Domestic Architecture in Spain, by Ralph Adams Cram, F. A. I. A.

Evolution of Farm Life in America, by H. E. Reeves & Shoring and Removing Columns & Designing and Furnishing the Entrance Hall


Volume CXXV

April 23, 1924

Number 2444
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THE AMERICAN ARCHITECT
THE ARCHITECTURAL REVIEW

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OWNED AND PUBLISHED BY
THE ARCHITECTURAL AND BUILDING PRESS, INC.
PUBLICATION OFFICES: STAMFORD, CONN.

Editorial and Advertising Offices: 243 West Thirty-ninth Street, New York
E. J. ROSENCRANS, President and Treasurer FREDERICK S. SLY, Vice-President

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Western Office: First National Bank Building, Chicago, PAGE A. ROBINSON, Manager

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DOMESTIC ARCHITECTURE in SPAIN

BY RALPH ADAMS CRAM, F.A.I.A., Lit. D., LL.D.

THE inclination to hold all essential architecture to consist in the major works of Church and State, and more or less to disregard the testimony of housebuilding outside the category of castle and palace, must be firmly resisted in Spain. Here this more modest, but peculiarly personal type of work takes a high place and casts almost as much light on the genius of the Spanish people as do the great monuments of civic and ecclesiastical achievement. Half the charm and the instruction of Spanish cities lies in the streets and squares, and towns like Cadiz, Ecaja, Carmona reveal even more through their dwellings than through their churches, palaces and municipal buildings.

Of course most of this is very late, XVIth century at the earliest, but the real principles of Spanish artistry persisted here after they had been suppressed by Philip II and Herrera for half a century, and the voluptuousness that succeeded with Churriguerra never percolated further than the more princely type of palaces. The native asceticism and reserve of the Spanish coupled with their austere good taste prevailed in private houses of town and country down to the very end of the last century, when here as elsewhere architects began to take the place of master-builders and craftsmen and to enforce their own artificial modes as the right sort of thing to do. It is a curious fact that outside of England and the United States, modern housebuilding has been excurciatingly bad even when comparatively high standards have been attained in most monumental work. In France, for example, while really fine things were being done in civic and official architecture, domestic work, both in city and country, was just as bad and silly and pretentious as possible; almost as degraded and discouraging as similar efforts at churchbuilding. It is this sort of thing that has become prevalent in Spain during the last twenty-five years, and while little of it succeeds in matching the work of Catalonia, and particularly Barcelona, in sheer depravity, it is all pretty bad even though in a sense pathetic because of the evident effort on the part of the architects to recover something supposedly Spanish and make it live again—a task they have wholly failed to accomplish. Such beautiful old cities as Seville have had great boulevards slashed through them,
and the new façades that appear are simply lamentable; the poorest type of French and Teutonic “Art Nouveau;” though as I say, pitifully striving with tiles and metalwork and “yeseria,” to accomplish a suggestion of Spanish quality.

It is architects alone who have redeemed architecture in spite of the schools and the public and civilization generally, but I sometimes wonder if they have not almost as much to answer for on the other side by reason of the quite awful things they produced and established during their formative period.

Of course practically all of the exquisite art of the Moors has vanished, ruthlessly obliterated by their conquerors. A few fragments remain here and there apart from the Alhambra and the reconstructed Alcazar in Seville. There is the perfect Generalife at Granada, and a few rooms lost in rebuilt edifices. In Toledo one may stumble on the loveliest possible apartments where they are least expected—I found one princely suite in a bakery, and another used as an art club—but generally speaking this wonder of a brilliant civilization has been swept away. It must have been ex-}

**DETAIL OF REFECTORY WINDOW IN CONVENT OF SANTA CLARA, SEVILLE**
*(From “Spanish Interiors and Furniture.” By permission of William Helburn, Inc.)*

**ENTRANCE HALL, CASA DEL GRECO, TOLEDO**
*(From “Spanish Interiors and Furniture.” By permission of William Helburn, Inc.)*
POTES

(From "Picturesque Spain." By permission of Brentano's)
wrought into the new art something of the old. Spanish domestic architecture is shot through and through with Moorish qualities, the inheritance of the "Mudejar" work of the old craftsmen. Apart from the "purism" of Herrera, there is nothing that does not show this Moorish influence, neither Gothic nor Renaissance nor Modernism. The cool patios and courts with their hanging galleries, the plashing fountains, and little rills running through marble pavements, "artesonado" and of colloquial Renaissance without pedantry or pretense, perfectly adapted to conditions, and vitalized and made beautiful by the Moorish elements above named and their Spanish derivatives. All through the South and East the patio is invariable, with the family living on the ground floor where it is cool, in Summer, and above where it is warm and sunny, in Winter. The rooms are large and lofty, with plain plastered walls or formal hangings of damask or velvet. The floors

A COURTYARD, ARCOS DE LA FRONTERA

(From "Picturesque Spain." By permission of Brentano’s)

honeycomb, and inlaid ceilings, lustrous tiles, carved plaster or "yeseria," wrought metalwork in balconies and "rejas" and lanterns, latticed bay-windows, intricate panelling, corbeled cornices, great spaces of plain plastered wall with a blazing accent of color or carving perfectly placed. These and a hundred other elements have been smitten into Spanish art and remain to this day vital factors in determining its character.

Apparently the imported and modified Gothic of the North had little or no influence, and even the Gothic-Renaissance of Egas made small impress outside of a few of the larger palaces. What we find from the Pyrenees to the Straits is a sort are of tile, tawny brown set with brilliant spots of glazed color, and the same tiles form the bases and sometimes the facings to the deeply embossed windows. Doors and shutters are of the most elaborate panelling, but the point of greatest richness is the ceiling, always in wood and of a hundred different types of design, all of them superb in their originality and pictorial quality. Many are richly painted and probably all were intended to be so treated. Every room is considered, not as an architectural composition in itself, but as a frame or setting for furniture and people. The former is the most varied and beautiful I have seen in any country, structural in
design, admirable in workmanship. The “vargueño” or cabinet, an inheritance from the Moors, is almost enough to furnish a room, and it varies in style from pure Arabic to the subtle Renaissance of Berruguete. Velvet, damask, tapestry, Cordovan leather are used for upholstery, giving wonderful notes of color, and frequently great chests and the fronts of vargueños are covered with blue or scarlet velvet bound and laced with steel or brass or gilded iron.

For those who search for such models there is a plentiful supply. Seville has many of the Mudejar sort, such as the Casa de Pilatos built by the Riberas early in the XVIth century, the pseudo Moorish Royal Palace of the Alcazar and the Palace of the Duke of Alba, the Casa de Dueñas. The palaces of Madrid are more of the imported styles which became popular in the XVIIIth century, while Aranjuez contains in the Casa de Labrador some of the most exquisite pure French Empire interiors to be found anywhere.

It is the veritably Spanish work that counts, however, and I commend this to curious architects as a notable example of how the thing should be done. It has just the right balance of simplicity and directness on the one hand, and noble richness on the other. It has grown without self-consciousness out of wholesome requirements and local conditions. It has just the right blending of tradition and modernism; it strives for no purity of style, hardly for any particular style at all, and above everything it realizes that a house
is made to live in and that it must act as a frame for furnishings and a foil for its human inhabitants.

Spanish architecture, all of it, whether religious or secular, has much to teach us, particularly at this time when the temptation is great to be led away by unnecessary wealth into too much architecture for the case in hand; where a certain pedantry and scholastic purism lead on to dead archaeology and when the human impulse to "show off" is being stimulated by so many new and powerful forces. Greece and Rome have taught us much, the Middle Ages could teach us more if we were disposed to listen. France has taught us most of all—some of it good—but I rather fancy that Spain, sympathetically known and reasonably accepted, might act as a very potent corrective of the excesses into which our other mentors have sometimes led us, and to our own undoing. In any case, one thing is sure: until the architect has seen Spain he knows only the half of architecture.

Following is a list of some books on Spain that architects will find useful:

- Romanesque Sculpture of the Pilgrimage Roads
  Arthur Kingsley Porter

- Gothic Architecture in Spain
  George Edmund Street

- Picturesque Spain
  Kurt Hildescher

- Spanish Architecture of the XVIth Century
  Arthur Byne

- Spanish Interiors and Furniture
  Arthur Byne

- Decorated Wooden Ceilings in Spain
  Arthur Byne

- The Renaissance Architecture of Central and Northern Spain
  Austin Whittlesey

BIELSA, IN THE PYRENEES

(From "Picturesque Spain." By permission of Brennino's)
Architecture of Southern Spain
Austin Whittlesey

The Minor Ecclesiastical and Domestic Architecture of Southern Spain
Austin Whittlesey

Spanish Farmhouses, etc.
Winsor Soule

Materiales y Documentos de Arte Español
Mira Leroy

Spain
A. F. Calvert

Southern Spain
A. F. Calvert

The Spanish Series (12 volumes)
A. F. Calvert

The Soul of Spain
Havelock Ellis

Rosinante to the Road Again
John Dos Passos

Idearium Español
Angel Ganivet

The Tragic Sense in Life
Miguel de Unamuno

Note—The foregoing article concludes Professor Cram's series on The Architecture of Spain.
A

BOUT twenty-five years ago there existed amongst the average farmers in this country, a deplorable condition of poverty and lack of education. When I say the "average farmer" I refer particularly to the peasant or "dirt farmer," one who tilled his own soil, cared for his own cattle, with the aid possibly of a farm hand or two.

In order properly to attribute the causes of this situation, we must acquaint ourselves with the farmer's home life and education, his social environments and the method and means employed in the performance of his daily tasks.

Approaching a farm along a picturesque country road one arrives at the farmhouse, set back a bit amongst an orchard of neglected trees. Across the road looms a red barn, so arranged that the hay is unloaded at the roadside, the rear of the barn used as a cow shelter and stable. Some minor buildings, such as the piggery, hennery, wagon shed and wood shed complete the farm group and are all scattered about in haphazard fashion.

At first glance, this rural scene possesses a certain degree of charm and quaintness, for although it was typical of the farmer's homestead and its dependencies, each farm painted its own fresh picture to the visitor.

But what of the struggle from within, the attempt to make ends meet, the lack of proper education, of social life and of adequate facilities to compete with his neighbor's products? True, most of the farm was under cultivation and looked promising; but due to the poor crop of a previous season the farmer was compelled to mortgage this year's crop in order to purchase implements, seed, possibly some cattle and the necessary cash required for the farm hands' wages. Whatever interests he had were centered entirely around his farm with the exception of a necessary trip to
the distant village or a chance chat with his neighbor. Winter finds him in the seclusion of his cottage, where, with no news of the outer world, he and his family barely exist until early Spring. His social life consists chiefly of an occasional visit to the meeting house and his church on Sunday, provided either is within reach. Badly kept highways in the countryside, inadequate schools, lack of proper sanitary and other facilities for his home, the constant exodus of dissatisfied farm labor and the worry of providing sufficiently for the needs of his family, bring us face to face with the struggle of the average peasant farmer of twenty-five years ago.

The blame must not rest entirely upon his shoulders. When one considers that any business must be profitable in order to continue in existence, we can readily appreciate the plight of the man who constantly fought against odds and was finally driven to a state where he was satisfied merely to eke out a living from his farm, with no hope of any profit to assist him in the improvement of his buildings, equipment and the proper education of his family.

The farm hand, owing to incommensurate wages and the scantiest of lodgings, was continually on the move, naturally in search of a better livelihood, and always hoping that his wanderings might eventually lead to a spot where employment would be steady, along with proportionate wages and some semblance of comfortable home life. There was no inducement whatsoever for him to remain in the employ of any one farmer for more than the crop season.
Then came a period of public improvements—schools, libraries, macadam roads, street lighting, telephones, electric current for the home, and the like. All these utilities tended to make the farm more suburban rather than rural. It not only brought the farmer in closer contact with his town, but it brought him in closer contact with the outer world in general. In a sense, he was really compelled to improve his farm in order to compete with the large commercial farmer who had realized the advantages of modern equipment and attractive surroundings for his family and help, with the result that his crops were more in demand.

The peasant farmer then discovered that although the initial cost of more modern equipment was a financial burden at the start, he was rewarded soon for this effort. His soil was cultivated more rapidly, crops received added attention in less time and the quick hauls over good roads brought him in contact with the merchants more frequently. He was unwittingly educating himself and his help; needless to say his children availed themselves of the facilities conducive to a proper education.

The farmer was now in a position to improve his dwelling and farm buildings, to make the help’s quarters more attractive and incidentally to offer them a living wage. Distant neighbors of former days now became his friends with the result that a social and educational element developed in the community, which exists to this day.

We now come to the farmer of today. His home is modern, comfortable and generally attractive, his buildings no more destroy the landscape, but are tucked away in a more secluded, desirable location and meet every requirement from a practical and sanitary standpoint. He is familiar with market quotations of produce and can transact his business in a more efficient and profitable manner. Safe in the thought that his crops and cattle are being cared for by help who are contented with their surroundings and who find that modern equipment makes their daily task much lighter and less irksome, he is now able to devote more of his time to the care and uplift of his family.

With the farmer who ships his milk to a metropolis or disposes of it locally, he is compelled by State authorities to have sanitary, well lighted and ventilated quarters for his cattle and the herdsmen must likewise keep themselves clean when attending the cattle or handling milk. These men, no doubt, have profited by strict regulations for surely they must realize it has been a step in the betterment of their life and happiness.

