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Fluorescent Lighting

What it is — How it is Used — Its Outlook for the Future

By C. E. Johnson and W. A. Seeberg

This is not an attempt to cover the technical aspect or phenomena of fluorescent lighting, on which volumes have been written and upon which engineers are agreed. It is, however, an effort to give a practical perspective of the timely and interesting subject of lighting with fluorescent tubes.

At the inception of fluorescent lighting, the principles and use of this new light source, strangely enough, were more generally agreed upon by engineers, than are all the uses and application of the equipment available today. While the "Science of Seeing" and of illuminating engineering are inter-related, they at times suggest divergent ideas. In principle, however, both of these recommendations will have certain basic fundamentals which are not always easily associated as coming from the same basic lighting or seeing principles.

What—in a few words—is the fluorescent lamp? It is a slim tube of glass made in various lengths and diameters that glow with richness and brilliance when lighted. The principles of fluorescence have been known as a natural phenomena observed in many forms of rocks, mineral deposits, and chemical compounds for many years. The most startling example of this to the layman has been in the spectacular effects that have been created in the theater, where costumes or scenery coated with fluorescent substances, glow with life and color on a darkened stage.

Contrasted to the lamps which have been used for many years, the fluorescent tube contains what might be termed a short coil or filament on each end instead of a filament running from one extreme to the other. It is a vapor light source using mercury to carry the arc from one coil or filament to the other. This produces a large quantity of ultra-violet radiation made visible by the phosphors which are coated on the inside of the tube. These phosphors, known now as fluorescent material, act as transformers of energy converting the ultra-violet radiation into visible light. Variations in color are created by the blending of various fluorescent chemicals.

The reason fluorescent lamps show higher efficiencies in light output (lumens per watt) is because more of the energy is transformed into light than into heat, as is the case with the filament type of lamp. Less than half the wattage is radiated or accompanies the lamp's lumen (light output) as heat, which contrast with 75 to 85 per cent radiated as heat from an incandescent filament lamp.

Like other electric discharge arc units, such as Neon and Mercury Vapor, with which we are somewhat familiar, fluorescent lamps also require the use of an auxiliary or ballast to accomodate variations in voltage and supply a resistance across the arc as the mercury changes from its starting to operating pressure (voltage). Each lamp used requires an individual ballast and starting switch. There is also a two-lamp ballast containing, in a single housing, the auxiliaries necessary to serve two lamps.

Filament lamps burned on alternating current produce an apparent uniform light, because the filament continues to glow between each of the 60 cycles per second that are inherent in a 60 cycle A.C. circuit. In an electrical discharge lamp, there being no filament to continue to glow between cycles, the light drops between each cycle, causing what has been termed flicker or stroboscopic effect. The tulamp ballast provides practically the same steady flow of light from two lamps as is received from incandescent filament lamps.

Power Factor and its effect on fluorescent lighting installations is a complete subject in itself, which can be more adequately covered by any competent electrical engineer. This is something that the architect need not concern himself with so long as he insists that equipment be wired with "high power factor" control equipment (ballasts). Except in very rare instances it is to the user's interest not only to accept but insist upon this.

Fluorescent lamps introduce an entirely new lighting art. Instead of having lamps which provide a point source of light, we now have a linear source—tubes which change the motive and design of equipment from that to which we have been accustomed. The low surface brightness especially of the 1½ and 2⅛ inch lamp increases the use of this linear source and gives a flexibility to our lighting as yet unheard of. Our lighting now becomes even more of an integral part of the interior, offering to the architect, as never before, the opportunity of incorporating functional lighting in harmony with the architectural or decorative scheme. With this he is able to secure an efficiency, which makes high intensity lighting as practical as it is desirable; coolness in lighting equipment with less radiant heat, a definite factor in considering the cost of air-conditioning; and color lighting effects heretofore almost impossible to obtain.

Color lighting today is secured not by the method of filtering out the colors which are not wanted, but by the multiplication process whereby variation in the chemicals produces their own individual color by transmitting invisible ultra-violet light to the visible spectrum, thus bringing color in lighting into more favor for general use as time goes on. The colors of fluorescent lighting are unique, and have a vi-

tality that regular lamps have never possessed.

Fluorescent lighting overcomes one serious handicap that we have encountered in all buildings wherever our levels of illumination have of necessity been low, due to inadequate wiring. In many locations existing wiring can be used for new fluorescent lighting. Where wiring is not adequate, changes providing additional capacity may easily be taken care of by a new type of small diameter latex wire.

Commercially available today are many types of good lighting units. Briefly, acceptance of certain lighting standards may be identified by the stamp of approval of the Electrical-Testing Laboratories, known as the "Fleur-O-Lier label". This means acceptance of specifications covering brightness, light output, safety requirements, and mechanical features that would be normally required by the architect in a specification which he felt qualified to write. Unfortunately, as in the early stages of radio, many opportunists have seized upon fluorescent lighting as the occasion for a "killing," with the result that there is much substandard equipment being offered, and in many cases accepted by the user. Claims made for saving in energy are never constructive, and in many instances are entirely false.

For years we have been living under artificial lighting that predominates in the reds and yellows. These colors from incandescent lamps have been accepted as our standard of artificial illumination and the changes which they have made in the appearance of interiors, colors, materials, and even complexions, have been accepted as our standard. Now with the changes in color and tone that are provided under the fluorescent lamp (which for the most part are low in the reds and yellows), we hear of changes in color which must now be considered.

It should be remembered by the designer and architect that in planning for a certain atmosphere or effect, greater attention must be given to the selection of the color scheme. Tones or colors for materials cannot be studied or tested and assumed to produce the same values under fluorescent lighting as are secured under incandescent lighting. Very often warmer colors may have to be introduced in decorations to compensate for the coolness in the color of fluorescent lighting. As times goes on, and the greater use of fluorescent lighting meets with more universal acceptance, this color quality in our artificial illumination will replace the present standard as set up by incandescent lighting.

