

Buildings for Bowling

By B. Leo Steif, Architect

"On entering the amphitheatre, new objects of wonder presented themselves. On a level spot in the center was a company of odd-looking personages playing at nine-pins. Nothing interrupted the stillness of the scene but the noise of the balls, which, whenever they were rolled, echoed along the mountains like rumbling peals of thunder". Thus did Washington Irving introduce the original bowlism and coincidentally immortalize one of our ancient bowling enthusiasts, Rip Van Winkle.

But little did old Rip realize that the modern Dame Van Winkle rather than harass and henpeck her spouse, not only encourages him but accompanies him and oftentimes rolls a fine score, and this in a finely appointed healthful recreation center.

With the advent of interest in bowling by the athletic woman, came the cleaning up of the old time pool hall and bar room type of alley. The institution became "glamorized." The "alleys" became known as "lanes." From coast to coast in every city, hamlet and village came a surging demand for bowling time and with the demand came the dressing up of the surroundings and environment. Here was a way to spend an evening in healthful homey surroundings.

A modern bowlism is in effect a bowling theatre, where the public comes to see sparkling fun expressed in terms of beautiful color and line, and where efficient planning and good circulation make for comfort and complete enjoyment. But unlike the theatre where the public only comes to promenade and spectate, in a bowlism it stages its own show as well. Therefore, the requirements of such an establishment parallel that of a theatre. A spacious and inviting entrance foyer with wainscoted walls, built in trophy cases, announcement boards and attraction boards should be provided. This gives inspiration to the forming of leagues and provides stimulation for patronage of the hall. Plaster domes in the ceiling afford a soft indirect lighting glow—a pleasant introduction to a brightly lighted main hall.

A preferred approach to the hall is at right angles to alley lanes thus providing a quiet wall surface in the distance suitable for mural decoration in extenso. A happy solution of this problem is Marie Marli's relief mural in the Bowlism at Sheridan Road, Broadway and Montrose Avenue, Chicago. She says:

"Just as the building is dynamic in design and impressive in scale a mural was created which through its vivid and rhythmic pattern focuses attention on the far wall. For here the old well known legend of Rip Van Winkle plays its rollicking and pungent humor across an almost one hundred foot wall. An animated invitation to bowl, a twentieth century version of an old sport in a truly twentieth century setting."

In the main hall one is impressed with the gay and moving atmosphere. Looking down at the bowling lanes, 3 feet below the level of the promenade, players are measuring their shots preparatory to throwing the ball down the lanes where they crash into the pins. But here, modern science has stepped in to accommodate the noises to the human ear for the pits are completely insulated to absorb a great part of the tremendous impact. Multiply the noise from one alley thirty times and you can almost imagine yourself beside a battery of howitzers. Again science has given us a decorative material for further noise control in the form of sanacoustic tile units, placed in squares on a gracefully arched suspended ceiling. As in all interior architectural compositions the ceiling is an expression of the floor plan. Since clear floor space, without any obstruction of the view is paramount in this type of operation, wood trusses 120 feet long were used to carry the roof and ceiling construction. To afford an intimacy not obtained in the heretofore barn-like rooms, an arched ceiling from a high point of 20 feet over the player benches down to the curtain wall of the pits was introduced.

Ample checking facilities are a requisite, placed conveniently to the entrance; a lounge centrally located is the means of access to both men's and women's locker rooms and toilets; fountain service and restaurant on the main promenade; a league and meeting room; a room for ball storage; and finally direct entrance to parking area.

These facilities are used by spectators as well as the players. Spectators space allotment is considerable, due to the interest in league competition. Provisions for viewing matches is made behind players benches on terraced platforms and seats are upholstered mohair opera chairs.

But the athlete himself is treated with luxurious precision! The player's bench is no more the old time home-made 2x4 lumbering affair. Today he sits on an octagonal settee of walnut, upholstered in brilliantly colored leather repeated from the vermillion copper and turquoise blue in the mural. He presses the button of an annunciator system and a pretty maid from the fountain takes his order for a coke or perhaps even a highball. In the mural's story of Rip Van Winkle's day liquid refreshment is brought by keg-laden companions. In our modern version on the bowling alley floor trim young women serve a thirst quenching draught. When the modern bowler steps over the foul line an electric eye warns him with the sound of a gong. The start and termination of his game is electrically controlled from the office. And all the time he is breathing the filtered conditioned air of a ventilating system, heated in the winter and zone controlled and cooled in the summer. For the twentieth century athlete is an all the year around bowler.

Though the lighting is brilliant and direct over the alleys, the promenade is once again soft, reflected from in-

direct coves within plaster domes and augmented by fluorescent troughs running the length of the hall. Finally the cream colored terrazzo floors add to the clean and polished luster of the atmosphere.

We are told that we are to have more leisure life, more time to play; "strength through joy of living." If such is the case the future of recreation building architecture becomes almost as important a social problem as domestic architecture. The architect will be asked to design buildings that are sanitary and well lighted, that are technically integrated and functionally efficient and that satisfy adequately the social and economic requirements of this enlightened era.

A Race Against Time

Says Edward J. Cleary, in reviewing housing accomplishments in the U.S.A. in 1941, for the "Engineering News Record" that it was a course covered with hurdles. All the hurdles of the defense housing program, however, in the form of policies, personalities, priorities, building restraints, and delayed financial appropriations, are about cleared and an unprecedented program takes its stride. The fast pace produced streamlined construction methods which will continue to influence housing in the future.

The grand total allotment for defense housing has passed the billion dollar mark. Administrative phases bordered on the chaotic and clamor of conflicting personalities added more confusion. PBA an organization of FWA, USHA, MOH, and an additional division of defense housing, all together produced unusual clamor. These and the Farm Security Administration and TVA—six groups in addition to the Navy—have been the principal housing agencies.