About a year ago, the writer was commissioned to make improvements to a farm situated fifty miles from New York City. Owing to the neglected condition of the premises, my client was able to make the purchase for a very nominal sum, but was advised beforehand by some discouraged farmers in the vicinity to the effect that the farm would not pay owing to the poor quality of soil and very doubtful crops. In the face of this outlook, however, he proceeded with the improvements to his buildings and the installation of the equipment essential to his particular product, with the result that at the end of the first year he has been able materially to reduce his initial expenditure and find a ready market for his crop. The supposedly poor qualities of soil merely required more attention and proper fertilization to produce satisfactory results.
In many of the suburbs adjacent to the large cities of this country we will find estates with either small or large farm groups, which are not only modern in every respect but architecturally very attractive. Whether simple or elaborate in design, they both tend to beautify the grounds and become an added feature to a composite picture.

Accompanying this article are a few photographs which give the reader some idea of the progress of farm buildings during the period covered by this story, as well as some foreign photographs. The farms of Europe possess a certain indefinable charm and picturesqueness, leaving one with a strong impression that the toilers must certainly be contented amidst such an atmosphere. Ruskin tells us "Well Building had three conditions: Commodity, Firmness and Delight." With attractive surroundings we all can work to better advantage and realize more fully the fruits of our ambition.
EDITORIAL COMMENT

WITH EACH SUCCEEDING year, the work of the American Academy in Rome becomes exceedingly more useful and fulfills more thoroughly the purposes of its organization. The practical direction of the work carried forward, and the high class of instruction that is now maintained, are the best appeals that can be put forward for support and maintenance of the Academy.

It is necessary that a more general understanding of the aims and advantages of the Academy be spread in the United States, particularly among the student element in architecture and also those who are inclined toward the arts and letters. When better knowledge is had of the rare opportunities afforded, there will be an increased interest in the Academy that will be carried into later professional life, and thus the future of this splendid institution permanently assured.

During 1923, and for the first time in the history of the Academy, a Summer session for advanced students was established and most successfully conducted. Provision was made for the maintenance of a Fellowship in landscape architecture, to be awarded once in three years. This gives permanency to a most desirable course, that in the past has precariously depended on popular subscription.

It is extremely gratifying to learn that the current debt has been eliminated and that the endowment fund substantially increased. In addition to the many contributing factors of support from this country, we are informed that a helpful sign is the substantial encouragement from the Mussolini government in the field of arts and letters in Italy. The preservation of historic monuments is proceeding more vigorously than ever before. All these activities on the part of the Italian government have a stimulating effect on conditions in Rome as affecting student life, and the highest contributory educational influence.

In short, the American Academy in Rome, after passing through many vicissitudes, would seem to be now arrived to a point where its valuable work may be carried forward without the hampering restrictions of the past. And in commenting on these satisfactory conditions, it is proper to make acknowledgment of the great value of the services of that group of earnest and fine spirited men who have seen to it that the Academy did not fail, and to the faculty that at one time and another has shown a most splendidly expressed, self-sacrificing spirit.

F. S. VOYSEY, Master of the Art Workers' Guild in London, in an article on some fundamental relations to art in the last issue of the Journal of the R. I. B. A., asks, "Why should carvers and sculptors be content to ignore color?" Sculptors, modellers and carvers in this country do not ignore color, if we speak of color in its truest sense. To the eye properly trained to color, form has the widest suggestiveness. The true sculptor does not need to resort to applied color to produce his effects. He suggests it. For many years there was in the Metropolitan Museum of Art a bust of a Nubian, probably the blackest of black men. It was done in white marble, but it suggested the Nubian color.

The early Greek sculptors did not always resort to applied color, and our own St. Gaudens and French secure in the block of white marble all the latent possibilities of color without resorting to brush and pigment. The architect in his choice of mouldings and their resultant shadows gets strong suggestion of the color he wants, and the architectural draftsman knows his cast shadowings and feels their color impulse.

"It may be said with truth," writes Mr. Voysey, "that sculpture is not complete until it is colored." We venture to assert that sculptors in this country will not concur in this statement.

In painting and in architecture we have, as it were, our color labeled so that we may know it. In sculpture color is to be found in its subtlest and most aesthetic form, and it is unfortunate that only the trained eye may detect it. But we believe it is true that the untrained eye will always feel it if it is properly expressed.

* * *

THE RECENT COURT ruling permitting the erection of towering apartment houses on Fifth Avenue, New York, is already affecting the hitherto exclusive character of that thoroughfare. Vincent Astor's house at Sixty-fifth Street, and the Fish dwelling at Sixty-second Street, for many years prominent landmarks on a street famous for expensive houses, have been sold. On each site apartment houses will be at once erected. Park Avenue, equally well known for its fine houses, has lost its atmosphere of exclusiveness, while Riverside Drive is now given over to apartments.

Soon the country house will replace the great city residences, and the activities of social life in New York, formerly conducted on a scale of magnificence, confined to the less spacious and impressive apartment. Great fortunes have contributed largely to our city architecture. With the passing of the city house we stand to suffer a considerable architectural loss.
THE new house of the North Jersey Country Club, the fifth oldest golf club in the United States, is situated on a hill far back and out of sight of the main road, in the foothills of the Preakness Mountains, about half way between Paterson and Pompton.

The surrounding country is bold and rugged, which characteristic suggested the stern lines of the club house.

The interiors have been carried out to harmonize with the spirit of the location.

The exterior is constructed mainly of local fieldstone taken from the premises and varies in color from a black colored granite to a golden rust with occasional red sand stone and blue flint rock.

Certain portions of the upper stories and walls are built of frame construction with wire lath and rough cement stucco. A dark local hard burned brick is distributed throughout the stone work to obtain horizontal lines. This treatment is repeated about the windows, door jambs, buttress caps, corbels and window sills.

The chimneys are of fieldstone with brick caps, water tables and shafts. At various portions in the gables one inch slate is used for corbels, impost, etc.

The roof is of variegated slate, ranging from ten and one-half to four and a half inch exposure with rounded valleys and irregular lines and ranges in color from golden pheasant to grays, greens, reds and black. The timber is of rough hewn cypress finished the color of natural tree bark.

Metal casements are used throughout. All doors are constructed of cypress or oak.

The exterior is very colorful, due to the stone and slate used, being further accentuated by brilliant orange sash with black frames for doors and windows. The cornice moulds and facias are finished in a rich terra cotta red.

The interiors, as indicated in the illustrations, are of a very severe architectural treatment and depend upon the color of the decoration and furnishings to give them warmth. The entrance lobby and loggia are finished in a rough mat plaster tinted in two hues Pogany blue at the base blended to golden yellow in the ceiling. The floors in these portions of the building are of heather brown tile laid on the diagonal with a black slate base.

The dining room and living room are finished in sand plaster tinted in various shades of blue, red and yellow with an overglaze of warm gray. A structural beam ceiling, ornamented with low toned stencils, constitutes the only architectural feature in these rooms, with the exception of the fireplaces at each end.

The living room fireplace is built entirely of local stone selected for the color and small horizontal shape and laid in natural cement mortar. Brick is also used here for the arch and jambs. The shelf and frieze are of cast stone.

The point of interest at the other end of the long vista through the living room and dining room is found in the dining room mantel which is treated as a vertical motive. This is built of heavy wood timbers decorated in low tone stencil recalling the color on the ceiling beams. Below the timbers of the fireplace is a beaten bronze firebox supported on segmental brick arches.

The main feature of this room is the group of high casement windows at the West end. Another interesting feature is the screen treatment between the dining room and living room. The two carved antique oak screens are on rollers which permit their being moved back against the wall or removed entirely, making living room and dining room in one long hall at least a hundred feet long, for dancing, musicales or moving pictures.

The grill room is simple and serviceable, finished in rough putty colored plaster with dark brown trim. Brilliant hangings frame the casement doors opening out on the terrace, from which is an unobstructed view of the first tee.
NORTH JERSEY COUNTRY CLUB, PATerson, N. J.
C. C. Wendehack, Architect
NORTH JERSEY COUNTRY CLUB, PATERNSON, N. J.

C. C. WENDEHACK, ARCHITECT
NORTH JERSEY COUNTRY CLUB, PATERTON, N. J.

C. C. WENDEHACK, ARCHITECT
NORTH JERSEY COUNTRY CLUB, PATERNON, N. J.
C. C. WENDEHACK, ARCHITECT
NORTH JERSEY COUNTRY CLUB, PATerson, N. J.

C. C. WENDEHACK, ARCHITECT
NORTH JERSEY COUNTRY CLUB, PATERNON, N. J.

C. C. WENDEHACK, ARCHITECT
IN these vernal days, in these changeable, uncertain days, when most of us are in the throes of decision as to the purchase of Summer clothes or more coal, and when the city's streets are filled with the chattering, not of birds, but of compressed air riveters; in these Spring days the young architect's fancy lightly turns to thoughts of medals, and not only the young architect's but the old architect's as well. Between the realization of the fancies of these two there is this vital difference, the young architect's medals are the hastily scrawled and often indecipherable legends on the corner of his drawing, while the older architect receives a real medal which is hung around his neck with much pomp and ceremony, that is, it is if the medal man has delivered it on time, which he generally does not; in point of fact there have been occasions, we understand, in which the blushing recipient has stammeringly acknowledged that just fifty years ago the same medal was refused by Ruskin, but, as might be expected, this obstinate old gentleman gave his reasons and gave them with great force. "The first," says the Journal, "referred to the neglected condition of the Tomb of Cardinal Brancaccio at Naples; the second to the conversion of the church of San Miniato, Florence, into a cemetery; the third for the destructive restoration of the chapel of Santa Maria della Spina, Pisa; and the fourth—the only English instance cited—the recklessness with which the ruins of Furness Abbey had been approached by the railway engineers. In conversation with Sir Gilbert Scott, who had used his best efforts to get the obdurate old man to accept the medal, Ruskin said he considered that the members of the Institute 'were assuredly answerable' for this state of things, 'at least in England,' and that it was no time for them it is offered, but childish to everyone else, there have been occasions when the honor was declined and sometimes it has been spurned. There is a case now in England. The gold medal, a real gold medal in this case, of the Royal Institute of British Architects, has been refused by Professor Lethaby for no particular reasons that appear. It is said that the Professor does not approve of medals, that he is too modest to accept one, that he is out of sympathy with the Institute or with the Government or with something; none of which is probably the real reason. Not knowing the real reason it is difficult to criticize his action, but unless the reason is a very good one indeed and is publicly expressed, the refusal seems an ungracious act, and a reflection not only on the Royal Institute but upon all past recipients. We learn from The Architects' Journal, London, March 12, that just fifty years ago the same medal was refused by Ruskin, but, as might be expected, this obstinate old gentleman gave his reasons and gave them with great force. "The first," says the Journal, "referred to the neglected condition of the Tomb of Cardinal Brancaccio at Naples; the
to play at adjudging medals to each other.”

Now, it may be that following Ruskinian precedent Professor Lethaby does not approve of Ramsay MacDonald or of the war, or of the Daugherty investigation, for all of which the Royal Institute was as much to blame as it was for the hideous betrayals of trust fifty years ago.

We also learn from the same journal that the Royal Institute of British Architects has, at a late meeting, rescinded its resolution to adopt an academic dress in spite of the pathetic appeals of those members who had already purchased their costumes and despite an impassioned plea by a member who reminded the meeting “it” (the academic dress) “is worn by the Tonic Sol-Fa Society and other bodies.” While we do not remember exactly what the academic dress was, we are inclined to regret this hasty action. It may be that the designs chosen were too somber and in a pageant or parade would be eclipsed by the Oriental gorgeousness of the Tonic Sol-Fa Society.

From “The Architectural Forum”

"GOODESTONE," HOUSE AT MIDDLEBURG. VA.
GOODWIN. BULLARD & WOOLSEY. ARCHITECTS

and by the dazzling display of numerous organizations which are rather contemptuously lumped above by The Architects’ Journal as “other bodies,” but surely architects, if they are designers at all should be able easily to outdo their lay competitors. They might hold a competition for it. We also regret this decision because of the depressing effect it may have on those now in control of The American Institute of Architects, who with their well known zeal for things modern have no doubt accepted designs for some brilliant and inexpensive costume which would lend a welcome touch of color to the next convention. The delegates from the different chapters would undoubtedly have costumes appropriate to their LOCALITY and HUMILITY; for the New York Chapter we might suggest flowing white robes and a stuffed dove portraying Innocence, the delegation led by a distinguished figure who may be induced to return to the fold. We welcome suggestions from other chapters.

In all the English papers, but particularly in the Journal of the Royal Institute of British Architects, March 8, there are very full accounts of a paper read at the Manchester University by A. E. Richardson, Professor of Architecture in the University of London, on the Modern Movement in Architecture. This paper is printed in full in the Journal and digests of it are given in other papers, and we have read them all carefully because we were anxious to know just what this movement was, but frankly the more we read the less we knew about it. There are a great many words in it and it seems well enough expressed but we must confess that for intelligibility it ranks with some speeches we have heard in the Senate. We are told that this movement is not Bolshevie; so far so good, but there are many...
nearly always, did express its structure, but that was in the good old days of masonry construction. Then the design and the construction were one; they had to be or the building could not be built. Nowadays with the aid of steel and reinforced concrete anything can be built, and the architecture that encloses the steel frame is only a veneer. The modernists say, and we suppose Professor Richardson would say, this condition is wrong; it is just what we are struggling against, etc., etc. We, too, think it is wrong, but what are you going to do about it? Modern construction has come to stay until something better is discovered, and we must either attempt to produce beautiful buildings, using forms which are in their origin generally the result of structural masonry conditions or we must give up the beauty of architecture and devote ourselves entirely to the utilitarian.

