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Le Corbusier

Veni, Vidi — but Did I Conquer!

Le Corbusier, renowned French architect, city planner, and writer, spoke on "Urbanisme" at the Stevens Hotel on Wednesday, November 27, 1935, following a dinner in his honor given by the Chicago Chapter, American Institute of Architects, the Illinois Society of Architects, the Architects Club of Chicago, the Chicago Architectural Exhibition League, the Chicago Architectural Club, and the Women's Architectural Club of Chicago.

Arthur Woltersdorf opened the meeting by presenting the French Consul, M. René Weiller, who introduced Le Corbusier. His discussion of city planning, in French, was ably translated at intervals by his confrère, Mr. Robert Jacobs, a young American architect who has worked with Le Corbusier for some time. After the lecture a series of slides were shown, followed by a film of some of Le Corbusier's work, taken by Pierre Chenal for the March of Time. The Chicago meeting was the last of Le Corbusier's American tour. Previously, he had spoken at the Arts Club and at the Renaissance Society at the University of Chicago two days before.

The present article is a general report of Le Corbusier's exposition of city planning at his three talks here, rather than a resumé of the lecture at the Stevens only.

Le Corbusier, in his Chicago talks, indicted present urban traffic congestion, accidents, and strangulation at the business focus; the corridor street; the time wasted in commuting; the general lack of sun, sky, trees and view, even in the pseudo-country of the suburbs; and the divergence to each separate suburban house of the incredibly complicated network of utility lines. He believes firmly in individual liberty, but does not find it existent in the present suburban garden-city of the extended type, which attempts to take the city to the countryside. His substitute, the garden-city in height, seeks to correct the above evils, as well as to increase man's leisure hours per day. Commuting time would be reduced to a minimum, under his plans, and working hours necessarily reduced by elimination of most of the needless complications in the public utilities service, for which we spend some hours each day working to pay for this unnecessary waste.

To achieve his first object, circulation is classified by varying speeds. Auto traffic is limited to highways raised 15 feet from the ground, with no cross intersections, and turn-offs not closer than 1200 feet apart. Pedestrian traffic may then use the earth's surface at will, and in safety. The elevated highways connect to parking spaces, also above ground, at elevators to the dwellings. A simple calculation of inhabitants per dwelling unit would permit ample parking space wherever needed at all times.

These widely spaced buildings go almost literally into the air. Raised also on columns, they touch the earth elsewhere only with their elevator shafts and stair landings, and are 150 feet (or less) high. Horizontal circulation, foot or auto, is free to pass beneath. Vertical circulation for 2700 persons to the interior streets of the buildings is spaced at a distance of 300 feet. With the individual apartments worked out to a definite module per person, an average of 1000 inhabitants per hectare, or about 500 per acre obtains. Only 12% of the ground area is built on, but since the roofs are used as gardens, and circulation is free between the columns at ground level, Le Corbusier engagingly indulged in a little simple addition to show that his plan utilizes 112% of the ground. His buildings are oriented with no apartments to the north. The main corridors, or interior streets, run on the north side of east-west blocks, which look south, and on the center line of the north-south blocks, with the apartments facing east and west.

All utility lines are canalized above ground in the buildings. Most apartments, which vary in size and plan, are duplexes, with one wall all glass and with the bedrooms on the upper level balcony Each apartment is completely sound-proofed, as a necessity to that individual liberty which Le Corbusier feels cannot be achieved without planning and powerful collective effort.

The small area of ground covered permits wide areas of park-like planting around and between the buildings, together with playing fields, swimming pools, etc., for the health and safety of the children. Schools, nurseries, etc. are all placed on the ground among the groves of the "Green City." Le Corbusier, in other words, would bring the countryside back into the town. A further result of the high density of habitation per acre results in a city much smaller in total ground area, yet still with 88% of the ground clear.

The above account is of a definite, but by no means fixed pattern of habitation. Working with the same underlying ideas, and using the same technics he resolves differing urban problems in varying ways. Always, however, the same basic elements necessary to the essential joys of living are employed: sun, sky, trees, steel, cement, in that order of importance. These, Le Corbusier feels, are the things which the technicians of the second stage of the machine age, upon which we are now entering, will not overlook. He stresses this order of importance, for while all the above elements have been ready for use in varying degrees for from fifty to eighty years, it is only within the last fifteen years that a recognition of their true relative importance has manifested itself in actual building.

Le Corbusier demonstrated rather fully the application of these principles to the specific problems of town planning for Algiers and for Barcelona. In the case of the latter town, he said he believed it would be of special interest locally because of the similarity of its site and problems to those of Chicago. A discussion of these plans is difficult without diagrams, and futile in any event, since both have been published. A striking difference from the garden-city in height, briefly described above, occurs in the plan for Algiers. Due to abrupt changes of level in the terrain, the express highways or autostrades, are in many cases placed high in the air in the manner of railway trestles, and the supporting structure below filled in with apartments. In this case, of course, these structures follow either straight lines or curves of radii large enough for driving at fairly

high speed, rather than the more or less regular battlement design in plan of the dwellings where the highways are less elevated.

