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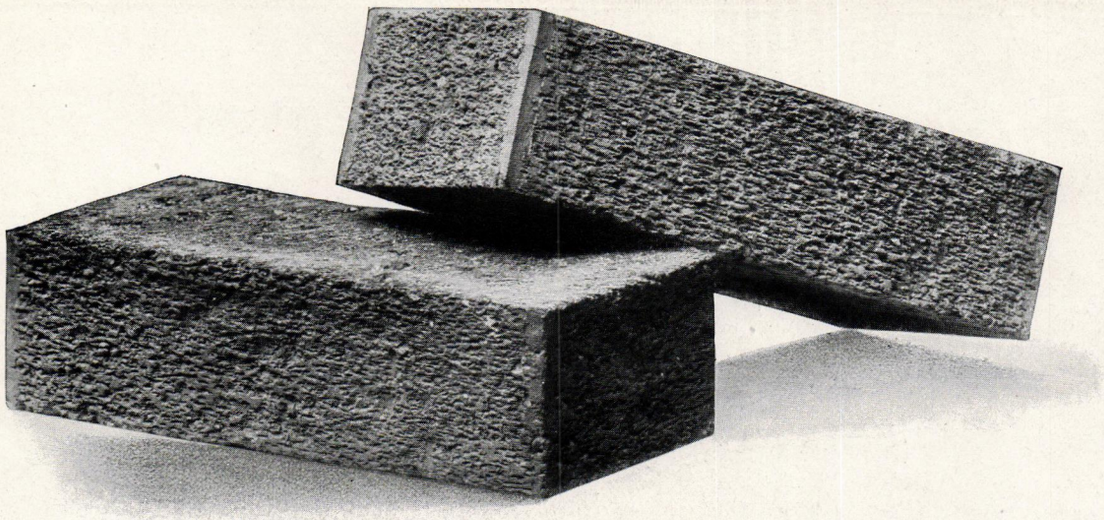

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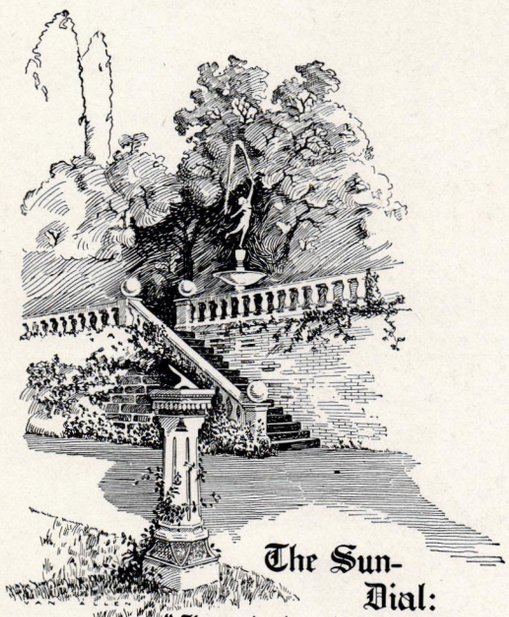

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"I mark the pleasant, sunny hours alone,"
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While thou art here, let skies be fair or dark,
Our hearts shall find but pleasant hours to mark.

VOLUME XXVIII

NUMBER 8

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PUBLISHER'S DEPARTMENT

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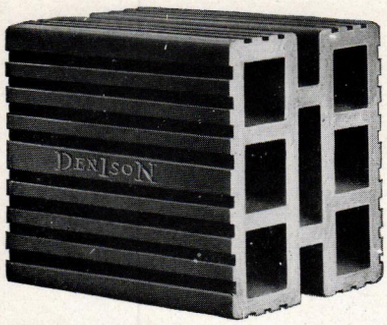
Walter W. Tompert has opened an office for the practice of architecture in the Dayton Savings & Trust Building, Dayton, Ohio. He desires catalogues and literature.

A salesman's convention of three days duration was held by the Buffalo Forge Company on June 25-7 at the summer home of the president of the company, Mr. Henry W. Wendt. There were gathered there the concerns representatives from all parts of the country and the local force from officers to engineers and salesmen. At two sessions each day such subjects as air washers, proper profiteering and other subjects applicable to the business, were discussed.

H. O. Wurmster, architect, of Lorain, Ohio, has formed a partnership with F. J. McFadden and G. L. Slater. Both are graduates of the University of Michigan.



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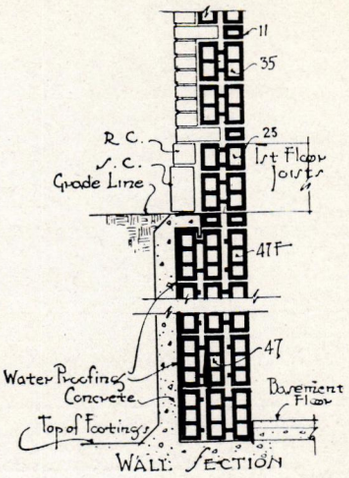

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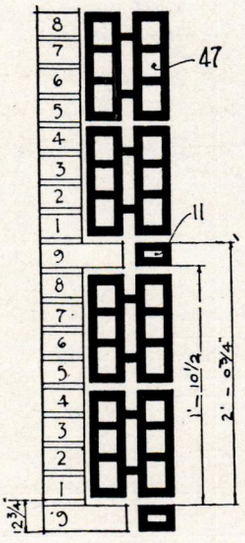
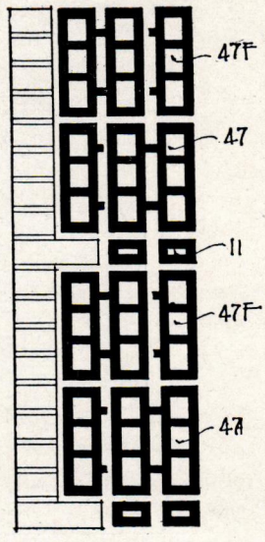


13" Wall



17" Wall

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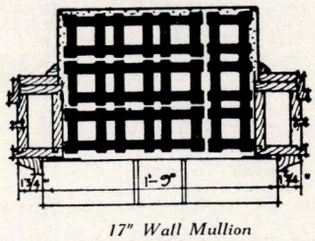
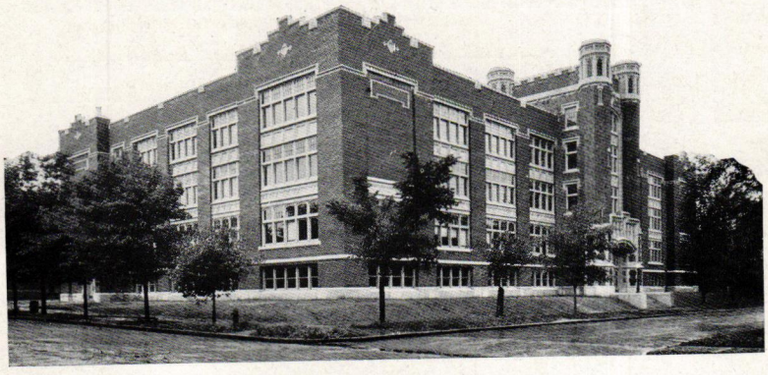


17" Wall Mullion



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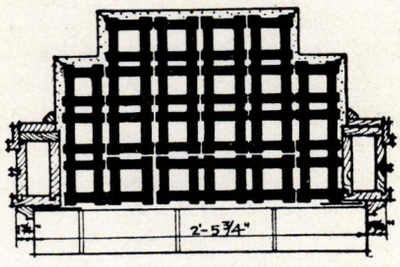


22" Wall Mullion of Pier Tile

THE WESTERN
ARCHITECT

A NATIONAL JOURNAL OF ARCHITECTURE AND ALLIED ARTS, PUBLISHED MONTHLY

VOLUME 28 AUGUST, 1919 NUMBER 8

The Building Trades Strike and Lockout in Chicago

The strike situation in Chicago requires but little comment. It is the same old story of a difficulty begun by carpenters and continued by the other trades. The carpenter contractors as a class have been representative in inclination to give the men a square deal, and to resist to the uttermost any union attempt to impose on their disposition to see that the individual worker got a square deal. The carpenter workmen have been of the same class, ranking in skill and intelligence most other trades, but always dominated by a few radicals with whom they agreed in order that they might save themselves from bodily harm. That in essence is the story of this strike and those of the past thirty-five years with but slight variation in details. The circular letter issued to the public by the Carpenter Contractors' Association of Chicago, on July 12, might have been written by Goldie, Mavor, Clark, Campbell and those other broad-minded but determined contractors of the eighties. The District Council of the Union is doubtless dominated by the same class of leaders as then, with a rank and file of expert workmen that for the sake of peace allow the leaders to control the organization. While there should be a better method, the most available one under present conditions seems to be an instant lock-out whenever an unjust strike is inaugurated in any of the building trades. It has many features to recommend it. In the present instance, the shortage of carpenter labor in smaller towns and cities will give employment to those who are desirous of working for a reasonable wage and free from interruption from labor agitators who have nothing at stake and live upon the earnings of real workmen. The architects of Chicago have taken their stand with the contractors. Involved in the controversy, in Chicago as elsewhere, today, however, is the question of a full day's work. This is a matter which is causing more actual concern to the building profession than the immediate problems arising from the dead-lock. Labor has firm friends in the architectural profession. These friends as well as the honest supporters of labor in all professions, look with alarm upon the tendency at the present time, to limit the work performed during the shorter hours which are recognized as based upon justice. There is altogether too much of the spirit of giving less service for the increased wage and the shorter day. Contractors and all others interested in building regard this spirit with real concern. Production is an all-important factor in working out present-day problems. Increased effort, not curtailed production, is essential if we are to work out our economic salvation. The sooner this is appreciated by labor the better it will be for all concerned. President Wilson's appeal to the sober element in labor and his emphasis upon the necessity of increased production sounded a note which should drive home the seriousness of the stituation.

Chicago Council Sanctions Burnham Lake Front Plan

Although for the past thirty-five years there have been citizens of Chicago who saw clearly the work of development the city had before it, the lake front and the street improvement ordinances passed recently by the city council mark the first practical move on the part of the municipality towards carrying out the plans of these "visionaries." A third of a century has passed since DeWitt C. Cregier, mayor of Chicago, urged the closing of the river and the construction of docks for lake traffic on the lake front. Mr. Cregier was an engineer of national reputation in his profession, and his advice should have carried weight. The neglect of this advice has cost the city the loss of the largest shipping prestige on the Great Lakes to the benefit of Milwaukee and South Chicago. The expenditure of a hundred and odd millions on dockage, railway

electrification, etc., will be worth the expenditure in returning the freedom of the lake front to the people and the clearing of the atmosphere of smoke, but whether it will bring back the lost boat traffic remains to be seen. After Cregier came the great reconstruction plan of James F. Gookins. This took in not only the port docks and warehouses at the mouth of the river, the deepening of the channel and a turning basin in the South Branch, but electrification, street widening and zoning adequate for the several millions in population his vision promised in the future. Gookins was an artist, yet his plans were those of an engineer. They were pronounced so practical by the engineers of three insurance companies and the American representative of the Rothschilds that these financial agents only waited the city council's enabling ordinances to take the bonds for the improvement. The sudden death of this foremost citizen of Chicago who put his dream into practical form dissolved the project. Then came D. H. Burnham. Fresh from his triumph as Director of Works of the Columbian Exposition, where his genius for organization gathered art, labor and material into a composition such as the modern world had not beheld, he looked for a new field for his genius. He found it in a vision of a new and greater Chicago. The history of his work is now in the writing and after twenty years of struggle by him and those he left in charge of his great idea, these ordinances mark the tangible beginning of a new era and the evolution of a great city into a World's capitol. The passage of these ordinances and the consequent commitment of the city to "The Burnham Plan" is distinct triumph for Mr. Charles Wacker and his associates in the City Plan Commission who have labored so many years for the benefit of the people of Chicago.

The Pennsylvania Master Stroke and Alton Mediocrity

An Appeal for a Continuation in the Chicago Union Station Plan of the Architectural Virility of the Pennsylvania Freight Terminal.

To the Editor of the Western Architect:

Permit me to compliment you and Architects Price & McLanahan for the splendid presentation in your July number of the Pennsylvania Freight Terminal at Chicago.