There has been a good deal written and a good many loose statements made, chiefly by laymen, of the possibilities of steel and reinforced concrete, or ferro concrete which sounds a little more mysterious to the uninformed, but what architecturally satisfying structure has been built of these materials frankly expressed? It may be done, anything is possible nowadays, but certainly it never has been, and in our poor opinion the odds are about one million to one against it. And, speaking of plan, even in the old days of masonry it is surprising to find that the plan of the Treasury Building in Washington is almost identical with the plan of the State War and Navy Building which balances it, and yet look at the structures.

We cannot leave the English magazines without mention of Fiske Kimball's article in The Architectural Review, London, for March, entitled Wren: Some of His Sources, in which Professor Kimball shows by the deadly parallel of photographic examples that there is a strong probability that Wren took much of his inspiration from abroad, chiefly from Italy. There is nothing absolutely new in all this, but it is expressed here in a simple and readable and authoritative manner with excellent illustrations. In his foreword Professor Kimball says, "For the sake of those who condemn all criticism of Wren's genius, it should be said here that the following article is in no sense a depreciation of Wren, but seeks to place him as a link in the evolutionary chain rather than as the unique phenomenon which he is so fondly made out to be. Wren's greatness relies on no one attribute, but equally with his originality on his large sense of scale and form." There will be many doubtless who will violently disagree with the article, but the application of a little common-sense will easily show the probability of it. Wren did not take up architecture in his youth; he tried his hand at other things first, and he drifted into it as many others did, as an amateur would. He had visited the Continent, and what is more natural than his adoption of the Baroque style he found the vogue there, and what is more natural than that for his larger and more monumental work he would adapt motives that he found there? All design is adaptation to a great extent; sometimes deliberate, sometimes unconscious. It is not copying; it is the occasional use of motives the idea for which someone else has taken from the work of some previous designer. No architect, except in a story book, has ever with a vacant mind and a clean sheet of paper evolved from his own inner consciousness a perfectly original building.

But we find we are wrong here. We have just read in The Architect's Journal, London, March 5, an article on the life and work of a Central European architect who has headed a new movement similar to that longed for by Professor Richardson. We quote from the Journal as follows:

"Grigori Ptuch (pronounced Hoich) is one of the few architects of the present day whose name will be remembered by posterity. Though he has published only a theoretical work, especially in his lecture before the Mongolian Architects' Club on The Ecstatic Ego in Architecture, commands respect from all who have at heart the welfare of the 'Mother of all the Arts.' 

"Ptuch was born in 1871, in the remote hamlet of Plink on the banks of the Plank, in the Government of Plunk, which is the largest and only division of the Mongolian Empire.

"His ancestry, which is said to extend back as far as Adam, though many intermediate links are missing, is unremarkable. His grandfather was a dumb charcoal-burner, who drank, and his grandmother, who was deaf, was the youngest daughter of a dwarf at the Imperial court. His father, who was both deaf and dumb, was a well-known breeder of marmots in his humble way.

"There can be no doubt that the little Grigori was greatly humored and indulged by his doting parents, for at the early age of seven he distinguished himself by hurling a small but powerful bomb, which wiped out a passing district Samovar and his official bodyguard of three Nubian Droshlyks. For this wanton act he was sentenced to three years in the Cascara Mines of the Sagrada Valley, during which time he spent his evenings in the study of classic architecture from books which his old nurse, Ginka, bought for him out of her scanty earnings as a dancer at the Municipal Ballet. On the eve of his release he kicked to death a warden who disagreed with him over the method of lighting Greek temples, and was sentenced to be hung. Happily for architecture, the rope broke three times, and his sentence was reduced to seven years' study of Byzantine needlework. He was released after ten years, but, thanks to his iron constitution, he escaped with no worse disability than a chronic stiff neck. Since then he has never looked behind.

"Four days after his release he arrived at Fittelborg, the capital city of Mongothria, to take up the position of Architektur-Doktor at the Imperial Formaartik-Teknik, which had been procured for him through the influence of the faithful Ginka. Success came to him quickly, for within the year he won the Imperial competition for 'A Small Lobby to a Sentry Box.' His design was an eminently architectonic essay which thoroughly satisfied that delight in ardent plasticity, which is one of the most pleasing traits of Mongothrian character, and, had it been erected, would have proved conclusively that 'hundreds and thousands' relieved by quicklime painted to imitate concealed blood, are the building materials of the future.

"Since that first memorable success he has designed up..."
wards of three buildings, including a combined Backgam­mon Room and Halma Hall and a Perambulator Garage with potting shed over for the Imperial Palace of Sans Souci; unhappily, none of these has been erected, for various reasons which, to avoid prolixity, we need not discuss.

"Ptuch has no truck with traditional architecture. Un­garnished with the 'accretif triepmassen' (his own term) of thirty centuries of historic ornament, his designs stand forth chaste, cosmic, and compelling as an elephant on an iceberg. He goes direct to Nature for his inspiration.

"In conclusion I will quote from the Emperor's speech upon the occasion of the opening of a new ropewalk at his secret naval base; he said: 'Those who doubt the greatness of Grigori Ptuch are those whose architectonic ego has been stunted by the continued practice of architecture, for it is only the true cognoscenti, the men who have never attempted to paint, draw, write, sing, dance or speak, who are sufficiently receptive to understand the elemental virility, the cosmic universality, and the truth-from-out-the-slough-groping forcefulness of our Grigori Ptuch.'"—FELIX.

We would also like to print entire an article by Karashish, but we will save it for another time when we need five hundred words or so to fill out our review, and will turn to the American magazines.

Architecture, for April, has some good photographs of the Shelton Club Hotel, Arthur Loomis Harmon, architect. The exterior of the Shelton is extremely good, very simple, economically treated and of interesting detail and texture. It masses well even from the rear. Mr. Harmon is to be congratulated. The Architectural Forum for March shows the Union Station at Toronto by Ross and MacDonald and Hugh G. Jones, architects, John M. Lyle, associate architect. With such an array of talent the station should be good, and it is. There is always bound to be a conflict when a large order is contrasted with a plain wall face punched with windows, but the Toronto station will compare favorably with any of the great stations in this country.

Also, in this issue is a house at Middleburg, Va., "Goodestone," by Goodwin, Bullard and Woolsey, architects, which is remarkably well done, and which should have been awarded the medal at the recent exhibition of the Architectural League. There have been medals awarded several times in the last few years to domestic work not nearly as good as this, and this firm or members of it have done much other work that has charm and distinction.

The Architectural Record for April features the domestic work of Harriett T. Lindeberg. Mr. Lindeberg's work is so well known and so widely admired that comment here is unnecessary. We have always regretted that he has not done more monumental work, for his peculiar ability in handling the picturesque would undoubtedly enable him to give a freedom and charm to monumental work which it generally lacks.

The Architect for April shows a very elaborate and good presentation of a group of buildings for the Aetna Life Insurance Co. in Hartford by James Gamble Rogers. This is one of the most encouraging commercial developments that has taken place in recent years, encouraging because it shows that a great corporation can recognize the commercial value of good architecture, and can see the futility of building a twenty story building in a city like Hartford. Mr. Rogers' layout is good and when built cannot help being a great architectural success. In fact all the April numbers of our own magazines are so good that it is difficult not to mention all their contents in detail. Let us hope they will be widely reproduced abroad.
JUDGMENT OF FEBRUARY 19, 1924
CLASS "A"—III PROJET
"A SHOPPING CENTER"

On a city block 200 feet by 300 feet with the more important streets on the narrow sides, a syndicate proposes to erect a building for the accommodation of a great many stores and shops of varied size and importance. In order to provide the necessary display space on all floors there are to be one or more great arcades. The height of the building and passing through from street to street. These arcades are to be 50 feet wide, with galleries on each side on the upper floors projecting 10 feet into them, from which access will be had to the various stores. The arcades should be covered with roofs of glass and may be open entirely or in part to the streets to provide air and ventilation.

It is important to the success of the enterprise that adequate access to the various galleries be provided by stairs and elevators and that the stores themselves should be able to attract customers from the main floor of the arcade.

There will be besides the ground floor, which is 20 feet high, 6 other floors, all 17 feet high (to allow for mezzanines), all measured from floor to floor. The roof, pent houses and so forth, may project above this limit.

A reservoir is located in a city park and against its wall it is proposed to erect a monumental fountain. Before the fountain will be an open plaza, whence the play of the fountain's waters may be seen to advantage. Balustrades, seats and statues adorn the plaza. The height of the reservoir wall is 50'-0" and the greatest width of the fountain proper shall not exceed 50'-0".

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THE AMERICAN ARCHITECT—THE ARCHITECTURAL REVIEW

CLASS "B"—III ESQUISE-ESQUISE
"A FRONTPISCE FOR A BOOK ON ARCHITECTURE"

Early editions of Vignola had frontispieces very beautifully designed and engraved. An American publisher who is preparing a fine modern edition will reproduce his title page in photogravure. It will have the following lettering on it:


That the sheet should be beautifully composed is essential. The drawing should be designed for reproduction at the same scale.

CLASS "A" AND "B" ARCHAEOLOGY—III PROJET

"THE PORCH OF A ROMANESQUE CHURCH"

At the time when Burgundy was at the height of its power, there grew up in the middle and Eastern parts of France a number of great monasteries which became very rich and powerful. These monasteries were of the Cluniac order. At each one, a great monastic church was built and while almost all of these monasteries have disappeared in the course of time, several of the massive churches remain to show the power and splendor of their builders.

At this time, the chief characteristic of building was one of massiveness, combined with occasional isolated spots of great richness. Carving was concentrated in the capitals of the columns, and in the wall arches and tympana of the doorways. Foliage, animals, human beings and rich rinceaux were used, although sparingly, and concentrated at the doorways and capitals.

The porch called for in this problem consists of three bays. It forms a sort of narthex to the church, where the population of the neighborhood gather before being admitted to the services. It faces a large open space surrounded by the principal buildings of the small village in which it stands. The elevation called for requires only one story, consisting of the three bays above mentioned, 75'-0" in length over all, and 35'-0" high. Each of the openings or bays may be treated with engaged columns or piers. It is to be remembered that the porch forms the ground floor of the great square tower attached to the facade of the church, but it is not required to show more than the first or ground floor colonnade of this tower.

Porches of this type on various scales are to be found at Autun, St. Benoit sur Loire, Vezelay, and The Collegiate Church at Loches.


NUMBER OF DRAWINGS SUBMITTED:-11.

AWARDS:-
MENTION:-D. D. Streeter, Columbia University, N. Y. C.; L. A. Balicki, John Huntington Poly. Inst., Cleveland; W. G. Nicolla, Ohio State University, Columbus; K. A. Marvin, Syracuse University, Syracuse; G. A. Anderson, University of Minnesota, Minneapolis.

MEASURED DRAWINGS

NUMBER OF DRAWINGS SUBMITTED:-3.

SUBJECT:-The Mappa House, Trenton, N. J.
AWARD:—SECOND MEDAL:—H. O. Williams, Yale University, New Haven.

SUBJECT:-The Josiah Bronson House, Onondaga Hill, N. Y.
AWARD:—MENTION:—K. A. Marvin, Syracuse University, Syracuse.

BOOK NOTES
PLUMBING QUESTIONS AND ANSWERS

THIS is a second edition of this valuable book written in the form of questions and answers. A very complete index makes any particular phase of plumbing installations quickly answered. A very complete index makes any particular phase of the subject that is applicable to house painting. After describing the nature of paints, the different vehicles and pigments, the tools for its application for various purposes are described. Exterior and interior painting, varnishing, floor finishing, glazing and papering, are subjects very thoroughly covered. The book concludes with the subject of whitewashing, kalsomining and cold water paints. An appendix with formulas for mixing paints for various purposes and for making a large number of tints is included. It is a valuable and usable book.

W. FAULKNER  
SECOND MEDAL
CLASS "A"—III PROJET—A SHOPPING CENTER
STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

YALE UNIV.

THE AMERICAN ARCHITECT—THE ARCHITECTURAL REVIEW
V. L. ANNIS
SECOND MEDAL
UNIV. OF PENN.
CLASS "A" AND "B" ARCHAEOLOGY—III PROJET—THE PORCH OF A ROMANESQUE CHURCH
STUDENT WORK. BEAUX-ARTS INSTITUTE OF DESIGN

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CLASS "A" AND "B" ARCHAEOLOGY-III PROJET—THE PORCH OF A ROMANESQUE CHURCH

STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

G. F. TRAPP
SECOND MEDAL
COLUMBIA UNIV.
W. Ferrari  FIRST MENTION  Yale Univ.

A. F. Euston  FIRST MENTION  Atelier Hirons

H. K. Bieg  FIRST MENTION  Armour Inst. of Tech.

Class "A"-III

Esquisse-esquisse—a monumental fountain

Student work,

Beaux-Arts Institute of Design

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INTERIOR ARCHITECTURE
Designing and Furnishing the Entrance Hall

While in no way intending to diminish the importance of the living room and its right to a considerable part of the floor space of the first floor plan, from an entirely different angle it may be said that the entrance hall is of even greater importance. With the living room, it is wholly a practical matter, one based on square feet, while with the hall, it is purely a problem in psychology. It is here that one forms those lasting first impressions by which the whole house is to be gauged. The entrance hall is the keynote on which the whole composition of the house plan is based. It must be planned and designed, therefore, to convey, in that first impression, the elements of either formality or informality, simplicity or elaboration, brightness or mellowness, according to the decorative scheme carried out in the other rooms of the house.

