DIVISION MEETING STARTS ACTION

Over 100 Attend Glidden Dinner

At an enthusiastic meeting of the Detroit Division, Michigan Society of Architects definite action was approved toward stopping some of the most flagrant violations that have beset the architectural profession here for some time. More than one hundred were present at the meeting and all of the big offices, as well as the small, were represented. All agreed unanimously that it was high time “something be done about it.” The meeting was at the Wardell on November 25.

BUILDERS’ & TRADERS’ DRAMATIZE 50 YEARS OF SERVICE

Marking the golden anniversary of the Builders’ and Traders’ Exchange, 700 members and guests gathered Wednesday evening, November 12, at Hotel Statler to enjoy a ceremonial banquet and a cavalcade of progress depicting the rise of Detroit to the forefront of the nation’s cities. From a concealed microphone was broadcast a running story of events and changes synchronized with the growth of the Exchange. The script, prepared by Secretary-Manager E. J. Brunner, was fitted to a series of costumes dances and songs.

Malcolm W. Bingay, editorial director of the Free Press, who was the banquet speaker, traced the meteoric early rise of the City of Detroit, its resurgence from the gloom of depression to a dominating position as the city Dynamic, tomorrow the arsenal of democracy.

Commenting on the spirited celebration, Emil Lorch, President, Detroit Chapter of The American Institute of Architects said, “On behalf of the Detroit Chapter of the American Institute of Architects I extend hearty congratulations and good wishes to the Builders’ and Traders’ Exchange on the occasion of its Golden Anniversary. It is a pleasure to acknowledge the indebtedness of architects to the members of the Exchange who in this age of specialization have cooperated so ably in erecting Detroit’s finest buildings.

“The Exchange was founded when blue prints and type-writers were still scarce and when the Candlers and Spitzley, Chapoton, Vinton, George and Carew were active as builders. That time of solid masonry, mill and cast-iron construction was succeeded by the age of steel, concrete and glass, and of speed—based on scientific and technical advances to which the building industry responded magnificently in point of performance and organization. May this progress continue unbroken in spite of temporary setbacks in the interest of society as a whole, of the building industry and of the Builders’ and Traders’ Exchange.”

A feature of the evening was the introduction by Dr. Clarence L. Candler, president of the Exchange, of 16 former presidents who occupied honor seats at the speakers table. They are: John A. Mercier, 1915; Jess Stoddard, 1918 and 1927; George R. Cooke, 1920; E. L. Downs, 1922; E. M. Harrigan, 1924; Clyde Crane, 1925; John Busby, 1929; Ferdi Korneffel, 1931; Dr. Julius Clippert, 1932; Edward Horning, 1933; Edwin Krieghoff, 1934; Mason P. Runney, 1935; Albert Beever, 1936; Herman Banbrook, 1937; Bert Haberkorn, 1938, and S. Vern Taylor, 1939.
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OUTDOOR FIREPLACES

by Frances P. (Mrs. J. Campbell) Morrison

Mrs. Morrison, whose interest in this subject has become something more than a hobby, is the wife of Mr. J. Campbell Morrison, architect.

As a result of fast-growing keen desire for outdoor living, the garden fireplace scene is demanding its full quota of interest and many efficient and beautiful designs are being built. More and more it is becoming a constant delight, with steady progress toward permanent structural types, well equipped.

If you are considering building a fireplace, while you are still in the talking stage it is well to consider the working units, construction safety and convenience, as well as design, the quality and kind of material to use, remembering that a big saving is often made by spending just a little more at the beginning. For instance, iron units that warp require the same amount of work and money to build around them as good ones do, also a foundation that will not support the fireplace is a discouraging absorber of money and effort. These are two very important considerations.

Location is vitally important because of drafts and smoke, also the best place in relating to the garden plantings. There are certain advantages in making the fireplace an integral part of a building, such as the side of a house with a sheltered rear porch, or against the plain unsightly side of a garage. With such construction the chimney must extend above the roof and have its own flue to the top.

For the units that stand alone, if possible face the fireplace so the prevailing wind will blow into the fire. This will help the draft and also carry away the smoke. If this is not possible, the draft regulation can be taken care of in the chimney construction. If you plan to burn wood, there should be a clearance of about ten feet from trees or too dense shrubbery. If you use only charcoal, it will not injure the foliage.

For easier masonry construction it is well to create your required design around a standard iron unit. Of course this fact does not apply to a simple grill that is built possibly without a chimney. It is very desirable for individual ideas of design to be incorporated to get away from "just one of the same kind," but the efficiency of performance will be insured by following the standard rules that have been worked out scientifically for draft in chimney construction.

This kind of construction will cost no more, and if the man of the house who would like to build his own fireplace is not familiar with these details, he will save time and money to ask someone who can give him this information.

The foundation must be solid, the ground should be drained, and the hearth above any ground water. All this helps to avoid cracks, so often caused by frost. The materials to be used should harmonize with the surrounding buildings in color and kind. Brick, stone, cement or cement block are equally good with careful construction.

Simple designs are more to be desired than ornamentation. Add the table, storage space, warming over and sink, and have a wide terrace in front to work on, and have it made level, work walking on rough ground with a tray of food could be tragic.

It is difficult for us to get down to hard facts about the fireplace, because it is completely enveloped in romantic associations and the play idea. Design your garden fireplace to take care of your own family needs. Add as many garden accessories as you can afford: lawn seats, easy chairs and swings, which contribute to both comfort and beauty.

So if your vacation time is all too short, you can still get your outdoor living right at home, without driving miles to find a place with some degree of privacy to unpack your picnic basket. To have your own fireplace is an investment that pays enormous dividends in pleasure for the amount of time and money spent, for here you can have both the steak and the sizzle, and is it delicious! And besides keeping in step with the times this is surely a safe and sane contribution to the idea of the Good Neighbor for home as well as national defense.

CIVILIAN DEFENSE PLANNED

A detailed plan to house 374,000 men, women and children in San Francisco in event of fire, bombardment or earthquake has been submitted to Fiorello H. LaGuardia, U. S. Director of civilian defense, by Thomas Larke Jr., chairman of the city's Red Cross Disaster Relief Commission.

The plan, prepared by executives of the commission's shelter division and members of the San Francisco Society of Architects, was drawn up in two parts.

1. A survey of schools, hotels, apartment houses and garages which could accommodate 374,000 persons, or 57 per cent of the city's population, immediately following a disaster.

2. Specially planned relief shelter camps, built for 1,000 persons each, to provide housing over a longer period for those whose homes had been destroyed.

Commenting on the thoroughness of the plan, A. L. Schafer, Pacific Coast manager of the American National Red Cross, said:

"This is undoubtedly the most comprehensive shelter plan which has come to my attention for any city in America. We are submitting it to defense authorities in Washington for consideration by other coastal cities such as New York, Boston, New Orleans, Los Angeles and Seattle.

"The survey is worthy of note because it shows that emergency housing is immediately available for nearly 60 per cent of San Francisco's population," Schafer added.

"British defense experts have found that an industrial city threatened with attack—or under attack—must provide for around 60 per cent of its normal population if it is to keep and maintain defense production. Evacuation of more than 40 per cent of the population has proved impractical."

Requiring four months for completion, the plan was drawn up by Albert Jason, shelter division chairman; Harry J. Oser, engineer and shelter division vice chairman; Col. W. P. Bear, statistician; Alfred P. Fisher, engineer; Norman E. Curtis, insurance executive, and the following architects:


The survey shows that beds could be provided for 99,074 people in 101 public and 29 parochial schools, while 111,278 more could be accommodated in tents on school grounds. The city's 3,000 hotels and 10,000 apartment houses would house a minimum of 100,000 refugees and 166 garages would house 59,000 more.

Meals for the disaster stricken populace would be prepared at a central depot, then trucked to the schools and other housing centers. They would be prepared and distributed by the food and fuel division under the direction of Raymond B. Hayward, chairman.

The relief shelter camps planned by the architects for prolonged emergency would be divided into two, four and six person family units, with separate accommodations for single men. Constructed either in the city's parks or in close-by-rural areas, the camps would have heated dormitories, mess halls and kitchens, toilet and shower facilities, laundries, hot and cold water, store houses and fire fighting equipment.

SOUTHWEST DIVISION HAS RECORD MEMBERSHIP

Of 713 architects registered in Michigan, 473, or 66% are paid members of the Michigan Society of Architects, John C. Thornton, Society treasurer, announced last week. Southwest Michigan Division leads with 89%, believed to be a record.

Other divisions rank as follows: Central Michigan 81 1/2%, Detroit 78%, Saginaw Valley 70%, Ann Arbor 74%, Upper Peninsula 66 1/4%, West Michigan 52%. Out of state 42 1/4%.

The Society's fiscal year ends with its convention next April and it is believed that at least 70 more will pay dues by that time. Those registered as architects in Michigan who have not yet paid 1941-42 dues will do the Society a service by sending $5 now. By convention time we should have at least 75% membership.
P R I O R I T I E S

O. P. M.

May I direct your attention to a condition which is causing confusion in the country's second largest industry, that of civilian building; threatening to undermine the morale of some twelve million people dependent upon it for a living, and extending to the very foundations of the Nation's defense efforts.

The unfortunate and inaccurate publicity attendant upon recent rulings of OPM and SPAB relative to priorities for building materials has unnecessarily confused the public and led them to believe that all building must be stopped, irrespective of the fact that little or no scarce materials would be required.

From all parts of the Nation are coming protests and even murmurs that ulterior motives are back of such departmental rulings, which many are led to believe are orders.

What seems to be needed most is a Building Industry Committee to meet with Government to study the situation and arrive at a means of keeping the industry functioning as far as is consistent with the defense program, and to see that the publicity is accurate.

Sincerely yours,
Talmage C. Hughes, Chairman
Committee on Public Information
American Institute of Architects.

Dear Mr. Hughes:

Your letter to the O. P. M. and the attached resolution from the Special Committee on Priorities and Allocation of Construction Materials in Detroit has been brought to the attention of this office, and we freely agree with you that it is exceedingly regrettable that so much confusion has resulted in the interpretation of O. P. M. and S. P. A. B. rulings relative to priorities.

We have discovered, however, that the public is extremely reluctant to investigate not only the rulings, but the reasons for these rulings. The insistence of the average business man on "Business as Usual," while completely ignoring the defense effort, is incomprehensible.

We sincerely hope that we have clarified the policies of S. P. A. B. and O.P.M. as they relate to the building industry. We realize fully the seriousness of the situation and assure you that all problems relating to construction are receiving the constant attention of men thoroughly familiar with the building industry.

Sincerely yours.
C. Henri Rush,
Principal Priority Specialist.

M. S. A. DIRECTORS MIX BUSINESS AND PLEASURE AT MIDLAND

as guests of Alden Dow

Architecture as she should be practiced was viewed by the Society's board of directors and members of the Saginaw Valley Division at the home and offices of Alden B. Dow in Midland on Friday, November 14th.

The Unification Committee, having met for luncheon at Midland Country Club, adjourned at mid-afternoon to be conducted by Alden about the Country Club development to inspect some of his homes in various stages of construction, thence to the vast industrial city that is the Dow Chemical Company.

The board meeting at Alden's office was followed by dinner at his home, adjoining, at which members of the Saginaw Valley Division attended. At this meeting the local group outlined a proposal for a show combining a building materials display and architectural exhibit. This appears to have great possibilities for publicizing the architect and it is hoped that it will be consummated. C. Douglas Ainslie, president of the Producers' Council of Michigan outlined the possible part that the Council might take.

These monthly meetings, held with a different division each time, are becoming more and more interesting and constructive. The next one, to be held in December, will be with the Southwest Division, at the Knife and Fork Club, a rural hideout near Battle Creek.

NEW LANDSCAPE FIRM

The association of Raymond Hill Wilcox and Edward H. Laird, both well known landscape architects and town planners, to create the largest firm of its kind in the Michigan area is announced by the new partners.

The addition of municipal assignments, defense housing projects prompted the merger.

The offices of Wilcox and Laird will be located in the Union Guardian Building, Detroit, where the Wilcox office now is located. Laird will continue to maintain his offices in Birmingham, Michigan, as a branch, and the personnel of both offices will be retained and amplified.

Wilcox, with 27 years experience in the field of landscape architecture, studied at the University of Michigan, Pennsylvania State College, Harvard University and the American Academy at Rome. Among his assignments have been the Stinson Aircraft Manufacturing Company, Brewster and Parkside Housing Projects (Detroit), Ludington State Park and Dodge-Bloomer Parks. He is a member of the American Society of Landscape Architects, the Engineering Society of Detroit and the Citizens' Housing and Planning Council.

Laird, a graduate of Michigan State College and senior fellow of the American Association of Park Executives, has handled industrial assignments, defense housing governmental projects, camps, estates and gardens in Bloomfield Hills, Birmingham, Grosse Pointe, Detroit and Lansing, St. James Church, Birmingham, St. Hugo of the Hills, Bloomfield Hills, and the Christian Tabernacle, Columbus, Ind. He has also served as a lecturer before clubs and consultant with groups in promoting civic beauty and developments in various industries.

Both Mr. Wilcox and Mr. Laird are well and favorably known to the architects of Michigan and we bespeak for them a successful practice.
ANNOUNCING

“The City,” one of the best documentary films produced in the United States, will be shown on the Film Forum, Monday, December 8, at 7:30 p.m., in the auditorium of the Public Library, Woodward at Kirby. Tickets may be obtained free at the main library and branches.

Robert Edmund Jones, noted stage designer (Green Pastures, The Jest), will be the speaker Thursday evening, December 4, at Detroit Institute of Arts under sponsorship of Metropolitan Art Association. Subject, “The Theatre of the Future.” Free to members, others fifty-five cents.

Nine juniors in the University of Notre Dame School of Architecture, constituting an entire class in architectural design, achieved a 100 percent rating in competitive Class B awards granted November 13th by the Beaux Arts Institute of Design in New York.

Two members of the class instructed by Mr. Frank Montana, received a first place mention, the highest possible award in the Class B program of problems given annually by the Institute to the major architecture schools of the country. The students were John J. Sherer and Edward L. Holland.

In the recent Michigan Artists’ Show Charles B. Culver, of Ferndale, won the Mrs. Albert Kahn prize for his watercolor, “Snow on the Cowpath.”

Advance notice has been sent to Indiana Architects announcing the annual winter convention of the Society and Chapter, Saturday, December 6, is the date selected. Friday the fifth may be added if the program warrants. The meeting will be in Indianapolis.

A new catalog of plumbing fixtures for industrial plants, public buildings and schools has been issued by the Kohler Co., Kohler, Wis. The catalog, a 24 page, 81/2x11” book, is printed in two colors.

The complete line of Kohler industrial fixtures is shown, including lavatories singly and in batteries, closets, hydraulic pressure tank combinations, urinals, sinks, wash sinks, drinking fountains, fittings, juvenile sized fixtures for schools, and medical department fixtures.

The book is enlivened with line drawings and pictures of Kohler installations.

Glad to hear Dalton Wells is happy in his work on the $18,000,000 Hoosier Ordnance Plant at Charlestown, Ind.—261 structures on a 5000 acre site. His address is 2000 Spring Drive, Louisville, Ky.


He was a descendant of Sir Christopher Wren, famed London architect of the Seventeenth Century.

Recent gifts to the University of Michigan include, $5,000 scholarship fund for the architectural and engineering students, given by the Associated Architects and Engineers, Inc., Detroit.

The cooperative venture on Thirteen Mile Road and John R. is gaining impetus every day. Frank Lloyd Wright has become interested and has agreed to design homes, furniture, and interior decoration for a very moderate fee. He will show them how to build their furniture, which, according to the famous Frank Lloyd Wright design, is both functional and simple.

Albert Kahn spoke before the Adcraft Club of Detroit on Friday, November 28. His subject was “Industrial Plants for Defense.”

Tentative plans for a $300,000 municipal hospital at Ypsilanti have been drawn by R. S. Gerganoff, architect.

The office of the late John Calvin Stevens, a Fellow of The American Institute of Architects, established in 1884, and in recent years John Calvin Stevens, F.A.I.A., John Howard Stevens, A.I.A., Architects, is to be continued as John Howard Stevens, A.I.A., John Calvin Stevens, 2nd, A.I.A., Architects, at 187 Middle Street, Portland, Maine.

The Urban Land Institute’s October conference on city planning problems and procedures, in Cambridge, Mass., drew 96 registrants, including the mayor of Denver, who brought along members of his city council and planning commission.

At a recent meeting of The Woman’s Improvement Club, of Bay City, devoted to civic improvement, Joseph C. Goddeyne, Architect, discussed plans proposed additions to Bay City General Hospital.

F. W. Woolworth Co., in announcing the opening of their new building, on down-town Woodward Ave., by Hyde & Williams, Architects, say: “Fifty years ago, next March, a 5 and 10 cent store opened at 197 Woodward avenue, Detroit. It was 20 feet wide. History was made when the store broke all records through the size and enthusiasm of the opening day crowd.

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The next State Board Examinations for Architects will be held at the University of Detroit, on December 29th, 30th, and 31st, 1941; and the examinations for Professional Engineers will be given on December 29th and for Land Surveyors on December 29th and 30th, at the University of Detroit, Michigan State College and the Michigan College of Mining.

Application blanks and full information may be obtained by writing to the office of the Board, located at 307 Transportation Building, Detroit.

The Scarab Club of Detroit announces the opening of an exhibition of oils and water colors by Oswald M. Gross, at the Scarab Club Galleries, 217 Farnsworth Avenue, Detroit, November 25, to December 2, 1941. Open to the public 9 A.M. to 6 P.M.

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CRANE TELLS OF LONDON

Forty members of the Detroit Chapter, A.I.A., heard C. Howard Crane describe conditions in London, at a dinner meeting in the Wardell, Friday evening, November 28th.

Crane, a distinguished architect of Detroit and London, has been in this country several weeks on war business.

Relating that when war was declared he expected his practice to cease, he said that on the contrary, it had greatly increased—this because he had a number of large industrial clients.

In introducing him Emil Lorch, F.A.I.A., president of the Chapter, said that Mr. Crane had been injured in London's first night of bombing, adding that it hadn't been explained why he was out that night. Crane said he received many messages from America, some saying they hoped it was nothing trivial, and others speculating on whether it was his leg or his neck. Anyway, he was glad to know his friends back home were so concerned.

A curious thing was the discovery that one-half inch asbestos was the best "bombproof" roof, the reason being that the bomb went right through it, blowing it sky-high, but doing little damage to the roof structure proper.

The British are wasting few bombs on the civilian population of Germany, he said, but are concentrating on military objectives. Berlin could be bombed easily, but in the words of Mr. Churchill, "Business before pleasure."

Fees are good, Mr. Crane says; they want you to make a lot of money so you can pay a lot of taxes. He believes the quantity survey system, paid for by the owner, in England is a good one. The chief difference in an English office, he said, was the fact that they are always eating, a spot of tea, coffee, etc. English architects are more like artists, and not so commercial. One refused to have a telephone because it would disturb him when he was making a perspective.

Mr. Crane spoke as follows:

Professor Lorch and members of the Detroit Chapter of the A.I.A.—I am very happy to be here tonight. I would like you to feel that this is rather an informal speech and inasmuch as there will be lots of matters that I probably won't think of at the moment, I will welcome any questions you might want to ask me later, and I will do my best to answer them.

Living in London during these trying times has been most interesting and I have been very proud of the fact that I am an American and that I came from Detroit.

Aside from New York and Washington, Detroit is without doubt the best known city in the United States, and I really believe that we, in England, are looking to Detroit for more help in this war, than to any other city. Detroit's fame, of course, has mostly to do with its industrial potentialities, and I might say it's reception to visiting Englishmen.

The thing that is going to be most interesting to you, I believe, is an idea of the general living conditions at the moment, the effects in London and in England of the bombings and just what plans are being made in connection with post war reconstruction. I have been asked many times, since my arrival here, just how London looks after the Blits' have knocked down so many of the buildings and my usual reply is, "It is beginning to look more like Detroit every day." When a building is bombed the site is usually cleared up and made nice and tidy and becomes what looks like a parking lot. We have very little use for parking.
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SHREVE HONORED BY R.I.B.A.

