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A Small House Prescription

The way to build enduring attractive small houses is not the way small houses are usually built. To get the best building results, finance must be divorced from contracts for material and construction. Finance is a proper function of the qualified financing organization. Conversely, the expert framer and marketer of bond issues is not a safe man to have the direction of the design and construction of buildings.

SPECIALIZATION

The competent contractor needs his capital to operate his business efficiently. He has no surplus funds to finance his customer's projects. Likewise he has neither the prestige nor the skill to work out and put through practical financial plans. The really efficient building contractor is not in a position to sell building securities to realty investors. When a pseudo-building contractor purports to finance a building project, he does not put his own money into it. That which he seems to put into the project is the junior paper which he coerces his material supply houses and sub-contractors to take. This junior credit is commonly wrangled from these subs on the promise of special favors. The only special favors that the financing contractor has to give are at the expense of the job. In turn, so-called contractor-financed first claim paper is placed with bond houses on a pyramided cost set-up. These bond houses, in turn, sell through brokers to actual investors. Thus are brokerage commissions multiplied, appraisals stuffed, specifications violated and the integrity of the building industry raped. Not only are the paper-taking subcontractors few in number, thus limiting competition, but they rarely, if ever, represent the best skill in the separate trade crafts. I have already pointed out that in order to build low cost, low-bracket houses well and cheap, it requires the highest separate trade craft skill and construction management. It hardly seems necessary to stress the fact that a building with excessive material costs or one whose upkeep expense is unreasonably large, will not be able to produce sufficient net revenue to sustain the breath of life through financial dry times.

Low cost small houses of pleasing appearance and enduring quality cannot be built in single units to suit the whims of special clients. This is irrespective of whether the work is organized by architect or general contractor. On these small units, the overhead is proportionately too great. On the other hand, such buildings can be produced in quantity at a low cost, with individual charm of varying aspect and of elastic diversified arrangement. To accomplish these results requires an architect of trained, experienced ability, working without too much client interference (in government projects there is always too much client handicap) and handling as one operation a group of not less than ten, preferably twenty-five houses. To accomplish this program, the architect must so design as to standardize all hidden parts, buy in considerable quantity through the closest competition but only from contractors of high craft, efficiency

and integrity. This means bids from and contracts awarded to, small operating separate trade contractors, firms or individuals working with comparatively small overhead. Usually in such firms, the head works part-time with his men; on the job at any rate, he is always in close touch with his employees.

NO CURE-ALL

One should not be deceived. There is no panacea in the way of a new prefabricated material for the real reduction of the cost of small buildings. It is a case of using the tried and true materials which have been employed and perfected since the dawn of history. The main factor in getting results is trained, experienced, scientific application of the fundamental principals of good design. If we do what the Romans did with Greek architecture, reduce the design of small houses to a module system, we can cut our costs and still obtain large variety and interest. Roman architecture was good and economically practical. Greek architecture was built to please the gods and for the inconvenience of men. Throughout all the ages nothing has ever rivaled or even approached the exquisite beauty of Greek architecture. There are still standing usable examples of old Roman houses. In contrast, little that is authentic is even known concerning the Ancient Greek dwelling house.

OLD ARE BEST

There are no real economic rivals of the basic building materials. These materials have all been in use almost since the beginning of history. Wood, stone, iron, burned clay, plaster and plaster-stone combination, now known as concrete, have been used so long and in so many variations of form that there is really no use to which they have not been applied.

Economy in building construction is all a matter of practical workable units, their assemblage in pleasing manner and at the minimum of cost. By building houses in groups in one continuous progression, small separate trade contractors can function in a relatively large way on a comparatively small capital. Close buying advantage may be taken of quantity purchase. Because of the small units that compose the whole, remnant lots of high quality brick, wood, cabinet work, plumbing, lighting fixtures, etc., can be included in the purchase at remarkable bargain prices. The wise architect who is handling such a project will find it very profitable to make a tour of the stock rooms of various building material supply houses. There are many real bargains in exceptionally fine products, which can be used on this kind of project, that could not be used in an apartment building project of the same magnitude. The very variety of these things helps to make distinctive the different houses that make up a group of this kind. Single architectural control of the group makes possible harmonious street aspect and at the same time the individual character of each house unit. Professional and contractor fees, even when comparatively small per house, yet are in the aggregate of such size as to enable the architect to do much care-

ful research work and the contractor to use extreme diligence, all to the great advantage of the job. Workmen with the prospect of steady employment before them as well as ripening experience growing out of each repeat unit, develop much higher efficiency than could possibly be attained on a single small job.

MODULE SYSTEM

The adoption of a module system in design, notwithstanding wide variation in the several building design units, results in a material saving in the cost of construction on a group operation. It is like a common denominator in an arithmetic problem. This unit system greatly simplifies layouts for contractors, enables the reuse of forms, permits shop cutting of parts, makes take-off of material merely a simple accurate counting process and thus reduces the chances of error to the minimum. By designing on a basic module appropriate to stock building materials, these materials may be used without waste, therefore with the highest degree of efficiency.

Quo Vadis

The prefabricated house seemed to me a bloodless thing sired by science out of industry, and did not exemplify any tenderness of feeling . . . So perhaps I did insinuate that the whole idea seemed to me a monumental piece of folly, the result of loose thinking and shortsighted avarice. I deplored the exit of the architect from the world's stage, and the entrance of the robot. I indicated that the future of architecture perhaps is doomed; that its course can no longer be guided by men trained in its subtleties, but must be handed over to the sales managers of the great industries and their allies, the advertising copywriters. I sensed the conflict between the producers of one or another building material or system of construction. I thought of the power industry (the Power Trust some call it), intent on extending the use of electric current and consequently sponsoring houses without windows, artificially lighted, heated and cooled and ventilated mechanically. I thought of the great glass industry fighting to preserve its integrity in the face of this development, and advocating more and more glass, less and less masonry. I thought of the clash of ideals and appetites between these two titanic forces, and wondered what gentle, middle way might be left for the simple-minded architect.