For Chicago, Le Corbusier foresaw the possibility of a very great future. Indeed, in private conversation he said that it might well become, in his opinion, the greatest city of the world, and one of the handsomest. Its very definite advantages over New York, he thought, lay first in its lower average height of existing buildings—somewhere around two stories—whereas the average in New York is nearly four. Also Chicago has many more all wood dwellings than New York. Both these factors would assist in the possibility of rapid demolition. Chicago's second advantage lies in its less restricted site, but with excellent facilities for water and air transportation at hand. His two major criticisms of the present situation (aside from the sweeping changes his own plan would doubtless entail) were, first, that Chicago is now far too extended, especially along the shore, and second, that broadly speaking, only the shore-line strip has been very much developed. This strip he felt has been favored at the expense of the western sections. As incidental details, Le Corbusier thought the space due to the river at the Michigan bridge an asset, and both he and Mr. Jacobs admired the wave system of traffic lights. Le Corbusier did a sketch of what might be done with Chicago which reduced the present lineal dimensions about a third or more, and brought trees, air and sun back through the whole loop district. When someone protested that such extensive operations would take an age, he replied that he thought it might be done easily in fifteen years, and then added that with the force already plainly evident in Chicago, it should take far less.

—Gilmer V. Black.

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Urban Growth

Spengler said that the rise of New York was the most pregnant event of the 19th century, and that it was a recurrence of the earth miracle which produced Bagdad, Rome and Paris.

Be this as it may, the rise of New York and Chicago, Detroit and Los Angeles has followed a historic formula. They have lost the country within themselves; they have become spots from which the surrounding country is regarded as environs, landscape and soil. The workers in them, even the blacksmith, live in a different world from that in which the same kinds of workers live in the country—all this in spite of so much which has come to pass, like radio, automobiles and the like, to citify the country.

Many large settlements are scarcely different from a military camp, or camp meeting, where thousands are gathered for a few days. Such places are merely centers of landscapes, without worlds within themselves. There is no pattern to them, no history, no massed intellect, no direction.

When mathematics finally seizes a city fully, the ripened bloom of the stalk once nourished by earth begins to be stripped. Mind becomes too dangerously awake, and bloodless thinking replaces nature and unconscious living. Already plans are made for cities of ten million and even twenty million of people, and mathematics does the planning, with all sorts of ingenious and even fantastic modes of travel and getting about.

This surely is the massing of people without limit, and, it would seem, marks the end of organic growth out of which a civilized spirit can come and rule. Will we then have sterility, with life so strained that all the blood is gone, and all richness out of the earth drawn therefrom and consumed?

—Edgar Lee Masters.

Sic Transit Gloria

It is not without regret that Chicago says goodby to one of the last of the old Prairie avenue mansions.

When the stately yellow brick house at the north end of the street, part of the estate of Mrs. H. J. Reynolds, goes under the auctioneer's hammer Monday, together with its period furniture and priceless objects of art, only two of its companions will remain—the Robert Gregory home and the Marshall Field home, the latter seldom used.

Perhaps never again in Chicago's history will the luxury of Prairie avenue be duplicated. During the gay '90's it was the scene of brilliant and distinguished social gatherings.

A roster of residents of that famous Mayfair in its heyday was a social register in itself. The hospitality of Prairie avenue was that of a more lavish and more glamorous era.

The passing of this monument to a more leisurely and formal age is an actual loss to the city. The mansion, with its art glass windows, its mahogany staircase, its paneled dining room and its grand ballroom, should have been preserved for future generations as a historical museum, a reminder of the Chicago of yesterday.

—Editorial — Chicago Herald and Examiner.

A dinner in honor of Detroit's grand old man of youthful heart and spirit, Architect William G. Malcomson, was given by the Michigan Society of Architects and the Detroit Chapter, A. I. A., on October 15 at Hotel Statler. Clair W. Ditchy as toastmaster, prefacing his introduction of speakers with an address of appropriate content and charm, called on H. J. Maxwell Grylls and Dr. Edgar DeWitt Jones. Mr. Malcomson responded with the recitation of an apropos poem. He was born April 7, 1853.

Le Corbusier has come and gone. Chicago presented him in three public meetings. The last meeting was before the joint architectural organizations of the city. The speaker's address on City Planning was listened to by architects and their guests to the number of five hundred. Le Corbusier as a front page attraction exceeds even Frank Lloyd Wright.

The profession in Chicago is indebted to the Illinois Society of Architects and the Chicago Chapter, A. I. A. for assuming financial and other responsibility in securing Le Corbusier. Sincere thanks are due Leo J. Weissenborn and Gilmer V. Black, program chairmen respectively for the Society and Chapter, for their efficient and untiring labors in arranging the many details for this unusual event.

They were a committee of four. Their mission? To inspect before destruction by wreckers, the residence of Chicago's foremost merchant in the last quarter of the nineteenth century and first decade of the twentieth.

The street, in his time the finest in the city, still holds houses of vanished glory alternating with empty spaces once occupied by fine homes.

The merchant's house harked back to the middle seventies. Its style—Neo-Grec; its scale—overlarge; its materials—brick with stone trim and mansard of slate; its architect, Richard Morris Hunt of New York, reflecting his French training and the feeling in the Louvre annex with whose building he had been associated.

The interior had noble rooms. The circular stairway at the far end of the central hall was a masterpiece in woodcraft. An elaborate mantlepiece in the dining room with Numidian and Alps Green marble facings confined by mahogany woodwork richly carved, reflected the French school. But the woodwork generally, with champhered edges and incised ornament, followed the Eastlake school of design. At the stair end of the hall stood a clock built in England in 1793 that required winding but once a year. In this house Marshall Field I had been master and here had he died.

The four architects wandered from room to room, noting alterations introduced from time to time. On leaving, the four reflected on the changes sixty years had wrought in architecture and science, social customs and economic needs.