What of the future? Styles in lighting equipment have been regarded as changing approximately every five years. Lighting levels or intensities have been regarded as trebling about every ten years. In 1919 the standard for office lighting was indicated at about five foot candles (units of light). In 1930, approximately ten years later, these intensities were given as 15 foot candles. Now in 1940, our recommendations are for upwards of 40 foot candles. Installations are being planned to intensities of 100 foot candles. These intensities are not only practical levels for us to be using today but are now possible because of the higher efficiencies of the fluorescent lamps. Fifty to one hundred foot candles are not unusual levels of lighting and are no greater than those which you probably have on your drafting board placed alongside a north window.

By 1945 it is predicted that 80 per cent of the lamps manufactured will be of the fluorescent type. This means that the modern motive, so definitely a part of architecture today, will find fluorescent lighting as the source for illuminating interiors and even many exteriors. The present epidemic of pendant luminaires of various sizes and shapes, will be superseded by ceiling equipment, most of it efficient; some of it decorative; some with lamps shielded; lamps concealed above glass panels, in coves or recessed. High intensity lighting and color effects will become common practice.

All in all, we shall have a style that will look as different ten years hence, as did the first lamp designed by Thomas A. Edison. We shall have lighting levels and efficiency in light sources as different in appearance and benefits as those produced by his first lamps over the old kerosene lamp. We are in a NEW LIGHTING ERA.

The Architectural Profession

The architect must take a more active interest in civic affairs and prove to his fellow citizens that he is ready to aid in affairs of the community. There is no reason why architects should not be valuable members on school and park boards, and as building inspectors in their community. The May number of the Octagon has an interesting article which shows what the City of Ladue, Missouri was able to do. This can be accomplished only by real unselfish cooperation of the architects in each community. Such action will assuredly make the public architect conscious.

The state of affairs today demands action, and hence, the architectural profession must become cognizant of the fact that unless it organizes by state, county, and community, to combat and overcome the increasing number of evils confronting the profession, neither the architect as an individual, nor the profession as a whole, will ever attain the success to which it is entitled.

The Institute and societies should make every effort to end governmental interference in the building industry.

Nothing will prove as helpful to make the public realize the value of the services a competent architect can render as the adoption of a state building code. House Bill No. 872, Illinois State Building Code, was introduced in the 61st General Assembly. Unfortunately it was not introduced soon enough and was tabled along with several hundred other bills. There is a chance to introduce the bill again at the session, January 2, 1941, and if the architects will take an active interest and discuss this with their local senators and representatives, it can be passed. It will require attendance when the bill is in committees and real organization on the part of the downstate architects. I am confident that the adoption of such a code will be of great benefit to the communities and to the profession as a whole.

—Leo H. Pleins

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Editor Monthly Bulletin

ARTHUR WOLTERSDORF, 520 NORTH MICHIGAN AVE., CHICAGO

An interesting opinion of law, establishing the professional rights of licensed architects in New York State, has recently been handed down in the case of a store equipment and construction company versus a restaurant. The construction company had contracted to perform various services, including planning, designing, and decorating the restaurant. They charged a stipulated fee for architects' services. The restaurant refused to pay the architects' fee on the ground that the builder was not licensed to perform architects' services, even though such work had been done for the restaurant.

The New York Court of Appeals affirmed the decision of a lower court holding that only an architect can contract to perform architectural services. The decision of the court restores the practice of architecture to architects. No firm or other organization can contract to perform architectural services other than a licensed architect, and where others perform such services, the court holds payment for them cannot be recovered through law. The opinion holds that contracting firms may not provide free architectural service as a part of their contract.

Mr. Justice Rosenman's opinion is published in the New York Law Journal of March 4, 1940.

To President Bergstrom of the American Institute of Architects the profession of architecture is deeply indebted for his untiring efforts to secure for the architect in private practice some reasonable share of the vast amount of building work to be designed and supervised for the Federal Government under the defense program. Some idea of Mr. Bergstrom's efforts may be gleaned from his monthly messages appearing in the Octagon. But with all his effort, it becomes clearer that the Army and Navy Departments propose to keep, if not all, as much as possible of this work in Federal bureaus.

In the last number of the Octagon issued (September), Mr. Bergstrom says that Federal Works Administrator Carmody stated that the Army had allocated 45½ millions of its 100 million dollar allotment for defense housing projects to the Federal Works Administrator. In Washington "it is generally expected that Mr. Carmody will direct the Public Buildings Administration to provide all, or at least the major portion, of this housing."

"If all of the above housing is allocated to the single agency, then at least 200 million dollars worth of defense housing will be placed under the jurisdiction of the Public Buildings Administration. . . . The only hope that Commissioner Reynolds seemed to offer our Committee was that he might engage some engineers to lay out the utility services for the projects, because he had no engineers in his drafting bureau to do that work."

The Public Buildings Administration "is reaching into fields in which it has had no experience. Constantly deprecating the employment of architects in private practice for designing federal public buildings because it considers that profession is not familiar with the intricacies of post office and court activities, the tables are now reversed and a bureau experienced in the design and construction of costly federal buildings and with no experience whatever in low-cost housing, will attempt to produce 60,000 or more housing units costing less than $3,000.00 each, within an incredibly short period. The attempt will be watched with great interest by many of the other federal agencies as well as by the design professions."

Apparently the experiences of more than four hundred architectural firms, gained from work in the low-cost housing field during the last four or five years under Government supervision, is not to be made use of.