Private housing activities have been stimulated through liberalization of mortgage-insurance requirements. But generally speaking private housing, unless in a defense area of low-rent type, met rough going.

With the newly introduced methods came pre-cut lumber, site assembly, and prefabrication; features of demountability and easy conversion. While house construction will very likely never become a production line operation, as is the automobile, some mass production industrial methods are finding application. There is the case of a 538-family USHA project at Newport, R. I. where entire roofs, complete with shingles, were built on the ground and swung into place with cranes.

The early efforts of prefabricated houses, sponsored by the government, deserved and received much criticism. Their designs did not include demountability features the government insisted upon; the opposition of labor unions was irksome.

At Indianhead, Md., where ten prefabricators erected six-hundred houses, special attention was given to demountability features so houses could be taken down with ease and shipped elsewhere. The first demonstration of this theory of demountability and re-erection at low cost is to come soon when 186 of these houses will be re-erected at Quantico, Va.

TVA had earlier built demountable houses so it was given a contract to furnish 150 houses at Muscle Shoals, Ala. Fixed in their appropriate places as an integral part

of the unit are the electric wiring, plumbing, bathroom kitchen, windows, screens, floors, and kitchen cabinets.

Lumber is the material most widely used. The little steel that was used is now being eliminated. Concrete through its weight, has disadvantages for demountable houses. Popular materials are plywood, compressed fiber, repulped newspaper, plaster composition for sheathing exterior and interior. For weatherproofing asbestos-cement shingles and composition roofing are favorites.

Prefabricated Houses in Mass Production

The Federal Works Agency made a quick start to build 42,000 prefabricated homes in about fifty locations, the houses to cost \$153,000,000. The houses shall be ready for occupancy by July, 1942. A manufacturing capacity of about 15,000 prefabricated houses per month is desired.

The newcomer to the field may design his own houses following floor plans and standards which have been adopted by FWA (available in a brochure issued by FWA Jan. 1) and seek approval of it from Newman's group. Rufe B. Newman, Jr., civil engineer, is in charge of the government's prefabricated defense housing program. FWA policy favors having the house manufacturer do the actual erection at the site in order to have central responsibility.

There will be no competitive bidding in the temporary housing program. All contracts will be on a negotiated lump-sum basis. Newman's group will design no houses; will simply pass on manufacturers' designs presented for approval.

The temporary nature of this demountable housing program considerably simplifies the problem of site selection. The considerations of city planning and co-ordination with the future growth of the community which have made choice of site a ticklish job to date will be disregarded. Major considerations will be to get within walking distance of the plant being served and, where possible, to find sites already served by utilities.

In many cases it will not be possible to meet these site requirements and still concentrate a project in one big area. Each housing project is likely to be spread around in comparatively small groups. Twenty-one locations have already been announced and about thirty more are awaiting the formality of Presidential approval. Of those announced the largest are at Mobile, Ala., 1,060, Buffalo, 1,050, and Dayton, 750.

What the vast, shifting, wage earning market needs is a modern house; a bright, shining, completely equipped, up-to-date house costing between \$1,000 and \$2,000; a house a man can alter, or enlarge easily, by buying spare parts; a house he can take with him when he shifts his job; a house he can turn in on a new model when it becomes obsolete; a house he can buy on the installment plan and pay for in two or three years without a lot of red tape. That's the kind of buying, that's the kind of merchandise he's used to. And that, incidentally, is why two or three hundred thousand families in America are submitting to the discomforts of life in trailers.

—Walter Dorwin Teague

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Editor Monthly Bulletin

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Before a group of Government officials and manufacturers, architects and builders assembled in Washington, D. C. November 6 last at the annual Construction Industry Conference of the Chamber of Commerce of the United States, Harvey Wiley Corbett, well known New York architect, prophesied design and building changes that would come with the post-war period.

Mr. Corbett says that the great factories, built for war products production, should be turned quickly to production of products needed in peace time building. This has revolutionary implications since labor, engaged in war production, will be unwilling to return to part-time, seasonal employment as it prevails in the building world.

Rapid defense housing construction will have demonstrated the economy of mass production building elements completely finished in the factory, assembled in the field, 100% demountable. This means greater standardization of parts with resultant economies inherent in mass production and a better quality of goods. Mr. Corbett thinks with plans properly made the shift from war to peace production could be handled overnight.

Mr. Corbett's mind picture of future building comprises: (1) No more skyscrapers. They are unnecessary from any point of view and cause undue congestion in streets; in an air raid it is easier for people to get to earth from a five story building than from a fifty story one. (2) Buildings will weigh about one-third what they do now. Masonry—brick, stone, cement—will not be used. Walls three or four inches thick are ample to make a complete division between in and out doors. Premade synthetic materials will replace the usual things now employed. Structures will be quickly put together out of these mass produced, prefabricated elements and dissembled with equal rapidity. Interior changes can be rapidly and economically made adjustable to functional needs for changes occurring in manufacturing and business procedure.

No longer should we think of buildings as permanent structures lasting for many years but rather of lighter structures comparable to motor cars incorporating most efficient design, best materials and kept flexible for changes with changing human needs. Unnecessary masses of masonry would be eliminated.

The human animal, through the centuries, has been trying to adjust himself to his permanent buildings. In the

future Mr. Corbett wants us to create buildings that meet the demand of human needs. These buildings "instead of being static and dead will become dynamic and alive."

As if architects and the master builders of an earlier age had not always had that ideal!

