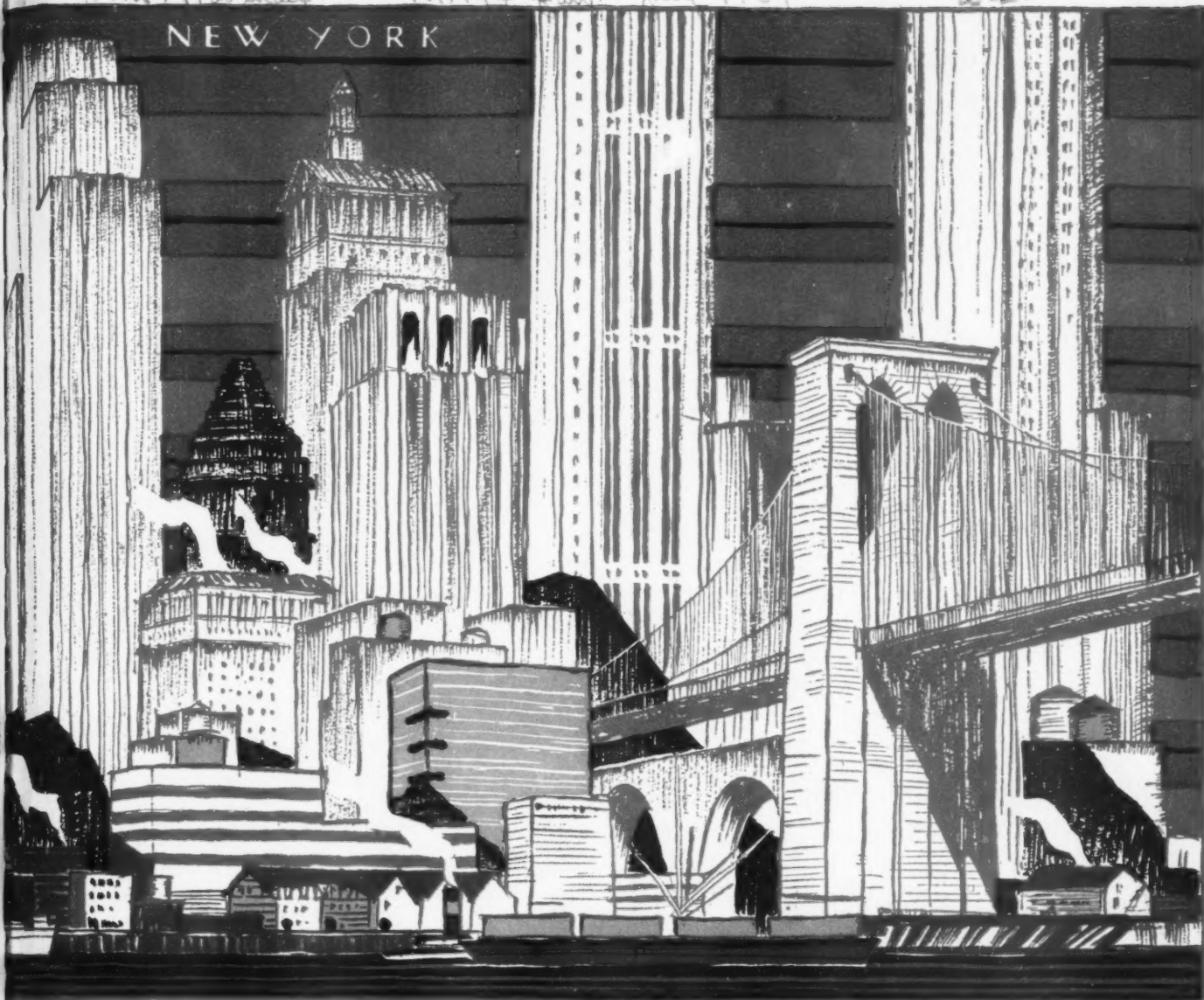


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AMERICAN ARCHITECT

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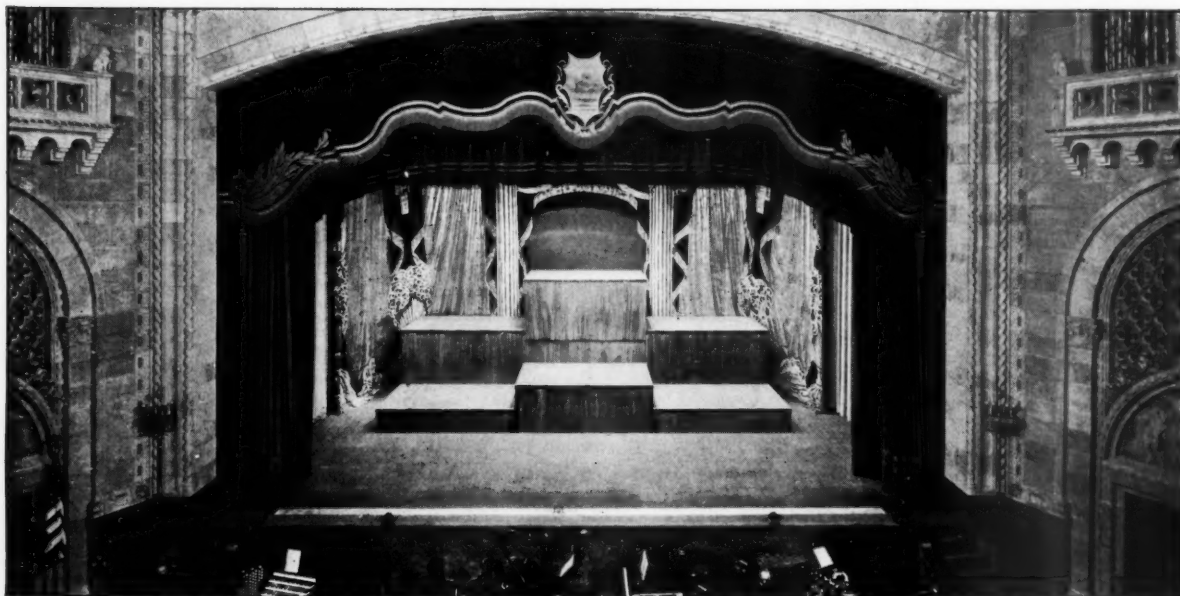
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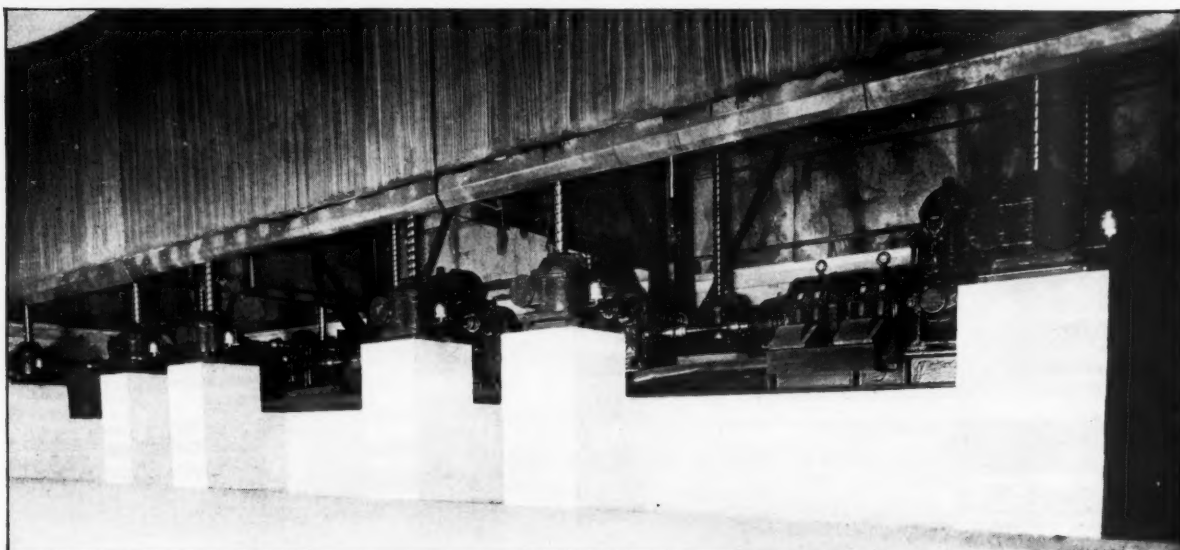
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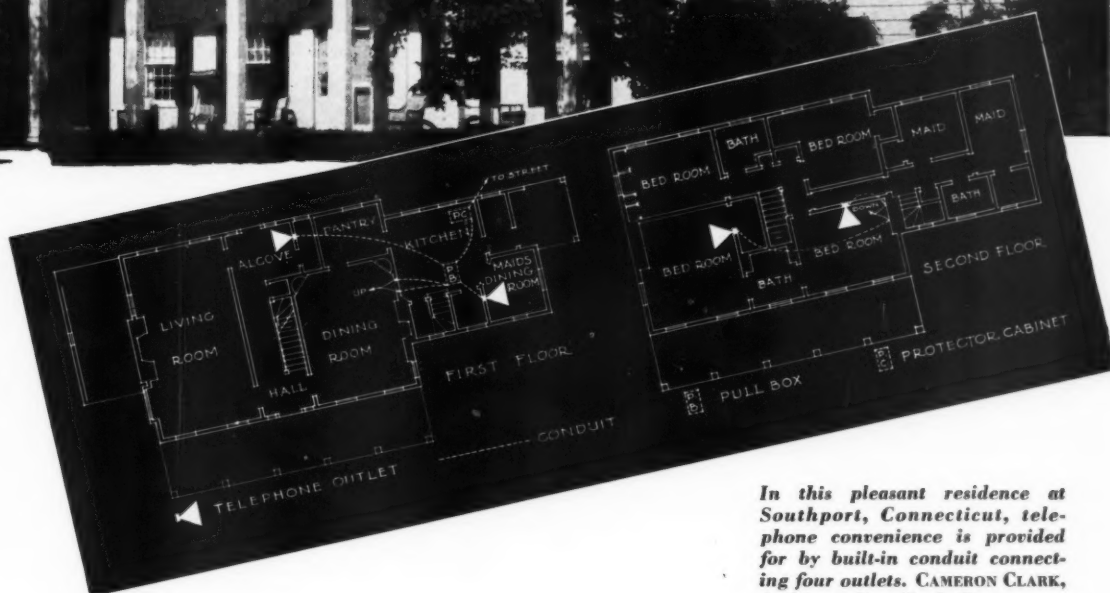
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OTIS ELEVATOR COMPANY

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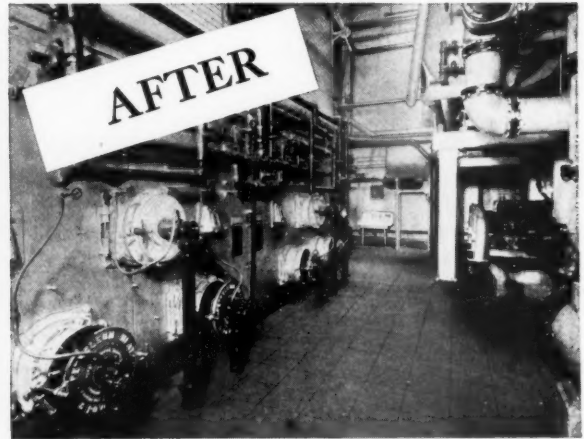
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When Cascade used bituminous coal



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What Mr. Max Troy, Cascade's Chief Engineer, is most enthusiastic about is the huge savings in steam costs.

Petro Burners pay for themselves in 2 years

When this laundry burned coal, 6.03% of gross income went to pay for power plant operation.

Then, in February of '28, Mr. Troy installed Petro Industrial Burners in their two 375 H. P. Boilers.

As a direct result, power plant costs, including fuel and maintenance, dropped to 2.94% . . . a saving of 51¼%.



Mr. Max Troy, Chief Engineer, Cascade Laundry, Brooklyn, N. Y.

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* * *

There is a sequel to this story...read it on the opposite page.

AMERICAN ARCHITECT

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Mr. Max Troy's home, Brooklyn, N. Y., in which he installed a Model R, vertical rotary type, domestic Petro-&-Nokol oil burner

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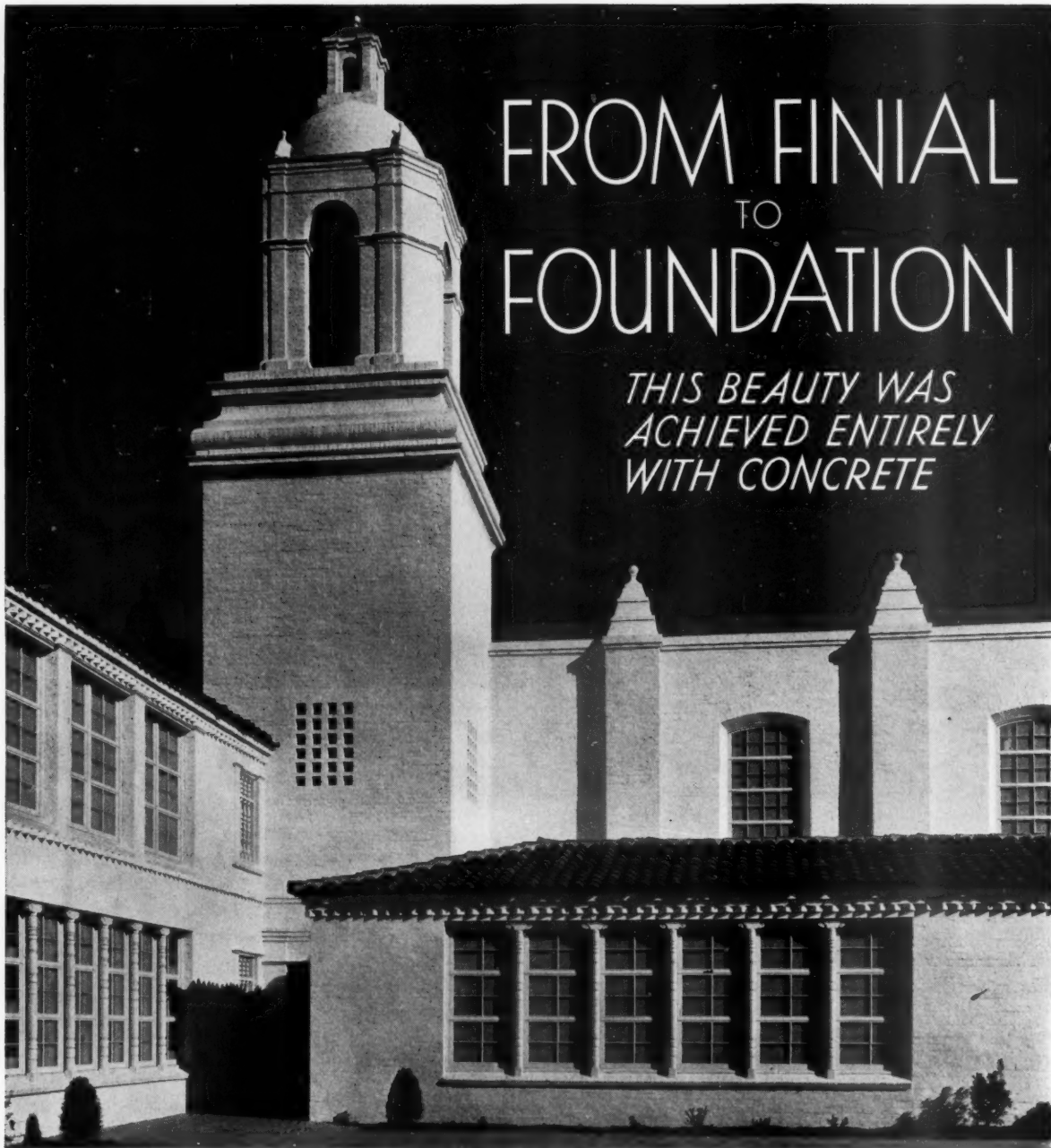
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Address



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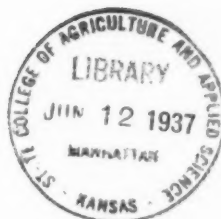
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AMERICAN ARCHITECT

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VOLUME CXLIV

NUMBER 2621



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AMERICAN ARCHITECT, Published bi-monthly by International Publications, Inc., 57th Street at Eighth Avenue, New York. Other offices, 919 N. Michigan Avenue, Chicago, Ill.; General Motors Bldg., Detroit, Mich.; 755 Boylston Street, Boston, Mass. William Randolph Hearst, President; Richard E. Berlin, Vice President; John Randolph Hearst, Vice President; Arthur S. Moore, Secretary; Austin W. Clark, Treasurer. Copyright, 1934, by International Publications, Inc. Single copies, 50 cents. Subscription: United States and Possessions, \$1.50 per year; \$3 for two years; \$4.50 for three years; Canada, 50c extra; foreign countries, \$1.00 extra. Entered as second-class matter, April 5, 1926, at the Post Office at New York, N. Y., under the act of March 3, 1879. American Architect is protected by copyright and nothing that appears in it may be reproduced either wholly or in part without permission.

FOR JANUARY 1934

7



This Profession Needs Aid Too

BY BENJAMIN F. BETTS, A.I.A.

NO group has been more affected by the depression than the architectural profession. Government relief measures have been directed wisely toward workers in the low income groups. But the Administration should not lose sight of the fact that a large group of technical workers in the building industry also need aid. Such aid can be extended without extra cost if the Government will do two things immediately.

1. STIMULATE PRIVATE BUILDING CONSTRUCTION

The importance of the building industry to our economic welfare is of sufficient moment to warrant the organization of a Building Construction Division of the NRA. This Division, composed of experts of the various units of the building industry, could guide a safe building program and help to remove the obstacles which retard building recovery.

Stimulation of this industry, essential to general business prosperity, would automatically assure a large amount of work for architects, engineers, draftsmen and other technicians.

2. EMPLOY ARCHITECTS ON ALL FEDERAL AND NON-FEDERAL BUILDING PROJECTS

Federal and non-Federal building projects financed by the Public Works fund should be made the means of aiding the profession by making the utilization of its services mandatory. Federal, State and Municipal architectural bureaus should cease competing with private business. These bureaus should be permitted to act only in an advisory capacity as representatives of the people who provide the money with which these buildings are erected.

These two steps are in accord with the reemployment policy of the Administration.

They would not only afford relief to a distressed profession, but also hasten the reemployment of some six million people directly and indirectly dependent upon the building industry for their livelihood. They would permit construction work to proceed simultaneously and without delay in every state in the Union. They would permit private industry to accomplish quickly what the Federal Administration is endeavoring to do through its Public Works program.



WANTED—A New System of

BY HARLOW LEWIS

THE Construction Industry presents probably the largest and the most important problem which confronts the American people today. It is also undoubtedly the most difficult of solution, partly by reason of popular ignorance regarding the mechanism of construction operations and finance: partly by reason of certain special conditions peculiar to the industry itself which, over a long period of years, have contributed to its gradual demoralization and—under stress of the post-war speculative orgy—to its complete disruption and final breakdown. These special conditions set Construction apart from all other industries. They are the governing factors in any scheme of recovery that is to be devised for the Industry; and their remedy carries us far beyond the more general terms of the main industrial recovery problem.

The importance of the Industry to the nation at large under normal conditions is easily shown. It runs a very close second to agriculture in the national balance sheet. It employs more men than any other industry with the exception of textiles. Its activities are ordinarily accepted as a fair barometer of industrial conditions generally. Each individual in the country's population, therefore, has a direct interest in the solution of the problem it presents, but to the Architect, Engineer and Building Contractor—to the Builder, in other words, if by Builder is understood the technical personnel of the industry—a correct solution of the problem is of vital necessity, since upon it depends his daily living.

It would be well, therefore, if the technicians of the Industry bestirred themselves to see that the correct solution is reached before things have gone too far. Laymen have been distressingly vocal on the subject for some time past. A harassed Administration in Washington—whose good intentions few question—is meeting with an increasing barrage of criticism directed at its alphabetic off-spring about whose function in the scheme of things no one, not even the Administration, seems to be quite clear. Insurance executives, Savings Bank executives, Real Estate Boards, Chambers of Commerce—all have been heard from, clamorous and contradictory. With a delightful Alice-in-Wonderland-March-Hare-Mad-Hatter air of unreality about them they emerge from solemn conferences and announce with an air of finality that “the important thing is to restore promptly on private account the construction and other capital goods industries.”

Obviously! But, unfortunately, this is not a problem in pure mathematics which, when properly stated,

carries with it its own solution. So there is cold comfort for us in such a pronouncement. It is an excellent plan, no doubt, and very neatly and simply arranged. The only difficulty is that we have not the slightest idea how to set about it. Furthermore, to Builders, there is nothing startlingly original in the suggestion. We have been living with the same idea, day and night, for years. And so we are not much impressed when the Chamber of Commerce labors and brings forth this solution of our difficulties. The March Hare did better. He at least got into action and put butter in the work—the best butter. Of course, butter didn't suit the works; and the Hatter's watch ran no better for it. But in any event, he had a concrete suggestion.

Out of the welter of words that are being spilled in such profusion, two ideas are beginning to emerge to which we can, perhaps, cling with safety. They are general in their nature,—almost, but not quite, as general as the suggestion that we “restore the construction industry”—but they undoubtedly contain the healing germ which can effect the cure of our malady. They do constitute the major objectives in any recovery program for our sick industry. They are: first, “the restoration of confidence in the building investor” and second, “the putting men back to work on building operations.”

BUT laymen, ignorant of the basic difference between the building depression and that of industry in general, are jumping to unwarranted conclusions on the strength of these twin slogans. Their idea seems to be that once confidence is re-established, the nation's savings will again be available to aid potential owners to finance their operations; construction will be resumed; men will find jobs to go back to; and the upward swing will get under way. It is as simple as that! And already indications are that the poor long-suffering building investor is to be made the target of well-intentioned propaganda calculated to induce in him a proper degree of receptivity for the blandishments of the bond salesmen, the mortgage companies and others, in order to start the ball rolling.