There are several distinct stages in the course of its development which must be studied and worked out with this idea always in mind. The first

of these is its floor plan. A bare floor plan alone can express elements of formality or informality, just as much as the decorations that are applied to the walls, although it may not be so generally accepted. For instance, square shaped rooms are much more conducive to cordiality than the long narrow room, while plans with many small door openings are more suggestive of formality than those with fewer large openings. The average house plan of the present day should express more than anything else the feeling of simple informality, and it is this type of house that is here to be considered. The square hall, therefore, seems best suited to it, and, besides, as will soon be seen, it lends itself better to decorations and furnishings to portray these desired qualities. It is

much more conducive to cordiality than the long narrow room, while plans with many small door openings are more suggestive of formality than those with fewer large openings. The average house plan of the present day should express more than anything else the feeling of simple informality, and it is this type of house that is here to be considered. The square hall, therefore, seems best suited to it, and, besides, as will soon be seen, it lends itself better to decorations and furnishings to portray these desired qualities. It is

not a matter of size, as in the living room, but strictly a problem in proportion. A small, square hall, say, ten by ten, is so far superior to one six by sixteen (one of similar area) that it is difficult to understand how the long, narrow type, so common fifteen or twenty years ago, ever gained its popularity, except as a means to express some element of formality or severity which the other rooms possessed. Now, its openings. Far and away the most important of these is a door or opening leading to the living room, through which a view of a part of that room will be obtained immediately after entering the front door. Nothing more than this gives that feeling of cordiality and hospitality so desirable, especially if the view

not a matter of size, as in the living room, but strictly a problem in proportion. A small, square hall, say, ten by ten, is so far superior to one six by sixteen (one of similar area) that it is difficult to understand how the long, narrow type, so common fifteen or twenty years ago, ever gained its popularity, except as a means to express some element of formality or severity which the other rooms possessed. Now, its openings. Far and away the most important of these is a door or opening leading to the living room, through which a view of a part of that room will be obtained immediately after entering the front door. Nothing more than this gives that feeling of cordiality and hospitality so desirable, especially if the view
of the living room is more than ordinarily inviting. This takes the place of the “Welcome” on the door mat. Sometimes this opening may be to the right of the entrance door, sometimes to the left, or perhaps directly opposite. This is not a consideration so far as its effect is concerned.

Another vital part of the hall plan is the placing of the stairs. If possible, keep the stairs out of the entrance hall, or make some arrangement so that the effect of being so is obtained. An arch may be placed between the entrance hall and the stair hall, where space does not allow of a distinct separation to carry out this idea. At any rate, keep the stairs well away from the entrance door. An entrance door is not intended to lead the one entering immediately upstairs; in fact, seldom, if ever, does anyone at once proceed upstairs after coming into the hall from the front door. Plan the hall, therefore, to conduct the one entering into the living room or library, perhaps, but avoid a direct invitation to the stairs. This does not mean that stairs cannot be placed facing the front door, for conditions frequently demand this. The idea of the staircase being in another room, the illusion which the archway suggests better than any other way, when space is at a premium, puts the stairs at once in the background.

With these facts in mind, the general floor plan of the hall is completed, and the next step in its development is the placing of the furniture. There are several pieces of furniture which convention seems to place in every hallway. It has become so much a matter of form to put a console table with mirror over in a hall, that no hall now seems complete without them. To be sure, these pieces cannot be classed with the general run of conventional furnishings, for there is no doubt of the practical value of both in every hall. The console allows a place for not only small articles of wearing apparel, but also permits of a pair of candlesticks or other decorative accessories, which add a note of interest and further carry out the cordial atmosphere of the room. As to the mirror, there can be no denying its practical value, nor, if well selected and hung, its decorative value, too. For the very reason, however, that these two pieces are so often used in hall schemes, it is well to consider some other furniture which would be appropriate for halls.

As suggested in one of the accompanying illustrations, a bench may be used in place of the console, with a mirror over. This is very interesting and even more practical than the table, especially for a small hall, for, after all, a seat of some kind is more necessary than a table, if you cannot have both. The old time hat-rack which used to be such a familiar feature of every hall, large or small, has left a vacant spot which must be furnished, and, in solving this new problem, let us not replace one discarded convention with another.

ENTRANCE HALL IN HOUSE AT RIVERDALE-ON-HUDSON, N. Y.

DWIGHT JAMES BAUM, ARCHITECT

While the stairs actually start from the entrance hall, a break in the floor plan, by a step down, gives the effect of the stairs being in another room. Note the square proportions to the entrance hall.
In choosing the style of decoration for a hall, the next step in its development, it is again most important to bear in mind the role which the hall plays as the keynote of the entire house. The impression which the hall establishes must prepare one for what the other rooms contain. This, of course, may be interpreted in various ways. An Elizabethan hall does not necessarily mean that the living room opening from it must also be Elizabethan; in fact, it is best not so. However, a hall of such pronounced characteristics as are evidenced in an Elizabethan design, does expect that the living room will be in some English period. Similarly, a decided Louis XVI hall would seem to indicate a French living room. And here-in lie the beauty and the practicability of the so-called Colonial hall. As has been so often and so insistently mentioned in these articles, the various styles which go to make up Colonial designs are so numerous that a Colonial hall with its simple lines and proportions prepares one to expect most anything in the adjoining living room. In spite of that fact, if not on account of it, a word of praise must be given to the Colonial style hall, especially for the medium sized house of moderate cost. Its proportions are expressive of informality and cordiality, its lines are simple and dignified, its colorings are unlimited, and its furnishings further carry out all the desired elements.

Then there is the Italian hall, with its rough plaster walls and trimless openings. The impression of such a hall is, too, somewhat expectant, and extremely hospitable.

The principal element in a hall design is interest. Good impressions are made only by those things which interest the observer. A good impression made on one immediately when entering the house, solicits further investigation; in other words, it effects hospitality. A hall designed along accurate period lines may interest some. It may disturb others. Therefore, it could not be considered a successful hall. For this very reason simple designs are best, for they interest more and disturb fewer, although the interest may be less pronounced.

The problem, then, is to make the simple more interesting, without detracting from its simplicity. Nothing will do this so quickly and decisively as added color. Use color freely though simply, in the decoration. Then it is only a matter of keeping enough variety to the color scheme to please all tastes. What if the Italians, centuries ago, always left their rough plaster walls in stone color, or if the Louis XVI architects painted both walls and woodwork in soft grays? You are not reproducing an Italian villa or a French palais, so put your own interpretation on the designs which they may have inspired.

In making up a color scheme for a hall, con-
sideration must be given the colors used in the rooms directly adjoining it, or opening into it. Just as the style of the design must prepare one for the style of the living room (admitting that the living room opens from it), so must the color scheme of the hall prepare one for the living room rally open from a blue hall, or an orange hall would perhaps suggest a red living room. In other words, harmony must reign and contrast must not be too pronounced. The definition of harmonious and contrasting colors, given in an earlier article in this department, is very adapt-

Although the stairs actually commence in the entrance hall, and quite near to the front door, the archway which forms the dividing line between the two halls seems much more pronounced than it is in reality. The effect is a separate entrance hall colors. This does not mean similarity in color, but strict harmony between them. For instance, a green hall would not prepare one for a red living room, nor would a red hall prepare one for a blue living room. But a green living room would natur-
is not plenty of other color in it. The red or green refers to the dominating color of the scheme, and, in order that a scheme may have sufficient contrast to be of interest, there should always be a dominating color. This brings you right back to the interest which the hall must arouse. What colors are apt to arouse the interest of the greatest number of people? That seems to be the problem in the selection of the color scheme of the hall. A monotonous use of any one color will never create as much interest as a scheme of several colors, built around an interesting dominating color. Shades of yellow are generally considered pleasing to a greater number of tastes than any other color. Also, yellow offers a better background for applying decoration in contrasting colors, and, for these reasons, halls are frequently seen with yellow as the dominating color of the scheme. Old Colonial wall papers of verdure or landscape patterns carry out the yellow idea, although softened considerably by the combined grays. Rough plaster walls tinted in a shade of dull yellow form an interesting background, while allowing a fine opportunity for the use of other or secondary colors in the decoration and furnishings. The deeper tints, as orange and tans, are often more suitable on account of the colors of the adjoining rooms, or as being more in keeping with the style of the design, but the result would still be known as a yellow hall.

While the general impression of the color scheme of the hall must prepare one for what to expect in the adjoining room, the portieres at the opening between the two rooms, if they are used, must act as the real connecting link. Looking into the living room, the portieres frame a picture of that room, and it is necessary that the frame does not interfere with the effect of the picture. Thus, plain or two-tone materials are best.

Speaking of portieres, the question naturally arises, is it advisable to use portieres at the opening between the hall and the living room? The decision depends a great deal upon the plan of the hall. If the hall is very small and the opening to the living room, as a consequence, very near the entrance door, portieres are really needed to preserve the privacy which the living room deserves. The effect of the hanging curtains, while not cutting off at all the view of the living room, fills just this want. An instance where portieres are not necessary is when the opening to the living room is treated by a decorative surround. In that case, the trim and overdoor serve as the frame instead of the portieres.

The floor of the hall offers an opportunity for unusual treatment. In the first place, it is not possible for the owner of the average house, the type of house which is here being considered, to afford an Oriental rug in the hall. Any other kind of carpeting is put to too strenuous use to be practical. Even the finish of the hardwood will not long stand this hard usage and will require constant refinishing. From a practical standpoint, therefore, some material other than these must be found. The market offers today several products suitable for this purpose, durable and pleasing in design as well. Composition tiles in various patterns to harmonize with any style of decoration give a decided note of interest to the floor treatment in both line and color, and possess strong qualities of durability besides.

Then comes up the problem of lighting the hall.
This is one room where intensified light is not required in any part of the room. Sufficient light is needed perhaps by the mirror to allow of its practical use, but, beyond that, bright light is not necessary. In such a case, a ceiling chandelier seems to fill the bill, perhaps aided by a bracket on either side of the mirror. A new problem arises in certain halls where the entrance hall and stair hall are one to locate the proper place for hanging the chandelier. On account of the stair well, it is difficult to locate any center. This is only another point in favor of a dividing beam or arch, which readily establishes a center outlet for the entrance hall and permits of two brackets above a console to light the stairs. (See illustration on page 398.) Lantern effects are sometimes interesting for hall fixtures in that they pave the way more gradually for the transition from exterior to interior details.

Summing up, then, it might be said that simple lines and a not too decided color scheme are the outstanding elements in the design and decoration of a hall. The choice of wainscots, wall paper, rough plaster, etc., are all determined by the style of the decoration, which, in turn, is materially governed by the style of the adjoining rooms. Wall paper in halls as in any other room adds interest in design and color at the same time, with the least effort and expense. No mention has as yet been made of window hangings, for it is seldom that windows appear in the hall of the average house. In case they do, however, it is best to keep the hangings in a plain color, for one window of a figured material would look spotty, and there would be no other place to repeat the fabric. Curtains at side lights and transoms of the entrance door should invariably be of a neutral tone. The reason is that when entering the hall, the decorative scheme should act on the one entering to make him want to stay in the house. Colored figured curtains at the door would tend to turn him around again after entering, to face the door and turn his back on the rest of the house. Portieres need not be of the same material as window hangings, for portieres act somewhat in the same way to the living room, which, in their case, is desirable. One window or even two in a hall should generally be treated in the same neutral material as the door lights. Pongee or casement cloths are appropriate for this purpose.

Furniture covering cannot take the important part in a scheme of a hall as it does in other rooms, for the fact that there is so little of it. Odd materials of decided pattern or color used in very small proportion in any scheme give a spotty effect. In large rooms with much furniture, certain pieces are covered with materials which are purposely of pronounced pattern and color. But in this case they are used to create contrast and break monotony. In halls, with little furniture, there is no monotony made by one material and contrast is more easily brought about.

Acknowledgment is made to the following firms for their courtesy in supplying illustrative material: Cooper-Williams, Inc., Glasner Brothers.
Walls of main portion are of stone from the Princeton University Quarries. Service wing walls of rough cast stucco. Roofs slated. Sash painted a dark green. An attempt has been made to preserve the traditions of the English manor house.
DETAILS OF A HOUSE
AT BAYVILLE,
L. I., N. Y.

HUBERT E. REEVES,
ARCHITECT

THE STAIR GABLE, OVERLOOKING THE GARDEN POOL

A COMBINATION OF MATERIALS WHICH BLEND HARMONIOUSLY

THE DINING ROOM BAY FACES EAST FROM WHICH IS AN UNOBSTRUCTED VIEW OF LONG ISLAND SOUND
The cast stone forms a sharp contrast to the soft tones of the wall, and was carefully tooled to give an impression of cut stone.
Walls and woodwork of dining room toned in soft shades of apple green, with certain moldings striped in old gold. Base of polished slate. The floor is paved with saxstone mantel. Library panelled with quartered oak. Ceiling is a replica of one in Wiltshire Castle. Floor quartered oak. Border of mahogany.
HOUSE AT BAYVILLE, L. I., N. Y.
HUBERT E. REEVES, ARCHITECT
The home of the farmer today is modern, comfortable and generally attractive. No more do his buildings destroy the landscape. They meet every requirement from a practical and sanitary standpoint, and the one time "down at heel" aspect is seldom to be seen.
DESIGN PLACED FIRST—JACKSON, ROBERTSON & ADAMS, ARCHITECTS

COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

Drawings of the third prize design having been received too late for presentation in this issue, will appear in the issue of May 7.
DESIGN PLACED FIRST
COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.
JACKSON, ROBERTSON & ADAMS, ARCHITECTS
DESIGN PLACED FIRST

COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

JACKSON, ROBERTSON & ADAMS, ARCHITECTS
DESIGN PLACED FIRST

COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

JACKSON, ROBERTSON & ADAMS, ARCHITECTS
Benefit Street Elevation

South Main Street Elevation

Design placed second

Competition for Court House, Providence, R. I.

