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New Materials Direct New Trends in Architectural Finishes

By Dr. A. H. Holton, Chemical Engineer

The last ten years have brought about an evolution in paint atings which owes its progress to the availability of new materials ith amazing potentialities. That these benefits have been accelrated through exigencies of war time demands gives great promise even greater strides in the post war period when restricted ingredents become available once more for the general formulation of rchitectural finishes.

IGMENTS:

This field has benefitted by several basic improvements.

/HITE PIGMENTS:

The improvement and ascendency of the titanium pigments to position of dominance has been a most conspicuous contribution paint progress.

Even a few years ago all forms of this pigment then available -as titanium calcium, titanium barium, as well as pure titanium oxide—were troublesome because of their excessive chalking in xterior finishes. The crystalline form of this oxide is termed natase." It was necessary to counteract the chalking weakness associating titanium pigments with other white pigments in rmulation. In making a gray automobile enamel, for example, was necessary to use as much as 60 parts antimony oxide with parts titanium oxide.

Later, special treatments at the furnace were employed in roducing pigment, using very small quantities of other metals ch as zinc, chromium, antimony and aluminum to help control is excessive chalking. However, today the formulator frequently ay deliberately incorporate proportions of this anatase titanium oxide with its chalking action serving the definite purpose of self-cleaning action in house paint.

The discovery of a method for producing titanium pigments ith a rutile crystalline form proved to be a fundamental improvement. As the process became fully developed, its opacity ultimately ecame noticeably better than the original anatase, plus a controllble degree of resistance to chalking. Thus paint formulators now ave varying degrees of chalk resistance to suit the purposes at hand.

In color, the rutile type is noticeably different from the older natase material, being less blue in cast with a light reflection fully s great or greater and producing warmer toned whites.

Compounding with lead to form lead titanate yielded remarkble results. Not only was chalking controlled, but a pronounced istensibility of the paint film resulted, which remained effective or years. Because of the resultant color, this compound pigment is uitable only for certain tints and shades. Also, undue dirt collection esults unless used in proper formulations.

The older white pigment still serve essential specific purposes.

Zinc oxide contributes hardness, resitance to fume dicoloration, ildew resistance and, in exterior paints, a smoothness to promote roper clean-up on exposure.

Lead Carbonate has a well established value for adhesion in rimers for wood.

Leaded zinc oxide combines the desirable properties of lead nd zinc and is used for its characteristic of good exposure and ildew resistance.

Antimony oxide loses much of its importance with the improvenents in titanium oxides. However, it is used in certain military re-retardant compositions.

The zinc sulphide pigments, such as the lithopones and zinc ulphide itself, while hard pressed in oil paints by the competition f titanium pigments, have certain characteristics which are particularly well suited for emulsion paints.

In the field of Extender Pigments:

Magnesium Silicate leads to good durability, retention of good condition of the paint in the package and promotes proper cleanup of the film under exposure.

Micaceous pigments particularly, have been improved with proper preparation for use.

Clays and Talcs are found to be valuable ingredients in emulsion paints.

The selection of calcium carbonate and silicates for semi-gloss and flat paints is important in formulation. In fact, with the perfecting of the prime pigments, used for opacity, the selection of the correct extenders receives even more careful consideration by the formulator, became of the unique part they play in modifying film characteristics.

COLORED PIGMENTS:

Perhaps the greatest single contribution has been the development of a new organic blue which gives the industry a blue which, for the first time, can compare with other pigments in exterior durability. This blue, known as "Phthalocyanine", also has been blended with organic yellows to make very permanent greens. There is an additional related chemical compound, copper phthalocyanine which is itself a permanent green of great brilliancy. Both of these colors fill a much needed purpose of brilliant outdoor trim colors for furniture, shutters, toys, etc.

Definite improvements have been made in all manufactured colors to give them better clarity of tone and resistance to light, but the development of this blue is outstanding.

Formulation of Exterior Paints

From the foregoing it is evident that the most efficient, exterior paint, where both appearance and protection are to be maintained, will be a scientifically balanced formulation, exploiting the desired properties of several of these highly developed white paint pigments.

Generally, it is considered that white lead carbonate imparts elasticity and good adhesion. Leaded zinc oxide fortifies the white lead against the roughening, atmospheric discoloration and spotty chalking characteristics of white lead in weathering. The titanium pigments are selected for great hiding power, intense whiteness and good color retention. And a correct balance of these assures dependably superior results.

In communities where industrial fumes are excessive, lead-free formulations are used employing zinc and titanium pigments because of their immunity to sulphur discoloration. Even the use of lead driers should be avoided.

A most important development of the past ten years has been the special undercoater for exterior paint. This special formulation of both the pigments and the vehicle is to fill the functions of priming, sealing and uniforming surfaces of uneven porosity common to weathered buildings. A dual purpose oil vehicle is used blending raw linseed oil with processed oil. Raw linseed oil satisfies the surface porosity going into the wood to form a water barrier within the surface next to the film. Processed oil employed tends to stay on top of the surface to seal it and thus prevent tthe finish coat from striking in.

VEGETABLE OILS:

The conditions imposed by the stoppage of shipments of China Wood Oil from the Orient have been responsible for much research work, with achievements of far-reaching significance.

China Wood Oil most likely never will regain the position of relative importance it held in the manufacture of varnishes before the war. Even before the shortage of China Wood Oil became acute, synthetic resins were becoming available, which were superior to China Wood Oil in certain of its many uses. True, there has been no general replacement product developed but, instead, a variety of replacements suitable for a particular product. In most cases the quality of the finished product has been improved rather than impaired. China Wood Oil is particularly useful in some insulating compounds, also some food container coatings, but its use in the future, even when it becomes available again, will depend largely whether it represents an economy in certain materials.

Dehydrated Caster Oil has been one of the replacement materials for tung oil. With suitable resins, the chemical resistance and many other characteristics of tung oil are supplied by this oil. Its color retention is an improvement over tung oil.

Many other oils have been true products of synthesis. The procedure has been literally to "take apart" natural oils like linseed, soya bean oil, cocoanut, fish oil, and others. Then the fatty acids and glycerin thus obtained are re-combined Also combinations are made with new synthetic materials which do a better job than glycerin. One of the most popular polyhydric alcohols serving this purpose is Pentaerythritol.