The restoration of confidence in the investor and the putting men back to work in industry generally would, of course, solve our depression problem. But they are the cure itself—not panaceas which can effect the cure. There is nothing particularly constructive in the suggestion that these are the objects to be sought, since it is simply another way of saying rather more specifically that a depression exists.

Construction Finance

REVIVAL OF BUILDING DEPENDS UPON ADEQUATE FINANCING

The old financial system—to which was largely due the collapse of the Building Industry—must be replaced by new financing methods that will:

1. Guarantee the closest possible approach to entire security of building investments
2. Make every type of building security easily negotiable in a free and open market
3. Operate as an integral unit of the Building Industry and not as an outside power

Concentration on the investor in an effort to re-inspire him with confidence in the safety of his future investments may be sound economic doctrine and good public policy in the case of all other industries—in the steel business, the textile business, the automobile business—but it can not be justified in the case of the building business. It is precisely at this point that the Architect, the Engineer and the Building Contractor must take control of the situation and lay out a working plan for the attainment of these two major objectives in their own industry, with whose history, structure and functioning they alone are intimately familiar and whose needs they alone can specify. It is essentially a technical problem in which the layman has no place. We have a special case which requires radically different treatment from other industries under consideration.

Steel, oil, automobiles, textiles are all at a low ebb of production by reason of world-wide economic conditions which have temporarily decreased demand for the products of these industries. This is not the essential fact with respect to the paralysis of the Building Industry. It too has suffered, and is suffering, from the effects of the world-wide depression. But the Building Industry is unique in this respect: that over a long period of years prior to the Stock Market collapse of 1929, it has been subjected to a cumulative process of demoralization due to an antiquated and irrational system of construction finance. This system, adequate enough to the simple requirements of the period at which it was adopted, has proved to be utterly unworkable under modern conditions and totally unfitted to function as an adjunct to modern building methods.

Think back sixty years or thereabouts to the days when building construction involved nothing but the simplest possible combinations of brick and stone and timber work. It is a far cry from such simple

conditions to the complicated mechanical problems involved in ordinary construction operations today. The technical branch of the Industry, keeping pace with modern industrial and scientific development, has learned how to solve its part of the problem with amazing efficiency. The financial branch of the industry, whose function it was to insure a steady, safe and regular circulation of capital between investor and producer, can show no similar progress—indeed, can show practically no progress at all.

AS their great-grandfathers worked, so are they working today. Their simple rules were formulated for early Nineteenth Century problems. They retired behind a Chinese Wall of complacency to let the modern world sweep by them, incurious as to the changes that were taking place in the technique of the industry and unaware of the tremendous importance of these changes in their effect on real values. It is somewhat as though Franklin, on completion of his first experiment with lightning, had organized a General Electric Company to handle all problems of electric transmission which might arise in the future on the basis of a key and a kite.

This failure of the Industry's financial department to keep pace with technical progress gave rise to abuses which led gradually, and at first almost imperceptibly, to serious demoralization of the construction branch. Standards of performance, established through the slow process of trial and error, could no longer be maintained. Uniformity of cost, the result of long years of experimentation with materials and methods, began to disappear. Momentary and accidental variations in current prices more and more obscured the fundamental question of real values. Quality output gave place slowly before encroachments of financially-supported speculators with their ruinous competition. A system of construction finance operating on no rational theory of

values, with no mechanism of control, no check on individual vagaries, left the door wide open for final exploitation. The results of these operations are unfortunately too familiar to all of us. The American public, whose savings make building operations possible, could not withstand this final assault. With the breakdown of the obsolete financial conduits which ensued, the wreck was complete and the machine refused longer to function.

HERE are the essential facts in the problem of the Construction Industry. Here is the fundamental difference which sets this problem apart from all others. Nothing has happened to steel, or to textiles, or to automobiles except a cessation of demand. The machinery needed to supply this demand is waiting, ready to function. Restore the demand for these products, apply a little lubrication in the shape of returning confidence and the machines can quickly be set in orderly and efficient operation, with reasonably intelligent control at the throttle.

This can not be done with the construction machine. No amount of lubrication will repair its broken parts and set the wheels to turning. Even four billion dollars' worth of the best butter, pumped under Federal auspices into its grease cups and bearings, will prove ineffective, for the problem is one of reconditioning broken parts and redesigning members to suit our modern requirements.

Demand already exists for the resumption of private building. But the machine refuses to move. Steam can not be brought to the engine. The average American, he whose savings furnish the motive power for the Building Industry, wants no more of the bitter dose he has been getting these last few years. The old hit-or-miss, irrational and uncontrolled system of finance is definitely out, so far as he is concerned. And until he is satisfied that a new one has been devised which can assure him the safety he is entitled to, his savings will continue to go into his sock and stay there. He doesn't know much about details. But he has seen the results of the old regime; and he has lost for all time such confidence as he once had in the wisdom, efficiency any integrity of the financial system to which he has been entrusting his savings for investment.

IT is unfortunate that the final collapse of the Construction Industry coincided with the world's business depression. Otherwise the issue could be more clearly drawn. As it is, there persists in the charitably inclined mind of the average American a question as to whether, after all, this world-wide depression may not be wholly responsible for his own private catastrophe. Such a supposition has no basis in fact. The wrecking of the Building Industry followed logically on the operations of an uncontrolled system of construction finance and would have occurred with or without a depression affecting the rest of the world. Nor will the Industry experience any real recovery with the rest of the

world until underlying causes of its collapse can be removed.

But the contrary assertion is being made in presumably responsible quarters. The contrary belief is finding encouragement in high places. The reason for this is easy to find. The depression has become a most convenient catch-all for all complaints as to the past conduct of our affairs. It is being used as the universal answer to any suggestion that the system might conceivably be bettered. Financiers whose sins of omission and commission will not bear too close a scrutiny are finding in it a convenient alibi for their previous activities.

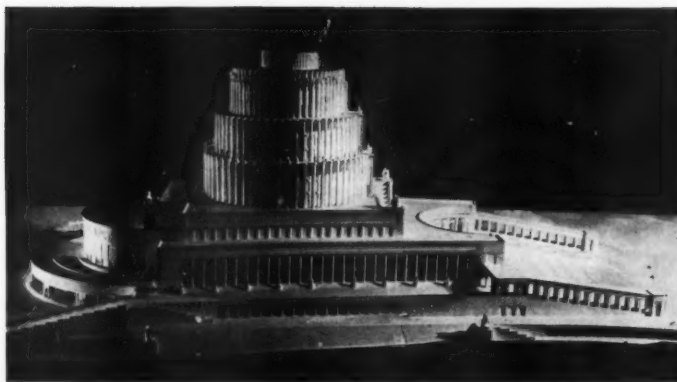
We should not let them get away with it, even though we cannot blame them as individuals. It is the system with its lack of organized control or any intelligent plan of operation that is responsible for the breakdown of the Construction Industry.

BUILDERS can draw a more definite and specific indictment of this system and its workings than the average American is capable of doing. They have been familiar with its crudities all their professional lives. They know how it has hampered their own technical operations and dulled the tools of their trade. They know, among other things that it has:

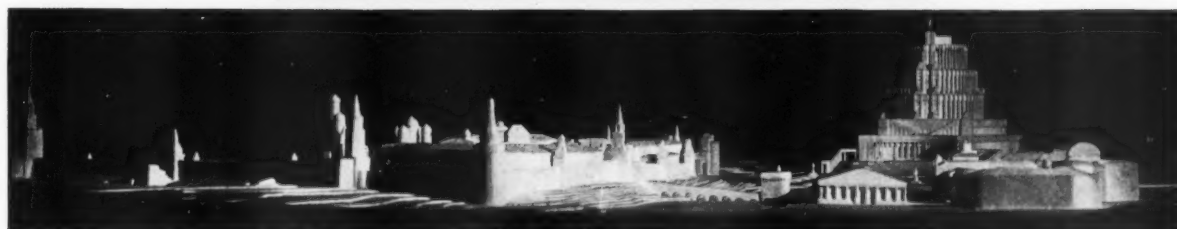
1. Placed a premium on poor building construction at the expense of competent workmanship;
2. Encouraged the concentration of building operations in the hands of incompetent and unscrupulous speculators whose ruinous competition has driven honest, competent and technically-trained builders into other fields;
3. Fostered graft and corruption in public office and to a large extent nullified protective provisions of existing building codes;
4. Filled our cities with illegal and unsafe housing;
5. Created and fostered an erroneous and dangerous theory of real building values;
6. Failed, even on the basis of this erroneous theory, to establish any rational formula for determining such values as it recognized;
7. Passed on to the investing public—that is, to the average American—all of the risk embodied in its fallacious theories, and that the average American has finally paid the price of the system's incompetence to the tune of billions of dollars and the total destruction of his faith in what ought to be the soundest of all possible forms of investment.

It has other faults, too, but these will do to point the argument that something more is needed to insure the correct solution of the construction problem than such general measures as may be adopted for other industries.

The grotesquely incapable performances of construction finance have long been familiar to builders. Laymen are beginning to make some acquaintance with them, but do not always appreciate their full significance. Here, however, is an illuminating illustration of the system (Continued on page 102)



SOVFOTO



The Palace of the Soviets in Moscow, Boris M. Iofan, architect; and below, its relation to the Kremlin

The Architect in Soviet Russia

BY ISADORE ROSENFELD

Assistant Professor of Architecture, New York University

TWELVE years ago in Rome I met a young Russian architect named Iofan who had been expatriated by the Czarist regime. Though his drawings revealed unusual ability, the man himself was a pathetic figure, unknown and starved for lack of architectural opportunity. Recently in Moscow, our paths crossed again and I found that he had become one of the most widely acclaimed architects of our time.

By every measurement—except that of money—Boris M. Iofan is an extremely successful man. But he is more than that. He is a symbol of the new Russia of the Soviets; and his work stands as an example of what Russia has accomplished architecturally since the Revolution of 1917 and the hopes that her architects have for her future.

Iofan's success and his unique position are indicative of the contrasts that exist between architectural practice in the United States and in the Soviet Union. Neither Iofan, nor any other architect in Russia, expects—or hopes—ever to get rich. Success in architecture, as in every other Russian activity, is judged not by pecuniary return, but by the

results of an individual's social usefulness in return for a decent living and public approbation.

Private business as we know it here in America does not exist in the Soviet Union. Architectural opportunity goes apace with the expanding industrialization and national development of the country. The awareness of every individual architect in Russia of the social significance of his work might characterize the difference between Soviet and American practice.

In general, building procedure corresponds to our own American system, but the eternal struggle between architect, engineer and contractor is noticeably lacking. In Russia there exists no advantage for an individual to be anything other than he is in the building industry, for the economic cause of such competition has been removed by abolition of the profit motive.

In order to understand the relation of the architect to the general economic activity in the country, it is important to know how work is initiated. The "Gosplan," or national economic planning agency, collects statistics and data of economic accomplish-

Right: Kropotkin Square, Moscow. Like all Russian cities, Moscow is being replanned and rebuilt under architectural direction. Typical of the thorough study given city planning problems is the school district plan of Grozny, below. City plan studies are coordinated by a central planning organization in Moscow



GALLOWAY

ment and needs from all over the country. On the basis of this information an economic program is laid down for a period of years—hence, the Five-Year Plan. Each industry—called a “trust”—each municipality, each department of Government, etc., gets its allotted program of work from the Gosplan. Large trusts, large municipalities and branches of Government have their own architectural offices. In addition, there are unattached architectural organizations that are in themselves branches of the Government, like Giprogor, the national city planning agency. Then there are architectural organizations maintained by public corporations—like the Housing Cooperative—which manages all houses in Russia and builds about one-third of the new ones. There are many other variations. The important thing to understand is that an architect in Russia is always an employee in the service of the public.

There is practically no private building in Russia and hence no private architecture. The only exceptions occur when a peasant adds a room or two to his house at the instigation of his “learned” children who demand new standards of hygiene. He may even build a new house. I have seen many such houses built in the traditional log-cabin manner with much jig-saw filigree at the gables and around the windows. The only other private building I encountered was in the form of summer cottages—not for rent, but for personal use.

It is not against the law for an individual to employ help to build, provided one builds for personal use and not for sale. But try and get a carpenter! The economic system is so adjusted that there is no advantage—or rather every disadvantage—in taking private work. What is true of the carpenter is true of the architect. He does not have to join a golf club, or a church, or marry the boss’s daughter to get a good job. All he has to do is to join in the national economic effort.

Parallel with architectural organizations there are



building organizations; the housing cooperatives already mentioned; the national housing bank which finances a great deal of the housing throughout the land; the standardization agency—in effect a research organization—which studies building materials and sets up standards of building practices.

Architectural and building activity is proceeding rapidly under this type of organized planning. And in view of the handicap of inadequate transportation, a shortage of skilled labor and essential building materials and a lack of experience in many departments, the work is being carried out in a magnificent manner. There are not enough men in the building industry to execute all the work that is



Housing of all types is a major activity of Russian architects. Though managed by a central agency, much housing is planned and built by large industrial organizations. Left: model of a large-scale project in Leningrad. Below: houses assembled from prefabricated wood units. Bottom: a student housing group at Leningrad

SOVPHOTO



largely to a lack of foreign money—"valuta"—with which to pay them rather than to the more popularly held conception that Russia has learned all she needs from them and requires their services no longer.

That the contrary is true can be proved by the important work that foreigners are now doing in Russia. One of the first offices I visited in Moscow was that of Ernest May, a German architect. In this office, a branch of Giprogor, two important industrial towns in the Ural Mountains were being planned. I examined the manner in which town plans were studied and found that the town of Grozny, for instance, was being analyzed minutely under fifteen different headings. I was tremendously impressed with the thoroughness and resourcefulness of the attack on a problem which is one of the most important which Soviet Russia faces today.

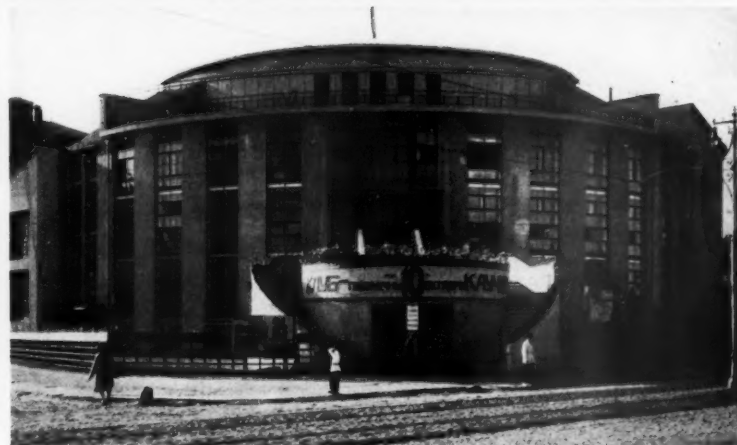
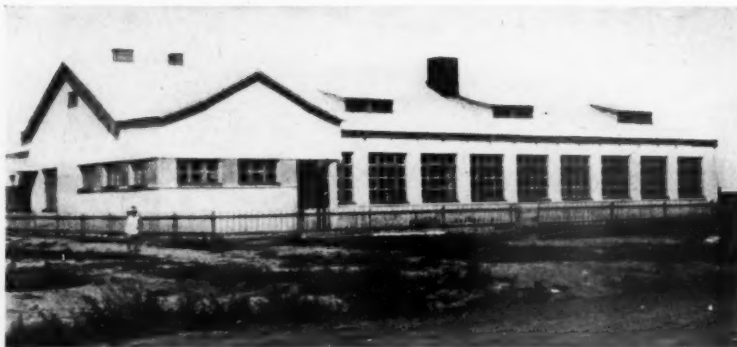
Problems of town planning constitute one of the major activities of Russian architects. Giprogor plans new towns for all of Russia except those in the Ukraine. In the latter, Giprograd, at Charkoff, plans all new towns. Also, every old city in the Soviet Union is being replanned and expanded. Even individual projects are often of such magnitude that they involve town planning in the real sense. I recently had the opportunity to examine the plans of the All-Union Institute of Experimental Medicine in Leningrad. The main group constitutes the hospital buildings, laboratories virtually by the mile, administrative buildings, gardens and pools. Adjoining this group is the housing sector for scientists, technicians and employees, which will take care of the housing, schooling, recreation, etc. of 12,000 people. Finally, there is the economic sector comprising the heating plant, garages, repair shops, warehouses, bakery, laundry, vegetable gardens, animal farm. In short, the project is not a hospital in our sense, but a city by itself. There is a comprehensiveness about the attack on town planning

being planned by the Soviet in all parts of Russia.

Many of the architectural offices which I visited in Russia were as large and as busy as many that existed in America's boom days of 1920-29. The problem of a surplus of architectural talent is non-existent. Indeed, the Russian program of expansion cannot be met—architecturally at least—for many years to come. The need for men trained in the technicalities of planning and building processes is as great today as it was at the beginning of Russia's Five-Year Plan, for the more they build, the more awakened they become to the possibilities of better living. It is true that today fewer foreign architects are employed on Russian projects. But that is due

Russia's huge school building program includes rural communities as well as cities. Right, top: one of the many new elementary schools; and below it a large agricultural school. Both are in the rural city of Verblude. Right, center: Russians delight in circuses. This building at Saratov houses the largest one in the Soviet Union. Planned and built entirely by Russians, it has seating accommodations for 3,000 and a modern system of heating and ventilation. Right, bottom: A new club for street railway workers in Moscow. Left, below: a striking contrast between old and new Russia. In the foreground is a typical old wood dwelling and behind it a portion of a modern apartment house, the First House of the Soviets in Moscow. On the facing page is the recently completed Government Building at Minsk in White Russia

(Photographs: Galloway, Sovfoto)





SOVPHOTO

problems which indicates the entire freedom with which an architect in Russia can develop his problem.

So far as the actual execution of the architect's work is concerned, it is made somewhat more simple than the same sort of activity would be in America. Of the three main individuals involved in a building project, the architect, engineer and constructor, the first two function in much the same way as they do in this country. The third, however, is an individual foreign to our experience. He is an engineer by training and a builder by profession. His work combines some of the functions of the architect's superintendent with those of the builder's superintendent. It is not essential, therefore, that an architect give continuous supervision to his jobs. At Dneprostroy I met the housing architect, Orloff, and had an opportunity to view this relation at first hand. It is productive of a very satisfactory type of cooperation between architect and constructor. It was interesting to see that the relation was much the same as that between architect and general contractor on first class work in this country. This was evident in the work of all building that I was able to see in Russia.

The actual organization of architectural offices does not differ greatly from that in America. Some offices are under direction of Germans. Most are entirely controlled by Russians. In all of them both men and women are employed on an equal economic basis. The majority of offices seem to be run on a system which might easily have been patterned after that of any large architectural office in America.

There is one major difference, however. The

internal policies of each office—or planning trust—are controlled by a committee of three. This includes the architect who is technical director and the head of the office, a representative of the draftsmen and a member of the Communist party. This last individual is—or can be—the most powerful of the three, for he has a veto power which can override any decision which the other two may make. Actually, however, this power is seldom exercised now, because architects and draftsmen have been politically educated so that they judge problems from a social and not an individualistic point of view. The political member exists only to help a decision on matters of office policy as it affects the general political plans of centralized Soviet authority. On the other hand, the political arm has learned to leave technical affairs in the hands of technicians; and insofar as details of design and construction are concerned, the architect, engineer or constructor actually constitutes the final authority.

The method of work in an architectural office is comparable also to that in America. Although at one time the collective method of design and development was in vogue, today the technically trained individual is allowed a rather wide latitude of individual decision.

The attitude of the public toward architectural design would qualify that statement to a certain extent. Public opinion accounts for a great deal in Russia, aesthetically as well as politically. Although once they were prone to accept without question the early efforts of the internationalists as expressing architecturally the

(Continued on page 110)

ENTRANCE, NBC STUDIOS ROCKEFELLER CENTER, NEW YORK CITY

REINHARD & HOFMEISTER, CORBETT, HARRISON & MACMURRAY, HOOD & FOUILLOUX, ARCHITECTS

Photographs by Samuel H. Gottscho

The entrance forms an oval around the stairwell. Surfaces are smooth and plain, decorative effects being obtained by huge lighting rings above the stair and a series of photomurals on curved walls. The murals, by Margaret Bourke-White, depict mechanical devices used in radio transmission. Stairwell is sheathed in pinkish-gray marble; columns are encased with wood, jointed vertically with a rounded V-cut. Ceiling is silvered; and metalwork is brushed chromium



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The One Hope For

BY CAROL ARONOVICI

Community Planning and Housing Consultant

FOR nearly a century, housing progress has been under the leadership of social workers, real estate promoters, bankers with bad investments, Presidents of the United States and—their wives. Is it not time for architects to take the lead?

With few outstanding exceptions, architects as a professional group, voluntarily or by force of circumstances, have lent themselves to housing proposals which, in terms of housing for people who can pay only the lowest rentals, could never become realities without such revolutionary changes of our economic system as to verge on Utopia. In this architects have not been the leaders. They have merely taken orders from those eager to benefit from the emotional state of American public opinion by making a profit while posing as public benefactors.

The usual method of housing procedure has so far not given life and vitality to the housing movement. The situation of our economic system—in which the building industry plays such a fundamental part—is grave. But may it not be ripe for a new era under guidance of the architectural profession which alone knows the facts about housing and only needs courage to expose them publicly?

There are several thousand architects in this country. Let them say to our Government and the people of the United States:

"Under the present scheme of things we can never hope to build houses for the lower income families. Housing for these people is more needed today than at any time in the history of the country, but unless our Government is ready to meet the difference between what these people can pay and what a minimum of decent housing must cost, it is sheer hypocrisy to expect that architects can contrive low-rental housing worthy of the name.

"About seven months have now passed since we started to flood the Federal Housing Authority with plans for low-cost housing. We have resorted to every device in technique and every trick of language to cover our inability to meet the essential requirements of low-cost housing. We have been forced to fool the public as to the real objective of low-cost housing. Now we risk being branded as incompetents, for we are ground between mounting prices of materials and wages and speculative land values on one hand and a Government policy on the other—a policy which so far has failed to declare an official interpretation of low-cost housing and how existing needs can be met in terms of public finance.