Richmond Harold Shreve, president of the American Institute of Architects has been elected an honorary corresponding member of the Royal Institute of British Architects. Mr. Shreve's election was announced in a communication from Sir Ian MacAlister of London, secretary of the Royal Institute.

Mr. Shreve, member of the New York architectural firm of Shreve, Lamb and Harmon, is active in defense construction and has been identified with the design and execution of many notable structures, including the Empire State Building. Mr. Shreve and his associates, together with Fay, Spofford, and Thorndike, Chicago engineers, are carrying out construction operations at the outlying defense base of the United States Government and Newfoundland.

Mr. Shreve has directed large housing and slum clearance projects in the New York area, and has been active in fostering closer relations between architects of the United States and those of other countries. He was born in Cornwallis, Canada, on June 25, 1877 and came to the United States in 1885. He received the degree of bachelor of architecture from Cornell University in 1902.

MEETING
Michigan Chapter
AMERICAN SOCIETY OF HEATING & VENTILATING ENGINEERS

Huyler's L'Aiglon Restaurant, Fisher Building
Thursday, December 11—Dinner at 6:00 P. M.
Speaker: Professor George L. Tuve
Case School of Applied Science, Cleveland
Subject: "Air Distribution, The Proof of Good Air Conditioning."

Also—A short sound picture, "The Bug-A-Boo of Bugville."

ARCHITECTS WELCOME

CHRISTMAS SUGGESTION
For personalized gifts—Pewabic Pottery, from the kilns of Mary Chase Stratton, noted for her excellence in design and color. Mrs. Stratton is the wife of our former beloved member, the late William B. Stratton. Who has not cherished the desire to own a piece of her lovely ware?

Illuminating Engineering Society
MICHIGAN SECTION

"MERCHANDISING UNDER FLUORESCENT"
By Mr. Thomas A. Carter
Tuesday, December 9, 1941
8:00 p. m.

2000 Third Avenue Detroit, Michigan

Mr. Carter, Chief Illuminating Engineer of The Grand Rapids Store Equipment Company, will present his interpretation of selling under fluorescent lighting, the effect of fluorescent on colors, and some discussion of fluorescent fixtures.

Mr. Carter's wide experience in the practical application of built-in lighting, built-on lighting, and lighting fixtures for better merchandising, plus intensive research in the field of color, will make this meeting one not to be overlooked. Here is an excellent opportunity to have your questions answered by an expert.

MOVIES: "WHEELS ACROSS INDIA" 
"A NIGHT WITH MAJOR BOWES"

Be sure to attend this meeting and bring your business associates.

ARCHITECTS WELCOME

DECEMBER 9, 1941

DETOURS OF THE DOW-GRAND RAPIDS AREA

Newness is an integral part of the architecture of the city of Grand Rapids. A visitor who is with the Dow-Grand Rapids Area Chamber of Commerce will be taken on a tour of the new downtown, including the new Dow Building.

ARCHITECTS ARE NAMED FOR ARMORY REPAIRS

Smith, Hinckman and Grylls were named Tuesday as the architects to supervise rehabilitation of the Detroit 182nd Field Artillery Armory, at a cost of $309,000, and the Detroit Naval Armory at a cost of $5,000.

Sixteen armories are to be repaired, on a State-WPA program, including Fontaine (Wm. C. Zimmerman); Monroe (Reed Dunbar); Ann Arbor (L. L. Woodworth); Flint (Lyndon and Smith); Saginaw (Frantz and Spence); and Port Huron (George L. Harvey).

EXHIBITION MATERIAL AVAILABLE

Drawings and photographs from the Allied Arts Exhibition, which toured the state, have been returned to the office of the Weekly Bulletin, where they may be obtained by their owners.
lost in Enyland due to the fact that the use of automobiles is very restricted. Petrol rationing is extremely severe and for ordinary pleasure driving a person is only allowed ten gallons per month. If one can prove his car is necessary to defense work, additional coupons are issued but never to the extent that it pays to own and drive your own car.

I have been in London now for six years and during that time I must say I have seen history in the making. The first year we had the Jubilee celebration of King George the Fifth and, as you know, his death followed soon afterwards. For a short period we had Edward the Seventh on the throne followed by his abdication which was indeed a most interesting period. The Coronation of the present King George the Sixth was another great celebration that I witnessed. Soon after this great event international affairs took on a very serious aspect and in September, 1938 we experienced the first crisis. Everyone expected that war would be declared at that time but as you all remember Mr. Chamberlain came back from Munich with his umbrella and a piece of paper and announced that "There will be no war in our time." This message of course was a great relief but I think it was taken with quite a grain of salt because England really did start to work at that time to prepare, although I must say it was rather a half hearted effort because everyone that believed in preparedness was accused of being a war monger. September, 1939 was the most dramatic of all times, when the Germans entered Poland and war was declared. Since that time my experiences have been varied and most interesting.

During the few years prior to the war I had been most fortunate in building up a very comfortable practice. My work was varied but I made a real effort to obtain industrial work and had secured quite a foothold in this field. When war was declared I had visions of folding my tent, like the Arabs, and returning to this country, because I could not foresee how the Architects in England were going to exist, nor did I realize that my services (being an American) would be very much in demand, but as it turned out things happened just the reverse. My industrial clients began to secure war contracts which meant additions to their factories and when the government decided to disburse the industries it meant the designing and building of new plants in different sections of England, and I became very busy indeed. As a rough guess I would estimate that about 80% of the English Architect's 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. The younger drafts men were all called up and in a great many instances the Architects themselves who held commissions in different branches of the service, quickly gave themselves to the war effort. Other Architects were drafted into the Ministries to assist in the building programs as advisers and experts. The result was that the firms remaining, and especially those that were industrial architects, were flooded with work. I have no doubt that owing to the fact that I was an American and therefore presumably more advanced in matters of this kind, that I received my share.

Our problems in the building of factories in England, are a little different than those you have at the moment because we have to consider the blacking-out problem and the effects of bombing. Special construction has to be used in connection with all vital plant and by vital plant I mean boiler construction, but before I do so I am going to tell you about our experiences in the Battle of Britain, everybody was keyed to a great extent. You all no doubt have read stirring accounts of the London raids and have even heard them on the radio, but I assure you it is all quite different when you are actually there. When the first daylight raids commenced, which resulted in the Battle of Britain, everybody was keyed to a great pitch. What was the score at one o'clock?—German planes 119, English 17, that's better than yesterday—jolly good show! The ticker services ran the scores almost hourly. As Mr. Churchill so ably said, "Never was so much owed..."
to so few by so many." One really had to be there to fully realize the import of those words.

When the Germans realized that they couldn't lick our handful of fighters, even with their greatest number of planes, they started their indiscriminate night bombing to terrorize the civilian population. Here is where they made another great mistake because those people just don't get terrorized or panicky. People just dug themselves in and said, "Let 'em come," and they surely did. For months you could set your watch each night at 7:00 o'clock by the first sirens and rarely did we get "all clear" until 4 or 4:30 in the morning.

The theatres all closed except the day-time shows and very few cafes and restaurants were in operation because people just couldn't get out. When Joe Ack had his guns start traffic stops because the resulting shrapnel will penetrate taxicab roofs and just ruin buses. Wherever you are, you stay put, so it was very wise in those days to get home early. Each month the death rate ran around 7,000 and the casualties about 15,000 in London alone. 50% of these were women and children and hospital patients, so it was at that time a real civilian war. When a man was called up in the service, his friends would give him a white feather, saying, "You can't take it--your getting into the army where it's safe."

It's the civilian, too, who is rationed for food and clothing and it's this same civilian who is working in the factories and offices of the Ministries to win this war. No doubt the soldier will get his chance, and let's hope it will be soon.

The Navy is, of course, doing a grand job too and it was amusing to see the newspaper headlines when the English Navy drove the Italian Navy out of the Mediterranean. They read, "English win Boat Race". You can't beat people with that kind of sense of humor.

I would like to just mention the Home Guard Army and the part a few Americans are playing in it and the activities of the American Eagle Club in which I am greatly interested.

With the Dunkirk incident, everyone in England expected an immediate invasion and that is when the Home Guard came into being. A civilian army sprung up over night and with clubs, pitch forks and an occasional musket--just like our Minute Men at Lexington—they drilled on the village greens and they were a real determined lot. The invasion didn't come but these men have not let up. Today the home guard is a very well equipped and trained army of one and a half million men—trained to guard their homes, their castles. They know every inch of the ground each division is assigned and they are hoping and praying for an invasion. Would they like to get a real crack at those Jerrys?

In London a group of about 60 American business men (I was one of them) formed a unit of this Home Guard. We all wanted to be in this thing. We at first found that we were quite out of order and that we might even lose our citizenship in the United States if we persisted in joining up with an army of another country, with our own country a neutral. There are many ways of skimming a cat, however, and legal ways were found. The King, by a special act, legalized our squadron and concessions were also made by our own government. We became pets too—full equipment was issued us and an armorly with large drill hall, rifle range, lecture and club rooms, were placed at our disposal and a garage to house our cars. We became a mobile outfit—the only one really operating in the London area. Monday nights we have rifle practice, map reading and lectures. Thursday night we either drill or have kit inspection, and every Saturday, regardless of the weather, we go on maneuvers. Brig. Gen. Wade Hayes (who in the last war was on Gen. Pershing's staff) is our commanding officer. We are drilled by real tough army sergeants and we all take our work very seriously. We have been reviewed by Mr. Churchill and have quite a bit of publicity in connection with some of our operations—but maybe I'd better not mention that.

The Eagle Club is a service club for all men in Uniform, regardless of their nationality. You will see Polish, Dutch and the French soldiers in London as well as Canadians, Australians and New Zealanders. Most of those men are on leave—most of them have their own service clubs to go to—but we discovered about a year ago that there were then over 5000 American boys in the Canadian forces, in England, and that something should be done to supply them with a home where hot dogs, hamburgers, coca-cola and other high-class American food could be served. The result was that a few of us got together the necessary funds to start the ball rolling, and now at 28 Charing Cross Road is the American Eagle Club. It is a six story building with four flag flying on the flagpole. There are few clubs that can boast of many amenities. A boy can take a shower bath, have his uniform cleaned, pressed and mended, get an excellent full course meal for a shilling (a quarter to you) and have the use of the lounges, reading and writing rooms and games rooms. A real efficient information department is in operation at all times and free theatre tickets are available for some of the boys. We have seventy-five volunteer workers. When I left England October first I learned that there were then 13,000 Americans in the Canadian forces and when I was there in 1940 I would like to tell this story—Every Thursday we have a broadcast for the boys when they can say "Hello Mom" and "Hello Pop" and as they are introduced over the air the compressor usually says "And what part of Canada are you from my lad", the answer usually is Tuscon, Arizona, or Mobile, Alabama, or some other "Canadian" city.

I am afraid I have digressed and really haven't told you what you came to hear, and that is England's plans for her post-war development.

Lord Reith, a very able man indeed, is the Minister in charge of this gigantic task and already he has set up a great machine but like all machines, before they can actually turn out the goods, tools, dies and jobs have to be made.

In my speech at a luncheon that I attended not long ago, his Lordship made a statement that took slight issue with and later on I was urged to write a little article on the subject. I believe it was reprinted in your Bulletin and I doubt some of you read it.

He said at this luncheon that before a real start could be made in the reconstruction plans of London or England, that one great question must be answered and that question was: "Are we to build for a future of peace or a future of war?" I thought this was being a little extreme, and in my article I suggested that the country be rebuilt for a future of peace as far as living and working conditions of the people were concerned and a future of war as far as the services and safety of the people were concerned. I made many suggestions to bring about this condition, none of which were of an experimental nature and many of which had been successfully tried out in this country and others for years.

In the rebuilding of London in particular, a great deal is going to depend on one major development—that is the electrification of all railroads entering the city, bringing the trains in underground. To definitely do this would solve so many problems. If all trains were put in tunnels and operated without steam, the fourteen major terminals now existent in London could be reduced to possibly four, thus centralizing traffic. The land acquired over the tracks would be of such value as to more than pay for such development and could be used for special housing and super-highways leading to the urban districts. The smoke and noise nuisance would be reduced and the slum clearance problems solved. All this was done in New York thirty years ago when the railroads along Park Avenue were electrified and covered in, thus eliminating a great cancerous growth thru that city, a breeder of slums. It resulted in one of the most attractive streets in the world and one of the most successful real estate developments. The problem in London is the same, only greater.

A Committee of British Architects is going to visit this country in the near future in order to study post war development problems. Someone over there suggested that
they visit San Francisco in order to see what they did after
the earthquake. I was made a minister without portfolio to
discuss this subject with members of the Institute here
and I have already laid before Mr. Shreve, your president,
my ideas of a program and I hope to return to England
with a formal invitation to the British Architects from
the American Institute. Perhaps I’ll return with them.

The damage to London is not too great. A person, I am
sure, could list all of the buildings that have been wrecked
or destroyed in a few weeks, while it would take centuries
to list the buildings still standing. It is true that certain
areas are wiped out just like a big fire will do to any city.
The replanning of the City of London, and by the city I
mean, the old financial area, would have been easier, had
more buildings been leveled. As a rough estimate I would
say that ninety-five per cent of the buildings that have
been destroyed, should have been.

The modern skeleton frame building, either steel or con­
crete, stands up to bombing very well, and the damage is
usually local. Walls are knocked in or sucked out and the
structure still stands. When the same thing happens to
walls bearing buildings, they of course collapse and are
a total loss.

The subject that is going to receive the most attention
with the replanning and rebuilding scheme is the subject
of traffic and the parking and storage of cars. Every build­
ing will be required to have garage facilities in it’s basement
and lower floors. Large underground public parking garages
will be built, which can be used in war times as shelters
and first aid stations and broad super-highways will have to
be constructed to direct traffic from the central areas
to urban districts.

The main hospitals will be located far out on these main
arteries. They will be fairly easy of access, have better
light and air and be subject to less noise. Emergency
hospitals and clinics will, no doubt, remain central.

All services such as sewers, gas, water, steam, electricity
and telephone lines, should be placed in large tunnels 50
to 60 feet below the surface. This would protect these most
important arteries of civil life against bombing and there
again these tunnels could be so constructed that they would
form deep shelters.

London’s services certainly have suffered from the bomb­
ings. It was amazing to see the masses of pipes and wires
that would become exposed after a bomb had hit the
center of a road and to me one of the most remarkable
things about this war is the fact that outside of a district
being without gas for a few days, or perhaps a few tele­
phones out of commission for a while, there has been a
minimum of discomfort, due to this cause. It certainly
speaks well for the efficiency of the public utilities services
staffs. I could go on talking indefinitely but I don’t want
to be a bore. I am sure lots of you are eager to ask me
questions which I hope I can answer.

Kahn Speaks at Adcraft Club

Albert Kahn was the speaker before the Adcraft Club
of Detroit at its luncheon meeting, Friday, November 28.
In his column in the Free Press, next morning, Anthony
Weitzel had the following to say:

“K. T. Keller, whose grandpop used to run one, was
telling a story about a country store. Before that he’d
told the one about the Irishman and the slovenly wife.
But the one about the country store busted up the huddle
and we went in and sat down and looked at slight Albert Kahn,
who is the greatest industrial architect in the country, up
there at the Adcrafters’ speaker table . . .

“Jack Donahue, the NBC man, stopped by. He wanted
to know what in tunket happened to me the day I was
supposed to go to lunch with him? Bill Stout came by and
shook hands. First time I met Bill Stout was in 1929 or
maybe 1930 when I was a cub reporter just out of college
and covering feature angles on the National Air Races for
the Cleveland News.

“There was an Early Birds dinner and Bill and Mrs.
Stout and their daughter sat at the same table. They were
pretty swell to that green cub sitting there, and late in
the evening everybody paused and the banquet room in the
Cleveland hotel became very quiet and we could hear the
motors of the Graf Zeppelin throbbing overhead. So Bill
Stout and his family and I hurried up to the roof and there
was the Graf above us.

But those were old memories. There we were, sitting
in the Statler ballroom and looking up at Albert Kahn, the
little man whose genius is building a huge part of America’s
arsenal for defense. I asked Fred Shaw, the public relations
man, what the little ribbon in Kahn’s lapel meant.

“Malcolm Bingay, filled with that old fire horse instinct
from the early days, gave up and walked over and asked Kahn, “What’s the decora­
tion for?” Kahn said it was the French Legion of Honor
—but from the Paris Government—not Vichy. He’s had it
a long time. . . .

“Then Keller got up and started to tell the fellows about
Albert Kahn. He told about the time they wanted a building
in a terrible hurry and they told Albert Kahn about it
on Wednesday. It was to be 500 feet wide and two-thirds
of a mile long.

“All right,” said Albert Kahn, “we’ll have the blueprints
for you Friday.”

“He not only had the blueprints but he let the contract
for the foundations on Friday noon. The building was in
production—with men and machines working at top speed—
within 90 days.

“Kahn got up to talk. His voice was clear and firm—he
read a speech that put the whole defense-plant construction
problem into a streamlined nutshell.

* * *

“He told about Ford’s Willow Run plant—how the Ford
engineers started from scratch and as they developed a pro­
duction formula for each unit, the architects developed the
building shell to house it...he told about the United States
bases on the coastline...and in the Caribbean...if America
could realize, he said, how rapidly its defense arsenal, its
defense bases, are being created...they’d feel a little better
about this chap named Hitler.”

Following his talk Mr. Kahn showed slides of many plants
his firm has done and are doing. In connection with the
question of windowless buildings he related an amusing
incident. In this case the board of directors were undecided
and, because they felt their employees would be the ones
most concerned, agreed to submit the question to a vote.
Accordingly, a questionnaire was sent to them stating, among
other things, that the management was particularly con­
cerned about the effects of claustrophobia. Employees hap­
pened to be mostly women and since they did not under­
stand the word they got together to discuss it. Upon
looking it up in the dictionary they found it meant “fear
of confinement,” so they all voted against it.

* * *
PROFESSIONAL OUTLOOK FOR THE ARCHITECTURAL GRADUATE

by Talmage C. Hughes

A talk before the University of Michigan Student Branch, Detroit Chapter, The American Institute of Architects, November 27th, 1941.

When Major Bowes was to speak at a dinner given in his honor by Mark Twain, he remarked to his host that he felt nervous, whereupon Mark Twain said, “Young man, just remember one thing, they don’t expect much.”

I’d like to take for my text a passage from the 127 Psalm; “Except the Lord build the house, they labor in vain that build it; except the Lord keep the city, the watchman waketh in vain.”

No, I’m not going to deliver a sermon, for sermons always seem to fit somebody else to a T. What I would like to state is that one aspiring to be an architect must have something deeper in feeling than is found in most others. He must be imbued with a spirit, a love for his work that is profound.

Hugh Walpole, noted English author, once said, “My supreme piece of luck was in being completely fascinated by the work I was doing. I adored writing. If you can be absolutely absorbed in something you’re doing, find enough in it to live on, then I think you’re inevitably a success.”

I was interested in the Five Reasons for your Student Branch, as written by Walter Johnson. I think they are all good and it seems to me that one of the principal reasons for such a group is the opportunity it affords for training students for service to the profession and to the public. After all, the practice of architecture is only going to be as good as you make it, and you can’t expect to take much out of a profession, without putting something into it. That’s true of a social club, a professional group, or any other organization, and if anyone thinks differently he hasn’t got what it takes to be an architect.

Robert D. Kohn, past president of the Institute, tells of a boy who came to him for advice, as to whether or not he should study architecture. He was questioned as to his likes and dislikes, what he had done toward finding out his fitness. He replied that he liked to draw, was interested in construction, that he had had some drawing in high school and had made good grades. He was advised to continue his studies in the field while he was able, and to work in an architect’s office, even as an office boy. Within the year he returned and reported that he had done everything told him, that he had not made as much money as he might have at something else, but that he was satisfied, because he liked the work.

Mr. Kohn said, “Then by all means become an architect, for you have the spirit, you will be happy to even ‘touch the hem of the garment’ of architecture, and with that nothing can stop you.”