Synthetic resins have appeared in many new varieties and types, designed to utilize their many divergent properties. Only a few commercially important ones can be mentioned here: Alkyds, Phenolics, Urea, Cellulose derivatives, vinyls, methacrylates and hydrocarbon polymers.

The phthalic alkyds had gained prime importance in the production of architectural whites prior to the war. Combined with modern pigments, these resins gave best whiteness and retention of whiteness, also outstanding smoothness, hardness and washability. Phthalic Alkyd resins are used also in baked enamel finishes for refrigerators and household appliances, because of their excellent life.

The phenolic resins are distinguished by their resistance to effects of continuous water submersion, as in marine finishes. They impart good toughness, chemical resistance, drying speed as in floor enamels, and other finishes where paleness of color is not required.

Resins such as urea, vinyl, etc., thus far have found greatest usefulness in industrial finishes.

Metal Protective Coatings

Coatings for the protection of ferrous metals have long received most careful consideration. Here again, balanced formulations prove advantageous when proper use is made of proven pigments such as red lead, white lead, zinc oxide and iron oxide to support inhibitive pigments such as basic lead chromate and to an increasing degree in government specifications, zinc chromate.

The latest pre-war development in metal protective paints employed synthetic resin vehicles which made possible better appearance in weathering and extended durability. Government war requirements will of course, limit the availability of many essential ingredients for the present.

Cement Paints

The greatest value of paints based upon Portland cement formulations is for masonry surfaces known to become damp, periodically and where neither oil paints or casein paints can be used. Cement Paints can be used to brighten tunnels and, while they darken with moisture, will resume their color upon drying out without deterioration. They cannot be applied over wood or over masonry previously painted with oil paints.

Resin Emulsion Paints are a revolutionizing paint development which owe their success to the perfect coordination of new discoveries in synthetic vehicles and a pigment formulation using both primary paint pigments and the latest knowledge of extenders.

The vehicle, in a leading brand, is a durable synthetic resi insoluble in water and completely washable. This resin is put in an emulsion solution to which water can be added for thinnin purposes—same as thinners are added to oil type paints.

In Oil Type Wall Paints the thinners evaporate, leaving th oils and resins to harden to a solid film.

In Resin Emulsion Paints, the water evaporates, the finish dry to touch in an hour, and the resins proceed to harden same a in an oil type wall paint. Because of the lapse of time betwee the evaporation of the water and the chemical hardening of th synthetic resin vehicle, it is possible to clean out brushes an remove spattered paint with water for an hour or more afte application. But upon hardening fully, even a paint and varnis remover has very little effect upon this type of paint film!

Inherent characteristics of such a resin emulsion paint are dis tinctively different from oil-type paints. Due to pigment formulatio and method of manufacture, this paint can carry a higher propor tion of actual film-building solids in the vehicle and still dry to completely matte finish.

The resin emulsion vehicle, while being tremendously adhesive is non-penetrating to a high degree. This factor combined wit the ingenious use of certain pigments, secures unusual coverag over porous surfaces. Resistance of the vehicle to plaster burning its affinity for water and the use of alkali-proof tinting colors mak usual cautions regarding painting over green plaster no longe necessary.

Events of the past few years teach us that it is not safe t predict coming events in the paint industry. Certainly, exigencie of this war have hastened the progress of paint development Therefore it is reasonable to expect that resin-emulsion type finishe will be exploited further, quite probably in the semi-gloss and possibly, gloss finishes, because of the many advantages they offer

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"Consoweld," a new material, consists of any number of shee of a specially-prepared plastic-impregnated paper, compresse under heat into huge panels having a mirror smooth finish. It ha much more tensile strength than many grades of aircraft aluminu It can be fabricated into beams, trusses, and ribs. It is an excellen insulator, requires no "doping," painting, or special finish. It i lighter than magnesium, its specific gravity is 1.40 where 24-S aluminum alloy is 2.77, and on a weight ratio Consoweld is stronger. U. S. Forest Products Laboratory at Madison endorses the above claims.

High Frequency Induction Heating has already been success fully and economically applied to the hardening of steel, brazing, soldering, drying of woods, setting of cements and plastics, drying of paints, dehydration of foods and many other applications in practically every branch of the industry. In these applications, many processes of manufacture have been reduced from hours to minutes and even to seconds, resulting in a greatly improved product in numerous instances.

The high frequency electrical waves, not unlike those that oper ate your radio, may be generated from any a-c supply by the use of comparatively simple apparatus and easily handled fixtures are required for applying the heat to the work.

In the introductory chapter of the *De Architectura* Vitruvius claims many branches of learning as necessary for the architect. It was a claim that was not without its influence in raising the status of the artist of the Renascence: he also has his erudition in antiquity and in the sciences, and is a man of learning. But, unfortunately, the claim is not that the architect should be a man of taste and learning, but that he should know jurisprudence so as to be able to handle disputes that will arise over boundary walls, and what not.

—J. H. Whitefield in "Petrarch and the Renascence."

Hearing Delayed on Pro. Engineering Act

The appeal now pending before the Supreme Court of the State of Illinois relative to the Circuit Court decision which declared the Illinois Professional Engineers Act unconstitutional, has been delayed until the May term of the Court.

During the interim, a joint committee composed of members of the Illinois Society of Architects and of the Chicago Chapter A. I. A. have been active in coordinating the efforts of the various architectural associations. In this connection, they have been extremely gratified by the response of the Illinois architects to the request for aid in presenting our case before the Supreme Court.

Meanwhile, the interest of the Professional Engineers, Structural Engineers and Architects throughout the country have focused on the significance of the court decision already rendered. The sentiment has varied from that of high praise for our actions to that of stinging rebuke. After subsidence of the tumult, calm deliberation, coordination and willingness on the part of the various professions may result in sponsoring a more applicable act, one which will properly integrate the various professions in relation to one another. There is hope and some evidence that we shall see such coordination shortly.

The February number of *The Plastering Craft* features an article captioned "THE ARCHITECT—By Oscar A. Reum." Both the title and the writer intrigued us; so we read it carefully for we have known Oscar Reum since 1895 when he was estimator for August Zander & Brother, a firm of foremost plastering contractors in Chicago.