This structure is indeed a monumental work that Chicago may well be proud of. To my way of thinking, it is the most virile essay in architecture that Chicago possesses. Further, it demonstrates clearly that purely industrial buildings offer the greatest opportunity to the modern architect if he will but recognize and seize that opportunity.

In the same number of the Western Architect you reproduce from the engineers' drawings, exterior elevations of the Chicago & Alton railroad proposed freight terminal to be built directly north of the Pennsylvania. Plans are lacking and hence it is impossible to form a fair judgment of this project beyond seeing that wall panels are conceived as commonplace, stereotyped loft building fronts such as litter our American cities by the thousands.

It is to be hoped that your July number will fall into the hands of the proper Alton officials so that they may see the difference between the Pennsylvania master-stroke and Alton mediocrity.

ARTHUR WOLTERSDORF.

* * *

Chicago, Illinois, August, 1919.

From the beginning the Union station development was recognized and treated as a vital element in the Chicago Plan. It is one of the dominating situations in the Chicago Plan Commission's scheme for the up-building of the city. Quite naturally the passenger station is given much prominence in the scheme, which is not so insistent, however, upon the type of structure quite as essential, though more utilitarian, in the working out of the great terminal situation—the freight stations.

These who have followed through the past four years, the slow progress of the union station development south of Adams street and extending nearly to the South Branch of the Chicago River, have realized how small a part of the whole is the passenger terminal as compared to the preparation for the handling of the vast quantities of freight which enter the city. Blocks of buildings have been razed, acres of excavation carried on quietly though persistently and one important structure, the Pennsylvania Freight Terminal station (illustrated in the July Western Architect) has been completed, the first of the series of industrial terminals and one of the most noteworthy buildings which Chicago possesses.

This station is the fore-runner of freight terminals in the immediate vicinity for the Chicago & Alton and the Chicago, Burlington & Quincy railways. It is of vital import to the architectural development of the city of Chicago that the buildings for the last-named railways be in harmony with the splendid structure built for the Pennsylvania Lines by Price and McLanahan of Philadelphia.

It was with the idea of presenting, in so far as possible, the freight terminal situation as a whole, completed and prospective, that The Western Architect publish-

ed in the same issue with the Pennsylvania terminal reproductions, the elevations for the Chicago & Alton railroad terminal, designed by the engineers of that system to adjoin the Pennsylvania terminal on the north. The presentation affected the architectural profession as a whole as it did Mr. Arthur Woltersdorf whose letter is reproduced above. Officials of the Chicago, Burlington & Quincy railroad asert that the plans for that company's freight terminal have not been made.

The Pennsylvania officials have pointed the way along which future developments must progress. Chicago, through its official representatives, through its Chicago Plan Commission and through every agency comprised of those who have its best interests at heart, must insist that there be no construction in the Union station development which does not conform in splendor of conception and in dignity of expression to the Pennsylvania freight terminal. Chicago must be assured that its future buildings express this growing spirit of artistic worth and are not a reversion to the loft type of buildings which, as Mr. Woltersdorf puts it, "litter American cities by the thousand."

The Pennsylvania railway and its architects have performed a service for the city the worth of which will become increasingly evident as the new freight terminal becomes more widely known both locally and abroad. That the new station will be viewed as a monumental structure, architecturally, is certain. The accomplishment is of two-fold value. It, first, has given to the city and to the country a building of great significance which will have its effect upon the architecture of the country; and, second, it has set a standard of accomplishment in the community which necessarily must be upheld in the development of the future, not alone in the terminal situation, but in the industrial upbuilding of the city.

When the Pennsylvania terminal was planned the railroad engineers took the problem in hand and worked out the technical railway engineering problems. In so doing a re-inforced concrete building of the "litter" type was projected. It was at that point that the officials of the road called in the firm of architects which, for a number of years, had assisted the company in many of its problems. The Chicago terminal station is not the first piece of work executed by Price and McLanahan for the Pennsylvania lines. The result is the structure which the officials of the Pennsylvania company must recognize as entirely worthy of one of the largest and most efficient railway systems in the world.

The engineers of the road were satisfied with the working out of the intricacies of freight handling; they must recognize the merit of the structure architecturally and the value which accrues, particularly as the price of the terminal was not increased through the architectural handling. As was stated at the time of publication of the station last month, no building could more forcefully illustrate the value of co-operation between engineer and architect.

The officials of the Chicago & Alton, the Chicago, Burlington & Quincy, and the Chicago, Milwaukee & St. Paul railways, all of which are concerned in the Union station development, may be relied upon, we believe, to recognize the force of the argument presented so substantially in the Pennsylvania station. No further demonstration of the need for competent architectural guidance should be necessary than the comparison of the two stations, complete and proposed, published in the July Western Architect.

These forward-looking men must appreciate, even though they may not have analyzed the spirit of the times so completely, the force of the thesis which Mr. Woltersdorf only hints at in his letter. That industrial architecture not only is worth while, *per se*, but holds the hope of America's development architecturally. We may be permitted, perhaps, to develop this thesis further, and state what, we believe to be in the mind not alone of Mr. Woltersdorf, but of every thinking architect.

America's great development has been industrial. We have stood for years as the nation of business men. So fast and so absorbing has been our industrial progress that other nations doubted seriously the possession on our part of any desire or ambition save that of money-making. It was not until we found ourselves, during the war, that the world discovered the idealism inherent in America's character.

America has its ideals in business. The architecture of industrial America must seek to express those ideals. In its broad sense the Pennsylvania station is such an expression. Chicago and the country, as well, confidently expects the officials of the railways involved to contribute their share, as have the officials of the Pennsylvania, to the finer architectural expression of industrial ideals. We cannot believe that the appeal to such a spirit will be in vain.

It is the belief of The Western Architect and not a few in the profession, that the railways involved will find in the freight terminal station for the Pennsylvania a virile type in architecture which will bear close study in connection with the passenger terminal. It is not too much to hope that the designers of the latter may study carefully "the most virile essay in architecture which Chicago possesses."

The Architecture of the Spanish Renaissance in California

REXFORD NEWCOMB
Assistant Professor of Architecture, Univerity of Illinois

PART II—CONSTRUCTION

A DISTINCT evolution can be traced in the development of mission architecture as regards construction. The first temporary structures, built hastily, were little better than brush huts with grass-thatched roofs. These were built in the fashion of the Indians and they never endured long. The earliest of the buildings that can really be called habitations at all were constructed of wooden posts of pine or cypress, set close together and plastered inside and out with mud or clay. This was the method used at San Carlos (second structure in the Carmel Valley, 1771). This might be called the stockade form. After the clay had dried the walls were treated to a heavy coat of white-wash inside and out. Usually, in this type of structure, the building was roofed with poles over which brush and grass were spread, and upon these a layer of mud, this in turn being protected with a grass thatch. Often in the minor buildings, a simple grass thatch alone was used. The mud roofs were never successful in keeping out the heavy winter rains so the Indian method of making a thatch of tule was next adopted. This form of roof covering was very inflammable and disastrous fires were experienced before the *padres* at San Luis Obispo began to make and burn roofing tiles like those used in Spain.

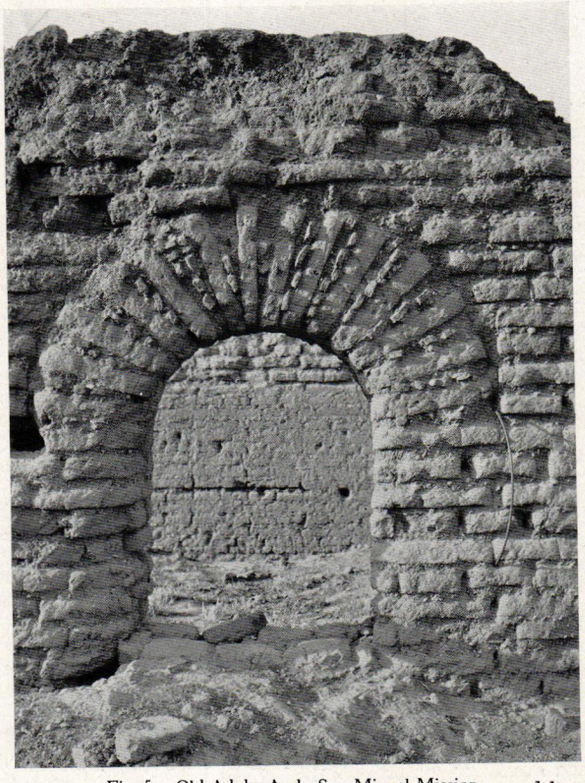


Fig. 5. Old Adobe Arch, San Miguel Mission

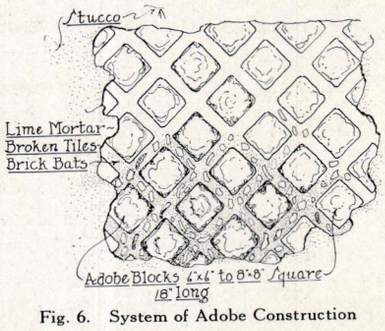


Fig. 6. System of Adobe Construction

The scarcity of wood, especially in the south led to the making of unburned brick from *adobe* soil. The second structure in most cases was of *adobe*, roofed with tule thatch, which after 1790 was replaced throughout the mission chain with burned tiles. The *adobe* walls, due to the low bearing power of the material, had, of necessity, to be very thick, and many examples are five and six feet in thickness while those of less than three feet are rare. The *adobe* bricks were easily made and were fashioned into about the same shapes as used later in the burned types. They were sometimes made with straw but more often dependence was placed in the natural grog consisting of small particles of disintegrated rock. Bricks of this sun-dried variety have been widely used from early antiquity down to our own day. Their use in Spain, where they figure as a widely used material for the construction of cottages in Castile and Leon and other places, is said to have been introduced by the Moors. Carried into Mexico and California, they became a usable and easily obtained material, especially during the less prosperous days, at the various missions. They were laid with *adobe* mud as an adhesive between them and were used even for arch construction in the wall in some instances. (Fig. 5.) Of course the *padres* knew full well that the walls made of this material must be protected from the elements and usually these walls were covered with stucco, and white washed. The roofs were given a great projection and thus at once warded off the intense, white California sunshine and protected the *adobe* walls from the weather.

Fig. 7. Tiled Roofs, San Juan Capistrano

There were some ingenious systems of *adobe* construction evolved to make this material, so easily gained, of practical value, and no system is more interesting than that used at San Luis Rey. The method here was to make *adobe* blocks 6″x6″ to 8″x8″ square and 18″ long. These were laid in a diagonal pattern with heavy "concrete" joints between them. (Fig. 6.) The "concrete" was composed of lime and sand mortar combined with stones, pieces of burned bricks and tiles. It is needless to say that the bond between the stucco plaster placed over it and the wall itself, in a construction of this kind, would be much stronger than if the plaster were applied to the plain *adobe* surface. It might be said that this form of construction, used upon the church at San Luis Rey has proved entirely satisfactory, and although exposed to the action of the elements for years, was practically as good as new when the writer examined it in the summer of 1913.

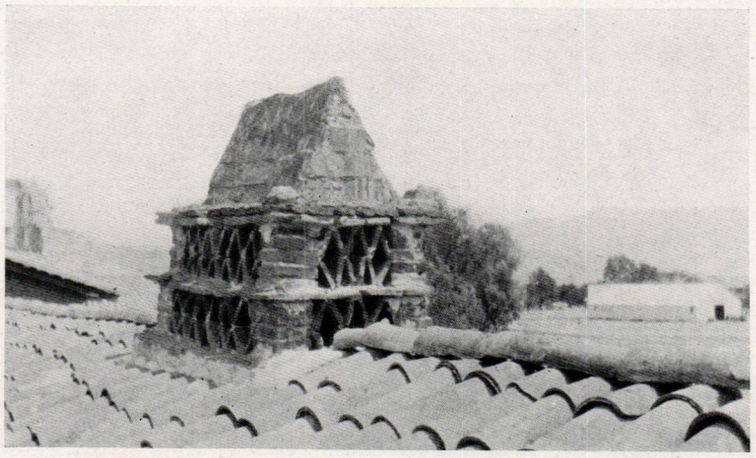


Fig. 8. Chimney, San Juan Capistrano

In many places the walls of *adobe* were faced with brick laid in lime and sand mortar, and in this manner the *adobe* was adequately protected. This system was used upon the *fachada* of San Luis Rey, at San Antonio de Padua and other places. Frequently lintels of stone or wood and arches of burned brick were used to span openings in the *adobe* walls. There are examples also of relieving arches of *adobe* built into *adobe* walls over window openings. An example of this construction is to be seen at San Antonio de Padua. Very often the jambs of openings were of brick or stone built into the *adobe* walls in much the same fashion that we build brick openings into stone walls, or vice versa, today. A good example of this usage is to be found in the church st San Fernando Rey.