In modern commercial architecture it is often difficult to know the line of demarcation between the architect's efforts and those of the advertising man. There is a new glass structure on a 17½ ft. wide lot on a prominent Philadelphia corner. An exterior practically all glass throughout the height of the building, held by stainless steel bars, and the structure crowned by a revolving loaf of bread made of transparent plastic, the loaf being 7 ft. high, 7½ ft. wide, and 14½ ft. long and weighing over 1,000 lbs., is the story! The description of this structure in Pittsburgh Plate Glass Company's house organ gives credit for all this design and interior equipment to Thalheimer and Weitz, architects, and they were also given credit for the interior serving as display and an actual baking exhibit. This interior has a bas-relief mural in plaster, depicting the history of bread. The mural, occurring above a white porcelain and stainless steel oven, placed against the wall, is 35 ft. long and 13 ft. high. Interior columns and framing of glass blocks are stainless steel. Indirect lighting is adopted for the mural with fluorescent lighting for the rest. Needless to say the place is air-conditioned. This, perhaps, is the last word in "inventive and indigenous American architecture."

The Soviet Union gained sixteen per cent in numbers in the twelve years between censuses, the 1939 figures point out. There are 6,000,000 fewer farmers, but machines are doing more of that work. A Soviet trek to the cities in general doubled city population. Nearly half of the Soviet Union's people are reported to be factory workers or to belong to families supported in this manner.

When the census was taken, Soviet Union officials counted 305,000 architects, engineers, and industrial designers, or almost ten times as many as in 1926. Farm crop experts numbered 90,000. Metal workers counted by enumerators numbered 4,331,000, or more than four times as many as twelve years before. Instrument and die makers had increased from 11,300 to 137,600. Brand new to a Russian census were 15,000 armature winders and 8,800 excavator operators.

That home-seekers are checking the possibilities of filling their needs by buying older dwellings is indicated in a Federal Home Loan Bank System report. It shows that during the first eight months of 1941 the volume of mortgages of savings and loan associations to finance the "purchase of homes" rose by nearly one-third over the same months in 1940, twice as large an increase as that of the total of their home loans for all purposes. Their home purchase loans amounted to nearly \$300,000,000 alone.

For a number of years the officially appointed biographer to collect material throughout this country under the sponsorship of the American Institute of Architects for the purpose of publishing a comprehensive Biographical Dictionary of Architects of the United States has been collecting this material from Institute Chapters, state associations, and reference books. The biographer is Henry F. Withey, 15031 Ventura Blvd., Sherman Oaks, California. The work will be published if not this year then in 1943.

Illinois Society January Meeting

Responding to the notice of the January 27 regular monthly dinner and meeting of the Illinois Society of Architects came thirty-five members including Messrs. Paul Danely and Ernest L. Stouffer both of Urbana. Four reports were discussed: (1) that of the committee visiting Governor Green; (2) Legislative committee report, Benjamin Franklin Olson, chairman; (3) Small House committee report, Bertram Weber, chairman; (4) report on the Lanham bill passed by Congress. In Secretary Newhouse's absence in Jamaica Treasurer Ralph Llewellyn functioned as Secretary.

Following his welcoming remarks President Ryan called upon Mr. Danely for his report on his committee's visit with Governor Green. This committee was to plead with the Governor to distribute as much of the state architectural work as possible among Illinois architects and to have the Governor use his influence with the Federal authorities to have as much war work as possible come to the Middle West.

Benjamin Franklin Olson of the Legislative committee reported attending a meeting of representatives of Illinois municipalities in the interest of a state building code. He also dwelt on the publicized urge by real estate organizations and some architects with Chicago Building Congress backing to expunge requirements in the Chicago Building Code. There has been much misinformation printed in that requirements have been stated that are not found in the present Chicago Code. Some interests seem to favor disregarding fire limits and permitting frame buildings wherein combustible walls are now required, also eliminating fire walls between row houses. President Ryan here reminded his hearers that the first requirement of the Building Code was the protection of life and limb of the public. There is an FHA limited building code. Mr. Olson said the temporary application of this code was favored by some organizations.

He spoke of the Zoning law, now in effect, with its many errors, referring to an article on Proposed Zoning Law appearing in the January 24 number of "The Economist." On public information on the employment of architects he had correspondence urging well studied radio programs. He referred to a November 7 meeting at Washington where a talk fest regarding Government interference with private building by reason of the war was held. A letter was read from Leo H. Pleins of Springfield urging concentration in the interest of a state building code for passage by the next Legislature rather than dissipating efforts on a second bill, namely, The Architects License Law.

President Ryan next took up the Lanham bill recently passed by Congress. Its feature authorizing employment of architects in private practice to do Government work was the point of interest. Edmund R. Purves is the architects' Washington representative through A.I.A. at the Capital. The forming of groups of architects with engineers and other experts to handle Government jobs was elucidated. Mr. Gerhardt reported that following the Palmer House meeting called by the Chicago Chapter in December twenty groups had been formed and names and details had been submitted to Washington. For further particulars consult W. Lindsay Suter, Secretary, Chicago Chapter A.I.A.

John R. Fugard spoke on civilian defense; on the yeoman's service performed by Edmund Purves at Washington in the interest of all architects. A resolution of thanks to Mr. Purves for his Washington service was voted.

Bertram Weber for the Small House committee had received a letter from Gail Sullivan, state director of FHA and William D. Sorgatz of FHA inviting an exhibition of plans, elevations, photographs or perspectives mounted on stiff boards 14x18 in. by individual architects for hanging in the Chicago offices of the FHA. These plans are meant to appeal to prospective owners of homes seeking FHA loans, the idea being that the prospect wishing to build will seek out the exhibiting architect for employment. A joint letter signed by the Illinois Society and the Chicago Chapter will go out to all members of both organizations. A letter from the Registered Architects Association of southern Illinois condemning all stock plan services was read by Weber. These southern Illinois men want all Small House Plan committees eliminated. Richard E. Schmidt referred to the history of the Small House Service Bureau sponsored more than twenty years ago by the A.I.A. and after years of bitterness on the part of small house architects the Institute's sponsorship was withdrawn. There was more general discussion and then the meeting adjourned.