"When the Government and public opinion are ready and willing to face facts, we shall create de-



GALLOWAY

Low-Rental Housing

cent low-rental housing for slum dwellers, blighted areas, shack towns and isolated country slums."

Such a pronouncement by architects—individually and collectively—is entirely justified, even in all the implications it contains. Two of these implications are particularly pertinent. The first is that "the housing problem" is no problem at all except where it concerns the requirements of those families able to pay less than is now required for adequate living quarters. It has been conclusively proved that housing for others can be built and operated with enough margin of profit to attract private capital. When such capital is attracted, a building problem vanishes in the light of its own solution.

The second implication springs automatically from the first. If private capital shies at the non-profit characteristics of low-rental housing, any statement that the need for such housing can be met presupposes some financial plan based upon a realistic analysis of existing social and economic conditions and capable of practical fulfillment. This, particularly, is—or should be—the immediate concern of every member of the building industry.

The task before us is no longer to extol the housing schemes of Germany or England or Switzerland. Nor is it important to imitate the architectural designs of Gropius, Mies van der Rohe, Alexander Klein, May, Mendelsohn, Oud, LeCorbusier, Nico-

laief or even Isaburo Ueno. We are not interested in financial details of European housing schemes. We are tired of hearing how much better housing is accomplished in other countries. Let us see what the American can do for Americans in an American way. We should be intelligent enough, technically skillful enough, socially and legally courageous enough and financially far-seeing enough to furnish a decent dwelling place for every American.

Although we have been at the task of promoting Federal housing schemes for many months, it seems to me that we have not even stated the problem in terms which would make a solution possible.

The Federal Government has set up standards and objectives which, in many cases, are out of harmony with available proposals and in some instances are even out of step with the actual and immediate needs of housing in this country. The Government does not want housing calling for a rental of \$10 or more per room; yet such projects have been approved by the Housing Authority. The Government does not want to utilize high cost land; yet such land is part of some schemes which are in a fair way to being carried out. The accepted theory is that the Government will not tolerate tall buildings; yet under special conditions there would seem to be no reason for rejecting tall buildings if rentals could be made low enough and the site plans de-

INTEREST	LAND F.D.C.E.	\$100 PER SQ. FT.	\$200 PER SQ. FT.	\$300 PER SQ. FT.	\$400 PER SQ. FT.	\$500 PER SQ. FT.	\$600 PER SQ. FT.	\$700 PER SQ. FT.	\$800 PER SQ. FT.	\$900 PER SQ. FT.	\$1000 PER SQ. FT.
0 %	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●
	\$15.32	\$16.79	\$18.26	\$19.72	\$21.19	\$22.66	\$24.13	\$25.60	\$27.06	\$28.53	\$30.00
1 %	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●
	\$17.12	\$18.90	\$20.68	\$22.46	\$24.24	\$26.02	\$27.80	\$29.58	\$31.36	\$33.14	\$34.92
2 %	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●
	\$18.91	\$21.00	\$23.09	\$25.19	\$27.28	\$29.37	\$31.46	\$33.55	\$35.65	\$37.74	\$39.83
3 %	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●
	\$20.71	\$23.11	\$25.52	\$27.92	\$30.33	\$32.73	\$35.13	\$37.54	\$39.94	\$42.35	\$44.75
4 %	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●
	\$22.50	\$25.22	\$27.93	\$30.65	\$33.37	\$36.09	\$38.80	\$41.52	\$44.24	\$46.95	\$49.67
5 %	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●
	\$24.30	\$27.33	\$30.36	\$33.38	\$36.41	\$39.44	\$42.47	\$45.50	\$48.52	\$51.55	\$54.58
6 %	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●
	\$26.10	\$29.44	\$32.78	\$36.12	\$39.46	\$42.80	\$46.14	\$49.48	\$52.82	\$56.16	\$59.50

Effect of land costs and interest rates upon rents. Each circle represents \$10 in monthly rental. This study is based upon a project in New York State to house 11,000 people. Buildings are five-story walk-up apartments of three and four rooms. Cost of construction, based upon indices of material and labor of October 15, 1933, includes central heating, all necessary utilities and development of outdoor play spaces. Rentals include annual amortization at 1.51 per cent of a 15 per cent equity bearing interest at 6 per cent

veloped with good, social, sanitary and service standards. Now we hear that slum clearance is to be the favored realm of Government operation. But no word has come from Federal authorities as to what a slum is, or what kind of slums should be absorbed by housing schemes. We are not told how the high land cost of such slums is to be reconciled with the requirements of low rents which slum dwellers now pay and their bearing on the rents which these same slum dwellers will have to pay if offered better housing.

This sort of vacillation and confusion is not evidence of bad faith on the part of the Government or of unwillingness on its part to meet the situation frankly, honestly and radically. But it is indisputable evidence that the problem of providing low-rental housing for those who need it as a requisite of decent living has been confused with the desire of every Administrative agency to break the back of unemployment in the building trades as one means of stimulating business activity.

In part, this confusion has been fostered by promoters who, after a four-year fast from speculative building, are trying to force the hand of the Administration by playing upon the sentimentalities of unemployment and bad housing. But it has developed chiefly from a lack of any clearly defined

objective, posed in terms of the factors that make up low-rental housing. The issue is befogged through lack of suitable definition of these factors; and before any solution of the problem can be offered, it is essential that we dispose of several misconceptions that are the result of loose analysis and unclear thinking.

SLUMS AND SLUM CLEARANCE . . . *A slum is an obsolete permanent residential district, the facilities of which are overtaxed. This is quite different from blighted areas. Blighted areas are districts the buildings of which have outlived their usefulness in relation to their primary functions and the trends of the community as a whole. Some have the character of slums in need of rehabilitation. Others are both slum areas and blighted districts, because aside from having all the characteristics of a slum they represent a use of land for which economically and socially it is no longer suited.*

On the outer fringes of many of our cities are areas generally called shack towns that are not slums in the proper sense of the term. *Shack towns are assemblies of temporary structures of no real market value that are located on land generally suited for housing. The market value of both land and buildings is sufficiently low to permit low-rental and low-*

cost housing. The cost of demolition and compensation for these shacks is almost nil; and the police powers of municipalities can always be invoked so that land clearance can easily and quickly be effected.

No one will deny the desirability of slum clearance and replacement, but the advisability of using Government funds for this is subject to question.

Objections may be briefly stated as follows:

1. Slum clearance involves in most cases—and certainly in the large cities—time-consuming land assembling, court litigation, compensation for destroyed buildings, demolition costs and generally excessive land costs.

2. Dispossessed occupants of slum areas must live somewhere. Unless new low-rental housing is developed outside the area to house them, areas adjoining the slum under reconstruction will inevitably become congested, with the attendant evils of higher rentals and lowered standards of living.

3. Owing to previous congestion and high land values, in many instances it would be impossible to re-house the same number of people unless tall buildings were constructed so as to provide the adequate site planning inherent in the requirements for modern housing even for the poor.

4. Use of a cleared slum for housing purposes may be wholly out of harmony with existing trends of the community, needs for open spaces, minimum requirements of neighborhood units, community equipment, etc.

For the present I am convinced that the possibilities for the building of low-cost housing quickly with Federal aid lies outside of the realm of slum clearance and slum reconstruction.

THE NEED FOR HOUSING . . . For nearly a century—and particularly in the last thirty years—low-cost housing, or rather low-rental housing, has meant slum or obsolescent housing. With the high cost of land and high interest rates on money it has been impossible to build houses rentable at rates consistent with the rent-paying resources of the masses of the people of the United States. Drastic legislation has resulted not in radical improvement of housing conditions but in a shift of investment from low-cost housing to luxury housing.

Beginning with the farmer's house, usually a relic of pioneer or near pioneer days, including the small town with its antiquated dwellings, shack towns and slums and ending with the congested and obsolescent tenements of the metropolitan areas, the shortage of decent accommodations in the United States has been variously estimated at from 35% to 50% or more of the home requirements of the 24,000,000 families of this country.

Disregarding the steady increase in population and in the number of families, this shortage could not be met, even though money were available, in less than ten years. The far-reaching implications of low-rental housing cannot be met by using projects merely as a means of solving the unemploy-

ment problem. Government finance, in this respect, must be looked upon as an instrument and not as a means in itself.

It is idle to talk about \$200,000,000 for housing. With a shortage of from eight to nine million dwellings costing an average of \$4,000 it would require from thirty-two to thirty-six billions of dollars to place housing ten years hence where it should have been ten years back.

RENTAL RESOURCES . . . Short of profound revolutionary changes in the economic system of the United States, wage fluctuations will not materially affect the proportional rental that the vast majority of people of the United States can pay or the amount they can invest in a home. Wages may rise, but usually a higher cost of living keeps constant the relation of rental expenditure to income.

Investigations of rentals and values of dwellings by the Harvard Planning Studies under the direction of Robert Whitten and Thomas Adams reveal some interesting facts. In the seventy-three cities studied it was found that 63% of the families occupied dwellings valued at less than \$3,600. Of this group, 26% were valued at less than \$2,400 and 10% at less than \$1,200. The rental investigations divulged the sad fact that 35% of the families paid less than \$25 per month.

These are facts significant enough to make us pause when we are confronted with housing schemes proposing ten and twelve dollar rentals per room per month. No national program for housing, well intentioned though it may be, can disregard these levels of values and rentals and lay claim to helping house the people most in need of help. Architectural tricks in constricting rooms, sweating land, depriving people of the simple essentials of sanitation and convenience will result in merely substituting new slums for old. They will not solve the housing problem. We must face this fact: *If wages are insufficient to pay rent, we must adjust rents to meet the level of wages.*

WHO SHALL PAY? . . . The present cost of land and construction are too high to make low-rental housing commercially profitable. Architects familiar with housing requirements and experienced in the social requisites of low-cost housing have found it impossible to develop economically, even at the comparatively low interest rates required by the Government, housing schemes which would rent at rates within the reach of the lower third of the people.

This is not a matter of applying new skill, using new materials, cutting down on accommodations or extending the period of amortization. *It is essentially a matter of recognizing the inescapable fact that if the lower income groups are to be housed decently, the Federal, State or Municipal Governments must meet the difference in the cost of what is socially essential in housing and what is economically possible in terms of income.*

This cannot be accomplished under the present policy of the Federal Government. Four and a half per cent interest on money with twenty-five year periods of amortization may build for the middle class, but for the lower income groups never, under present conditions of land values and building costs. It does not take much knowledge of land economics or of finance and very little information on building costs to realize that the difference between four and a half or even four per cent interest and no interest is the difference between housing progress and the continuance of present intolerable conditions.

In the slums, high land cost and the destruction of old buildings involve extra investment. Even money free of interest will not meet the need in terms of low rentals.

The conclusion is inescapable. *Nothing short of non-interest bearing, amortizable public funds will bring into being any housing for those who need it most.* If we are to begin at the bottom of the rental scale, we must recognize that the Government cannot use interest bearing bonds in the hope that low-rental housing would be both revenue-producing and self-amortizing. It may be the latter, but it will not fit into our present day economic system of interest-bearing investment.

A PROGRAM . . . Any constructive program for low-rental or low-cost housing must recognize the following essential and more or less fixed conditions:

1. Low-rental housing implies a maximum expenditure of \$25 a month per family. A large proportion should rent at even lower rates if any considerable proportion of the people now living in sub-standard conditions are to be benefited.
2. Present cost of construction and land costs make it practically impossible to build for the lower income groups on city plots without some subsidy.
3. The replacement of slums by modern housing is not practical either as an economic venture or as a social service until we have actually built some housing accommodations outside of the slums.
4. Financing charges on Government housing loans are too high to be of material assistance in reducing rentals to needs of lower income families.
5. We should clearly differentiate between low-rental housing intended for lower income groups and housing for the higher income groups which, as a Government project, is largely a means for reducing unemployment.
6. Even with sufficient money, it would be impossible to build rapidly enough to meet present needs without completely revolutionizing the building industry. Only a long time program would produce sufficient dwellings to meet a standard of social well being.

With the above postulates it is possible to outline a feasible program to accelerate house construction and to reemploy at once the building industry and its dependent activities.

The following program is suggested:

1. Let the Federal Government set aside two billions of dollars to be lent to organizations or municipalities without interest and to be amortized at a rate based on the productive life of the buildings.

2. Let this sum become a rotating fund for low-rental housing *exclusively*. Let it be available until there will be no longer be any need for this type of housing.

3. As an alternate, let the Federal Government offer subsidies of fixed sums for every square foot of low-rental housing that is built. Following English precedent, this should be an outright gift to meet the difference between the cost of housing and the rent paying ability of low-income families.

4. In areas where low-rental housing is imperatively needed and where land values make construction economically impossible, let the Government buy land for housing purposes exclusively. Let the Government lease the land to the housing corporation at a figure low enough to insure desired rentals over such periods of time as individual cases warrant.

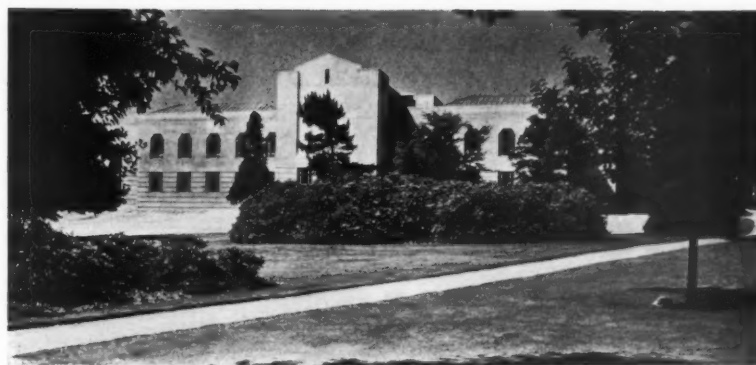
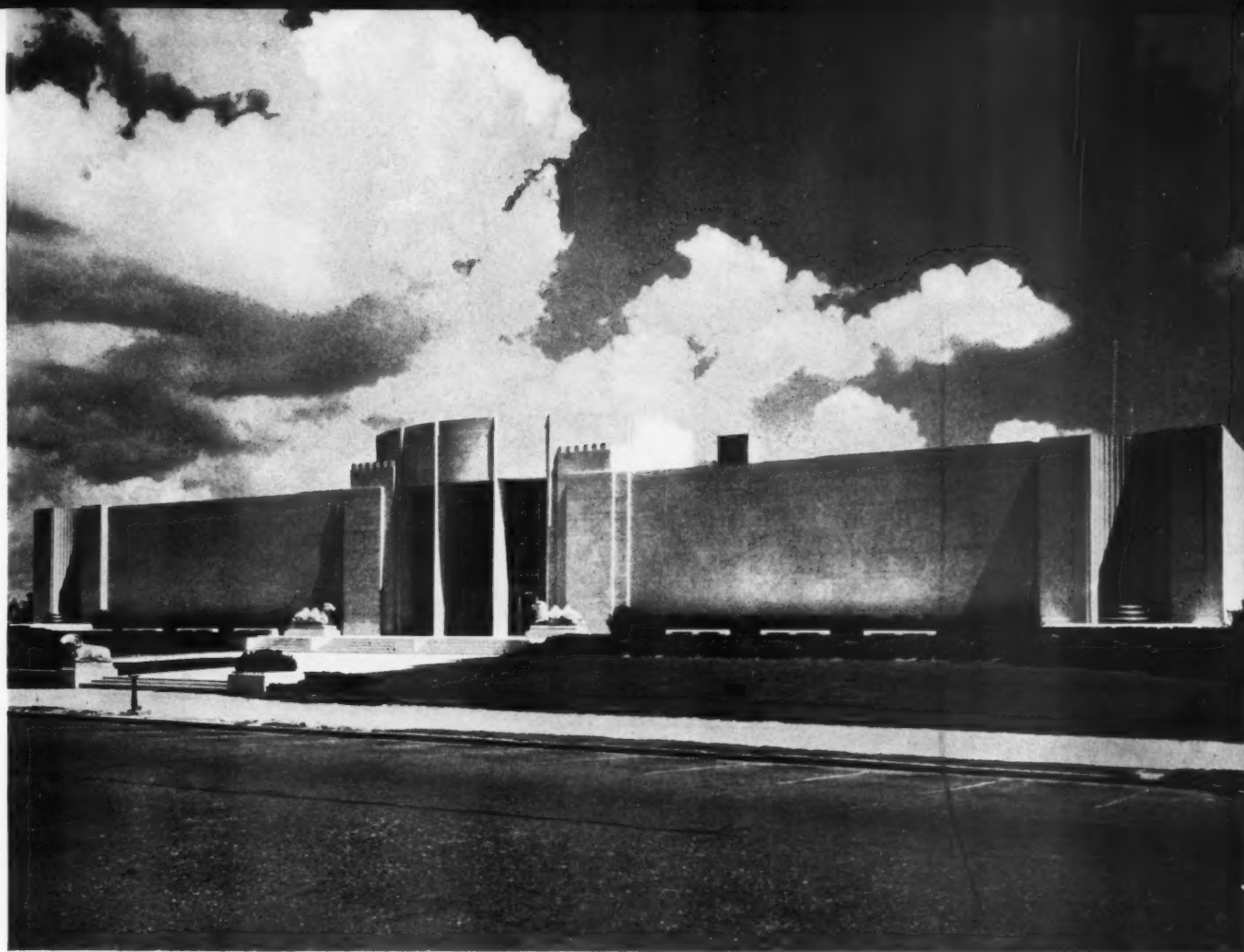
5. Let the Government specify that Federal aid be given only to those housing projects that include the characteristics of a self-integrated neighborhood or that are specifically designed for use in relation to already existing essential community equipment, such as schools and play spaces.

CONCLUSIONS . . . It seems clear that we are in need of a new and frank restatement of the objectives of housing activity in terms of public finance. This restatement can only be made if we are willing to face the issue as one of conflict. The conflict is between the accepted methods of housing finance, the present day technique of building and the efforts of the Federal Government to aid housing without antagonizing the powerful interests of real estate and slum owners and without serious interference to private capital that controls the business of furnishing dwelling places for our people.

While effort to bring about an adjustment of these conflicts has been going on, practically no housing proposal has moved beyond a faint hope of future Government financing.

The situation is a Gordian knot that must be severed if low-rental housing is to become more than merely a name for a social ideal. Architectural initiative appears to be the only Alexandrian power that can prove effective, for architects have the power of knowledge and the technical ability for necessary analysis.

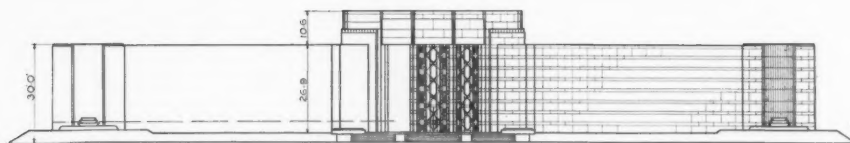
They have nothing but paper plans to lose and great values in leadership to gain. By concerted and enlightened effort they must bring before the people of the United States and the leaders in "The New Deal" the facts about housing. Facts alone can expose our present vacillating efforts as ineffectual; and facts must point the way towards a courageous, far-reaching, long-time policy which will produce real houses for the really needy.



