs. 1.40 per ton
- Elliott top gravel, at bnkrs. 1.40 per ton
- City gravel, at bunkers..... 1.40 per ton
- River sand, at bunkers..... 1.00 per ton
- Delivered bank sand..... 1.00 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

- Del Monte, \$1.75 to \$3.00 per ton.
- Fan Shell Beach (car lots, f.o.b. Lake Majella), \$2.75 to \$4.00 per ton.

Cement, \$2.44 per bbl. in paper sks.
Cement (f.o.b. Job, S. F.) \$2.64 per bbl.

Cement (f.o.b. Job, Oak.), \$2.64 per bbl.

Rebate of 10 cents bbl. cash in 15 days.

Atlas "White"\$ 8.50 per bbl.
Forms, Labors average 22.00 per M.

Average cost of concrete in place, exclusive of forms, 28c per cu. ft.

4-inch concrete basement floor.....13c to 14c per sq. ft.

4 $\frac{1}{2}$ -inch concrete basement floor.....14c to 15c per sq. ft.

2-inch rat-proofing.....6 $\frac{1}{2}$ c per sq. ft.
Concrete Steps.....\$1.26 per lin. ft.

Dampproofing—

- Two-coat work, 20c per yard.
- Membrane waterproofing—4 layers of saturated felt, \$5.50 per square.
- Hot coating work, \$2.00 per square.

Electric Wiring — \$3.00 to \$9.00 per outlet for conduit work (including switches).

Knob and tube average \$2.25 to \$5.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, \$2600; direct automatic, about \$2500.

Excavation—

Sand, 70 cents; clay or shale, \$1.25 per yard.

Teams, \$10.00 per day.

Trucks, \$21 to \$27.50 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, \$65.00 per balcony.

Glass (consult with manufacturers)—

Double strength window glass, 15c per square foot.

Quartz Lite, 50c per square foot.

Plate 80c per square foot.

Art, \$1.00 up per square foot.

Wire (for skylights), 27c per square foot.

Obscure glass, 25c per square foot.

Note—Add extra for setting.

Heating—

Average, \$1.80 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg.site)
Common, \$24.00 per M (average).
Common O. P. select, average, \$34.00 per M.

- 1 x 6 No. 3— Form lumber.....\$20.00 per M
- 1 x 4 No. 1 flooring..... 45.00 per M
- 1 x 4 No. 2 flooring..... 40.50 per M
- 1 x 4 No. 3 flooring..... 35.00 per M
- 1 x 6 No. 2 and better flooring..... 41.00 per M
- 1 $\frac{1}{4}$ x 4 and 6 No. 2 flooring..... 50.00 per M

Slash grain—

- 1 x 4 No. 2 flooring.....\$35.00 per M
- 1 x 4 No. 3 flooring..... 33.00 per M
- No. 1 common run to T & G..... 30.00 per M
- Lath 4.50 per M

Shingles (add cartage to prices quoted)—

- Redwood, No. 1.....\$.90 per bble.
- Redwood, No. 2..... .75 per bble.
- Red Cedar90 per bble.

Hardwood Flooring (delivered to building)—

- 13-16x3 $\frac{1}{4}$ " T & G Maple.....\$135.00 M ft.
- 11-16x2 $\frac{3}{4}$ " T & G Maple..... 145.50 M ft.
- 7/8x3 $\frac{1}{2}$ sq. edge Maple..... 132.50 M ft.

- 13-16x2 $\frac{3}{4}$ " 3/4x2" 5-16x2"
T&G T&G Sq. Ed.
- Clr. Qtd. Oak.....\$220.00 M \$160.00 M \$178 M
- Sel. Qtd. Oak..... 150.00 M 122.00 M 131 M
- Clr. Pla. Oak..... 155.00 M 110.00 M 113 M
- Sel. Pla. Oak..... 132.00 M 79.00 M 97 M
- Clear Maple 147.00 M 101.00 M
- Laying & Finishing 16c ft. 15c ft. 13c ft.
- Wage—Floor layers, \$9.00 per day.

Building Paper—

- 1 ply per 1000 ft. roll.....\$4.00
- 2 ply per 1000 ft. roll..... 6.00
- 3 ply per 1000 ft. roll..... 9.25
- Sash cord com, No. 7.....\$ 1.05 per 100 ft.
- Sash cord com, No. 8..... 1.20 per 100 ft.
- Sash cord spot No. 7..... 1.75 per 100 ft.
- Sash cord spot No. 8..... 1.10 per 200 ft.
- Sash weights cast iron..... 57.00 ton
- Nails, \$3.25 base.
- Belgian nails, \$3.00 base.