"The Defense Housing Coordinator, Charles F. Palmer, has declared that the Government hopes private capital will provide 40 per cent of the defense housing work. Housing provided by private capital should be the immediate concern of our profession, and the various groups should ascertain in what cities housing is to be required and then attempt to work out propositions for providing it with private capital. Housing that can be so provided will be encouraged by the Government, and undoubtedly will be on the priority list."

It is observed that much of the Government housing now under way is of frame construction and follows the plan of cantonment construction introduced by the Army and Navy in 1917-18.

Architects will be interested in the statements made by Captain Ralph D. Spalding, Public Works Officer at U. S. Naval Station, Great Lakes, Illinois, before the statewide meeting of the Illinois Society of Architects in Springfield on October 12, found on page 4 of this issue.

Thomas E. O'Donnell, Assistant Professor of Architecture, University of Illinois, is the new president of Central Illinois Chapter, American Institute of Architects. With Professor O'Donnell's acceptance of the presidency, Elbert I. Harrison of Peoria becomes editor of Central Illinois' Quarterly Bulletin. The Bulletin announces recent completion by the State Architect's office of a new Library Building and Home Management House at Illinois State Normal University at Normal; also the first unit of a security building for the Illinois State Training School for Boys at Sheridan.

Fifth Annual Statewide I. S. A. Meeting

A beloved poet sang of June when "if ever come perfect days." The poet was a New Englander. Had he been a Middle Westerner, he would have chosen October. October 12 and 13 at Springfield, Illinois, where the Illinois Society of Architects met in the St. Nicholas Hotel for the Fifth Annual Statewide Meeting, gloried in perfect days—atmospherically speaking. But Ralph C. Harris, General Chairman of the Local Committee on Arrangements, was unhappy, and Leo J. Weissenborn, Chairman of the Entertainment Committee, was disappointed because the numerical response by the members was not larger. True, the architects' meeting was thrown into competition for attention by Christopher Columbus, who stepped up to America's doorway on October 12 some years ago. Then there was the intercollegiate football game at Champaign-Urbana, and finally, Yom Kippur.

After this introduction, the reader will want to know what the attendance was. Here it is. When the Saturday afternoon session was called at 2:30, there were 26 members in attendance; when the President adjourned this meeting at 5:30 there were 40 members in attendance. At the dinner in the evening were 72, including members, their wives and guests. The Sunday morning inspection of new public buildings in Springfield, the trip to New Salem, luncheon at Wagon Wheel, and return to Springfield, drew an attendance of 34 members and guests.

In President Gerhardt's address at the opening session on Saturday afternoon, he insisted that the membership must grow; that the Society felt an obligation in furthering the publicizing of the architect. He spoke of the effort in some sections of the country, encouraged by lumber dealers and others, aimed at circumventing the architect in his proper function. He dwelt upon the necessity of a strong state organization, not only numerically, but in courage to speak for the licensed practicing architect. After remarks on the existing license law and what amendments were needed, he discussed the proposed state building code.

Secretary Fairclough read the minutes of the September meeting. Mr. Gerhardt then reviewed the regional meeting at Cranbrook. He spoke of bills that would come before the State Legislature, convening January 2, 1941, and called Leo Pleins to the podium. Mr. Pleins is the Society's State Building Code Chairman and he speaks with authority. Interjected at this point were arguments to amend the Architects' License Law, the attitude to be taken toward the engineers' license act, criticism of the administration of the Architects' License Law, which criticism was answered by Newton File of the Department of Education and Registration. There was a discussion on lax enforcement of the law and why officials of the law were so backward in taking up such cases. On this point Messrs. Ralph Harris, Charles Urbanek, and Victor Matteson were heard.

Then Mr. Pleins had an opportunity to continue on the subject of a state building code. President Gerhardt advised the membership to "get behind Pleins." But Mr. File of the Department of Registration and Education was not through. He got the floor again on the question of enforcement, when Matteson, Palmer, and others relieved themselves of their views on why this enforcement was so lackadaisical.

Ernest J. Russell, former A. I. A. President and a member of the Construction Advisory Committee of the Council of National Defense, came from St Louis to tell of the new preparedness program. He told of what was accomplished in this direction a generation ago during the first World War. Today it is different. What is wanted today is permanent housing. Much of this will be individual industry housing, done by the industrialist under direction and supervision of some Federal agency. There are the Government Defense Commission, the USHA, the Supervising Architect's Office, and other Government agencies that will function for housing, as will local housing authorities. It has been estimated that housing for 200,000 families must be planned immediately, and of this 200,000 Illinois has been allocated 2400. Fees for architects' remuneration will be worked out by an A. I. A. committee working in cooperation with the U. S. Army Quartermaster's Department. Mr. Russell stated that the Government was planning to spend on this program ten billion dollars per year for the next five years. This sum includes other constructions, comprising flying fields, ammunition plants, and others.

The ever-present small house problem and how to handle it with architects' services so that the architect may earn living pay and preserve his professional dignity, was next discussed. Charles Urbanek, who is Chairman of the Society's Small House Committee, and at the same time a functionary with FHA, read a paper on the subject. He brought out what competition the architect had to meet in this field, spoke of limited architectural services, royalties, and various other phases. The speaker was hesitant and unconvincing.

The subject of unification followed and here President Gerhardt hoped to build a state society, namely, the Illinois Society of Architects, with local units holding their own local meetings, with occasional statewide meetings. Messrs. Wuellner of Alton and Kane of Edwardsville, representing the newly-formed Registered Architects Association of Southern Illinois, spoke. Messrs. Urbain, William Fox, Pleins, Ralph Harris, and others, followed.