The right of a state and its cities and towns to make laws effectively restricting billboards has been upheld by a unanimous decision of the Massachusetts Supreme Judicial Court. The people of Massachusetts in 1935 have won a victory of nation-wide significance.

For the first time in this country, the decision expressly sanctions the use of the police power for aesthetic reasons—in the words of the Court, for "the protection of scenic beauty from the intrusion of advertising on private property."

The historic town of Concord won this suit against the assault of the bill-posting companies upon the constitutionality of its by-law drastically restricting billboards.

If the United States Supreme Court confirms this Massachusetts decision under the Federal Constitution, every state in the Union can, by its legislature and through its cities and towns, similarly control outdoor advertising.

The philosopher Hegel wrote a glossary for the use of students of his writings. This comes to mind when reading the following editorial in the October American Architect.

DEPORABLE! Evidence of any conscious thought directed to the designing and planning of homes in local communities, throughout the country, without regard for the sentiment, tradition and life of the people is deplorable, in the opinion of Miles L. Colean, Technical Director, Federal Housing Administration. He feels that this condition is due largely through failure to consult architects. "It is vital to the future of our civic development, as it is possible of development, as a source of remunerative endeavor, that architects strive to co-ordinate and extend that type or style of domestic architecture in their communities which is especially fitted to the life of the people." The extent to which architects can capitalize on such a development depends upon what influence they are able to exert as citizens and professional men in their communities.

The Bulletin's editor imagines he understands the American Architect editor's thought. Others have another interpretation. The first and last sentences are Hegelian in their obscurity. The A. A. editor should try again on that editorial. Chicago and Peoria hold Miles Colean in high regard; they think him a coming man in architecture and entitled to a better written editorial.

Born October 15, 1935 was "The Architrave," bulletin of The Women's Architectural Club of Chicago. We congratulate the Club on the new baby. Both mother and child have the best wishes of the Illinois Society of Architects and its Bulletin. The Society will practice gallantry towards the Club and the I. S. A. Bulletin aims to be ever chivalrous to "The Architrave."

October and November Society Meetings

A galaxy of talent unfolded the mysteries of radio at the October meeting of the Illinois Society of Architects when fifty-five members and guests gathered at the Architects Club on the 22nd of the month.

Leo Weissenborn made his initial appearance as the newly appointed chairman of the Program Committee and outlined the progress made in the design of broadcasting studios by describing the original layout of the WGN Transmitter Station near Elgin and mentioning how it rapidly became inadequate due to changes and advancement in radio broadcasting. The reception room, visitors' room, and other rooms of such character which had been provided were found unnecessary and had to be taken over for enlarging the actual operating space. He next turned to the WGN Studio on the Drake Hotel which occupied studios revamped from two handball courts. After telling how these studios never properly functioned, he touched briefly on the new WGN Studio Building on Tribune Square. Mr. Weissenborn then introduced the various guests who were scheduled to portray the more important features of the program.

O. W. Swischer of the R. C. A. organization told about the different types of public address systems and also discussed the installation of antennae systems for apartment buildings and hotels. He pointed out that it is now possible to secure a selection of from one to four, six and even eight stations at each individual outlet. Approximately twenty outlets may be grouped together without the use of special amplification. He particularly emphasized the rapid progress in the development of radio equipment within a year's time, adding that often in the lapse of a month, certain improvements were out of date.

Next came A. C. Barg of the Stromberg Carlson Co. He outlined the developments in remote control and explained how the receiver might be hidden or placed at a distance if the decorative treatment of the room so demanded, and an assortment of eight stations secured through the use of the small selector device. Mr. Barg urged that architects give consideration to incorporating control booths in conjunction with ballrooms and other amusement places from whence radio programs may be broadcast.

K. V. Glentzer of the Illinois Bell Telephone Co. referred to the conduit and cable requirements for telephone circuits used in transmitting broadcasting programs. After much discourse with certain members who wished to know the cost of leased wires for broadcasting a stated program, he offered the information that the NBC's telephone bill was over $3,000,000 a year; also, that the leased wires are always specially tuned to such service.

The design of control rooms was discussed by M. H. Eichorst, NBC engineer. His confrere, J. Arnone, architectural specialist, brought forth a mass of design details which had become crystallized as sound practice from actual experience in the construction of broadcasting stations. These seemed invaluable as it is likely that the information is nowhere available in print. It was left to Mr. Arnone to talk more specifically on acoustics and sound isolation. In connection with the latter he emphatically stressed the importance of inert mass in building as the most essential factor for successful sound isolation. He also thought it important to have sound isolation and acoustic manufacturers install their own product, citing a case in the South where a radio studio was a complete failure due to the contractor's buying the material and installing it himself with inexperienced labor. Referring to the architecture of studios, he mentioned that they are primarily workshops and were only decorated to give the artists more poise and complacency.

It was a profitably spent evening and bodes well for future programs of Mr. Weissenborn's selection.

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The November Illinois Society meeting was shifted from Tuesday, the 26th, to Wednesday, the 27th, to meet the schedule of Le Corbusier (Charles Edouard Jeanneret). This meeting was held in Hotel Stevens. It was a joint meeting of all Chicago architectural bodies, though the Illinois Society and Chicago Chapter, A. I. A., carried all details to completion. Other organizations participating in the invitation were Chicago Architectural Exhibition League, Chicago Architectural Club, The Architects Club of Chicago, The Women's Architectural Club of Chicago.

At the speakers' table during the dinner were the presidents of all the above societies and their ladies, representatives of Chapters from neighboring states, Le Corbusier and Robert Jacobs (his translator), M. René Weiller, Consul of France and Madame Weiller.