There comes to every architectural draftsman a most discouraging period, between graduation and the time when he is an experienced draftsman. There are times that seem hopeless, but to those who live it through a reward is bound to come, and when it does it will seem to come all at once.

I can recall when as a draftsman the profession was struck by a depression and I was all but ready to give it up, and suddenly the tide turned and from then on the going was easier. Graduates in the years ahead, undoubtedly, more than ever before, are going to be tempted to accept other work, as being more remunerative. My advice is “don’t give up the ship,” for America is going to need you. Just recently a man told me that his son had been interested in architecture, but had taken a job in a tool shop. He left it and became a blueprint boy in a large Detroit office, drawing in his spare time, but the temptation became too great, for while the architects’ office paid $18 per week, he went back to the factory and got $60 per week.

It must be obvious to anyone that any work that pays such wages, after such short training does not have a great future. Certainly no profession can be learned in a few weeks, nor does it pay well to start. On the other hand, I have in mind a blueprint boy of some years ago who is now in charge of one of the nation’s largest defense projects.

Don’t expect too much at first. Be willing to demonstrate your ability and, when asked how much salary you expect, don’t think of it so much in terms of how much you should have to live on, as in how much you are able to earn for your employer. Your standard of living may have little relation to your earning power, to start with.

Whatever you can do to help the architect will be helping yourselves. Try and understand their problems, for tomorrow they will be your problems, and it will be your duty to help the younger men.

It is also important that you become interested in civic affairs, and in your architectural organization, for in that way you will be of greater service. Become interested in public information for the profession, for it is needed. Your Student Branch affords an excellent opportunity for such training. I have received a number of clippings of last May and June bearing on the establishment of your organization and honors bestowed on some of your members. This is excellent, and it helps to bring the profession to the attention of the public.

Become registered as soon as possible. The longer you wait the more difficult it will be, and there is too much already happening that demands your attention. There are many interests, and even becoming antagonistic to the profession. This is most unfortunate. It is said that a successful architect is one who marries wealth and influence. Of course, that helps, but if you can’t do that don’t marry too soon.

Don’t become an “architect and contractor.” Don’t be lacking in loyalty to your employer, for most of them are fair, and all are human.

As everyone is an individual, no set of rules can be applied to all. However, I would like to make the observation that, in general, there is a greater opportunity for architects in small towns than has been realized. There are many counties, and large areas of Michigan, for instance, where no architects reside. Architects in such localities would do a great deal to bring architecture to the public, with a resulting benefit to the profession in general.

You will be faced with the problem of whether to work in a large office or a small office. Again this depends on the individual. I’ve seen it work out well both ways. Perhaps, because if one is not in him he will succeed either way. If one expects to establish his own practice it would be better to get general experience, which favors the office not too large. On the other hand, this is a day of mass production and a high degree of specialization, and if, after years of experience, you become an important part of a large office, would hardly hope for anything better.

Certainly, the value of the large office has become doubly apparent in the defense program, and to such an extent that it is not to be soon forgotten after the war. New and unusual things are happening to architecture as a result, and the graduate will do well to take notice of them.

Mr. W. Pope Barney, speaking before the recent convention of the Architects’ Society of Ohio, said he believed that after the war we would experience the greatest rebuilding program the world has ever known, and that the architectural graduate of the years ahead had a most promising prospect.

Certainly the public has become more conscious of the problems of rebuilding the slum areas of our cities, of large scale and small houses, zoning, city planning and many others which, if not new, at least are newly faced, and require energy and imagination for their solution.

The student now in the architectural schools are bound to take important parts in this coming rehabilitation. They can play a vital role of the mechanism necessary in the moral, aesthetic, and economic renaissance which, in the light of past experience, must surely come.

If you have any questions, I shall be glad to answer all of them. The answers to some may be, “I don’t know.”

DECEMBER 9, 1941
FRANK DEAN ENGAGEMENT ANNOUNCED

Mr. and Mrs. Frank Darwin DeVotie of Guanajuato, Mexico, have announced the engagement of their daughter, Miss Jean Louise DeVotie, to Frank E. Dean, Albion architect, son of the late George E. Dean and Mrs. Dean of Albion. The announcement was made recently at a dinner given by Consul General and Mrs. George P. Shaw in their home in Colonia del Valle, Mexico City. Miss DeVotie has for several years been a member of the foreign service of the United States with the American consulate in Mexico City. The wedding will take place in Mexico City early in January.

CORRECTION

In a previous issue of the Bulletin it was announced that the next meeting of the Board of Directors of the Michigan Society would be held in Battle Creek in December. This was an error. The next meeting will be in January. Notices will be sent by the secretary in due time.

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ARCHITECTS URGE EASING ON PRIORITIES

From Chicago Tribune, Nov. 23, 1941

Private building will come to a standstill and the entire construction industry will be crippled unless recent Supply Priorities and Allocations Board priority rulings on building materials are modified, Peter Brust of Milwaukee, director of the Illinois-Wisconsin district of the American Institute of Architects, said yesterday.

Midwest architects are demanding amendments to the SPAB edicts which in effect prohibit private building, Brust announced. He asserted that the automotive industry is permitted 60 per cent of normal production, while nondefense construction is expected to come to a complete stop.

Use Less Critical Materials

"The products of the construction industry," Brust said, "requires about 20 per cent of critical materials to 80 per cent of noncritical materials, while the product of the automotive industry requires 88 per cent of critical materials. Yet the construction industry is expected to fold up completely while the automobile industry is curbed but 40 per cent of normal.

"The amount of critical materials that will keep one man employed in the automotive industry will keep five men employed in the construction industry.

"For every man employed in the field in the building industry, two and one-half men are employed in forest, mines, and factory preparing materials. I doubt if the automotive industry requires the same proportion of backstage work.

Lessen Taxes, Raise Relief Roll

"Illinois and Wisconsin architects contend that it is to the best interest of the nation to keep the second largest industry in the nation employed to the greatest extent possible because this industry requires a comparatively small amount of critical defense material and because men out of employment not only can't pay taxes but will add to the burden of government by being forced on relief."

Brust said that the construction industry in Wisconsin is making a comprehensive survey of the situation and shortly will make a convincing report that should compel a change of attitude on the part of the government toward building.

Architects in Chicago and elsewhere also have protested against SPAB curbs on building. The Illinois Society of Architects sponsored a recent meeting of building industry organizations in the Hotel Sherman at which Earl McMahon, secretary of the Chicago Building Trades council, suggested that the present government curtailment of new building be scrutinized to determine if it is not another scarcity scare like the recent oil "shortage."

Clement R. Newkirk of Utica, N. Y., director of the New York district of the A.I.A., recently asserted that "in nondefense areas the construction industry already is in the coma that precedes death."

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ALL ARCHITECTS WELCOME

Turn to pages 5 and 6 and read about The Producers' Council, who they are, how they are affiliated with The American Institute of Architects. E. Douglas Ainslie is President of the local chapter, Frank Eurich is Liaison Officer from the Detroit Chapter and The Michigan Society of Architects. Paul Marshall and Dick Jones are in charge of the Christmas Party.

Come and meet a swell bunch of fellows and their ladies. Have fun and help to foster a better understanding at Christmas time. Next June at the Institute Convention in Detroit the Producers will be celebrating their Twenty-First birthday—Come of Age, and an important part in making the Convention a success.
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ART IN INDUSTRY EXPLAINED BY PICKENS

The industrial designer of today is a combination of artist, mechanic and engineer. Buford L. Pickens, A.I.A., assistant professor in the art department at Wayne University, told the Green Lights audience Wednesday evening, December 3, in the Auditorium Studio of WWJ—The Detroit News. It is only within the last few years that manufacturers have become conscious of style and design and have attempted to make their products beautiful, he pointed out. And that, Pickens said, is where the artist fits into the picture.

Today manufacturing is not only functional and utilitarian but creative, artistically speaking. He continued. It reached this point following a transition period when attention was focused on speed of manufacturing and not upon the product, he asserted.

Speaking on “Modern Arts in Industry,” Pickens defined the two types of modern design as “organic” and “styling.” Styling he spoke of as simply beautifying a product while organic design is an examination of the function of the product and use of materials to make the new form more expressive.

Pickens illustrated his talk with slides showing the gradual evolution of trains, ships, telephones, houses, furniture and silverware.

To high school students interested in industrial design he suggested mechanical as well as free-hand drawing, chemistry and physics, color and design, and metal and wood making shop courses together with the regular art work.

HOTEL, MEMORIAL FOR MONROE

A memorial to the old Indian fighter, General George Armstrong Custer, Monroe, Michigan hero, which John S. McMillan proposes to build is a magnificent, 120-room hotel. A site already has been chosen on the southwest corner of North Monroe (US-25) and West Elm (M-130) and facing the River Raisin for the estimated half-million-dollar structure.

A Custer Shrine is proposed, to be housed in a room 50 by 30 feet in one ground floor wing where relics of the Indian fighter’s military career will be shown, together with the Anheuser-Busch painting of “Custer’s Last Stand,” now in possession of an historical society in Washington, D.C.

The Custer Monument, which was erected in 1910 in Monroe by the State of Michigan, McMillan hopes to move to a new pedestal in front of the hotel.

John A. Holabird, a West Point graduate and head of the Chicago architectural firm, Holabird and Root, has drawn plans for the building. Because of his interest in Custer lore, Holabird has offered to supply an oil painting of Mrs. Custer’s favorite portrait of the General, to be housed in the Shrine Room.

Priorities on structural steel, McMillan anticipates, may delay erection of the Hotel General Custer until after World War II.

G. R. CHAPTER RE-ELECTS BAKER

John P. Baker was unanimously re-elected President of the Grand Rapids Chapter at their annual dinner meeting held at the Cherie Inn, Grand Rapids, on Tuesday evening, Dec. 2nd. Adrian N. Langius of Lansing was selected to succeed Fred Knecht as Vice-President. Edwin E. Valentine, Muskegon architect, replaces Victor Thebaud, whose term as Director expired this year. Warren Rindge, the other Director has another year to serve. Paul Flanagan will continue to bill members as the Secretary-Treasurer.


FIVE ARCHITECTS ELECTED TO A.I.A.

Emil Lorch, president, Detroit Chapter of The American Institute of Architects, has announced that Victor A. Adler, L. R. Bennett, Leo J. Heenan, George L. W. Schultz and Paul R. Sewell have been elected to membership in the Institute and assigned to its Detroit Chapter.

Adler, a Detroiter, received his higher education at the University of Detroit and the University of Michigan. Following experience in the offices of Marcus R. Burrowes, J. Ivan Disce, D. Allen Wright, and Frank Eurich, he became registered as an architect by examination in 1935. He is now chief architectural supervisor, State of Michigan, for the Federal Housing Administration.

Bennett, a member of the firm of Bennett & Straight, of Dearborn, Michigan, attended Detroit’s Central High School and Detroit Institute of Technology, worked for Mueliman-Mildner, and became registered by examination in 1930. His firm has specialized in theatres and other commercial buildings.

Mr. Ketelhut

Mr. Sewell

Mr. Bennett

Mr. Heenan

Mr. Schultz

Mr. Adler

Mr. Sewell, also a Detroiter, has been connected with leading Detroit offices, including Ditchy-Perry-Sidnam, and J. Ivan Disce. His training was received at the old Central High School of Detroit, under the late George V. Pottle. He became registered by examination in 1938.

KETELHUT HAS BIG ASSIGNMENT

Paul J. Ketelhut, of the office of Smith, Hinchman & Grylls, is now Project Administrator at the Twin Cities Ordnance Plant in St. Paul, Minnesota, on which the St. Paul firm of Totz, King & Day is assisted.

This is one of the large defense jobs by that firm, and the position which Paul holds is a distinct recognition of his capabilities.

Paul, a native Detroiter, graduated from the University of Michigan, College of Architecture, in 1923 and was registered by examination in the same year. His early experience was with Albert Kahn, Cuthbert & Cuthbert, Michigan State Architects Office, Coral Gables Development Co., and Smith, Hinchman & Grylls.

He assisted in building the Michigan State Prison at Jackson and has been in responsible charge of many other important projects.

DECEMBER 16, 1941
GOVERNMENT DEFENSE AGENCIES

The following is a list of departments and personnel in Washington having to do with the Government's defense program.

WAR DEPARTMENT

Defense Projects—(Professional Services)
Construction Advisory Committee
Personnel: Major Gen. Wm. D. Connor, Ext. 2291
Chairman F. J. C. Dresser
Alonzo J. Hammond
Forrest S. Harvey
R. H. Tatlow, III
Secretary: H. Van Rensselaer
Office of the Quartermaster General
R. R. Retirement Bldg., 4th & D Sts., S. W., Rm. 1086, Washington, D. C.

Civilian Appointments—field positions, as inspectors, supt., etc.
J. T. Willett, Acting Chief
Civilian Personnel Section
Construction Div., Quartermaster Corps
R. R. Retirement Bldg., 4th & D Sts., S. W., Rm. 1118
Washington, D. C.

Military Appointments—reserve officers and others seeking commissions
Lt. Col. H. H. Andrews, Chief
Reserve Officers & Training Branch
Quartermaster Corps
R. R. Retirement Bldg., 4th & D Sts., S. W., Rm. 5613
Washington, D. C.

NAVY DEPARTMENT

Defense Projects—(Professional Services)
Lt. Comdr. E. J. Spaulding, CEC USNR
Bureau of Yards and Docks
Navy Building, Room 1606
Washington, D. C.

Civilian Appointments—field positions, as inspectors, supt., etc.
Carl F. Kuldell
Bureau of Yards and Docks
Navy Building, Room 1512
Washington, D. C.

Naval Appointments—reserve officers and others seeking commissions
Lt. Comdr. J. S. Leister
Bureau of Yards and Docks
Navy Building, Room 3431
Washington, D. C.

FEDERAL WORKS AGENCY

Public Buildings Administration
N. Max Dunnig, Architect Assistant
Procurement Division Buildings
(Federal Warehouse), Rm. 725
Seventh & D Sts., S. W.
Washington, D. C.

United States Housing Authority
Gilbert Rodier
Director of Project Planning Division
Old Interior Building, Room 5327
Washington, D. C.

UNITED STATES COUNCIL OF NATIONAL DEFENSE

Advisory Commission
Charles F. Palmer
National Defense Housing Coordinator
1600 Eye Street, N. W., Room 302
Washington, D. C.

OFFICE OF PRODUCTION MANAGEMENT

Sullivan W. Jones, Chief
Housing Priorities Branch
Room 310, 462 Indiana Ave., N. W.
Washington, D. C.

Henry Rush, Priorities Specialist
Temporary Bldg. "D," Room 2237
4th & Independence Ave., S. W.
Washington, D. C.

NEW FIELDS FOR ARCHITECTS

The "Repair for Defense" program of the Federal Housing Administration will rescue many of the valuable old properties which are a part of the nation's estimated eighty billion dollar investment in homes, Howard Leland Smith, chief of the Architectural section, technical division, FHA, reports to the American Institute of Architects. This program, Mr. Smith points out, provides a promising field for the talents of architects in defense areas.

"It now appears certain," says Mr. Smith, "that non-defense construction — together with other business as usual activities—will be sharply curtailed in the near future. Consequently, it behooves the architect who wishes to continue practicing to explore every avenue still open where his services can and should be employed."

"The need for defense housing in rapidly expanding defense areas has become a major national problem. To help meet this need in the least possible time and to use as little critical materials as are consistent with sound construction, encouragement is being given to the rehabilitation of old houses suitable for conversion into multi-family use in designated defense areas.

"Rehabilitation will not only conserve vital and strategic materials but will furnish considerable activity for the building trades and its allied industries during the emergency period."

"Perhaps the most beneficial effect of the FHA repair program will be the conservation and preservation of many of the valuable old properties which are a part of the nation's eighty billion dollar investment in homes."

"Critical materials needed for housing in defense areas will receive favorable action by the priorities officials having jurisdiction, if and when the project has been properly designated as such. Wherever possible, avoid the use of critical material listed on the Defense Housing Critical List to prevent possible delays. The use of substitute materials wherever feasible is required."

"In estimating the possible income and the economic soundness of a proposed rehabilitation job, priorities are limited by a general ruling to units having a shelter rental not in excess of $50 a month."

"Every encouragement in both financing and priorities is being offered to rehabilitation at the present time. To encourage this type of work, Congress recently amended FHA's Title I terms. Lending institutions are now insured against loss on Title I loans up to $5,000 (with repayment up to five years) for financing alterations and repairs which create additional defense housing units."

"Priority preference is given to materials which are to be used for improvements which add to the supply of needed defense housing. Furthermore, the Federal Reserve Board's new Regulation "W," which places restrictions on most types of consumer credit, specifically exempts the financing of property alterations which create additional housing for defense workers."

"An amended Title I, priorities preference rating, and lack of credit restrictions add up to a favorable climate for a considerable volume of repairs and rehabilitation work."

"Intelligent leadership combined with exceptional vision and technical skill will be necessary, if real and lasting benefits are to be obtained. It seems logical, therefore, that the architect, by reason of his experience and training, should assume a large share of this leadership."

"He can act as counselor and guide through various phases of the operation, since many owners of deteriorating properties are not aware of the possibilities for financing made available through new FHA terms. Cooperation from banks and realtors may be anticipated, because both groups are vitally interested in any movement which tends to arrest the decline of real estate values."

"The architect who actively devotes his time and energy to this program will find himself contributing to the National Defense effort while he is being remunerated for professional services rendered. It is an opportunity for services in a time when architectural help is most needed."

Local banks and state and district offices of the FHA are information centers on the "Repair for Defense" program.
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(As of October 1, 1941)

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### If We Can Assist You, Call on Us

Address: J. W. Follin, Managing Director, The Producers' Council, Inc.  
122 East 42nd Street, New York, N. Y.
THE PRODUCERS' COUNCIL
A Service Organization to Architects and Engineers and the Building Industry
NEW YORK, N. Y.

What Is the Council?

The Council is a semi-technical organization devoting its efforts primarily to promotion of the use of quality building products and services.

Its membership consists of key manufacturers of building products, plus a number of the principal national trade or product associations of manufacturers in specific lines of building products.

Accordingly, the Council is a cross section of the building products manufacturing industry, and is widely recognized as the voice of the producing industry and the authority on many building problems.

A Valuable Heritage

The Council was established at the suggestion of the Board of Directors of the American Institute of Architects that manufacturers provide means for supplying the technical profession with better information on building products.

Through the years the Council has developed far beyond this initial purpose and greatly expanded its services and benefits to architects and engineers, producers and the entire building industry.

Purposes of the Council

(1) To co-operate with The American Institute of Architects; architects, engineers, contractors, builders, individually or collectively; the press and the public generally, in furthering the highest ideals in architecture and building construction and equipment.

(2) To provide facilities for solution of mutual problems of architects, engineers, builders and producers of building products.

(3) To assist in the standardization of building materials and equipment and their use.

(4) To encourage adoption and use of new and improved building products.

(5) To encourage building product research.

(6) To furnish factual information on building products.

Methods of Disseminating Useful Information

Definite means have been developed by the Council to furnish the designer and specifier with information on building products. These include:

(1) The Technical Bulletin Published Quarterly

All material is reviewed by the Technical Secretary of the A. I. A. to enhance its usefulness.

(2) Informational Meetings

Usually held under the auspices of local Council Clubs presenting the development of new building products, improvements in existing products, or in their fabrication or use.

(3) Visits from National or Local Member Representatives

Manufacturers and associations recognize their responsibility as Council members to furnish the designer and specifier with fullest information and all possible assistance.

The Council Clubs

To extend Council services locally where buildings are being designed and erected, the Council has chartered local Council Clubs in 21 of the principal market centers. Club members with useful information, are at the service of designers and specifiers and buyers of building products, in the following places:

A Council Slogan Over The Years—“Consult An Architect—Use Quality Products”
'Jeeps' Aid Fort Brady Deer Hunters

For the first time in Michigan's history, regular Army "jeeps" were used by soldier-hunters from Fort Brady, Sault Ste. Marie, to hunt deer along the bleak shores of Lake Superior. Eighty soldiers and a score of officers from the 702nd Military Police Battalion participated in the hunt under the direction of 12 expert guides from the Michigan WPA Guide Project. Above, Dexter A. MacSwain, of Sault Ste. Marie, Chief WPA guide; and Pfc. Joseph Pelson of Highland Park, Michigan, are dragging in a deer. Beside the driver in the first deer-loaded "jeep" is Captain Charles T. Duvall, of Milwaukee, Battalion executive officer. Below, a group of hunters admire the first deer shot by the party—Left to right are: Lieutenant Walter J. Jones, Sergeant Michael Daniels; Captain Alois J. Hubert, Jr., camp commander; Lieutenant Robert B. McCready, camp medical officer, who shot the deer; Captain Duvall and Guide MacSwain.