In the course of the article Mr. Reum says:

"From the time of Leviticus and the homes of twigs and stones, construction has kept pace with all of the advances that are supposed to represent what we are pleased to term "higher civilization," and with it came, and as an integral and essential part of our education, wisdom and understanding of civilization, *architecture* and the *architect*—with all of the comfort, safety and beauty of homes, both elaborate and modest, and all other kinds of structures necessary for the well being of a civilized and enlightened people. . . .

"Then, as the years grew apace, with the transient trend dominant, with technology and the machine era looked upon by the uninitiated and superficial as the "golden age," with "something for nothing" or at least, something "just as good," for less, individualistic home building has become, to a great extent, a "lost art"; mass construction seems the order of the day. Architects are declared, to all intents and purposes, as non-essential; you can order your "home" at a department store just like selecting a roll of wall paper, and as to the fundamental integrity of sound and permanent construction, it is a toss up between rolls of paper and the "home." . . .

"As the first and essential exponent of good construction, the *architect* has suffered even more greatly than many of the specialized trades from such present day trend. His invaluable and money saving service of design and supervision is no longer, in too many instances, considered necessary, in the building of a house or home. The average home buyer is too uninformed to pass judgment on what constitutes the real fundamentals of his investment. . . . When the government ceases to be either financier or builder and the prospective owner will be compelled to have an initial equity of more than 5% or 10% in his undertaking, the invaluable services of the *architect,* as the owner's agent, will again come into general recognition."

We think Mr. Reum is right. He speaks from long years of experience and responsibility in the bulding field. Through decades he has headed his contracting firm which has carried out skillful work in many parts of the country; he has served unselfishly on local and national committees having to do with building and labor problems; he is now serving as president of the Building Construction Employers' Association of Chicago.

So the United States Marine Commission is naming Liberty ships after illustrious American archtects! Here is the list according to the Journal of the A. I. A.: Thomas Jefferson, William Thornton, Asher Benjamin, Benjamin Latrobe, Charles Bulfinch, Thomas U. Walter, Henry H. Richardson, Henry Bacon, Cass Gilbert, John Russell Pope, Ralph Adams Cram. By the way, wasn't it a Liberty ship whose hull, during the tryout, split in the middle due to unforeseen stresses and faulty welding?

The Burnham Library of Architecture, Art Institute, Chicago, lacks volumes 1 to 6 inclusive, v34 (1921) of the annual exhibition catalogues of the Chicago Architectural Club. The Library will be grateful to the donor or donors of these issues, thus providing a complete file.

On Feb. 6 members of three congressional committees demanded an investigation by Congress as to why the War Department's Pentagon Building cost almost $75,000,000 instead of the $35,000,000 originally appropriated for the work. The committees, some of whose members desire to look into this matter, are Ways and Means, Military Affairs, and Appropriations.

Nobody ever wins a statistical argument, because statistics have lost all meaning. When you see a statistic coming your way, run for the foxholes.

Illinois Society February and March Meetings

To the Chicago Bar Association quarters on February 29 for the dinner and meeting of the Illinois Society of Architects. The Society had invited the Producers Council Club of Chicago and the Chicago Chapter A. I. A. as participating guests. The attendance was 48. Small, according to expectations! Following a very good dinner, President Ryan introduced those at the speakers' table and announced that no important business had developed; that Secretary Fuhrer was absent by reason of sickness in his home; and that the program would begin at once.

The program for the evening was a discussion of the super or express highways for Chicago. Three authoritative speakers had been secured, all from the Department of Subways and Superhighways: first, Charles E. De Leuw, Chief Engineer; second, Richard Van Gorp, Planning Engineer; third, George L. Jackson, Senior Assistant Engineer.

Mr. De Leuw began by explaining what the Department has done and continues to do in the interest of providing a backbone for rapid transit in Chicago. He stated that all such highways focused necessarily in big cities. He pointed out the difference in conception of some of the New York highways with that of the Chicago Department in that the Chicago plans were to accommodate express buses and other rapid public conveyance transportation. The ideal was depressed highways on landscaped right-ofways sufficiently wide to provide service roads at grade for abutting properties; that four traffic lanes in each direction were contemplated, the expressways to take the fast and hazardous traffic out of the neighborhood areas leaving the neighborhoods free for local traffic movement.

Mr. Van Gorp spoke on Chicago's Comprehensive Superhighway Program and pointed to the Outer or Shore Drive, beginning at about 10,000 south all the way north to the south line of Evanston, part of which is not yet completed. He gave the history of this and other projects and explained the Comprehensive Plan of Routes. He dwelt upon statistics of street accidents, proving that express highways, depressed or elevated, very materially reduced the number of accidents. He brought his talk to a close by throwing on the screen diagrams showing routes of proposed express highways in Chicago, many of which were to tie up with county and federal highways.

Mr. Jackson spoke on general features of expressway design with particular reference to the West Route Superhighway. The depressed highway, with its general level 6 feet below standard street grade, was the ideal though more expensive to construct than elevated highways. The 6-foot depression would vary downward by easy grades wherever bridges to span the expressway were necessary. Three types of bridges were considered; first, the vehicular bridge; second, pedestrian bridges; third, railway bridges. He told that such expressways considered traffic speed of from 40 to 100 miles per hour but that the Department had fixed for the time being on a calculation of 60 miles per hour and the 60 might, after further discussion, be reduced to 50. He spoke of landscaping, that besides aesthetic effect, it was all-important to use landscaping to prevent erosion; the distances back from the highway curb to the line of lamp posts as well as the distances back to the bridge abutments were all-important.

President Ryan next asked for questions which were answered chiefly by Mr. De Leuw. Mr. De Leuw said that there was a school of thought that believed in eliminating pedestrian bridges and retaining only vehicular and railway bridges over depressed expressways. This was now being considered by the Department. J. Howard Raftery, Director of the Master Plan, Chicago Plan Commission, was asked for an expression. Mr. Raftery indorsed whole-heartedly the proposals of the engineers. The symposium was closed by a movie talkie film of highway improvements in different sections of the country. While the sound film irritated the auditory nerves, the pictures were outstanding for their clarity and beauty. Observers were taken over the roads in and about New York, crossing the Washington Bridge into Jersey, the Tri-Borough Bridge into Queens, taken to Jones Beach, and up through beautiful Westchester County. The company traveled with the film to Pennsylvania, to Los Angeles and Pasadena, sometimes by airplan and other times by auto.