As was said, most of the second structures were of *adobe* unless the mission was established late in the mission period, in which case the system of construc-

Fig. 9. Mission San Luis Rey, before recent restoration

Fig. 10. Broken Arches in Patio, San Juan Capistrano

These were supported on timbers and proved the adequate solution of the roofing problem. It is the sparkle and color that the red tiles lend to the mission buildings that to some extent makes them so interesting to us today. (Fig. 7.)

Something more, however, should be said concerning the methods in which the *padres* used brick and tiles and of their brickwork in general. The old priests displayed a marked originality in combining these simple flat tiles, and the charming chimneys at San Miguel, San Luis Rey (now disappeared), and San Juan Capistrano (Fig. 8), and the latticed parapet at San Luis Rey stand as worthy monuments to their skill. Nowhere has better use been made of materials than in the brickwork of San Luis Rey, due, no doubt, to the efforts of the indefatigable Peyri, priest and designer of the church, and also to the fact that the church was built late in the mission period. The church and cemetery wall, which parts furnish a considerable of the present day charm of the group, are admirable examples of brickwork. (Fig. 9.) The *fachada*, one may be sure, was designed in advance by a practiced hand, as all the features; niches, corbels, bands, etc., are of brickwork, moulded for the particular situations in which they were placed. The same may be said of the side door of the church a measured drawing of which is presented in Plate 16. To be sure all of this work was covered with a coating of stucco but one is always wishing that the brickwork might have been left bare and untouched.

Brick and stone were the most durable materials to be had in the country, and had the mission period lasted

tion had advanced to a stage when better materials were more readily available. In several cases, however, no construction more stable than *adobe* was used. These structures are the ones that nature and an uncaring race have allowed to go to ruin.

No sooner were roofing tiles perfected than the *padres* began to burn building brick and floor tiles. These materials were of the variety known today as soft brick and were used in most of the later buildings. There were various forms but the ordinary brick was flat, being about $1\frac{1}{2}''$ to $2''$ thick and from $8''$ to $10''$x$10''$ square. The floor tiles were of about the same thickness and were sometimes, square, sometimes oblong and often diamond-shaped.

The roofing tiles were almost semi-circular in cross section, about $22''$ long and tapered from a diameter of $8''$ at the upper end to a diameter of $10''$ at the lower.

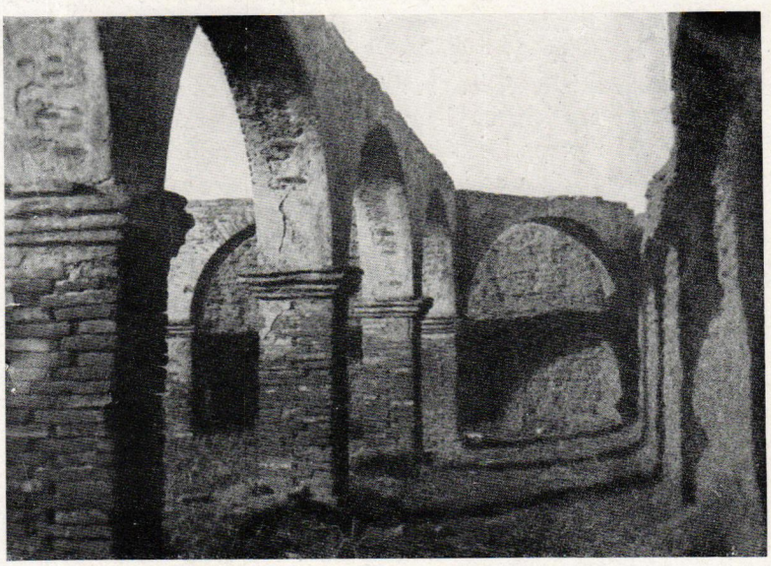


Fig. 11. Arches of Cloister, showing Auxiliary Arch, San Juan Capistrano

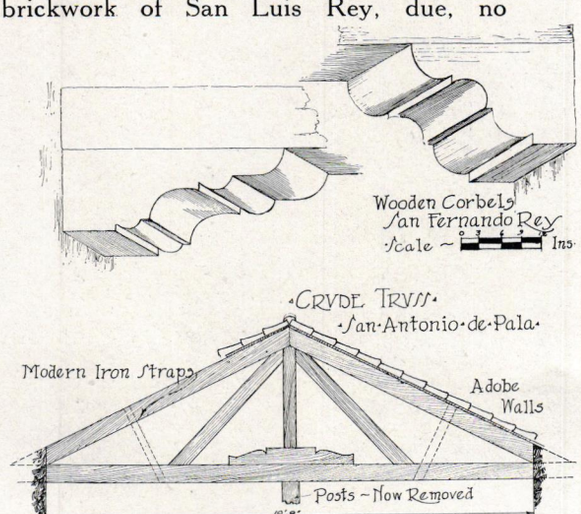
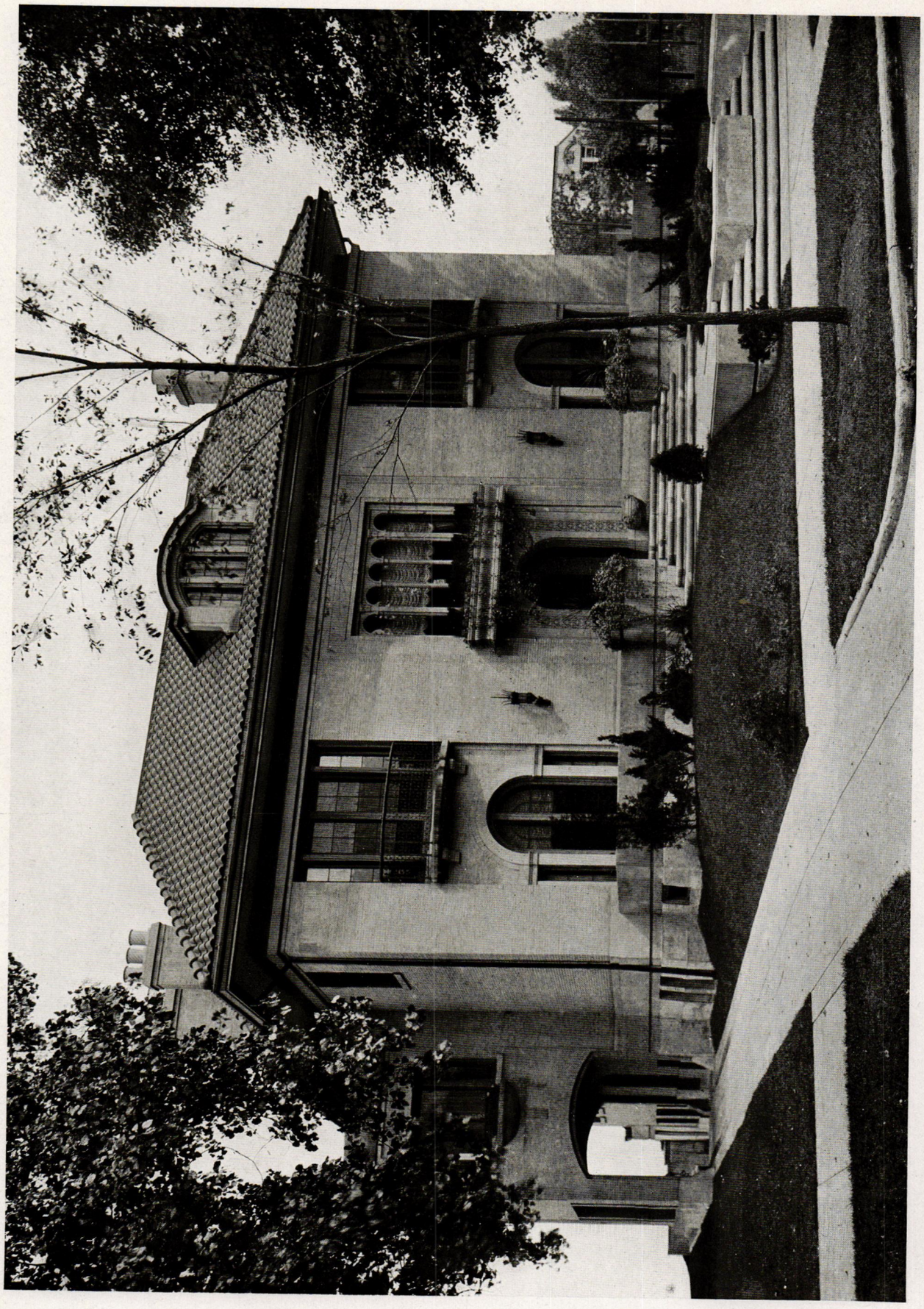


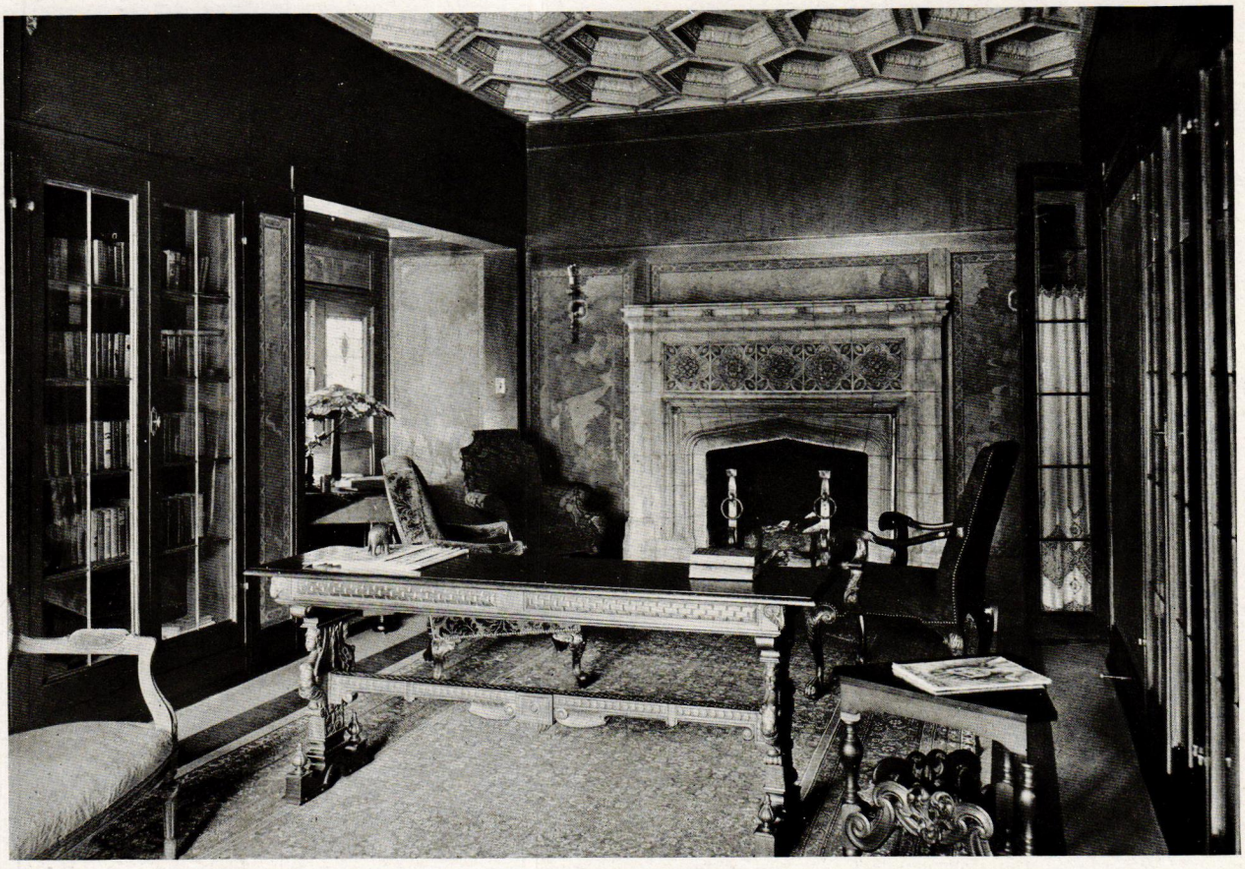
Fig. 12. Corbels, San Fernando Rey. Crude Truss, San Antonio de Pala