I didn't really want to hurt anybody's feelings, but I did want to reflect a moment so that you and I and the rest of us might recognize Frankenstein when he comes along.

—Louis LaBeaume.

Banqueting Hall at Whitehall to Go

Inigo Jones' Banqueting Hall, London, built 1619-1621 is to disappear under the wrecker's hand this fall of 1936 to make room for a government office building. So passes a famous monument, relic of a romantic, thrilling and glamorous past.

The Banqueting Hall or Banqueting House was designed by Jones for Charles I as part of the proposed palace of Whitehall, 950 feet along the Thames by 1280 feet back to St. James Park. Only the Banqueting Hall, however, was built.

The noble exterior reflects Inigo Jones' study of the correct Palladian architecture of Italy.

The result of owner interference and unnecessary taking of the time of architect, contractor and even workmen on a small job is many times greater than on a large job. On a large job, the owner is invariably an experienced business man and as such knows the importance of delegating work to proper people and then trusting them. A business man knows that if he uses unnecessary time of those employed by him that he has to pay for that waste, therefore he is careful not to cause waste of time.

Stock plans freely given are worth just as much as a physician's prescription without the competent doctor to watch the case. The legend on a patented medicine package says its contents will cure mumps, measles, appendicitis, etc.; but the wise man does not take patent medicine nor does he consult a druggist when he is seriously ill. He calls an experienced, well-trained physician with a reputation for integrity. No house is cheap that is not well designed and the integrity of its construction competently certified.

—Emery Stanford Hall in "The Plastering Craft."

Air Conditioning Brings Increased Fire Hazards

A fire may quickly gain headway in a building by means of the vertical shafts and connecting horizontal ducts of air conditioning systems, George Booth, chief engineer of the National Board of Fire Underwriters, New York, pointed out to members of the International Fire Chiefs' Association.

New regulations about to be issued by the fire underwriters will require the installation of dampers at the top and bottom of vertical shafts in air conditioning systems and also in horizontal ducts where these pass through fire partitions. These dampers must be so arranged that by means of a fusible link or other heat actuated device they will close automatically in case of a fire. The new regulations will also make provision that all air filters and linings in the ducts designed to combat vibration noise be of fire-proof or fire resisting materials.

Germans Build Museum for Prehistoric Art

Germany's famous art galleries are to have a new addition—an exhibit of prehistoric art. Wall pictures that the world's first artists painted in dim caverns or on cliff-sides have been copied by expeditions led by Prof. Leo Frobenius, of Goethe University, Frankfurt am Main. To house the 3500 pictures, large and small, the German government is considering the construction of a special museum.

Evidence that there were two schools of art, even in the dawn of art history, is revealed by cave paintings in France and Spain. The eastern Spanish style was carried out in one color and depicted human beings as well as animal figures. The Franco-Cantabrian style, executed in polychrome, depicted animals exclusively. Both styles apparently flourished in the territory at the same time, Professor Frobenius concludes.

The fact that frescoes found in caves and on cliffs in Libya, North Africa, show resemblance to the Spanish style is regarded as evidence that Spain and North Africa made a territory of uniform artistic culture, 30,000 years ago.

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Editor Monthly Bulletin

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In recent issues of the Bulletin, outstanding men have presented their views on the evolution of the low and moderate cost dwelling house. The June-July 1933 Bulletin printed Prof. H. V. Walsh's (Columbia University) thesis showing from personal experience in building that the dwelling built with older standards and materials is the more economical and satisfactory. In the February-March 1936 issue, Richard J. Neutra weighed prefabrication, and the experimental houses in the Purdue Housing Research were discussed in the same issue. In the August-September 1936 issue, Prof. W. I. Bennett of University of Michigan, School of Architecture, argued new, prefabricated materials in modern domestic architecture.

In this current issue our own Emery Stanford Hall offers his prescription for the cure of all dwelling construction ills and points out the boulevard to building beatitude, while Louis La Beaume wonders whither we are going.

Yes, the evolving house has been man's problem since he first sought shelter on this earth. To tell its story, Albert Farwell Bemis of Boston, engineer, industrialist, banker, who died April 11, 1936, wrote a three volume work "The Evolving House," the last volume appearing posthumously. Volume I covers "A History of the Home"; Vol. II "The Economics of Shelter"; Vol. III "Rational Design."

In the chapter "Rationalization," the author says: "Just as the right catalytic agent starts and accelerates the beautiful and orderly process of synthesis in some great conglomerate mass of hydrocarbons, there must be for the building industry an agent by means of which its huge, heterogeneous, unwieldy mass may change from chaos to order. It is useless to think that such a disorganized, diverse, antiquated conglomeration can contain its own reagent. But once provided with a persuader, its scattered warring particles would with reasonable celerity join into an effective new formation. Complex as the change may seem, it is in reality the variegated mass of social and economic elements in the industry that is complex. But their realignment should prove relatively simple. To suit mass production, a new conception of building structure is

needed, a conception that will annul the present obvious disabilities of the industry. Such a conception would precipitate the rationalization of housing, would effect the benefits we have described."