Presidents Hall and Jensen alternated in presenting the guests of honor. Skeleton business meetings were conductd with dispatch.

At 8:15 the dinner guests repaired to the larger hall on the same floor where nearly 300 had already assembled to hear Le Corbusier. Students from the architectural schools at Urbana, Ann Arbor and Armour, together with their professors, had come to hear the widely heralded Le Corbusier.

Arthur Woltersdorf introduced the French Consul, René Weiller, who in turn presented his countryman Le Corbusier to the assembly. The subject was Town Planning. Elsewhere in this issue appears a full report of the address.

To program chairmen Weissenborn and Black and to the secretaries of Chapter and Society, the architects of Chicago are indebted for carrying to a brilliant success this presentation of the most talked of living architect.

October and November Chapter Meetings

On October 8 at the Architects Club of Chicago occurred the regular monthly meeting of the Chicago Chapter, A. I. A., with Col. F. Charles Starr functioning as secretary in the absence of Secretary Heimbrodt. President Hall was in the chair.

Howard Cheney, Past-President of the Chicago Chapter and now an architect in the Treasury Department at Washington, was a guest with his new wife. Mr. Cheney spoke a few pleasant words expressing his anticipation and that of the other Chicago architects in Washington of again being in Chicago before many months.

John R. Fugard, President, Metropolitan Housing Council, spoke in favor of a new city ordinance creating a Board of Appeals consisting of the Commissioners of Buildings, Health, and Fire, who would be given authority to select and order wrecked, buildings within the city that are a menace. The Chapter passed resolutions to endorse such an ordinance.

The special program of the evening followed, with L. E. Dunbar, head of the Old English Silver Department of Marshall Field & Company, talking on Old English Silver, and Ernst Hagerstrom, an arts and crafts designer, speaking on wrought iron and other metals and their modern trends. Both speakers illustrated their talks with exhibits.

Standing back of a table filled with rare examples of Old English Silver, Mr. Dunbar developed his theme historically, stating that 1237 was the date when England first passed legislation defining sterling silver and creating punishment for prostitution of that metal. Like architecture and decoration, the periods are marked by the reigns of the succeeding sovereigns. Sheffield Plate was clearly defined, and Cromwell was pronounced the greatest destroyer of antique silver. Interesting was the statement that in 1681 the first coffee pot was created and that tea pots came later. This would prove that the Englishman was not always obsessed with tea drinking. Mr. Dunbar spoke of imitations of famous pieces and how the fraud may be detected, the wrong use of what today would be called trade marks, the location on silver pieces of these marks, and the great sums paid by connoisseurs for genuine antiques.

Ernst Hagerstrom, a Swedish artist in metals now living among us, traced craftsmanship in metals in Sweden back to the days of the Vikings. While the pieces exhibited did not go back to these roving seafarers, there were shown fine pieces in iron, copper, brass, aluminum, and stainless steel—beautiful forms, some in dull natural colors, some lacquered, bowls with colored enamel linings. The processes of achieving these results were explained. Mr. Hagerstrom made reference to some fine Swedish work exhibited in the Swedish building of the Century of Progress. He recommends starting a school for craftsmen in metals in Chicago. Art metalwork from the hand of Hagerstrom is incorporated in the Stockholm Town Hall.

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The regular monthly Chapter meeting falling on November 12 was waived and in its place occurred the joint meeting of all Chi-

cago professional architectural organizations to meet and hear Le Corbusier. This joint meeting occurred at Hotel Stevens on November 27; the dinner at 6:30, the address by Le Corbusier on Town Planning in an adjoining hall at 8:15. Two hundred twenty-five attended the dinner. Five hundred listened to the speaker deliver his address in French while he drew on ten foot long sheets of paper with colored crayons. This was in three parts, Robert Jacobs, friend and student of Le Corbusier, following each part with his English rendition of the address. Then came slides of buildings by Le Corbusier with running comment by the author and finally moving pictures with French captions. These were rendered in English by Mr. Jacobs.

This was the last address by Le Corbusier on this, his first visit to America.

The End of the Depression

The celebrated controversy between Gen. Dawes and Col. Leonard Ayres has no part in this presentation. We have no axe to grind nor any prognostication to advance. It is our purpose merely to portray some pertinent facts from which the intelligent reader may draw his own facile deductions. Furthermore, while it has often been alleged that facts are hard and figures are cold, we believe that the matter with which we are about to deal has all the attributes of soul-stirring warmth.

Forty delinquent accounts cleared! Fifty new members secured so far this year! Heating plant renovated! Money in the bank! This is the current report from the Architects Club of Chicago.

These accomplishments are not the work of any one man but are typical of the results which are always obtained when earnest workers cooperate for mutual benefit.

You may safely recommend this Club to your friends in the building industry and you will be doing them a real favor thereby, for the time is rapidly approaching when the limit on admission to membership will be reached.—*Tirrell J. Ferrenz, President.*

Federal Housing Administration Report

	October 21, 1935
Title I Modernization and Repair Notes Insured	$185,338,724
Title II Mortgages Selected for Appraisal	200,190,239
Low Cost Housing Mortgages Accepted for Insurance	21,371,874
COMBINED TOTAL	$406,900,837

This is all private capital. The Federal Housing Administration does not loan money.

Statistics show that since the launching of the program of modernization and repair by the Federal Housing Administration, more than $900,000,000 of this type of work has been done.