Walter Gropius, founder of The Bauhaus, now head critic at Harvard University's School of Architecture, and Marcel Breuer will speak Friday evening, February 6, 8:00 P. M. to an interested public at the School of Design, 247 East Ontario St., Chicago. The subject of the address is "Site and Shelter." There will be lantern slides. Admission 50 cents. Architects and students are especially invited.

Talbot F. Hamlin Says

... As it effects architects this crisis has revealed many of the deficiencies in professional idealism. The Institute seems to have been too much occupied with the problems of the individual architect and of individual practice. Despite its committees on city planning and housing matters, on legislation and education, it has so far failed to give its members the high idealism of all true professional activity—the idealism of service to the nation and the world. In one sense, speaking brutally, it is fairly unimportant whether Jones and Smith close up their offices today and go into advertising or real estate or merely retire, but what is of vital importance is the fact that the particular training and skill of Jones and Smith—a training and a skill that enables them to see a problem large and to see it whole, and to create from that problem the most efficient and beautiful and humanly useful forms, which shall actually be built in definite materials as real things—is something the country needs terrifically and will need with ever increasing intensity. What is important is that this skill shall be available when and where it is needed and not dissipated, forgotten, and lost. This is the one ground on which the architect can demand to be heard at this hour, and it is the ground on which he can ask confidently for the utmost consideration. If the country is once convinced of this necessity and of the ability and readiness of architects to furnish this kind of design leadership, then, whether buildings are built now or not, some means will be found not only to make use of this skill but also to enable the architect to live during the process.

There has been much talk about a reservoir of designed public improvements to take up the slack of unemployment after the war. In any such project the architects and the city planners should have a preeminent voice, and their services could be employed profitably for years in developing such a project. Whether or not this will be true will depend, at least partly, on the architects themselves—on their readiness to see the opportunity and to seize it, on their ability to co-operate with the other sections of the building industry, on their aggressiveness in asserting their power in order to assure the public the benefit of their skill. The time is short—the time was really yesterday or the day before—and every Institute member and official, every state society member and officer, should be thinking and working toward this end. . . .

—From December "Pencil Points"



"Who is that sinister man slinking about our house?"

"Oh let him be! He's the architect,—his conscience drives him to the scene of his crime."

Chicago Chapter December-January Meetings

To Normandy House, on December 2, came eighty members and guests for the Chapter's monthly dinner-meeting at 6:30 P.M. followed by an inspection of the then completed, but not yet operating, Wesley Memorial Hospital. It was a sociable affair. Over coffee and cigars the President called for attention announcing, in the absence of Secretary Suter, no minutes would be read. Illinois-Wisconsin Regional A.I.A. Director, Peter Brust, from Milwaukee, was an honored guest.

A telegram from Edmund R. Purves, A.I.A. Washington representative, bearing on Defense Housing bill H. R. 6128, was read. It had to do with the spending of three hundred million additional dollars for defense housing of War and Navy Departments. Mr. Purves would add a clause to the bill that preference be given to the employment of competent architects, engineers, and landscape architects in private practice at established rates of compensation with preference to those resident near the projects."

A letter from F. Charles Starr, Chapter member now resident in Washington, bearing on fees in compensation, was referred to. The company was reminded of the architectural exhibition opening at the Art Institute January 20. Philip Maher, a Chapter member, spoke of the hardships entailed in getting building projects to go ahead because of the requirements of the 1939 Chicago Building Code. He spoke in the name of the Chicago Building Congress and mentioned other organizations favoring the amendment of the Ordinance for the interest of lower costs. Maher would substitute wood where steel is called for in the Ordinance. The ten per cent difference in cost of buildings designed according to Ordinance and those designed with substitutes, such as he had in mind, was the deciding point whether the project would fail or go through, he said. Commissioner of Buildings, Richard E. Schmidt, an A.I.A. member for forty years, advised, as he did at a recent Illinois Society meeting, that architects act in this matter not individually but through established organizations in their profession after due reflection and consideration of their recommendations.

Elmer C. Jensen spoke feelingly of the deceased Frederick J. Thielbar whom he had known for thirty years. At the call of the President the company stood for a minute in silence in memory of Mr. Thielbar. Frank Carroll, for years a fellow worker with Thielbar in the office of Holabird & Roche, added his tribute.

John R. Fugard, of Thielbar & Fugard, architects for Wesley Memorial Hospital, spoke next in behalf of this just completed "cathedral of healing." Generously he called upon one man after the other of the architects' office staff who had been responsible for this specialty in planning and supervising the three and one-half million dollar structure. Sixty-nine and eight-tenths cents per cubic foot, it was announced, was the cost of structure including all mechanical equipment.

It was now more than 8:30 P.M. and the company repaired to the hospital, two blocks away, for an inspection under the guidance of the men that had just been heard talking on their part in the work.

Inspection began on the seventeenth floor, devoted to private rooms de luxe and solaria, then down through the floors of private rooms of less cost, through the operating room floors (there are four-ten operating rooms) with all the accessory rooms and equipment, through the ward floors (no ward contains more than six beds), kitchen and preparatory room floors with conveyors to electric dumb waiters, and, finally, to the basement or boiler room floor, the latter attended by those who were not already tired out. It was an important and most interesting demonstration of the last word in hospital construction.

—A. W.

More than 400 (coat check room count) architects, draftsmen, and others of their staffs attended the special meeting called by the Chicago Chapter A.I.A. for Saturday afternoon, December 13, at the Palmer House to obtain a line on "how many men are available to help the nation professionally in this emergency." The meeting was called at 2:15 P.M. and adjourned at 3:00 P.M.

The quarters were inadequate for the number attending and a large proportion remained standing for want of seats throughout the session. President Loeb read a prepared statement. He was seated at the speakers' table by Secretary Suter, a stenographer, and

Messrs. Ernest Grunsfeld, Andrew Rebori, and Alfred Shaw forming a special Defense committee.