Millwork—

- O. P. \$85.00 per 1000. R. W., \$92.00 per 1000 (delivered).
- Double hung box window frames, average, with trim, \$6.50 and up, each.
- Doors, including trim (single panel, 1 $\frac{3}{4}$ in. Ore. pine) \$7.00 and up, each.
- Doors, including trim (five panel, 1 $\frac{3}{4}$ in. Oregon pine) \$6.00 each.
- Screen doors, \$3.50 each.
- Patent screen windows, 25c a sq. ft.
- Cases for kitchen pantries seven ft. high, per lineal ft., \$6.00 each.
- Dining room cases, \$7.00 per lineal foot.
- Labor—Rough carpentry, warehouse heavy framing (average), \$11.00 per M.
- For smaller work, average, \$22 to \$30 per 1000.

Marble—(Not set), add 50c to 65c per ft. for setting.

- Alaska\$1.40 sq. ft.
- Columbia 1.40 sq. ft.
- Golden Vein Yule Colo..... 1.70 sq. ft.
- Pink Lepanto 1.50 sq. ft.
- Italian 1.75 sq. ft.

Tennessee	1.70 sq. ft.
Verde Antique	3.00 sq. ft.

NOTE—Above quotations are for 7/8 inch waistscot in large slabs f.o.b. factory. Prices on all other classes of work should be obtained from the manufacturers.

Floor Tile—Set in place.

Verde Antique	\$2.50 sq. ft.
Tennessee	1.50 sq. ft.
Alaska	1.35 sq. ft.
Columbia	1.45 sq. ft.
Yule Colorado	1.45 sq. ft.
Travertine	1.60 sq. ft.

Painting—

Two-coat work	30c per yard
Three-coat work	40c per yard
Whitewashing	4c per yard
Cold Water Painting	8c per yard
Turpentine, 90c per gal. in cans and 75c per gal. in drums.	
Raw Linseed Oil—\$1.36 gal. in bbls.	
Boiled Linseed Oil—\$1.39 gal. in bbls.	

Cartier or Dutch Boy White Lead in Oil (in steel kegs)

Per Lb.

1 ton lots, 100 lbs. net weight 12 3/4 c	
500 lb. and less than 1 ton lots 12 1/2 c	
Less than 500 lb. lots	12c

Dutch Boy Dry Red Lead and Litharge (in steel kegs)

1 ton lots, 100 lb. kegs, net wt. 12 3/4 c	
500 lb. and less than 1 ton lots 12 1/2 c	
Less than 500 lb. lots	13c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lbs. net weight 13 3/4 c	
500 lb. and less than 1 ton lots	14c
Less than 500 lb. lots	14 1/4 c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	\$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.85 lineal foot
12-inch	2.10 lineal foot

Pipe Casings — 14" long (average), \$5.00 each.

Plastering—Interior—

1 coat, brown mortar only, wood lath	Yard \$0.40
2 coats, lime mortar hard finish, wood lath .....	.52
2 coats, hard wall plaster, wood lath .....	.55
3 coats, metal lath and plaster	1.00
Keene cement on metal lath	1.25
Ceilings with 3/4 hot roll channels metal lath .....	.67
Ceilings with 3/4 hot roll channels metal lath plastered	1.40
Shingle partition 3/4 channel lath 1 side .....	.62
Single partition 3/4 channel lath 2 sides 2 inches thick	2.20
4-inch double partition 3/4 channel lath 2 sides	1.80
4-inch double partition 3/4 channel lath 2 sides plastered	2.45

Plastering—Exterior—

2 coats cement finish, brick or concrete wall	Yard \$1.00
2 coats Atlas cement, brick or concrete wall	1.25
3 coats cement finish No. 18 gauge wire mesh	1.75
3 coats Atlas finish No. 18 gauge wire mesh	2.05
Wood lath, \$4.50 per 1000	
2.5-lb. metal lath (dipped) .....	.19
2.5-lb. metal lath (galvanized) .....	.22
3.4-lb. metal lath (dipped) .....	.24
3.4-lb. metal lath (galvanized) .....	.29
3/4-inch hot roll channels, \$45 per ton	
Hardwall plaster, \$15.40 ton; \$12.95 in paper sacks (rebate 15c sack)	
Finish plaster, \$16.40 ton; in paper sacks, \$13.85 (rebate 10c sack)	

Dealer's commission, \$1.00 off above quotations.
Hydrate Lime, \$19.50 ton.
Lime, f.o.b. warehouse, \$2.25 bbl.; cars, \$2.15
Lime, bulk (ton 2000 lbs.), \$16.00 ton.
Wall Board 5 ply, \$43.00 per M.

Composition Stucco—\$1.60 to 2.00 per sq. yard (applied).

Plumbing—
From \$60.00 per fixture up, according to grade, quantity and runs.

Roofing—
"Standard" tar and gravel, \$5.25 per square for 30 squares or over.
Less than 30 squares, \$5.50 per sq. Tile, \$19.00 to \$35.00 per square.
Redwood Shingles, \$11.00 per square in place.
Cedar Shingles, \$10.50 sq. in place.
Recoat, with Gravel, \$3.00 per sq.

Sheet Metal—
Windows—Metal, \$1.85 a sq. foot.
Fire doors (average), including hardware, \$2.15 per sq. foot.