The President adjourned the meeting at 5:30, the session having run for three hours. It was time for fresh air in anticipation of the dinner to follow in the evening, where ladies and distinguished guests were expected.

An excellent dinner contributed its share to the camaraderie of the evening. The speaking began with the President reading his message. It touched on the trials, disappointments, hopes, and efforts of the architect. The professional architect aims to make a contribution to the public through sound construction and good design that may be valued by posterity. The address contained much professional self-criticism.

Those at the speakers' table were introduced. Frank M. Pfeifer, Assistant Attorney General for the State of Illinois, substituting for Attorney General Cassidy, spoke pleasantly, telling stories that were not inapropos.

Captain Ralph D. Spalding, C. E. C., Public Works Officer, U. S. Naval Station, Great Lakes, Illinois, was the principal speaker of the evening He had come to the dinner escorted by Hubert Burnham and Edwin H. Clark, both men who had served in the U. S. Navy and are now distinguished practitioners of architecture. Their ladies—Mrs. Spalding, Mrs. Burnham, and Mrs. Clark—were most welcome guests The Captain's theme was "The Preparedness Program and the Architect's Place in it."

Preparedness, he said, was not as sincere a name for what is to be done, as the word defense. He was very careful in everything he said, though trying to make clear the difference in the point of view of nations, which he referred to as the "haves" and "have nots." But soon coming to the point, namely, the architect's position in this defense program, he held that the work to be undertaken does not start from scratch, since both the Navy and Army had, through the years, accumulated many plans of buildings and equipment that would become necessary in an emergency, and that what would have to be done would be the adjustment and assembling of these unit plans to specific conditions and locations. The architect would probably have little opportunity to function for the Government as he functions in his private practice. Bureaus of these Departments would probably become active in developing each Department's building requirements and here is where architects and draftsmen would be employed. The letting of contracts and supervision of work would be controlled by each Department's own officers. Capt. Spalding's gracious and modest presentation was listened to with rapt attention.

The President thanked the speakers and guests and the members, and declared the meeting adjourned.

At 10:30 on Sunday morning a chartered Greyhound bus gathered in members and guests (a few preferred to go in their own cars) at the St. Nicholas Hotel and drove first to the two great public buildings erected by the State with Federal aid, located on the State House grounds and flanking the Capitol.

The first building visited was the State Armory, a huge, impressive structure, with exterior sheathing of Indiana limestone, enclosing a great hall with stage on the ground floor, surrounded by offices for the military. This hall has banks of seats opposite

the stage and a U-shaped balcony extending around three sides, filled with opera chairs. The hall seats about 6000 people. It forms the base of a court created by two L-shaped office buildings, built over the military offices flanking the hall. The hall has top lighting. Spanning the hall in its shorter dimension, estimated approximately 175 feet, is a series of steel Howe trusses. Celotex sheets resting on T's, supported by purlins secured to the trusses, form the ceiling. Over the Celotex is the reinforced concrete roof construction. The walls have a glazed terra cotta proscenium frame, a high wainscot, and above this a Waylite concrete surface, toned a soft gray. The effect is very good. The Howe trusses, however, appear to be the work of the structural engineer with no thought of architectural values. One was reminded by contrast of the fine effect achieved in the steel trusses of the Pennsylvania Passenger Terminal in New York City, where the steel trusses achieved so much beauty that thousands of words were spent by architectural critics in applauding the achievement of McKim, Mead & White engineers cooperating with the architect in the design. The Armory trusses seem entirely innocent of such cooperation. The two L-shaped superstructures referred to are given over to office space and here the office of the State Supervising Architect has also found its home. The visiting architects were conducted through it all. Ceiling heights seem to be normal, but the effect is that of low ceilings because of frequent deep girder drops. The architects of this building are Burnham and Hammond of Chicago.

Leaving the Armory, the company were driven to the other side of the Capitol for an inspection of the Archives Building. They were welcomed by the archivist and she and Mr. Joseph Booton of the Office of the State Architect talked and explained everything encountered. The impression left upon the visitor is that the building has many features common to libraries, except that more enclosed fireproof rooms are created. There is a stack structure, holding filing cases, running through many stories, modeled on that of book stack construction. The office of the State Supervising Architect designed this building.

Leaving the building, the company paid a visit to the Hall of Flags in the Centennial Building, erected after plans by Schmidt, Garden and Martin in 1918 to commemorate the centennial of Illinois' statehood.

The twenty mile drive from Springfield to New Salem was now undertaken. The country was still green, only maples had been touched with yellow, and the ride over the rolling country along the Sangamon was much enjoyed. Before turning in at New Salem, the party visited the grave of Ann Rutledge in Petersburg Cemetery some three miles away. Thence to the Wagon Wheel, the inn built at New Salem after the old model. Within the last two years an entirely new wing has been added to accommodate the present-day public. Here the architects' party had their luncheon.

It was a very sociable affair and the food consumed was a reinforcement for the climb over the hill to the restored structures of New Salem. It should be remembered that Lincoln lived in New Salem from 1831 to '37 and that about 1837 the inhabitants were ready to abandon the town in favor of the new settlement of Petersburg. The five years intervening between the first and fifth statewide meetings of the Society had seen the completion by the Office of the State Architect of practically all the houses known to have existed in Lincoln's day. The dam across the Sangamon River has now been restored and the State authorities are restoring the old grist and saw mill at the riverside where the original mill stood. The architects were much interested in the model of this mill.

By five o'clock the bus had deposited the visitors again at the St. Nicholas Hotel in Springfield, goodbyes were said, and the Fifth Annual Statewide Meeting was history.

New York State Association Convention

The October issue of "Oculus," monthly bulletin of the New York Chapter, A. I. A., carries a report of the third annual convention of the New York State Association of Architects held at Rochester, September 26-28. It reports an attendance of more than 200, twenty-four of whom were New York Chapter members, besides a considerable number from the metropolitan area.