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The March meeting of the Illinois Society of Architects o the 28th began with a good dinner, in the Chicago Bar Associatio quarters, to 40 members. President Ryan announced the specia program would be taken up first, followed by the regular busine meeting.

President Ryan introduced Mr. Gilbert Harold of the Unite States Savings and Loan League. Harold is the League's Sta Representative for their Post-War Committee. His subject wa "Home Financing in the Post-War Period," and he went on t explain how private funds are now and will continue to be i greater volume available for an unlimited building progra Mr. Harold made clear at the beginning that his organization, i seeking the placement of mortgage money, invariably preferre buildings that were not alone designed but also supervised b architects. To assure his hearers of the strength of the League, h asserted it had more than 3,600 member institutions scattered al over the country in every state including Alaska.

The League has now at its disposal for lending purposes, a fund of over two billion dollars and this sum is growing by leap and bounds. The speaker made clear that the U. S. S. L. Leagu recognized the necessity of public funds, either municipal, state federal, or all three working together for slum clearance in cities since private capital can never carry on this work without seriou losses to innocent individuals because of delinquent taxes, depre ciated values, and labor to destroy which can never be made t bring returns. Housing, on the other hand, the League maintains should be left entirely to private initiative.

The League has perfected a post-war mortgage loan pla which, while not yet officially published, is divided into eight parts whose features are the following: (1) provision for minimum com petitive interest rate, (2) maximum loan term, (3) monthly interes reduction with payments on unpaid balances only, (4) provisio for monthly tax and interest payments, (5) monthly payme adjustments when borrower's income is reduced, (6) borrower right to repay principal any time without penalty, (7) borrower privilege to repay monthly payments, (8) care of borrower wh of necessity must move. More points or features exist which th speaker did not here include.

With questions from the floor which the speaker answered completed, the president next turned to the business meeting; Secretary Fuhrer read minutes of the February meeting. These were approved without change. The secretary then reported on the Illinois Professional Engineering Act in extenso referring also to correspondence. Then followed a lively discussion ending in a consensus that the architect, always considered through the ages the master mind to conceive and guide building operations, must maintain that position or he is lost; all of which meant that engineers and specialists should be employed, when deemed necessary, but always to be under the supervision and control of the architect who is responsible for the composite whole.

The Society is entitled to two delegates to the A. I. A. national meeting in Indianapolis early in May. The Society elected Messrs. William J. Ryan and Eugene Fuhrer to be those delegates.

C. E. DeLeuw has resigned as chief engineer of Chicago's Department of Subways and Superhighways to resume his practice as a consulting engineer. Mr. DeLeuw will be succeeded by Virgil E. Gunlock as chief engineer.

Miss Rossie Moodie, a registered architect who formerly had an office in Winnetka, has been appointed director of USO building services in Hawaii. She is a native of Superior, Wis., and formerly was associate regional director of USO building services in Chicago.

"There has been a sort of foldup on the part of your Tacoma correspondent due to cataclysmic conditions here and there, one of the same being the arrival of a new son which has erased all seemingly unimportant items from the calendar. The baby and his mother are doing fine but the father has run out of cigars."

—From Monthly Bulletin, Washington State Chapter, A. I. A.

Chicago Chapter February and March Meetings

It was on February 15 that the Chicago Chapter, American Institute of Architects, assembled for its monthly meeting to the number of 73 at the Tavern Club. The Club served them a very good dinner at 6:30 and after their coffee and cigars, they were in a receptive mood for an evening of talk. So Vice President Paul Gerhardt, Jr., in the absence of President Shaw, called the meeting to order and directed Secretary Furst to read the minutes of the January meeting. The minutes over and accepted without corrections, Chairman Gerhardt called on Professor Provine of the University of Illinois School of Architecture. Mr. Provine, Illinois-Wisconsin Director of the A. I. A., brought greetings from the recent Directors' Meeting of the A I. A. held at Memphis in December and complimented A. I. A. President Ashton for his devotion and advancing policies as president.

Chairman Gerhardt announced that for the March meeting of the Chapter, Siegfried Giedion, well-known writer on architecture and lecturer on that subject at Harvard University, would be the feature of the program. Mr. Gerhardt then reported the results achieved to date from the letter of appeal sent to all licensed architects in Illinois to make a small contribution to cover the expense of defending the case before the Illinois Supreme Court brought by interests dissatisfied with the finding of Judge Hemphill of the Circuit Court of Sangamon County in whose judgment the Illinois Professional Engineering Act is unconstitutional. In less than a week since the appeal was mailed, over $800 had come in and the checks continued to flow. Ernest Grunsfeld read a long resolution, replete with many whereas'es, to be addressed to Governor Green of Illionis asking state grants to municipalities in aid of postwar projects. These objects will offer employment to thousands of men returning from the war. Cooperation with the Illinois Post-War Planning Commission and that commission's approval, would be the feature of the grant. Mr. Jarvis proposed that architects' contributions to the American Red Cross be made through the A. I. A.

With the business thus disposed of, the Chairman introduced the special subject of discussion for the evening which was "Prefabrication." Four speakers intimately acquainted with the subject had been programmed, one of whom, D. C. Slipher of National Homes Corporation, was unavoidably absent.

The first speaker called upon, Bettin Stalling, Regional Counsel H. O. L. C., read a paper on "The Legal and Financing Aspects of the Prefabricated House." Mr. Stalling made clear at the outset that the legal interpretation of a pefabricated house was one that was demountable in sections and easily movable from its site. This feature had revolutionized the opinion of the courts regarding real estate and personal property. The courts now hold that a prefabricated house is personal property while the land on which it stands is real estate. Mortgage bankers must revise their ideas of loans accordingly.