The architectural mind is skeptical of ever standardizing taste and plan in dwelling houses to the extent warranting industry to produce standardized houses *en masse* at a sufficiently low price and still leave an adequate profit. The dwelling house is neither a Ford nor a Chevrolet. The comparison doesn't fit.

To call Boulder Dam a great engineering work is trite. To say it is stupendous is equally banal. To call it an interesting and successful example of modern architecture is to proclaim the truth.

Study the disposition of this construction, its shadows through expansion jointing, its surfaces—plane and curved, its disposition of piers and windows in power house and towers, wall textures achieved through variation in centering material against which the concrete was poured and color shading of the concrete achieved through chemical content of curing water and the type of pipe conducting this water.

There is no ornament as such. All has a useful purpose. This is the point in modern architecture the Walter Gropiuses and Le Corbusiers dwell upon. But have they produced anything to compare in dignity and simplicity with the architecture of Boulder Dam?

Program committees of architectural bodies would do well to secure architectural critics competent to present by word and pictures to members assembled, the architecture of Boulder Dam.

On July 6 the Procurement Division of the U. S. Treasury celebrated the hundredth anniversary of the Supervising Architect's office at a dinner in Washington. Robert Mills, the first incumbent of this office, was appointed by Andrew Jackson on July 6, 1836. He held the office for six years.

Wisely, the Board of Directors of the Illinois Society of Architects, decided that one monthly meeting each year shall be held in a city in Illinois other than Chicago. This action should redound to a better understanding, a more intimate acquaintance among Illinois practitioners, resulting in a constant increase in membership as each section of the state is tapped by a meeting in its locality.

The October meeting will be held in Springfield, Illinois. Vice-President Helmle, a resident of Springfield, has charge of all local arrangements. The meeting will be held on a Saturday evening, thus giving architects from other parts of the state time to travel and enjoy what is offered between Saturday noon and Monday morning.

John Howard Raftery is architect of the model house, thrown open to public inspection on September 27, built in Grant Park, Michigan Avenue and Roosevelt Road. The public is invited to inspect this modern, fire-safe dwelling up to December 1, when its life ends. Architects will be interested in the assembling of materials, the public reaction and the cost of the product. An admission charge of ten cents per person is made.

Trends—Discussed at I. S. A. September Meeting

They were 35 in number. They met, as usual, in the Architects Club of Chicago. September 22 was the date. The occasion, the first monthly meeting in the new I. S. A. year. The subject for discussion was "Trends in Architecture" and two very thoughtful and interesting hours were spent.

The minutes of the June meeting, the plan to hold the October meeting in Springfield, and other routine matters were quickly dispatched after a good dinner.

President Jensen, in introducing the subject of the evening, stated that today architects feel free to interpret problems entrusted to them in architectural expression without self-examination as to application of historic motifs and old established architectural grammar. The result of this was evident all about us and the discussion of the evening was meant to bring out thoughts, not alone on the logic of modern architectural efforts, but of their permanent value—if any. And in this train of thought, the President introduced the first speaker—John A. Holabird.

Mr. Holabird frankly admitted that he did not know the trend or drift of our architecture today. He doubted the permanency of our modern contribution and wondered whether the pendulum had not swung too far away from what, through time, had been recognized as true and fine architectural tenets. He contrasted the distinguished modern architects, now growing old or passing, in Sweden, who had developed a modern architecture that held fast to certain, nationalistic earmarks, with the men like Gunnar Asplund who, in the 1930 Stockholm Exposition, showed a tendency to free themselves from national taste to the displeasure of men like Östberg. The speaker referred to the late Tengbom as an extraordinary figure in architecture through his power and influence and whose plans Mr. Holabird much admired. As one of the committee guiding Armour Institute of Technology, School of Architecture, he divulged the committee's efforts to obtain the services of Miës van der Rohe for that school. Another American school had bid for his services. As far as he knew, neither request had been complied with. Mr. Holabird thought that today's evidence in baldness of building was not a true expression of our civilization. That civilization contained more than mere baldness. There was light and shade in it and he hoped that through sculpture and modeling our architecture might reach a happier blend of the mechanical with the aesthetic.

Ernest A. Grunsfeld spoke on trends in housing. He was pleased to see building activity in outlying suburban residential sections. Even the real estate subdivider, said he, had been influenced by the endless housing talks and plethora of housing literature of the last few years, in that he introduced culs-de-sac and round points. He questioned the wisdom of the individually designed and built house for the family in the lower income group to own, and the architect for such individual homes was unfortunate in that he could never be paid adequately for his skill and time and trouble. One such house designed with outlook and garden and services might be completely nullified by his neighbor's efforts for another client having entirely different ideas. For such planning a community plan was necessary and planning and building houses in groups was the only right way to do it. But after all, said the speaker, people in this bracket are better off to rent than to own their homes. He was interested in the trailer solution of living, though he did not argue the point.

Hugh M. G. Garden was to talk on hospital architecture and here Sullivan's "form follows function" was more strictly applicable, perhaps, than in any other branch of architecture, for the hospital designed stylistically and even with a grand, balanced plan of wings, is out. The ambitious blending of a hospital and palace projected for New York City before the debacle, where patients would be charged \$100 a day, has no interest in the field of real hospital design where the trend is toward cheaper hospitalization. Changes in hospital design are constant and rapid, following as quickly as possible the rapid changes in medical and surgical science and practice. The speaker made clear that a doctor whose patient was quartered in the hospital and required sun baths, would have no patience with an architect producing a lovely Gothic or Renaissance

loggia for a sun terrace. Nor had the speaker much patience with the thought of glass walls for hospitals where shades would have to be introduced as a protection against glare. He spoke of English hospitals being divided into three types. These three types were not followed in America.