Unification of the architectural profession was uppermost in the minds of attendants. A special business meeting for this subject was held. It was brought out that twenty of the twenty-four existing state associations are now affiliated with the Institute. The New York Association comprises sixteen architectural societies (six are A. I. A. Chapters) and includes one-third of all registered architects in the state. The New York Association is one of the four state organizations not yet affiliated with the Institute.

Albert Kahn of Detroit addressed the convention on "Industrial Architecture, An Opportunity and Challenge." Speaking to the practitioner who endeavors to make a start in industrial design, Mr. Kahn urged formation of a group capable of supplying complete engineering service. "Don't forget the estimator," said Mr. Kahn, "for the client wants to know his cost at once."

He continued by suggesting an intelligent consideration of all new materials and contractors' suggestions as a sign of the progressive architect. "And remember," said Mr. Kahn, "that while it is the duty of the industrial architect always to indulge in economies, he must never forget to tell his client about these economies."

The scheme of the convention program divided morning sessions into sectional meetings for round table discussion. A formal dinner at convention headquarters, the Hotel Seneca, brought the second day's proceedings to a close.

An attraction which drew favorable comment was a representative exhibit of works by State Association members hung in the Rochester Public Library.

Among the resolutions passed was one favoring the publication of a State Association bulletin, one expressing the attitude of the State Department of Public Works toward private architects, one emphasizing the architect's interest in the small house problem, and another approving a pamphlet entitled "How to Select an Architect."

Chicago Architectural Club Activities

The Chicago Architectural Club announces that for its new year a series of portfolio lectures covering the various branches with which the architect must advance has been arranged. On October 18 the first lecture of the series was given. The subject discussed was Heating. Others following and to follow are Plumbing, Electrification, Painting and Sculpture, Color, Civics, Lumber, and Glass. All members of the architectural profession are invited to attend these lectures.

In addition to these lectures the Club carries on actively for its members its Beaux Arts problems, with exercises on Saturdays and submissions on Mondays, with judgment Thursdays.

The Club's activities take place in its quarters on the seventh floor of the Merchandise Mart.

Students who wish to register to take the preliminary sketches for Beaux-Arts Institute of Design programs may apply for information to W. F McCaughey, Pickwick Building, Park Ridge, Illinois.

Chicago Building Congress

At the luncheon meeting on October 22 of the Chicago Building Congress, five speakers, led by J. Soule Warterfield, proposed the creation of "Neighborhood Redevelopment Corporations," with power of eminent domain, as one of the first steps toward eliminating blighted areas and improving property values in Chicago's central business district. Mr. Warterfield prophesied that legislation to establish such corporations has promise of becoming law in the next session of the State Legislature.

American business has always been conducted on an expansion policy—it had to cope with an annual increment of 1,400,000 people. Now that the increment has dropped to 850,000 and may drop by the end of this decade to 600,000, that policy will have to be modified. However, I believe that for the next few years the lack of expansion of facilities in the decade of the 1930's, the amount of obsolescence of plant and equipment, not to mention the present war situation, plus the present excess of births over deaths, will create a very substantial rate of business activity.

—Gen. Robert E. Wood

Illinois Society November Meeting

Time: November 26. Dinner 6:30. Business meeting and program 8:15. Place: Second floor club room, Old Cathay, Chicago Avenue at Michigan, Chicago. The attendance was 40 or 42 members at the business meeting and program, 26 of whom had attended the dinner.

Secretary Fairclough's minutes of the October statewide meeting were complete and necessarily lengthy. President Gerhardt introduced two subjects that had been weighed in directors' meetings where the decision was reached to get the views of the general membership. These subjects are, first, permanent club quarters and, second, advertising the profession in the newspapers.

President Gerhardt made clear that in the matter of permanent quarters cooperation with the Chapter was contemplated. Chicago Chapter President Loebl was present and spoke after President Gerhardt. Both organizations are aiming not alone to increase their membership, but to instill greater interest and one way they hope to accelerate the interest is by securing permanent quarters available three or four evenings a week in a well-located downtown club where monthly meetings also would be held. The Skyline Club atop the Bell Building on Michigan Avenue has been approached. It is an important lunch club for executives but little use is made of it in the evening. So it was thought that the architects' use of this club in the evening, with moderately priced dinners available, in a dining room that can seat approximately a hundred for monthly meetings, might have an appeal to the membership. The cost to both architectural organizations for one year would be $1000—divided between the two. Individual special service extra, of course. Interest of the members attending was mild. (*Non-attending members and kickers should address their views by mail to President Gerhardt.—Ed.*)

Regarding advertising the profession, President Gerhardt suggested trying a carefully worded ad in the Tribune or Daily News, 2 or 2½ inches long, in the real estate section.

Elmer C. Jensen's letter to the President, bearing on super-highways proposed in Chicago, was read.

Otto K. Jelinek, traffic engineer, Chicago Park District, the star of the program, was next introduced. His subject was "Traffic Engineer and City Planning." The work nearing completion in Lincoln Park, which has been under way for nearly two years, is the conception of Mr. Jelinek. That was the high spot of his talk. He was able to defend successfully the inconvenience citizens driving through the park have been put to. But his talk extended far beyond Lincoln Park. On the screen were shown slides, maps, charts, graphs, bird's-eye-views, and diagrams showing how thoroughly the Park District had studied traffic trends, loads, time and life elements. The plans of the Chicago Park District shown extended down to the Indiana state line.

In the questions and answers following, a lively interest on the part of the hearers was developed. Much of what was posed extended beyond the Park District's jurisdiction.