Our Public Information Program

Mr. Lloyd W. McClenahan, a member of our committee, has secured the cooperation of Salt Lake City newspapers in publishing a series of articles by Utah Chapter members.

This is the very best kind of public information for the profession and, since it is believed nearly every newspaper will gladly accept such material, something we can accomplish without any expense.

We are now in an emergency, nationally and professionally. England is more so, but the Royal Institute of British Architects is redoubling its efforts to prepare the public and governmental officials for a post-war program in which the architects will lead. We have the same opportunity.

May we suggest that each member of the Institute Committee on Public Information write Presidents of Chapters and State Associations in his region, asking that they plan a similar program, by having members prepare articles for publication, and that, in addition to use in local papers, copies be sent the chairman of our committee for distribution through the Institute's publicist to papers throughout the Nation. Of course, the author and his chapter will be credited.

Suggested Topics for Articles

The Architect's Part in the Defense Program
The Architect's Part in Post-War Planning
Defense Housing
Antiquated Building Codes
Slum Clearance
Mass Production
Architects in Government Work
Standardization
City Planning
Zoning
Regional Planning
More Planning by Trained Planners Needed.
Read the column on Public Relations in the back numbers of Pencil Points for further suggestions.

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J. P. Jamieson

James P. Jamieson, Fellow of The American Institute of Architects, and member of the St. Louis Chapter, died at his home in St. Louis, Mo., on November 29th.

Mr. Jamieson, senior member of the firms of Jamieson and Spearl, was 74 years old. He was architect for many buildings on the nation's campuses, including Washington University in St. Louis, University of Missouri, University of Pennsylvania, Bryn Mawr College, and Princeton University.

IN-LAWS

are not always the favorite relations and our relations with present Defense building isn't our favorite relation either. Aren't we, as Architects, paying a heavy price today for good Public Relations neglected yesterday? If we had "sold" ourselves to the Government and public, wouldn't we be designing and running the large projects instead of sitting on the sidelines and watching bureaus and others do it? A good Public Relations program would put the Architect "in the saddle" and keep him there—without a program we struggle alone—often ineffectually.

Bulletin, So. California Chapter, A.I.A.
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FORWARD!

This country is at war, and we as loyal citizens are hourly conscious of that fact, and we will do our duty just as we did in the last great war.

While some of us are older now, we also have those years of experience to enable us to perform more fully and more capably the tasks that are set before us.

In our professional career, while we may have not agreed with some of our colleagues in matters pertaining to the advancement of our profession, we forgot those differences and worked for the common cause.

In this strife, which is barely started, let us as a professional group show that same loyalty as citizens and work with the same good spirit for the cause of our country.

The architect has a place in this momentous task, and he should not be backward in offering his services, but should insist that he is well qualified to perform certain urgent work, whether it is in the field of national defense proper, defense housing, or the proper protection of our homes.

Heading the second largest industry in this country, we must be ever mindful that certain materials used in that industry must be used for national defense, but if the supply exceeds the defense demand, we can use it justly. Along with national defense, the unemployment problem is bound to come in the near future, even while we are making guns and ammunitions. Conscientiously encouraging private building, where justified, and the careful study of materials available will help our country with this unemployment problem.

In all respects let us make the country’s problems our problems, for with a government such as ours, it IS our problem, and we should prove ourselves willing to shoulder that responsibility.

At this particular time of the year, when our families and numerous friends bring to our minds the many blessings which this country has bestowed upon us, let our first and foremost thought be, “Thank God we are Americans.”

C. WILLIAM PALMER, President, Michigan Society of Architects.
PEARL HARBOR SHOWS LACK OF PLANNING

The disaster at Pearl Harbor reveals with poignant clarity the tragic results of a lack of protective planning, Frederick J. Woodbridge of New York, chairman of the Committee on Architectural Services of the American Institute of Architects, declares in a statement calling upon the government to utilize the vast reservoir of unused technical skill in the architectural and allied planning professions.

"Hickam Field was as obvious a target more so than any commercial airport," Mr. Woodbridge points out. "The hangars were lined up to make it as easy as possible to do the maximum damage with the least effort. In fact it is obvious that many planes must have been destroyed not by bombs, but by collapsing roofs of hangars adjacent to a hit. The great barracks shown in the newspapers seem designed to afford the greatest destructive power to a single hit."

Members of the architectural and allied professions throughout this country have for many months been giving of their time and skill to studies connected with defense in time of war, Mr. Woodbridge says.

"As a profession primarily concerned with planning," he continues, "architects have emphasized over and over again the importance of planning for most successful protection, both civilian and military. In spite of repeated tenders of service and repeated urging that planning with an eye to protection is of vital importance in view of the development of aerial warfare, very little use has been made of this great body of talent which is eager to do its part in the service of our country.

"Architects have struggled in vain with authorities to consider natural concealment or scattered and staggered plans to avoid such catastrophes. Various excuses have been given, some, in the light of recent events, are ludicrous—such as 'a certain air post is not in a danger zone; it is 250 miles from a border.'

"Usually any extra cost is frowned upon. But surely it would be cheaper to spend half as much again on an installation that would escape destruction than to have to replace an entire establishment, not to mention irreparable loss of life.

"Any suggestion that we are not going to be attacked has certainly been blown to the winds by the astonishing stabs made by Japan. We are in an all-out war and all-out means must be adopted to win it. There exists in the country a large body of highly trained technicians who are able and willing, nay impatient, to make their important contribution to the war effort.

"These men are experts fundamentally equipped to deal with camouflage and planning for protection. The services of the architects of this country should now be used as extensively as possible. It makes little difference in what capacity architects are used. The all important fact is that the nation truly cannot afford not to use them."

ARCHITECTURAL EXHIBITION

Aloys Frank Herman, president, Detroit Division M.S.A., announces that first steps have been taken in organizing an architectural exhibition and competition in connection with Michigan Society of Architects' 28th Annual Convention to be held at Hotel Olds in Lansing, April 3 and 4, 1942. The show will be sponsored by the Detroit Division of the Society.

Francis H. Wright, chairman of the Division's Exhibition Committee, said it would be open to all architects registered in the State, with awards for different classes of buildings erected in Michigan within the last five years.

Material required will be simple, for the most part consisting of 8x10 inch photographs, which will be mounted by the Committee. Further information will be given in the near future, but architects are requested to keep this event in mind and to begin to collect material for entries.

DECEMBER 23, 1941

THE ARCHITECT AND THE SMALL HOUSE

It is regrettable that the various home magazines are limiting their new publicity to houses in the $6,000 class. As the situation now exists, barring some housing developments, this cuts the architect out and the builder in. Even though larger houses are not to be built (?) it seems to me that people look forward to the houses they can build after the emergency and if the architect is cut out of the publicity during this period the public will forget him. It seems to me that two things are necessary, first, to convince the editors that it iswise to omit the $10,000 or over house, and second, to broadcast an appeal to the architects to submit to the magazines all work in the $6,000 class that they have done in order to counteract the great preponderance of work in this class done by builders.

L. MORGAN YOST,
Member, A. I. A. Committee on Public Information.

INDIANA ARCHITECTS ACT FOR DEFENSE

Convention Reelects Lennox

The Indiana Society of Architects' Annual Winter Convention, which closed at the Claypool Hotel in Indianapolis on December 7, went on record endorsing the organization of architects into regional groups to cope with Defense work in Indiana.

Special emphasis was laid on the extension of factories and attendant facilities to back up production for the armed forces. Coordination of design and construction, factors vital to such plans, should be kept in Indiana, it was pointed out. Study of protection from sabotage and bombing of industrial buildings and bomb shelters for civilian and industrial groups was a necessary part of study and planning, also came up for discussion.

A special committee, consisting of O. A. Tislow, Kurt Vonnegut, and J. Lloyd Allen, was authorized by the board, and it was reported that South Bend and Ft. Wayne groups are organized and progress reported from other areas.

Officers Elected

Richard C. Lennox of Indianapolis again will head the Society as president. Others elected were John R. Kelley, first vice-president; David V. Burns, second vice-president; Richard K. Zimmerly, secretary; and O. A. Tislow, treasurer. All are of Indianapolis.

Directors elected were James M. Turner of Hammond, Alvin M. Strauss of Fort Wayne, Ralph O. Yeager of Terre Haute, Edwin C. Berendes of Evansville, Edward D. Pierre of Indianapolis, and Vincent Fagan of South Bend.

Expects Lateral Developments

Cities of the future will cover much wider areas than present-day urban centers, Dean Arthur M. Weimer of the Indiana University school of business, predicted in an address at the banquet, concluding event.

Dean Weimer told the architects that the city of the future will "be characterized by lateral rather than vertical developments."

"The line of demarcation between the city and county in the future will be practically wiped out," Dean Weimer said. "Many new developments will occur in which architects, by virtue of their training and experience, should play a leading part."

Foltz Honored

Tribute to Herbert Willard Foltz, Indianapolis architect, was paid at the society's luncheon. He was presented a lifetime membership in the society. The presentation was made by Mr. Pierre.

Foltz has been a practicing architect since 1891 when he opened his own office in Indianapolis after graduation from Rose Polytechnic Institute and later studying at the Art Institute of Chicago. Work from his office has included the Madison State Hospital, buildings at the Village for Epileptics at New Castle, the Indiana reformatory at Pendleton, new buildings at Rose Polytechnic Institute and many churches and homes.
Wishing You . . .

A Merry Christmas

and

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ALLEN GOES TO A PARTY

What kind of a sheet you running now, Hughes?

Different parties have said to me, “You see that article Carl Rudine wrote about the Lansing meeting? That fellow has got something.” He certainly has, and he can have it.

As a matter of fact, Carl Rudine used to work for me. Maybe that is putting it too strongly; he used to be in my office in the summertime. When I first knew him, the only word of English he knew was “smorgasbord.” Under the refining influence of me and later of Professor Loré—he said where you would find a more refined couple of fellows on a foggy day—Carl got right up there. He married a very good looking girl and moved to Lansing. I notice a number of Lansing architects married good looking women. Why is that?

All kidding to the one side, Carl is right. They charged $1.85 for that dinner, on account of the extra 85 cents is for the liquor. So far, so good, but who got to DRINK that liquor? The hosts, that’s who. Nobody had a chance against those fast-charging Lansing backs. Two or three times I nearly made it, but just as I would reach out my tiny hand towards a glass, some Lansing fellow like Art Zimmerman would stab me on the wrist with a fork. Finally Carl Kressbach tipped me and Jim Stewart sat on my chest until the licker was gone.

It was a good thing for me that I had been out to a Mr. Black’s house and had a couple or perhaps five before I went to the dinner. This Mr. Black is a great contrast to most of his colleagues. Aside from being a low heel who announced publicly that I could not be toastmaster at any convention he was chairman of, he is every other inch a gentleman.

Thanks, Allen, it’s nice hearing from you again. I’ve been intending to write you ever since the Yosemite Convention, when Branson Gamber and I left the main line of the Sante Fe at Williams, Arizona, and headed north for the Grand Canyon. Of course, I had some difficulty in getting Branson to break away, for we had pretty good company. On first viewing the canyon, he remarked, “That reminds me, I want to send Allen a card.” Asked how come, he said, “Well, isn’t this the oldest crack in the world?”

With regard to the Lansing incident, it is my personal belief that you should rank with Elsa Maxwell, only instead of throwing a party, it seems that the party threw you.

As one editor to another, it was not at all sporting of you to tear the front page from the last Bulletin, and return it, as you would a box top, and opposite the line, “Men $2.00—Producers who buy 5 tickets allowed 3 ladies free,” your comment, “There ain’t a Producer alive who can handle 3 women.”

APPPOINT ARCHITECTURAL COMMISSION

Clifford Carlson, architect and former alderman of Des Plaines, Illinois, has been appointed chairman of a newly created Architectural Commission in that city, according to an item in the Des Plaines Journal of December 2, 1941.

The new commission must approve all building permits hereafter before they can be issued by the Building inspector. Under the revised building code a person will be required to submit plans for new buildings to this commission.

The plan, which has been in operation in other cities in Cook County for a long time, will eliminate a lot of abuses now experienced under the present building code, the Journal states.

Mayor Charles H. Garland explained that the duties of this commission would be to determine if the proposed building would enhance the value of surrounding property, or if it would decrease the value. If the latter, the commission can make suggestions as to changes which might make the building more in conformity with the surrounding territory and thus enhance the value of the property.

He explained that in a district requiring homes of a certain cost one might comply with the requirements and still build something detrimental to the neighborhood; for instance, an atrocity on which the contractor made a large profit would be less desirable than a smaller, well designed home that cost less.

A nation-wide campaign to make the services of trained technicians available to civilian defense committees in every major city has been recommended to the American Institute of Architects by Ben Nash, chairman of the New York Chapter of the American Designers Institute. The program would be undertaken jointly by the two institutes.

All members of the Indiana state board of registration for architects have been reappointed by Governor Henry F. Schriker. They are O. A. Tislow, chairman, and A. C. Bohlen, both of Indianapolis; Joe H. Wildermuth, Gary; Warren D. Miller, Terre Haute, and A. M. Strauss, Fort Wayne.

“AVERsing YOU”

Program of the BBC North American Short-wave Service Broadcast from Britain—November 23rd, 4:30 p. m. EST

Question from Mr. Norman K. Blanchard, Vice President of the State Association of California Architects, Northern Section, San Francisco.

Our members would like to hear what is being done to replan or improve British cities after the war with reference to the work of architects.

Answer by Mr. E. G. Carther, librarian of the Royal Institute of British Architects:

We architects are agreed, Mr. Blanchard, that we are not yet at the stage when we can put on paper complete and realistic plans for any city. There are many basic technical and social studies which have to be made first. And until we have made those studies we can’t plan realistically. Unrealistic planning is just expensive dope. The future of our cities depends on how long we take to win the war. All our thinking and all our doing has to be aimed at shortening the war, and rightly so. At the present time, architects are engaged in planning and building camps, defense housing and health services, ARP services, factories and military buildings. And it’s in such daily work that we are making the best scientific and imaginative contribution to the rebuilding of Britain. That field of the work is the ground where the solutions to many of our postwar architectural problems will germinate. And I can assure you that in their present activities architects are promoting radical changes. Britain swarms with official, as well as voluntary, planning research groups. The RIBA has two of its own. There is a Reconstruction Section attached to the Ministry of Works and Buildings largely started by architects. Moreover, most cities have architect-planners already. You may have heard of the work of Donald Gibson of Coventry; while Professor Patrick Abercombie has recently been appointed to the post of adviser to the London County Council. Let me say, too, how vitally necessary it is for us to share our fundamental research problems with you, in the States. The British architects are grateful for the help you are giving us already. The American Institute of Architects sends us gifts of American technical and scientific publications, which are widely consulted. And again, Pilgrim Fund money has been made available for architectural exhibitions. There’s one going round at present called “Living in Cities,” which has caused great interest. Rockefeller money, too, has been given to the National Buildings Record — ordinarily available for scientific research into architectural problems. And so, Mr. Blanchard, I can give you a fairly optimistic answer, only don’t look too soon for paper plans—they’ll come in time, I’m sure, the architects of Great Britain.
A. I. S. C. APPOINTS JURY

The following Jury has been appointed by the American Institute of Steel Construction to select the prize-winning designs in the Students' Annual Bridge Design Competition:

Mr. Lorimer Rich and Mr. Don E. Hatch, Architects; Mr. Henry C. Tammen of Howard, Needles, Tammen & Bergendoff, Consulting Engineers; Mr. Roger W. Sherman, Managing Editor of Architectural Record, all of New York City; and Mr. L. G. Sumner, Engineer of Bridges and Structures, Connecticut State Highway Department, Hartford, Connecticut.

This competition has been held annually during the past thirteen years. The designs judged to be the first, second and third best will be awarded prizes of $200, $100 and $50 respectively. Certificates signed by the Jury of Award and by the officers of the Institute will be awarded to the prize winners and those whose designs are given honorable mention.

The Jury will meet at the headquarters of the Institute, 101 Park Avenue, New York City, on February 18 next to make their selections.

W. D. Cuthbert is now at the Twin Cities Ordnance Plant in St. Paul, Minnesota.

John P. Baker's new address is Pine Bluff, Arkansas.

Announcement is made of the dissolution of the firm of Frost & Snyder, in Jackson, and the establishment of separate practice by the two. Barry L. Frost is at Armory Court in Jackson, and Leon Snyder, Jr., is at 190 West Street, Battle Creek.

Professor George B. Brigham, Jr., of the College of Architecture and Design, University of Michigan, has been granted sabbatical leave for the second semester.

New York Times of Sunday, November 30, carries pictures of St. Andrew Avellin Roman Catholic Church on Northern Boulevard, in Flushing, New York, and St. Gabriel's School, in East Elmhurst, both designed by Henry J. McGill. Henry was architect for the Shrine of the Little Flower, in Royal Oak.

Appointment of Edmund R. Purves of Philadelphia as Washington representative of The American Institute of Architects has been announced by Richmond H. Shreve of New York, president of the Institute. Purves will work with the 71 chapters of the Institute throughout the country in the formulation of an emergency program for the architectural profession.

Drawings and photographs of the Allied Arts Exhibition have been returned from State tour and can now be had at the office of the Bulletin.

Changes to Chapter by-laws, as recently voted upon, were approved and ordered to become effective. The changes made the executive secretary an elective officer and member of the Chapter board.

The "Defense City," now on exhibit at the Main Library, will be open to the view of the public until December 26. This is the architect's site plan for the proposed 10,000 dwelling unit housing project to be built near Detroit. The project is sponsored by the UAW-CIO and has the support and approval of President Roosevelt. Otis Winn of Detroit is consultant architect for UAW; Oscar Stonorov, of Philadelphia, is UAW architect and a designer of the model.

Accompanying the exhibit will be a display of books on defense housing and city planning in the Social Sciences Department of the Public Library.

If exercise eliminates fat, how do you account for my double chin? —ROGER ALLEN

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SPECIAL DEFENSE ISSUE

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CHRYSLER TANK ARSENAL, DETROIT

FROM THE KAHN OFFICE--The immensity of the Arsenal, 520 feet wide and more than a quarter-mile long, can only be estimated by the picture above, which shows only one end of the plant.
I told Parker-Wolverine Company they could save $10,000 with JANITROL Heat and they did . . . says A. V. Cauhorn, Detroit

This Parker-Wolverine Building heated with Janitrol Unit Heaters.

Four years ago Parker-Wolverine Co. purchased a building in which an out-of-condition boiler had to be replaced before the building could be satisfactorily heated. Bids for replacement ran $15,000, yet A. V. Cauhorn, Detroit Janitrol Dealer, was able to install an adequate system with Janitrol Gas Fired Unit Heaters for $3,700. Cauhorn told them he could save them $10,000 on installation costs and he actually saved them $11,300 and 2/3 of the installation time besides.

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WEEKLY BULLETIN
ALBERT KAHN

A recent photograph of the Master—known affectionately to his employees as A. K. As to the photographs in the background, your guess is as good as mine. His birthday is March 21. Here's hoping for many more, continued health, happiness and prosperity, A. K.

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PACKARD TEAR-DOWN BUILDING
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WEEKLY BULLETIN
Another Exterior View

Architects' Perspective

Interior, showing plant in production.

Chrysler Tank Arsenal, Detroit
Albert Kahn Associated Architects and Engineers, Incorporated

DECEMBER 30, 1941
Details of Enterprise Rotary Industrial Oil Burner with dual gas-electric ignition system, fully automatic. All automatic burners are furnished in sizes up to 330 boiler horsepower. Burners for semi-automatic operation are available in sizes up to 650 boiler horse-power, in single units. Enterprise burners can also be arranged for combination gas-oil firing.