Mr. Garden prophesied that not a single building of our time would be standing in 150 years. He paid tribute to Eliel Saarinen as the sanest, most logical and beautiful designer of architecture today.

Howard Raftery was called on. He, who had designed the small house to be thrown open for public inspection before these lines reach the reader—the house standing at Michigan avenue and Roosevelt road—spoke of original conceptions generally falling within historic mould and developing out along practical present-day needs. W. H. Buchholz, a young architect who is looked upon as promising and who had just returned from Sweden was introduced.

George Nimmons, a veteran, spoke on materials influencing design, noting particularly the lessons that had been learned from the Woolworth Tower, New York. E. S. Hall advised the young architect never to overlook the homely but all-important details of wall and house design, such as drips. Walter McDougall drew comparisons between present-day lighting and the earlier crystal chandelier.

September Chapter Meeting

After dinner and the Secretary's briefed minutes of the June meeting, the 35 men responding to the invitation of the Chicago Chapter's September 15 meeting received for the Chapter's Portrait Collection Daniel H. Burnham's gift of a framed photograph of Henry Hobson Richardson and heard the Portrait Committee Chairman's announcement that through the efforts of Portrait Committee member Miles Colean in Washington and the Foreign Legion of the Chapter in that city, a portrait of Thomas U. Walter, painted by Annunziata from the original in Washington by Francisco Pansas had arrived. John C. Bollenbacher, lately returned from Washington, explained how the Legion was subdivided for assisting Mr. Colean. The formal presentation of the Walter portrait was deferred to a later meeting.

President Merrill spoke on the necessity of increasing the Chapter membership and explained how the membership had shrunk due to the evaporation of architectural jobs during the depression. This shrinkage was characteristic not alone of the Chicago Chapter, but of Chapters throughout the country.

The Program Committee had arranged for talks on closer contacts between different branches of the building industry. Four men—Otto Randolph, President, Associated Builders of Chicago; Byron Cain, President, North Side Real Estate Board; Morris B. Ashton, Great Lakes Mortgage Corporation; and Don Webb, President, Producers Council Club of Chicago—were the special guests invited to discuss this problem. All responded but Don Webb, unavoidably absent from the city, for whom George Fairbrass substituted. Each of the four made graceful, companionable, fraternal talks without projecting anything particularly tangible.

The President then invited the membership to take part in the discussion, limiting each member to five minutes. Some members overcame this handicap by appearing more than once on their feet. Elmer C. Jensen believed that compromise was necessary. Where and what he would compromise was not made clear. This reporter's mind unconsciously reverted to American history, where Henry Clay was called the "Great Compromiser" and he never reached his goal—the Presidency. Among those whose words met approval or non-acquiescence were E. S. Hall, K. M. Vitzthum and Henry K. Holsman.

I. S. A. October Meeting in Springfield

The regular monthly Illinois Society of Architects' meeting in October will be held in Springfield, Illinois, on a Saturday evening. The program committee, in association with Vice-President Helmle of Springfield, are at work perfecting arrangements for this, the first of a series of annual meetings held by the Society in different cities of the State.

If the program committee's plans are consummated, members may anticipate a rich program, participated in by the Director of Education and Registration and by Louis La Beaume of St. Louis, Vice-President of the A. I. A. and long time member of the Illinois Society. It is possible that the dinner and meeting will be in the Country Club, permitting members on the following morning to participate in golf. The program committee will determine whether the Chicago contingent will go en masse by special car on the railroad, or whether a community bus will be chartered from Chicago to Springfield and return.

Watch your mail for the date, program and full details, for this first of a series of out of Chicago meetings.

A Monument on Robert Mills' Grave

May 30th was a perfect day in Washington, D. C. With white clouds against a clear sky and gentle summer zephyrs rustling the leaves in the Congressional Cemetery, a group of Washington architects with a few women, including Mrs. Robert Mills Evans, assembled to do honor to the memory of Robert Mills, architect. Mills, who was the first federal architect to mould and influence our architecture, through such works as the Washington Monument, Treasury Building, old Patent Office and old Post Office, had lain buried in this cemetery in an unmarked grave since 1855.

Washington architects in recent years had decorated this grave once a year, but now, on May 30, 1936, these architects through subscription among themselves and others, had raised funds to erect over Mills' grave a white marble tombstone with a suitable inscription.

He was born in 1781 and died in 1855. The President of the United States paid his tribute to Mills with a message read before those assembled at the grave.

In New York City, the processes of architectural education are controlled by a most enthusiastic society of architects who have imported from Paris a collection of ingenious conceits and from these they have constructed a facade of convention so formidable that no one has ever dared to ask what it is all about.

And yet the actual education technic of this group consists in eating a good dinner once every six weeks. After this dinner, between cognac at 9 and a glass of beer at midnight, 400 architectural awards are made.

These awards are made for what are called "design for buildings" but which have been developed under a set of rules so written as to divorce the designer as far as possible from any conditions that conceivably might govern the practice of architecture; . . . it occasions not the least surprise to learn that scarcely one of the competitors could build even a part of the structure that he has designed.—*Joseph Hudnut, Dean of Architecture, Harvard.*

Victor A. Matteson of Chicago has been appointed national chairman for the architects' committee of the Republican National Committee.

To make illumination of gardens more artistic, a lighting designer has devised little houses resembling bird houses for the lighting equipment.

Green glass blackboards are now being made, with the claim that they eliminate glare and lessen eye strain.

The Soybean in Building

The soybean has started to go to town. Industry has discovered the soybean as a raw material, out of which all manner of things, from glue to doorknobs, may be made, and city folks have begun to see visions of the country rolling back to prosperity in a magic chariot popped out of a soybean pod.