Pierre Blouke, a Chapter member and for some years an official of the H. O. L. C., talked on the subject of "The Effect of the Prefabricated Housing Industry on the Architectural Profession." Mr. Blouke had himself worked on a development of the prefabricated house which may or may not be in production. Whether the architect's profession would be seriously affected by mass production housing run off an assembly line, as it were, he questioned; but that prefabrication held posibilities of becoming a great industry, he did not doubt.

Carl Boester, Housing Research Executive, Purdue Research Foundation, spoke on "What's Ahead For Prefabrication." He is an engineer by training, not an architect. He spoke of experiences in this Purdue Research and thought the time was approaching when heavy materials like brick and concrete for houses costing from $2,600 to about $4,000 made for a man, wife, and two children were passing from the scene. He foresaw thinner walls where the materials were studied and tested intensively for their insulating qualities and their quick and easy assemblage at the factory. He spoke of aluminum foil sheets as an interior wall coating, and window glass that now lets in cold and feels cold to the touch as compared to the insulated pier or wall adjoining said window and prophesied that glass would be made of a composition that would not feel cold to the touch from the inside even though the outdoor temperature was cold. He said that there were about 100 concerns that claimed to make prefabricated houses but that that number could not be counted upon as carrying on the industry. The greatest single order for prefabricated houses that had ever been placed was 3,000 houses. This, Mr. Boester held, was not enough to warrant the great expense of jigs and other special factory equipment. He hoped that with the life of prefabrication preserved in the postwar era, there would be about ten manufactories. Questions and answers followed. Mr. Boester showed himself agile and very well posted, particularly so in the ideals of future house heating. He spoke of panel or radiant heating, recognized its possibilities, its greater initial cost in the buried pipes in floors, walls, or ceilings, and quoted Sam Lewis, the consulting mechanical engineer, as saying that much panel heating was installed by guess and worked by luck.

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The Chicago Chapter A. I. A. meeting at the Palmer House on the 21st was the regular March meeting though it eliminated much that is ordinarily looked for. There was no dinner; there was no business meeting. The entire evening beginning at 8:15 was devoted to the program and this program was filled by Dr. Siegfried Giedion, philosopher, historian, writer, lecturer.

Dr. Giedion's subject for this evening was "The Changing Aspect of Comfort." In the absence of President Alfred Shaw, Vice President Paul Gerhardt, Jr., presided and introduced the speaker gracefully. He told of Dr. Giedion's filling lecture engagements at Harvard, at Yale, and at Princeton; of the publication of his work "Space, Time and Architecture" in this country and that he is now preparing for publication by the Oxford University Press a book on the impact of mechanization on private life.

The speaker had two screens hanging from the wall and his projector-operator used both. Often the speaker kept both pictures before his listeners so as to compare them and point out differences. His subject revolved entirely around furniture and the comforts of sitting. He began with a picture illustrating sitting furniture in 1538. The next was from 1475, and then came a picture painted in 1460 of Mary and Child both crouching on the floor; then a Venetian scene of 1499, Twelfth Century seating facilities at Chartres, a painting by Holbein of 1516, choir-stalls, a sumptuous chair, Sixteenth Century library table. The speaker pointed out that at this time a library table had no flat top, but the students on benches read their volumes set up against planes tilted back 30 degrees from the vertical. These tables, he said, were first built movable and later fixed. He spoke of bourgeois culture, an interior from the Tyrol, a chair from the Strozzi Palace at Florence, a Swiss interior, some dissertation on medieval comfort, the general use of the medieval cathedral for meetings other than religious; and then followed a picture of 1520 by Albrecht Durer.

There was a Zurich cloister of 1528; and then the doctor jumped to late Eighteenth Century in England, continuing with Sheraton furniture, a richly carved Swedish chair, designs by Percier & Fontaine in the days of Napoleon III, and an American settee of 1860.

And now we come to what the speaker called "patent furniture" and much humor was here introduced by showing pictures of ladies' bustles 1860, upholstered chairs and rockers, and a caricature of 1851 showing a man being shot to the ceiling with a spring that had broken through the upholstery. He turned back to America in 1853, showing a drawing for a mechanical chair and other examples down to 1889. He said some unkind things about the influence of the Columbian Exposition of 1893. The Brown Decade was applauded, which he marked as beginning shortly before the Civil War and ending with the 1880's. The picture symposium ended with illustrations of hammocks holding women in various postures seeking comfort. The first one of these hammock pictures showed the hammock used in Nicaragua.

The speaker summed up by saying that wood was an all-important material in furniture and that first came the carpenter, next the joiner, third the cabinet maker, and last the upholsterer. 170 attended this meeting. Members had been requested by letter to invite their wives, sweethearts, and other friends; and it was observed that the majority were young men and women, possibly from the Illinois Institute of Technology and from Maholy-Nagy's Chicago School of Design.

The Chapter will hold its business meeting on April 4 when delegates will be selected to represent the Chicago Chapter at the A. I. A. meet in Indianapolis in May.

"The symbolic urge in such time as ours can also be falsified. The history of successful painting in the nineteenth century, loved by both rich and poor, is a history of falsified symbols. Even in our own times buildings are erected in a manner or in a style through which the owner would like to mirror himself. Thus, we may understand the residences or colleges erected in Gothic shapes and reflecting a manorial attitude toward life. These are phenomena of escape and no real expression of feeling. They are the expression of inner uncertainty." *Segfried Giedion in 1942*

The Professional Engineering Act in New Jersey

Architecturally Known as the "Battle of Trenton"

By C. W. Fairweather, F. A. I. A., Metuchen, N. J.

Most learned judge! A sentence: Come prepare!
The Merchant of Venice.

Eugene Fuhrer's "Resumé of the Professional Engineering Act" published in the February issue of the *Monthly Bulletin* of the Illinois Society of Architects which is just to hand arouses sad nostalgic memories of New Orleans with its pompano and oysters Rockefeller; of a mad dash back to New Jersey after the nineteen thirty eight A. I. A. Convention; of endless conferences with statesmen and engineers; of a full dress brawl with the latter which has since gone down in the history of the architectural profession in New Jersey as the battle of Trenton; of hurried arrangements for a passport; of a stateroom obtained at the pier end of a trip across the Atlantic Ocean, the while we licked our wounds and regained our shattered health.