Hearing was most difficult and only the voice of Andy Rebori rang out in stentorian tones. Among the speakers besides Rebori were H. K. Holsman, Dennison Hull, Alfred Shaw, Uffendell, and Earl Reed. Reed's remarks culminated in a resolution authorizing the Chapter President and the Defense committee to proceed along the lines they were following.

Every attendant was asked to sign a register and to fill out a questionnaire submitted by the secretary.

—Leo J. Weissenborn

To the Chapter's Christmas party came upwards of sixty members. They met the evening of the twenty-third at The Cliff Dwellers. There was a Christmas tree with presents wrapped in gay colors at the tree base; there was the flowing Tom and Jerrie presided over by Matthews, an island that was never uninhabited; and then there was the buffet supper which tasted so good that second helpings were the order of the day.

There was no formal meeting, no calling the assembly to order. The only public speaking was done by Philip Maher Santa Claus when he called the names of men to receive presents which he picked from the base of the tree. These presents were limited in scope only by the limits of the five and dime counters. One man got a bottle of smelling salts, another hot pot holders, a third a miniature telephone, etc. Friendliness and good will were at high tide.

Replacing the regular monthly meeting of the Chapter came the preview of the architectural exhibition on Wednesday evening, January 21 from 8 to 10 P.M. This preview was well attended by members, their ladies and friends.

The place of the exhibition is the Chicago Art Institute in galleries G58, G59, and G60. The exhibition is open to the public from January 22 to February 23. Forty architectural firms are represented and models are shown by Mies van der Rohe, Jerome Cerny, Lind & Luckman, and Moholy Nagy's School of Design. Apparently all exhibitors are from Chicago. Samuel A. Marx, of the Chicago Chapter, is chairman of the Architectural Exhibit committee.

Colonel B. C. Dunn, U. S. Army Engineer stationed at Seattle, Washington, announced application by the Washington toll bridge authority to replace the fallen Tacoma Narrows suspension bridge with a new bridge.

It is proposed that the new suspension structure have a four-lane roadway and two sidewalks; horizontal clearance at center 179 ft. above high water level. This clearance is 20 ft. less than figured for the old structure.

The bridge authority has retained Glenn B. Woodruff of Berkeley, California and Leif John Sverdrup of St. Louis, Missouri to pass on the design.

The authority decided to use the \$4,000,000 received from companies holding insurance on the old bridge to retire \$3,750,000 of bonds outstanding against the old structure. This plan produces a saving of \$10,000 a month in interest but will cost about \$100,000 penalty for recalling the twenty-year bonds before they are due.

As a rough guess I would estimate that about 80% of the English Architects' offices are closed. The reasons for this are several, the main one being, that private building ceased entirely and those who were not used to industrial work, had no outlook.

All factories have to be designed with blast walls. These walls are usually constructed of 14 in. reinforced brickwork to a height of 8 ft. and no matter how much the area of the factory, the walls are laid out to sub-divide areas into spaces of not over 10,000 sq. ft. each. These walls not only protect the workmen but the machinery and localize the effect of bombs.

—C. Howard Crane, Architect
once of Detroit now of London, England

Landscape architects, once concerned with building showplace estates, now are Army *camofleurs*, helping conceal military objectives.

Illinois Building Stones

Relatively large amounts of building stone have been quarried in years past from the limestone, dolomite and sandstone formations of Illinois for the construction of various types of buildings, cellar walls, foundations and the like. Flagstone and curbing were also produced in considerable quantities in some parts of the State. Probably the best known of the older Illinois building stones was the so-called "Athens stone," also erroneously called "Athens marble," which was extensively quarried in the vicinity of Lemont and Joliet.

Not many years ago Illinois' building stone industry was practically non-existent and produced only relatively small amounts of rough stone used in a limited way locally. In recent years, however, there has been a rejuvenation of the industry especially for the production of dolomite rubble, ashlar and stone veneer in the greater Chicago area including Joliet and Kankakee. In this area likewise native dolomite is also being converted into cutstone, known as "Lemont stone" for interior use. Elsewhere in the State, particularly in the western and southern parts where outcrops are abundant, native stones are likewise finding increasing use as rubble and stone veneer.

Recognizing the probability that the State's limestones, dolomites and sandstones had possibilities greatly beyond their actual utilization, especially in the field of interior decoration, the Illinois Geological Survey, located on the campus of the University of Illinois at Urbana, some years ago began a study of the State's building stone resources which had three primary objectives, namely, (1) to sample representative deposits of potential Illinois building stones and to prepare an exhibit of the materials thus obtained, (2) to obtain from architects, cut stone contractors and others opinions as to the suitability and promise of these building stones for interior or exterior use, and (3) on the basis of the foregoing to ascertain those stones of greatest promise, and to explore in detail the nature of selected deposits as well as the physical and mechanical properties of the stone they contain with a view to fostering the development of these or similar deposits as commercial sources of decorative and structural stone.

The first two of these objectives have been attained and work on the third is underway. A display of Illinois building stones has been on exhibit in the Natural Resources Building on the campus of the University of Illinois in Urbana for about a year. It has been inspected by members of the Illinois Society of Architects, the Central Illinois chapter of the American Institute of Architects and by many architects individually as well as others interested in building stone or the State's mineral resources.

The study thus far has shown that the building stone resources of Illinois may be considered to be commercial marbles, commercial travertines, limestone and dolomite for ashlar, rubble and stone veneer and sandstone for a similar variety of purposes.

The marbles of the State are found in western and southern Illinois and in lesser amounts in northern Illinois. Included are marbles having a wide variety of textures, patterns, and colors including white, pink, various shades and mixtures of gray, brown, dark gray and black. Unusual are a conglomerate marble from Alton and a southern Illinois black marble with light gray and white corals ramifying through it. Perhaps the most informative description that can be given of these samples is the statement of competent architects that the Illinois marbles are equal in appearance to marbles now in use for decoration and as service marbles.