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CHRYSLER TANK ARSENAL

By Albert Kahn, F.A.I.A.

Chrysler Corporation received a contract on August 15, 1940 to build and equip a plant to be used in the manufacture of 28-ton medium tanks, the cost of which was to be around $20,000,000 (the largest of its type in the world). Building was to be erected on an 113-acre site, and then title transferred to the Government. Under arrangements made with the Company, the Government-owned plant will be leased at a nominal rental fee of $1 per annum, to be operated and maintained by the Company for the manufacture of medium tanks. Located in Warren Township, Macomb County, on Van Dyke Road between Eleven and Twelve Mile Road.

Two months before the contract was signed, William S. Fudsen of the OPM asked K. T. Keller—president of Chrysler Corporation—if he would build tanks, and he replied he would. The next step was a trip to Rock Island Arsenal to see some tanks and get drawings, and upon his return 197 Chrysler men began working seven days a week to develop processes, estimate the time on paper, to work them into production line and to develop formal dimensions of a building. No one had ever built heavy tanks in volume before and Chrysler Corporation set out to find a way to do it. Their success is evidenced by the fact they are now in the process of doubling their capacity and are far away the leading tank manufacturers in the world. The contract was signed on August 15th, and preparation of the blueprints for the buildings for this gigantic enterprise was turned over to Albert Kahn, Associated Architects & Engineers, Inc.

On September 11th ground was broken. Steel fabrication and erection was let to Bethlehem Steel on September 18th, steel erection began on November 19th. The general contract was let on October 3rd, and the first footing was completed that day. The first roof tiles were laid December 9th and the roofing on December 13th. Steel sash on monitors began December 11th, steel walls December 19th, and the glazing followed on December 18th.

The site was firm and dry when workmen began to clear it—a farm, turning brown under the autumn sun—but by early December it was a marshy morass. Steel workers slopped around in boots—many times up to their knees in mud. Then snow came, followed by icy rains and a sweeping wind. But despite these obstacles, progress was not retarded. On January 28th (ahead of schedule) the steel erection was completed—one month. In 4½ months 1¼ of the building had been covered with glass on three sides, with a temporary partition on the fourth side; concrete floors were being poured, and this section was heated by shovels which dug 448 individual footings, while pull-shovels attacked the 3780 ft. of trench for the continuous wall footings. Average excavated depth was about 4 ft. Foundations were formed and concreted within a day after excavation. After the footing work came excavation of underfloor trenches (with pull-shovels), Storm drainage, underfloor trenches (on 60-ft. centers across the building) using dawn. The two longitudinal and two cross-connection trenches for the sanitary sewer system were shallower, with the power conduit trenches even nearer to the surface. When the first steel arrived on Nov. 19th, utility line excavation and laying was sufficiently advanced to stay ahead of steel erection. Had not a 30-ft wide concrete roadway been in the length of the plant early in the fall, construction would have been delayed due to the condition of the ground later. Two temporary railroad tracks had been laid the entire length of the building, one in the 80-ft. bay and the other on the building centerline, to bring in the steel. Two locomotive cranes unloaded it, a truck crane and four crawler cranes set it. All trusses came to the job in one piece, and when the locomotive cranes were not unloading steel, they were used for erection.

Plant embodies most modern practice in tool and machinery design, in layout and in plant and production engineering. Readily adapted to expansion.

Site is sufficient in area to provide employee parking and in addition a figure eight special tank loading track on which tanks will get a 75-mile run-in before shipment. Plant located near Detroit because only here are the talent and production ability available in quantities large enough to get the project started.

Entire plant heavily fenced and lighted because of nature of work.

Designed and erected in 7 months.

Administration building is 4-story, 50x60, reinforced concrete—1-story 50x160 steel framed personnel building and a boiler house.

Arsenal is 1,380 ft. long east and west by 500 ft. wide north and south, of monitor type construction with continuous steel sash and brick curtain walls. High bays will characterize this building since the intricate machinery necessary and the assembly of tanks are operations that require plenty of room. About 95% of factory wall surface is glazed with more than 80,000 individual panes.

Running through the entire length on the north side is a bay, 60-ft. wide containing a depressed railway track and an unloading dock. At right angles to this are production aisles 60 ft. wide across the building, through which fabricating parts will move to the 80-ft. assembly aisle that runs the length of the south or opposite side of the building.

Receiving, manufacturing and assembly areas are defined by different framing layouts. In the 60-ft. receiving and the 80-ft. assembly aisle, column supports are 20 ft. apart, vertical clearance to the roof truss bottom chords being 20 ft. and the 80-ft. assembly aisle, column supports are 20 ft. apart, 60x45 ft. and clearance is 21 ft. This building is divided transversely into thirds by accordion-type expansion joints, continuous over roof and walls.

The roof is of precast cement tile, covered with built-up tar and gravel roofing. The floor is a 9" reinforced concrete slab covered with creosoted wood block (150 car-loads) except for the areas occupied by about 150 machine foundations—the largest of which support 25-ton loads—and trusses that are spread on a clay soil with the high capacity of 6,000 lb. per sq. ft.

Arsenal is streamlined in operation, material flowing along through the various processes until at one end of the building completed tanks will be hoisted by cranes onto waiting railway flat cars.

In connection with most of the machines, special foundations, conduits, pipes and other accessories had to be installed. About 1000 men worked on the construction.

A great number of the main supply lines are kept outside the building. The 60" cast-iron sprinkler piping from a 150,000 gal. elevated tanks entirely encircles the building, while the 8" branches (at about 100-ft intervals) run inside under the floor to risers at the first interior row of columns. The 48" dia. concrete storm sewer which takes all of the roof drainage, is outside the north wall; laterals...
60 ft. apart under the floor slab bring the roof drainage to it, and at its far end it picks up the effluent line from the sewage treatment plant. The lines that lead from these panels to the various machines are on top of the floor slab but under the wood block, where they are easily accessible for changes.

The only underfloor utilities, except for the power ducts, are about 20 storm sewer laterals and 2 cross-connected sanitary sewers that run lengthwise of the building. The ones on the south side extend beyond the end wall of the building to discharge into the sewage treatment plant—a simple lime-settling basin.

Medium pressure steam for the unit heaters is carried in pipes on the roof trusses, as are compressed air, oil for machining work, propane gas for cutting operations, and hot and cold water for the locker and toilet rooms. This domestic water will be supplied by a new 4-mile-long cast-iron main connecting to the Detroit city system, while sprinkler and cooling water will come from wells on the property.

Artificial lighting is designed for the comfort of the workers. Fixtures are on 20-ft centers at bottom chord level and contain one 400-watt mercury lamp and three 150-watt mazda lamps. Two 40-ton overhead cranes in the assembly aisles of the manufacturing and storage area will move the heavy tank parts and service the machines. Ten-ton cranes handle heavy materials in the heavy machinery bays.

Below, and on facing page, Packard Tear-down and Re-Assembly Building, Detroit.
Plant of the Taylorcraft Corporation at Alliance, Ohio—another A. K. job.

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ALBERT KAHN
Associated Architects and Engineers, Inc.
August 14, 1941, was a red-letter day in Buffalo. Flags waved, bands played. There was speech-making. And jolly American cheers all but drowned out the snarl of motors.

DECEMBER 30, 1941

The event brought into bold relief something else, too—the near-miraculous speed with which the United States is swinging into its program of building for defense. All manner of records—designing, building, engineering—went by the board as the huge structure quickly took shape and form.

The plant was designed so changes could be quickly and easily made when new plans were put into effect. An excellent example of the steps that were taken to provide manufacturing flexibility is the electrical wiring system. Numerous outlets have been provided and thus the moving around of the motor-driven machinery will not necessitate the tearing up of wiring or conduits. In effect, a machine will merely be moved and plugged into another outlet.

Also typifying the plant's ultra-modern design are the large elevators which are used to raise the lower freight cars while they are being loaded or unloaded. By this means, the floor of a freight car can be brought to the same level as a loading platform.

The design of the plant permits equalizing the production of all departments. Thus, Machine Shop, Press, Sub-assembly and Production Departments keep pace with one another in moving a continuous stream of parts, sub-assemblies and assemblies down a multiple "line", from which wings and fuselages emerge as finished airplanes.

Space on the main floor of the plant has been apportioned as follows: 840,000 square feet for manufacturing purposes, 90,000 square feet to the Engineering and Planning Departments, 20,000 square feet for offices, and 38,940 square feet for a flight hangar. On the main floor level are found, in addition, shipping and receiving platforms and a truck dock.

On the second floor are provided another 20,000 square feet of office space. And the 300,000 square feet basement includes a cafeteria seating 1,800 persons, lunch rooms accommodating 2,000, rooms with a total of 10,000 lockers and three 10,000 person showers.

Almost astronomical are the figures that have been used to give an idea of the immensity of the plant. For example, statisticians pointed out at the time of the structure's dedication that the floor area was sufficient to accommodate every man, woman and child in Buffalo, each having 3 square feet of floor space. Or, if you stood them shoulder-to-shoulder, you could shelter 1,000,000.

Further, it was pointed out, the building of the skeleton of the plant consumed 12,000 tons of structural steel, more than twice the amount used in the construction of the new Rainbow Bridge which spans the gorge at Niagara Falls. Approximately 320,000 cubic yards of earth were excavated to make way for the foundations of the building—and this, it was said, was sufficient to fill 110,000 dump trucks of 3 tons each.

The plant's roof required 1,000,000 square feet of roofing material, in addition to an equal amount of "1" cork insulation. Figuring approximately 1,000 square feet of roofing for the average single-family dwelling, this roofing, it was mentioned, would be sufficient to cover 1,000 homes.

For the heating installation alone, 20 carloads of pipe, each weighing in the neighborhood of 50,000 pounds, or a total of 1,000,000 pounds, were used. The pipe varied in size from 3/8" to 16". Pipes for the heating of the main factory and the final assembly unit were fastened to the overhead steel trusswork and immediately over them a catwalk was provided, making the installation easily accessible.

The heating and ventilating systems include 170 exhaust fans on the roof, 62 Summer units for the recirculation of air, 46 Winter units which bring in cold, fresh air and heat it to desired temperatures, 82 supply and exhaust fans to serve the offices, engineering rooms and basements, 50 exhaust fans devoted to washrooms.

And it was estimated the electric wiring, in total length, was the equivalent of a line running from Buffalo, to New York City.

Only 193 days elapsed from the time of the ground-breaking until the first airplane, completely assembled in the plant, rolled out from the assembly line. Even under the best of weather conditions, construction of such an immense structure in so short a time would be a seeming miracle.

But at Buffalo, the weather was anything but propitious, throwing apparently insurmountable obstacles in the way of architects, engineers and contractors. So, during this time, miracles were accomplished, in the name of national defense.
Early in the building program, almost endless rains turned the 124-acre site into a literal ocean of muddy clay. So digging for the foundations was, as a contractor characterized it, "like excavating soup." Then came bitter cold. Frost penetrated many inches into the ground and there was snow, plenty of it. But despite this, a small army of concrete mixers poured 55,000 cubic yards of concrete into foundations and piling. In all, 85,000 barrels of cement were used. Mid-winter weather made it necessary to steam-treat the concrete so it would harden without freezing.

Then came the erection of the steel-work—24,000,000 pounds of it—to form the skeleton of the great plant. Metal lathe was installed; concrete was sprayed on the sidewalls by a new process; 300,000 bricks were laid to form the facade of the office and engineering quarters, and thousands of blocks of prefabricated concrete-like material were applied to the roof.

Next an army of glaziers converged on the Airport site and in jig-time more than 300,000 square feet of heat-resistant cobalt-colored glass had been installed. Four square feet to the light, 75,000 panes of this glare-preventing glass carries eye-saving daylight to thousands of workmen.

Long before the buildings were completed, manufacturing was under way. With the west end of the factory without glass in the windows, without even a finished floor, machinery was moved into the east section. Tool room, stock cages and machine shop were quickly installed. As fast as the remaining sections were completed, jigs and fixtures were erected. Panels, fuselages and control surfaces built in the older Buffalo Plant and stored during the Winter months, magically made their appearance. Almost before steel erection was completed, the Buffalo Airport Plant was in operation.

So, on August 14, last, was scored another victory in the Battle of Production!

Note!

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Wherever the name of a city or place is indicated on this world map will be found a structure that has been conceived in Detroit or actually designed here by the Kahn organization. Included are naval bases, factories, commercial buildings, hospitals, arsenals and others.

(Courtesy, The Detroit Free Press)
Above, manufacturing bay and Below, corridor in basement of factory with doors to cafeteria, locker rooms, toilet rooms and stairs.

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HUDSON NAVAL ORDNANCE PLANT

Outstanding among the nation's industrial units is the new United States Naval Ordnance Plant at Centerline, near Detroit, which early in the Fall took its place as a “fighting unit” of Uncle Sam's forces. It is being operated by the Hudson Motor Car Company under a lease agreement.

Designed by Albert Kahn Associated Architects & Engineers of Detroit, working in close collaboration with Hudson and with the Navy's Bureau of Ordnance, the huge plant has become a permanent part of the national defense set-up. The most up-to-date straight-line production methods, such as are employed in the automobile industry, have been applied in this plant to the manufacture of weapons for the ships and men of the fast-expanding Navy.

The Oerlikon gun—an anti-aircraft weapon of tremendous fire power which hurls an explosive shell—is manufactured in the new plant. The weapon contains 600 parts, an undisclosed number of which are manufactured in the new buildings, the remainder being produced at other plants, under sub-contracts. Units and parts manufactured outside, however, are brought to the Detroit plant for final assembly.

In addition to the Oerlikon gun, the plant is producing an unannounced variety of naval ordnance components, ranging from delicate fire control and direction apparatus to parts for gun mounts, torpedo tubes and catapult guns.

Unusual constructional features make the plant as bomb-proof as it's possible for any modern industrial unit to be, according to Architect Albert Kahn. Actually, the plant consists of 16 separate buildings, containing more than 1,000,000 square feet of floor space, spread in an orderly fashion over a site that's 138 acres in extent. Thus, in the event of a raid by bombers, a hit on one building would not throw the entire plant out of commission.

As in other defense plants designed by the Kahn organization, consideration was given to the possibility of future expansion. The buildings are so arranged and spaced that if it is found desirable, they can be connected and the whole area put under one roof. Also, to the north of the group of buildings there's a large area that will accommodate additional structures, should the Navy decide upon an expansion of this type.

Today, the plant stands virtually completed, with production being stepped up at a rapid rate toward its ultimate peak. Work is going forward rapidly on the last structure of the sprawling set-up—the Gun Proving Range Building, where weapons manufactured under the direction of Naval Ordnance men and the Hudson Motor Car Company will be given their final tests.

Noteworthy was the speed with which the plant was created:

Ground was broken March 17, 1941.
First concrete was poured March 26.
Structural steel started rising April 17.
First brickwork was laid April 30.
First floors were poured May 20, with installation of machinery getting under way soon after this date.

By the end of October, seven months after the work started, the buildings stood 95 per cent completed and approximately half the machine tools required for 100 per cent production had been received.

Largest structure in the plant set-up is the Gun Building. Then, there are three separate machine shops.

Also, there are the shipping and Receiving Building the Assembly Building, the Garage and Maintenance Building, the Tool Shop, the Personnel Building, the Cafeteria Building, the Administration Building, the Scrap Building, the Power House, the Oil Storage Building, an Incinerator Plant and the Gun Proving Range Building.

The Gun Building is of steel, face brick and glass and the roof is of the “butterfly” monitor type. Except for the workshop section, extending 400 feet along the north end, the structure is one-story. The office section is of two-story construction, with offices located on the ground floor and employees' locker areas and washrooms on the second.

Face brick extends upward to the sills, which are 5 feet 8 inches above the floor elevation. There's a 12-foot strip of glare-proof glass area. Above the glass, the finial is gunite. Column spacing is 50 feet in both directions. From floor to bottom chords of the trusses, the measurement is 18 feet.

In the Gun Building, as in the other manufacturing buildings, the floors are of heavy, reinforced concrete mat 8 and 12 inches thick, topped by wood block. This feature, according to the architects and engineers, makes for great flexibility in manufacturing arrangements. Machines, no matter how heavy, can be moved and relocated at will, without it being necessary to provide special foundations.

Still another outstanding feature of the Gun Building, as well as the other production units, is the glazed tile lining of the interior walls. This lining was adopted for reasons of cleanliness. Parts for the anti-aircraft guns and the precision equipment turned out for the Navy's use require that manufacturing be carried on amid dirt-free and dust-free conditions.

The Gun Building, as are the other structures, is illuminated for night work by scientifically placed fluorescent fixtures. In the event blackout is necessary and metal panes are bolted to the window sash, ventilation is provided by exhaust and intake units located in the roof.

Facing the western border of the plant reservation and Mound Road, super-highway leading out of Detroit, is the Administration Building. This is a two-story structure—but plans provide for the addition of a third story in the event additional office space is needed.

The Administration Building, measuring 402 by 50 feet, is also of steel, concrete, face brick and glass. By virtue of its design, the main entrance is most imposing. The doorway is flanked by two-story high pillars of stone and between the pillars and above the doorway are panels of glass brick rising two stories in height.

The lobby has flexwood walls and a terrazzo floor. Lobby ceiling and also the ceilings of the offices throughout the building have been acoustically treated. Fluorescent fixtures, housed in the recessed channels, provide lighting in the lobby. Fluorescents are also used for illumination of the office spaces. The offices are separated by means of metal and glass partitions.

A partial basement contains complete equipment for the air conditioning of the office building.

Also facing the super-highway which borders the west side of the reservation is the air-conditioned Cafeteria Building. Containing the most modern kitchen and equipment and two large serving areas, the cafeteria can accommodate 800 employees at one sitting.

Another important structure in the group is the Personnel Building, which houses three important departments—the employment office, a hospital completed even to X-ray facilities and operating room and the plant protection division. This building also faces the western border of the area and is easily reached from the highway that serves the plant.

An exception to the one-story construction that generally prevails in the manufacturing areas is the Tool Shop Building. This is a two-story structure, measuring 100 by 550 feet and offering 110,000 square feet of working space. Like the Administration Building, the Tool Shop can be quickly and easily expanded to three stories, if and when the need arises.
All the buildings in the group are connected by a series of tunnels through which pass both the power lines and the eating lines.

Of unusual interest is the Gun Proving Range Building, which possesses many unique features about which the Navy is highly secretive. In this building, guns are placed on mounts and given their firing tests. Approximately 300 feet away is the target; and behind the target is a wall of steel which stops the projectiles. As a precaution, the sand rail is enclosed, on three sides, by walls of tough armor plate. A continuous conveyor system will carry the sand to a point where the metal is reclaimed. Then the conveyor will restore the "cleaned" sand to the enclosure behind the target.

At the far north end of the site are seven comfortable and modern homes which were designed by the Bureau of Ordnance as residences for the Naval officers who have been assigned to the military establishment of the plant.

And adjoining the plant at its south end is a large employee parking area, capable of accommodating 2,500 automobiles.

The Shipping and Receiving Building, 900 feet long and 152 feet wide, lies along the eastern edge of the plant reservation. It is served by a railroad siding which enters the plant grounds and the building itself and also by large truck docks.

Nearly three miles of cement roads, some as wide as 60 feet, border and parallel the buildings of the plant.

The designers and builders of the plant provided the utmost protection against sabotage. The 138-acre tract is rimmed at the property line by a 6-foot-high metal fence, then, approximately 150 feet from the building group is an inner fence of the "man-proof" type, 8 feet in height, with three strands of barbed wire at the top. Just inside this latter fence is a 3-foot-wide path, along which armed sentries will constantly walk.

The Detroit plant is one of five large manufacturing units that the Navy is putting into operation as permanent sources of supply for the armament of American ships. All the plants are strategically located inland, away from the coasts.

Besides the Detroit plant, there are a rehabilitated gun and armor plate plant at South Charleston, W. Va.; a fuse-loading plant at Macon, Ga.; a plant for the manufacturing of miscellaneous parts at Canton, Ohio, and an assembly plant at Louisville, Ky., for parts manufactured at the other factories. Just as ships are now being built to make up America's two-ocean Navy, so these plants are being constructed to arm them.