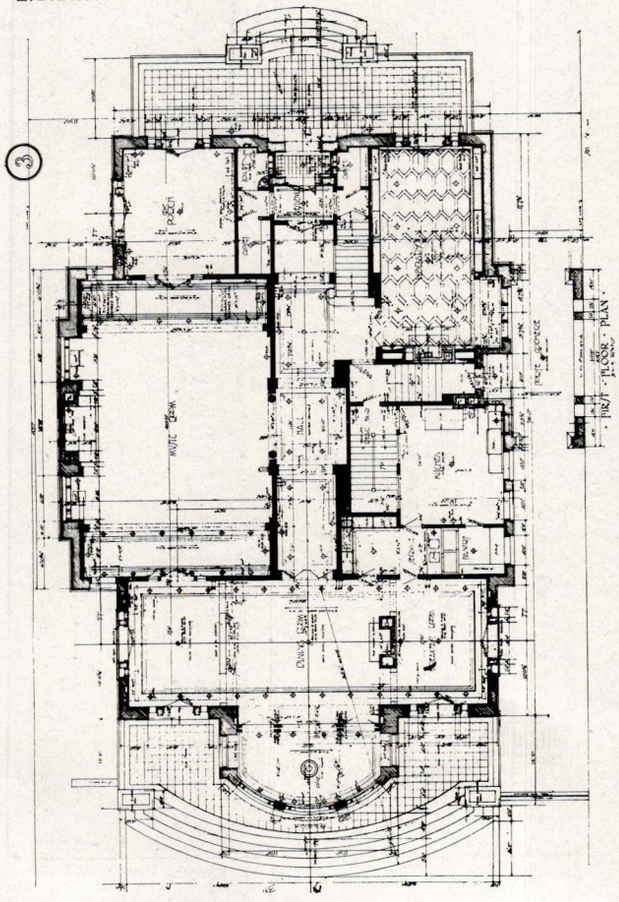
RESIDENCE FOR MR. S. S. HUTCHINSON, CHICAGO
TALLMADGE AND WATSON, ARCHITECTS

DETAIL OF ENTRANCE
RESIDENCE FOR MR. S. S. HUTCHINSON, CHICAGO
TALLMADGE AND WATSON, ARCHITECTS :: ::

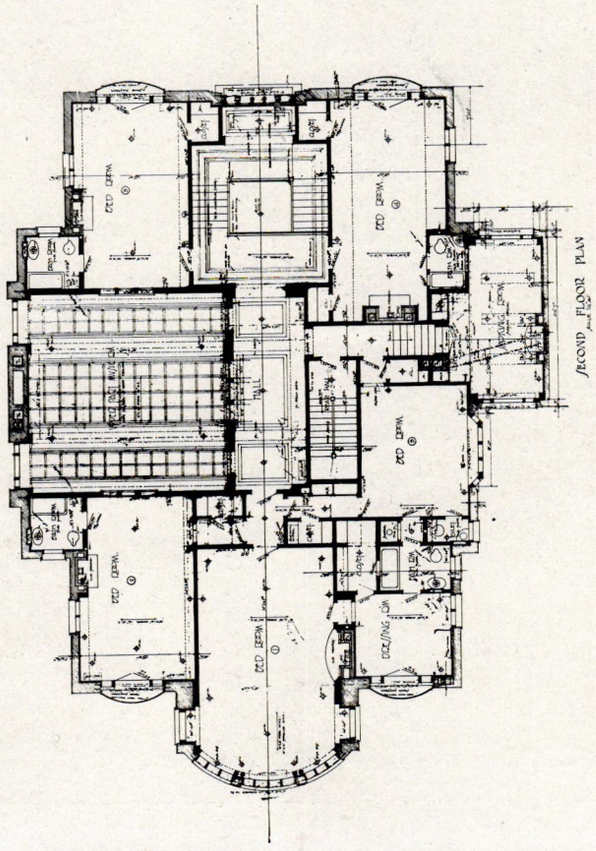
MUSIC ROOM
RESIDENCE FOR MR. S. S. HUTCHINSON, CHICAGO
TALLMADGE AND WATSON, ARCHITECTS :: ::



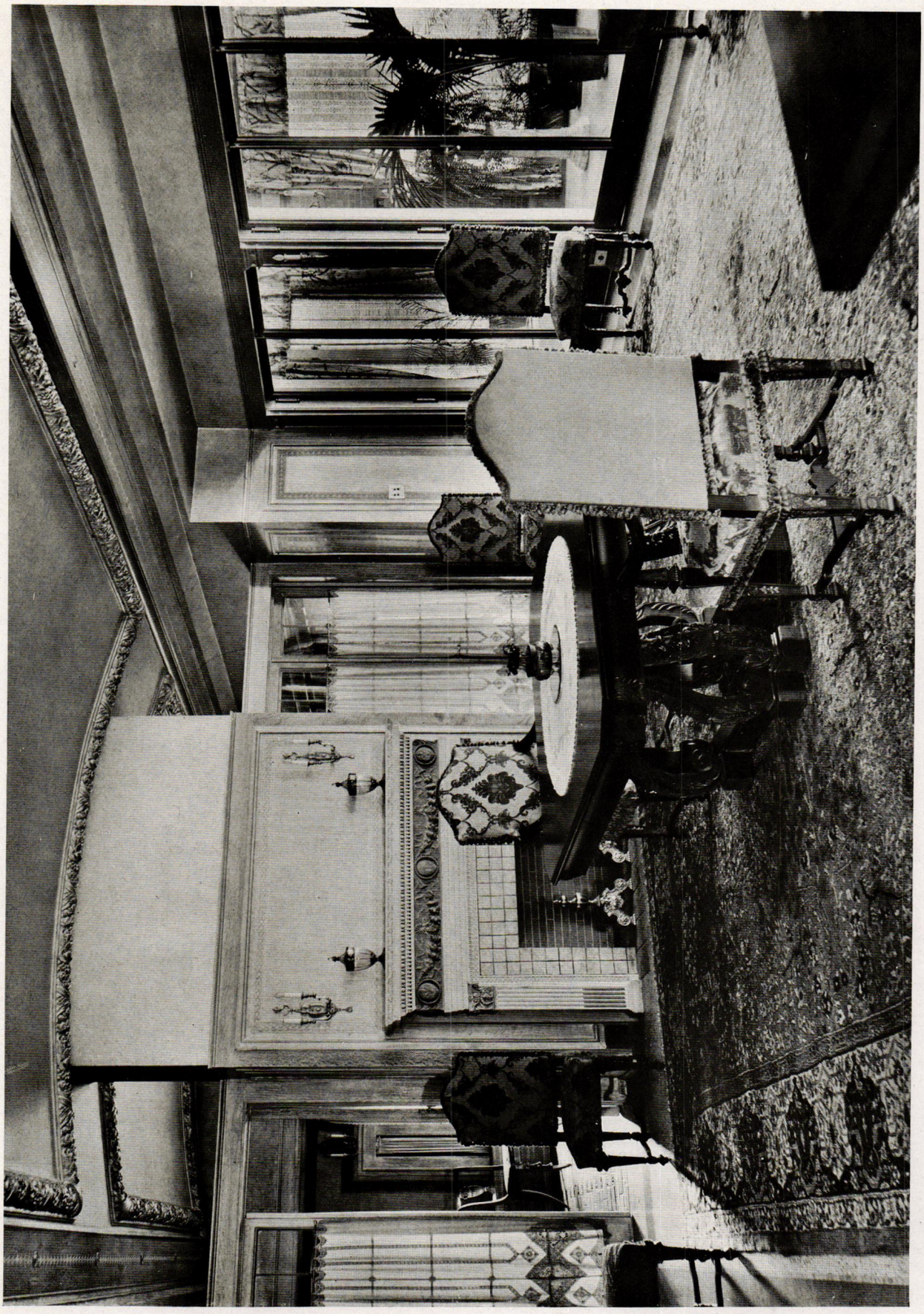
LIBRARY



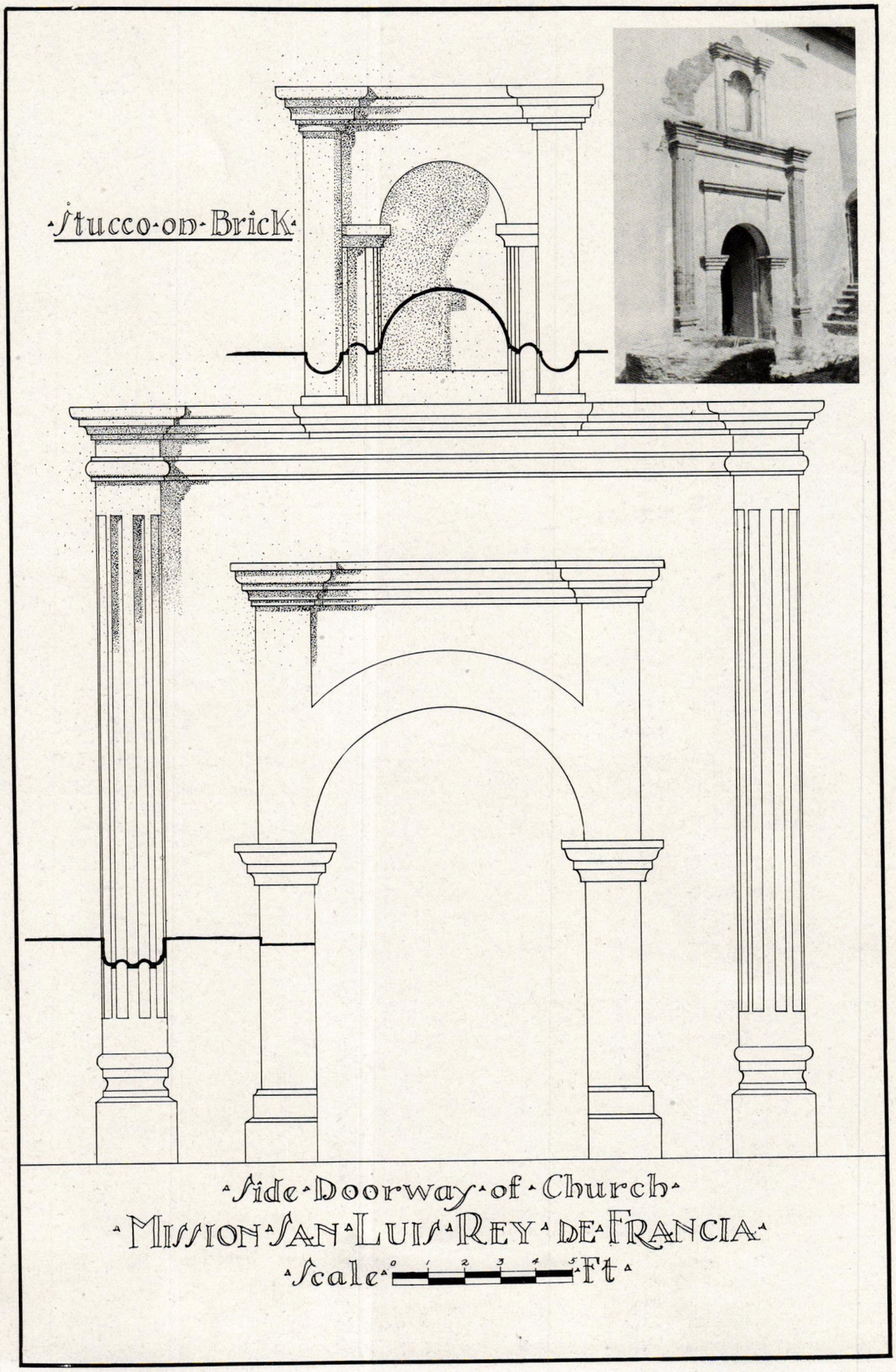
FIRST FLOOR PLAN
RESIDENCE FOR MR. S. S. HUTCHINSON, CHICAGO
TALLMADGE AND WATSON, ARCHITECTS :: ::