It was the feeling that the Program Committee should pursue these thoughts on city planning further, drawing in experts from various departments such as subways and super-highways, the county, the Regional Planning Board, Sanitary District, and last but not least, the Chicago Plan Commission.

Changes in Chicago Building Code

Section Number	Action	Date	Council Journal Page
48-54	Addition	10/31/40	3343
	Eliminates the requirements for two stairway exits for certain apartments in existing tenement houses.		
89-3	Addition	7/11/40	2785
	Includes certain territory within the provisional fire limits.		
127-5	New Section	10/31/40	3326
	Broadens the description of the property affected relative to frontage consent requirements for filling stations.		

A "cloverleaf" house for four families is a novel design evolved by the U. S. Housing Authority as having advantage over row houses.

House-Heating and Cooling Research

For advancing the science of heating and cooling dwellings of modest cost, there has been erected in Urbana, within five blocks of the campus of the University of Illinois, a two-story house with attached garage on full basement—a type of house stamped with FHA's loan approval. This is the I-B-R (Institute of Boiler and Radiator Research) house.

The building is of frame construction with brick veneer on outside, insulated with mineral wool batts for walls and second story ceiling. A vapor barrier of Neponset paper is introduced between studs and inside plastering. Windows and outside doors are weather stripped.

The heating plant to be first installed is a forced flow one-pipe hot-water system. A cast-iron oil-fired boiler will be used. Small tube cast-iron radiators will carry the heat from the water to the room air. Radiator recesses are provided with inlet and outlet grilles to be used at option.

It is aimed to make and equip this house for the study of atmospheric or environmental conditions affecting human comfort in typical residential rooms under actual weather conditions. Besides determining the quantity of water circulated through each radiator, measurements will be taken of the temperature of water entering and leaving each radiator and the temperature of the water to and from the boiler.

Moisture measuring stations, recommended by the U. S. Forest Products Laboratory, are being installed in about seventy-five strategic locations in the building. Measuring stations are located in building materials where the moisture content is most likely to be critical or too high. Moisture stations will be connected through copper lead wires to a control switchboard where, by means of an instrument, the operator can quickly read the moisture content of the studs, plaster, sheathing, trim, floors, and wall insulation. The moisture content of the building materials is greatly influenced by the humidity maintained in the occupied space.

Temperature recorders will be placed at the floor, the breathing level, and ceiling in each of the six rooms. Other instruments will make a continuous record of the attic, basement, and outside air temperatures. Aspirated psychrometers will record the moisture content of the air. A thermo integrator and globe thermometer will measure the dry bulb temperature of the air. They reflect warming and chilling effects of the heated radiators and cold outside walls.

The Small House Problem

The editor's Foreword of the November "Architectural Record" says, in part: "Whatever her actual need or potential capacity, America produced in 1939 approximately 200,000 single-family dwellings. The widely varying conditions under which these units were produced are matched only by the widely varying positions of the architect in each case—a position which runs the full gamut from no position at all to complete control. The reasons for this anomalous situation are complex; they may be attacked, but they will not be eradicated, by moralizing.

"1. More people are buying ready-built houses than houses built to order. (In 1932 the figure was 39%; by 1937 it had risen to 53%; and for 1939 it stood at 57%.)

"2. More and more houses are being built in groups.

"3. Most houses built for sale or rent are being built in groups. The percentage of single-family houses for rent or sale built in groups of two or more was 60% in 1937; by 1939 it had risen to 67%.

"For the individual architect, this trend may offer difficulties, but they are far from insurmountable. It is easy to understand why he protests against a trend which often works a hardship on him as an individual; but it is strange that his profession generally appears to ignore the constructive possibilities in this important development.

"That these relationships are not unattractive—to the architect, to the builder, or to the consumer—is attested by many architects who have engaged in such co-operative effort with marked success."

Chicago Chapter October and November Meetings

It was after eight by the clock in the Wrigley Tower on the evening of October 29 at the Tavern Club, when President Loebl—after the buffet supper—called the monthly meeting of the Chicago Chapter, A. I. A. to order. Secretary Suter read the September meeting minutes, and then a young lawyer—a Mr. Von Ammon—was introduced. Mr. Von Ammon came in behalf of the Joint Civic Committee on Elections to enlist the services of architect volunteers for work on November 5—election day—during the counting of ballots as observers and watchers at the polls. Each of the twenty-five attendants at this meeting was given a card to fill out and return to the Committee.

There was no new business and no one wanted to speak from the floor, so President Loebl called on Charles Dornbusch, Chairman of the Program Committee, to tell of programs planned for this and coming meetings and introduce the speaker of the evening. He stated that with the program of the evening, a series of discussions on city planning was introduced.

The speaker was Walter Blucher, Executive Director of the American Society of Planning Officials. This society of planners has its headquarters in a special building erected on the University of Chicago campus through the generosity of the Spellman Foundation. Mr. Blucher started by telling stories drawn from his experience in meeting civic committees and their professional advisers. Then he turned to the work he is engaged in on the Columbia River basin towns and sage brush areas. He spoke of the existing towns, future towns that are projected and what might be expected of the existing towns in the future; of the open lands devoted, or to be devoted, to agriculture, and the effect of the Grand Coulee Dam.

After that he turned to Chicago's problems—planning problems. He referred to a newly issued pamphlet on this subject; referred to the work of the Chicago Plan Commission and what may be expected from them. He spoke of metropolitan cities' downhill population trends, declining tax returns, fictitious and actual land values today, housing and housing mistakes that have been made. Trumbull Park housing project, he said, in the south section of Chicago, intended to house steel workers, was unsuccessful in that the housing authority had difficulty in filling the space with tenants. Steel workers' income is generally too large to permit renting Trumbull Park housing at the rates established.