Illinois travertines are found principally in western and northern Illinois, especially the latter. These travertines afford diverse patterns and textures ranging from highly to slightly porous with small to large sized pores and colors from gray through buff and brown. Some of the travertines are believed to be suitable for exterior construction and most of them for interior purposes. Comments are frequently to the effect that the Illinois samples resemble closely or are an improvement on travertines now in actual architectural use.

Limestone and dolomites for ashlar, stone veneer and rubble are available at many places in Illinois though they are less common present and offer less variety in central Illinois than elsewhere. Buff brown and grays occur in northern Illinois. These colors and whites are found in western Illinois. Buff and brown stone are found to a lesser extent in southern Illinois but this area more particularly offers a variety of grays, whites, and creams, including a number of different kinds of oolitic stone.

Sandstones occur in many parts of Illinois but the best deposits thus far studied from the standpoint of color, texture, and probable weather resistance occur in southern Illinois. The sandstones of this area include a diversity of buffs, browns, yellows, brownish reds, whites, creams and to a lesser extent purples. One deposit has been found near Anna which contains sandstone of unusual color appeal. It consists of well layered beds having a very attractive coloration throughout the stone generally and also especially along the bedding planes. The colors include blotched and banded patterns of browns including warm toast-browns, clear yellows, maroon to bright reds and to a lesser extent purples. It has been frequently remarked that the general color effect is not unlike that of a highly regarded quartzite marketed commercially as a building stone. The well stratified nature of the deposit makes it of particular interest as a source of stone veneer though it would also be a suitable source of stone for rubble and ashlar.

At the present time Illinois sandstones are being used in relatively small amounts chiefly as rubble, stone veneer and riprap but some shipped in sandstone ashlar and cut stone has recently been effectively used in the State for both interior and exterior construction. Many of the sandstones of Illinois should lend themselves to this form of architectural treatment as well as to more extensive use as rubble and stone veneer.

The Geological Survey will keep on display for a time in its laboratories in Urbana the collection of Illinois building stones and will be pleased to have interested persons visit the exhibit. Also the Survey will be glad to cooperate in so far as is possible with those seeking information regarding the Illinois building stones with a view to their development or utilization.

—J. E. Lamar, Geologist

Head, Industrial Minerals Division, State of Illinois

Sandy Loam Cement Building Block Walls

The new laboratory to house the engineering experiment station activities of the School of Engineering and Architecture as well as the broadcasting station for the University of Kansas at Lawrence will be built of soil-cement building blocks, featuring the use of an earth building material superior to the adobe blocks long used in the arid Southwest. The blocks and how they will be used are described in detail in the December 4 Engineering News Record by W. C. McNown, Professor of Civil Engineering at Kansas University, an able concrete technician. If earth blocks can be made adequate for structures such as farm buildings a real economic service will have been performed.

A local sandy loam combined with 10% by weight of cement for partition blocks and 12% for outside wall blocks is the prescription. The blocks are hand-rammed into cast-iron molds of original design and placed in a moist room for curing, remaining there about two weeks. The blocks have a 6x14 in. wall face and are 4 in. thick. The finished face is at the bottom of the mold box and is given a 1/8 in. bevel on the edges. The rammed face, which is rough finished, will be on the inside of a 10 in. hollow wall made of two 4 in. thicknesses of blocks separated by a 2 in. air space, tied at intervals with 3/4 in. round steel rods.

Compressive strength tested damp is above 1,000 psi. Tensile strength is 125 psi. Absorption of water is 8% for outside blocks. The insulating quality is low being the same as low-grade concrete.

The material cost of the block, exclusive of mortar, for the 10 in. hollow wall is approximately .07 per sq. ft. of wall area, or about the same as that of 1 sq. ft. of 1 in. board. The labor cost, figured at the probable normal wage for such labor as is being used, is .25 per sq. ft. of wall.

Housing Status in Three Countries

In Germany, before the first World War, private dwelling construction was considered "anticyclical" in character, braking the falling employment curve in depression times by increasing activity, due mainly to lower interest rates and cheaper cost of materials and wages, but itself slackening with rising building costs in times of recovery. During the 1920's, however, public residential building was not only continued but even increased, and this in a time of rising interest rates and costs, thus accelerating the upswing; and the critical aggravation of unemployment in the subsequent years was partly due to these ill-timed exaggerations. In England, too, private residential building is held one of the main contributing factors of recovery, and up to 1935 it was, indeed, the strongest support of the whole upward movement. Public housing in England, though active before, was notably increased only after 1936, while private housing declined then, after six years of a sharp upswing. Until the present war the entire building volume remained at nearly the same level as in 1935 and 1936. Thus in both of these countries housing behaved in an anticyclical way, but different housing policies brought different results. In Germany government intervention disturbed the natural flow of the housing curve, while the English example proves that government intervention, if well timed, is possible without any exaggeration and also without hampering private building activity. Are those European experiences applicable to the United States?

In this country experiences in former boom periods have shown that what a considerable extent residential building is independent of business movements; thus the behavior of the residential building cycle is not the same as it is in Europe. In most of the European countries residential building has tended to take an anticyclical course, but in this country the theory prevails that its curve encompasses about 16 to 20 years, and that the amplitude of its fluctuations is much more violent than the course of the general business cycle. . . .

In the United States property is thought of rather in terms of capital value, with less reference to income than to a speculative appreciation of value. An attitude like this favors building activity regardless of annual return. Hence in the 1920's building costs in the United States, or rather the relation between them and the expected return, lost control over building activity, as Pribram has convincingly shown, because overwhelming speculative influences swept away rational calculations. A large part of residential building was led by considerations not of return or investment but of expected speculative capital gains. The economy as a whole was passing through a period of huge expansion, supported and winged by abundant credit facilities, and the expectation of continuing prosperity prevailed. Rising interest rates did not sufficiently brake the demands for credit, because of the ample capital supply and, above all, because of the unconnected and unorganized condition of the home mortgage market at that time. "There existed a multitude of small borrowers on the one hand and a large number of small financial institutions on the other. There was lack of interregional and interlocal equalization of funds. . . ."