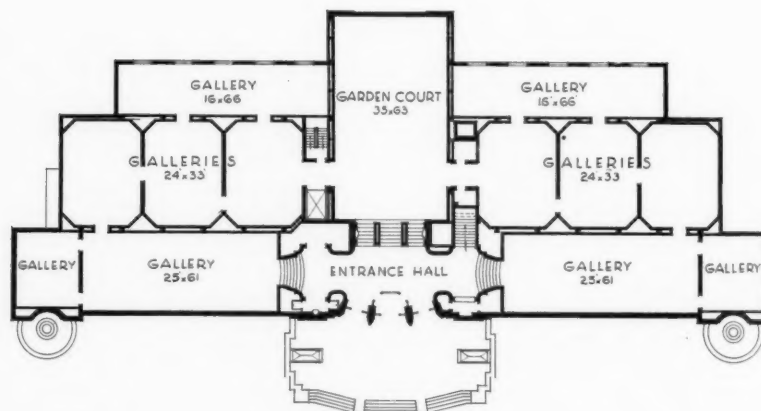
THE SEATTLE ART MUSEUM
SEATTLE, WASHINGTON

BEBB & GOULD, ARCHITECTS

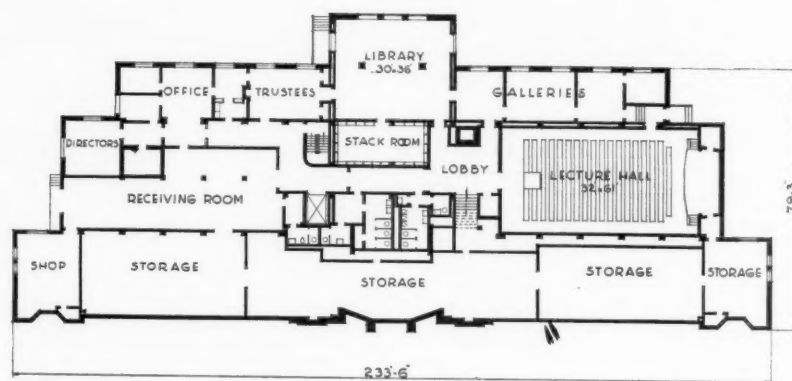
Photographs by H. C. Davidson



FRONT ELEVATION



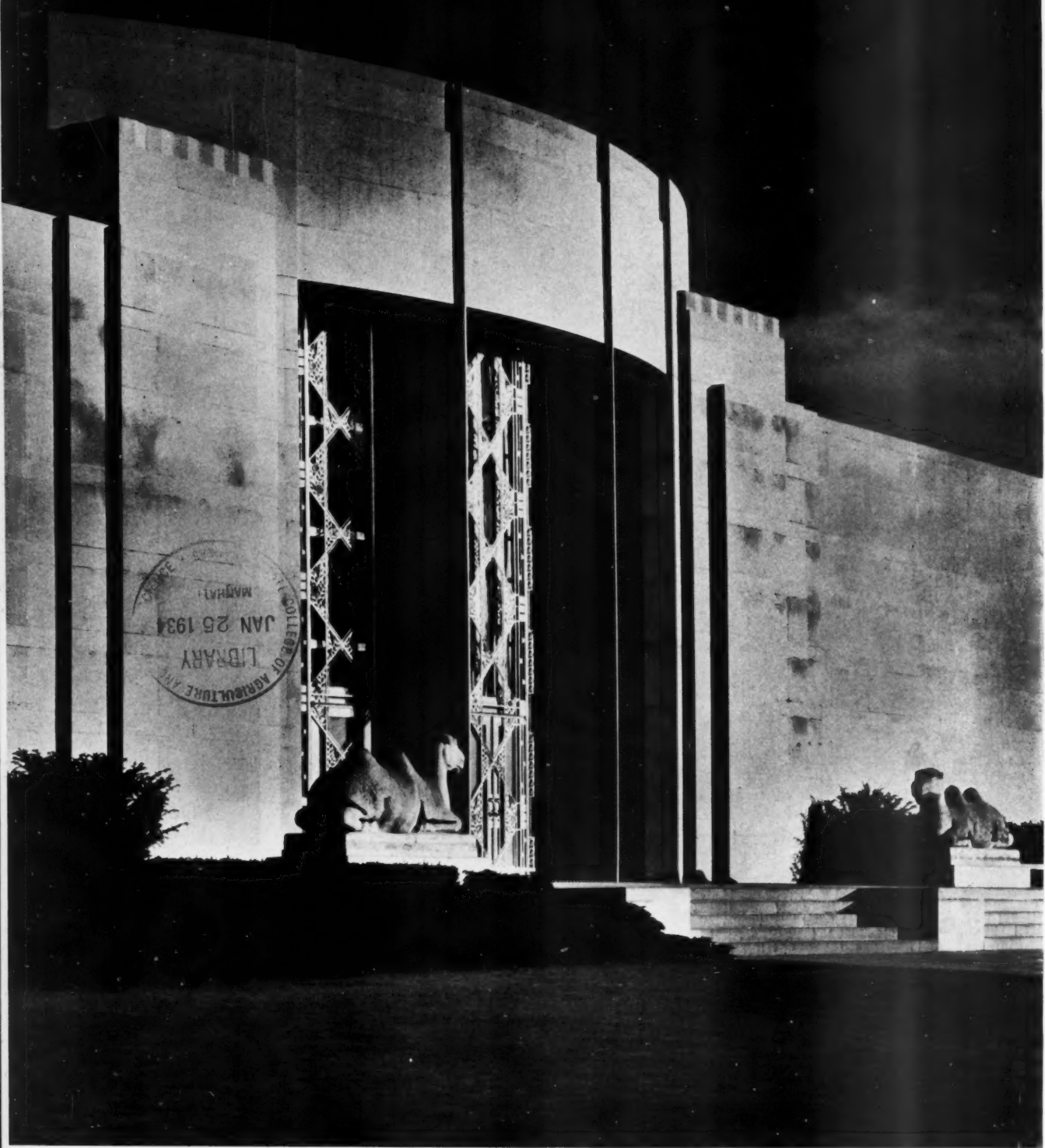
MAIN FLOOR

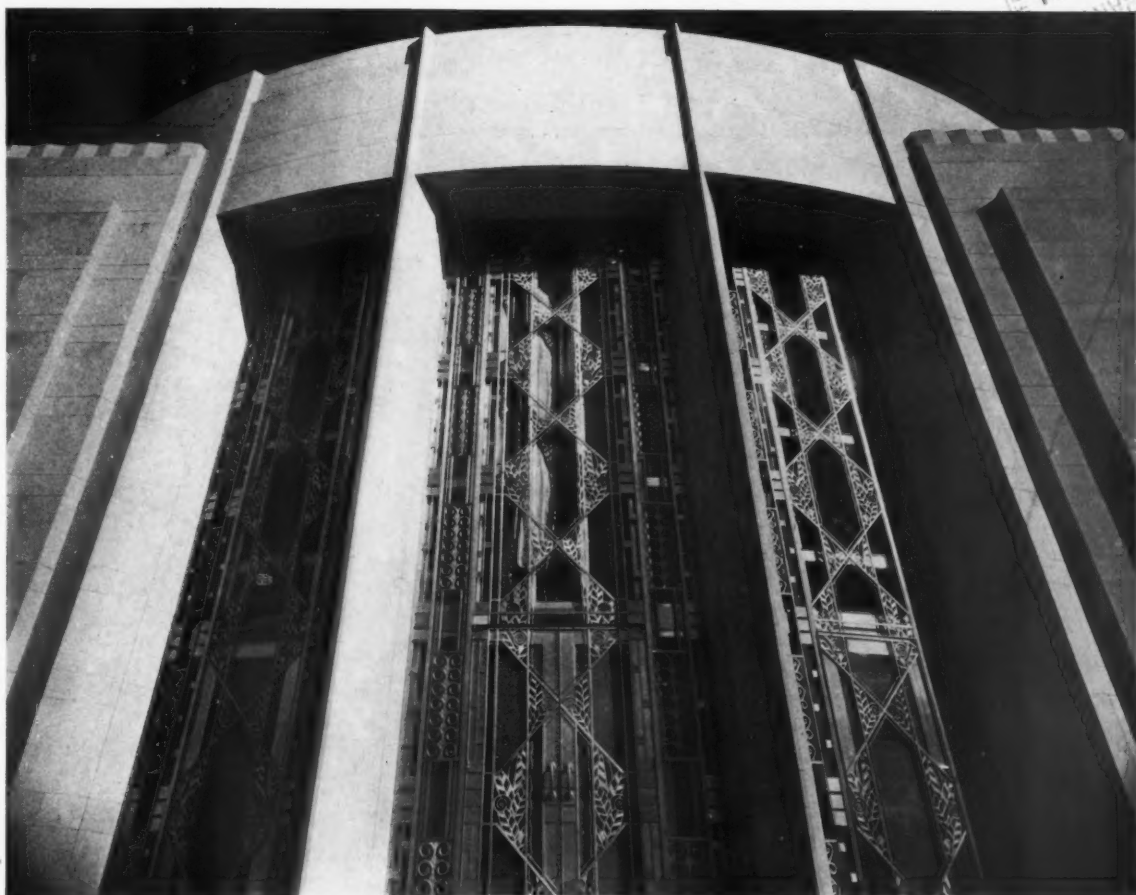


GROUND FLOOR

THE SEATTLE ART MUSEUM, SEATTLE, WASHINGTON, BEBB & GOULD, ARCHITECTS







Construction. Reinforced concrete faced with hard-surfaced Wilkeson sandstone, light gray-buff in color. Skylights over main galleries, all exterior flashing, copper. Terraces, walks and bases, Wilkeson sandstone. Rams and camels at entrance are Chinese sculptures from the early Ming dynasty. Grilles, door, sash, etc., of entrance (facing page and above), aluminum. Entrance hall (bottom, page 30): Floor, red Levanto terrazzo with base of Belgian Black marble; walls, imitation Travertine with strips of gold terra cotta; deep door jambs, dark green scagliola; plaster ceiling with gold leaf. Garden court (page 30): slate floors; base and fountain, Travertine; walls, imitation Travertine; floors of galleries (page 32), wood composition tiles. Floors in offices, lecture room and service areas, mastic tile. Library on ground floor finished in oak; board room in walnut. Galleries are lighted by two systems, both under centralized remote control. One employs indirect illumination from reflectors in continuous troughs; the other includes reflectors mounted above skylights. All reflectors are equipped with lenses for color correction.

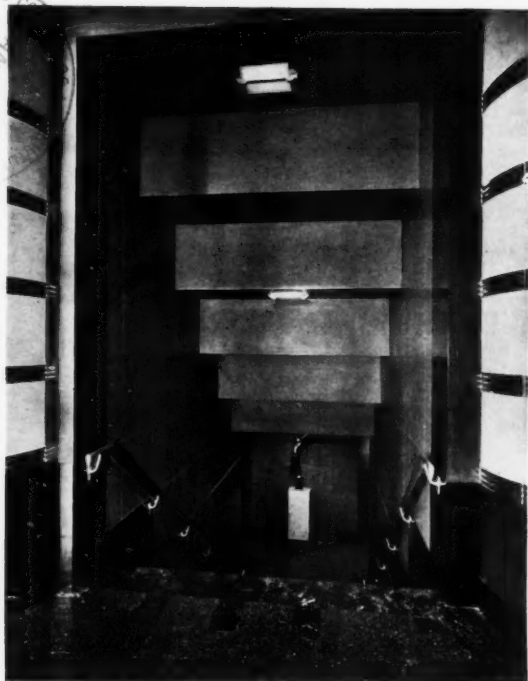
THE SEATTLE ART MUSEUM, SEATTLE, WASHINGTON, BEBB & GOULD, ARCHITECTS





FOR JANUARY 1934

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THE SEATTLE ART MUSEUM, SEATTLE, WASHINGTON, BEBB & GOULD, ARCHITECTS



This Courthouse Was Remodeled Five Times

At Independence, Mo., Keene & Simpson, Architects, demonstrate the possibilities of rehabilitating antiquated civic structures

By VERNON E. MOORE

OPPORTUNITIES for remodeling old structures exist in every city and town. Not all of them are confined to buildings of a commercial type that are modernized solely for the purpose of increasing revenue from antiquated property. Often remodeling presents opportunities for civic improvement by rehabilitating outworn public buildings. Thousands of communities might well profit economically and socially from the object lesson of an inadequate town hall or court house transformed into an efficient, more attractive center of civic affairs.

Today this fact is being forcefully demonstrated.

The PWA is urging communities to take advantage of its offer of funds for long-delayed construction or the modernization of public buildings. In any community the architect can be a logical leader in demonstrating possibilities for modernizing existing structures and in promoting the interest of his community in the profitable results of civic and archi-

tectural improvement and economical management.

The common sense of remodeling a good old building and enlarging it into a modern, well-planned structure has been proved again by the transformation of the historic old Independence, Missouri, Courthouse—a building ill suited to present needs and lacking civic character—into a more useful structure, dignified and simple in design.

Rehabilitating this courthouse cost slightly less than the \$200,000 bond issue voted two years ago as part of the Kansas City and Jackson County Ten Year Improvement Plan. It was estimated that the use of the old structure saved about \$50,000. The work was accomplished at the small cost of 25 cents per cubic foot. The building contains 800,000 cubic feet. Savings in rentals paid by Jackson County for office space outside the old Independence Courthouse before its fifth remodeling will more than pay for interest charges on the bond issue made to finance the present structure.



1836



1846



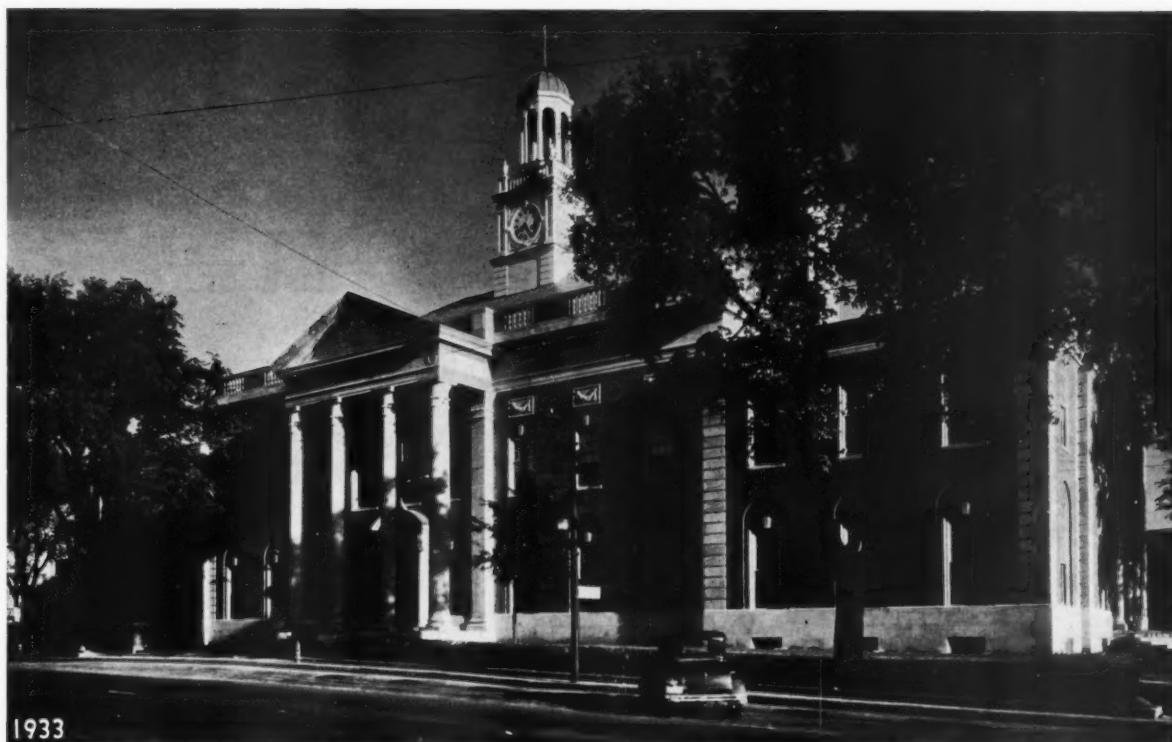
1872

EVOLUTION OF A 1934 COURTHOUSE

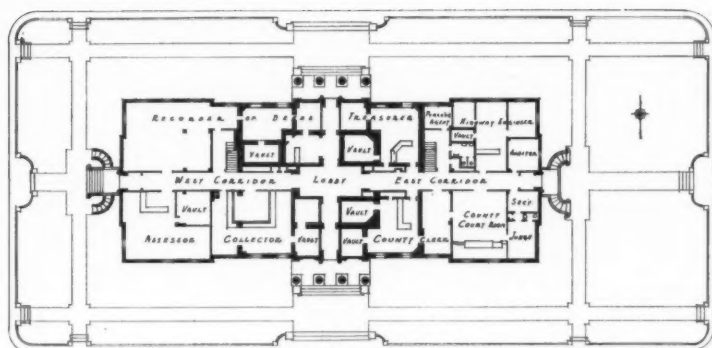
1836—The original brick Courthouse at Independence, Missouri, which replaced a two-room log cabin erected in 1828 as the farthest west courthouse. It cost about \$1,500. It abounds with legends, one being that sheep were allowed in the building before each court session to carry out fleas brought in by hogs and chickens that roamed at will through the halls. Successive alterations to this building in 1846, 1872 and 1907 are shown. The alteration in 1887 effected no radical change in the exterior beyond that noted in 1872. The fifth, and latest, remodeling of the building is shown on the facing page. Its cost was about \$200,000. Walls are brick, trimmed with limestone; roof, Vermont slate. It was built around the walls of the original brick structure defined in plan by the walls of the Circuit Court room



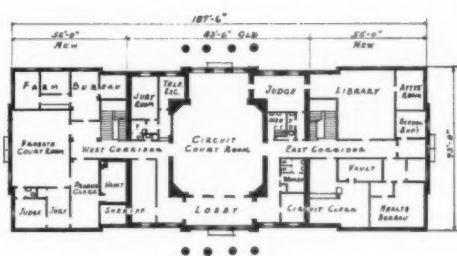
1907



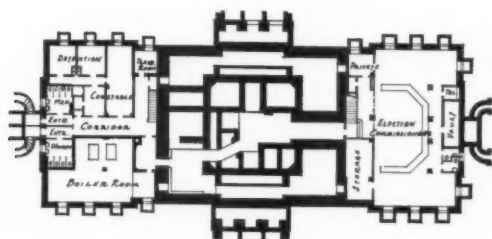
COMMERCIAL



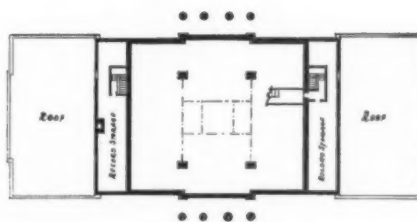
First Floor



Second Floor



Basement



Attic

COURTHOUSE, INDEPENDENCE, MO., KEENE & SIMPSON, ARCHITECTS, D. FREDERICK WALLACE, ASSOCIATE

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Keene & Simpson, D. Frederick Wallace, associate, were the architects. Their desire was to perpetuate the county's historical heritage and to provide normal facilities as economically as possible. They chose a design reflecting the simplicity of a Colonial Virginia meeting house as well suited to the needs and well adapted to the oblong lot in the center of Independence Square.

The new courthouse houses all of the county offices in Independence for the first time in ten years. Because of inadequate space in the old building, many offices had been forced out of it as their activities expanded with growing population.

It was necessary to raze the annex on the west, built in 1886, the old clock tower, the porch on the east and the east and west walls of the central unit before construction was actually started.

The basement was not extended under the old building in the center, because it was considered unnecessary and would have entailed a large expenditure. A passage cut through solid rock connects the east and west wings of the basement.

Storage rooms, provided for offices on the second floor at both ends of the attic, are heated and lighted so that they can house county records which are in little use now except by abstractors.

In printing ballots for the special bond election, printers made the mistake of stating the question to

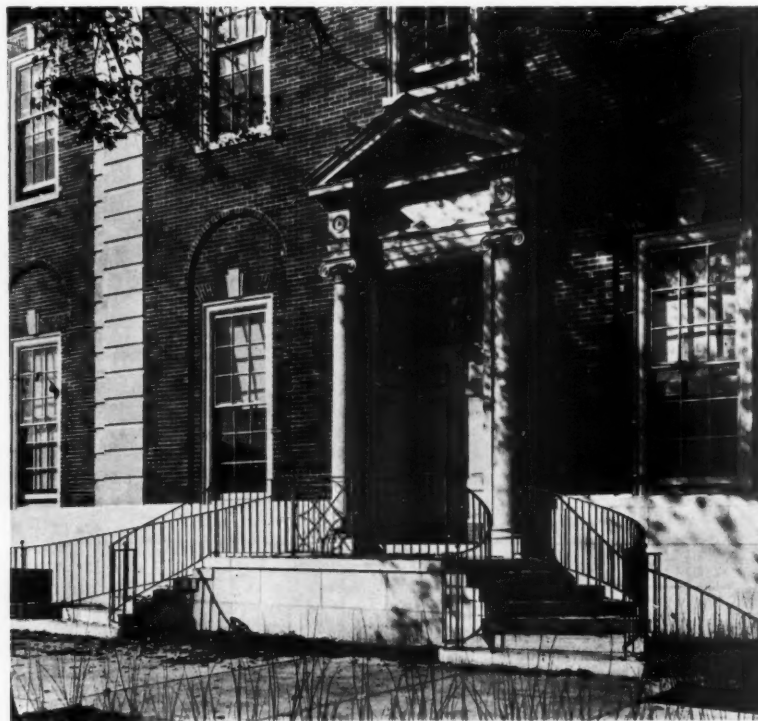
be "the remodeling of the Independence Courthouse and Jail." To conform to the law after this mistake had been recorded, the County Court was forced to build two jail cells in the west wing of the basement.

This is the fifth time the original building, erected in 1836 as the first permanent courthouse of Jackson County, has been included in a remodeling of the Independence Courthouse. It is defined now by the Circuit Court room on the second floor of the new building. The walls of this room are the walls of the old building, included in all of the five remodelings of the courthouse.

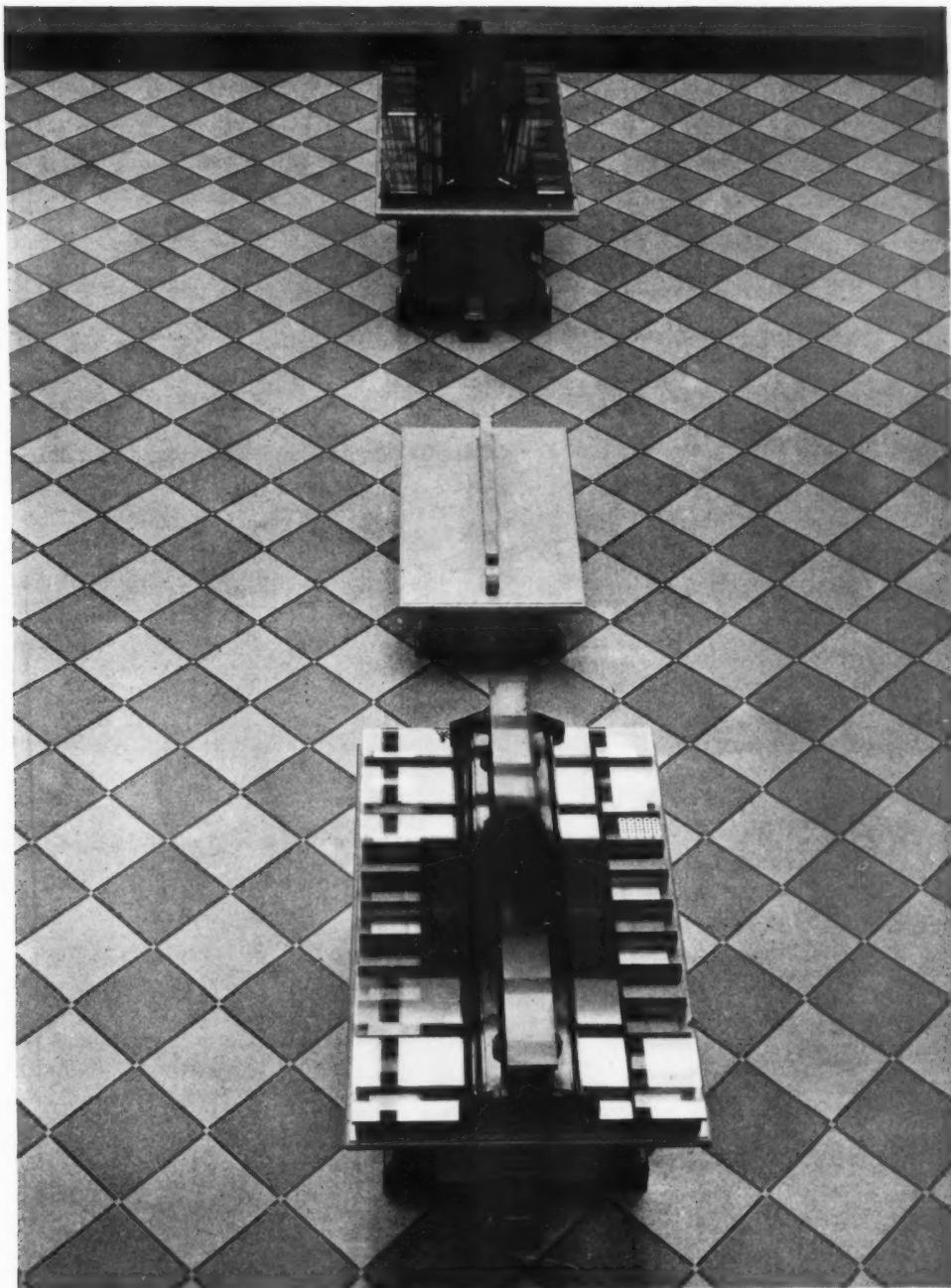
The 1836 courthouse was a two-story structure costing about \$1,500. It had replaced a two-room log cabin erected as the farthest west courthouse in the country in 1828. The cabin has been reconstructed and is used as the headquarters for a charity organization.