There were questions put to the speaker, and answers. One of these was, "From what class of professional men shall city planners be drawn?" The speaker replied that landscape architects, sociologists, engineers, and architects, each claimed that his training and background were the proper start to make the successful city planner. Mr. Blucher felt that no one mind was comprehensive enough to include all that was expected in this day of the city planner. The city planner should be the coordinator, but at his elbow there would have to be economists, sociologists, architects, engineers, landscapists, and a host of other experts whose findings must be blended in the general plan.

As for the Chicago plan, he thought the best that could be done at this time would be the development of a master plan, subject to change as time went on. He recommended further that the Chicago Chapter appoint an observer who would sit in at all meetings of the Chicago Plan Commission.

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This space was destined to carry a review of the November monthly Chapter meeting, but it is not to be. Notwithstanding the Chapter's letterhead that regular monthly meetings are held on the "Second Tuesday of Each Month"—a time-honored custom in the Chapter, the Bulletin was advised on November 20, its deadline date, that no Chapter program for November had yet been consummated. The Secretary reported that the Program Committee was actively engaged in securing a program that could be presented before November faded out. All material for the December-January Bulletin went to the printers on November 22 (barring one page reserved for a report of the Illinois Society meeting on November 26).

So the Bulletin is unable to give an announcement of the Chapter's program, say nothing of a review of what was said.

These modern times of cynic calculation sneer at order and miscall it regimentation.

"For of all sad words of tongue or pen,
The saddest are these: 'It might have been!' "

Prefabricated Housing for San Diego

Centralized purchasing by the Government of prefabricated structural units offers difficulties because there is no existing industry capable of supplying prefabricated housing in quantity, says Engineering News-Record. Initially it is planned to give "educational orders" for ten to a hundred units to various of the firms in the field. If the resulting houses prove satisfactory and if the manufacturers are able to handle large orders, Housing Coordinator Palmer would like to see nearly all the housing for industrial workers of a demountable type; this could run to as much as $150,000,000. Already 1,000 units of demountable housing are scheduled for San Diego.

Possible solution of some of the difficulty in obtaining large numbers of units is hoped for in Washington as a result of reports that Budd—builder of streamlined trains—will enter the prefabricated housing field soon.

Oakland - San Francisco Bridge

The bridge, including approaches, is 8¼ miles long. It contains suspension, cantilever and single bridge spans. It has two decks. The lower carries three lanes of trucks and busses and two tracks for trains. The upper contains six lanes for passenger traffic. Started in 1933, completed in 1936, its cost was $78,000,000. Its steel tonnage equals 18 per cent of all steel fabricated in the United States in 1933.

Tacoma Narrows Suspension Bridge

This bridge was wrecked in a wind storm on Thursday, November 7, when the center span broke in a 42 mph wind. Its center span was 2,800 feet. Its two side spans sagged 30 feet when the center span broke and the towers bent back 12 feet shoreward. No lives were lost since the public were barred from crossing on the structure some days before the wreck.

The oscillating movement up and down and sideways had been observed for some time and Professor F. B. Farquharson of the University of Washington (State) had been conducting experiments on a model of the bridge with a view to controlling its oscillation.

Tacoma Narrows bridge was the third longest suspension span in existence (Golden Gate 4,200 feet, George Washington 3,500 feet, Tacoma Narrows 2,800 feet). The Narrows bridge was built between October 1938 and July 1940 and was opened to traffic in July. It was by far the most slender suspension bridge ever built, laterally and vertically.

Francis J. Plym Fellowship Competitions

The twenty-eighth competition in architecture and the eighteenth competition in architectural engineering of the Francis J. Plym Fellowships are announced by the committee in charge by authority of the Board of Trustees, University of Illinois. The competition in architecture will be held in two parts; the preliminary during January, and the final probably during February and March. It is open to all graduates of the Department of Architecture in the curriculum in architecture of the University of Illinois, who are American citizens and under thirty years of age on June 1, 1941.

The Architectural and Engineering Fellowship is open to all graduates of the Department of Architecture in the curriculum in architectural engineering.

Persons wishing to take part must notify Professor L. H. Provine, Department of Architecture, University of Illinois, not later than January 10. The value of each Fellowship is $1200.00, to be used toward defraying expenses for one year in Europe for the study of architecture or architectural engineering.

L. Hamilton McCormick House in Chicago

In the series on "Old Chicago Houses" by John Drury appearing each Friday in the Chicago Daily News, there appeared on October 25 in a lengthy article, accompanied by photographic illustration of the exterior, the L. Hamilton McCormick house standing on the northeast corner of Rush and Ontario Streets. The house is now occupied by Kungsholm, a high-class Swedish restaurant. This residence, because of its builder and occupants and the distinguished guests entertained here through the years, is of social significance in Chicago's history and its architectural history becomes of some importance.

Mr. Drury says of this history: "The old-style brown-stone mansion is of interest, however, for other reasons than its McCormick association. In the first place, it was designed by the well-known American architect, Stanford White, who was shot and killed by Harry K. Thaw in 1906."

This quoted statement is so at variance with the Bulletin editor's clear recollection that the architects were Cowles and Ohrenstein, a local firm, and with the building's lack of all earmarks of the work of Mr. White's firm, McKim, Mead & White of New York, that the Bulletin, in the interest of accuracy in Chicago's architectural history, enlisted research on this house by the Burnham Library of Architecture.

The Burnham Library, with the aid of Leander J. McCormick Estate and the Chicago Historical Society, established the following facts about this mansion. The house was designed and supervised by Cowles and Ohrenstein (W. D. Cowles and Ernest Ohrenstein, both deceased), Architects, of Chicago. The records show that it was built in 1896. The Chicago Historical Society finds that L. Hamilton McCormick was living in the house in 1897.