Dozing one morning in the lobby of our hotel after the usual heavy round of convention duties of the day before, we were rudely awakened by another of the Jersey delegates who thrust a paper into our hand with this call to arms: "Look what the engineers have slipped over on us while we are down here." Hastily we read the following passage of New Jersey Assembly Bill 507 which had been introduced into the Legislature:

"The practice of professional engineering within the meaning and intent of this chapter includes *any professional service such as consultation, investigation, evaluation,* planning *design or* responsible *supervision of construction* or operation *in connection with any public or private utilities, structures, buildings, machines, equipment processes works or projects wherein the public welfare or the safeguarding of life, health or property is concerned or involved when such service requires the application of engineering principles and data.* The practice of professional engineering shall not include the work ordinarily performed by persons who operate or maintain machinery or equipment. The provisions of the chapter shall not be construed to extend to architects."

The italics are ours and the italicized words are so emphasized to bring out the parts of the bill which was introduced in New Jersey which are identical in wording with the verbiage of the act which has just been found unconstitutional in Illinois. Now, we realize that the Prairie State, which bears the proud distinction of having obtained the first architects' state registration law, needs no help from New Jersey—which was runner up in the race to obtain such legislative protection for the building public—but we may perhaps be permitted to enjoy a modest chuckle at finding ourselves to have been an earlier near victim of as choice of peace of ambiguity as one might hope to find in any perusal of the law. It is refreshing to find that the phraseology that baffled us in 1938 prompted Judge Victor Hemphill in Springfield Court House to find that "The Act delegates to the Department a wide discretion to determine the character of services which cannot be performed without a license and that the Act does not establish easily comprehensible standards by which that classification is to be made."

Roscoe P. McClave, one time Captain of Princeton University football team and presently an engineer and legislator of distinction, introduced the bill in the Assembly believing that it was acceptable to the architects; and on learning that this was not the case, declined to bring the bill out of Committee until such time as the two professions were in agreement as to its provisions. In an attempt to foment such agreement, an abortive conference took place in a nearby hotel, and a few days later a full dress debate was staged in the State House with both sides marshalling their forces from far and near. While the architects were outnumbered on the floor, this was made up for their nobility and mental equipment. Gilbert C. Higby, now a member of the National Council of Architectural Registration Boards and then and now Chairman of our legislative committee, acted as Field Captain for our side and handled his team well but by mid-day the situation was as fuzzy as ever. So we adjourned for lunch and afterward went into more or less embittered conference again at the near hotel.

Our side made the contention that a law which described "The practice of professional engineering" as "Any professional service such as . . . design . . . of . . . buildings . . . wherein the . . . safeguarding of life . . . requires . . . the application of engineering principles" would give legal sanction to the design of churches or any other type of building by engineers and one at least of the bright boys in the ranks of our opponents maintained that this was as it should be; and that if an engineer could land a church, he could be trusted to hire an architect to doll the thing up with gargoyles after he had got the stresses in the buttresses figured out. The writer of this article, long the harassed secretary of the New Jersey Chapter A. I. A (and those of you who have met the Jersey boys at the conventions will know how harassing that can be) felt that he had hit a high moment in his career when one of the engineers pointed at him and was heard to exclaim "If it wasn't for that son of a gun over there we could get the bill out of Committee." No, come to think of it, the word wasn't gun, it was the feminine for dog.

Finally, the engineers, unwilling to accept concessions which we had magnanimously offered, announced that they were going to get the bill out of committee and filed out of the room in spite of our plea that they remain.

Back in the State House, Engineer Ross McClave heard our reports and with fine impartiality adhered to his position; which was that until an agreement had been reached between the architects and the engineers, there would be no act.

The minutes of three special meetings of the Executive Committee which were held, record that "The New Jersey Society of Architects will concur if all features in Assembly Bill 507 reprinted are eliminated which would in any way permit engineers to practice architecture independent of the jurisdiction and control of the State Board of Architects." Conferences continued and the following substitute wording (still ambiguous and we think perhaps unconstitutional in view of Judge Hemphill's decision) was proposed for the offending sentence:

"The practice of professional engineering within the meaning of this chapter includes any professional service such as consultation, investigation, evaluation, planning design or responsible supervision of construction or operation in connection with any public or private engineering or industrial project. The practice of professional engineering shall not include the work ordinarily performed by persons who operate or maintain machinery or equipment. The provisions of this chapter shall not be construed to prevent or affect the employment of architects in connection with engineering projects within the scope of the act to regulate the practice of architecture and all the amendments and supplements thereto."

This was agreed to at a final meeting of our Board although the architects declined to get behind and push the bill, agreeing only to step aside and out of its way. Afterwards we made our way home and found a cable awaiting us with an unexpected call to go to England, whither we repaired, sailing the following morning. The cool breezes of the ocean made us forget the bitterness of the conflict and on our return we were reconciled to further contact with the engineers and indeed attended a harmony banquet which the two professions tendered to each other. It was a smart affair and good-will prevailed; the feeling being that, after all, we are brothers under the skin; although as far as the writer of this article is concerned he is a little particular when it comes to picking his relatives.

Housing Conference at the Drake

National Committee on Housing, Inc. under chairmanship of Mrs. Samuel I. Rosenman of New York assembled for a national talkfest March 8-9-10 at the Drake Hotel, Chicago.

The papers read were:

Housing Principles for America, by John B. Bradford, Jr.
Housing for the Lowest Income Group, by Dr. B. J. Hovde
Introduction to the Day's Program, by Miss Elizabeth Wood
Building the Future, by Henry J. Kaiser
Urban Redevelopment—An Integrated Program, by Herbert U. Nelson
Financing the Future, by Beardsley Ruml
Prefabrication—Its Future, by John C. Taylor, Jr.
Economic, Efficient Massproduction Small House Operation, by David D. Bohannon
The Future of Mortgage Insurance, by Ernest M. Fisher
New Aids to Private Enterprise in Supplying Low Cost Housing, by Morris Macht
Material and Equipment Manufacturers' Problems and Contributions, by Irving W. Clark
Have Plastics been Over-Rated, by Elmer C. Maywald
Processed Materials—Their Future in Small Homes and Multi-story Dwellings, by Robert L. Davison
Building Tradesmen's Viewpoint on New Materials and Methods, by M. H. Hedges
General Discussion, led by Carl F. Boester

Chicago Regional Planning Conference

Daniel H Burnham, architect, was elected President of the Chicago Regional Planning Association for the nineteenth consecutive time, at the Annual Meeting held February 24, 1944, at the Palmer House. With him were elected seventeen officers and directors, thus bringing to one hundred thirty seven the total number of officers to serve on the Board in its twenty years of life.