—From Dr. Max Nurnberg's "Housing Between Boom and Bottlenecks" in May, 1941 "Social Research"

Fluorescent Lighting the Architects' Responsibility

I suggest that through the fluorescent lamp new building illumination has become definitely the responsibility and the opportunity of the architect in a sense never before possible. The adaptable, portable, attachable, fixture still has its natural field in both old and new buildings, but the built-in fixture now becomes an integral part of the original design, and I believe the responsibility for its successful use lies almost solely with the architect. He must see to it that the fixtures he specifies are made to such dimensional tolerances that they will fit when delivered to the job. It follows from this that the fixture manufacturer must conform to such dimensional standards for his fixtures of the built-in type, as are already commonplace to the manufacturers of heating and plumbing fixtures, and prefabricated window frames, and should provide similar roughing-in specifications. A good start in this direction has already been made, and I believe it is up to the architect to demand that the practice be universal.

I suggest that the method of illumination should be chosen

early in the building design and its installation details should be as carefully anticipated as those of the heating and plumbing. It would seem that the architect may properly look to the fixture manufacturer for information not only as to the mechanical dimensions of fixtures, but for information as to the amount and the distribution of the light supplied from such fixtures. Any fixture so profoundly modifies the characteristics of the light source itself as to render the information supplied by the lamp manufacturer of only the most general value.

Unsuccessful lighting experience is all too easily obtained at first hand, but hard to secure by admission from others. I believe it goes without saying that to do creative work in the general strategy of the design of a building or a room the architect must have so completely absorbed the basic characteristics of his media that he thinks in terms of steel, concrete and wood, of plaster, paint and color, as casually as he uses paper, pencils and crayons to make a sketch. I believe the time has come for the architect to similarly take on the creative use of light and lighting effects.

—Dr. L. J. Buttolph, Physicist, Nela Park, Cleveland

Dr. Buttolph is research physicist for General Electric Company. He is lecturer in Illuminating Engineering at Case School of Applied Science, New York University, and the School of Architecture, Columbia University.

Massachusetts Architects Registration Law

On October 24, 1941 Governor Saltonstall signed the act, passed by the state Legislature, making the registration of architects in that state a law. This law goes into effect ninety days after October 24, on January 22, 1942.

Barring Connecticut, which passed a registration law in 1933, Massachusetts is the first state in New England to register or license architects. The new law has many of its "teeth" removed. Here are instances: (1) Registration is not mandatory for performing the functions of an architect. (2) The Governor appoints five Massachusetts architects with at least ten years practice behind them as a Board of Registration. Beyond these original appointments there will be one architect appointed each year for a five year term, and after the first year each appointee shall also be a registered architect in the state. The board makes its own rules and sets up its own administrative machinery.

The registration fee is \$25.00 and the renewal fee is \$10.00. After January 1, 1943 all applicants will be subject to examinations in such subjects as the board may determine.

The Massachusetts State Association of Architects and the Boston Society of Architects have sent to the Governor a list of qualified architects willing to serve on the board. They hope the Governor will choose his appointments from their list.

Effect of Frost and Thaw on Painted Brick

The Structural Clay Products Institute advises the failure of painted brick, due to the effects of freezing and thawing, is not an unusual condition. Instances have been noted where a considerable percentage of the face brick has disintegrated, in many instances to a depth of one-half inch or more.

It is the opinion of The Structural Clay Products Institute that highly absorbent brick, which may have satisfactory weather resistance when the pores are open, permitting the rapid escape of absorbed moisture, are subject to disintegration and spawling, due to the freezing of absorbed moisture, when these pores are sealed with paint or a waterproofing compound.

It is, therefore, recommended that exterior brick to be painted be of a hard burned type meeting the requirements of Grade SW of ASTM Specification C62-40T, and having a total absorption, by five hour boil, of not over ten to fifteen per cent.

—From October '41 "The Octagon"

There are acute timber shortages in Latin America often within a few miles of virgin forests. Wood users often import lumber all the way from the United States and Canada. Professor Record of the Yale School of Forestry suggests that now is the time to undertake a research program.

New Salem Carding Mill

New Salem was restored primarily to honor Lincoln by showing us where and how he and his friends and neighbors lived during his early manhood. The cabin interiors reveal to us how they carried on their everyday chores. The stores give us an idea of the available materials they could buy. One of the greatest lessons the restoration has for us is that it refutes the idea we had since childhood, that the pioneer had a hard time of it and that his tools and methods were crude and clumsy.

Judged by our standards of today, his lot was not easy, but the restoration tells us that they *knew* more than we think they did and *had* more than we realize. He could look at his coat hanging on the peg and at his shoes on his feet and see the candle flickering on the table and think of his meat hanging in his smoke house and to him they were no mystery. He knew intimately the materials that went into them and how they were made, and what's more, he and his wife could and did make most of them. The cabin interiors also show they appreciated nice things and combined beauty with utility. These are the by-products, so to speak, of the memorial restoration.

Now another phase of the pioneer life at New Salem is about to be graphically displayed. We will see how they worked and will have an opportunity to study their industries. The carding mill, one of the most interesting of them, is now nearing completion and I believe that this restoration will bring home to us in a telling way, that our ancestors really were clever.

Let us suppose we are visiting the village a year or two hence after the mill is in operation. As we approach it we will see a large log structure, open underneath and supported on log posts. We can see revolving wooden machinery underneath, hanging from the first floor construction. We note a large kettle of grease over a wood fire near the door and some activity at the rear. So we circle the structure and find a large tilted circular platform supporting two treading oxen slowly turning it and the wooden machinery under the mill floor. An open shed roof protects them from the sun and rain. Above the creaking of the wooden gears and shafts we can hear the whirl of the machinery within the mill so we retrace our steps and enter the front door.