Mr. Drury's statement that it is an "old-style brown-stone mansion" is refuted by the evidence of any passer-by who will see that the first story is enclosed with a wall of Indiana limestone facing, above which the walls are of a salmon colored Roman face-brick, with terra cotta trimmings of a like color.

In a handsomely printed booklet issued by Kungsholm Restaurant, it is stated: "L. Hamilton McCormick, nephew of the Reaper King, commissioned the internationally famous architect, Stanford White, to design for him a residence and built an imposing home at Rush and Ontario Streets." Later in the same booklet one reads, "The building itself is unique, for each brick came from Belgium, separately wrapped in straw, as bottles of rare wines are wrapped."

The first statement quoted from the Kungsholm booklet has already been refuted, and the second is easily refuted, since the brick were made in New Jersey by the Sayre and Fisher Company. The terra cotta was made by Northwestern Terra Cotta Company of Chicago.

There remain standing in Chicago the following works by McKim, Mead & White, Architects. All are residential architecture. 1. The Patterson house, 20 East Burton Place. 2. The Edward T. Blair house, 1516 Lake Shore Drive. 3. Ballroom in the Potter Palmer castle in Lake Shore Drive 4. Bryan Lathrop house (now Fortnightly Club), 120 East Bellevue Place.

A. W.

Practicing Architecture in China

When an American sets up an office in China, he must get a "Hong" name—that is, he must go to an educated Chinaman and be given a distinctive name, which naturally must have a meaning. . . .

The architectural office consists of:

1. A compradore, who is your Chinese manager, working on a per cent of your business. He makes the contacts with Chinese owners, and he has four or five assistants who bring business in to the foreign master. He must entertain a great deal in night life and the usual tea parties and "talkie talks."

2. The next in order is the schroff, who by nature is a natural bookkeeper and money changer. He is the fox. He extracts "squeeze money" from the contractor for the privilege of talking to the head master, the architect. This money is distributed pro-rata through the office and down to the draftsmen. Confucius' teachings have made him adept in remembering names and accounts. He does not have to look up in account books for the cost of work done years previous.

3. The next are your stenographers, who become quite good, considering that they have to write in a foreign language. American women stenographers do not fare so well, as men do the work of women, and after all, if a girl is born in China, it is not considered good luck.

Your drafting room becomes a school of architecture. Wealthy fathers ask you to place their sons in your office, all working for food and travel money. Under foreign head draftsmen they learn very fast, become efficient in mathematics, engineering, concrete design, and their drafting is superb in minute details, but naturally they misspell some funny names on your plans if not well supervised.

Procedure in architectural business:

1. Often a paid competition between American, British, French, and Spanish architects. 2. Plans and specifications in the usual way, but never any stock details. 3. Full size details are laid out full size without breaks. 4. Contract figures taken and lowest man gets the job. 5. Construction bonds are not heard of. The contractor's word is his bond, and it is as good as gold. He never fails. 6. Changes in plans and materials, to a certain degree, do not entail extras. 7. Constant supervision is necessary, usually by a qualified American builder. No foreign contractor can succeed in the Orient. The labor system will ruin him. Concrete hoists are not allowed. Concrete goes from the mixer in bamboo baskets on a human conveyor of women to the top of the building.

—Rowland A. Curry in "Ohio Architect."

A Crow Indian never converses with his mother-in-law—it's a tribal custom for avoiding possible conflict.

Alfred S. Alschuler, prominent Chicago architect, died in Michael Reese Hospital, Chicago, on November 6, age 64 years. Mr. Alschuler was born and educated in Chicago. He graduated from Armour Institute of Technology with an M. S. degree in 1899 and continued his studies at the Art Institute. He served in the office of Dankmar Adler, Architect, from 1899 to 1904. From 1904-07 he was in partnership with Samuel A. Treat under the firm name of Treat & Alschuler, Architects. In 1907 his practice was established as Alfred Alschuler, Architect.

His practice was wide and general and includes commercial, industrial, and monumental buildings. He was architect of the London Guarantee and Accident office building, Chicago; of the Westminster, Cunard, Adams-Franklin, and other office buildings; of the E. J. Brach & Sons candy manufacturing plant and Chicago Mail Order plant. His work in ecclesiastical architecture includes Sinai and Isaiah Temples. He was architect for the Legler and Austin branches, Chicago Public Library. These structures are all in Chicago. His work, however, extended far beyond the city's limits.

If not the first, Mr. Alschuler was at least one of the very early users of reinforced concrete construction in Chicago.

Mr. Alschuler was a member of the Chicago Chapter, A. I. A. from 1921 on and a member of the Illinois Society of Architects since 1912. He was a Trustee of Armour Institute of Technology and at one time a member of the Illinois State Examining Board of Architects.

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Leo H. Weisfeld, Chicago architect, died in his home on October 4, aged 51. Mr. Weisfeld was a Chicagoan by birth and education, completing his architectural schooling at the University of Illinois in 1913. He taught school for a time in North Dakota. After that he served in the architectural offices of Alfred S. Alschuler and Henry L. Newhouse. Succeeding this experience came a partnership with N. Koenigsberg, under the firm name of Koenigsberg & Weisfeld, Architects.

His firm has been active in the design of hotels away from the heart of Chicago, as well as apartment buildings and stores, some of these running to ten and thirteen story high buildings. They did much in the way of remodeling for nationally known chain stores. Mr. Weisfeld was active in bringing glass manufacturing concerns to see the error of their ways in attempting to replace the architect with their own draftsmen in the matter of modern store fronts.

Mr. Weisfeld was a member of the Illinois Society of Architects from December, 1920 to his death.