SECOND FLOOR PLAN



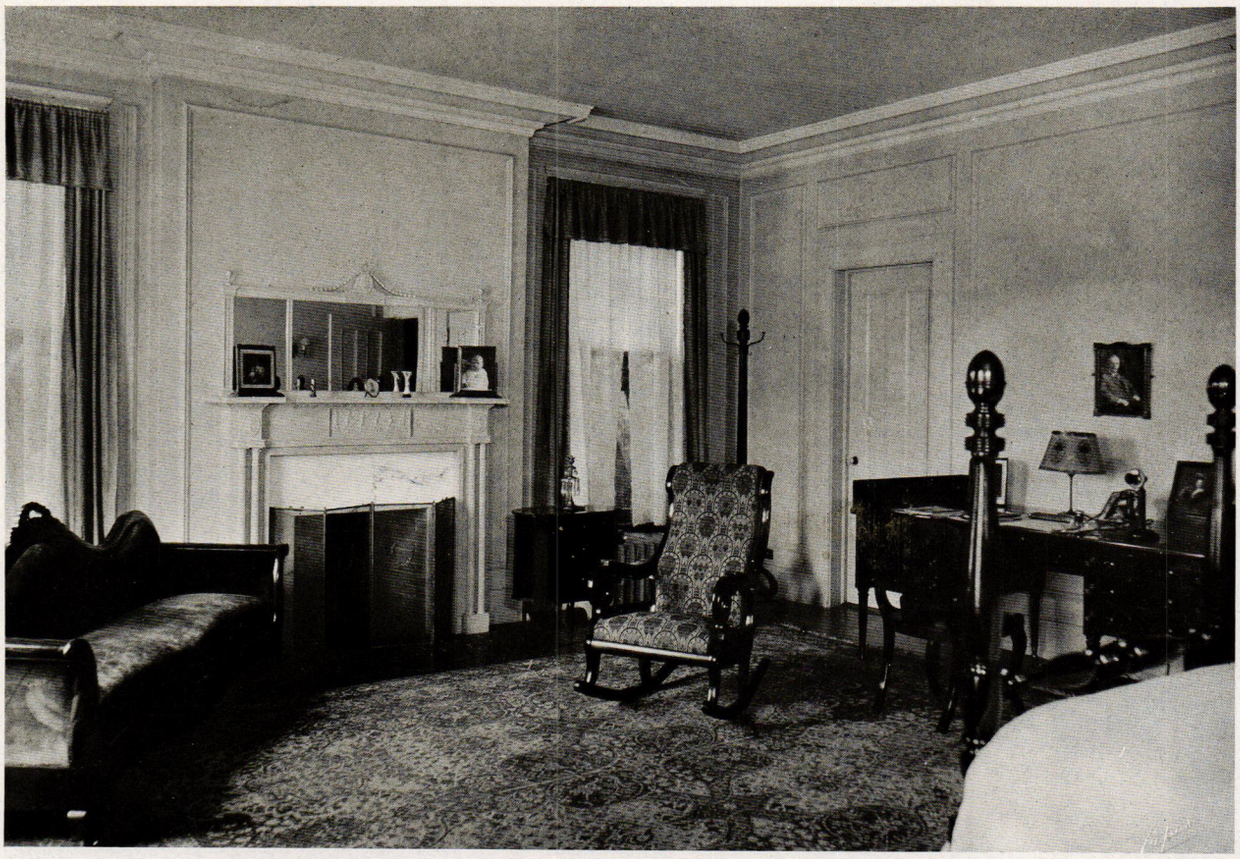
DINING ROOM
RESIDENCE FOR MR. S. S. HUTCHINSON, CHICAGO
TALLMADGE AND WATSON, ARCHITECTS :: ::



DETAIL OF SIDE DOORWAY OF SAN LUIS REY MISSION
REXFORD NEWCOMB, DEL.

ALTERATIONS TO RESIDENCE FOR MR. S. J. LLEWELLYN, EVANSTON, ILLINOIS
TALLMADGE AND WATSON, ARCHITECTS

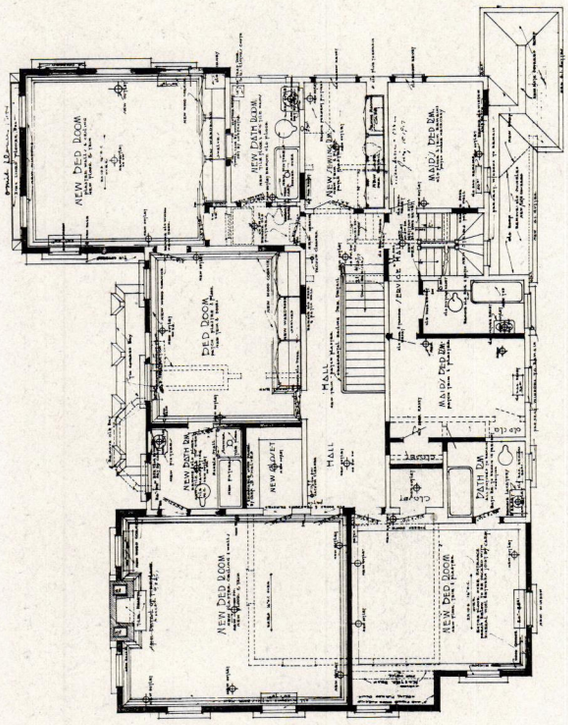
LIVING ROOM
RESIDENCE FOR MR. S. J. LLEWELLYN, EVANSTON, ILLINOIS
TALLMADGE AND WATSON, ARCHITECTS :: :: :: ::

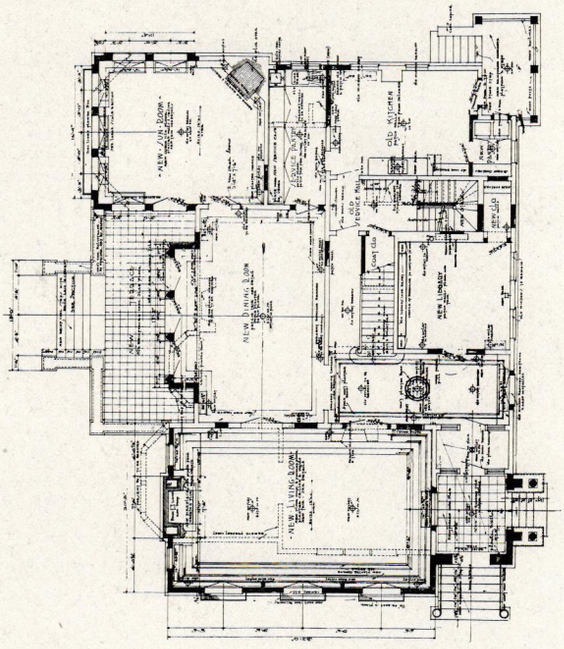


BED ROOM

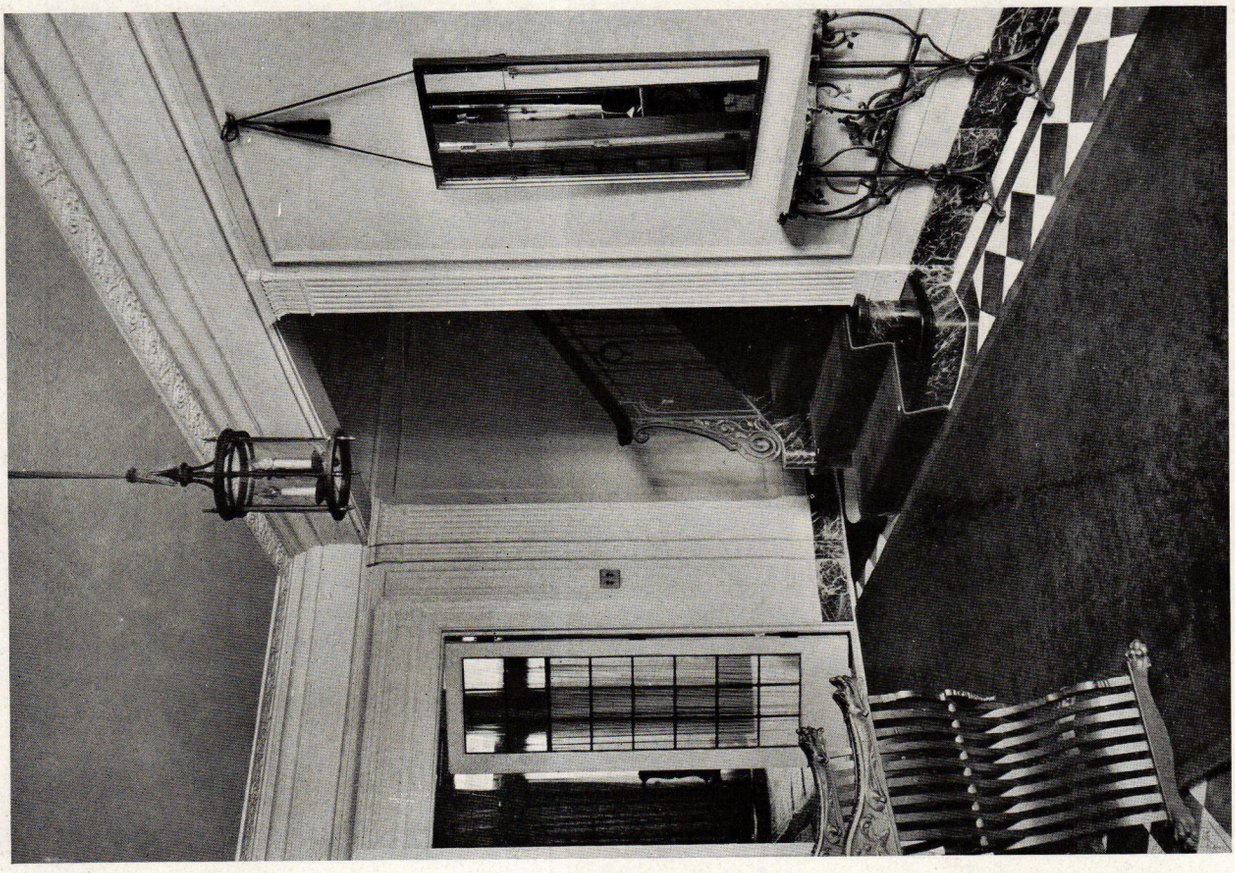
SUN ROOM

RESIDENCE FOR MR. S. J. LLEWELLYN, EVANSTON, ILLINOIS
TALLMADGE AND WATSON, ARCHITECTS :: :: :: ::