We see a machine in the middle of the room and its revolving wheels and drums are connected by a belt to an overhead power shaft. We see an operator feeding the wool to the cylinders at one end and the *rovings* dropping onto a box at the other end. These rovings are carded wool, in small rolls about thirty inches long and about half inch in diameter, and represent the finished product of the mill. They can be spun into yarn or thread on the family spinning wheel.

Across the room is the door to the store room where we see bags tied with thorns and containing clean washed raw wool. Some are filled with plain natural washed wool and in others is dyed wool. They have names on them and we note that families came from miles around to have their wool carded here. Above us in the attic are piles of other bags waiting their turn and we now understand why they called this the "great storehouse" and the "busiest place in town." On some shelves are kegs of tallow for it is the custom to bring one pound of grease with every eight pounds of wool to replace the natural oils lost in the washing. This accounts for the kettle of grease we saw at the front door as we entered.

We learn that after the oil has been sprinkled and mixed with the wool it is fed to the revolving cylinder covered with carding cloth. This "cloth" is leather with thousands of little protruding wires. The wool is thus combed and recombined, or carded, into a thin fleecy strip which is cut and automatically rolled into rovings. For this work the carding miller was paid eight cents per pound or took every fifth pound of wool as toll.

As we leave we reflect that in spite of the isolation due to the bad roads, lack of bridges and the virgin country our ancestors at New Salem and other similar villages were more advanced in their way of life than we had supposed. Also we have learned a little about one of civilization's basic industries.

—Joseph F. Booton, Chief of Design

Division of Architecture and Engineering, State of Illinois

In Bavaria the baroque had a tendency to be robust and found a particularly fruitful and sympathetic soil. Nowhere else did this style blossom as it did here. The baroque meets the happy, playful

temperament of the Bavarian; more particularly the upper Bavarian folk find joy in the arts and crafts. Munich later became the capital of German arts and crafts; it echoed the joy in the scenic, inherent in the folk ways, songs, amateur-theatricals, and folk dress. Add to this the welcome which the Bavarian gave to the counter-reformatory efforts, for Catholicism appears in the peasant land more Catholic even than in Rome. Since the Bavarian feels indigenous to his soil he embraced the baroque as indigenous.

To Prevent Decay in Wood

Forest Products Laboratory, United States Forest Service says: "There are two ways in which fungi can be kept from growing in wood: (1) Poison the wood by injecting a preservative into it; surface treatment is not sufficient and (2) deprive the decay fungi of water. Wood kept dry is a permanent building material.

"Wood must contain more than twenty per cent of moisture before fungi can grow in it. This is considerably less moisture than is found in green wood, but it is more than is recommended for wood in a building for reasons other than those associated with decay. There is no form of decay that is really a dry rot. The rot more aptly called "dry rot" is limited to that caused by a few fungi which carry the necessary water through rootlike strands from the soil or other source to wood that would otherwise be too dry for fungus growth."

The average North American's knowledge of South American woods stops with mahogany and, perhaps, cigar-box cedar which is now little used. Yet there are dozens of kinds of timber, of all weights, densities and adaptabilities, which might advantageously supplement our own diminished supplies of native woods, says Professor Samuel B. Record of the Yale School of Forestry.

Louis Christian Mullgardt, prominent American architect, died in San Francisco, Cal., January 12, age 76 years. In Chicago's architectural world of the 1890's Louis Mullgardt was a prominent figure. He was associated in Chicago with the office of Henry Ives Cobb and his clever designs and subtle draftsmanship were much admired.

Mr. Mullgardt was born in Washington, Mo., educated in public and private schools, architects' offices in St. Louis, Boston and Brookline, Mass.; he attended Washington University in St. Louis; was a special student at Harvard 1889-90. He practiced in St. Louis 1893-1902, in England 1902-05, San Francisco 1905—, Honolulu 1920-21. Among buildings carried out after his design are Davidson Building, Commercial Center, Honolulu; University Club Building, St. Louis; Arlington Hotel, Hot Springs, Ark.; Memorial Museum, Golden Gate Park, San Francisco, Cal. He was architect for "Court of Ages" Panama Pacific International Exposition, 1915. Mr. Mullgardt, besides being a writer on architectural and art subjects, has the distinction of being present when King Tut-Ankh-Amen's tomb was opened in Thebes, Egypt. He had been a fellow of the American Institute of Architects though recent Annuaries omit his name.

Edward Probst, Chicago architect, the last of the famous firm of Graham, Anderson, Probst & White, died January 9 in his home at River Forest, age 72. Mr. Probst was born in Chicago, son of a carpenter-builder. At 17 he began work in architect Robert C. Pentecost's office. In 1891 we find him in the office of architect Francis M. Whitehouse where he remained until Mr. Whitehouse closed his practice in 1893. In 1894, as a free lance, he worked for H. B. Wheelock, Simeon Eisendratt, William A. Brinkman all Chicago architects. Probst had made the acquaintance of Peter B. Wight from whose conversation he gathered valuable information. In 1895 Probst was again with Pentecost but this time under a partnership arrangement. He was with De Witt Taylor Kenard in 1897 and in 1898 started to work as a draftsman in the office of D. H. Burnham & Co.

Graham, Anderson, Probst & White were architects for the Field Office Building, Union Station, Chicago Post Office Building, Pittsfield Building, Marshall Field & Company's State street store to name just a few of their works in Chicago. The Pennsylvania Railway Station in Philadelphia and the Cleveland Terminal group may be mentioned as among the firm's works beyond Chicago. Mr. Probst was a member of the Illinois Society of Architects since March, 1915 and served as a director for two years.