### HUGE NEW NAVAL ORDNANCE PLANT

**Was Dedicated Tuesday, October 28th**

**By Secretary of the Navy, Frank Knox**

This new $20,000,000 Naval Ordnance Plant, built and operated by the Hudson Motor Car Company, took its place as a "fighting unit" of Uncle Sam's navy following formal dedication Tuesday morning, October 28th, by Secretary of the Navy Frank Knox, Rear Admiral W. H. P. Blandy, Chief of the Bureau of Ordnance, Navy Department, and other high Navy officials. Colorful ceremonies for the dedication included a nationwide broadcast by Secretary Knox, preceded by an inspection tour of the plant by Secretary Knox, Rear Admiral Blandy, Commander F. F. Foster, U.S.N., ordnance Inspector in Charge of the plant here, President A. E. Barit of the Hudson Motor Car Company, and high navy and civic officials and guests. Located in Centerline, Mich., near Detroit, the project occupies 135 acres (about 36 square city blocks), comprises 14 buildings, contains over a million square feet of floor space and employs over 7,000 defense workers in the manufacture of the Oerlikon 20 mm. anti-aircraft machine gun and an unannounced variety of naval ordnance components.

### THE PUBLIC LIBRARY

The Public Library Reference Department, in addition to giving aid in finding prompt, authoritative answers to questions, undertakes extensive research in its fields, compiles booklists, and collects source material for investigators.

In the Map Room, adjoining the general reference room, you can comfortably examine reference books on geography, travel, and history. If you want a map, you will find it here. All told, there are over 7000. There are city, political, historical, geological, topographic, and soil maps; there are road maps for every state, and guides useful in planning motor trips. Some of these maps may be borrowed.

Magazines on general subjects are found in the periodical reading room. Duplicate copies of certain magazines are issued on a rental basis. Many of the periodicals on specific subjects are kept in the special departments. For example, technical magazines are in the Technology Department. If the Periodical Division does not have the magazine you want, it will refer you to the proper department.

Below, architects' perspective of huge Hudson Naval Ordnance Plant, by A. K. Architects.

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DESIGNED BY Albert Kahn, architect, the Consolidated B-24 Bomber Plant of the Ford Motor Company at Willow Run, Michigan, complete with runways, will represent the largest single use of cement in any one building project in Michigan's history. The airport runway area alone contains 1,000,000 square yards of cement. (Laid end to end, that would make a 20-foot highway 64 miles long.) Naturally, FORD PORTLAND CEMENT was used... long-lasting and fire-safe to meet the needs of defense construction and modern home building.

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HANGAR DOORS ‘BY ACRE’ GROW IN DETROIT PLANT

by John D. M. White
Free Press Financial Writer

Here in the motor capital is the largest exclusive manufacturer of huge canopy-type airplane hangar doors—doors so big they are sometimes reckoned by the acre.

The recently revealed order for the doors required for the Willow Run bomber plant of the Ford Motor Co. went to Byrne Doors, Inc., in Detroit.

This tops a number of big defense installations by the local concern and is believed to be the largest single order ever given for airplane hangar doors. Others of appreciable size have been doors for the neutrality patrol bases scattered along the Atlantic Coast, and the Quonset Point naval air station, near Providence, R. I.

Outside the United States Byrne Doors has done work in Trinidad, Bermuda, Canal Zone, Puerto Rico, Newfoundland and Alaska.

Doors 144 Feet Wide

The Ford order for the plant at Ypsilanti calls for 12 canopy type doors, each 144 feet wide. Four of these will be installed in the delivery end of the factory, which will cover 58 1/2 acres under one roof.

Virtually the entire front of the separate hangar, running 1,240 feet along the mile-square airport, will be equipped with eight Byrne doors, each 144 feet wide and 41 feet high.

The doors are of the single-leaf, upward-acting type. While made of steel and weighing many tons, each is so accurately balanced that a relatively small electric motor opens or closes each door in a matter of seconds. The doors may be operated separately or simultaneously.

And here are some more big doors:

An eight-story building half a block wide could pass through one door engineered by the company and now being built on contract.

Open in 45 Seconds

A door two-thirds the length of a football field can be opened in 45 seconds.

The concern has built a number of doors 250 feet wide by 48 feet high. Another made for a hangar will be 155 feet wide by 90 feet high.

With its home office in Detroit, Byrne Doors has a machine shop on Warren and a main door plant in the old Ford plant in Highland Park.

It was incorporated in Michigan in 1936 by its president, J. I. Byrne, who previously had spent some eight years in developing, perfecting and marketing the canopy door.

Annual sales volume of the concern now tops $3,000,000 and unfilled orders are well in excess of $1,000,000.

Besides the sales, executive and design engineering offices, which fill the thirty-first floor of the David Stott Building, Byrne Doors has sales offices in Washington, New York and San Francisco.

In addition to hangar and industrial doors, the concern makes hangars, crane entrance doors and movable steel partitions.

Felicitations . . .

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December 30, 1941

NEW DEFENSE PLANTS FAVOR GAS FIRED UNIT HEATERS

Many of the newer plants in the Detroit defense area are solving their space heating problems with Janitrol gas fired unit heaters. Engineers give several different reasons for this choice of heating systems. Some stress flexibility because individual bays, rooms or buildings can be heated without paying for heat in unoccupied portions. The units can be controlled either by individual or group thermostats. The economy of first cost comes from elimination of central heating system construction costs while maintenance economies result from eliminating need for central heating plant engineers and maintenance men.

One engineer gives speed of installation as a dominating factor in his choice of gas fired unit heaters, since they can be installed and in operation in less time than it takes to get a central heating plant to the blueprint stage.

The unit heaters, placed above and out of the way of walls or floors, permit use of every foot of floor space for workmen, machines, stock and plant transport. This space-saving feature is difficult to appraise but is given approval by many plant engineers.

Among many new defense plants choosing Janitrol gas fired unit heaters are the machine gun plant of the Saginaw Steering Gear Division of General Motors, the Faigle Tool & Die Company, the Hydro-Electric Welding Company, Parker Wolverine Company, Fruehauf Trailer and many others. These installations have been made by Janitrol dealers in the Detroit area working with the Detroit office of the Surface Combustion Corporation at 3078 East Grand Boulevard.
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In the approximate time it takes a crop of wheat to mature or a major league baseball season to run its course, Buick division of General Motors corporation has brought to completion one of the largest Defense Plant corporation projects in the national defense program and readied that project for the mass production of Pratt & Whitney 1200 horsepower airplane engines for the Army Air Corps.

This was disclosed today with the announcement of Har­low H. Curtice, chief executive of the Buick organization, that major construction contracts on the vast buildings comprising the Buick plant in Melrose Park, Ill., have been completed substantially ahead of schedule as a result of day and night operations over the past eight and a half months.

The go-ahead was given last March 17 and the word passed that time was the vital factor, that extra shifts and night work be employed wherever this could be done to speed construction. Early on St. Patrick's day morning steam shovels bit into the muddy prairie, at the western limits of Chicago, and electricians laid the first lines that were to supply night light for work far beyond the normal eight hours a day.

While thousands of tons of concrete were being poured for the vast foundations—it required 410,000 bags of cement to complete the buildings and excavations totaled 5,500,000 cubic feet—a railroad was built to the construction scene over which trainloads of structural steel, specified in one of the largest steel contracts in the middle west, soon were rolling.

A network of steel rose into the sky and on the heels of steel workers were bricklayers, stone masons, glaziers and workers in a score of other construction trades who built up the walls, the roofs, the windows and floors, all according to a preconceived plan the most important element of which was time.

So vast was the structural undertaking that as high as 1,800 construction workers were on the job daily. Four leading Chicago concerns pooled their resources, manpower and equipment in order effectively to handle the electrical work. More than 300,000 pounds of copper went into bus lines alone to furnish power for the machines that were to build aircraft engines. Ten thousand tons of structural steel, 7,000,000 wood flooring blocks, 3,000,000 bricks, 145,000 panes of glass and 186,000 square feet of steel sash, 250 miles of electric wire and cable and similarly fabulous quantities of other materials were built into the structure without waste of time or substance in order that one of the defense program's largest industrial plants should be rushed into being.

On June 22, construction work already was 25 days ahead of schedule—an exceptional record in the face of unfavorable weather and other obstacles. The job was then 30 per cent completed. Work progressed so rapidly that four bulldozers were still at work grading the rough prairie beneath the roofed over section, while above them glaziers were installing factory windows. Half the steel was up, five huge traveling concrete mixers were on the job day and night; steam shovels were still excavating and streams of heavy trucks rolled in and out of the plant.

On July 25 the job was 30 days ahead of schedule. All the steel had been erected and two sides of the factory had been walled in. More than 1,500 men were working on the structure; a large part of the roof was finished; machinery was being assembled in a room built especially for its housing and more machinery was rolling in.

The accomplishment brought satisfaction to President Curtice, a man not easily satisfied under the urgency of the huge production job Buick has undertaken. On September 17 the keys to the plant were turned over to him, six months after ground was broken. Since then a huge power house has been built, the housing for a double row of engine test cells constructed and finishing details put to the manufacturing building where more than 10,000 productive workers will be employed.
"Buick long ago 'enlisted' in the Air Corps," he commented, "and we are proud of our assignment to mass produce these fighting machines. We are appreciative of the day and night efforts of our architects and contractors and the structural workers on the job. I believe they have established a record for an undertaking of this size. At least they have handily won a mighty important race against time.

The executive announced that as a result of a parallel and similarly urgent program on machinery and tools, there has been a steady flow of equipment into the plant, with pilot line machinery, the minimum necessary to fabricate a complete engine within very few minutes of completion. Meanwhile, jigs, fixtures, tools, gauges and the like are rolling into the plants in vast quantities.

This goes, too, he said, for the aviation engine parts manufacture in Flint where two Buick plants have been converted to produce approximately 50 per cent of the parts and sub-assemblies going into the engine.

Structurally and in point of plant layout and equipment, the Buick engine plant is one of the most completely modern defense plants yet constructed.

Besides the main manufacturing building and test cells, the plant includes an administration building, personnel building, garage, power house and minor structures. Four of these buildings are connected by a common wall. They are the administrative building the stories high, a garage, the manufacturing building, and dynamometer building.

The administration building has full basement and is of reinforced concrete, brick and steel construction, with inexpensive limestone and glass block trim. The floors are of asphalt tile except in the lobby and wash rooms where they are terrazzo. Ceilings are acoustical and there are glass block panels on both sides of and above the main entrance providing the day lighting area for the conference room on the second floor immediately above the lobby.

Office areas are subdivided by removable metal sash and glass partitions, the sash finished in walnut grain. All artificial lighting is supplied by fluorescent units suspended from the ceiling while an under floor duct system provides electrical outlets every 12 inches. The building is completely air conditioned as are manufacturing building offices located on the mezzanine of the manufacturing building.

Immediately behind the main office building and connected to it is the general garage of steel, concrete and brick construction with concrete floor and cement tile roof. Entrances to the garage are at either end.

Of steel, brick, gunite and continuous steel sash construction, the main factory building is one story high and has 10 monitors extending the entire length of the building. The expansive roof is of precast cement tile covered with tar and gravel. Continuous steel sash windows on the east, west and south sides of the building, including the monitors, are of a special type heat resisting wire glass that afford even daylight distribution throughout the plant without glare. The main manufacturing building is equipped with a ventilating system designed to be ample in case of black-out and to keep the inside temperature within 10 degrees of that outside. There are 575 motor driven fans in the ventilating system including 210 intake and 210 exhaust ventilators equipped with 10,000 cfm fans or approximately 2 cfm for every square foot of floor area.

The factory building is heated in winter by overhead unit heaters of the projection type and is divided into four zones with zone thermostats that regulate artificial heat in accordance with the amount of sunshine in each zone. A total of 15 miles of heating pipes was required in the installation.

The manufacturing bays are 60 by 75 feet and floors are of concrete covered by creosote wood blocks except in the heat treat and service areas. The manufacturing building is artificially lighted by fluorescent lights of which 9,500 fixtures were required. The light intensity is from 50 to 45 foot candles which approximates daylight.

The power system of the new building includes seven substations of 2,500 KVA capacity which steps down 35 KV current to 4,160 V and transmits it to various transformer rooms in the plant where it is further reduced to various requirements. There are approximately 75 miles of conduit in the system and 250 miles of wires and cables, with all high tension connections totally enclosed and all equipment of the latest design.

Employees entrance to the manufacturing building is through two transverse corridors in the basement with access to the various manufacturing departments through 10 stairways located strategically throughout the plant.

All factory employees enter and leave through these corridors and all wash rooms, coat room, time clocks are located in the basement. There are waiting rooms just inside each entrance where employees may congregate without blocking the corridors, while lockers are located near the main stairways and employees are assigned lockers nearest to their place of employment. Thus, the most convenient stairways are used and congestion avoided both in the basement and in the working areas.

An air conditioned employees' cafeteria with capacity for serving several thousand people, 2,000 at one sitting, is also located in the basement and is regarded as one of the most modern of its kind. Other space leading off the basement corridors is occupied by additional lunch rooms, service rooms, fan rooms, refrigeration equipment and utilities.

The power system including 210 intake and 210 exhaust ventilators which must be made in the testing cells. The engineers devised a means to make quick "plug-ins" which it is estimated will enable an expert crew to make the connections in 45 minutes or less. It will be possible to test 44 engines at one time.

Each engine under test will produce approximately 135 decibels of noise—a volume beyond the capacity of human endurance. But by locating the engines behind thick concrete and insulated walls, the test men will get only 57 decibels hurled against their ear drums, neither a harmful nor uncomfortable volume.

Another innovation will be the hook-up of the engines while under test to electric generators. It is estimated that each engine thus equipped will be able to turn back an average of 450 horsepower in the form of electric energy into the plant's power line, thus reducing plant power requirements.

Of steel, brick, gunite and continuous steel sash construction, the main factory building is one story high and has 10 monitors extending the entire length of the building. The expansive roof is of precast cement tile covered with tar and gravel. Continuous steel sash windows on the east, west and south sides of the building, including the monitors, are of a special type heat resisting wire glass that afford even daylight distribution throughout the plant without glare. The main manufacturing building is equipped with a ventilating system designed to be ample in case of black-out and to keep the inside temperature within 10 degrees of that outside. There are 575 motor driven fans in the ventilating system including 210 intake and 210 exhaust ventilators equipped with 10,000 cfm fans or approximately 2 cfm for every square foot of floor area.

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From the beginning of construction, Buick engineers worked on plans to make short cuts in the production of engines. Originally it took from three to six hours to set up an aviation engine for testing because of the electrical, oil and pressure connections that must be made in the testing cells. The engineers devised a means to make quick "plug-ins" which it is estimated will enable an expert crew to make the connections in 45 minutes or less. It will be possible to test 44 engines at one time.

Each engine under test will produce approximately 135 decibels of noise—a volume beyond the capacity of human endurance. But by locating the engines behind thick concrete and insulated walls, the test men will get only 57 decibels hurled against their ear drums, neither a harmful nor uncomfortable volume.

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RECIPE FOR A MAJOR DEFENSE PLANT

Major items of materials required for the construction of Buick Chicago division’s big plane engine plant at Melrose Park, Ill., were listed by the architects and general contractors as follows:

- 410,000 bags of cement
- 115,000 tons of sand and stone
- 5,500,000 cubic feet of excavation
- 1,200,000 cubic feet of reinforced concrete
- 2,500 tons of reinforcing steel
- 690,000 square feet of wire mesh reinforcing
- 10,000 tons of structural steel
- 3,000,000 bricks
- 820,000 pieces of facing tile
- 8,600 cubic feet of cut limestone
- 1,158,000 square feet of cement roof tile
- 7,000,000 creosote wood flooring blocks or 123,000 sq. yds.
- 12,000 squares of composition roofing
- 150,000 panes of glass
- 186,000 square feet of steel sash
- 79,000 feet or 15 miles of heating pipes
- 575 motor driven fans for ventilation
- 75 miles of electric conduit
- 250 miles of electric wire and cable
- 300,000 pounds of copper for power wiring
- 9,500 fluorescent light fixtures
- 10 transformer sub-stations
- 1 master sub-station providing 30,000 KW
- 8,000 feet of railroad siding
- 6 miles of concrete pavement
- Cafeteria to accommodate 2,000 at one sitting
- 13,000 lockers for men and women
- Additional lunchrooms to handle 1,200 more
- Parking space for 3,500 cars
- 125 acres of land

Below, Factory and Office, Buick Melrose Plant
Albert Kahn Associated Architects & Engineers, Inc.
TIN CLAD
KALAMEIN
FIRE DOORS
were used on
HUDSON U. S. NAVAL ORDNANCE
PLANT

ASBESTOS ROOFS
on
OFFICERS QUARTERS
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for
Buick Motor Division-G. M. Co.
Aviation Engine Plant
Melrose Park, Illinois

WEEKLY BULLETIN
Clean-cut lines, characteristic of modern-day tempo, mark the Kahn work on entrance detail of new Buick Aviation Engine Plant.

Pertinent Facts Pertaining to the New AIRPLANE ENGINE PLANT for BUICK MOTOR General Motors Corp., Melrose Park, Ill.

by Albert Kahn, F.A.I.A.

Plant built under Government contract. Project approved by War Department in January, 1941.

Cost about $31,000,000.

To manufacture 1,000 airplane engines per month—Pratt & Whitney 1830-cubic inch displacement, 14-cylinder, air-cooled, 1200 HP.

Parts to be manufactured at Flint and assembling and testing done at Melrose Park Plant.

Plant to employ 15,000 workers when in full operation, with an estimated annual payroll of $17,000,000.

First aircraft engine plant to be located in Chicago. It will employ largest number of men under one roof, and will rank seventh in the Chicago district in number employed.

Located on 125-acre site on the northeast corner of North Avenue and LaGrange Road, Melrose Park, Ill. Title acquired January 25th. Inadequate supply of skilled labor in Flint area forced Buick to decide on Chicago, which was the nearest employment center to Detroit with an adequate supply of the right type of workers. Site also had adequate railroad and highway transport facilities.

"History repeats itself as Buick thus bends its energies to the speedy completion of new plants and facilities and the launching of actual production of aircraft engines for America's defense forces. Less than a quarter of a century ago, Buick stepped to the aid of the nation, in World War days, as one of the major builders of the famous Liberty engines. Then, as now, they erected special factories and installed special equipment for the purpose. Then, as now, they played a major part as an efficient, big-volume manufacturer in a vast program to supply the needs of the government of our country." From "Buick Magazine."

Plant consists of—1-story 750 ft. x 1305 Manufacturing and Assembly Building with basement area containing Cafeterias, Locker and Rest Rooms, Toilet Facilities, etc., and a 3-story section to the front containing factory offices, drafting rooms and laboratories; and to the rear a Dynamometer Test Building 750 ft. x 140 ft. containing 45 test cells. 3-story Administration Building and Garage 60x280 ft. A Propeller Test Building A Master Substation A Boiler House, Pump and Oil House A Personnel and Employment Building

More than 23 acres of floor space under one roof, 1,320,000 sq. ft. area of Main Building; 170,000 sq. ft. area of Test Cells. Ground was broken March 17th. By Mid-May 90% of the foundation work for the factory and a substantial amount of the steel work had been completed. About 200 tons of steel were erected daily with over 250 men employed in the erection and 150 men working in the steel company under the supervision of 25 engineers. Eight diesel-powered cranes were used. About 10,000 tons of steel were required.

On June 22nd construction work was already 25 days ahead of schedule—an astounding record in the face of unfavorable weather and other obstacles. The job was then 30% completed. Work progressed so rapidly that 4 bulldozers were still at work grading the rough prairie beneath the roofed-over section, while above them glaziers were still at work. Half the steel was up; five huge traveling concrete mixers were at work; steam shovels were still
excavating and streams of heavy trucks rolled in and out of the plant.

On July 25 the job was 30 days ahead of schedule. All the steel had been erected and two sides of the factory had been walled in. 1500 men were working on the structure; a large part of the roof was finished; machinery was being assembled in a room built especially for its housing, and more machinery was rolling in. There will be about 1500 machine tools in the factory.