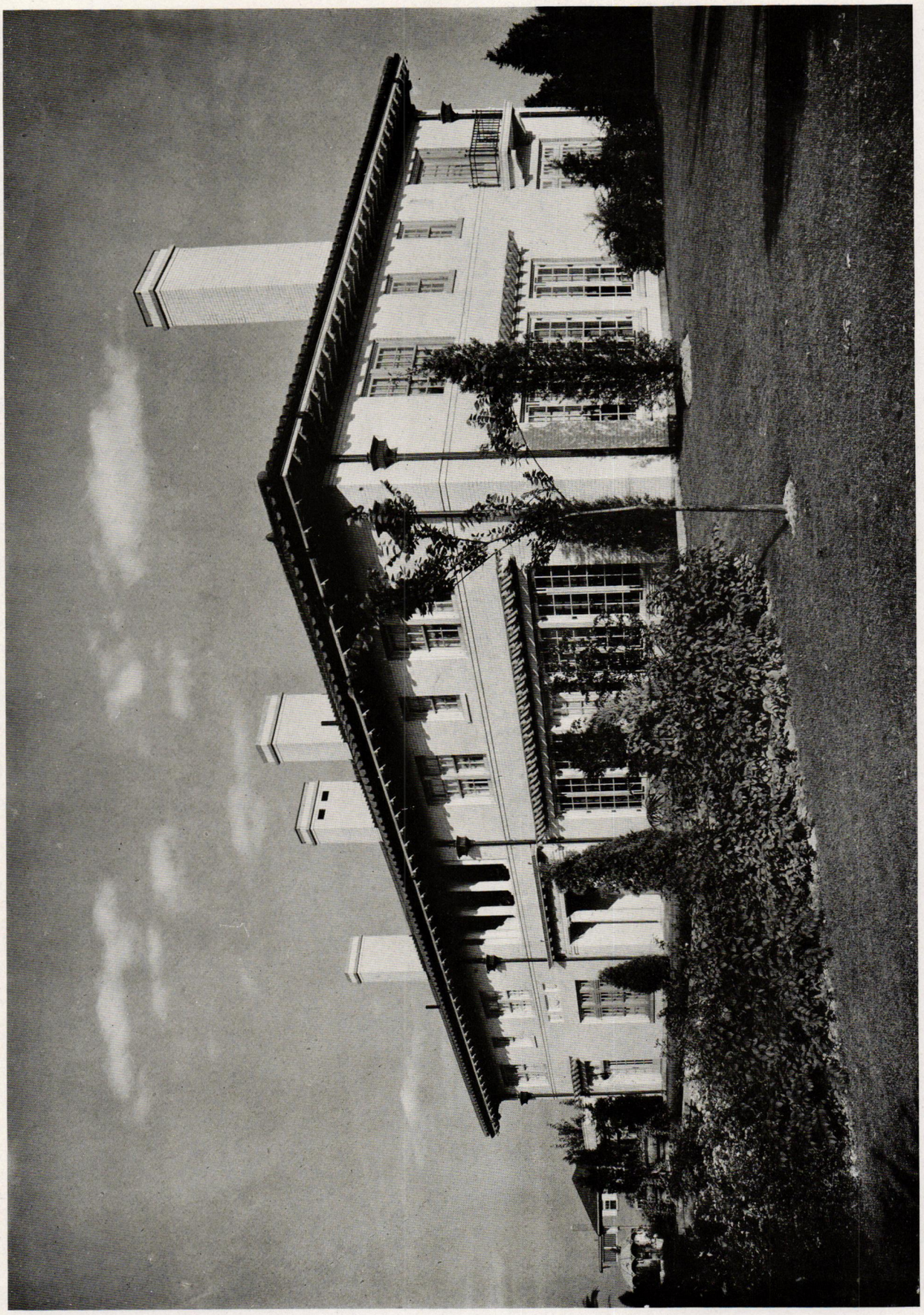




FLOOR PLANS



HALL
RESIDENCE FOR MR. S. J. LLEWELLYN, EVANSTON, ILLINOIS
TALLMADGE AND WATSON, ARCHITECTS

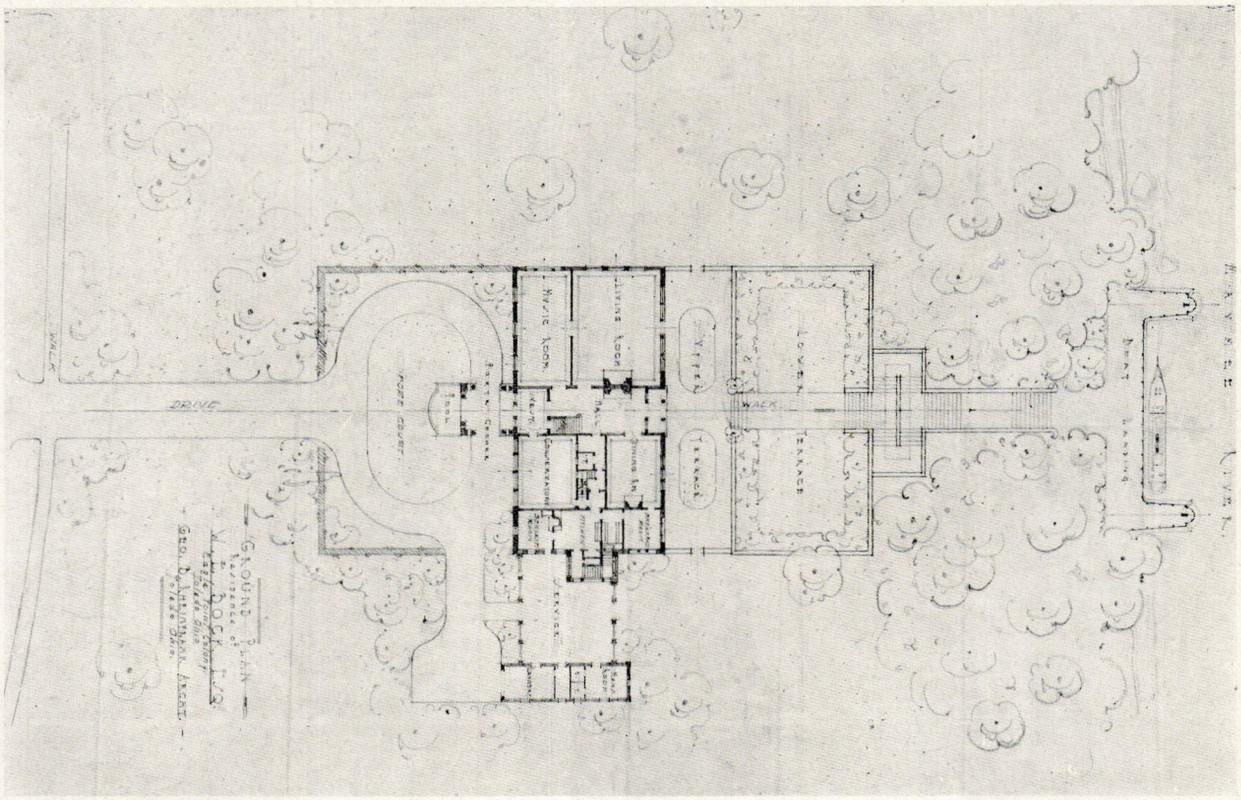


RESIDENCE FOR MR. W. O. BOCK, EAGLE POINT COLONY, TOLEDO, OHIO
GEORGE B. RHEINFRANK, ARCHITECT :: :: :: :: :: :: ::

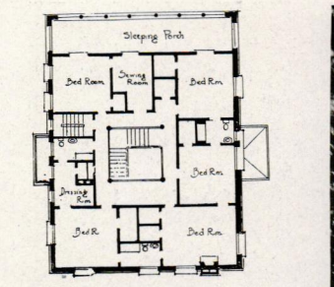
DETAIL OF GARDEN ENTRANCE
RESIDENCE FOR MR. W. O. BOCK, EAGLE POINT COLONY, TOLEDO, OHIO
GEORGE B. RHEINFRANK, ARCHITECT

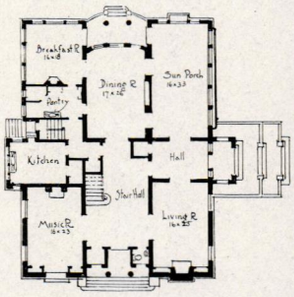
TERRACE ON RIVER FRONT
RESIDENCE FOR MR. W. O. BOCK, EAGLE POINT COLONY, TOLEDO, OHIO
GEORGE B. RHEINFRANK, ARCHITECT :: :: :: :: :: ::

DETAIL OF ENTRANCE FRONT



PLAN
RESIDENCE FOR MR. W. O. BOCK, EAGLE POINT COLONY, TOLEDO, OHIO
GEORGE B. RHEINFRONK, ARCHITECT :: :: :: :: :: :: ::





RESIDENCE FOR MR. GONZALO ABAUNZA, NEW ORLEANS, LOUISIANA
FRANCIS J. MACDONNELL, ARCHITECT

LIVING ROOM

DINING ROOM
RESIDENCE FOR MR. GONZALO ABAUNZA, NEW ORLEANS, LOUISIANA
FRANCIS J. MACDONNELL, ARCHITECT :: :: :: :: :: ::

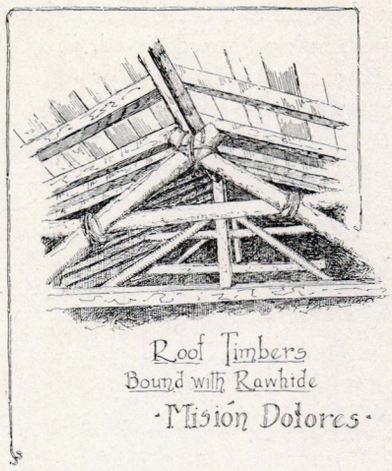


Fig. 13. Roof Timbers bound with rawhide, Mission Dolores

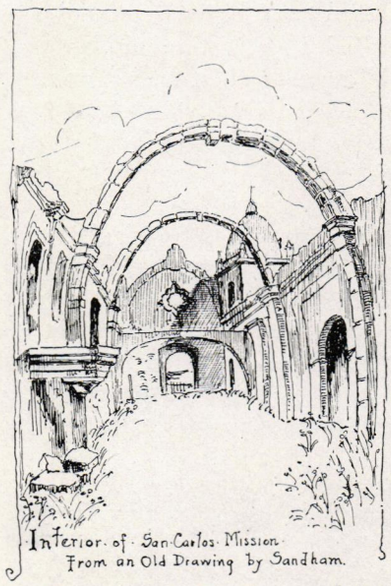


Fig. 14. Interior of San Carlos Mission

longer, there is no doubt but that every establishment would have had a church in brick or stone. The most prosperous and progressive missions did reach that stage and it was the ambition of every *padre* to have a lasting and monumental building to his credit. It is even known that Father Peyri proposed to supersede the present structure at San Luis Rey with a finer and more elaborate edifice.

Stone of various sorts was used, depending of course upon the available supply. Foundations in all of the later buildings, especially the churches and priests' houses, were of stone. They were either of boulders or of quarried stone. The notable stone churches were those of Santa Barbara, San Buenaventura, San Juan Capistrano, San Carlos (Carmel) and parts of San Gabriel. All of these buildings are standing today with the exception of San Juan Capistrano, perhaps the most glorious attempt at church building in Alta California, which was ruined by the earthquake of 1812, a calamity which damaged most of the mission structures in California.

Fig. 15. Cemetery, San Luis Rey, showing Boveda of Mortuary Chapel

In the case of the church at Capistrano, the entire building, walls and roof alike, was of stone. The interior was of cut stone of a soft, mouse-colored sandstone, while the walls and domes (*bovedas*) were of a straw-colored sandstone of a better quality. The church, begun in 1797, was nine years in the building and was constructed under the direction of a mason and stone carver, imported for the purpose from Culiacan, Mexico. (Fig. 17.) The introduction of stone completes the evolution in the use of structural materials in Alta California. Had the era lasted longer, it is safe to say that we would have had a vastly finer architecture by virtue of the fact that the more durable and susceptible materials would have found a much wider use.

The structural systems used in the missions may be said to have been of three kinds, namely: the post and lintel, the arch and pier and the truss, thus combining elements of each of the world's great constructional systems. To be sure, the trusses were not well constructed, but never-theless there are to be found in the old buildings some elementary trusses. The arches of the corridors were usually made of burned brick with the piers of the same material. In some cases, where there were no arches to be used, the piers were of *adobe*, as at Pala Chapel. An interesting combination of brick and stone was used at Capistrano where the voussoirs of the arches are of burned brick while the skewbacks and keystones are of sandstone. Of course this mixture of materials was hidden by a coating of stuc-

Fig. 16. Fachada of Church, San Buenaventura

co, the whole presenting a continuous surface of plaster when finished. (Fig. 10.)

An ingenious use of the arch is to be found at Capistrano, two examples of the same usage being found there, one at the northeast corner of the *patio* and one in what is now the sacristy of the church. The primitive builder has made the one arch do the work of two, and to all intents and purposes it does its work well. The scheme was to place an arch at an angle of forty-five degrees at the corner of the cloister, where the ordinary usage is to place an arch over the cloister each way. There is no accepted term for this construction unless it could be called an auxiliary arch, in the sense that it reinforces the others. Its chief work, however, is that of steadying the long row of arches that form the arcade (*arcada*). (Fig. 11.) Another arch having for its purpose the same work originally spanned the cloister about half way along the eastern side of the *patio,* this one, however, being at right angles to the arches of the arcade.