John Mead Howells—Raymond M. Hood, Associated Architects

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COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

JOHN MEAD HOWELLS—RAYMOND M. HOOD, ASSOCIATED ARCHITECTS
FIRST FLOOR PLAN

GROUND FLOOR PLAN

DESIGN PLACED SECOND

COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

JOHN MEAD HOWELLS—RAYMOND M. HOOD, ASSOCIATED ARCHITECTS
THIRD FLOOR PLAN

SECOND FLOOR PLAN

DESIGN PLACED SECOND

COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

JOHN MEAD HOWELLS—RAYMOND M. HOOD, ASSOCIATED ARCHITECTS

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METHODS USED in SHORING and REMOVING HEAVILY LOADED COLUMNS

Exchange National Bank of Tulsa Building, Tulsa, Okla.

BY KENNY JOHNSON, Member W. S. E.

At the time that the twelve story building for the Exchange National Bank of Tulsa, Okla., was erected (1916) it was thought that sufficient provision had been made for the future expansion of the owner's business. However, in 1922 it became apparent that the provisions made for expansion were entirely inadequate and that an addition to the building would have to be erected on the rear, or South end, for which an area of 75 x 89 feet was available.

The banking room arrangement as shown by the plan indicates in outline the original building, in dotted lines the portions of the original building which obstructed the extension of the banking lobby, and the removal of which was necessary. The addition is shown in the poché. Particular mention is made of the absence of columns in the banking lobby. One of the owner's requirements was that this 32 foot wide lobby be extended through the addition, providing a space free from columns.

The original building was of the reinforced concrete skeleton type with the exception of a row of steel columns on each side of the banking lobby. These columns supported girders in the third floor which in turn supported reinforced concrete columns which extended through the upper stories. At the South (rear) end the wall columns were
located at regular intervals and they were obstacles in making the extension of the banking lobby as desired. On examination of the plan it is seen that columns 17, 18 and 19 were not so located as to permit a symmetrical treatment of the banking room. They were also of greater size than the finished marble columns in the original banking room space. If column 18 had remained in place, it would have stood in the lobby by itself and of course would have been quite objectionable.

These columns were of the usual spirally reinforced concrete type, having cores 32" in diameter. It was necessary to shift the centers of and reduce the size of columns 17 and 19 and to remove column 18 from the first story entirely.

The bank officials looked upon this proposition with some misgivings, both from the standpoint of stability of the structure and expense, but they finally decided to invest a certain sum if the work could be successfully done as suggested by the architects. It may be stated that the project was completed at approximately 60 per cent of the estimated cost.

This change made it necessary that three of the four columns in the old South wall should be shored up and cut off. To support the heavy loads without settlement, foundations would be required equal to the existing foundations. Caissons were built adjacent to columns 17 and 19 to support the temporary shoring columns and to resist the eccentricity resulting from the shifting of columns 17 and 19. The new caissons were bound to the old caissons with reinforced concrete collars built near the top.

The rearrangement of the girders and columns is shown in the detailed drawings. The temporary columns 17 and 19 were placed on cast steel plates and wedges for the purpose of adjustment and removal. It is evident that a series of temporary shoring girders would be required to support the concrete columns above the third floor, until some kind of permanent supports was provided. It was finally decided to build in permanently the shoring construction and allow it to remain in place. The most important problem was to make sure that the concrete columns would transmit their loads to the shoring girders. To accomplish this it was decided to strip the concrete columns of their fireproofing in the third story, exposing the spirals, and then to encase the columns in steel jackets; the space between the jackets and the old columns to be filled with concrete proportioned of one part of cement, one part of sand and two parts of gravel crushed to pass a 1/2" ring. These old concrete columns were allowed to carry their own loads until all of the structural steelwork was in place, the steel jackets placed in position and filled with concrete which was then allowed to age for ninety days before the lower portion of them in the first story was removed.

These steel jackets form the basis of the design. Their inside diameter was 36 inches and they were 9'0" high. The bond stress was calculated on the inside of the jackets at about 40 pounds per square inch, and at 45 pounds per square inch on the concrete columns. The jackets were composed of four sections of 3/8 inch bent steel plates, with vertical angle iron stiffeners for connecting the flanges and bearing lugs. The vertical stiffeners
Details of the foundations, the new permanent and temporary steelwork and the method of supporting the old reinforced concrete columns.

EXCHANGE NATIONAL BANK OF TULSA BUILDING, TULSA, OKLA.

THE WEARY & ALFORD COMPANY, ARCHITECTS AND ENGINEERS
The steel jacket around column 16 has been removed, and columns 17, 18 and 19 stripped to permit installation of new girders and masts.

Concrete columns 17, 18 and 19 are not removed and will be cut free at top.

Concrete column has been cut free at top.

Concrete column has been cut free at top.

Concrete column has been cut free at top.

Concrete columns 17 and 18 are ready for position column 12. Note temporary column supporting the haunch the jacks.

General view of permanent structural steel frame with temporary columns 17 and 18 in position:

Columns 16 is not removed and will be cut free at top.
were bolted together with ¾” diameter turned bolts inserted in reamed holes. Horizontal bands of 2” x ¾” steel bars were riveted on the inside of the jacket at intervals of one foot. The rivets through the bands were designed to have a resistance to shearing equal in value to the total load on the column. The jackets were punched with 13/16” diameter holes 12 inches on centers horizontally and 6 inches on centers vertically. The purpose of these holes was to ventilate the fluid concrete, thus avoiding air pockets in the concrete fill, to observe the pouring and to increase the bond resistance. When the concrete was observed at each horizontal row of holes, ¾” bolts were pushed through the holes to close them and also to serve as a bond to the jackets between the inside fill and the subsequent fireproofing.

The double girders G2, straddling concrete columns 17 and 19, were cantilevers bearing on temporary columns 17 and 19 and were restrained at girder G1 which was supported on columns 47 and 55. In order to secure the stability of this cantilever it was necessary to build the addition up to or beyond the ninth floor, dead load alone being considered. Girders G2 were designed for the maximum condition of being supported by the temporary columns 17 and 19 until the permanent columns were in place. These girders were then more than capable of carrying the eccentrically located original concrete columns 17 and 19 and also their proportion of the load from column 18.

The double girders G3, straddling column 18, had their bearing at the ends of the girders G2. The connection of the girders G3 to G2 was made strongest at the inside of girder G2, which would receive the load first. The outside connection was made equal to one-half of the reaction plus the loads from columns 17 or 19. This approximated a condition of fixed ends.

When all of the steelwork was erected and the temporary columns wedged up tight, steel wedges were driven between the ends of the jacket stiffeners and the tops of the girders and diaphragms under the columns 17 and 19. The girders G2 and the temporary columns received their initial stress. The concrete columns 17 and 19 were then cut out one at a time and replaced by the permanent columns.

The calculated deflection of the girders G3 due to the load transmitted by column 18 was 3/16 inches. The girders were therefore wedged down as far as possible, which, however, only amounted to ⅛ inch, and the wedges were locked. The wedging operation also tended to produce stress in the concrete fill in the jacket and thus afforded a test of the sufficiency of the bond. Column 18 was then cut away beneath the girders G3 and also part way up between the girders and then six short, heavy-weight 9 inch I-beams, supported on the bottom flanges were installed under the column. No deflection occurred after the removal of column 18. The space between the column ends and the girders was then filled with concrete and the steel jackets were fireproofed.

Numerous other minor operations were necessary to join the two structures together permanently at other column connections and at each floor level. A definite sequence of operations was planned and adhered to throughout the construction. The fact that the architectural sketches were approved in August, 1922, and the upper stories occupied by tenants in July, 1923, gives evidence of the close adherence to the program. The structural frame of the addition was actually completed before the columns were cut out and the brick curtain walls of the old South building line removed.

One difficulty encountered was the concrete spandrel beams which projected above the floor lines in the old South wall. These projections would have to be cut off to provide uninterrupted floor levels between the old building and the addition. Additional columns 44, 45 and 46 adjacent to old columns 1, 19 and 17 were provided to carry the ends of the beams in the addition. Column 44 started at the first floor line and terminated at the roof. Columns 45 and 46 started from the diaphragms between girders G2 and also terminated at the roof. Before the projection of the old concrete spandrels was cut off a line of steel beams was installed at each floor between columns 44, 45 and 46; these new steel beams had shelf angles which engaged with the shelf angles on the old beams. The space between the old and new beams was filled solidly with concrete as shown in the detail. In this way the new steel beams carried the new slab and a portion of the load on the old beam, thus, with the removal of the wall load, compensating for the loss of the section.

The Weary and Alford Company, of Chicago, were the architects and engineers, with Gardner C. Coughlen acting as supervising architect, and the writer and S. E. Berkenblit as engineers. Hans Von Unwerth of Kansas City, Mo., acted as consulting engineer for the owner and credit must be given him for much helpful criticism of proposed methods and design. The construction work was done by W. H. Horster, contractor, Tulsa.
A COMPARISON of THREE TYPES of SCHOOLHOUSE CONSTRUCTION

BY A. R. REILLY, C. E.*

WITH the increased need for more schoolhouses has come an increased cost of construction. This condition has naturally led to investigations to determine what can be done to secure a maximum accommodation with a minimum of cost consistent with good planning and construction. It is a necessary and interesting problem for architects interested in schoolhouse construction.

Design No. 1 is of the ordinary type with wood joists and floors in the classrooms and with fireproof construction in all corridors, stair halls and toilet rooms. Steel beams support the wood joists of the floors and roof, spanning the classrooms transversely and resting on exterior and interior brick bearing walls. The partitions between classrooms and around flues are built of hollow gypsum tile. Light, No. 34 gauge, tin-pan concrete slabs form the corridor and toilet room floors while the roof system over classrooms and corridors is of wood construction. An excavation of approximately 5'-6" under the entire first floor provides space for steam and hot air pipes which keep the floor warm and dry in Winter. The assembly hall is of structural steel and brick construction.

Official bids received in June, 1923, by the Board of Education of Rochester, N. Y., furnish valuable information and indicate among other things that a fireproof building of reinforced concrete skeleton can be built for less than six per cent more than one of the ordinary fire-resisting type. Three sets of drawings were made for three distinct types of construction. Each of the buildings was planned to accommodate the same number of pupils and the plans were practically alike. The kind of construction was different in each design, namely:

Design No. 1 is of the ordinary type with wood joists and floors in the classrooms and with fireproof construction in all corridors, stair halls and toilet rooms. Steel beams support the wood joists of the floors and roof, spanning the classrooms transversely and resting on exterior and interior brick bearing walls. The partitions between classrooms and around flues are built of hollow gypsum tile. Light, No. 34 gauge, tin-pan concrete slabs form the corridor and toilet room floors while the roof system over classrooms and corridors is of wood construction. An excavation of approximately 5'-6" under the entire first floor provides space for steam and hot air pipes which keep the floor warm and dry in Winter. The assembly hall is of structural steel and brick construction.

*Structural Engineer, Board of Education, Rochester, N. Y.
To complete the sprinkler system in design 1, an basement in design 1, as required by the city tabulated as follows:

- Design No. 1, $2,314.00 more than the gyp- sum tile floors specified and heavy, cross-ribbed tin-pan floors would save $7,147.00.

One can readily see from an examination of the mass of bids received that the economy of design 2 lies in the reinforced concrete skeleton feature because 85% ($85,100.00) of the differ- ence between designs 2 and 3 is in the masonry figures. The heating, plumbing and electrical figures showed a saving for design 2 of 3% ($2,000.00) plus the cost of metal ventilating ducts of design 2. This is largely due to the fact that the exposed wall area of design 2 is 8,300 sq. ft. less than that of design 3. This is slightly offset by better facilities for piping and conduit work in the attic of design 3.

Design 3 with a cinder brick instead of the face brick specified would save $8,592.00. Two-way tile floors would cost $2,835.00 more than the gyp- sum tile floors specified and heavy, cross-ribbed tin-pan floors would save $7,147.00.

The summations given below are the totals of the low bids received separately for each branch of the work, all contractors having equal rights on the premises. Designs 2 and 3 called for alternate figures for a twelve room addition. Design 2 as drawn, without the addition, provided for more of the completed job than did design 3, which is one reason for the non-conformity of differences in summations. The official bids were tabulated as follows:

Many alternate figures were received. The fireproofing of steel beams and columns above the basement in design 1, as required by the city code, would cost an additional $6,000.00 as bid. To complete the sprinkler system in design 1, an additional $2,500.00 is necessary.

In design 2, wood floors in the classrooms, on
often in the corrosion of the lath before plastersing, which weakens the lath, and also entails an expense for cleaning before plastersing.

The general scheme of building design 1 is familiar to all. It is not fireproof and lacks structural unity. The piece-meal method of building, involving laying off and reemploying men, is less economical than the method employed in design 2. Constructing the skeleton completes the concreting operation before bricklayers are needed on the job. This piece-meal method affects the construction of design 3 also. Design 2 with its monolithic skeleton was enthusiastically approved by most of the masonry contractors as indicated by the bids. When such a concrete frame is completed it is then a matter of filling in with tile and brick and so on down the line to the completed job. Contractors were allowed to bid on two-way tile floors as an alternate in this design. Although the bid was not formal, a saving of more than $10,000.00 is indicated. It affords a better base for the plastering of ceilings and a better floor structurally than the one-way floors, in that it lends itself better to the light loads and panel dimensions of schoolhouse construction. The girders placed in the peripheries of the panels result in a better distribution of the loads to the columns and reduce the amount of unbalanced moments transmitted thereto. The tie-through girders give structural unity. The saving of plaster and more simple form work appeals to the contractor, resulting in reduced cost.