Each remodeling operation increased the size of the building and was financed by voluntary subscriptions or by general county funds and not by bond issues. Former alterations occurred in 1846, 1872, 1887 and 1907.

Many architects can visualize antiquated public buildings throughout the country on which modernization expenditures could advantageously be made. In many communities remodeling would save money for taxpayers besides providing adequate buildings.



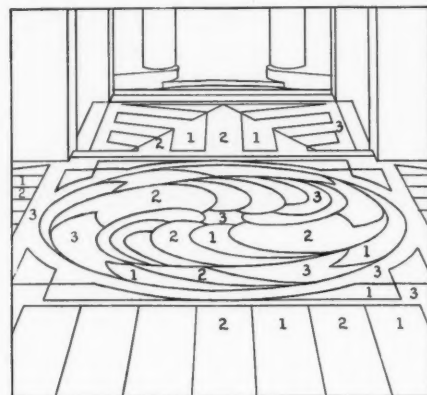
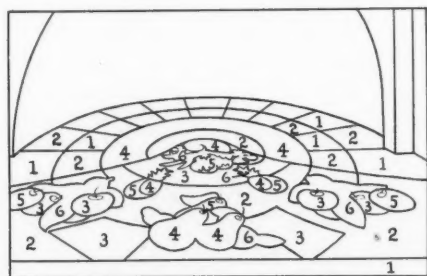
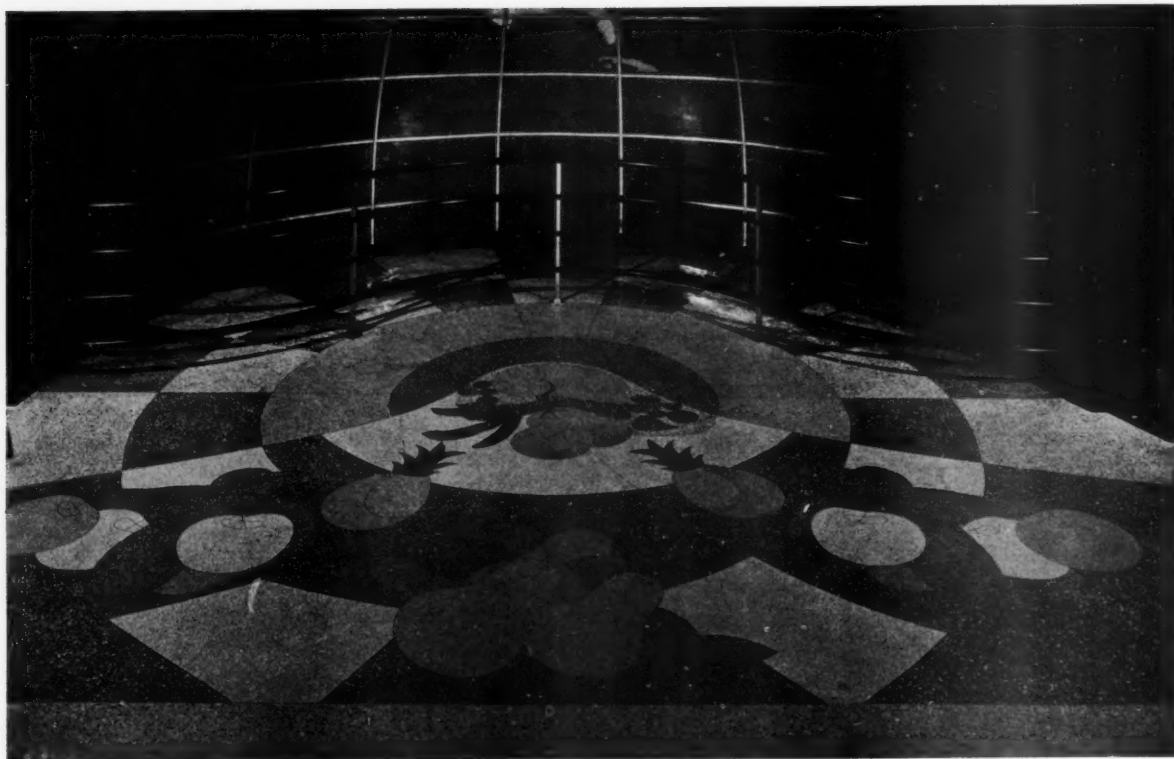
East entrance, Independence, Mo., Courthouse



Floor of West Town State Bank, Chicago, Ill., Axel V. Teisen, Architect

DECORATIVE POSSIBILITIES IN TERRAZZO

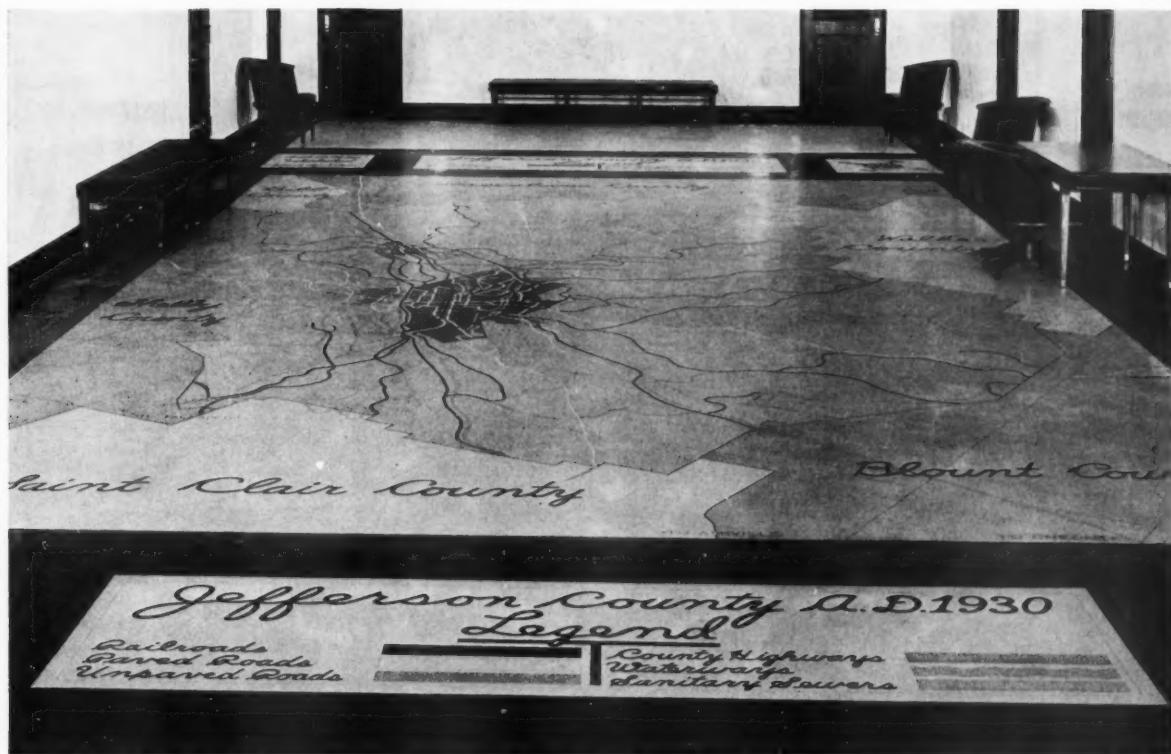
Photographs by Hedrich-Blessing



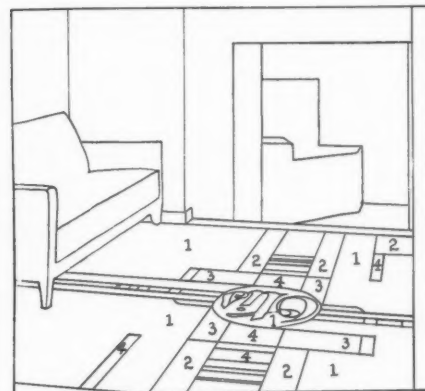
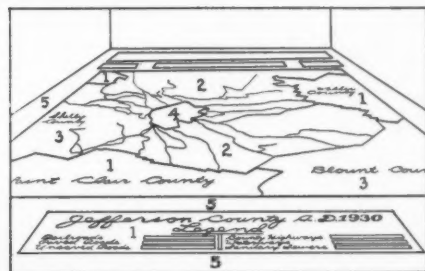
Corridor intersection in Lobby of Michigan Square Building, Chicago, Ill., Holabird & Root, Architects. 1. Light Buff (Cream Botticino), 2. Light Gray (Gray Tennessee), 3. Dark Red (Red Levanto)

Colorful pattern was part of Libby McNeil & Libby's exhibit at A Century of Progress, Chicago, Ill., Layman Whitney, Inc., architects. 1. Light Gray, 2. Dark Gray, 3. Light Yellow, 4. Dark Yellow Ochre, 5. Red-orange, 6. Blue-green





Map of colored terrazzo and brass in lobby of the Jefferson County Courthouse, Birmingham, Alabama, Holabird & Root, architects. Railroads and names, black in brass strips. Paved roads, light green. 1. Cream, 2. Salmon Pink, 3. Gray, 4. Dark Green, 5. Black



Lobby floor in Otis Elevator Co. Building, Chicago, Ill., Holabird & Root, architects. This unusual design contains four colors. 1. Cream, 2. Light Green, 3. Brown, 4. Black. Letters are black



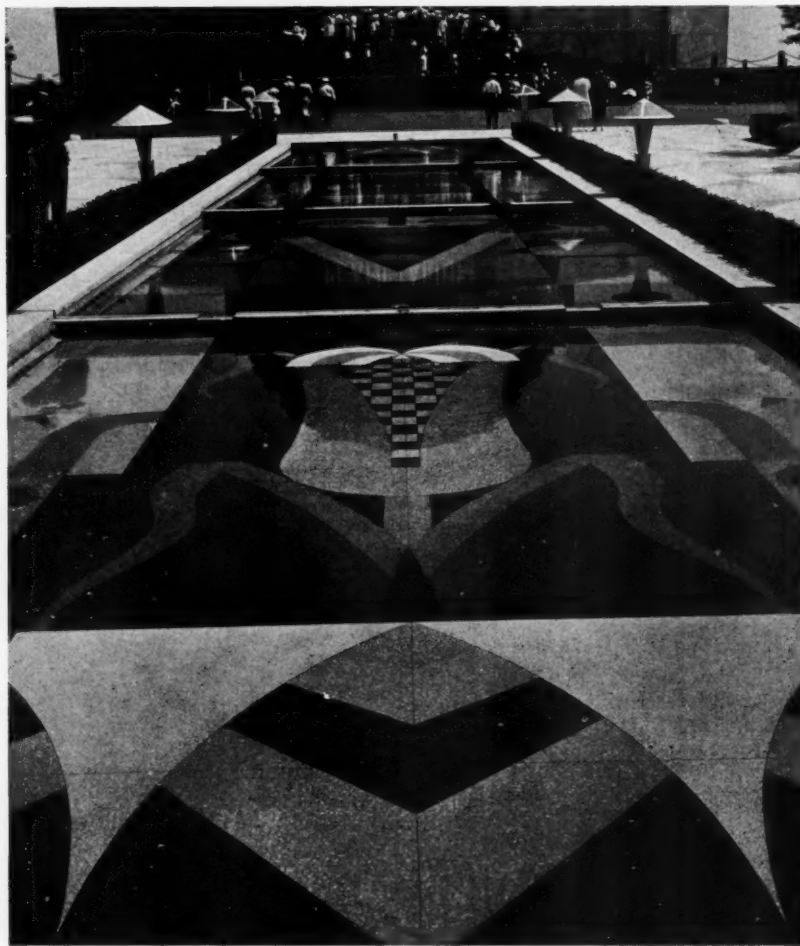
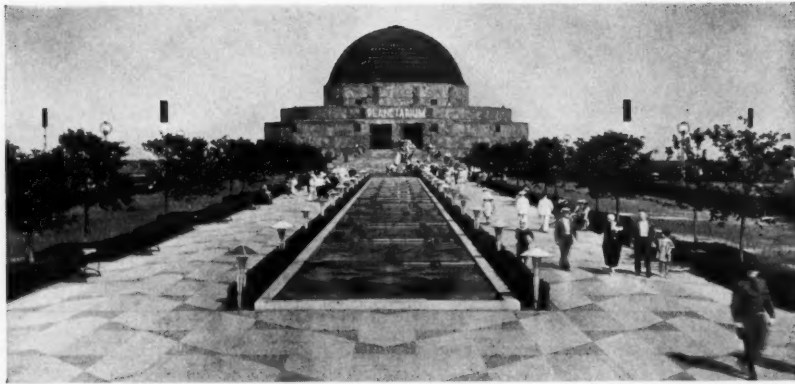


Obscure glass forms an unusual pattern in a field of light and dark gray terrazzo. The glass panels conceal lights beneath the floor

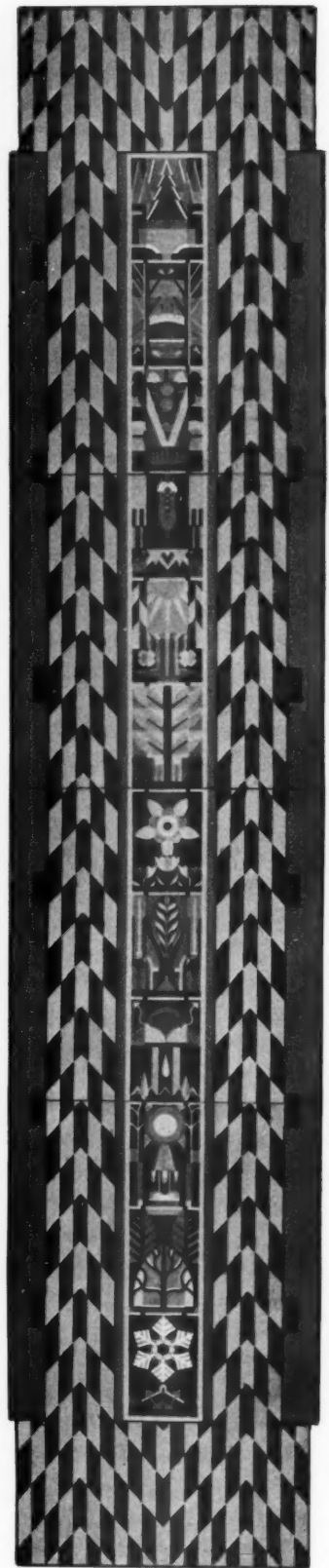
LOBBY OF THE A. O. SMITH BUILDING, MILWAUKEE, WISCONSIN, HOLABIRD & ROOT, ARCHITECTS

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Fifty colors, produced in terrazzo by combining marble chips, cement and paint were used in the design of the walk and fountain basins of the Esplanade which forms a permanent approach to the Adler Planetarium, Ernest A. Grunsfeld, architect. The area surrounding the long pool is patterned in three shades of red. Central panels that form the floor of the shallow pool represent the twelve months of the year. They were executed by using chips of nineteen marbles combined with five paint pigments and white cement. Color ranges from black, through the grays and blues to brilliant yellow, orange and red. Patterns are outlined with brass strips of varying gauges. Each panel is twenty-six feet long; the entire Esplanade measures 700 feet in length. On the facing page is shown a detail of the panel representing May and symbolic of spring flowers. Designs were developed by John Norton and Tom Lea; they were installed under the direction of A. J. Rennen, president of the National Terrazzo and Mosaic Association





ESPLANADE, A CENTURY OF PROGRESS, CHICAGO, ILL., ERNEST A. GRUNSFELD, ARCHITECT

FOR JANUARY 1934



Unusual color and pattern are combined to make this terrazzo floor a valuable element of interior design.
1. White field, 2. Brilliant red, 3. 1/8" brass strips

THE SOCATCH SHOP, CHICAGO, ILL.
HOLABIRD & ROOT, ARCHITECTS



Should Architect and Contractor Combine

BY CLINTON H. BLAKE

Blake and Voorhees, Counsellors-at-Law

THERE seems to have been an increasing tendency in recent years for architects to enter the construction field as builders and for contractors to undertake to provide architectural service in an effort to broaden their field. In either case, there is necessarily a mixing and overlapping of the proper functions of each individual. The cases where architects and contractors are thus invading each other's proper fields have become sufficiently frequent so that it is in order to consider the problem which this tendency presents in the light of its ethical implications and its practical effect and desirability.

A fundamental principle of the architectural profession has been that the architect is employed both to advise the owner and to protect his interests so that the owner may secure the architectural result desired and also full value for the money which he expends. Courts have recognized, almost from the beginning, that the architect owes to his client absolute fidelity and a disinterested service. His relationship to the client has been likened in many respects to that of the lawyer to his client. His obligations differ from those of the lawyer chiefly in that there is not the same degree of confidential relationship involved and the fact that he is under an obligation, also, to the contractor in so far as he is called upon to act in an arbitral capacity as between contractor and owner.

In any event, it is of the very essence of an architect's service that he be in a position where, without self-interest other than the earning of his fee, he shall serve the interests of his client to the best of his ability. If an architect not only designs the work but also undertakes the contract for the building operation itself, he is at once placed in the position of supervising his own work. It may be argued that, if this be done with the full knowledge and approval of the client, the latter is in no position to object. Legally speaking, this is correct. If an architect's client employs the architect, not only to provide the plans, but to carry out the work, he is

certainly estopped from claiming that the architect, by undertaking the construction work, has violated any obligation which he owes the client. The question involved, however, goes somewhat deeper than this. It goes really to the fundamental conception of the service and duties of an architect and the character and quality of the service which he is presumed to render.

It is obvious that one whose sole duty is to prepare the best possible design and to supervise the construction of the work in the most effective way is in a position to render a far better service than one who, as both designer and builder, is financially interested in each capacity. Over a period of many years, architects as a class have built up a rather enviable reputation for fidelity to their clients' interests and for fair-dealing to client and to contractor alike. The most highly thought of firms—and generally the most successful—are those that have been and are strong enough, both ethically and otherwise, to insist on a square deal for client and builder alike; that are willing to insist, without reservation, that the builder fully perform the obligations of the contract and are, on the other hand, willing—even at the risk of incurring displeasure of the client—to perform their duty to the builder when called upon to arbitrate between him and the owner as to questions of material, workmanship and general performance under the contract. No matter how ethical the architect may attempt to be, he must necessarily sacrifice, consciously or unconsciously, a certain amount of the independent and impartial position which is of the essence of his professional relationships if he puts himself in the position of contractor as well as architect.

If an architect wishes to become a contractor, he should, in my opinion, give up the practice of architecture and frankly enter into the contracting business. There is no reason whatever why he should not present as among his most valuable assets in the new field his architectural training, his knowledge of the architect's point of view and his ability to carry

out the building contract with an appreciation of detail and of desired results more effectively than it could be carried out, perhaps, by a contractor who had had no architectural training or experience. But he should face the issue. Let him make up his mind what he is going to be—architect or contractor—and not place himself in the equivocal position of attempting to be both.

It may be argued that this is taking too advanced a position ethically and that there may well be a certain advantage economically and through centralization of authority in having one person undertake all the responsibility of design and construction. There are many first-class concerns which provide this type of dual service and that endeavor conscientiously to give full and fair service to their clients. Nevertheless I believe that it is to the best interests of architect, contractor and owner alike that the professional relationship of an architect and the business relationship of a contractor should not be merged, but that each should continue in its own sphere of activity and obligation.

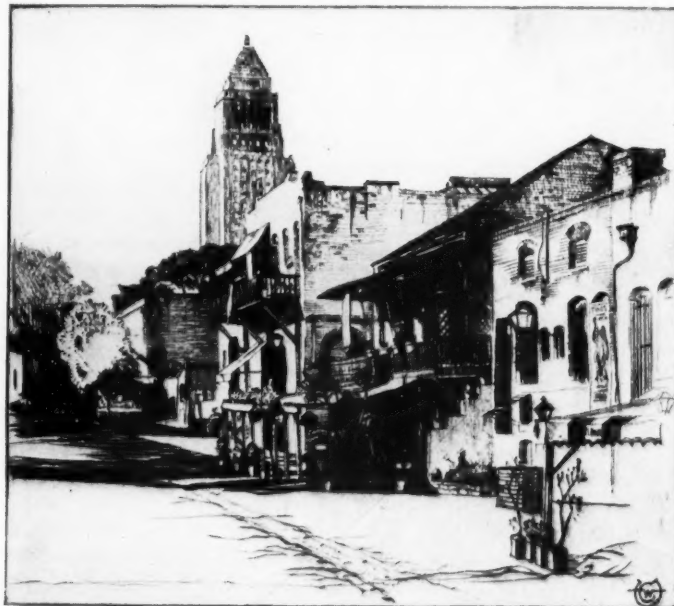
Similarly, many contracting firms are undertaking to provide architectural services. The new architectural registration laws have done much to prevent this, in that they have made it necessary for architectural services to be performed by registered architects. This point, however, has been met by the contractor employing an architect as a member of his organization and filing the plans in the name of this architect.