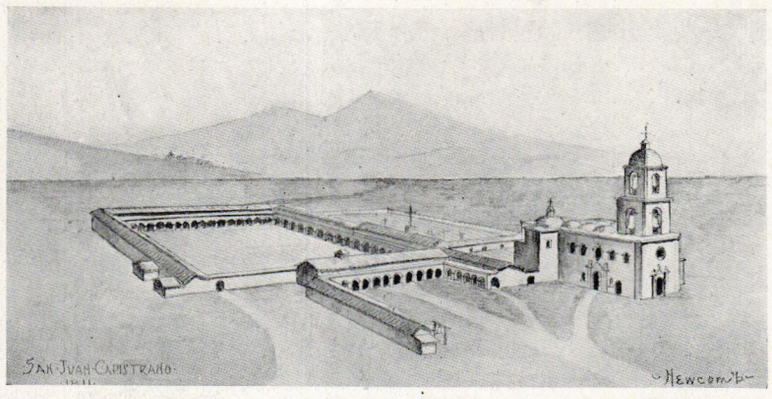


Fig. 17. Restoration of San Juan Capistrano, as the group appeared before earthquake of 1812

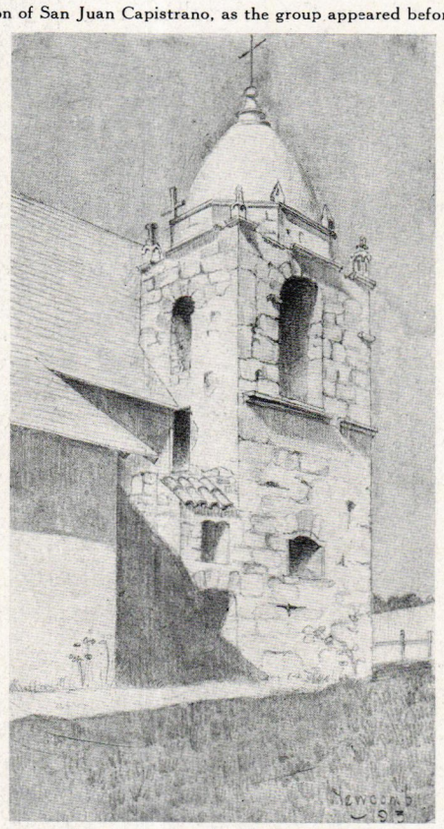


Fig. 18. Tower with Boveda, San Carlos

Truthfully speaking there were no real trusses, in the modern sense of the word, to be found in the missions. Near attempts are found here and there but the full accomplishment was never attained, due to the ignorance of the *padres* in structural matters and the scarcity of iron for tensional members. The churches were usually spanned with heavy timber beams which not only carried themselves and the ceiling but often also the roofing timbers above. In order to reinforce these beams corbels were universally used under their ends. Thus it would seem that the width of the church was conditioned by the length of the timbers obtainable, and as a consequence, long, narrow churches resulted. Examples of these simple, corbelled beams are to be seen in Serra's Church at San Juan Capistrano, San Luis Rey, San Fernando Rey and many other places. (Fig. 12.)

When trusses were introduced, they were usually ill constructed as was the case at Pala Chapel, where the tensional members having been omitted, it was necessary to introduce a post at the center of the span to prevent failure when the tiles were in place. The tensional members have been supplied in recent years and the post removed, greatly improving the appearance of the church. In the absence of iron, the trusses were held together with rawhide thongs. (Fig. 13.)

There was one example of a stone vaulted church, that of San Gabriel, and one of an arched, wooden roof carried upon stone transverse arches, that of San Carlos Boromeo (Carmel). The roof at San Gabriel was removed and a wooden roof substituted in 1804 after the arches had developed such serious cracks that it was deemed unsafe to allow the vault to remain in place. The church in its present form dates from 1812, in which form it was repaired after the earthquake of that year.

The artist Sandham, who illustrated Helen Hunt Jackson's book entitled, "Glimpses of California and the Missions," shows a sketch illustrating how the roof at San Carlos was originally supported on arches, the walls of the church being thickened at the top to reduce the span and make a neat (?) transition between the walls and the arches. (Fig. 14.) The arches were backed up by three buttresses along each side of the church. The present buttresses along the walls of San Gabriel, served the same purpose originally. This system of roof support is not generally known to have been employed, but it is one that could have evolved into a charming feature had there been time for its development.

There are several examples of masonry domes in Alta California, the chief examples being those on the stone church at San Juan Capistrano, of which there were originally seven, the one above the mortuary chapel at San Luis Rey (Fig. 15), that over the bap-

tistry at San Gabriel, and those on the terraced bell towers at San Luis Rey (Figs. 9, 15), Santa Barbara (Fig. 4), San Buenaventura (Fig. 16), and San Carlos. The Spanish name for this feature is *"boveda,"* and the form varied from the low *boveda* of San Juan Capistrano (Fig. 17) to the elongated, egg-shaped dome found at Carmel (Fig. 18). Plans of the *bovedas* varied from a circle to an octagon, while the materials used were either brick or stone.

Of the structural features, perhaps none give more character to the buildings than the arches and *bovedas,* but in order to get an estimate of the architectural character of the buildings it will be necessary to analyze the various features, remembering, always, that the structure was in most cases the excuse for the forms and that the forms, usually well proportioned, were so in spite of the difficulties imposed by poor materials, lack of skilled labor and rude implements.

Race Riots and Improper Housing

By ROBERT CRAIK McLEAN

A CONTRIBUTING cause, one of the foremost if not the chief, of the recent race riots in Chicago, was the housing conditions among the colored people. Need of proper housing of labor has been demonstrated beyond peradventure during the war, not in this country alone but in every industrial country. That the same problem is a vital factor in the handling of the race problem was emphasized in cruel and insistent fashion in this outburst of race hatred in Chicago. It is certain that the problem of housing will be studied carefully by the commission of white and colored folks, headed by Mr. Edgar A. Bancroft, appointed by Governor Frank O. Lowden to give its attention to this situation.

The war witnessed a great increase in the colored population of Chicago. Laborers have been imported in large numbers to perform the necessary work of this industrial community. This rapid growth in the colored population aggravated in a serious way the housing situation. As in other cities segregation of the races has resulted naturally in Chicago. The colored population has been assigned the poorest housing accommodations in the city, adjoining territory not much better in which live the poorer class of white citizens. For these housing facilities high rentals are charged. The colored people complain that white landlords refuse to make repairs for colored tenants. They declare that the colored sections do not receive such attention by city bureaus for street cleaning and garbage removal as white neighborhoods receive.

Sorely pressed by the greatly increased population, it has been the desire on the part of the better class of Chicago's colored population to seek better homes. This necessarily has taken them out of the segregated districts and into communities inhabited chiefly by a white population. This gradual process of filtration has created numerous points of friction until only the necessary spark was lacking to start the conflagration. It is felt both by white and colored people who have studied the situation that proper housing conditions which shall insure to the colored people respectable sanitary habitations will go far toward eliminating the danger of similar future conflicts between races.

It is interesting to view this situation through the eyes of the colored man, made possible through the study of a book recently published by a Chicago negro, Charles S. Duke. The title of the book is, "The Housing Situation and the Colored People of Chicago." Summarized in a recent City Club Bulletin the following analysis of what Chicago owes her colored citizens and what the latter owe Chicago indicates the clear thinking which Mr. Duke has done along these constructive lines.

Things that Chicago Owes Her Colored Citizens:

1. The privilege of borrowing money easily upon real estate occupied by colored citizens living upon the south side and in the same amounts as can be borrowed upon property located in other parts of the city.

2. Better attention in the matter of repairs and upkeep of premises occupied by colored tenants.

3. The neglecting of neighborhoods occupied principally by colored people brought to an end.

4. The abandonment of all attempts at racial segregation.

5. The commercializing of race prejudice in real estate matters prohibited as far as possible.

6. The recovery from hysteria incident to the advent of the first colored neighbors.

7. Fewer indignation meetings and more constructive planning.

8. Better school houses and more modern equipment in schools of districts where colored people live in large numbers.

9. More playgrounds and recreational centers on the south side.

10. A beautiful branch library located in the center of the colored district.

Things that Colored Citizens Owe Chicago:

1. Better care of premises occupied by them either as tenants or landlords.

2. The formation of improvement clubs for the beautification of the neighborhoods in which they may live.

3. The practice of thirft and economy in the spending of the income.

4. A keeping of the expenditures within the income.

5. The buying of beautiful sanitary homes.

6. The spending of less money for amusements and expensive clothing.

7. The checkmating of the real estate broker who makes it his business to capitalize race prejudice in his dealings.

8. The reduction of the "lodger evil."

9. The taking on of real estate obligations beyond their means brought to an end.

10. A continual making of demands for all of the civic benefits that a beautiful and progressive city like Chicago can confer upon her citizens.

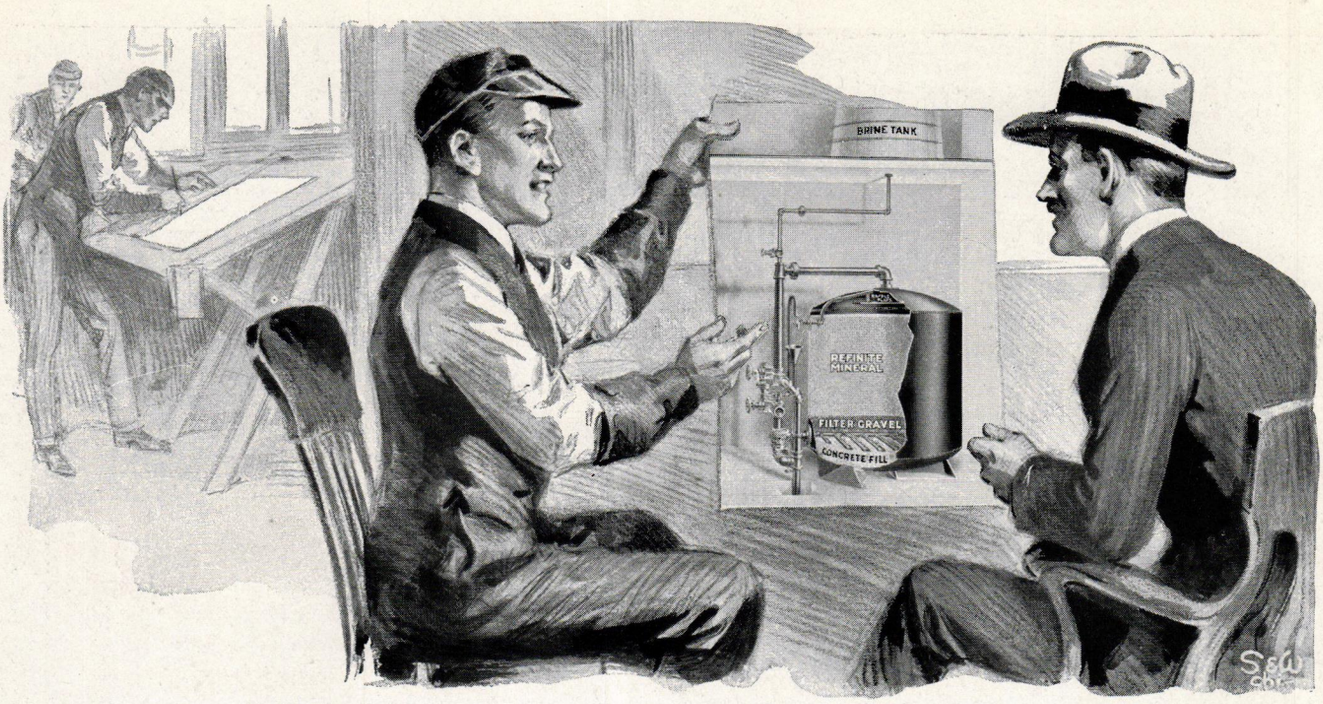
This report will be of exceptional interest to the architectural profession, upon whose shoulders the burden of housing reform will fall. It long has realized the need of proper housing conditions; the public must soon begin to have a similar realization of its importance. The war has developed a communal spirit bent upon securing better conditions of living for the wage earners everywhere. It is reflected in the more serious consideration given to the housing situation, not alone in industrial, but in farming communities, as Mr. George W. Maher's efforts in the latter field indicate. This is a valuable spirit and the Chicago Housing Association in common with other similar organizations in other cities is doing much to further it. Though here and there taken advantage of by speculators and selfish interests, the "Own Your Own Home" idea has gone beyond the personal wish of the homeless for a settled habitation and has enlisted the sympathies and practical activities of those who love their neighbors as themselves. The Chicago housing plan is simple and practical. The personnel of the Association is gathered from the ranks of those citizens who have assisted in making the city notable among the progressive communities of the world. Its board of directors is composed of those who have seen in their personal prosperity the debt they owe to the community in which they have prospered. We notice as the secretary of the association the name of one, who, with Mr. Burnham, the landscape architect, Hawkes, and one other, some twenty-five years ago tramped the distance from Chicago to Highland Park along the lake shore and laid out the Sheridan drive for the future benefit of the people. From men of this class has this association been organized, and this communal spirit and not the collected money for the enterprise, is the more valuable feature in its composition. Its building committee of eight members includes two architects of note in the profession and of broad humanitarian principles. As its work is both industrial and social in its purpose, the complementary social service committee is composed of a selection from among the most active women social workers of the city.