At the University of Illinois, government action has made possible the opening of a soybean research center. Henry Ford started making out of the solid parts of soybeans—dashboard panels, gear-shift knobs, distributor cases, and so on. He is still making them by hundred thousands. The shiny gadgets on your car or radio may be made of soybeans, or of Bakelite, or of something else of less familiar name.

Besides their use in these solid forms that you see whole and by themselves, soybean plastics have begun to get into a whole series of applications in which they are combined with something else. Beautiful high-grade wallpapers coated with a soybean product, for example, and laminated wallboard in which the thin sheets of wood veneer are solidly held by a vise-gripping soybean glue.

But soybean plastics are rather less than half the story, as industry sees it. The best thing that the soybean brings to town is its oil. The soybean consists of one-third protein, two-thirds oil and no starch. That oil is one of the relatively few kinds in the world that can be used in the making of paints, enamels, etc. Like all other paint oils, soybean oil requires processing and it works best when mixed with one of the other paint oils, like linseed oil or the newer product of the South, tung oil.

Tung oil paints have to face the conservatism of painters and the paint business, who have always regarded "b'iled linseed 'n' white lead" as an unbeatable combination—the only proper stuff to coat a house with. Besides its use in paint, soybean oil is enjoying increasing utilization in baked finishes on automobile bodies, electric refrigerators, etc.

Extraction is very economical as well as very efficient. However, it has the element of danger that is always present where inflammable liquids are being vaporized. A leak in the apparatus, a chance spark or careless cigarette—and you have another industrial disaster. At least two such soybean oil extractor explosions have occurred within recent months. Manufacturers of extractor apparatus, having learned from the fatal experience of others, are now bending every effort toward making their machines at least as leak-proof as the coils of a mechanical refrigerator.—*From Dr. Frank Thone's Paper in Science News Letter.*

Louis H. Skidmore of Skidmore and Owings, architects, Chicago, has been appointed Director of the Department of Architecture and Professor of Senior Design at Armour Institute of Technology, succeeding Earl H. Reed.

Mr. Skidmore is a graduate of Massachusetts Institute of Technology and a past holder of Rotch Traveling Scholarship.

Since Mr. Skidmore's appointment to Armour Institute, he has received appointment as consultant to the board of design of the New York World's Fair of 1939, prompted, no doubt, by his experience in the design and construction field acquired in A Century of Progress.

Carl Milles, Swedish sculptor of international fame who spends part of each year teaching at Cranbrook Foundation in Detroit, where Eliel Saarinen is a dominant figure, was honored by Yale University with the honorary degree of Doctor of Humane Letters last June.

Mr. Milles was born at Upsala, trained in Stockholm and Paris. His heroic sculptures in bronze, wood and granite are outstanding for conception and technical execution. Professor Phelps pronounced him the greatest designer of fountains since Bernini. Milles was a pupil of Rodin. The quality of his work is Northern. His Triton Fountain in McKinlock Court of the Art Institute and the figure in Diana Court Building are, together with Mestrovic's horses, the most talked of sculptures in Chicago today.

Pilfering Architects' Jobs

An article on ways in which the architect can combat the encroachment which comes from outside the profession was promised in the last issue of the Bulletin. So much has occurred in the meantime that is pertinent to the discussion that it seems advisable to defer this until later.

The previous articles, reprinted in "The Architect and Engineer" of San Francisco, aroused much interest. That journal says editorially:

"The article in last month's 'Architect and Engineer' by Howard J. White, a prominent Chicago architect, describing conditions in that city which indicated a lamentable state of affairs in shyster competition, was read with intense interest by Pacific Coast architects who are fast beginning to realize that legislation and organization must eventually be the answer in clearing up a menacing situation."

An article in the same issue by James E. Blackwell, architect, of Seattle, is here reprinted:

"I endorse the article entitled 'Architects Must Resist Usurpation' by Howard J. White published in your July number. The writer, while starting life in the strictly professional line, has been both an architect and a contractor, but never both at the same time and this has given him an opportunity to see the two points of view. If we, as architects, must do business with contractors and material dealers, it helps us to know both sides, as well as being a benefit to our client. The practice of contractors offering architectural service free is not only usurpation, but a great swindling game for those engaged in that kind of business—and we have had such here in Seattle.

"An example of how such games are worked, which came to my notice, is pertinent to this subject. A contractor-architect secured an order to erect a building for a client, giving a price of \$25,000, at the same time agreeing with his client that if the client got any competitive bids and awarded the construction to another that he should be paid the usual architect's fee for plans. The owner of the building was on the verge of letting the contract for \$25,000 when he took a friend's advice and got bids and let the construction contract for \$17,000. The builder made a profit of \$2,000. The contractor got the usual architect's fee. This happens many times on residences and small buildings and I know several architect-contractors who are operating that way. While I was Superintendent of Buildings of the City of Seattle, this game was brought to my attention. I believe the architects owe it to themselves to bring this to the attention of the public generally.

"Mr. Horowitz's articles in the Saturday Evening Post I have read with a good deal of interest, but the average architect does not have many clients like his Mr. Kahn, who said: 'Go ahead with the house, I don't care a d... what it costs.'

"Architects make one serious mistake and that is the predominating desire to be artists without the necessary knowledge to produce artistic, livable and practical buildings. This has let another set of men 'horn in' on us—the structural engineer and engineers for heating, ventilating, wiring, acoustics, etc. These men are essentially craftsmen, not architects, and they are already fighting architects, demanding on public work that architects employ men belonging to their particular unions.