Many times the contractor has a sales advantage in being able to say to a prospective owner that he will provide the requisite plans and specifications through his own organization and through his own

retained architect; that by so doing cost to the owner will be decreased and all responsibility centralized in the contractor. Nevertheless, the contractor who follows this course assumes a somewhat greater responsibility to the owner than the contractor who undertakes to carry out the plans of an independent architect. He lays himself open to the charge that he is in effect planning and supervising his own work; that it is to his interest to incorporate in the building those methods of construction on which he will have the larger profit; and that he is more interested in his profit than he is in refinements of design and careful attention to a strict adherence to sound engineering and construction principles.

There are many advantages to the contractor in having an independent architect on the job. The architect often can and does act as a buffer between an unconscionable client and the contractor. I know of repeated instances wherein an architect has protected the contractor from an owner's unreasonable demands and has been the means of saving the contractor from expense and loss which it would have been unfair for him to have assumed.

The quasi-judicial duties of the architect as an arbiter of disputes relating to the interpretation and carrying out of the plans and specifications are of real importance to contractor as well as to owner. The moment the architect is eliminated and the contractor made responsible for design, supervision and construction, this safeguard is removed. The contractor must fight his own battle with the owner; and in the event of a dispute, the tendency of the court would be to scrutinize with special care the claims and work of a contractor who has undertaken this triple responsibility.



Los Angeles, Old and New

Etching by William C. Ullrich



ALTERATIONS TO HOUSE OF MRS. F. E. BRADLEY
WOODBURY, CONNECTICUT

HOBART UPJOHN, ARCHITECT

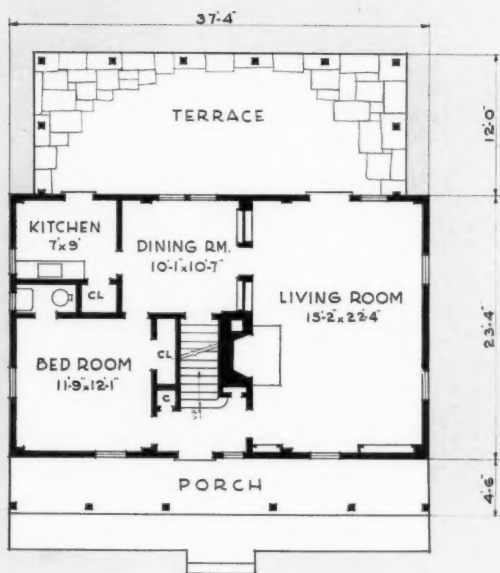
Photographs by Charles E. Knell



FRONT ELEVATION



SECTION



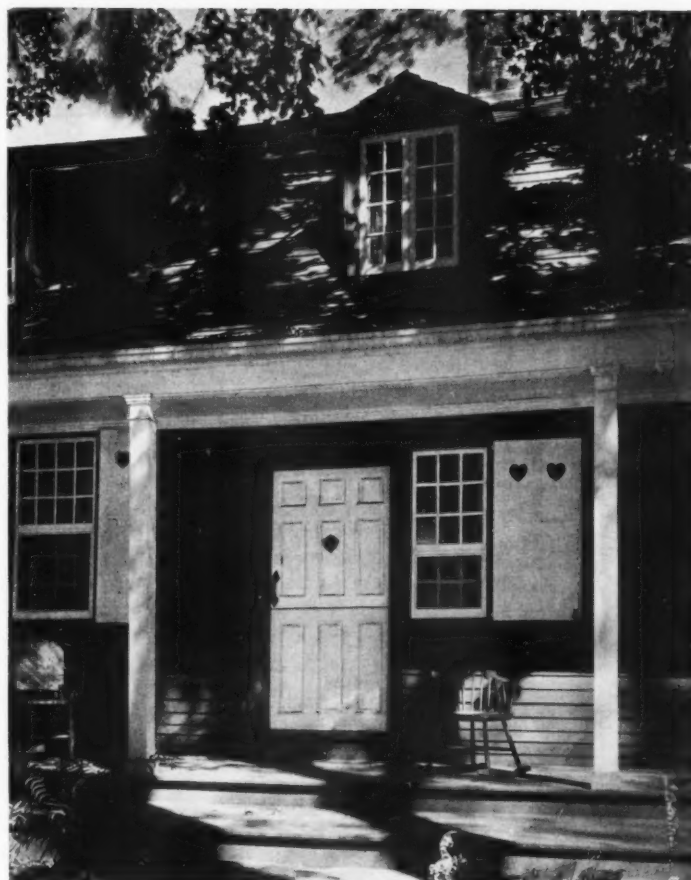
FIRST FLOOR



SECOND FLOOR

Originally built in 1760, the building had been used as a store since the middle of the last century. It included two chimneys, one on each end, but most of the partitions had been removed. Structural changes involved removal of the two chimneys and construction of a new central one, addition of a covered terrace at the rear, dormer windows and partitions

ALTERATIONS TO HOUSE OF MRS. F. E. BRADLEY, WOODBURY, CONN., HOBART UPJOHN, ARCHITECT



Long known as "The Old Red Store," the house is still painted red with white trim. Exterior siding is the original. Front door is new. When interior plaster was removed in the process of alteration, well-preserved woodwork was found. This was left exposed for interior finish and necessary new work made to conform to it in color and texture.

ALTERATIONS TO HOUSE
OF MRS. F. E. BRADLEY
WOODBURY, CONNECTICUT
HOBART UPJOHN, ARCHITECT



Above, living room. Below, left, living room entrance to terrace; right, dining room

ALTERATIONS TO HOUSE OF MRS. F. E. BRADLEY, WOODBURY, CONN., HOBART UPJOHN, ARCHITECT

The Building Outlook

BY THOMAS M. McNIECE

THE volume of building construction measured in square feet was probably lower in 1932 and 1933 than in any other years during this century. A very moderate recovery from the low levels of the last two years has been attained up to this time. The journey back to normal is a long one; and the path is by no means free of obstacles. Before the greatest advantage can be gained from recovery measures, it must be realized that revival of building will be a cause and not merely an effect of business improvement.

Certain factors are of immense importance in governing the near future of building. Among these are the market as measured by the nature and extent of new construction needed; financial conditions as they affect the present mortgage situation and the facility with which credit can be secured; and building cost trends, especially as they will influence demand. These and related influences are reviewed in this discussion.

THE MARKET:

NORMALLY the following classes of construction comprise at least 92 per cent of the total value of the markets:

Residential	55 per cent
Public Works and Utilities.....	14 " "
Commercial	11 " "
Industrial	7 " "
Educational	5 " "

In the foregoing list residential value is somewhat understated and the others correspondingly overvalued. It should be apparent that no great recovery can be made by the industry without improvement in residential building. What need exists for such construction? There is a wide difference of opinion in answers made to this question. Those most intimately concerned with the financing of home construction are commonly of the opinion that there is no need for new construction. Their conclusion is based on a knowledge of existing vacancies, the vacancies being interpreted as measuring a surplus of facilities. This interpretation does not give consideration to the important distinction between an actual surplus of homes and an enforced reduction in demand.

Careful studies made both within and without the industry indicate that there is a material shortage of homes based on levels of ordinary demand. The shortage is concealed for the time by the ability to "double-up" and to defer replacement. Both conditions are compelled by reduced income and will be corrected as spending begins and income levels rise. Greater shrinkage of income has come from the decline in building operations than from any other industry. *Resumption of spending for construction is necessary before business will advance to any great extent from its present levels.*

There is certainly no impelling need for additional expenditures in public works and utilities or dominating need for commercial and industrial buildings. A shortage in educational buildings, if not already apparent, will soon make its existence known. No great surplus of school capacity is ever provided. This non-speculative type of building is seldom erected before it is needed; and its volume from year to year is the most uniform of any of the various classes. Nevertheless, it is depressed temporarily by the pressure of economic conditions.

Public works and utilities involve a class of work, which, especially after the intense activity of the past decade, can be long deferred. The enormous expenditures contemplated for this group under the federal plan constitute largely an effort to "prime the pump." The same may be said of public buildings which, even in their most active era, comprised scarcely 1 per cent of the construction program. These two classes in the aggregate make such a small proportion of the total value of normal construction that their power to stimulate recovery may be questioned. They will, to a certain extent, provide current relief, but at the expense of the future the normal volume of which they must reduce.

There can be no real need for additional office and factory buildings at present. Some years will elapse before existing capacity is economically utilized. This is particularly true of commercial buildings in some of the larger centers of population.

These considerations all point to residential construction as the main hope of the industry, not only on account of its preponderant importance, but because natural increase in population and wear and tear on existing structures have not been offset during

the low construction levels of the present period. While the ability of the public works program alone to effect recovery may be questioned, the amounts involved, especially in some localities, are so large that they warrant detailed consideration.

The accompanying tables show the value of actual building construction released by the Public Works Administration up to December 1, 1933, by states and classes of buildings. These data include nothing not definitely described as buildings. In many cases actual building is included in releases where descriptive titles and amounts only in total have prevented definite classification. The figures shown are therefore conservative.

The research and planning division of N. R. A. has recently made a study of a possible two-year building program. This is not advanced as a definite recommendation at this time, but rather as an inventory of possibilities. The sub-totals are:

Housing	\$4,532,000,000
Recreation Facilities.....	450,000,000
Health and Sanitation.....	136,000,000
Grade Crossings and Highways	2,400,000,000
Express Highways.....	1,800,000,000
Railway Improvement.....	1,500,000,000
Industrial and Commercial Improvement	1,800,000,000
Educational Facilities.....	300,000,000
Modernization	650,000,000
New Outlets (not estimated)...	
Total	\$13,568,000,000

It will be noted that much of this falls within the non-essential and convenience classes and requires public rather than private financing. This would have the unfavorable effect of increasing the already tremendous burden of public debt and, therefore, increasing the share of individual income which must be turned over to the Government. In view of the normal division of construction by percentages previously shown, the amounts allocated to the various classes in the N. R. A. survey may be open to question. The amount specified for housing provides for about 800,000 homes. The thought is expressed in the survey that if the work were once effectively started with the Government underwriting the program, momentum could be maintained largely by private financing. What is needed is an increase in the proportion of individual spending and a decrease in the proportion of governmental spending.

The continued depression in building activities is building up a large back-log of maintenance, repairs and modernization. Because of necessity as well as of the lower expenditure required, activity in these fields may be increased before a general revival of new construction is encountered. Material gains in this class were made during 1933. While its total economic value will be small, some gains of this nature will be made on account of modernization and alterations due to resumption of the liquor trade. This may also affect commercial rentals in some areas through occupancy of vacant stores.

FINANCE:

FINANCIAL conditions, as they affect the building industry, are very involved and uncertain at the present time. Building construction requires credit not only in greater amount, but in a higher percentage of total value than that required by any other important industry. About 59 per cent of all urban real estate loans are on residential properties. The mortgage situation is somewhat improved through relief measures, although conditions in this respect are very spotty. Continued improvement will facilitate recovery in new construction. Increase in building will also improve the mortgage situation by preventing many threatened foreclosures.

It is becoming increasingly apparent that many financial difficulties are intensified by the short period of mortgage loans. If mortgages were more commonly granted for ten or fifteen year periods with amortization payments incorporated, many actual or imminent foreclosures during the present depression would have been avoided. If the collateral value of properties is sound for a ten-year period, there should be no impelling reason for demanding renewals every three years. This practice increases the number of payments or renewals each year and, therefore, the number of foreclosures in periods of economic stress. Many owners would successfully weather these conditions if not called upon to meet maturities during business depressions. In the event of great deflation from war-born price levels, real values would be better protected by reducing the number of forced sales when no favorable market exists.

Financing of new construction is extremely difficult at the present time. To a certain extent, private capital is available for such loans. This is shown by the great reserves of idle funds that have accumulated in savings and other banks. Nevertheless, conditions are not favorable to extension of credit, even when the need for housing can be demonstrated. The reason for this is the uncertain outcome of the monetary policy of the Federal Government. Much capital has taken flight from the country.

Bankers will properly hesitate to extend credit on long term loans when there is no assurance as to the value of the dollar with which the loans will be repaid. They, furthermore, have no way of knowing their depositors' attitudes on these questions and must hold themselves in readiness to meet any new situation which monetary developments will bring about. There seems to be no way in which these conditions can be remedied until the *value* of our money and the *confidence* of the people are again firmly established.

Since residential building is the great preponderant part of the industry and since it is dependent upon private financing, it seems logical to conclude that *the industry can make no great strides until a favorable credit situation for private funds is again established*. Aside from the credit situation itself, the uncertainty over money values and contractual

obligations is forcing hesitancy in creating new commitments of any importance.

The reluctance to advance capital for residential construction has now resulted in considerable pressure from some sources for the Government to extend credit for housing. Some such projects have already been released by the Public Works Administration. A more natural program would be to create conditions that would release private credit for its normal pursuits. The ultimate effect of Government participation in private financing can scarcely be foretold at this time. If extensively followed, it must finally reduce the amount of financing usually handled by organizations devoted to that purpose.

BUILDING COSTS:

MORE money is expended on building construction than on any other of the durable goods industries. The cost per project and per individual owner is also highest in our whole list of requirements. Any increase or decrease in cost becomes important as it affects both the short and long terms trends. At this time when the problem of financing is under microscopic scrutiny, it would be well for the industry to revise its financing methods from the viewpoint of cost. *Any saving thus made would be released for more and better construction.*

According to published indexes, material and labor costs in construction have not declined as much as those of other essentials of life. Costs of food and clothing, while now erratic, are currently near 70 per cent of their 1926 levels. While the cost of housing, involving rent as part of the cost of living, is about 63 per cent, the index of cost of building stands at about 86 per cent of its 1926 level. Building wages were at 108 per cent of their 1926 values in 1930 and currently are about 92 per cent. Building materials are reported to stand at about 82 per cent as compared with the all-commodity wholesale price of 71 per cent.

The trend of building material prices is upward, the advance being about 16 per cent during 1933. The disorganized state of the industry due to extremely low output may affect the accuracy of the wage index to some extent, but the conclusion is justified that costs in this industry have remained relatively high compared with those of most others. Wholesale commodity prices have been as high as, or higher than, those of 1926 in only 19 years since 1798; and these years are almost equally divided among the price peaks of the War of 1812, the Civil War and the World War.

The building cost trend in the near future will depend principally on two factors: first, the degree of activity in the industry; and second, the value of our money as determined by our monetary policy. While it is the policy of the Government to force an increase in prices in terms of our own currency, it is probable there will be no appreciable increase in prices in terms of gold.

A forced rise in prices not supported by increased demand will retard recovery. It is significant that the record of 13 depressions in this country in the last 100 years shows that, as a composite average, improvement in prices has not preceded improvement in business activity, but has followed it by about eight months. This suggests an important phase of the cost situation that seems to be commonly overlooked. *The higher the cost of any commodity, the fewer are the people who can afford to buy it.* Therefore, anything that tends to increase the real cost of such a commodity tends to curtail its market and, in the present situation, to retard recovery. Reduced output per man hour and increased wages per hour must inevitably increase real costs and check recovery.

The construction industry stands today as the one great industry that has made no progress through the years in cost reduction. Better housing at materially lower costs offers opportunity for the greatest sustained increase in activity this country can possibly enjoy. Throughout the land the quality of housing lags far behind the standards set by products of other industries. Latent replacement demand is enormous if it can only be released by progress in cost reduction.

It is this situation that is stimulating the demand for prefabricated houses. Those developing this construction will find their volume expanding. One could not witness the newer types of construction exhibited at the Century of Progress Exposition without being impressed by the fact that much earnest thought is behind this movement that is gaining momentum. The problem of mass production in this industry calls for exercise of much ingenuity in adapting requirements for standardized output to demand for individualism in homes.

WHERE DO WE GO?

A COMPARISON of the long term trend of building construction with the actual for the last ten years indicates that a definite shortage has accumulated on a country-wide basis. In the aggregate—and without reference to any division among types—this deficit is equivalent to at least a year's output of the industry at normal levels of production. The problem is to energize the industry.

The benefits from improvement in methods of handling construction will be enhanced by the low levels of today and the long climb into the future. Many new structures and much new value will be created within the next few years. Now is the time to apply better architecture, better financial procedure at lower costs and new methods of construction that will improve quality and reduce costs. Methods of financing that will be employed during the expansion that will come will have much to do with prevention or repetition in the future of the serious troubles of today. *If nothing is learned from*

NON-FEDERAL PROJECTS

	Schools		Housing		State Institutions		City and County		Miscellaneous		Total Non-Federal	
	No.		No.		No.		No.		No.		No.	
ALABAMA												
ARIZONA	1	14,000									1	14,000
CALIFORNIA	1	5,100	1	3,230,000			2	15,800	3	1,097,000	7	4,347,900
COLORADO	2	1,225,111			1	92,000	1	80,000			4	1,397,111
CONNECTICUT	5	885,300									5	885,300
DELAWARE	1	435,000									1	435,000
DIST. OF COL.												
FLORIDA		75,000							1	250,000	1	325,000
GEORGIA	6	868,115	2	3,812,500	1	1,300,000	1	346,000			10	6,326,615
IDAHO												
ILLINOIS	10	1,648,760	1	1,333,000	5	2,580,545	1	44,500	1	78,000	18	5,684,805
INDIANA	2	18,700	1	4,460,000							3	4,478,700
IOWA	6	393,300					3	77,000			9	470,300
KANSAS	5	232,000	1	40,000			2	6,100	1	4,000	9	282,100
KENTUCKY	2	153,195					1	13,000			3	166,195
LOUISIANA												
MAINE	1	34,500									1	34,500
MARYLAND	18	726,000					3	186,000			21	912,000
MASSACHUSETTS	7	994,300	1	3,500,000	30	5,468,520					38	9,962,820
MICHIGAN												
MINNESOTA	5	203,200					1	27,600	1	8,000	7	238,800
MISSISSIPPI	1	6,746									1	6,746
MISSOURI	4	178,857	1	500,000			4	1,558,000			9	2,236,857
MONTANA	8	1,908,000					1	12,200			9	1,920,200
NEBRASKA												
NEVADA												
NEW HAMPSHIRE	1	114,500			1	31,000	2	162,000			4	307,500
NEW JERSEY	1	215,000			15	4,604,405					16	4,819,405
NEW MEXICO	1	24,500									1	24,500
NEW YORK	5	3,983,900	4	13,384,000	4	1,144,000					13	18,511,900
NO. CAROLINA	3	186,500					2	5,000			5	191,500
NORTH DAKOTA	2	64,400					3	45,070			5	109,470
OHIO	2	88,000	3	14,980,000			1	542,900	1	7,000	7	15,617,900
OKLAHOMA	4	310,515					1	49,000			5	359,515
OREGON												
PENNSYLVANIA	3	632,000	2	2,135,000					1	425,000	6	3,192,000
RHODE ISLAND	2	540,000					1	425,000			3	965,000
SO. CAROLINA	1	2,700			1	225,000					2	227,700
SOUTH DAKOTA	2	7,500					2	99,500			4	107,000
TENNESSEE	1	493,433			2	57,400					3	550,833
TEXAS	4	654,000									4	654,000
UTAH	2	430,000			12	1,515,000					14	1,945,000
VERMONT	2	4,300							1	8,600	3	12,900
VIRGINIA	11	442,600	1	663,000			1	50,000			13	1,155,600
WASHINGTON	8	282,000			4	163,000			1	50,600	13	495,600
WEST VIRGINIA	1	400,000									1	400,000
WISCONSIN	3	892,630			2	350,000	1	48,700	2	65,300	8	1,356,630
WYOMING												
TOTALS	144	19,773,662	18	48,037,500	78	17,530,870	34	3,793,370	13	1,993,500	287	91,128,902

NOTE: The above figures of building construction only have been compiled from lists of loans and grants made by the P. W. A. to December 1, 1933. The figures do not necessarily indicate the total cost of Non-Federal projects

the lessons of the last few years, the industry will surely face the same unpleasant picture in the future.

The use of public credit in such a way as to increase the fixed charges on the public debt must inevitably reduce individual opportunity. This in turn may force the substitution of more public credit for the private credit that is restrained. Public debt is a first mortgage on all the private property in the country. This lesson should be driven home. *The anxiety for improvement today must not become the despair of the future.*

With the next advance in residential building will

come a rapid acceleration of air conditioning and automatic heating. These factors are rapidly increasing the obsolescence of homes, which in itself will increase modernization and replacements markets.