A structural steel skeleton was used in the assembly hall as it was the most economical because of the spans and balcony conditions encountered. Gypsum blocks were used for the fireproofing of the girders in order to reduce the dead load. Design 2 provides for the use of metal ducts for the ventilation system in the basement, which are more economical than the concrete plenum chambers used in design 3.

An intermediate column was placed in the corridor side of the classrooms in design 3. The minimum diameter of this column is determined by its height rather than economic design. Because column forms cost more per square foot than girder forms, their elimination, as in design 2, would effect a saving of $1,200.00. These columns also displace valuable floor space in the wardrobes.

The greater exposed wall area of design 3 gives a larger area for heat transmission and the solid wall has a higher coefficient of loss than the 4" brick veneer and the 6" hollow tile backing of design 2. The solid brick wall also costs more to construct. The floor of the attic, a suspended ceiling, must be designed to carry a live load as men must repair piping in this space at times. Leaks would corrode the metal lath and rod hangers, thus causing the ceilings of the second floor to become discolored. It is also an inconvenient place, whereas in design 2 all piping is in the basement.

The first floor, placed on the ground in design 3, is not considered good construction. Many years of experience with such floors lead to the conclusion that not only are they damp, cold and unsanitary but very costly to maintain. Notwithstanding the precautions taken to reinforce and waterproof them, cracking of the sub-slab is bound to occur and allow moisture to penetrate and rot the wood sleepers and flooring or linoleum, thus requiring frequent replacements. In kindergartens where children are on the floor a large part of the time it is undesirable, and in the grades the children and teachers complain of cold feet. On most school sites there is usually opportunity for using the excavated material as in design 2 for filling or terracing. Concrete trenches are necessary under the first floor for cross branches and conduits which further increase the cost.

In designs 2 and 3 the linoleum is cemented directly to the 1" mortar finish of the concrete floor slab. In the corridors and toilet rooms the cement coat base is recessed the thickness of the linoleum back of the face of the finished wall. At the top of this base is placed a metal ground strip. The linoleum is then cemented to the floor and cement coat base, making a continuous floor and base finish. This method of continuous floor-base finish has not had extensive and long use; experts agree that it is a great improvement over the moulded base and flat floor strip. Although the cementing of the linoleum prevents creeping, an allowance for a slight expansion is made below the metal ground strip at the top of the base.

Much could be written about the maintenance cost of the different designs. It is apparent that the average annual maintenance charge during a period of years against design 2 would be considerably less than for design 1. The latter is not structurally equal to design 2 and naturally would have more unequal settlements, cracking and depreciation. The greater amount of radiation required in design 3, the suspended ceilings and the first floor construction, would undoubtedly increase the cost of upkeep to exceed the percentage of the excess cost of design 2.

Although some argue that the rapidly changing educational methods do not justify permanent buildings, it is quite reasonable to assume that the increased protection to life and property is worth such a small difference in cost as is here indicated. If we further offset this difference in initial cost by the low maintenance charges attributable to the fireproof type of construction, then it would be good business to construct buildings of that kind.
ECONOMICS as RELATING to ARCHITECTURE

FEBRUARY building did not measure up to expectation; or, stated more significantly, the volume of new building actually undertaken in February did not fulfill apprehensions. It is truly well for the industry that the unusual amount of new construction, which was started in January, was not sustained, for it undoubtedly have brought forth a menacing rise in costs.

Now whether the decline in February building is introducing a major recession, or whether it is simply a minor reaction produced by seasonal influences, remains to be seen. Much building is yet to be done. Projects upon the boards are rather heavy in the aggregate. Nevertheless, it is a most important and a rather ominous fact that costs are now at a high point in this movement, the highest point reached since 1921. After the seasonal correction had been applied to January's building, it disclosed an accomplishment that was positively extreme. Such a pace could not have been maintained for long without a severe advance in costs. Building during the coming months is expected to remain above the normal line, but the steady rise in costs, an obvious prospect, very strongly suggests a more moderate appearance of new business later on in the year.

The volume of new contracts awarded in February, measured by the square feet of floor space in each job begun, ordinarily increases about 3 per cent over January. But February, in an unexpected movement, revealed, in the 27 states reported by the F. W. Dodge Corporation, a decline of about 4 per cent in contrast with January. The volume of construction, which, under the impetus of an insistent demand, favorable weather, and an easier trend in costs, rose 53 per cent above normal (the average of the years 1919 to 1923) later sacrificed 12 points, receding to some 41 per cent above normal in February. Contracts awarded during these first two months, however, were more than 20 per cent in excess of last year. That certainly was a most unusual beginning, statistically.

The amount of new construction started in March had not yet been published at the time this article was prepared, but, based upon the experience of the past four years, March building expressed in units of square feet of floor space usually surpasses February in the 27 Northeastern states by about 40 per cent. While early reports have indicated that new building is still progressing above normal in the aggregate, there is no positive assurance yet that final statistics will either sustain these earlier indications or that the total volume of building undertaken during the months immediately ahead will hold the high altitudes so definitely claimed by the late Fall and early Winter seasons. During the past four years March has proven to be the period in which the onrush of Spring business is the most pronounced. This surge of new construction usually reaches its peak in April, when the index of seasonal variation advances above that of March by about 5 per cent.

A very interesting and important statistical picture of conditions underlying the building trade today is sketched in The Annalist, of March 24, by Thomas S. Holden, statistician for the F. W. Dodge Corporation. Mr. Holden points out that since the war, building and construction has attained its greatest intensity in the larger cities, and he shows how the enormous amount of activity that is transpiring in both Chicago and New York, more than offsets a moderate decline.
For example, the dollar value of contracts awarded in the thirty-six Eastern states, which include about seven-eighths of the total construction volume of the United States, during the first two months of the year amounted to $601,881,000 compared with $525,377,000 for the corresponding period of last year. A marked increase of about 15 per cent in favor of 1924 is obvious. Now, statistics of a similar period in New York City, according to Mr. Holden, show an increase of $4 per cent over last year, and in the case of Chicago a 81 per cent increase is revealed. But, and this is a most important contrast, if the figures for New York City and Chicago are deducted from the grand total of contracts awarded in the thirty-six Eastern states, then the first two months of 1924 disclose a decline of 2 per cent in contrast with 1923. In this way the slight recession that has been general all over the country has been obscured by the enormous volume of building in these two great cities. Two months, however, are hardly sufficient time to establish a trend, and Mr. Holden does not say that these conditions obtained in October, November, or December. Assuming that it has only existed since the first of the year, it still represents a significant movement, for the intense activity in these two metropolitan centers is attributed chiefly to speculative enterprise, a type of business suggesting dismal possibilities. Again the villain seems to be dominating the play.

It is to be regretted that new contracts have been undertaken in a volume running from 25 to 50 per cent above the average of the past five years. Such a condition is one of weakness rather than of strength, for being an extreme movement itself it begets instability. It usually signifies a relatively heavy turnover of improved property at high valuations. Costs mount and soon reach prohibitive heights that preclude further extension and development. Then the public quits the market. Reappraisal, recession and readjustment invariably follow. In a saner and more moderate pace the danger of overbuilding is reduced, the rise in costs arrested, and stability fostered and encouraged. The most profitable progress is always that which is most firmly established. Repeated extremes of activity and passivity inspire and enrich, then dishearten and impoverish, and are very enervating. They destroy that equipoise and balance, that nice harmony of interests which is so essential to lasting and true economic progress.

Demand in the building industry springs from several sources. The most important origin, and perhaps the one making the heaviest contribution, is the growth and shifting of the population. Now, demand due to increases in population is usually perceptible only when the achievements of a number of years are put side by side for purposes of comparison. It is only when radical re-distributions are made within a comparatively short space of time that the influence of the population upon the industry is most keenly felt. During the entire war period the trend of the population was away from the country and toward the city. War in Europe was destroying materials as fast as the world could produce them, and the demand for the products of our industrial centers reached great heights. This profitable operation held a wonderful attraction for the country laborer, and the movement which was started then persists today.

When the United States declared war in 1917, the shifts that occurred in the population were still more radical and on a scale unheard of before. The mobilization and training of our huge fighting machine resulted in the heavy concentration of people in our port cities and in those municipalities near army cantonments and camps. In these districts the supply of shelter was a real problem throughout the war, but in the country and cities outside of these districts the situation was relieved. Normal building requirements here were forgotten in the press of war work, and it was not until after the cessation of hostilities, when the population began to drift back or to settle permanently in their new localities, that the neglect of our normal building program was apparent. A deficit of astonishing proportions had accumulated. Peak costs in 1919 and 1920 delayed the work of effectively eliminating this deficit until 1922. Then followed two years of building which was so heavy that the industry was operated at capacity. It is generally felt now that another ten months of active construction will practically eliminate the deficiency.

As a factor in demand this scarcity of shelter has been rather intangible and elusive, particularly in its later stages. For the most part its proportions can be defined only by conservative opinion and careful conjecture. In 1922, when the need for building was most keenly felt, the units of society seeking shelter exceeded the number of shelter units in existence. Discomfort, amounting in some instances to distress and suffering, was the result. Heavy building relieved this emergency in about a year. Then a new type of demand sprang up. The prosperity of the construction industry had been a major influence—as it continues to be today—in a general industrial revival, and living standards were again rising from the depths of the industrial depression of 1920 and 1921. Demand arising out of improved standards of living is hard to measure, and its ultimate significance is difficult to gauge. Its appearance in the form of an awarded contract, for example, depends upon the trend of confidence, the general industrial outlook, the direction in which costs are moving, the yield of the
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inflation, and the abundance of credit. Rope
lied of the pressure of positive urgency this type
of demand is less assertive and more calculating
and subtle. Even when conditions are reasonably
known, the psychological elements in the situation
make it difficult to tell which direction the pro-
spective builder will jump. And it is from just
this sort of demand that the industry is drawing
a greater part of its support today. With the
deficit no longer a potential factor in the situa-
tion, the architect, who is looking months ahead,
must expect to encounter demand forces underly-
ing, not an unusual set of conditions, but a state
of affairs approximately normal.
Confidence has been troubled. The delay in
the reduction of taxes, the passage of the bonus
bill by the House of Representatives and the re-
result of the sensational investigations in Wash-
ington with their interruptions of needed legisla-
tion, have created a great deal of uncertainty all
over the United States. This feeling of caution
has deprived Spring business of its usual viva-
ciousness and snap. It has also suppressed that
boldness and courage which form a vital part of
the whole business of speculation. Furthermore,
a mild form of pessimism has been produced by
that ancient economic specter, the presidential
year, when all the forces underlying business are
supposed to be restless and unruly. Early indica-
tions of a campaign of acrimony and of the in-
quisition of personalities and reputations have
done a great deal to heighten timidity in the ad-
vancement of business affairs. Mr. Daugherty's
resignation has lessened the political tension some-
what, but the public's apprehension of develop-
ments of a disquieting nature has certainly been
aroused.
Anxiety and uncertainty have never formed the
foundations of prosperity. Genuine good times,
like good reputations, must be born of confidence-
breeding circumstances and conditions that are
fundamentally sound, substantial and secure.
These distasteful revelations in Washington have
been reflected in the amount of forward buying
which has lingered and wavered since February.
The volume of new business that graced the close
of the Winter months in such a promising man-
ner, has apparently given way to the old practice
of purchasing for immediate requirements. Ca-
tions and afraid of debt, business men have been
reluctant to accumulate inventories at present
prices. As long as this attitude prevails, a de-
cided rise in commodity values cannot reasonably
be expected; yet active retail trade, comfortable
inventories, and an abundance of cheap money
militate against the probability of a pronounced
slump in the general price level and may even
serve as the incentive to a moderate advance in
prices in the next few months.
Quite in the face of the prevailing timidity and
vacillation in general buying policies, indexes of
the activity in business point to a movement which
continues better than normal. For example, pro-
ductive activity in twenty-two basic industries,
according to the Federal Reserve Board, advanced
9 points, from a relative of 111 in December,
1923, to 120 in January, 1924, a notable gain in
one month's time. That index has only recently
moved up another point in February. March's
relative, when it appears, is not likely to disclose
any marked change. Furthermore, factory em-
ployment is increasing, and the amount of checks
passing through the banks lends weight to the
feeling that business is progressing in good vol-
tume. It is gratifying to have the assurance from
the relatively heavy movement of retail trade and
the unprecedentedly heavy railroad traffic, con-
sidering the time of year, that this increased vol-
ume of production is passing rapidly into con-
sumptive channels. This is indeed a salubrious
condition and one of basic significance. By keep-
ing down the accumulation of merchandise, such
steady consumption offers some degree of insur-
ance against the effects of a decline in the pres-
ent rate of production, which, obviously, cannot
be maintained for long in the face of the public's
policy of buying stantially. A moderate recession
is inevitable, or the manufacturer must produce
for inventory or increase his sales. Already
manner, and in some cases inadequate margins of
profit preclude further price concessions, and the
timidity and caution of the buying public are a
barrier to heavier forward purchasing for the
present. Furthermore, present conditions do not
favor manufacturing for inventory, so a moderate
recession in production may be expected in the
coming months. This program is essentially
sound, and prevents the players from overreaching
the possibilities of their hands.
An industrial debacle, similar to the depression
of 1920-1921 is certainly not in prospect, and is
hardly probable as long as easy money, comfort-
able inventories, full employment and attractively
priced merchandise hold the public in the market.
The principal weakness is that these good times
have not been evenly distributed among the in-
dustries. This fault has been the result partly
of the economic disturbances of the war, partly
of the artificial control of some parts of the eco-

domine machine, and partly because of the ex-

ploitations by opportunist elements in society who
for the moment have held an advantage. The
effect has been the destruction of finely balanced
relationships of prices, which has benefited some
to the detriment of others. The greatest activity
today prevails in those trades which have been the
leaders since 1921: building and construction, iron
and steel, automobile, and electrical equipment.
Industries allied with these basic lines have like-
wise prospered. In other trades activity has been
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slightly above or slightly below normal. Margins of profit have been discouragingly narrow, for prices have been repressed and costs boosted high. A significant index of the business situation is the condition of credit. A serious industrial depression in this country has always been attended by a scarcity of money, or money at prohibitive rates. Today credit is abundant and rates of interest are relatively easy. There have been two years now of very active business, and speculation has been moderate and controlled, and these have left a condition which is fundamentally strong and healthy.