Under Title II, which is the program of home mortgage insurance, approximately 72% of the mortgages selected for appraisal will be accepted for insurance. Of this amount, it is estimated that 38% will be for the construction of new homes.

The Bureau of Labor Statistics of the Department of Labor figures released of this date indicate the following increases in residential construction for each month since March as compared to the year previous.

	% of Increase
March	+130.9
April	+122.7
May	+112.2
June	+228.9
July	+214.9
August	+207.6
September	+167.4

—*Stewart McDonald, Administrator.*

I can visualize the products of the orchard and field of Turkestan or California served in London ten years hence with all the native freshness and taste of those freshly gathered. This means suspended animation of both enzymes and organized micro-organisms. Not less interesting and romantic will be the container for these foods which I visualize as nonmetallic, transparent and nonbreakable.—*Charles S. Ash.*

Reed on Mid-West Pioneer Architecture

Earl H. Reed, head of the Department of Architecture, Armour Institute of Technology, as a Scammon Fund lecturer at the Art Institute of Chicago, interested a large audience on Oct. 22 with an illustrated review of "Mid-West Pioneer Architecture," covering the period of the Greek Revival from 1830 to 1850. His investigations in this little worked field of architecture began as a hobby, but that they have developed into a careful research was disclosed by his penetrating observations and his photographs of modest but charming examples of this period which a less careful student might have overlooked.

Abundant examples of wooden Parthenons and temple front residences still exist over a wide area in the Middle West and Mr. Reed urged his audience to see them soon before they are destroyed by ignorant modernizers.

It was interesting to observe that many of Mr. Reed's listeners made notes of the location of examples near Chicago, indicating, perhaps, that the significance of architecture in its various expressions is of interest to the layman when salient features are designated. Committees on Public Information who desire to awaken interest in the architect and his work should consider this subtle and charming method.

Wood Handbook

Your Uncle Samuel has just consummated an act to increase the knowledge and broaden the horizon of the architect and engineer. This act is the publication of "Wood Handbook" by Forest Products Laboratory, Forest Service, U. S. Dept. of Agriculture. This book of 325 pages, just off the press and procurable from the Superintendent of Documents, Washington, D. C. for 25c, is an invaluable reference book that must take its place in architectural and engineering offices with handbooks on steel, concrete, and other building materials in constant use.

Wood Handbook treats of all the practical phases of wood use: mechanical properties of wood and facts recently developed on ring placement, fatigue effects, factors affecting strength, control of decay and insect damage, timbers for outdoor use, painting, preservative treatment, effective fire resistance treatment. Distinctly modern fields of use are covered in the section on glued, laminated, and composite wood construction. There is a glossary at the beginning of the book. The Handbook is adequately illustrated with line drawings and half tones.

This book should be of great value to the professional man. He should recognize that the band of scientists working in the Forest Products Laboratory at Madison, Wisconsin, for the last twenty years, has solved many problems that have troubled the architect and the engineer in their practice.

Building Exits

"Design and Construction of Building Exits" is a new document by National Bureau of Standards, U. S. Department of Commerce, procurable from the Superintendent of Documents, Washington, D. C. for 10c a copy. In its 76 pages are discussed vital points of moment to every planner of buildings where groups of people assemble. In the text occur 21 tables and 19 illustrations.

The deplorable loss of life that occurs annually in building fires can be reduced by providing suitable exits. Building code requirements vary widely as to how many exits are needed, what sizes they should be, and how the details concerning them should be worked out. To aid those interested in the problem, surveys of current practice in providing exits and of the rates at which people can effect their escape through different kinds of exits have been made. The methods employed in the surveys and the results are presented here in detail. To supplement the information thus obtained, opinions have been solicited from numerous architects, building officials, fire-protection experts, and others. Five methods of calculating exit width in current use are discussed. As a useful reference when local requirements are under consideration, suggested requirements are presented, together with notes on the reasoning employed in connection with them.

Pollution Through Back Syphonage

A very instructive and interesting lecture and demonstration on a subject in which architects should be concerned took place last month before a large group of members of the Western Society of Engineers (including one architect) at the Chicago Research Plumbing Laboratory, 1503 South Michigan avenue. In all about 150 persons were present.

The talk, which was illustrated by actual demonstrations with standard plumbing equipment of various makes, was given by William Brookman, and covered the subject of serious disease-causing pollution of drinking water through back syphonage, cross connection, and faults in plumbing installations of quite unexpected nature.

Chicago Research Plumbing Laboratory is completely equipped for all sorts of testing and its facilities are probably excelled by none. By means of glass piping of actual size, colored water, and mirrors to reflect what was happening to the contents of second story fixtures, the audience could readily see the results of all the tests, which were made on plumbing fixtures in common use and connected in the usual manner. Much of the trouble was shown to occur in connection with the use of flushometer valves. It was shown how the mains could be filled with contaminated water—sewage—through a flush valve merely by draining the supply pipe in the usual manner in the basement, which would cause sufficient suction to start syphonic action and actually empty the bowl into the supply pipes. By opening a drinking water faucet on the first floor, the polluted water (in this case water stained red) flowed from the faucet. Not a pleasant thought, truly—but a serious one.

An hour and a half was spent illustrating various conditions under which contamination of water may take place, many of which were made under what is ordinarily considered accepted plumbing practice. This demonstration is all-important to architects and program committees for architectural bodies should plan to have this demonstration carried out at a meeting of their societies.