The all day session was devoted largely to informal questions and answers on important problems which are constantly facing the many suburban, municipal and county officials. The recently revised DuPage County ordinance regulating new subdivisions was described, particularly the requirements that the subdivider install certain improvements, and provide lots not less than a quarter acre in area, in the unincorporated part of the county.

The Association was urged to find methods to establish building regualtions in the unincorporated areas, and thus help reduce fire and other hazards in rural homes.

Describing the planned use of land as the fundamental basis for all regional and town planning, Mr. Burnham introduced Alexander H. Marshall, Village Attorney of Glencoe. Mr. Marshall made this subject of zoning (usually technical and dry) a vivid story of the steps humans have taken to (1) Achieve adequate light, pure air and safety from fire, (2) Conserve the taxable values of land and buildings throughout the community, (3) Lessen or avoid congestion of the public streets, and (4) Promote the public health, safety, comfort, morals and welfare.

Mr. Marshall declared that eternal vigilance is the price of good zoning, that zoning ordinances must be reviewed periodically and carefully amended as new court decisions point the way.

Robert Kingery, General Manager of the Association, reported with illustrations in color, the actual accomplishments of the many public officers in carrying out the plans. Suburban municipal park acreage has grown to 11,200 acres, at 7.8 acres per 1000 persons, while the State and County Parks and Preserves now total over 49,000 acres. Outside of the Sanitary District of Chicago 48 new and 15 modernized sewage treatment works have been completed. Two new large airports have been built in accord with the general program announced in 1941. The paved regional highway system now totals 4560 miles of connected highway, 185 miles of which are on the broad highway system. More than 15 miles of additional broad highway up to 300 feet in width, are now available for construction immediately after the war. Five counties covering 2500 square miles of rural land have adopted and are enforcing intelligent rural zoning ordinances with a sixth county making its zoning survey; while 118 municipalities outside of Chicago have adopted their zoning plans.

More than 150 suburban, municipal park, and county officials took active part in the "Town Meeting" discussion.

Robert Kingery

American Society of Architectural Historians

The American Society of Architectural Historians was founded in 1940. The officers today are: president, Rexford Newcomb, University of Illinois; vice president, John P. Coolidge, Ensign, USNR; secretary-treasurer, Carroll L. V. Meeks, Yale University.

The directors are: Turpin C. Bannister, Rensselaer Polytechnic Institute; Kenneth J. Conant, Harvard University; Leicester B. Holland, Library of Congress, Washington, D. C.; Fiske Kimball, Philadelphia Museum of Art; Richard Krautheimer, Vassar College; Charles E. Peterson, Lieut. USNR, Washington, D. C.

The Society has three Chapters: Boston-Cambridge, New York City, Washington, D. C. The Society welcomes members and has four classes of membership. Annual Membership, $3.00; Institutional Membership, $5.00; Contributing Membership, $10.00; Patron Membership, $25.00. Members are entitled to receive the Journal.

The Journal is a quarterly, having completed three volumes. Number 4 of Volume 3, October, 1943, is a book of 68 pages devoted to 10 articles. There are no advertisements. One of these articles, "The origin and Distribution of the Bulbous Dome." covering 16 pages, is a scholarly dissertation by Dr. Wolfgang Born, once of Vienna but now Director of Art at Maryville College, St. Louis, Mo. The article carries a plate illustrating 24 examples of the bulbous domes referred to in the text. In the course of his essay, Dr. Born says: "Bulbous domes appeared in India, Persia, Turkestan, Egypt, Russia, and finally spread to western Europe. They form a stratum of architecture distributed through this enormous area, embracing the near East and adjoining south Asiatic and east European countries. In this article, we will not pursue its western spread. Nor will we proceed in an historic manner. On the contrary, we will try to 'excavate' the developmental stratum which produced the bulbous dome."

Dr. Born continues the discussion "Wanted—Birth Certificate for the Onion Dome," which was carried on in the Illinois Society of Architects' Bulletin October 1942-March 1943 by Dr. Hugo F. Simon and Professor Alan K. Laing.

Propose Air-Theater for Chicago

On March 19 The Chicago Tribune announced on its front page its intention to hold an architects' competition for an eight or ten story building to adjoin Tribune Tower on the south, fronting N. Michigan Avenue and the Chicago River. Details will be published by May 20.

The building is to house a radio studio seating 2,000 and two smaller theatres each seating 600, with the various activities of WGN broadcasting and Chicago offices of Mutual Broadcasting System. Full advantage is to be taken in the plans of the development of television and frequency modulation broadcasting.

For the first prize, $5,000; second, $2,500; third, $500; and 15 prizes of $100 each. The architecture is to harmonize with Tribune Tower.

The announcement says: "A new world of fabrics, plastics, and specially treated woods has sprung up in the wake of modern sound, and the dictionary has spawned the word acoustician for the scientist who works in that world."

Official Labor Department figures show there were 3,737 strikes in U. S. in 1943, against an average of 2,968 a year during 15 years 1927-41.

Supreme Court Upholds N. Y. Housing Law

The constitutionality of the New York State law under which the Metropolitan Life Insurance Co. proposes to build a housing development called Stuyvesant Town in New York City, was upheld by recent action of the United States Supreme Court. The court denied a petition by property owners in the vicinity of the proposed project for a writ of certiorari after New York courts had upheld constitutionality of the state's redevelopment companies law.

The petition questioned that "the power of eminent domain is being exercised for a 'public use' when property is taken by a city and conveyed to a private corporation, admittedly created for private gain and not subject to regulation by law as to rents, profits, dividends and disposition of its property or franchises." It also questioned the legality of granting such power to a city for the purpose of taking private property to be transferred to a private corporation.