The trend of building costs is still mildly upward. On March 1 the construction cost index computed by the Engineering News-Record gained 4.4 points over February 1, due chiefly to increases in two components of the index, lumber and labor. The cost of general construction stood on March 1 at a relative of 328, 9 per cent higher than a year ago, and 18 per cent under the peak of all time. A slight recession in lumber and steel prices, which took place during March, may result in a decline in the April 1 index, a movement which is believed to be opposite to the main trend of construction costs at the present time.

Materials markets in March apparently confronted that same chilly wind of uncertainty and caution which swept over the whole industrial field. Demand flinched, then faltered. Materials markets apparently are forecasting a milder movement in new building and construction. New orders, which had been appearing in gratifying volume, fell off; prices of structural steel receded mildly, as did the quotations of pine. Markets for the other basic materials held firm. As April approached, a better demand appeared, particularly in lumber, and during the second month of Spring, if there is any change in construction costs, they will be expected to move mildly upward. Stocks of basic materials are believed to be sufficient to meet Spring demand, with the possible exception of certain grades of lumber and hollow tile. European shipments of cement and brick are being added to supplies already augmented by increased domestic production. The shipping situation is good and shortages are not threatening.

Wages show no inclination to yield to the weakening influences that have resulted in the disappearance of courageous forward buying. Enough work is already under way to keep employment, particularly of the skilled crafts, full for several months. For the most part, the labor situation is a fairly comfortable one. A shortage may be said to exist in the trowel trades, and these bricklayers and plasterers are reported to receive bonuses of $1 and $2 a day in New York. But as far as the remaining crafts are concerned, immigration, active apprenticeship movements, and the release of skilled workmen from other occupations have relieved the situation. There has been no surplus of men except in districts where the weather has resulted in temporary idleness.

Wage increases during February and effective March 1 showed fewer changes than in January, according to The American Contractor. Still the upward trend, which has prevailed since May, 1922, continues. Thirty-one raises were reported in February and no cuts. The outlook is entirely favorable to the projection of this rising trend of wages. A busy season is ahead. Employment is already full, and the cost of living has revealed no appreciable decline. Food, clothing and fuel costs are still high and a nationwide survey recently conducted by the National Industrial Conference Board shows that rents of low and medium priced four and five room houses average 80 per cent above pre-war levels, and some 8 per cent higher than a year ago. With these conditions prevailing, peak wages are likely to obtain in the building and construction trade for some months.

The abundance of industrial credit has had a favorable effect upon the mortgage money market. Rates have not altered radically, but the disposition to loan upon improved property has apparently eased. The change in the situation is probably due to the good supply of available funds, and to the fact that real estate markets are not quite as active as they were in March and April of last year. Essentially, the situation is the same, for costs have not declined, and valuations are not being made upon a readjusted basis. The careful banker will continue to make the builder finance a greater portion of his project by loaning to less than the usual percentage of the fair valuation, and construing that fair valuation upon a pre-war basis of appraisal and worth. In this way the strength of the credit structure underlying the building and construction industry may best be preserved.

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PERSONALS

Morris & Weinberg, architects, have moved their offices from 3226 to 3008 Euclid Avenue, Cleveland, Ohio.

Arthur Dahlstrom, architect, has moved his offices from 305 Essex Building to 217 Essex Building, Minneapolis, Minn.

Anton F. Korn, Jr., architect, will move his office on May 1 from 413 Andrews Building, to 415 Thomas Building, Dallas, Texas.

Alling S. DeForest, Fellow of the American Society of Landscape Architects, has moved his offices to 16 Fair Place, Rochester, N. Y.

Thos. F. Walston, architect, has moved his offices from the Grand Theatre Building to Room 917, Ashland National Bank Building, Ashland, Ky.

J. B. Chamberlin, architect and engineer, has moved his offices from 143 North Church Street to 613-616 Hazleton National Bank Building, Hazleton, Pa.

Kenneth B. Worthen, architect, and George M. Bg, structural engineer, are now occupying enlarged quarters at 647 Endicott Building, St. Paul, Minn.

Raymond M. Hood, architect, has moved his office from 18 East Forty-first Street to the Radiator Building, 40 West Fortieth Street, New York City.

H. M. Haven & A. T. Hopkins, Inc., engineers and architects, have moved from 40 Court Street to new and larger quarters at 11 Beacon Street, Room 1121-1134, Boston, Mass.

William Quincy Bendaus, architect, announces the removal of his office from Steinway Hall to Room 2049 in the McCormick Building, 332 South Michigan Boulevard, Chicago, Ill.

Annette Hoyt Flanders, member of the American Society of Landscape Architects, announces the opening of her office for the practice of landscape architecture at 8 West Fifty-first Street, New York City, with Helen Swift Jones as associate.

Herbert Wheaton Congdon, at one time the junior partner of the architectural firm of Henry M. Congdon & Son, which was dissolved at the death of Henry M. Congdon, is practicing architecture under his own name and on May 1 will move his office to Arlington, Vermont, where he will be glad to continue to receive advertising matter from manufacturers.
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602. Better Built Houses, Vol. XIII. This volume contains floor plans and perspectives of 21 two family houses. The designs were made by Trowbridge and Ackerman, Architects, New York, and illustrations rendered by Schell Lewis. Printed in color on heavy cream paper. Sent free to architects, east of the Rockies, requesting it on business stationery, otherwise price $1.00. 24 pp. Ill. 9 x 12 in.

McKeown Bros., Co., 21 East 46th St., New York, N. Y.

541. Catalog Showing Plans and Specifications of McKeown "Lattis" and "Bowstring" long span wood roof trusses. 4 pp. Ill. 8½ x 11 in.


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520. Concrete Conduits—See Pipe Conduits—See Conduits

Portsmouth Cement Association, 111 West Washington St., Chicago, Ill.

638. Concrete Data for Engineers and Architects. A valuable booklet containing the tests and data of the Concrete Materials Research Laboratories at Lewis Institute, Chicago, in abbreviated form. Contains tables of values in specifications. 28 pp. Ill. 8½ x 11 in.

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Joseph Dixon Crucible Company, Pencil Department, Jersey City, N. J.

285. Finding Your Pencil. A book explaining the various degrees of hardness of the Eldorado pencil and the grade most suitable for every man who needs a pencil for business or professional man, clerk or draftsman. Accompanied by a color chart of pencils and information regarding the best uses of the 150 best pencils. 4 pp. ill. 5⅛ x 6⅝ in.


792. Rudeubfeel Sinflet and Specification Chart. A diagram of vanishing lines over which perspective sketches can be readily and correctly made. 8½ x 11 in.

DUMB-WAIFERS—See also Elevators

Kuestner & Heeht Co., 1850 No. Branch St., Chicago, Ill.


Segwick Machine Works, 144 West 15th Street, New York, N. Y.

590. Hand Power Elevators and Dumb-waiters in Modern Architectural Construction. Illustrated catalog. 4½ x 7¼ in.

226. Catalog No. 25. A catalog and price list of kuife switchboard switches, panel boards, steel cabinets, switchboard material. 33 pp. Ill. 8½ x 11 in.

The Hart & Hegeman Mfg. Co., 342 Capitol Ave., Hartford, Conn.

690. H. & H. Electrical Wiring Devices, Catalog "R." Catalog of a complete line of switches, sockets, plugs, receptacles, plates, rocker switches, cut-outs, switches and accessories. Two identical catalogs in two sizes, 122 pp. Ill. 8½ x 11 in. and 8 x 10 in.

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ELECTRICAL EQUIPMENT

Harvey Hubbard, Inc., Bridgeport, Conn.

267. Electrical Equipment—Catalog No. 17, 1929. This cata-
log contains descriptions with prices of the thousand and one
items, including electric light, electric alarm and unit,
and small electric appliance installations in modern buildings.
104 pp.

Minneapolis Heat Regulator Co., Minneapolis, Minn.

570. The Minneapolis Thermostatic Relay Switch. Used in con-
nection with any Minneapolis Thermostat, provides a means
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refrigerating apparatus, electric heating units and any similar
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in.


481. Liberty Rubber Insulated Wires. Cables and Cords. A des-
criptive catalog of insulated wires, cables and cords for
wiring. Contains much special information together with
useful tables. 30 pp. Ills. 6 x 9 in.

ELEVATORS—See also Dumb-waiters and Holists

A. B. See Electric Elevator Co., 52 Vesey St., New York.

167. Photographs and description in detail of elevator equip-
ment manufactured by the A. B. See Electric Elevator Co.

Karsten & Hecht Co., 1500 No. Branch St., Chicago, Ill.

507. Electric Traction Elevators, Bulletin No. 500. Illustrated
catalog describing gearless traction elevators and worm-gear
traction elevators. 21 pp. 8 1/2 x 11 in.

Kimbail Brothers Company, Council Bluffs, Iowa.

520. Kimball Elevators. An illustrated catalog of band power,
sidewalk, and garage elevators and dumb-waiters and electric
carriages. Freight and push button elevators. 24 pp. Ills.
7 1/2 x 10 1/2 in.

Otis Elevator Co., 260 Eleventh Ave., N. Y. C.

621. Otis Gearless and Gearless Traction Elevators. Listet in
describing all types of geared and gearless traction elevators with
samples, tables, specifications, and controls for these types.
Illustrated. 8 1/2 x 11 in.


137. Ideal Elevator Door Hangers. Catalog showing
equipment for handling doors for two, three and six speed doors,
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side doors. Door parts and checks. 24 pp. Ills. 8 1/2 x 11 in.

ELEVATOR LOCKS


528. M-C-K Safety Elevator Locks. A descriptive cata-
log illustrating how locks for doors, which mechanically lock the
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control the landing. Contains several pages of names of con-
tented users. 24 pp. Ills. 4 1/4 x 11 in.

FASCILLATORS

Otis Elevator Co., 260 Eleventh Ave., N. Y. C.

652. Elevators and Included Elevators. A comprehensive cata-
log illustrating how locks for doors, which mechanically lock the
power and gate the power automatically, while gate is open; keep
power power locked until gate is securely closed; security lock gate before power can operate;
control the landing. Contains several pages of names of con-
tented users. 24 pp. Ills. 4 1/4 x 11 in.

FENCE

The Stewart Iron Works Company, Cincinnati, Ohio.

456. Book of designs, B. A book of fence designs full of
suggestions for architects. All illustrations are from photo-
graphs. 80 pp. Ills. 9 7/8 x 12 in.

FILTERS—See Air Filters

FINANCING OF ENTERPRISES

N. W. Strauss & Co., 545 Fifth Ave., New York, N. Y.

196. The Street Plan of Finance. A book describing the
methods of S. W. Strauss & Co., is helping to finance
the erection of the larger class of properties such as office and
apartment buildings, hotels, loft buildings and similar struc-
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handles, and regular and dampers. 24 pp. Ills. 8 1/2 x 11 in.

H. W. Covert Co., 137 East 46th St., New York.

70. Hints on Fireplace Construction. Diagrams of construc-
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tion of the Kerner incinerator for residences. Illustrated by views of residences in which the Kerner incinerator is installed, with cuts showing all
kinds of garbage to be burnt and illustrations of the
Kerner for residences. 35 pp. Ill. 6% x 9 in.

GARBAGE RECEIVERS
Edwin A. Jackson & Bro., Inc., 50 Beekman St., New
York. 176. Booklet showing general construction and sizes of garbage
receivers to be placed underground for suburban use; also types
for suburban wall with opening on inside for the maid and
outside for the garbage man. Size 3% x 6% in. 16 pp.

GARDENS
Julius Rechrs Company, Rutherford, N. J. 406. The Ten-Ten books issued three times a year—covering
all aspects of gardening in general, such things as fruit trees, roses and
perennials. Also one general greenhouse catalog, listing or­
chids and greenhouse plants.

GLASS
Plate Glass Manufacturers of America, First National
Bank Bldg., Pittsburgh, Pa. 484. The Booklet show­ing the general construction and sizes of gar­
bages, consisting of five sections on Rutts, Bolts, Blind and Shutter
Hardware, Stanley Garage Hardware, Screen and Sash Hard­
ware. Detail drawings are given, showing clear­
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GRAIN—See Stone

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THE NEW YORK JlRCE Co., 169 Front Street, New York,
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AIH-PRONTY Co., Danville, Illinois. 506. General Catalog No. 90. This catalog embraces a de­
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The Pacific Lumber Company of Illinois, 2600 McCord Ave., Chicago, Ill.