From the beginning of construction, Buick engineers worked on plans to make short cuts in the production of the engines. Originally it took 3 to 6 hours to set up an engine for testing because of the main electrical and oil and pressure connections that must be made in the testing cells. The engineers devised a means of making quick "plug-ins" which it is estimated will enable an expert crew to make connections in 45 minutes or less. It will be possible to test 46 test engines at one time. Each engine under test will produce 135 decibels of noise—a volume beyond the capacity of human endurance. But by locating the engines behind thick concrete and insulated walls, observers will get only 57 decibels hurled against their ear drums. Another innovation not originally used will be the hook up of the engines while under test to electric generators. It is estimated that each engine thereby will be able to turn back 450 HP into the plant power lines, thus reducing plant power requirements. In most plants the practice is to hook the engines up to propellers.

Underlying the plant is an enormous system of concrete tunnels. One, 2200 feet long, runs from the administration building, the full length of the plant and ends up in the power plant at the north. Two others, 800 feet long and 100 feet wide, run from east to west, near either end of the plant. The tunnel system serves as entrances and exits for workers and contains employee facilities. They are so constructed that they may be used as bombproof shelters in case of need.
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ARCHITECTURE IN THE NATIONAL DEFENSE BUILDING PROGRAM

By Albert Kahn, F. A. I. A.

"We have just been awarded a contract for planes by the French Government and will require 400,000 to 800,000 square feet of floor space within the next three months"—comes the telephone message from Glenn L. Martin in Baltimore. "We'll be in your office tomorrow morning"—goes the reply from the architects in Detroit. Four of us tackle the problem in the morning, the requirements of which have been carefully figured out and noted by the capable plant engineer, Paul Tignor. Within twenty-four hours, several studies are ready to submit. Mr. Martin and his associates, with rare ability to decide quickly, settle on one of the schemes. Within another twenty-four hours, the structural steel drawings are ready for obtaining bids on a pound price, the contract is placed at once for five weeks' delivery—which, however, is bettered by one week. Further work on the plant is carried on at the home office of the architects, one contract is placed after another with excellent contractors, wisely selected for the respective parts of the work. In just eleven weeks from the day the message went to Detroit, the building complete is turned over to the owners ready for occupancy. An engraved message of felicitation from the owners is inscribed on such a page by the method of hundreds who played a part in the undertaking and the architects are particularly happy at this gracious gesture.

But that was in 1939 and compared with the problems of today, the Glenn Martin structure must be considered small. We are now erecting plants covering 1,000,000 to 3,700,000 square feet, each and all urgent.

Speed and more speed is the watchword of the Defense Program. Decisions to build or expand are made suddenly, and complete plans are expected of the architect "immediately, if not sooner." To meet these demands has been a superhuman task these many months. There is no time for philosophizing, waiting for inspiration, or even considering the matter of aesthetics. A prompt and direct solution of practical problems dealing with the housing of machines and manufacturing processes is demanded. Simplicity of design and construction is imperative. Every day counts and minutes must be saved. It is not only a matter of dollars and cents but, today, a matter of life and death. This means a new chapter in the practice of architecture and requires a new approach. This is a day of action, it is the day of quantity production, of the assembly line. Just as the labor saving machine is designed to expedite production, so must industrial architecture assist to the same end.

Industrial planning, however, is not merely the housing of machines. There must be, first, the general plan which provides for straight-line production, for efficiency and particularly for ease of expansion when and if required. There must be prompt decisions as to the type of building best suited for the purpose; whether single or multi-story, the form of construction most adaptable to the work to be done; method of daylighting and artificial lighting; heating, ventilating, air conditioning; where heat or power plants, warehouses, or other appurtenances are to be located so as to avoid interference with future growth; sewage disposal, coal storage, railroad sidings, truck wells; where raw materials are to enter the plant and where finished items are to leave; where piping, wiring, generators, air conditioning equipment, locker rooms, toilet rooms, offices, and other facilities are to be located, and so on, ad infinitum.

Within a week's time, or even less, structural steel drawings for plants costing millions must be ready for placing contracts. For the preparation of general working plans and specifications, a few added weeks must suffice. The tempo is breath-taking. To make it possible requires considerable standardization, the result of interdepartmental and interfactory cooperation and advice. It requires many months to develop a new machine and additional months to perfect its operation. This in spite of careful models first built. In industrial architecture, however, there is no time for making scale models, then change and to improve the design. Such practice would quickly mean the finish of the industrial architect. He must be right the first time. He must be able to interpret the client's wants—vague as they often are—then to coordinate the work of the many assistants, specialists, contractors and sub-contractors. Thousands of shop drawings must be checked; innumerable orders must be issued in the field. Thus the general layout men, the structural, heating, lighting, ventilating, sanitary, power wiring, sprinkler and other engineers, and finally those concerned with the exterior treatment and appearance—all must work at top speed and must check one another lest there be interference one with another. Any detail such as locating a pipe where it will interfere with the swing of a door, for example, is an unpardonable sin.

Probably the most difficult feature of the practice of industrial architecture, and certainly one of the most important, is that of business management. This is necessary not only in the speedy and punctual preparation of plans and in managing the hundreds of employees—many of them experts in their respective fields—on the firm's payroll, but also, and to an even greater extent, in directing the work of construction. With millions to be expended, careful judgment must be exercised. The first problem is likely to be the kind of contract to let; whether straight contract, cost plus, or other basis. Then the capacity and responsibility of each contractor must be considered before making the awards. Contracts must be prepared and they must cover all exigencies. After that comes the coordination of the work, its direction and supervision, the checking and auditing of bills, issuing certificates of payment, expediting different features of the work to meet rearranged schedules, anticipating difficulties, and meeting emergencies that are bound to arise. This requires business ability and a large staff of assistants. Above all, the architect must have the confidence of both owner and contractor, for he is often called upon to serve as arbiter.

Industrial architecture, therefore, means far more than designing and planning. It is to be classed as "big business." In fact, the writer has for years contended that it is about ninety per cent business and ten per cent art or science.

The difficulties multiply as the tempo of the defense program increases. Whereas materials and labor were plentiful and contractors were eager for work when we built that Glenn Martin structure in 1939, now materials are being rationed, labor has become scarce, contractors are rushed, manufacturers are unable to guarantee deliveries, workers are lured from one job to another, and strikes have become all too frequent.

Nevertheless, the results being achieved are remarkable. Ours is but one organization engaged in building defense plants, mainly for the aviation industry. It is but a small portion of the work being done throughout the country by many organizations, tool making, precision instruments, chemical, ordnance, steel, aluminum and magnesium industries, the housing and shipbuilding programs. The impossible is being done, wherefor criticism of the progress made can come only from either uninformed or misinformed.

Mention of just some of our jobs will give the reader an idea of what is being accomplished. In September, 1940, the Chrysler Corporation was awarded a contract for building one thousand 28-ton tanks. A new plant was necessary and the structure decided upon was one of 690,000 square feet. Work was begun on the foundation on September 11, 1940, in what was then a corn field. Much bad weather had to be contended with, yet the main structure, heating plant, administration building, personnel
building, and garage were ready for occupancy on April 30, 1941. Today, tanks are rolling out of this plant at the rate of five per day, which presently will be increased to fifteen.

The go-ahead for three Curtiss-Wright airplane factories was given by the Government on September 23, 1940; each to be a plant of about 1,200,000 square feet in floor area, together with heating plant, garage, administration building, flight hangars, and some minor buildings. Although the requirements for each were much alike, the different sites and their relation to existing flying fields necessitated different working plans for each.

Work in the field started at Buffalo, November 19, 1940, and this plant entered production June 15, 1941. It is already employing 8,700 persons which number will soon be increased to 12,000. At the recent dedication exercises, this achievement was warmly praised by the Chief of the OPM, Assistant Secretary of War, and attending officers of the Army and Navy.

The St. Louis project was contracted for on December 9, 1940. Part of the site was occupied at the time by buildings that could not be abandoned at once, hence the new plant had to be constructed in sections. The first section has been in operation since June 29. The balance is under construction but has been impeded by a shortage of labor there.

Contract for the Columbus plant was let several months after the others, but it will likely be occupied before this article appears in print.

Another huge plant erected in record time was that for Wright Aeronautical Corporation at Lockland, near Cincinnati. This plant, which is producing airplane engines, covers 1,500,000 square feet. A heating plant, administration building, and 137,700 square feet of test cells are part of the project. A magnesium-smelting foundry, 160,000 square feet in area, occupies one corner of the site. Because of climatic conditions, the main plant is air conditioned throughout. Contracts for this plant were let December 13, 1940. It was dedicated on June 12, 1941, but it had been producing parts for two months or longer at that time.

Numerous additions and extensions to plants of United Aircraft Corporation at Hartford, Conn., and Wright Aeronautical Corporation at Paterson, N. J., have been made. A complete new structure of 470,000 square feet was erected for Wright in 57 working days — another record performance. That was in 1940, though, when both steel and labor were more plentiful than now.

At Baltimore, the Glenn L. Martin Co. has continued to expand. Since 1939 it has added another section of 340,000 square feet and has enlarged the unique assembly building from 450x300 to 700x300 feet, with not a post in it. This building is forty-three feet high under the trusses and has a floor area large enough for four standard football fields. Martin has also built a new plant of 1,170,000 square feet and has enlarged the unique assembly building for U. S. Navy planes, and another of 800,000 square feet for U. S. Navy planes both at Baltimore.

Still another for Army planes is under construction at Omaha. Other buildings for this company at Baltimore, either finished or nearing completion, include new flight hangars, an administration building for the new flying field, and a personnel building. The three-story and basement engineering building has been more than doubled in size. Most of this work has been done since the first of the year in spite of difficulties in obtaining labor and materials.

Another record accomplishment is the Hudson Naval gun group now nearing completion at Detroit. This differs from the others in that it comprises a number of separate buildings instead of one single main structure. The site covers some 138 acres and the buildings total to approximately 1,030,000 square feet of floor area.

Still another that is approaching completion is the Buick airplane engine plant at Melrose Park, near Chicago. This comprises a main building of 1,320,000 square feet, test cells of 170,000 square feet, an administration building and some minor structures. The general contract was placed on March 17th. It is expected to be in operation in September, a little over five months after breaking ground. When one considers that even a modest residence requires not less than five months to construct, one has a better idea of what is being accomplished for the Nation's defense in spite of difficulties.

Big as the projects cited are, an even larger one is just getting well under way. This is the bomber plant for the Ford Motor Co., near Ypsilanti, Michigan, about twenty miles from Detroit. The main building alone will cover some eighty acres—all under one roof. It is primarily of one-story construction, but in many parts this is divided into three for housing engineering offices, locker rooms and lunch rooms. It will furnish employment for an estimated 40,000 men. A heating plant, administration building, flight hangars, and one of the largest flying fields in the country are a part of the project. The main building is to be of the so-called "windowless" type, artificially lighted, air conditioned, and temperature controlled.

This new form of building has been adopted in a number of instances. With fluorescent lighting recently developed, and with air conditioning now quite reliable, certain advantages are rightfully claimed for the windowless building. It affords simpler and speedier construction and it provides a uniformity of light and temperature scarcely obtainable in the daylighted plant. While manufacturing is carried on twenty-four hours per day, the cost of operation should be no higher. It will be higher, though, when we return to the normal eight-hour day. For this reason, manufacturers who are building their own plants, and expecting to meet keen competition sooner or later, are adhering largely to the older type. Then, too, many question the psychological effect upon workers entirely shut off from daylight. This can be determined only by experience. The Government, however, favors the windowless building because of possible blackouts. The importance of this, however, would seem to be over-stressed. Even on moonless nights, plants are easily located by dropping flares or incendiary bombs. And for that matter, blacking out a daylighted structure is a simple and easy task.

It is but natural that the present opportunities for building anew from scratch produce new ideas in plan and structure. One contributed by the writer's firm is that of placing locker, lunch and toilet rooms in excavated basements from off wide passageways by which workers enter and leave the plant. Numerous stairways lead to the factory floor above. This arrangement avoids much objectionable traffic in the working aisles, affords lounging space for different shifts, and places these fixed utilities where they will never interfere with future expansion. Such rooms formerly were often on elevated or suspended platforms which interfered with production.

Emphasis has been placed upon the need for speed and little has been said regarding external appearance. Elimination of non-essentials and of all else save the purely utilitarian is imperative. In the very observance of these requirements, however, lies an element which itself makes for attractive external effect. Just as the mere clothing of the modern airplane by designers with an eye for line and a sense of fitness produces an object of beauty, so the direct and frank expression of the functional, the structural element of the industrial building automatically makes for impressive results. External beauty as such is never achieved by application of useless decoration, but rather by good planning, grouping, massing and proportion. It needs add to the structure itself, not be an added feature which interferes. Design is an important element in design, which is fully recognized by the skilled architect. It makes for grandeur and dignity in these mammoth structures.

Incidentally, it is not only private firms who are doing expeditious work in this emergency. Many are the Governmental Departments doing equally well. Among these, the Bureau of Yards and Docks under the able leadership of the dynamic Rear Admiral Ben Moreell and his efficient assistants have been given the opportunity to observe the remarkable efficiency of this Bureau. The so-called schematics, or preliminary studies, for all projects including general layouts for developing dif-
The Defense Projects of Albert Kahn
Associated Architects & Engineers, Inc.

Airplane Engine Plant—Buick Motor Division, General Motors Corporation, Melrose Park (Chicago), Illinois.

Airplane Engine Plant—Chevrolet Motor Division, General Motors Corporation, Tonawanda, New York.

Airplane Engine Plant—Wright Aeronautical Corporation, Paterson, N. J.

Airplane Engine Plant—Wright Aeronautical Corporation, Lockland (Cincinnati), Ohio.


Aircraft Engine Parts Plant—Thomson Products, Inc., Cleveland, Ohio.

Airplane Plant—Curtiss-Wright Corporation, Buffalo, N.Y.

Airplane Plant—Curtiss-Wright Corporation, Columbus, Ohio.

Airplane Plant—Curtiss-Wright Corporation, St. Louis, Mo.

Airplane Plant—Fairchild Aircraft Division, Fairchild Airplane & Engine Corporation, Hagerstown, Maryland.

Airplane Plant, Buildings and Additions—Glenn L. Martin Company, Baltimore, Md.

Airplane Plant—Ranger Aircraft Division, Fairchild Airplane & Engine Corporation, Farmingdale, Long Island, N.Y.

Airplane Plant—Republic Aviation Corporation, Farmingdale, Long Island, N. Y.

Airplane Plant—Taylorcraft Aviation Corporation, Alliance, Ohio.


Bomber Plant—Glenn L. Martin Company, Omaha, Nebr.

Airplane Propeller Plant—Curtiss-Wright Corporation, Caldwell, N. J.

Airplane Propeller Plant—Curtiss-Wright Corporation, Beaver (Pittsburgh), Pa.

Airplane Plant Additions—Hamilton Standard Propeller Division, United Aircraft Corporation, East Hartford, Conn.

Airplane Plant Additions—Pratt & Whitney Aircraft Division, United Aircraft Corporation, East Hartford, Conn.

Airplane Plant Additions—Vought Sikorsky Aircraft Division, United Aircraft Corporation, Stratford, Conn.

Gun Parts Plant—Chrysler Division, Chrysler Corporation, Detroit, Michigan.

Gun Parts Plant—DeSoto Division, Chrysler Corporation, Detroit, Michigan.


Aluminum Forge Plant—Dodge Division, Chrysler Corporation, Detroit, Michigan.

Naval Ordnance Plant—Hudson Motor Car Company, Detroit, Mich.

Ordinance Plant—Pontiac Motor Division, General Motors Corporation, Pontiac, Michigan.

Foundry—American Steel Foundries, East Chicago, Ill.

Chemical Plant—B. F. Goodrich Company, Louisville, Ky.

Tool-making Plant—City Machine & Tool Company, Toledo, Ohio.

Manufacturing Building—New Departure Division, General Motors Corporation, Bristol, Conn.

Machine Shop—Pratt & Whitney Division, Niles-Bement-Pond, West Hartford, Conn.

Plant Additions—Robins Dry Dock & Repair Company, Erie Basin, Brooklyn, N. Y.

Magnesium Foundry—Wright Aeronautical Corporation, Fairlawn, N. J.

Air Base—United States Navy, Kaneohe, Oahu, Hawaii.

Air Base—United States Navy, Kodiak, Alaska.

Air Base—United States Navy, Midway Island.

Air Base—United States Navy, Quonset Point, R. I.

Air Base—United States Navy, San Juan, Puerto Rico.

Air Base—United States Navy, Sitka, Alaska.

Portions of Air Base—United States Navy, Siquanum, Mass.

Portions of Air Base—United States Navy, Chatham, Mass.

Portions of Air Base—United States Navy, Banana River, Florida.

Portions of Air Base—United States Navy, Key West, Fla.

Portions of Air Base—United States Navy, Floyd Bennett Field, New York City.

Portions of Air Base—United States Navy, Jacksonville, Florida.

Portions of Air Base—United States Navy, Pearl Harbor, Honolulu, Hawaii.

Portions of Air Base—United States Navy, Guantanamo, Cuba.

Hangar and Flight Control Building; Addition to Machine Shop—United States Army, Patterson Field, Dayton, Ohio.

Hangar; Warehouse—United States Army, Duncan Field, San Antonio, Texas.
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DETOITERS KEY TO DEFENSE SPEED

By ADRIAN FULLER
(In The Detroit Free Press)

Right here in Detroit there is one story of America's all-out defense effort that is little known but to the select inner circle of heads of great industry.

The story concerns the motivating force of how great defense plants and naval bases, costing millions, and covering up to 3,700,000 square feet, can be built in record breaking time; how these huge arsenals of democracy came into the blue print stage in time enough to guide construction gangs in their work.

In many cases, including the Chrysler Tank Arsenal, Ford Motor Co's Willow Run plant, Curtiss-Wright's mammoth aircraft plants at Buffalo, Cincinnati, and Columbus naval bases, and scores of others, the locale of the story was in the huge sprawling home offices of the Albert Kahn Associated Engineers and Architects, Inc., the New Center Building on Second Boulevard in Detroit.

Here hundreds of draftsmen, working in every available space in the great building, turn out complete specifications and blue prints for building costing from $1,000,000 to $50,000,000 in record breaking time.

And some of these structures have been completed in less time, almost, than is often required for the completion of an eight-room residence.

When America's vast defense program was launched, the great factories necessary had first to be designed. It was inevitable that Albert Kahn and his organization should be called in, for long ago Kahn had become recognized as the "architect of the automobile industry."

It was Kahn who conceived and executed the new industrial architecture. For 35 years he had been architect for the Packard Motor Car Co., had served the Ford Motor Co. in the same capacity for 30 years, and had designed more than 127 buildings for the General Motors Corp.

Kahn's achievements in creating vast industrial plants for Soviet Russia brought him world wide fame. From these same buildings, scores of them costing millions of dollars, have come the vast supplies of munitions Stalin has used in his valiant stand against Germany.

Utilizing this vast reservoir of experience, Albert Kahn has met the challenge of defense in the same way that his long time associates in the automobile industry have done. Kahn expanded his organization overnight to include 500 people, and, and with the energy and organizational ability characteristic of this seventy-two-year-old veteran, delivered structural steel drawings for plants costing millions of dollars in less than a week after they were ordered.

Albert Kahn—the man who came to America when he was a boy, who deserted the study of piano for the drawing board and rose to world wide fame for his contribution to industrial architecture—has, like other men of achievement, turned his efforts to all out defense.

Kahn was born in Rhaunen in Westphalia, Germany, March 21, 1869. His father guided him toward a musician's career. But in spite of the fact "he got so he could play the piano fairly well," Kahn left school at 11 years of age and came to America with his mother, aunt and five smaller brothers to join his father who had preceded them. And Detroit has been Kahn's home practically ever since.

He learned his profession as a junior employee in architects' offices. A scholarship in architectural design enabled him to spend two years in Europe studying, and, as Kahn puts it, "my education was furthered by association with men of high attainments." Today Kahn still does, as he says, "most of the preliminary lay-out work" on the vast architectural and engineering projects that his organization executes.