The city of New York and the Metropolitan Life Insurance Co., as respondents, contended that the case does not present a federal question and, further, cited the redevelopment companies law as specifically declaring that such rehabilitation "in accordance with official plans by redevelopment companies are 'public uses and purposes for which private property may be acquired for such corporations and partial tax exemption granted'."

—Engineering News-Record

An 1837 Ad in "Sangamo Journal"

ARCHITECTURAL DRAWING

The subscriber recently returned from New York, and having had ten years experience as a builder in the city, now offers his services to the citizens of this country. He will execute plans and elevations for buildings in any of the orders of architecture—write specifications, receive estimates, (and superintend any work of sufficient importance to require it) and construct foundations in such a manner that the buildings will neither settle or crack.

He is also prepared to execute Rough Casting in imitation of granite, or any other stone, warranted to stand firm—also Stucco work with enriched cornices, center pieces, &c.

As wood carving for buildings has in a great degree been superceded in the Eastern Cities, the subscriber will furnish to order, and send to any part of the State composition egg and dart mouldings, stair brackets, etc., etc., warranted to resist the influence of all weather for less than half the cost of carving.

Springfield, march, 27, 1837 J. F. Rague
282 tff

Region V of the Federal Public Housing Authority obtained proposals on 73 temporary war housing projects in which the successful contractor was allowed the option of using prefabricated or conventionally built dwellings. . . . Only 31 of the successful bidders elected to use prefabricated buildings, which indicates that conventional construction appeared less costly. . . .

It seems that reputable architects and builders should promptly de-bunk the exaggerated stories about post-war housing being widely circulated through certain periodicals. Failure to do so may upset hopes for a sound post-war building program. People should not wait for the last word in building unless they are prepared to wait plenty long. Anyone contemplating any kind of post-war construction should be working with his arcihtect now, so that he may be ready to contribute his bit to the reducion of possible unemployment. This is a patriotic duty.

—Charles B. McGrew

An architect predicts a keen race after the war for the completion of building programs. At the present rate of progress it will be neck and neck between the new London and the second pair of farm laborers' cottages. *—Punch or The London Charivari*

Joseph Henry Freedlander, New York architect of note, died there November 23, 1943. Born in New York City, he was a graduate in architecture of Mass. Inst. of Technology and L'Ecole de Beaux Arts of Paris. He was architect of Imports & Traders Nat. Bank Building, N. Y., Perry Memorial, Put-in-Bay, Ohio; Museum of the City of New York among others. He was an F. A. I. A.

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Alfred Faist Rosenheim, prominent St. Louis and later L. Angeles architect, died September 3, 1943 in Los Angeles, age 8 Mr. Rosenheim was born in St. Louis, Mo. His educational steps 1871-1881 were Hassels Institute, Frankfort-on-Main, Germany Washington University, St. Louis; M. I. T., Boston; served vario architects, 1881-85 when he succeeded to the practice of Archite Francis D. Lee in St. Louis. He practiced in St. Louis till 190 when he moved to Los Angeles. In Los Angeles he was associate with Austin & Ashley, Architects, Hamburger Department Stor 2nd Church of Christ, Scientist, Security Bank and Merchan National Bank are among his works. Mr. Rosenheim retired i 1935. He joined the Western Association in 1885, became an A. I. A with the merging of the W. A. A. with the A. I. A. and in 188 he was made F. A. I. A.

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Frank Lotan Venning, Chicago architect, died in Highlan Park hospital February 18, age 58. He was well known as partner in the firm of Granger & Bollenbacher, Architects. Bor in Chicago in 1886, graduated from Crane M. T. High School, h served successively in the architect offices of John E. Youngberg Howard Shaw, Otis & Clarke and others. Then came a year o European travel and study ending in May, 1914. In 1915-16, teache U. of Illinois in landscape architecture; 1917-19 U. S. Army. H had had an association with Lowe & Bollenbacher since 1917 This firm later became Granger & Bollenbacher. From 1940 o Mr. Venning's association was with Edward F. Jansson, architec of Lutheran Youth Building, Dearborn and Delaware Place, Chi cago. Among the buildings designed by Mr. Venning in the abov associations are Kent College of Law, The Cloisters (apartments) Chicago Medical & Dental Laboratories, Union Building at Indian University, Winnebago Court House, Wisconsin. Mr. Venning joined the A. I. A. in 1924.

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David Knickerbacker Boyd, Philadelphia architect well know among his colleagues throughout the United States through hi efforts to unify and strengthen his profession, died in Philadelphi Pa, February 21, age 72. Mr. Boyd was born in Philadelphi attended the University of Pennsylvania and began practice i 1892. He was architect of churches, schools, homes, factories, an of Philadelphia's Carnegie Library Building. In recent years hi time was given up largely to advancing the standing of the archi tect in the public's eye. He served as consultant to federal agencies the N. Y. World's Fair Commission and Russell Sage Foundation Mr. Boyd was made a fellow of the A I. A in 1908, and was past secretary and past vice president of the A I. A.. He was the first president of the Pa. State Association of Architects.

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Benjamin Franklin Affleck, cement producer and public spirited citizen widely known among architects in Chicago and the Middle West, died in his Winnetka, Ill., home February 13, in his 75th year. Born in Belleville, Ill., he came to St. Louis, Mo. in 1885, became a cement salesman in 1896, sales manager for Universal Atlas Cement Co. in 1906 and its president in 1915. In 1935 he retired. He was honorary member of The Wetern Society of Engineers, Chicago Engineers Club, Portland Cement Association and American Concrete Institute. Mr. Affleck had filled the presidency in Chicago Citizens' Association, Chicago Engineers' Club, Union League Club, Executives Club.

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Waddy Butler Wood, Washington, D C., architect, died in his Warrenton, Virginia, home January 25, age 74. Mr. Wood was born in St. Louis, Mo., and was educated at Virginia Polytechnic Institute. Beginning his career in 1892, he headed the firm Wood, Donn & Deming. For sixteen years this firm carried out important Washington residences such as those for Mrs. Phillis Sheridan, Gen. C. L. Futzhugh, Dr. Galludet. Mr. Wood was architect of the new Interior Department Building, Brookings Institution on Lafayette Square, Stock Exchange Bldg, Chinese Embassy, Commercial National Bank Bldg. and Navy Annex Building. He was a fellow of the American Institute of Architects.