—*Victor A. Matteson.*

Architects' Standard Accounting System

First announced at its annual convention in May at Milwaukee, the American Institute of Architects now presents to the profession for use throughout this country, its Standard Accounting System for Architects. This system is divided into the Manual; the Binders; and the Accounting Forms. It represents a labor extending over three years by an Institute Committee on Standard Accounting under the chairmanship of Edwin Bergstrom. Mr. Bergstrom, the efficient treasurer of the Institute, is the author of the Manual and the Institute expresses its obligation and appreciation to Mr. Bergstrom for his invaluable service in the development of this Standard Accounting System for Architects.

The Board of Directors of the Institute is convinced that general use by the profession will develop the data for comprehensive and intelligent comparison of costs of rendering architectural services, and that these comparisons will form accurate bases for determination of more adequate compensation for architectural services.

The architect is engaged in the practice of a profession wherein he is dependent upon others for the opportunity to create his art and give it form and substance. For such opportunity he is dependent upon conditions that obtain in the industrial world, and for its successful conclusion he must rely upon his skill in administering the enterprise as well as upon his skill in applying his art. The manner in which he administers the enterprise is the gauge of his business standing.

The Manual is a cloth bound book of eleven chapters beginning with the Principles of Accounting and ending with Construction Accounts. Its price is $5.00 with 20% discount to Institute members. The loose leaf binders cover: first, general ledger, overhead expense ledger, construction contract register—all for sheets 9¼x11⅞"; second, cash journal, voucher register, job cost ledger, insurance register—these are for sheets 11x23¾"; and third, pay rolls—for sheets 9¼x14". Accounting Forms cover twenty-five titles and files and indices cover four titles. Also available are labels and index tabs.

All these may be procured at headquarters of the Institute, The Octagon, Washington, D. C.

Termites

The termites and their works have been publicized to such an extent that architects generally are now aware of the menace they provide and are seeking the best ways and means to safeguard against them in designing new structures.

Most important progress has been made in the development of methods providing permanent fixation in the wood of water-borne toxic salts. The earlier conception of chemical treatment sought a single ingredient that would remain the same in the wood as in the treating solution or the original dry salt from which the solutions were prepared. There was a generally believed doctrine that only quite soluble materials could be toxic.

As long ago as 1912 Wehmer published in Chemische Zeitung the suggestion that highly toxic effects might be found in chemicals relatively insoluble in water provided they were soluble in the secretions delivered by fungi to break down or dissolve cellulose so that it could be assimilated by them for food supply. Elfving, in 1918, further developed this idea in a Swedish publication "Tinska Velensk."

With this guiding principle established, a great many practical investigators have experimented with chemicals that, when dried out of water solution, in contact with wood fibres, would deposit such relatively insoluble compounds on the fibres that leaching of the preservative would be effectively prevented, but, on the other hand, would be soluble in the secretions within or deposited outside of organisms capable of breaking down cellulose such as the fungi, certain types of bacteria, and the single celled organisms used by the termite in his intestinal tract to pre-digest his food. Such toxins intimately bound into the fibres of wood and put into solution by the same secretions that broke down the cellulose into soluble form would then be absorbed along with the food supply.

As this principle was developed, many earlier observations took on new importance and the efficacy of certain chemical combinations for which there had seemed to be no very clear explanation, found justification in a partial fixation that had unwittingly been attained.

Phenol is more commonly known in its commercial form as carbolic acid and its extremely toxic value is well established. It is one of the principal toxic ingredients of creosote. When nitrated, or chlorinated as a sodium salt, it becomes water-soluble and at the same time shows a striking increase of toxicity. As used in Wolman salts, it forms complex molecules with some of the other ingredients, and besides the additive value of the individual toxicities, there is found a striking supplementary increase in the efficacy of the resulting compound to inhibit the growth or kill various wood destroying fungi. These phenol compounds are particularly effective against all forms of molds and with a strong tendency to concentrate in that portion of the treated wood near the surface, establish a barrier against mold attack ever, by any possibility, reaching the substrata.

Millions of feet of fluoride—phenol—arsenic—chrome treated lumber have been handled in loading and unloading and erection. Barns, cattle sheds, chicken coops, dwellings, factory buildings and structures of all kinds have been in use without one case of reported injury or damage.—*John G. Kreer in The Architect & Engineer.*

Transmission of Ultra-Violet Rays

The best ultra-violet glass, when a little old, lets only one-third of the available ultra-violet rays pass through. The average amount of ultra-violet light in a 32-foot room glazed with ultra-violet glass is only 1/600 of the noon-day's sun. This amount is obviously too small to be of any great value. Any child going out for recess, or any stenographer going out to lunch, will get more ultra-violet radiation than she would get all day behind a window of ultra-violet transmitting glass. So, although these materials have an undoubted field of usefulness, it is unnecessary to put them in schools and offices where it would be cheaper and more efficient to send the individuals concerned into the sunshine for a few minutes every day at noon.—*Dr. Janet Howell Clark.*

The Japanese House

The first impression of a Japanese house to a Westerner accustomed to the apparently substantial houses of his homeland, must of necessity be disappointing and perplexing. So many features which to him make a home, such as foundation, swinging doors, windows, attic, cellar, chimney, fireplace, permanently enclosed rooms, furniture, etc. seem to be utterly lacking.

He sees what appears to be an unsubstantial meagre structure, built from the flimsiest kind of materials, utterly innocent of paint and consequently colorless, often sustaining a rather ponderous roof, the whole giving the notion that a breath of air would make it tumble down like a deck of cards.