"Now, this brings me to what we architects should do: Advertise just what we are and what our functions are; go slow on ethics; the public cares nothing for them, they belong solely to the profession. . . .

"We are not at the end of our road yet. Here in the West even 40 years ago, a man did not think of an architect, but of a carpenter when he wanted to build a house. The modern trend of design and the millions of new gadgets may give the engineer an opening to suggest that the architect is not as necessary as the engineer is. True, we need specialists. This is an age of specialists, but the architects are not quite in the fix of the doctors, who have so many specialists that one never knows whether he has the right kind or not."

A portion of this article touches on what was in mind as one remedy for the architect's situation. Another portion gives an answer to the "American Builder's" suggestion of a new word to be coined—"Architractor." Evidently Mr. Blackwell had not seen the article in the "American Builder" when he wrote of the experience of the owner and the builder of homes where, by competition, the owner saved \$8,000. If this be so, it gives added force to this statement.

Crossing Michigan Avenue bridge early one morning, the car in front of mine stopped abruptly and one of our most successful contractors jumped out and stopped a working man carrying a kit of tools. When I saw the contractor again, I told him of the occurrence and of my curiosity. "Oh," he said, "I saw one of my men who had been working for me on a percentage job in Detroit and I wanted to be sure that he had not been ordered to a large operation of mine in the loop where he might disorganize the men, so I sent him to a small job in the outskirts until he could recover his sense of an honest day's work. Moral: How, if percentage work is unwholesome for the contractor, does it become wholesome for the owner?

A large bank in a midwestern city proposed to build and one of the conditions imposed was that no outside contractors be asked to bid. They had a closed town and wanted no outsiders to come in and teach their local men smart tricks. They were finally prevailed upon to let one Chicago contractor make a check figure. When the bids were opened, the Chicago contractor was considerably low—so much so that the temptation was too strong for the bankers to resist and he was given the work.

His first sub-contract to let was general excavation and here he found that the local men were perfectly familiar with tricks. He could not break the combination, so he called his Chicago office and ordered his yard to get a Northwestern baggage car and knock down four large trucks and ship them with four teams at once. They arrived the next day and were put to work. As soon as the local excavators saw this, they broke and said they did not mean what they said and were willing to agree to a fair price.

Moral: Competition makes the Olympic Games.

To summarize:

The owner is better served by knowing in advance what his obligation totals.

The owner has better protection if a full day's work depends on the contractor's watchfulness and pocketbook.

The owner is better served by free and open competition.

All of these advantages the owner receives when he employs an architect.

All of this is of no avail unless we can put these facts in some form before those who contemplate building. This is our problem. How shall we meet it? By the daily press as a group, by direct mail, or by a school of salesmanship? What are your suggestions?

Members and other architects are requested to send to my address, 80 East Jackson Blvd., Chicago, particulars with names and addresses of contractors and manufacturers offering architectural services in connection with work or material they desire to sell.

—Howard J. White, Chairman,
Committee on Architects Practice.

Weatherproof Ancient Ruins with Chemicals

After years of research, scientists believe they have found a weatherproofing compound to save prehistoric pueblo ruins in the Southwest from further damage by weather and erosion.

Field experiments in the past year, by Frederick T. Martius of the National Park Service, have tested a newly developed compound, consisting in part of a solution of vinyl resin in acetone and toluene. The material appears to meet the numerous requirements.—*Science News Letter*.

Early Buildings in Northern Illinois

The measurement of over seventy early structures in Northern Illinois by the Historic American Buildings Survey during the past three years has amply borne out the promise of choice architectural antiquities contained in the photographs gathered by the writer in auto forays during the several previous years. Attracted first by quaint buildings scattered along the Fox and Rock Rivers and in the Lake towns to the north, casual curiosity soon turned to intensest interest as hundreds of these, when compared and studied, dramatically revealed that the regions of the old Northwest, roughly bounded by Green Bay, the Mississippi, Central Illinois and Indiana and Southern Michigan, still contained numerous examples of the fine old architecture brought westward by the early settlers.

Very little previous attention had been paid these modest structures because they were often dilapidated, widely scattered, as became a frontier, and frequently surrounded and hidden by more modern, and let it be said, less worthy ones. Fire and progress have largely wiped out old Chicago, but at such points as Waukegan, Green Bay, Galena, Iowa City, Oquawka, Warsaw, Nauvoo, Ottawa, South Bend, Goshen, Niles and Cassopolis, to mention only a few, many of these buildings still remain and the intervening territory will amply reward the searcher for the interesting architecture of the 1830's, 40's and 50's.

How the frontier had been thrust forward since John Smith's time by successive generations has been often described. Wave after wave, they came with gun, plow and tool-kit too, and nowhere can the record of their courage and culture be more clearly read than in these structures. The rich black dirtlands of Northern Illinois were not open until after the tragedy of Blackhawk in 1833, though settlement to the northward and along the waterways to the south had been much earlier, Chicago was still a lazy French-Canadian fur-trading port adjoined by virgin forest and prairie land where only the frontiersman dared dwell. With the extinction of Indian titles, however, in poured a motley crew; farmers, poor whites, land speculators, aristocrats, religious enthusiasts, adventurers, gamblers—all these mingled in a land and opportunity-hungry throng. These were our forebears and with furious energy they set to work to overcome the mighty obstacles presented by the red man, the prairie and the forest. Their architecture is often naive, always colorful and usually reminiscent of the work back east from whence they came. That it should be so uniformly well and simply designed in the face of incredibly difficult conditions, is a cause for just wonderment.