Skylights—
Copper, \$1.35 sq. ft. (not glazed).
Galvanized iron, 30c sq. ft. (not glazed).

Stone—
Granite, average, \$6.00 sq. foot in place.
Sandstone, average Blue, \$3.50; Boise, \$2.60 sq. ft. in place.
Indiana Limestone, \$2.60 per sq. ft. in place.

Store Fronts—
Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Steel Structural—\$85.00 per ton erected. This quotation is an average for comparatively small quantities. Light truss work higher; plain beam and column work in large quantities, less.
Cost of steel for average building (erected), \$82.00 per ton.

Reinforcing—
Base price for car load lots, \$2.50 100 lbs. f.o.b. cars.
Average cost to install, \$23 per ton.

Steel Sash—
All makes, from S. F. stock, 18c to 30c per square foot.
All makes, plant shipment, 18c to 30c per square foot.
(Includes mullions and hardware.)

Tile—White glazed, 75c per foot, laid.
White floor, 75c per foot, laid.
Colored floor tile, \$1.00 per ft. laid.
Promenade tile, 80c per sq. ft., laid.

1929 WAGE SCHEDULE
FOR SAN FRANCISCO
BUILDING TRADES

Craft	Journeymen Mechanics
Asbestos workers	\$ 8.00
Bricklayers	11.00
Bricklayers' hodcarriers	7.50
Cabinet workers, (shop)	9.00
Cabinet workers, (outside)	9.00

Carpenters	9.00
Cement finishers	9.00
Electric workers	9.00
Electrical fixture hangers	8.00
Elevator constructors	10.00
Elevator helpers	7.00
Engineers, portable and hoisting	8.50
Glass workers	9.00
Hardwood floormen	8.00
Housemovers	8.00
Housemiths, arch. iron, skilled all branches	9.00
Housemiths, arch. iron, not skilled all branches	8.00
Housemiths, reinforced concrete, or rodmen iron workers (bridge & structural) including engineers	11.00
Laborers, building (6-day week)	5.50
Lathers, channel iron	10.00
*Lathers, all other	8.50
Marble setters	10.00
Marble helpers	6.00
Marble cutters and copers	8.00
Marble bed rubbers	7.50
Marble polishers and finishers	7.00
Millmen, planing mill department	7.00
Millmen, sash and door	8.00
Millwrights	8.00
Model makers	10.00
Model casters	9.00
Mosaic and Terrazzo workers	9.00
Mosaic and Terrazzo helpers	6.00
Painters	9.00
Painters, varnishers and polishers (shop)	7.50
Painters, varnishers and polishers (outside)	9.00
Pile drivers and wharf builders	9.00
Pile drivers engineers	10.00
Plasterers	11.00
Plasterers' hodcarriers	7.50
Plumbers	10.00
Roofers, composition	8.00
Roofers, all others	8.00
Sheet metal workers	9.00
Sprinkler fitters	10.00
Steam fitters	10.00
Stair builders	9.00
Stone cutters, soft and granite	8.50
Stone setters, soft and granite	9.00
Stone carvers	8.50
Stone derrickmen	9.00
Tile setters	10.00
Tile helpers	6.00
Auto truck drivers, less than 2500 lbs.	5.50
Auto truck drivers, 2500 to 4500 lbs.	6.00
Auto truck drivers, 4500 to 6500 lbs.	6.50
Auto truck drivers, 6500 lbs. and over	7.00
General teamsters, 1 horse	5.50
General teamsters, 2 horses	6.00
General teamsters, 4 horses	6.50
Plow teamsters, 4 horses	6.50
Scrapper teamsters, 2 horses	6.00
Scrapper teamsters, 4 horses	6.00

*On wood lath if piece rates are paid they shall be not less than such an amount as will guarantee, on an average day's production of 1600 lath, the day wage set forth.

Eight hours shall constitute a day's work for all Crafts except as otherwise noted.

Plasterer's hodcarriers, bricklayers' hodcarriers, roofers, laborers, and engineers, portable and hoisting, shall start 15 minutes before other workmen, both at morning and noon.

Five and one-half days, consisting of eight hours on Monday to Friday inclusive, and four hours on Saturday forenoon shall constitute a week's work.

Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday afternoon (except laborers), Sundays from 12 midnight Saturday, and Holidays from 12 midnight of the preceding day shall be paid double time. On Saturday afternoon laborers, building, shall be paid straight time.

Where two shifts are worked in any twenty-four hours shift time shall be straight time. Where three shifts are worked, eight hours pay shall be paid for seven hours on the second and third shifts.

All work shall regularly be performed between the hours of 8 A. M. and 5 P. M., provided, that in emergencies or where premises cannot be vacated for work by mechanics until the close of business, men then reporting for work shall work at straight time; but any work performed after midnight shall be paid time and one-half except on Saturday afternoons, Sundays, and holidays, when double time shall be paid.

Recognized holidays to be New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day and Christmas Day.

Men ordered to report for work, for whom no employment is provided, shall be entitled to two hours pay.