The Mission of the association is to "improve the housing conditions among the industrial workers of the city of Chicago, and to encourage such people to acquire and own their own homes." The first concrete project of the association will be worked out on a tract of land in an industrial neighborhood, the houses built and sold at cost upon easy terms. The lives of buyers will be insured and the association will act as a general guardian for the interests of those who unavoidably default. The funds for financing the enterprise are provided by public-spirited citizens and other tracts will be acquired and built upon as the success of the first venture is assured. The project is in no sense commercial. Attractiveness in design and surroundings, plans which provide for sunshine in each room; a community house for social gatherings, these are some of the essential features of this practical home-building enterprise.

In the absence of a broad Government policy of housing such enterprises as this will do much to relieve city congestion and serve to allay the unrest that is sapping the country's economic vitality. It further will have its bearing on the race problem. For beyond political organization and a world commerce lies the contentment and domestic progress of the individual inhabitant. It is a marked feature of such a movement that architects are leaders and enthusiastic co-workers in their organization, and their broad knowledge and unselfish action makes their success not only possible, but gives to the country a service that will show best in future generations.

Walter W. Judell and Harry W. Bogner have formed a partnership for the practice of architecture under the firm name of Judell & Bogner, succeeding Schuchardt & Judell, 508 First National Bank Building, Milwaukee, Wisconsin. Mr. Schuchardt has retired from practice.

Charles W. Attwood and Ernest H. Trysell, architects and engineers have opened offices for the practice of the profession at 603 Temple Building, Detroit, Michigan. The partnership will be conducted under the firm name of Attwood & Trysell. The firm desires manufacturers' catalogues and literature.



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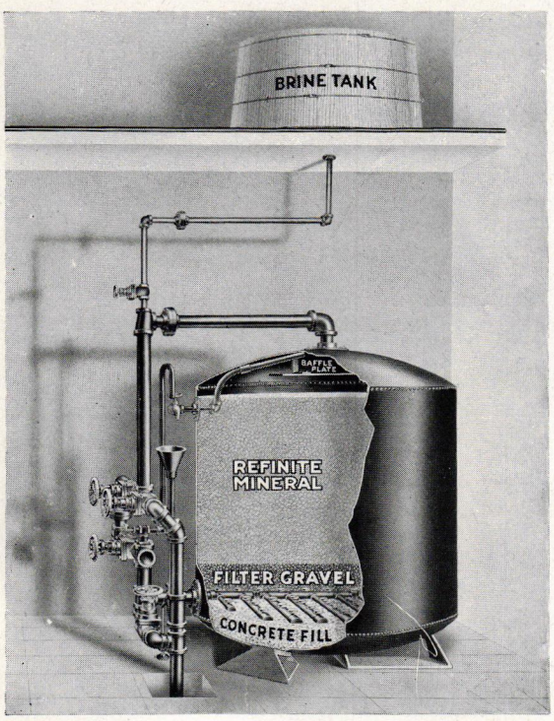

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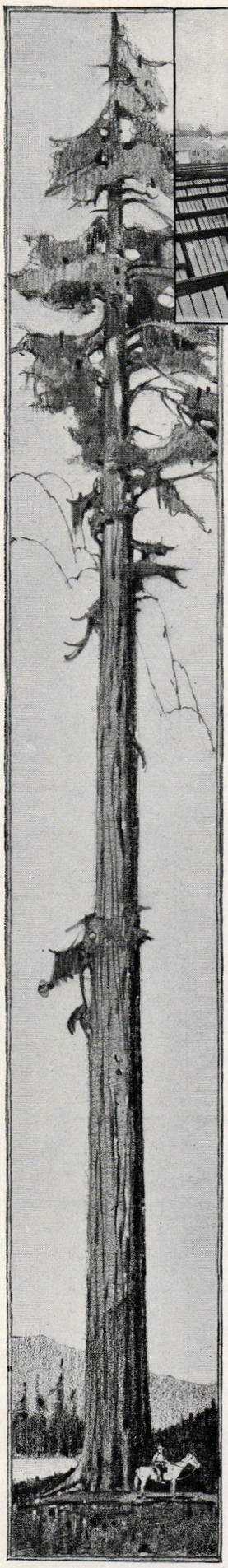
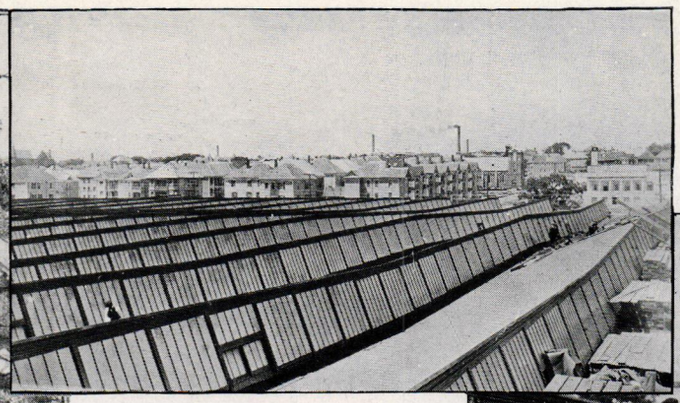
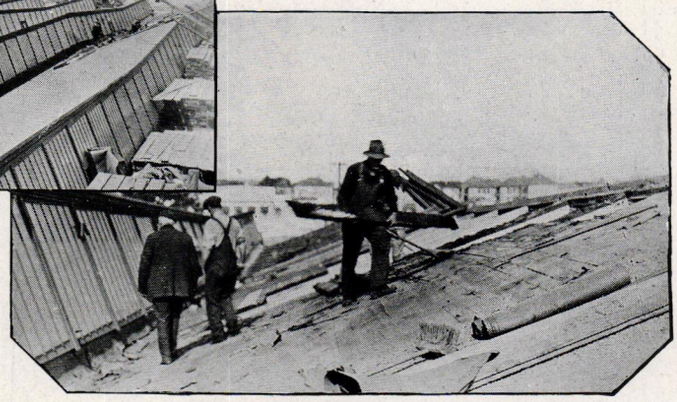




Saw-tooth roof Whitman Weaving Mill, New Bedford. Rotted boards replaced with long-lived Redwood

Roof boards of Redwood prevent condensation of moisture, as well as resisting decay-producing fungi



Where proper insulation and resistance to decay count big

At the Whitman Weaving Mill, New Bedford, shown above, the roof boards, which had rotted badly in the moist mill atmosphere, have been recently replaced with California Redwood.

H. J. Hoxie, Engineer and Special Inspector of the Associated Mutual Fire Insurance Companies, Boston, writes regarding this work:

"I am well aware of the excellent rot-resisting qualities of California Redwood, also of its high insulating power. I believe there is an excellent field for Redwood for roofs, especially in paper mills, weave mills and other finishing mills. . . . The heat insulating power of the light Redwood is fully as great in value in the roofs of buildings containing much moisture, as its fungus-resisting power."

Redwood was selected for the roof boards of the Consolidated Water Power and Paper Company, Stevens Point, Wisconsin, (L. A. De Guere, Arch., Grand Rapids, Wis.) because of its insulating properties, which prevent condensation of moisture and consequent dripping from the roof—no matter what the difference between the outside and inside temperatures.

The peculiar and uniform cellular structure of Redwood accounts for its insulating qualities.

A *natural* preservative, which has protected the venerable Redwood trees through the centuries, prevents the formation or growth of decay-producing fungi in Redwood lumber. Hence its great value to works exposed to moisture, earth or chemicals.

These qualities of Redwood fit it admirably for many exacting engineering, industrial and construction purposes.

Investigate Redwood. Write for free booklets: "Redwood for the Engineer," "Redwood Roofs," "Redwood Homes," "Redwood Block Flooring," "Redwood Lattice Trusses" and others describing the many uses of Redwood.

Your lumber dealer should carry Redwood. If not, write us and your requirements will be supplied.

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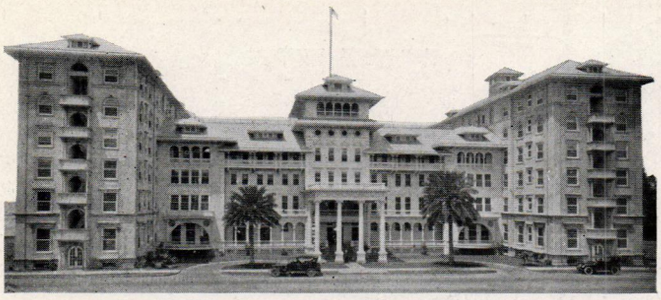

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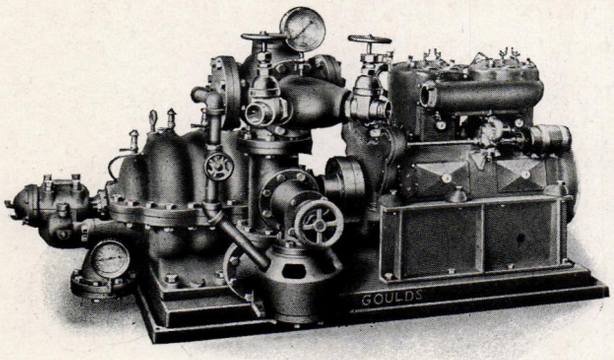

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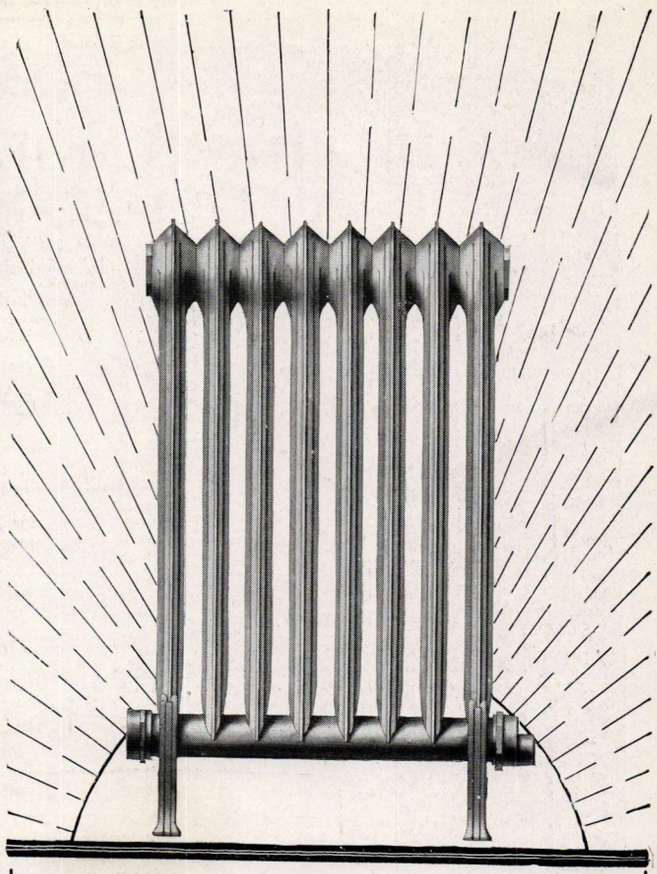

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