Observation indicates that while short-term surges will carry the industry temporarily up and down, long-term recovery will be gradual. A temporary set-back will undoubtedly occur when stabilization of the dollar is effected. Based on natural behavior of the industry—and assuming the prompt resumption of credit conditions favorable to construction—it is probable that construction levels of 1922 and

FEDERAL PROJECTS

	Post Offices		Army and Navy		Miscellaneous		Total Federal		Total Federal and Non-Federal	
	No.		No.		No.		No.		No.	
ALABAMA			1	1,620,075	2	32,500	3	1,652,575	3	1,652,575
ARIZONA	3	228,500	1	72,748	8	994,748	12	1,295,996	13	1,309,996
CALIFORNIA	36	2,505,800	4	4,860,777	5	199,150	45	7,565,727	52	11,913,627
COLORADO	5	328,900	1	3,922			6	332,822	10	1,729,933
CONNECTICUT	3	180,600					3	180,600	8	1,065,900
DELAWARE	2	95,100			1	78,000	3	173,100	4	608,100
DIST. OF COL.			1	23,800	12	6,452,394	13	6,476,194	13	6,476,194
FLORIDA	6	362,100			2	26,160	8	388,260	9	713,260
GEORGIA	1	52,800	1	6,002,483	2	61,444	4	6,116,727	14	12,443,342
IDAHO					2	63,100	2	63,100	2	63,100
ILLINOIS	34	3,491,800					34	3,491,800	52	9,176,605
INDIANA	5	267,600					5	267,600	8	4,746,300
IOWA	6	300,100			1	5,000	7	305,100	16	775,400
KANSAS	7	333,900	2	1,486,383			9	1,820,283	18	2,102,383
KENTUCKY	1	49,500	1	2,581,913	1	6,000	3	2,637,413	6	2,803,608
LOUISIANA	3	160,600	2	2,455,578	1	8,191	6	2,624,369	6	2,624,369
MAINE			1	198,000	2	30,960	3	228,960	4	263,460
MARYLAND	2	87,500	6	630,423	1	45,000	9	762,923	30	1,674,923
MASSACHUSETTS	15	1,598,300	2	429,218	2	111,000	19	2,138,518	57	12,101,338
MICHIGAN	9	647,400	1	707,014	3	425,000	13	1,779,414	13	1,779,414
MINNESOTA	10	607,200					10	607,200	17	846,000
MISSISSIPPI									1	6,746
MISSOURI	5	230,300					5	230,300	14	2,467,157
MONTANA					6	462,355	6	462,355	15	2,382,555
NEBRASKA	5	233,600			1	35,000	6	268,600	6	268,600
NEVADA	1	45,000			1	75,000	2	120,000	2	120,000
NEW HAMPSHIRE	3	179,500					3	179,500	7	487,000
NEW JERSEY	19	1,769,600	1	796,667			20	2,566,267	36	7,385,672
NEW MEXICO	2	122,600	1	243,000	7	1,065,464	10	1,431,064	11	1,455,564
NEW YORK	88	11,955,150	6	6,087,722	3	186,180	97	18,229,052	110	36,740,952
NORTH CAROLINA	3	166,100	2	2,177,350	2	95,000	7	2,438,450	12	2,629,950
NORTH DAKOTA	1	49,000			3	70,000	4	119,000	9	228,470
OHIO	22	1,658,400	1	2,610,111			23	4,268,511	30	19,886,411
OKLAHOMA	5	269,700	1	4,309,035			6	4,578,735	11	4,938,250
OREGON	3	210,700			2	89,916	5	300,616	5	300,616
PENNSYLVANIA	48	4,333,915	3	3,949,726	1	6,000	52	8,289,641	58	11,481,641
RHODE ISLAND									3	965,000
SOUTH CAROLINA	1	44,000			2	121,900	3	165,900	5	393,600
SOUTH DAKOTA					5	175,000	5	175,000	9	282,000
TENNESSEE	1	46,200					1	46,200	4	597,033
TEXAS	18	1,389,900	4	5,969,923	1	41,050	23	7,400,873	27	8,054,873
UTAH									14	1,945,000
VERMONT	1	60,500			5	251,141	6	311,641	9	324,541
VIRGINIA	2	92,900	8	4,632,509	2	1,359,800	12	6,085,209	25	7,240,809
WASHINGTON	1	56,300	1	2,397,663	2	230,400	4	2,684,363	17	3,179,963
WEST VIRGINIA	5	278,400					5	278,400	6	678,400
WISCONSIN	3	159,100			1	18,000	4	177,100	12	1,533,730
WYOMING					1	8,000	1	8,000	1	8,000
TOTALS	385	34,648,565	52	54,246,040	90	12,828,853	527	101,723,458	814	192,852,360

NOTE: These figures do not include some forty millions appropriated for repairing and reconditioning Federal buildings nor appropriations for such items as subsistence homesteads

1923 will be attained by the middle of 1935. Two years more may be required to build this massive industry up to normal volume.

This progress may be somewhat accelerated by the program of public works or retarded by continued unfavorable financial conditions. If the large suggested program of public works is fully undertaken, the acceleration provided will, of necessity, be offset later. This will be due to anticipation of needs, to the inability to maintain public expenditures at the high rate established and to the necessity of meeting the debts engendered.

The Government has provided funds to cover the cost of a country-wide inventory of building structures, including classification by types, occupancy, vacancy and other items. This should yield much valuable information. It will soon lose its value unless provisions are made to keep it up-to-date. *In the controlled use of credit based on actual building needs rather than on speculative fervor lies much of the hope for reasonable stabilization of construction activity.* These problems are sufficiently important and complex to warrant undivided attention from those most competent to weigh the situation.

From Photograph to Elevation

Modernization work often demands labor-saving methods. Time required to measure and draw the elevations of a building can be saved by use of a pocket camera and the grid scale method described in this article



FIGURE 1

BY FRANCIS DAVID BEYER

IN connection with many alteration and modernization projects, elevations must be produced depicting existing facades with reasonable accuracy but requiring accurate drawings only at locations where actual alterations occur. Time-saving methods are often essential; always they are highly desirable.

In this work the camera can aid the draftsman. The ideal photograph of a building, for this purpose, is taken with a large view camera set level at a point normal to the center of the facade and at sufficient distance away to minimize distortion resulting from the effect of conic projection on surfaces at varying distances from the lens. The scale of the photograph is readily determined from a single measurement on the building which permits drawing the elevation at any desired scale. Due to interference of other buildings and difficulties in locating cameras at suitable heights this method is rarely practicable.

Views made with a small hand camera, tilted at such vertical angle as required, while not attractive as photographs, can also be used for the purpose of developing elevations. On prints made from such views, or preferably on enlargements made from the negatives, distorted grids are constructed from which detail is transferred to drawings constructed at any desired scale on true grids. True grids are restored in accordance with field measurements of a few critical dimensions.

To avoid vertical distortion of features at the same level it is advisable to take views from points normal to the center of the facade in plan so that the vertical tilt of the camera—if a tilt is required—is the only factor producing major distortion in the photograph. Figure 1 is such a photograph, taken with a Vest Pocket Kodak ($1\frac{5}{8}'' \times 2\frac{1}{2}''$), without tripod, from the sidewalk level on the opposite side of the street. It shows the left half of a building facade

which is symmetrical about a center line. Figure 2 is a direct $5'' \times 7''$ enlargement from this negative on which a distorted grid has been constructed.

To construct the distorted grid the half width of the building and its height from sidewalk to parapet were measured. On the enlargement the half width of the building was divided into the same number of equal parts at sidewalk and at parapet. These points were connected for the "vertical" lines. The number of spaces in the height of the building was then determined from the ratio of measured width to height and the correct number of horizontal grid lines were drawn, decreasing the heights of grid "squares" from bottom to top in the same ratio that the width of the "squares" decrease.

Due to the varying angles at which different parts of the building present themselves to the lens this method is not exact, but unless extreme angles occur, the errors thus introduced may be neglected. Computing the true size of a grid square from the building width, the restored grid in Figure 3 was constructed and the elevation developed, interpolating detail from the distorted grid in Figure 2. A later check by field measurements showed that errors of scale in the drawing were of little consequence.

In the case of wide buildings a series of views can be made so that details will overlap from one view to the next. A distorted grid traced on a transparent overlay is clipped in position over the enlargement of each view, for the purpose of interpolating detail on the restored grid.

In interpolating detail from a tilted photograph to an elevation, it is necessary to make due allowances and corrections for all projections and setbacks, since the size of a feature on a photograph will vary inversely with its distance from the lens. Where a considerable area of a facade projects or sets back from the building line, an independent grid should be constructed for it, preferably by taking enough measurements to keep both grids at the same



FIGURE 2

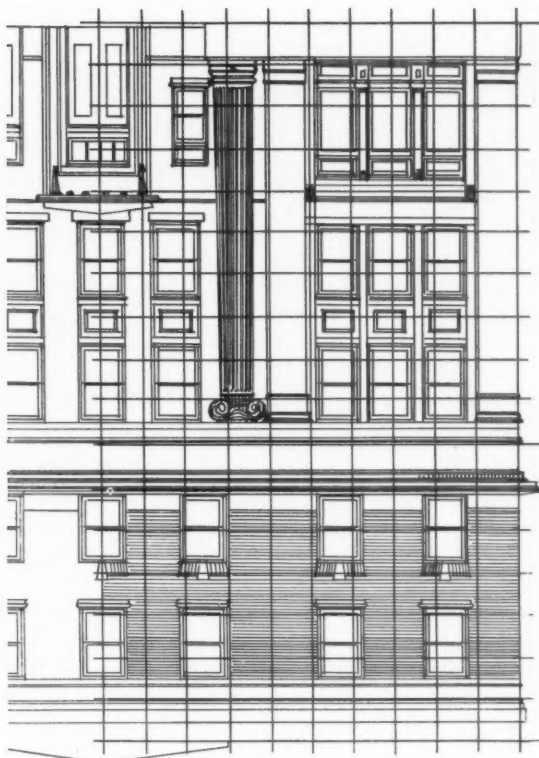


FIGURE 3

scale, so that detail can be interpolated from both grids direct to the restored grid. At the left in Figure 4 is a side view showing the effect of camera tilt in photographing a group of geometric solids.

The true scale of the resultant photograph is obtained at P , where the optical axis intersects the subject. A line representing the "plane of photograph" is drawn through P , perpendicular to the optical axis. Lines through points on the subject and the lens position intersect the plane of photograph in such a way as to produce the distorted grid shown in the central diagram, the grid for the upper prism being reduced in accordance with its greater distance from the lens. When this distorted grid is restored as shown at the right, detail in the upper grid will be enlarged to true proportions.

The ovoid solid on top, not being in the plane of either grid, must be treated separately and plotted on the true grid from field measurements, or by constructing a side elevation with the camera location, angle of tilt and plane of photograph shown, so that lines through the lens and plane of photograph will develop true heights on the side elevation. This is essentially the reverse of the "picture plane" method of constructing perspectives.

For cases where it is desirable to compute the scale of a photograph, the focal length of the lens may be obtained from the data on the lens housing, or may be measured from the optical center of the

lens system to the face of the film and the angle of tilt may be measured with a clinometer, if the camera is mounted on a tripod. Then, all measurements being in the same units, if, on Figure 4, f represents the focal length, D the horizontal distance from lens to building, a the angle of tilt, and L the distance from lens to a point P where the optical axis meets the building line:

$$L \text{ equals } D \times \secant a$$

and the scale of the photograph, on a horizontal line through P , and neglecting the effect of conic projection between the ends and the center of this line,

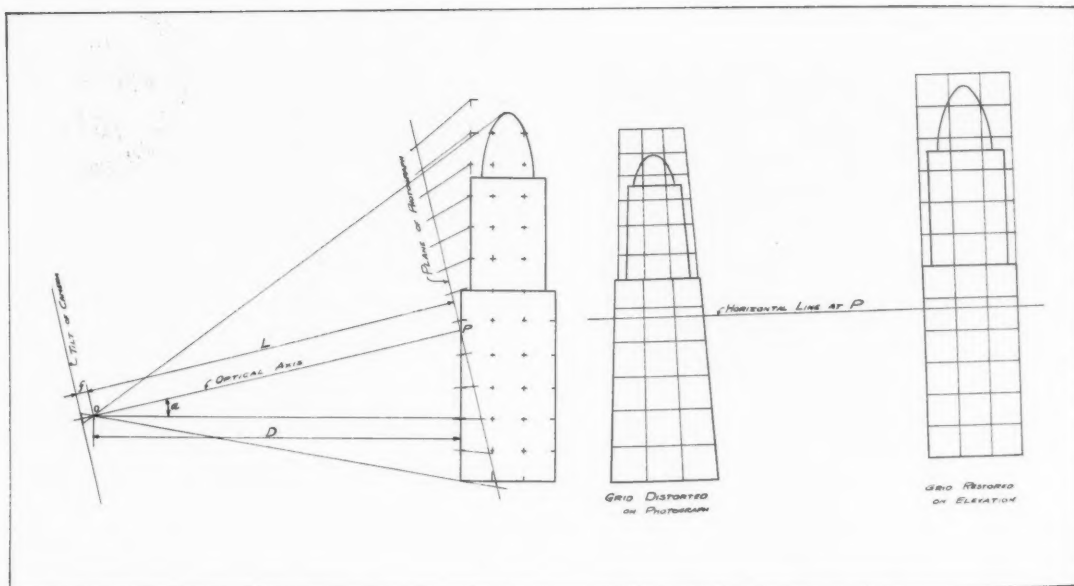
may be expressed as a representative fraction, $\frac{f}{L}$

reduced to $\frac{1}{\text{Scale of Photograph}}$

For example, if the focal length of the camera is $4\frac{1}{2}$ inches, and L is found to be 108 feet, the representative fraction for the scale of the photograph

at point P is $\frac{4\frac{1}{2}}{108 \times 12}$, which may be reduced to

$\frac{1}{288}$. One inch on the photograph is then equivalent to 288 inches, or 24 feet, on the building, at or near point P .



Above, Figure 4 shows the effect of camera tilt in photographing geometric solids. Below, Figure 5 is a photographic elevation made by tilting negative of Figure 1

If the camera is level and at a sufficient distance from the building to minimize differences in distances D from the lens to various points of the facade, then the representative fraction expressing the scale of the photograph will be simply;

$$\frac{f}{D}, \text{ reduced to } \frac{1}{\text{Scale of Photograph}}$$

and a paper scale in this ratio may be constructed for use on the photograph.

The enlargement in Figure 5 was made from the same negative by tilting the print paper until the vertical lines were approximately parallel. This results in making the photograph too high in proportion to its width and does not eliminate errors due to "conic projection effect" by which the size of a feature on a photograph varies inversely with its distance from the lens. By determining the true building proportions from measurements a grid may be constructed on Figure 5 and the detail interpolated to a drawing. This type of enlargement is more difficult to make. True proportions must still be determined by measurements; and difficulty is encountered in restoring detail which projects or sets back from the building line. The shrinkage of the photographic paper may also increase errors in heights or widths.

Many factors may affect the inherent accuracy of photographs. They include the lens, departure of film from focal plane and variations in air density and temperature. Assuming good equipment and light, we may ordinarily neglect all sources of error except the angle at which a building is presented to the lens and the effect of conic projection.





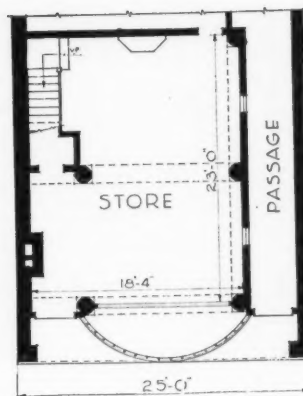
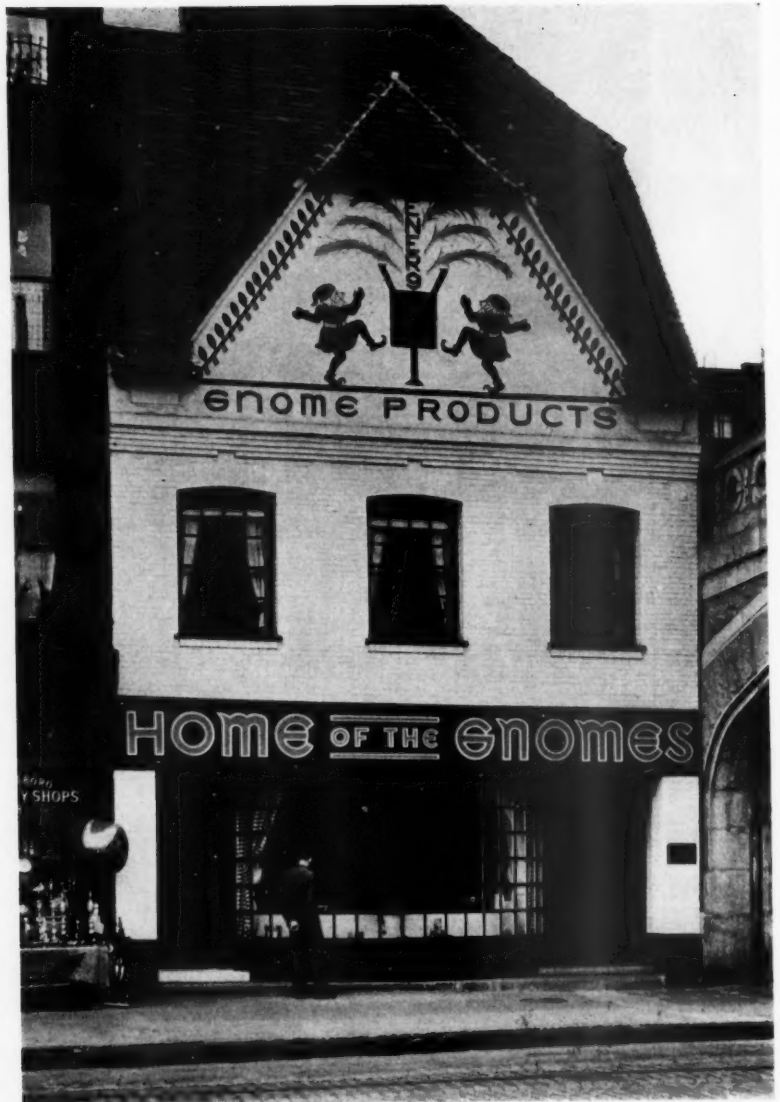
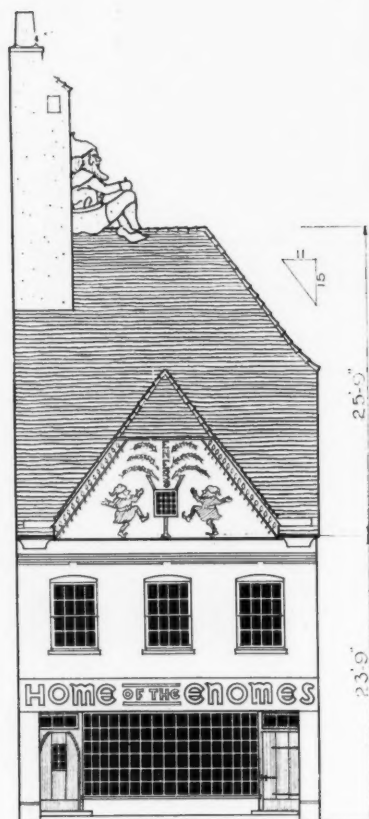
ALTERATIONS TO GNOME BAKERY, NEW YORK, N. Y.

ADAMS & PRENTICE, ARCHITECTS

Photographs by Samuel H. Gottscho

ALTERATIONS TO GNOME BAKERY
NEW YORK CITY
ADAMS & PRENTICE, ARCHITECTS

To advertise a special type of baked goods the red clay tile roof, chimney and papier mache gnome were added to the old store shown below at the right. All are visible from an elevated road, as shown on the facing page. Color scheme is red, green, yellow and black against white painted brick walls. Alteration cost, \$10,000, including show room furniture designed by architects. Completed, summer of 1933

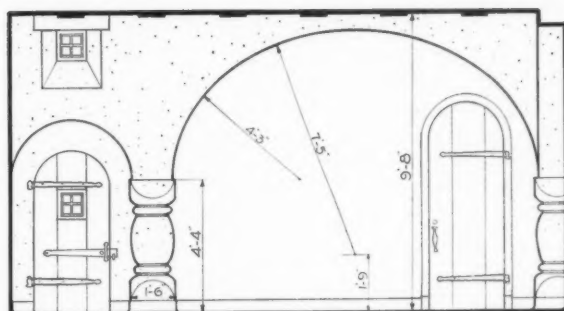


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SECTION

ALTERATIONS TO GNOME BAKERY, NEW YORK, N. Y.

ADAMS & PRENTICE, ARCHITECTS

. . As It Looks

Help Revive Building

BUILDING is one of the three bearings of the country's economic foundation. Without normal building volume business lags. Architects—individually and collectively through their organizations—can do much to stimulate revival of needed building construction. Because of their intimate and widely recognized knowledge of building needs and technique they are in a particularly fortunate position to arouse public opinion on these and related questions. Aroused public opinion results in action. Through every personal, social and political contact that may be available architects can secure recognition by the public and by the Federal Government of the importance of the building industry and the vital necessity of its immediate revival. By doing this with every means in their power they can help their nation, their community, their profession and themselves.

Twenty-First Amendment

WHAT will be the architectural opportunity created by the repeal of the Eighteenth Amendment? It seems obvious that the answer to this question is closely bound with laws in various states that may regulate the drinking habits of the people. At the present, such laws have not been formulated in enough detail—except in isolated instances—to permit a forecast of their influence upon architectural planning and design. If legislative efforts to bar the return of the saloon are successful, the architectural problem of liquor and wine dispensing will be closely linked to that of a new type of restaurant or cafe. Largely this will be influenced by local conditions and costs. Architects are familiar with such factors and should find much opportunity for interesting work in remodeling and modernizing kitchens, restaurants and club rooms, particularly in the hotel field.

For Better Bathrooms

ALMOST unbelievable are the tremendous advances that sanitary science has made during the past few years. Bathrooms are no longer just one of the necessary cubicles that people blush about. More and more they are being regarded as health centers; and the improvement of their planning and equipment is a subject of important concern to every architect. So impressed have we been with the favorable comments on the article on kitchen planning published last July that on page 69 of this issue we present a similar study of Bathroom Planning and Equipment. In the belief that clients are also interested in this subject, special care has

been taken to make this reference article one that architects can use as much *with* their clients as *for* them. It will be useful as means of anticipating many of the client's questions and will also serve as an authoritative guide to more intelligent and complete specifications.

Covers For 1934

BEGINNING with this issue a new series of cover designs will be adopted for the year. The design of the cover for each issue will remain substantially the same with the exception of the decorative subject. This will consist of a series of decorative interpretations of well-known American cities. The cover format and the drawings are the work of that facile draftsman and designer, Ernest Born. To produce a distinctive magazine format, *AMERICAN ARCHITECT* in 1933 inaugurated the use of covers without advertising on the back or inside. This feature has permitted Mr. Born to develop the front and back covers as a single unit. It is an innovation in magazine publishing in the United States.

What Kind of Filing System?

RECENTLY *AMERICAN ARCHITECT* conducted a survey among 5000 architectural offices to find out whether architects file the great amount of literature that comes to them, and also what system was most employed. Results should interest the new Filing Committee of the A. I. A. 92.6 per cent of those answering the questionnaire maintain catalog files; the A. I. A. system is in use by 65 per cent. The other 35 per cent use a system of their own patterned after that of the A. I. A. 82.7 per cent keep a separate file of magazine articles and clippings. We admit that most surveys of this kind are somewhat of a nuisance to architects. But they really help in the long run. This one, for example, shows that most architects consider the A. I. A. file a pretty good one to maintain. But it shows also that there is a need for some uniform method of filing architectural reference data other than manufacturers catalogs. Have you any suggestions that might aid in developing such a system?