How effective his contribution to defense has been when speed and more speed has been needed, can be better understood by following the growth of one of the many mammoth structures. We'll illustrate by taking the great Wright Aeronautical Corp. Engine plant near Cincinnati, rather than the greatest of them all—the Ford Willow Run Bomber Plant near Ypsilanti, for the latter is still unfinished.

Wright engineers started work on the Cincinnati plant lay-out even before it was known just where the fifty-acre plant would be located. Then, in rapid sequence, land near Cincinnati was purchased and Albert Kahn was called in. Structural steel plans were prepared with great rapidity and the architectural specifications were developed simultaneously.

Steel bids were taken, and contracts let while excavation plans were completed. Contracts for the architectural trades were awarded while steel work was being fabricated. Foundations were ready by the time the steel was delivered for erection. Ground was broken Oct. 23, 1940. Steel erection began Jan. 3, 1941 and installation of machinery was started Feb. 15.

All major construction work was completed in June, when the first engines rolled off the line two months ahead of schedule. It was just 142 days after ground breaking, that manufacturing operations were under way.

The amazing thing about these defense structures that are springing up under the guiding hand of the Kahn organization, is that despite the speed many new features are included. In the Curtiss-Wright plant at Cincinnati for instance, there is an unusually large basement space of 225,000 square feet.

The basement accommodates corridors through which employees pass to and from their jobs. Stairways take them to their positions at convenient intervals. This saves time and promotes efficiency. Originally they were not intended as bomb shelters, yet, because of their concrete construction, they would serve that purpose if the need should arise.

In many different parts of the country, the same rate of speed, the same efficiency, and the same results, are being duplicated by Kahn's organization.

But, what of the future? What purpose will be found for these great buildings which have been erected for abnormal defense needs? Not alone is this question asked by the man in the street. It is occupying the thoughts of those in high places as well.

Only close inspection of these plants gives any sort of clue. Into these buildings have gone facilities that make them readily convertible for peace-time production. But, there remains the question as to how they can possibly be utilized when even before the war there occurred periods when many of our great industries fell into slack periods?

For the answer to this and other questions the writer turned to the man who had designed many of the great structures—Albert Kahn.

The architect was deliberate in his replies. It was evident that he, too, perhaps more than any other person, has pondered this problem of the future.

"Undoubtedly our country will not again be caught in a condition of unpreparedness," Kahn said. "Therefore, the defense plants being erected today will continue in use—not, perhaps, 24 hours a day, but, say, eight hours a day, to replenish and repair armaments and other equipment for the standing army of reasonable size which I believe we will maintain. In my opinion, there is no doubt that America will be called upon for many years to come to supply the urgent needs of all other countries."

"Being fully prepared and equipped, American manufacturers will be in splendid position to handle this vast volume of business that must be supplied from some source. To meet competition, to measure up to advanced manu-
facturing standards, to turn out new products that will be
developed, it may even be necessary to rebuild (old) exist­
ing plants, as well. This may be over-optimism, but I am
fairly convinced that it is not.

"Of course, there will be a period of re-adjustment. But,
with so many products unavailable just now, there must
come a tremendous rush to supply needed automobiles, com­
mercial airplanes, mechanical refrigerators, radios, talking
machines, and all sorts of apparatus.
"I feel that the period of readjustment will be shorter than
many persons realize."

In the meantime out in the New Center building the blue
prints are being completed for more and more of these de­
fense structures that are mushrooming from coast to coast.
And when the history of America's great effort is finally
written it will not be complete without reference to the
great contribution made by Albert Kahn and his associates.
INDUSTRIAL PLANTS FOR DEFENSE

By ALBERT KAIN, F.A.I.A.

A talk before the Aircraft Club of Detroit, November 28, 1941

It is questionable whether the enormity of the building program for National defense is generally appreciated. I believe that if the actual facts were better known, much of what is said about the Government’s bossing down would be averted. For, in reality, the impossible is being accomplished in spite of many obstacles, unfortunate labor situations, difficulty in obtaining building materials, priority regulations, lack of adequate competent labor, and what not. A short recital of the work done by just one firm—which happens to be ours—within the past year, will give some idea of what is being achieved. It is but a fraction of the entire program of plant enlargement and new plant construction contemplated and under way. Never in the history of man has so staggering a program been undertaken at one time, nor has there ever been as much accomplished in one short year.

It was but natural that several of this city’s architectural and engineering firms, ours among them, be called upon to assist in this emergency, for Detroit’s industrialists have taught us much and have set a standard of manufacture, quantity production, also for buildings best suited thereto. The Government was glad to profit by it. For manufacturing buildings that has been developed here a certain type which has been quite generally accepted as the best solution. It is the one-story structure of incombustible materials, with enormous uninterrupted floor spaces under one roof, with a minimum number of columns. Many of these buildings are top lighted; some of them are of the "blackout," windowless type, artificially lighted and mechanically ventilated, while certain ones are for engineering and administrative purposes, two or more stories high. All are simple, straightforward common sense buildings, purely utilitarian, orderly in arrangement and planned with a view to the future and probable expansion, something little thought of in earlier plants which, like Topsy, "just grew."

All important in carrying on this emergency work has been the need for speed and more speed. There is no time for awaiting inspiration. Even before definite commitments are made by the Government, the respective manufacturers have spent night and day on process layouts and the architects and engineers have been called in to prepare tentative schemes for properly housing their equipment. With contracts definitely placed, not a moment can be lost. The type of building best suited has been decided on; so has the floor space required. Often, within less than a week’s time, the structural steel drawings must be developed sufficiently to obtain competitive prices ready for placing contracts. Supplying the steel frame, obtaining the necessary material, much of which must come from the mills, and fabricating it is the bottle neck. We used to have five and six weeks’ deliveries. Today twelve weeks’ delivery is considered remarkable, and eighteen weeks is more than the usual. Time for awaiting inspiration. Even before definite contracts are placed, not a moment can be lost. The type of building best suited has been decided on; so has the floor space required.

The method of daylighting as well as artificial lighting is all-important. Because of possible need for blackout later, the windowless plant has been decided upon in numerous instances. No less a man than Mr. Kettering had to face the flying field. In the same way, we were asked to duplicate at Omaha an Army airplane plant built for the Glenn L. Martin Company in Baltimore. Natural conditions, however, were so utterly different as to require entirely new drawings. We, of course, observe standardization as much as possible, but rarely can a scheme or plant be duplicated in its entirety or without major differences. Even in such comparatively minor details as location or types of locker rooms and toilet rooms, there is a wide variation among operating men. Some prefer such in lean-tos, others in balconies or on raised platforms; still others insist on distributing them throughout the plant or placing them right on the main floor.

What have we done in this regard lately, with outstanding results, is the providing of an excavated basement with a wide general walkway, through which employees enter and leave the plant. From this passageway, we open locker rooms, cafeterias, lunch rooms, and toilet rooms. Stairways at numerous points lead to the working floor above.

Many advantages are gained by this arrangement. First of all, those utilities are where they never interfere with future expansion—indeed they are automatically expanded as the plant grows. What is equally important, much travel of employees is avoided on the main floor, since the respective departments are reached direct from below. This is just one detail. There are innumerable others naturally.

The column spacing is an important one. We used to build plants with columns twenty feet apart—at least in one direction. Now we aim to have them not less than forty feet apart. By careful study and design, we have been able to do this at little, if any additional cost. Ever column loses not less than four square feet of floor space—counting the useless area immediately surrounding—and every added column interferes just that much with the economical placing of machine tools and also obstructs the flow of materials. Furthermore, the additional floor space gained is considerable.

The method of daylighting as well as artificial lighting is all-important. Because of possible need for blackout later, the windowless plant has been decided upon in numerous instances. No less a man than Mr. Kettering has been its prime promoter, and though the Simonds Saw Company built such a plant some years ago, the first of the modern structures of this kind was the Allison plant in Indianapolis.

DECEMBER 30, 1941

MICHIGAN SOCIETY OF ARCHITECTS
There are unquestionably some advantages in these windowless plants. They are quicker and perhaps simpler to construct; both heat and humidity may be more uniform and more easily controlled. However, they require at all times artificial lighting, mechanical ventilation and air-cooling. Today with work carried on twenty-four hours per day, the cost of artificial lighting may become prohibitive. But with the return to the return to the normal eight-hour day, this may prove a handicap, especially in meeting competition. The cost of necessary air-changing and cooling may actually prove prohibitive. Our own office is open-minded on the point. Most of our clients, however, and especially those expecting to operate their new plants after the emergency, have preferred the day-lighted plant with provision for blackout when needed. This, incidentally, is easily taken care of.

An all-important decision necessary in designing the new plants is whether they be in the main under one roof or in segregated buildings. Naturally, such special structures as forge shops, foundries and the like need buildings by themselves—but Mr. Ford has taught us that as much as possible under one roof is the solution. Years ago, Mr. Ford insisted that open courts were detriments, catch-alls. He believed that large areas under one roof, with a minimum number of walls and in the main but one story high, made for easier supervision, more economical operation.

That his opinion was right is amply proven by the fact that most manufacturing plants today are one-story structures with occasionally a second floor for certain departments. Many-storied manufacturing buildings, except in special instances and for special purposes—and then only where building areas are limited—are things of the past. For warehouse purposes and the like, they prove economical, but rarely for manufacturing.

Mr. Ford, incidentally, has introduced many an innovation in building as well as in production, and the history of industrial building, when it is some day written, will record much to his credit. It has been to his good fortune to work for him, since his first building was put up in Highland Park, on the former race track. He has permitted us many an experiment, much to our profit. And what is more, he has always encouraged the use of successful results by others.

This particular trait, however, is not exclusively Mr. Ford's. Too much praise cannot be given our Detroit manufacturers for so freely exchanging ideas and for their willingness to let others profit by their experience. It is not so long since that it was almost impossible to obtain permission to visit a competitor's plant. Manufacturers today may have secret processes, but there certainly exists no secrecy as far as building is concerned. It is indeed a happy situation for which no group deserves greater credit than our own Detroit manufacturers. The same splendid condition obtains in the National Defense work. Certainly no finer cooperation could exist than among the respective manufacturers who are turning over patents and designs and giving every assistance to one another. If only the same spirit existed in the labor field!

Time will not permit dwelling upon the many details that must be dealt with in the planning of the new defense plants. The heating, the ventilating, the lighting, air-conditioning, process piping, sprinkler system, water supply, sewage system, crane ways, railroad sidings, tunnels, pipe trenches, roads, parking, offices, requirements, warehousing and engineering facilities, oil storage, test trucks, etc., etc.—all must be simultaneously developed so as to avoid interference one with another in execution. With all, the most rigid economy is demanded, for extravagance of any kind is frowned upon, and rightly so.

These new plants are to serve just one purpose; namely, to produce in the shortest possible time and at reasonable cost the material needed to put Hitler and his gang where they belong. And it has told you, our manufacturers are certainly doing their part in a manner which leaves no doubt in anyone's mind as to their intent.

In the building of new defense plants, there has been a minimum of Governmental interference. In most instances, the respective operators have been permitted to build as they believed best for their purpose, which has made possible employment of the latest practice and experience in industrial building.

Most of the plants in our charge have been of the one-story type—as far as possible all under one roof—with only heating plants, foundries, oil storage facilities, garages, personnel and employment buildings and the like, segregated. Our only plant of numerous separate buildings is the new Hudson Gun Plant where the Navy preferred this arrangement.

The buildings constructed for the present emergency differ from those of the first Great War in that the current ones are of permanent construction, as against the temporary structures built in 1917 and 1918. Most of the latter have been torn down since. But this great waste is happily not to occur again.

It is obviously the intent of the Government to continue operation of many of the new plants—if not twenty-four hours of the day, at least enough to replenish material and keep equipment in proper order. This would seem the answer to questions often asked about what is to happen after the duration. Many fear surplus manufacturing capacities. Personally, I have no such misgivings, believing that what is not needed by the Government will be readily absorbed by private industry, which will make excellent use of the modern facilities of plant now that they have been built ever so long ago. Indeed, the use of these modern plants will, I believe, stimulate erection of many additional ones, to meet future competition.

In the planning of the new defense plants, the principles of sensible industrial building have generally applied: namely, an orderly straightforward arrangement, uniform as far as possible, designed for straight-line quantity production, with the raw material entering at one point and the finished product leaving at the other without recrossing of steps.

The all-important point of planning for possible future expansion has been observed and to good advantage, for even now with plants barely completed, extensions are being built. With all necessary provisions for expansion made at the outset, enlargement becomes a simple matter, whereas, with lack of foresight, it is bound to prove difficult. You will see in the plants of which I shall presently show a number of slides, how buildings, such as heating plants, warehouses and the like are placed by themselves, so as not to interfere with future expansion. In the properly planned scheme, each unit can be expanded without the need of much tearing down or disrupting of operations. Thus, we provide for expansion, not only horizontally for one-story structures, but also vertically for the multi-storied buildings, such as administration, engineering and heating structures and the like.

The next problem, after completion of plans and specifications, is the obtaining of bids and placing of contracts. As probably you know, some of the new plants are being constructed by private industry under some sort of amortization plan. Most of the new plants, however, are being erected with Government funds. Meeting the required formalities in preparing estimates and the necessary proper work is in itself considerable of a task for the engineers. However, it is much such as the credit of the Governmental authorities that is being so rapidly and so remarkably free from unnecessary red tape. Although difficulties may obtain in Washington, where, of course, the task is gigantic, once the work is released, all operate with unusual smoothness and competence.

Some Governmental departments, realizing the difficulty in estimating today's labor or even material costs, have placed contracts upon the basis of a fixed fee plus actual cost. This makes for speed, for there is no matter of overtime so necessary to accomplish the quickest results is thus automatically taken care of.

More often, though, contracts are let on a straight competitive basis and this frequently brings its difficulties. Irrespective of time schedules called for—which many times are made invalid by changes ordered during construction—the low bidders employed frequently save themselves as
much as possible the extra cost of overtime, with the result that completion is delayed.

At that, we have been fortunate in most cases in having had conscientious and capable contractors who, even though the lowest bidders, have delivered on time. Detroit may indeed be proud of its contractors. They compare favorably with the best in the country. Naturally, with the extreme speed with which defense projects must be completed and with the difficulties encountered in obtaining necessary materials, there must be considerable give-and-take between builders and engineers.

Substitutions are often required, and the best of faith and confidence between both are imperative for the satisfactory result.

The records made not only here in Detroit but in many other places are indeed such as to deserve loudest praise. The Chrysler tank plant was, for instance, started last year in November. It was complete, ready for occupancy, in April, five months in spite of the snow, ice and frost of the winter. The Hudson Gun Plant was started in March and completed in October—in less than seven months' time. I shall presently show you views of the new Buick plant at Melrose Park near Chicago, for which contracts were let on March 5th; work was started on March 17th, and the building occupied early in September, six months later.

These facts indicate the tempo at which we are proceeding and should be a source of satisfaction to the entire country. Except in a few isolated cases contractors have shown remarkable enthusiasm, a wonderful spirit of cooperation and the greatest anxiety to get things done. Their spirit has been most inspiring and gratifying.

It would be less than fair in this address not to mention the remarkable work done by our own group of co-workers. We have had some 475 men and women busy on defense work for over a year. Hours have meant nothing to them, Sundays and holidays have never interfered with meeting promised schedules. Everyone has felt the importance of his job with the gratifying result that we have been able to turn out an incredible amount of work. I am sure that the views I shall show you which, in the main, are the work of just the past year, will give proof of this.

Our particular work for defense has dealt mainly with the aviation and tank industries, which today are well on the way to meet the President's program. Many of our new plants have been for the manufacture of parts required for the airplane—such as engines, propellers, valves, precision instruments. We are at work at the moment on a very large cast steel plant which will produce armor plate for tanks. In addition, we have been busy with synthetic rubber plants, chemical plants and others.

Although each project has been thrilling because of the need of speed and more speed, none has been more thrilling than that for the new Ford Bomber Plant near Ypsilanti. Starting right from scratch, with no experience in the particular type of plane to be constructed and planning for a never-dreamed-of quantity production, the Ford Motor Company has kept us busy these last months as we have never been before. With the process barely developed, the plans for building are turned out overnight and steel fabrication is begun. The plant will house some 90 acres—and perhaps the largest plant under one roof. Its length will be approximately two-thirds of a mile and its width some 800 feet.

One of the largest air fields for testing purposes, nearly completed, adjoins the plant. Approximately 70,000 men are to be employed in this plant. There are in it innumerable innovations, which time will not permit mentioning.

Perhaps our most thrilling experience has been the work we have been called upon to do for the U. S. Navy bases in the Pacific and Atlantic. A special Act of Congress, the very remarkable head of the Bureau of Yards and Docks, Rear Admiral Ben Morell, was empowered in the emergency to proceed with building these bases; and, without competitive bidding, to select contractors as well as architects for the work. We are very proud at having been chosen, quite out of a clear sky, to supply architectural and engineering services for the projects at Midway Island, Kanehoe in Hawaii, Sitka and Kodiak in Alaska, a base in Porto Rico, part of one at Jacksonville and another at Quonset Point, Rhode Island. It meant the turning out of some 1900 sheets of working drawings in less than seven months' time—or at the rate of nine sheet every day.

Within a year's time from the day we started, most of these bases were completed and occupied. They involved the erection of administration buildings, hospital barracks, recreation buildings, officers, quarters, hangars, work shops and warehouses. Considering the fact that materials and labor had to be shipped to these outlying posts, the impossible was really accomplished.

Only the fine cooperation and the rare efficiency of this remarkable Bureau made the results possible. I take my hat off to the Bureau of Yards and Docks! Believe it or not—no red tape, no bureaucracy, no time-worn instructions or regulations interfered.

From the very outset, our instructions were—"We want the benefit of your experience, we want to use your methods and, though we reserve the right to pass on all, we have faith in your organization and want to profit thereby." No experience of ours has ever proven more gratifying. With such men at the helm as Admiral Morell, we are bound to accomplish things.

In showing you some lantern slides of the work we have been privileged to do, please remember that ours is but one of many firms throughout the country that are doing their part for the well-being of the country. Everyone we work for has been most inspiring and gratifying to learn of the marvelous way in which the terrific enemy has been met and defeated; but we cannot forget those who have never to know, the public is not kept fully apprised of what is being done. I dare say that otherwise there would be less fear of the Government's bogging down and less criticism of the progress being made. I hope that some of you who chanced to hear Kaltenborn last Sunday afternoon telling about his visit to industrial plants on the Coast. It was certainly inspiring and gratifying to learn of the marvelous work of airplane manufacturers and shipbuilders and all the wonderful performances of industrialists in general.

It has been a tremendous task for Government officials to meet the endless problems that have sprung up overnight. We still hear criticism of delays in Washington. No doubt there are such, but what has been and is being accomplished is, when all is said and done, little less than miraculous.

For us, the most remarkable is the manner in which our manufacturers have taken hold in an all-out effort to meet the country's needs. It makes one tired to hear an Adles, a Reuther or a Murray tell how much more might have been accomplished had they been called in on the program, had their suggestions been followed. We have had the opportunity to observe what men of the highest calibre and experience and ability in their respective fields have been doing—how they have devoted day and night to meeting their enormous tasks—how they have circumvented all sorts of obstacles, giving the best in them—and how even today they are producing on a scale pronounced impossible only ten months ago.

It has been a privilege to work with them and to have had a share in the undertakings. The experience has been one never to be forgotten, one never afforded before in our history and one that will never offer again.

At all events, Mr. Hitler and his gang have much cause for worry. It is only a question of time before they will have proof that barbarism, persecution, ruthlessness, raiding, killing and shameless lying have no place on this earth; that our way of life makes for all that is worth while in the world; that presently it will destroy them and their monstrous methods.

Believe It or Not. Bob Ripley's cartoon shows, "The largest building in the World, Wright Aeronautical Plant in Cincinnati: 16 big league baseball games and a college football game could be played simultaneously before 17 separate crowds of 30,000 persons each, without confusion. Assembly building alone contains 1,640,000 square feet." — A. K., architect.
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