These first thoughts, of course, leave out some very good reasons why the house is built in this manner, a few of which may be mentioned. The cost of this style of house enables everyone to own his home in Japan. (This has changed, of course, since the westernization, dating from about the beginning of the 20th century). Earthquakes and typhoons necessitate an entirely different construction. The Japanese mode of life is quite different from ours. Even though superficially a Japanese house may seem to lack everything we require of a house, it nevertheless answers admirably the purposes for which it was intended.

I have singled out the Japanese house as approaching closest to a real unit system, a quality instantly apparent when this unit system is examined. In the first place it is a horizontal unit—a unit of plan rather than a vertical unit or unit of facade. In the second place, it is also a unit of measure, obviating the necessity of complicated dimensions, with which our plans are encumbered. Specifically, the unit appears in the form of a mat or *tatami* carefully made of straw, matted and bound together with stout string, about two inches thick and approximately three by six feet. The edges are trimmed true and square and the two longer sides are bordered on the upper surface and edge with a strip of black linen cloth an inch or more in width. The upper surface is covered with a fine canton matting.

The size of a room is definitely determined by the number of mats it contains. The mats are laid in the following numbers: two, three, four and one-half, six, eight, ten, twelve, fourteen, sixteen, and so on. Therefore, the dimensions of the mats given, it appears that a two mat room is six by six feet, a three mat room six by nine, a four and a half mat room nine by nine, a six mat room nine by twelve, an eight mat room twelve by twelve, and a ten mat room twelve by fifteen, etc.

In adjusting the mats to the floor the corners of four mats are never allowed to come together but are arranged so that the short sides of two mats abutt against the long side of a third. They are supposed to be arranged in the direction of a closely wound spiral.

Each room bears a certain relation to every other room, and consequently to the whole house. This mat-unit is carried vertically as well as horizontally; in other words, the various facades are affected by it and carry out the relationships and proportions established in the plan. This, in contra-distinction to most occidental unit systems which start with the facade and end with the plan being determined from these facades. The superiority of the former system is apparent.

These mats are used as table, bed, chair and lounge. The Japanese assume a kneeling position when sitting or resting. At meal times food is served in lacquer and porcelain dishes on lacquer trays placed on the floor or sometimes on low tables. The bedding consists of two heavily wadded comforters, one of which is placed directly on the floor, the other serving as a blanket. The Japanese remove their shoes or slippers upon entering the house so as not to damage or soil the matting. On sunny days the mats are removed, beaten, and exposed to the rays of the sun.

The first thing that impresses one on entering a Japanese house is that the construction features such as posts, supports, cross-ties, etc. are everywhere apparent and form part of the design and decorative scheme, instead of being hidden as with us. This is another point of superiority over our system. These people have known for centuries that ornament or decoration is not something stuck on, either to embellish or hide structure, but is organically one with it.

The generally rectangular room shape, without jogs or bays, is varied with the *tokonoma,* usually in the best room of the house. This recess varies in depth from two to three feet, depending upon the size of the room and is invariably at right angles to the veranda. It is separated from a companion recess by a thin partition which contains a small cupboard or closet with sliding screens, also several shelves, forming an interesting arrangement. On the *tokonoma* floor, raised about six inches, stands a vase with flowers and other ornaments, including an incense burner. A *kaka-mono,* a picture, hangs on the back wall. The *kaka-mono* is changed with the seasons and according to the owner's fancy.

The rooms are separated from each other as well as from the outside by sliding screens or partitions consisting of light wooden frames covered with paper. The screens separating the rooms are covered on both sides with a thick opaque paper; while those acting as outside walls are covered with a white transparent paper on the outside only, admitting a soft, diffused light. The first are called *fusuma,* the others *shoji.* These screens slide in grooves at top and bottom and can be completely removed at will, thus either throwing a series of rooms together or leaving the entire front of the house open to the air and sunshine. This flexibility is a desirable feature, offering suggestions to occidental houses.

All exterior and interior woodwork is left free of fillers, varnish or paint. The grain and natural color of wood is highly valued by the Japanese and care is taken to secure wood matching in grain and color.

Permanent partitions in- and outside are not unlike our lath and plaster partitions. The Japanese use bamboo saplings in place of our wood lath and expanded metal.

The Japanese house contains no cellar, basement, or excavation of any kind. The foundation is not continuous but consists of a number of uncut stones pounded into the ground one on top of the other to serve as support for the upright framing or for a sill or beam on which the uprights rest, thus elevating the floor from one and one-half to two feet above grade. In a small house the upright framing consists of four corner posts, but as the rooms increase in number the uprights come in the corner of the rooms against which the sliding screens abutt. This type of foundation is suitable in a locality where earthquakes occur. The vertical framing is held together either by the sill or by continuous strips of wood passing through mortices in uprights and firmly keyed into place.

Every Japanese house has a porch or veranda which is formed by another row of columns or uprights. This veranda serves the double purpose of protecting the paper *shoji* from the elements and as a continuation or extension of the room into the garden when these are opened or removed.

On top of the uprights are placed horizontal members or beams which support the rafters. The ceiling is a suspended affair; joists (if they may be so labeled) about one inch square and spaced from ten to eighteen inches apart with ends resting on a continuous cross-member morticed into the uprights, are kept from sagging in the middle by a continuous beam in the center hung from the rafters by small vertical strips of wood. On top of the joists are laid wide thin boards which overlap and are nailed to them with

wooden pegs. The continuous center beam is nailed on top of these boards.