It was a time of great enthusiasm for Greek culture and hundreds of classically named hamlets were springing up—witness our own Aurora, Center, Elgin and even Cicero! The monumental researches of Stuart and Revett in Greece had induced a Greek Revival in Europe, but nowhere else did it seize the popular imagination more strongly or receive such varied application, especially in wood, as in America. So quite naturally we find the first settlers of our region building largely in Greek forms—to live behind a templed front was the common ambition, though some preferred Gothic and a few even Roman. Before these usually came the tiny log, sod or frame house from which the better conditioned pioneer frequently moved to his Greek house within ten years' time, so rapid was material progress.

Professional architectural cooperation was neither needed nor available except in rare instances. The amateur-handcraftsman tradition, now so completely superseded by the machine, made possible the design and construction of this pure and charming architecture. Strangely enough, persistent inquiry has uncovered but few copies of Asher Benjamin's or Menard Lafevere's handbooks here, but many instances have been found of their direct employment by the old carpenters. A dormer here, a doorway there tell this story. In spite of the early establishment of steam mills at important centers, the mouldings which lend such grace to these early Midwest facades continued to be hand wrought by means of the elaborate sets of mould planes in every pioneer carpenter's box. At first chastely Grecian, straight lined and pure, these mouldings became rotund and heavy-bodied as the years of the Civil War came

on, to be finally obliterated in the inelegancies of the Grant period.

Galena, with its placid Old Market House in brick, now, we learn, in the reckless hands of the remodeler, should be visited by those who would see Midwest pioneer architecture at its best. Here are fine churches, interesting old stores and many residences which compare favorably with eastern work of the same period. Nauvoo still contains a number of well designed Mormon residences, though here as elsewhere destruction is rapidly diminishing their numbers. Knoxville and Oquawka display imposing court houses of early days, and at Bishop Hill, near Kewanee, is the Old Steeple Building of Jansenist origin, in moulded stucco on brick, astonishingly well preserved. At Belvedere, Marengo, Geneva, Waukegan, Elgin and many other old centers are still to be found excellent residences, some temple fronted, some with Erechtheion-like entrance or moulded windows only, but almost always with the little cornice returns on the gabled front which occur so frequently as to form an "earmark" of the period.

At Warsaw are three half blocks of early commercial buildings practically unspoiled by progress; near Oquawka are two covered wooden bridges; at Naperville is the "Pre-Emption House 1834," outstanding surviving example of a pioneer tavern. Rockton, Geneva and Lisbon have, or had, five churches, for the one at the latter place has been despoiled since measurement by the Historic Survey. Quaint little doctor's offices at Lee's Center and Toulon, one in stone and the other in wood, are striking examples of the diversity of design attained by the early pioneer builders—so characteristic of our region into which settlers poured from every quarter.

Chicago itself still contains a very beautiful Greek cottage at 723 West Congress Street, well worth seeing and the best of many to be still found of this raised type. At Morgan and Monroe Streets is the Aiken Institute in sad decrepitude, formerly the First Baptist Church, moved from the site of the Foreman Bank before the fire, and the work of Burling, early architect, with an addition by Van Osdell. Also in a lamentable state on Wabash near 46th can be seen the old Widow Clark House, noblest of all in its day, and removed from 16th and Michigan. And along the river still remain the old stone I. C. freight house and the Buckingham Elevator, famed commercial structures in their day. Southward on Archer Avenue at Summit stands four square, like "Long John" of old, the great Wentworth farm house, the center of a vast domain. An old Windmill at Addison, a watermill at Brush Hill (Ogden and York Road), the Fullersburg Tavern nearby, from whose wooden walls flamed forth the fabulous *Loi*, Europe's darling of the dance—but, alas, space does not permit further enumeration of these old structures, rich in lore and beauty!

Most of these and many others besides have been recorded painstakingly by the Northern District of the Historic American Buildings Survey. Go forth yourself in the auto on the old highways leading into the beautiful Illinois country and see them in their own sometimes lovely settings. A fine surprise awaits you.

—Earl H. Reed.

Contributors to this Issue

Emery Stanford Hall, Past President, I. S. A., F. A. I. A., well-known Chicago architect, has for years been on the examining board for licensing Illinois architects and is Secretary, National Council Architectural Registration Boards. He is deeply interested in the education of the coming architect.

Louis La Beaume, Vice-President A. I. A., member I. S. A., is a prominent St. Louis architect, famous as a speaker and is, perhaps, the most fascinating writer on architecture in America.

Howard J. White, of Graham, Anderson, Probst and White, continues his report of matters to be cured in the profession.

Earl H. Reed is a practicing architect in Chicago and until lately head of the Department of Architecture, Armour Institute of Technology.

Ralph Harris, for years a practicing architect in Chicago and holding many offices through the years in the Illinois Society of Architects, is now Highways Architect, Division of Highways, for the State of Illinois.

Illinois Highway Police—Radio Stations and Towers

Perhaps the most interesting and refreshing aspect of the construction of the radio system for the Illinois State Highway Police is the comprehensive manner in which the system was planned.

In 1934 when work was started, instructions were given by the Governor that the system should in all respects be as complete and efficient as present day radio science could develop. Other states which had police radio systems had demonstrated the folly of unscientific planning and piecemeal construction which, after the expenditure of large sums, had failed to achieve the desired results. So far as Illinois was concerned, it was decided that no construction work would be started until full and comprehensive surveys had been made and complete coverage of the State, under all conditions, was assured. It must be remembered that a radio system suitable for police work is quite different from a system designed for commercial purposes. Positive signals must be heard throughout twenty-four hours of each day and these signals must be loud enough to overcome the noises of traffic, motors, and other outside interferences. Weather conditions, having a decidedly marked effect on radio reception, make the design of a police system against the worst possible weather conditions a necessity.