363. Construction Digest—The use of California Redwood in residential and industrial construction. Contains illustrations, tables, charts and general information regarding the use of California Redwood in construction, together with other technical data for architects and builders. 16 pp. Ill. 8½ x 11 in.

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Cutler Mail Chute Co., Rochester, N. Y.

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Ripolin Co., The, Cleveland, Ohio.

418. Ripolin Specification Book, 8 x 10 1/4 in., 12 pp. Complete architectural specifications and general instructions for the application of Ripolin, the original Holland Enamel Paints. Directions for the proper finishing of wood, metal, plaster, concrete, brick and other surfaces, both interior and exterior, are included in this Specification Book.

Standard Varnish Works, 443 Fourth Ave., New York, N. Y.


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Thomas Macdonell's Sons Company, Trenton, N. J.

566. Vitrue In China Plumbing Fixtures. A valuable and complete catalog of vitreous china lavatories, drinking fountains, bidets, water closets, urinals, and accessories. 16 pp. Ill. 5 7/8 x 9 1/4 in.

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Kohler Company, Kohler, Wisconsin.

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Kohler Company, Kohler, Wisconsin.


The Powers Regulator Co., 2770 Greenview Ave., Chi­

cago, Ill.

723. The Powers Shower Mower, Bulletin No. 154. Description and details of a shower bath mixer that imposes uniform water temperature regardless of disturbance of initial water pressure. 4 pp. Ill. 6 3/4 x 9 1/4 in.

The Vulcan Brass Manufacturing Co., Cleveland, Ohio.

578. Paragon Brass Goods, Catalog C. New catalog showing sectional drawings, illustrations and text describing exclusive feature of "Paragon" self closing back stop valves and stops; high pressure ball cocks, vitreous china bubbler, compression and quick-compression work. 60 pp. Ill. 7 3/16 x 10 1/4 in.

PUMPS

The Dayton Pump and Manufacturing Company, Day­

ton, Ohio.

475. Electric House Pumps and Water Supply Systems. A heavy paper binder containing illustrated bulletins 8 1/2 x 11 in. These bulletins describe pumps as well as complete automatic electric and gasoline water supply systems and all accessories, together with specifications, detail drawings and tables of dimensions. 48 pp.


387. Pump Bulletin 112. There are 28 of these bulletins treating on piston, plunger, air pressure, vacuum, triplex and centrifugal pumps. Bulletin 112 and Bulletin 122 containing the theory of pumps together with power pump data are of especial value to engineers in the offices of architects. 16 to 20 pp. Ill. 11 x 14 in.

REFRIGERATION

The Automatic Refrigerating Co., Hartford, Conn.


376. Automatic Refrigeration for Retail Markets. A valuable treatise on the subject matter mentioned in the title. 20 pp. Ill. 8 1/2 x 11 in.

Baker Ice Machine Co., Inc., Omaha, Nebraska.

561. Baker System Refrigeration. A catalog explaining the applications of this refrigeration system for hotels, hospitals, institutions and restaurants requiring up to 60 ton daily capacity including mechanical details and specifications. 20 pp. Ill. 9 x 12 in.

Jennison Cold Storage Door Co., Hagerstown, Md.

569. Heavy Duty Cold Storage Doors. Catalog No. in. Com­
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Ition of description of both hinged and sliding cold storage doors for every application. Also Contains, in addition, a number of cold storage windows and ice chests. 70 pp. Ill. 8 1/2 x 11 in.

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REFERENCE LIST OF BUSINESS LITERATURE—Continued

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The Jewett Refrigerator Company, 27 Chandler Street, Buffalo, N. Y.

325. Manual of Refrigerators. This manual completely describes the use of refrigerators, their parts and accessories, and their proper installation in homes, restaurants, hotels, hospitals, institutions and residences, with specifications. Numerous line drawings and illustrations. Complete line with dimensions, types and prices. 32 pp. Ill. 8½ x 11 in.

326. Jewett Solid Porcelain Refrigerators. This improved refrigerator has an interior finish of one-piece solid porcelain ware, and is designed for home and institution use. Complete line with dimensions, types and prices. 24 pp. Ill. 8½ x 11 in.

McCray Refrigerator Co., Kendallville, Ind.

472. Refrigerators and Cooling Rooms. Cat. C. A catalog of cooling equipment for homes, restaurants, hospitals, institutions, colleges and clubs. Catalog No. 96 deals with refrigerators for residences. 52 no. each. Ill. in colors. 7½ x 10 in.

REINFORCING STEEL—See also Concrete, Reinforced
Hall Steel Products Association, Reinforcing Bar Division, Arcade Bldg., St. Louis, Mo.

502. Rail Steel for Concrete Reinforcing. A book describing the manufacturing, fabrication and physical properties of rolled, billet and rail steel bars with specifications for their uses. 84 pp. Ill. 8½ x 11 in.

RESTAURANT EQUIPMENT—See Kitchen Equipment
HOOFING—See also Slate—Metals—Shingles
American Brass Company, Main Office, Waterbury, Conn.

515. Copper Roofing. Service Sheet. This service sheet contains data for copper roofing together with standard specifications. 17 x 22 in. folding to 8½ x 11 in. printed both sides.

American Sheet & Tin Plate Co., Frick Building, Pittsburgh, Pa.

400. Copper: Effect Upon Steel for Roofing Tin. Describes the merits of high grade roofing tin plates and the advantages of the copper-steel alloy. 25 no. Ill. 8½ x 11 in.


422. Standard Triangular Built-Up Roofing Specifications. Contains two specifications for applying a built-up roof over boards and two for applying over concrete. Gives quantities of materials needed for each square yard. 16 pp. Ill. 8½ x 11 in. Ask at same time for Good Roof Guide Book. 32 pp. Ill. 6 x 9 in.

762. Specifications. A pamphlet containing standard specifications for Genasco Standard Trinidad Lake Asphalt Built-up Roofing, Genasco Economy Trinidad Lake Asphalt Built-up Roofing, Genasco Membrane Waterproofing and Genasco Asphalt Flooring. Illustrated with sketches showing construction. 16 pp. Ill. 8½ x 11½ in.

The Phillip Carey Co., Lockland, Cincinnati, Ohio.


The Edwards Manufacturing Company, Cincinnati, Ohio.

535. Shingles and Spanish Tile of Copper. This book, illustrated with line drawings, describes the forms, sizes, weights and methods of application of roof coverings, gutters, downspouts, etc., of copper-steel composition. Ill. in special indexed folder for letter size vertical files.

Ludowici-Celadon Co., Chicago, Ill.

129. Roofing Tile. A detailed Reference for Architects' Use. Sheets of detailed construction drawings to scale of tile sections of various types and dimensions, giving notes of their uses and positions for various conditions of architectural sections. Descriptions and illustrations of 132 plates. 154. The Roof Beautiful. Booklet. Well illustrated with photographs and drawings, giving history and origin of roofing tile, and advantages of tile over other forms of roofing. Types shown by detailed illustrations. Size 8 x 10½ in. 32 pp.

The Richardson Company, Lockland, Cincinnati, Ohio.

492. Fibitch Membrane Roofs. Contains specifications for applying Membrane roof over boards and also for applying over concrete. Illustrated with line drawings of several approved methods of flashings. 3 pp. Ill. 8½ x 11 in.

Rising and Nelson Slate Company, 101 Park Ave., New York, N. Y.

496. Tudor Stone Roofs. This leaflet discusses colors and sizes of Tudor hand-wrought slate; deals with the service given to architects and specifications for formalités, and describes the installation of the slate. Complete line with dimensions, types and prices. 56 pp. Ill. 8½ x 11 in.

Rising and Nelson Slate Company, 101 Park Ave., New York, N. Y.

533. Tudor Stone Roofs. A brochure describing the 7 special grades of Tudor Stone and the 7 grades of commercial slate produced by this company. Illustrations of many structures on which it has been used. 28 pp. Ill. 8½ x 11 in.

Vendor Slate Co., Easton, Pa.

333. Occasional brochures on architecturally pertinent phases of roofing slate sent on request. See also listing under Slate.

ROOF CONSTRUCTION
Porere Mfg. Co., Summit Ave., Newark, N. J.


ROOF LIGHTS—See Glass Construction

SAFETY TREADS
American Abrasive Metals Co., 50 Church St., New York City.

736. Forbush Anti-Slip Treads. Six plates of details of anti-slip stair treads, door saddles, elevator door sills, floor plates, trench covers and garage ramps. Plates can be traced or blue printed. Also data sheet of sizes, thickness and specifications. 7 pp. Ill. 8½ x 11 in.

SANDBSTONE—See Stone

SASH—See Doors and Windows

SASH CHAIN AND CORD
Samson Cordage Works, Boston, Mass.


SCREENS
American Wire Fabrics Company, 288 So. La Salle St., Chicago, Illinois.

305. Catalog of Screen Wire Cloth. A catalog and price list of screen wire cloth, black enamelled, galvanized, copper, bronze. 36 pp. Ill. 3¾ x 6¼ in.

The Higgin Manufacturing Co., 5th and Washington Ave., Newport, Ky.

353. Screen your Home in the Higgin Way. A description of Higgin door and window screens with practical data. 16 pp. Ill. 8½ x 11½ in.

New Jersey Wire Cloth Company, 614 South Broad St., Trenton, N. J.

400. A Matter of Health and Comfort. Booklet No. 233. A booklet telling all about screens, the durability of copper and its superiority over all other metals for screen purposes. 16 pp. Ill. 6 x 9 in.

SHINGLES—See also Roofing
The Phillip Carey Co., Lockland, Cincinnati, Ohio.

381. Carey Asphaltite Shingles. Folder containing illustrations of attractive buildings and residences on which Carey Asphaltite Shingles have been used. Describes this type of shingle, showing its special claims and advantages.

SIDEWALK LIGHTS—See also Vault Lights
SLATE—See also Roofing
Vendor Slate Co., Inc., Easton, Pa.

332. The Vendor Book of Roofing slate for Architects. Contains original information on slate in various architectural uses; history, geology, sandy practical matters; complete descriptive classification; extended treatise on architectural roof design and specifications. 24 pp. Ill. 8½ x 11 in.

STAINS—See also Paints, Varnishes
STAIRWAYS—MOVABLE
The Bessear Movable Stairway Co., Akron, Ohio.

541. The Modern Way Up. A book describing a stairway that helps utilize attic space. It folds up in the ceiling and is concealed when not in use. Letters are given from contented users. 52 pp. Ill. 6¾ x 8¾ in.

STEEL JOIST CONSTRUCTION
Truscon Steel Co., Youngstown, Ohio.

641. Truscon Steel Joint Data Book. Complete data of steel joints giving properties, dimensions, safe loads, coefficients of deflection, details of connections, specifications, directions for installations. 31 pp. Ill. 8½ x 11 in.

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The Appalachian Marble Company, Knoxville, Tenn.

503. Appalachian Tennessee Marble. A new booklet on the qualities to be looked for in marble and a treatise on Tennessee marble by T. Nelson Dale (Retired Geologist, U.S.G.S.). Contains also data on the company, building in which Appalachian Tennessee Marble has been used and four-color process plates of the six major Appalachian marbles. In tough paper indexed cover. 12 pp. Ill. 8½ x 11 in.
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The Welte Philharmonic Pipe Organ in a residence in New York City. Playable either manually upon its keyboards or by Recorded Rolls.

The keyboard console shown is partly recessed in the second floor Music Room. The Organ itself is ingeniously placed in a private chamber off the stair landing, with tone outlets through a loosely hung tapestry panel, with additional ornamental wood grilles on either side for further outlet of tone.

The Welte Philharmonic Pipe Organ gives an absolutely true reproduction of the individual performances of the most distinguished organists of Europe and America.

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Arms iron Lin ole um

for Every Floor in the House

This floor is Armstrong's black and gray inset tile inlaid linoleum (No. 741), with a border of plain black linoleum. It is one of 33 such floors installed by the Frank Novak Company in a recent building operation in Baltimore, Md. Each linoleum floor was cemented to a wood underflooring over a lining of deadening felt. For Specifications, write for "Armstrong's Linoleum Floors," slip-cover folder, or see Sweet's Architectural Catalog, pages 498-499, or American Architect Specification Manual.

Why Should the Architect Specify the Kitchen Linoleum?

Modern practice is to think of the linoleum for the kitchen, pantry, and entry, as the floor itself—a structural part of the house. It is often possible to save considerable floor expense by specifying linoleum to be cemented over telt to an inexpensive underflooring, simply of tongued-and-grooved wood.

When he considers linoleum as the floor itself, the architect can use the linoleum's color and design as a part of his decorative plan. This bordered floor of black and gray inset tile linoleum is but a suggestion of the many interesting and distinctive floors that may be designed in linoleum.

Installing the linoleum when the house is built insures a more serviceable and a better appearing job—no furniture or fixtures to move or fit around, no seams left open to catch dirt and moisture.

Linoleum is such a practical and handsome floor that it is appreciated by every housewife. Its smooth, seamless surface makes it indispensable where cleanliness and sanitation are so necessary, and its quiet resilience makes it a comfortable floor to work on. These features, combined with its remarkable durability, make linoleum a most economical floor. Your client gets 100% service and appearance in his linoleum floors if they go in when the house is built.

Armstrong Cork Company, Linoleum Division, Lancaster, Pa.
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Please send requests for this handbook on your stationery, addressing the Associated Tile Manufacturers, Beaver Falls, Pa.

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The above are photos of a comparatively small kitchen in which careful planning is made necessary in order that all necessities are included—that nothing be left out for lack of space.

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