Great elaboration and variety marks the roof an important part of the house. Roofs are either shingled, thatched, or tiled. The first are laid about the same as with us, except that the shingles are smaller and are nailed with bamboo pins. Sometimes narrow strips of bamboo are nailed diagonally across the roof to hold them more firmly. Ridges consist usually of six layers of shingles held in place by two long narrow strips of wood or bamboo.

Tile roofs are usually embedded in a thick layer of mud over a thinly shingled sub-roof. No other means of fastening is employed so that in high gales considerable damage may be done to a roof of this sort. These tiles have various sections and shapes, as with us.

Thatched roofs are by far the most common form of roof outside the cities. Each province seems to have its own style and method, especially of ridges.

The veranda is an essential feature of the Japanese house. It may be either with or without a rail. However, every veranda is provided with *amado* or rain doors, the same size as the *shoji* made out of thin boards and held together with a light frame work running in a groove. These are put in place in inclement or cold weather, and are also used in winter to keep the house warm, as well as serving as a protection at night against marauders. In the daytime these shutters are stowed away in a closet especially provided for them at the end of the veranda.

The Japanese have brought their garden art to such perfection that even the smallest plot of ground is capable of being beautified. The larger gardens may contain summer houses, tea houses, brooks, small hills, bridges, etc. The smallest detail is treated with the greatest of care and distinction. In a Japanese house it is difficult to determine where the house ends and the garden begins. The illusion is not only maintained by the general planning but also by the lowness of the dwelling and the materials from which it is constructed, especially the untreated wood. Thus the dwelling merges with the landscape and becomes one with it.

It will be conceded that the unit system as employed by the Japanese has unlimited practical and aesthetic possibilities. Unit systems proposed in occidental countries aim only at practical results and are woefully lacking on the aesthetic side. The Japanese system has the advantage of extending itelf from the plan through the walls and onto the facade. The application of this or a similar system by us should redound to a more harmonious and economical architecture.—*Theodorus M. Hofmeester.*

Seeking Safety from Earthquakes

Some heavy earth shocks have occurred on the Pacific slope since the first white men came. But heavier shocks have occurred in the Mississippi valley and adjacent territory, fortunately either before communities of any considerable size had been established or in regions remote from such communities. Earthquakes, like hurricanes and tornadoes, are more likely to occur in certain regions and the United States has always been subject to these visitations. Far more people have been killed or hurt and far greater property damage has been done by hurricanes and tornadoes than by earthquakes in the United States. But people are alike everywhere unmindful of possible danger from visitation of nature's destructive forces until they strike at home and find themselves unprepared.

Those seeking safety from earthquakes, hurricanes and tornadoes will find it not in places which have been long apparently immune from such visitations but rather in places where buildings and structures have been designed and erected to resist these destructive forces. Large buildings generally throughout the middle western, southern and eastern states are designed for wind pressures which would offer certain resistance to lateral forces, but which might not prove so effective against the destructive oscillations set up by earth vibrations and the rotational motion resulting apparently from the conflict between the primary and transverse waves. The whipping action which results when the ground under a structure moves is very different from that which occurs under wind pressure, notwithstanding the theoretical analogy between earthquake forces and wind pressure assumed for structural engineering calculations.

Modern buildings properly designed and well constructed with foundations on firm ground will successfully withstand considerable shaking. But they will be safer against severe seismic movements if they are designed and constructed to resist lateral forces. This fact cannot be too strongly impressed upon the minds of those living in Southern California and particularly in Los Angeles city where the school rehabilitation program is the most important issue now confronting them. This program, under which 210 buildings in 137 plants will have been reconstructed or replaced by new structures by January 1 next, is not yet completed. There remain 132 masonry buildings which are not reinforced for lateral stress which should be rehabilitated without further delay. These were built prior to 1927 when the structural requirements were not so rigid as those which governed the erection of 275 school buildings subsequent to that date, and which are considered reasonably safe although not entirely conforming to the state lateral force law.

—*Southwest Builder and Contractor.*

Pumping Concrete Ten Stories Up

A pump that handles water is no novelty. But here's a pump that is. It handles concrete just as the conventional type pumps water, and delivers a uniform flow to points as far away as 10 stories above the ground. Then, after the day's work is completed, it can be converted into a water pump and clean out the pipe lines.

Based on Dutch and German patents, modified to meet American conditions, the pump is a product of the Chain Belt Company, Milwaukee, Wis., and is known as the Rex Pumpcrete. Its standard models in 1934 alone pumped nearly 1,000,000 cubic yards of concrete at Boulder Dam and other construction jobs throughout the country.

The concrete actually passes through the cylinder of the pump and is forced out through the pipe lines by each succeeding stroke of the piston. There is no tendency to disarrange the structure of the concrete mixture and the concrete is delivered to the end of the line with a minimum of segregation. As a matter of fact, as it reaches the end of the line it is normally in a better state of uniformity of mixture than it was in the hopper of the pump.

The valve parts are nearly as large in diameter as the cylinder, and so is the pipe line itself. Sharp corners and sudden changes of direction at all points are avoided, both in the pump and in the pipe line. Concrete has a peculiarity of "stowing" or packing in case there is a sudden reduction in the size of the passage through which it is forced. This peculiarity is taken advantage of in the design of the valves. Instead of closing fully, these valves normally close only partially, as the concrete itself will "stow" at the restriction thereby completing the closure.—*Inco.*

Should people live in uncomfortable but picturesque surroundings to please tourists, or should they live in comfortable eyesores that give the artistic seeker after sights a pain in the neck? If the whole world ever becomes standardized, no one will want to travel.

—*Bruno Lessing.*