In 1934 when work on the system was started, the State had not in its employ a qualified radio engineer and the work came under the jurisdiction of the writer who was in charge of building construction for the Division of Highways, the State Police being an integral part of the Division of Highways. The result was that the writer, for a period of time, became more of a radio engineer than an architect.

Radio engineers were employed who covered the State with experimental apparatus and, after several months, recommended the construction of seven separate broadcasting stations located at various points. The size of these stations in terms of radio power was determined, the height and type of the radio sending antenna was recommended, and other details to achieve the desired results were determined. The report of the radio engineers stated that if the state followed the recommendations contained therein it would on completion have the most modern system of police radio communication known at the present day. Throughout design and construction the report was followed with the slightest deviations possible. The acquisition of property at the various locations presented quite a problem due to the fact that with the comprehensive ground wire system, eleven acres of property were needed for each station. At three points state property was available, but at the other four points property had to be purchased. It is interesting to note that in no single instance was politics permitted to enter the picture.

Seven buildings to house the broadcasting and administrative elements of the system are either completed or under construction. These buildings are located near the following cities: Chicago, Sterling, Pontiac, Macomb, Springfield, Effingham and DuQuoin. The buildings are one-story structures designed along modern lines. They are approximately 40 feet by 65 feet in size, each one different in detail due to local topographical and administrative features. Fireproof in construction, they are built to withstand assaults by outlaws. All are air conditioned, are designed to resist the accumulation of dust and dirt and the broadcasting rooms are naturally acoustically treated. Heating equipment is automatic and is carefully isolated so that motor noises will not reach the broadcasting elements. The exteriors of the buildings are all constructed of face brick and stone, the same brick being used for all. The idea was to achieve a uniformity of effect although not a uniformity of design. All buildings are carefully landscaped.

Perhaps the most interesting structural features of the system are the broadcasting towers. The radio engineers stated in their report that the most efficient broadcasting element would be a single tower 329 feet in height, which height represented .53 of the assigned wave length, the steel of the tower being the broadcasting element. They also stated that the towers should be vertically sided as this was more efficient than a pyramidal or other shaped tower. A design for these towers was developed, making use of solid round sections, the largest being 2½ inches in diameter with

cross bracing of small sized angles. The towers are in the form of isosceles triangles, 20 feet on a side and no guy wires or side bracing are used. The three legs of the towers rest on porcelain insulators which are anchored to the concrete foundations. These towers, reaching to the approximate height of a 33-story building present a very unstable picture but as some of them have already withstood small tornados, the strength of the design has been proved.

Another interesting feature is the ground wire system, which grounds out the steel of the tower. At the base of each tower at each 5° point of the circle is a radial wire of the same length in feet as the tower is high. These radial wires at the far point are soldered to another wire which forms the circumference of a circle, the whole forming a vast spider web. There are approximately 5½ miles of ⅜ inch copper wire buried in the ground at the base of each tower.

Equipment of the system consists of 1000 watt transmitters at each station, together with a battery of eight receiving sets, each set tuned in to the broadcast band of adjoining states, principal cities, etc. Some 300 automobiles and 350 motorcycles belonging to the state police are equipped with receiving sets, the motorcycles as well as the cars having loud speakers. This, it is believed, is the first time that loud speakers have been used for motorcycle purposes. Due to the fact that the system operates on a rather large broadcasting radius, 2-way communication is not possible and no effort has been made to equip moving vehicles with transmitting apparatus.

Although only about 50% completed, the system has already proved itself. Statistics show a marked reduction in criminal operations as well as a marked increase in the apprehension of criminals, the recovery of stolen articles and in giving quick assistance in the case of accidents. It is entirely probable that upon completion, traffic control by means of airplanes in connection with the radio system will be attempted.—*Ralph C. Harris.*

Northern Illinois District, HABS

Under the auspices of CWA in 1934, 31 persons measured, drew, photographed and wrote the histories of 33 projects in conformity with the specifications of the National Parks Service. In 1934-35, 27 people labored for seven months under the IERC, recording 14 projects and measuring and partially recording 14 more. Since January 1936, 17 persons, under WPA, have to date completed the unfinished work under IERC and measured and partly recorded 10 new projects.

The work of 1934 is published in part. Complete original records are on file in the Library of Congress at Washington and complete copies are in the Burnham Library, Art Institute of Chicago.

The organization is now operating on a permanent basis under control of the architectural profession with an agreement between the National Parks Service, the Library of Congress and the American Institute of Architects.

Architects are invited to visit the Survey District Office, Room 1512 Pure Oil Building, Chicago, where criticism and suggestion are welcomed.—*Condensed Report, Earl H. Reed, District Officer, Northern Illinois, Historic American Buildings Survey.*

Charles E. White, A. I. A., died at his home in Oak Park, Ill. on August 16, age 60 years. He was born at Lynn, Mass. and graduated from M. I. T. He was employed by Swift & Company in planning refrigeration of sea-going vessels. For two years he was employed by Frank Lloyd Wright. He planned Oak Park's park district as well as its zoning and served that town as Commissioner of Public Works. On the editorial staff of Ladies' Home Journal for ten years, he wrote regularly on architecture for that publication and for House Beautiful. He was author of "Successful Houses and How to Build Them" and "The Bungalow Book." His firm, White and Weber, Architects, Chicago, designed many fine homes, the Oak Park Public Library, Oak Park Country Club and the new Oak Park Post Office, dedicated on August 21.