That Breakfast Alcove

ARTHUR ('Bugs') Baer, columnist for the *Hearst* newspapers, has little use for the "breakfast alcove." He says, "Everything has improved about breakfasts except the alcoves. And even though we subsisted on oatmeal in the years that are past paging we at least had room to swing our elbows. If we can get thirty-six states to

to the Editors . .

repeal the breakfast alcove we will feel that we have not eaten our historic oatmeal in vain." In Mr. Baer's facetious remarks there is also much truth. Most breakfast alcoves are too small.

A Caption Correction

THE caption for Figure 3, on page 23 of the November issue of *AMERICAN ARCHITECT* contained an inadvertent error. The caption stated that the shaded portions of the chart indicated the number of homes *built* and referred to the shortage of homes indicated for the present decade. The last two sentences in this caption should have read, "Curve indicates relative increase in population, shaded portions number of homes required for increased population. Estimated decline indicated for the present decade shows one probable result of the current depression." An apology for this error is due our readers as well as Mr. Thomas M. McNiece, the author of the article. The editors gladly tender it. Incidentally, any reader who failed to read this article should do so now.

The Architect's Opportunity

MUCH thought and attention is being given the important question of stimulating building as a factor in our general economic recovery. Good is bound to come from this. It is hoped that 1934 will witness the beginning of an important era of building in the United States. It spells opportunity for architects. This should be recognized. Steps should be taken to make sure that architects receive their share of this work. Now is the time to begin planning and designing a more beautiful America. The opportunity is not far away. Now is the time to make sure of it—not after it is well underway and so far advanced that it is a lost "market."

What, No Smokestack!

ODDITIES in building frequently break into Robert Ripley's "Believe it or Not." Not long ago Mr. Ripley showed a Baltimore building in which the boilers were installed and a fire started before it was discovered by a perturbed janitor that the building had no smokestack. Since Mr. Ripley offers to prove his statements, we will accept his account as correct. We could add to it tales of numerous buildings constructed without stairways and with stairways having insufficient headroom. A catalog of building errors would no doubt make a fair-sized volume. It would certainly form an impressive argument for the wider employment of architects.

A Confusion Of Names

THIS may help to clarify the confusion that exists in the public mind regarding two Federal organizations—Home Loan Banks and Home Owners Loan Corporation. Home Loan Banks are designed to assist in financing home building. The Home Owners Loan Corporation is designed to assist home owners whose mortgages are in distress. The names and purposes of these two organizations are so nearly alike that they are often confused both as to name and purpose.

Timely Questions

DURING the past few years there are probably few architects who have not asked themselves some or all of these questions: Why did I study and become qualified to practice in a field for which there seems to be a limited demand? Is the profession overcrowded? How can I assure myself of more work in the future? How can I assure myself of more steady work? How can I become better remunerated for the work I do? How can greater public interest in the work of the architect be obtained? How can the belief that an architect's services are costly or unnecessary be overcome? There are other questions but they all point in about the same direction. Surely there are many architects who have given these questions serious thought and as a result have constructive suggestions for their solution or answer. The editors of *AMERICAN ARCHITECT* would like to correspond with these individuals if they will kindly make themselves known to us.

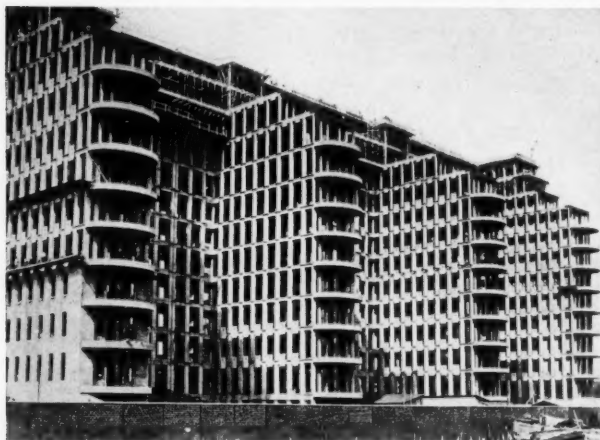
Russian Architects

OUR recent diplomatic recognition of Soviet Russia gives added interest and significance to the article by Isadore Rosenfield that starts on page 13 of this issue. Even a casual survey of Russia's building problems reveals the fact that architects are—and will be for many years—feverishly busy. Indeed, the supply of well-trained men is not adequate, though Russian universities are instructing huge classes of "technical experts." Most interesting of all is the opportunity that every architect has to work on the type of architectural problem that attracts him most. A man usually does better the things that he enjoys doing; and since no problem of economics forces a Russian to remain an architect or an architect to design industrial buildings when his chief interest lies in housing, Russia should develop ultimately some of the best architects in the world.

Right: State Office Building at Columbus, Ohio, recently rebuilt after a disastrous explosion in 1932. Harry Hake, architect; Frank W. Bail and Alfred A. Hahn, consulting architects. Below: Beajon Hospital, now under construction at Clichy, France, will be the tallest concrete building in the country. Projecting balconies will be used for sun bathing



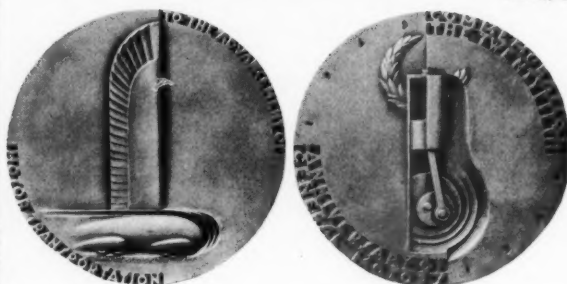
CUSHING



ACME



An experimental house that can be duplicated for \$2,770 has been completed at Zanesville, Ohio, by the Universal House Co. Construction is of sheet steel insulated with spun glass. Exterior siding is 16-gauge ingot iron, finished with sprayed enamel paint. Finished floors are hardwood. The interior is sheathed with wallboard covered with decorative wall fabrics

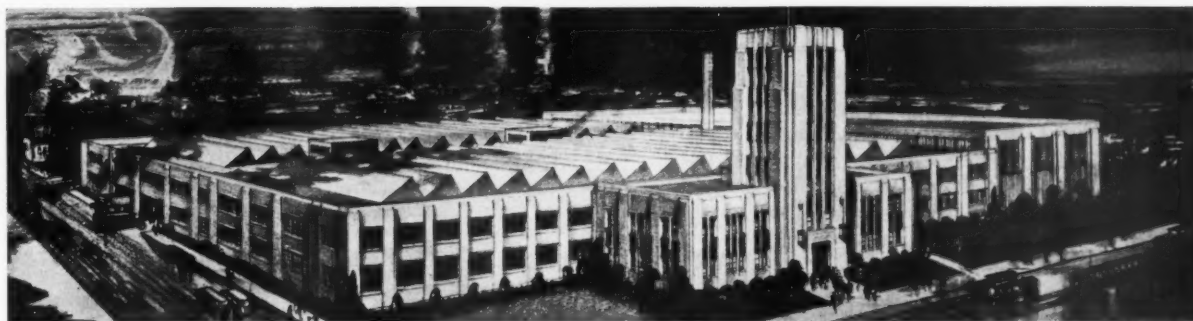
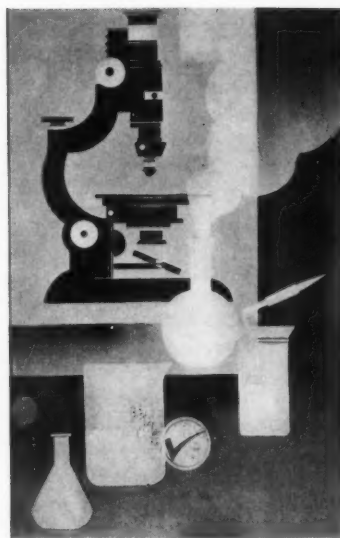


Silver medallion by Norman Bel Geddes, industrial designer, to mark the Silver Anniversary of General Motors. This is Mr. Geddes' first work in the field of medallion design

Trends and

- Faith in America's future is voiced by B. C. Forbes in the *New York American*. Among other things Mr. Forbes prophesies for the future: more jobs than workers; construction on an unparalleled scale; the birth and expansion of new industries eclipsing even the automobile's record; profit sharing plans which will make millions well-to-do; real estate values transcending all past peaks; and a standard of living higher than any now imagined.

- The extent of the housing market is stated in large figures by Mr. B. G. Dahlberg of the Celotex Co. He says, "To bring back housing to the proper basis for the first one-third of the population will require substantially eleven billions of dollars. The second one-third will require twenty-five billions and the last one-third twelve billion—a total potential building necessity of forty-eight billion dollars. This does not take into consideration the repairing or mod-



Above, left: Wooden hardware, manufactured as a depression activity by Woodcrafters Guild, Inc. It was designed by Newell C. Cushing and sponsored by Parsons & Wait, Boston architects. Above right: Two porcelain enamel murals designed by Edward Winter. Below: New factory for Chicago Carton Co., Chicago, Ill., A. Epstein, architect and engineer

Topics of the Times

ernizing of homes." Mr. Dahlberg estimates that the last two-thirds of the population include families with incomes below \$2,000 per year. For those having an income under \$1,200 Mr. Dahlberg sees no housing help without Government aid.

- Lightning rods have been a subject of controversy ever since Benjamin Franklin first touched the key at the end of a kite string. But recent investigations indicate that a lightning rod protects not only the structure upon which it is erected, but also a considerable area around it. Engineers say, for example, that on a flat area a thousand foot lightning rod will give protection within a radius of at least a thousand feet. W. L. Lloyd, Jr. of the General Electric Engineering Laboratory says that information regarding lightning and its vagaries is still incomplete, but asserts the best way to prevent possible damages to buildings is to show the bolt the easiest way to earth via a lightning rod.

- B. F. Affleck of the Universal Atlas Cement Co. predicts entire elimination of pitched roofs in future home design. He thinks that roofs of future dwellings will be used for terraces and gardens and bases his contention on the ease with which a flat roof may now be constructed. Mr. Affleck believes that the predominance of flat roofs among the World's Fair houses will influence public acceptance of a new type of architectural design.

- 1,000 architects and architectural draftsmen will be employed in a historic American buildings survey under the C. W. A. program in charge of Chief Architect Thomas C. Vint of the Branch of Plans and Design, Office of National Parks, Buildings and Reservations. They will study, measure and draw up plans, elevations and details of important antique buildings throughout the U. S. (Cont. on page 108)



'Erb the 'Ousebreaker

By H. E. KAVANAGH

THERE is no public figure in London to-day so certain of a large and lingering audience as that acrobatic marvel who performs feats of agility on the crumbling walls of buildings in process of demolition.

It is his misfortune that an unthinking world has imposed upon him the unfortunate name of housebreaker, making him the butt of comedians, and connecting his noble profession with the sinister activities of crooks and cat-burglars.

Other London characters have been immortalized in song and story; the coster, the busker, the pavement artist have all had their meed of public recognition, but the greatest of them all, the balancer on precarious perches, the inimitable artist who plays daily to packed pavements, has never attracted the attention of the Poet Laureate nor been properly honored in the Press.

To most people, of course, he is a man of mystery; few can claim the honor of knowing with any degree of intimacy the Man behind the Gantry. No publisher has ever circulated "The Memoirs of a Housebreaker" or "From Attic to Area" by Percival Pickaxe, nor has any psychologist analyzed the mind of the man whose lifetime is spent in an orgy of destruction. Possibly this public apathy does not worry him in the slightest degree for he is a member of an unique order, the one man who can do, with impunity, what millions of his fellow men would love to do if only the opportunity were granted them.

Although his public appearances are usually by kind permission of Somebody's Wharf, his origin is obscure. The crowd which gazes reverently upwards while showers of plaster patter down, regards the happy housebreaker with awe-struck admiration but with little desire to learn the method by which he reached so lofty a pinnacle. His audience envies him, but as long as he is content to perform prodigies of valor with one foot on a cornice and the other poised in the upper atmosphere, curiosity is stifled. He is an actor—a star performer on London's continuous variety stage, a practitioner of non-stop acrobatics—and his private life is nobody's business.

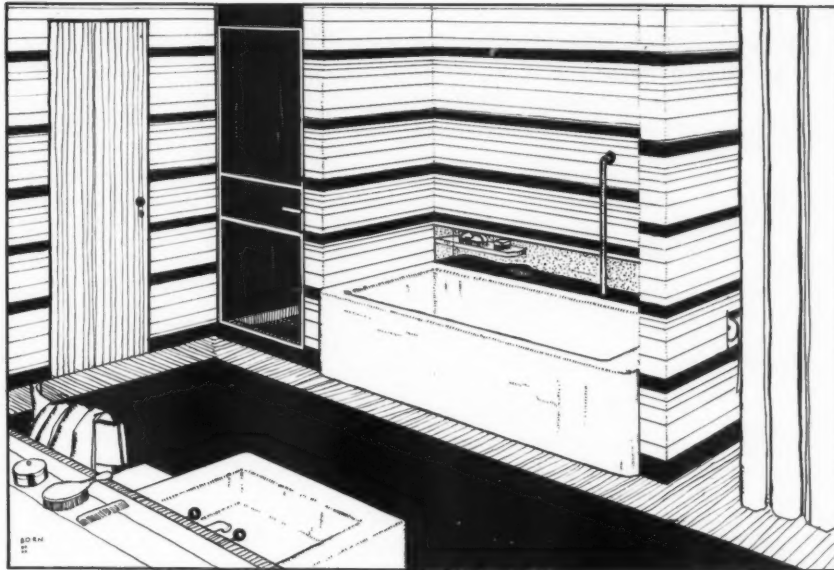
There can be, however, few more fascinating occupations. He must feel a very king amongst men—the one man of whom it can truly be said that he leaves no stone unturned. Everything falls beneath his sway; everything indeed falls for him and he never even stumbles. No man drops so many bricks and yet never fears ostracism; no man delivers so many shrewd blows at established institutions and yet never risks social obloquy. He may not know that he is the prototype of a great historical figure, that he is a modern Oliver Cromwell, but whereas Oliver only knocked things about a bit he never rests content until he has reduced everything to dust.

Truly the housebreaker must be a happy man, he cannot possibly have a conscience. He can break up the redundant "Red Lion" with as much gusto as he will display when he is let loose in the Adelphi. What's an Adam mantelpiece to him as long as it gives him a foothold? What does Carlton House Terrace matter?—the better the building the more he enjoys himself. He could blow down some of the modern stuff, but it's a man's job to demolish the old. And yet, on a Saturday afternoon, when he has washed off the brick dust and combed the mortar out of his moustache, you can see him gazing longingly at Bush House, murmuring to himself that he "wouldn't 'arf like to have a go at that one." And as far as the Shell Building—well!—if they'd only give him the chance, he'd have the hands off that blinking clock in less time than it would take him to sink a pint. He needn't worry: his time will surely come.

He is a great man, the housebreaker—a great benefactor. What he destroys today others are planning to re-build tomorrow. By destroying other men's work he creates opportunities for the labors of architects and builders; he creates profit for Somebody's Wharf—and he creates an enviable thirst for himself. And as he grasps his pick and stands in silhouette against the sky he can at least feel that in Piccadilly Circus he has been immortalized in bronze, for who can gaze upon Eros without seeing where Sir Alfred Gilbert obtained his inspiration? Exchange the arrow for the pick, garb Eros in dungarees and what have you? Why, none other than that god of daily destruction—'Erb the 'Ousebreaker.



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BATHROOM PLANNING

American Architect Reference Data
Number 9 January, 1934

Data compiled and reference plates drawn by Harold R. Sleeper.
Studies of elevations and decorative treatment by Ernest Born

BATHROOM planning is one of the most frequently recurring architectural problems that demands detailed study. More money is involved in the development of bathrooms per unit of volume or area than for any other part of a dwelling. And today this problem is multiplied for each dwelling by the marked trend toward the use of several bathroom units in every dwelling.

The purpose of these reference data is to simplify this problem by establishing its basic principles and by providing useful information on bathroom planning and the selection of materials.

LOCATION AND EXTENT OF TOILET FACILITIES

1. Minimum toilet requirements for any dwelling housing three persons or more should include two water closets, two lavatories, one shower and one bathtub, the latter two combined if desired. Normally these fixtures should be disposed in a main bathroom (consisting of a closet, lavatory, and bath with shower) and a secondary toilet (including closet and lavatory). Under some circumstances the second closet may be a basement closet for servants' use, and the second lavatory may be in a bedroom;

or one bathroom may have toilet, lavatory and bathtub, and the other, toilet, lavatory and shower.

2. The foregoing minimum should be increased: (a) where sleeping rooms are disposed on two or more floors, to provide at least one complete bathroom on each bedroom floor; (b) where there are more than three bedrooms for master and guests, to provide at least one additional complete bathroom for every two rooms above three; and (c) where there are servants' rooms, to provide at least one complete bathroom exclusively for servants' use.

These minimum standards should be adopted only where budgets limit the toilet facilities to the minimum consistent with rentability, salability, and reasonable convenience. For average dwellings, costs should be proportioned to permit the adoption of the following standard based on frequency of use:

3. Normal toilet accommodations should include: (a) a private bathroom for the master bedroom; (b) a general utility bathroom entered from a common hall serving children's room and possibly one or two infrequently used guest rooms; (c) a guest bathroom serving each one or two frequently used guest rooms; (d) a toilet with closet and lavatory accessible to family and guests on the ground or entrance floor; (e) a servants' bathroom for one to three servants' rooms according to sexes employed; and (f) a toilet accessible to out-servants.

This optimum standard provides reasonable convenience without an undue investment in facilities

that are only occasionally used. For maximum convenience toilet facilities may be increased as far as cost will permit to provide a complete bathroom with every bedroom, plus additional toilets and bathrooms as required by the plan or the style of living of the owner.

LOCATION FOR PRIVACY

4. *Water closets should be installed in a separate compartment wherever possible. Preferably this compartment should be arranged so that it may be entered from the room or hall it serves without entering the adjacent bathroom.*

This important rule provides the privacy desirable in the use of closets; the bathroom proper may be devoted to washing and bathing and to other health functions, such as exercising or sun bathing, which two people can use jointly. In addition, the closet compartment may be soundproofed without treating the entire area, and it may be ventilated adequately without unduly cooling the larger unit.

5. *Privacy is further increased where: (a) bathroom doors are positioned or swung to shield the water closet when door is open; (b) bathrooms serving two adjoining rooms are entered from a common hallway through a single entrance (in preference to having two doors to the same bathroom); (c) doors to bedrooms are placed remotely from doors to hall bathrooms; and (d) bathrooms are not located directly at the head of stairs.*

LOCATION FOR ECONOMY

Where multiple toilet facilities are required at minimum cost, the following points should be considered:

6. *Installation costs are minimized where: (a) bathrooms and toilets are located over each other or over other plumbing fixtures, such as kitchen or pantry sinks, to permit use of common soil stack (and vent where permissible); (b) bathrooms and toilets on the same floor are located back to back; (c) closets are located close to the soil stack to minimize horizontal runs; and (d) where wastes of other fixtures are located in close proximity to the soil stack. This rule reduces piping costs and minimizes furring out the thickness of walls to conceal the soil lines. See Figures 1 and 2. In alteration work the use of "unit panel" fixtures, consisting of metal housings for all piping combined with the fixtures and appropriate accessories, saves the cost of cutting existing partitions to conceal the pipe and the cost of redecorating damaged walls.*

Too much emphasis should not be placed on piping economy. The following rule should always be considered in connection with the last:

7. *Never let piping costs impair a logical and convenient layout. Convenience in the location of bathrooms and toilets and of individual fixtures is far more important during many years of service than the small economies that might result from another arrangement designed solely for piping economy.*

LOCATION AND TREATMENT FOR QUIETNESS

The transmission of noises generated in the bathroom to adjacent rooms or to other parts of the dwelling is one of the architect's most troublesome and important problems. The expense incident to complete insulation by means of suspended surfaces is seldom required if these precautions are taken:

8. *Bathrooms and toilets should be isolated from adjoining rooms by means of closets or infrequently used passage ways, wherever the plan permits.*

9. *All piping should be heavily wrapped with hair felt or rock wool, and isolated from contact with metal lath to prevent telephoning of noise from fittings. Pipe anchorages should be cushioned and attached only to rigid parts of the structure.*

Other soundproofing precautions include: (a) The use of soundproof doors or, where they are precluded for cost reasons, the use of felt weatherstripping for all edges of the door, including an automatically lifting bottom strip; (b) the construction of double partitions consisting of staggered studs without intermediate contact between surfaces from floor to ceiling in stud construction, or the use of solid brick or other heavy masonry partitions in fireproof construction; (c) sound absorption within the bathroom by means of acoustical plaster or sound absorbing materials on the ceiling; and (d) the selection of the highest grade fixtures and fittings.

SIZE IN RELATION TO PURPOSE

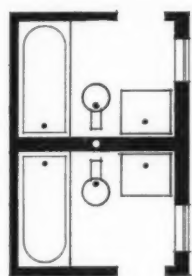
There is an unfortunate tendency to plan bathrooms of minimum size. It will be conceded at once that it is better to have multiple toilet facilities of minimum size than to have an inadequate number of bathrooms and toilets. What is really minimum size cannot be precisely defined, because the owner's concept of convenience in the use of the individual unit must always be taken into consideration.

In Fig. 3 the clearances required by individual fixtures both as isolated units and in relation to each other are developed in diagrammatic form. These clearances have been established by bathroom planning experts as desirable minimums. Lesser dimensions may be used if necessary but only at a considerable sacrifice of convenience. Absolute minimums are to be found in ship, pullman and aeroplane toilets. These are not considered good practice in dwellings.

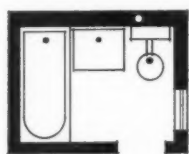
In all cases these minimum clearances should be increased whenever possible, even when bathrooms are intended for the private use of only one person. Occasions may arise, particularly during sickness, when an attendant must be present in the bathroom. The care of children also requires space for two people. In short, *minimum sizes are to be avoided rather than recommended.*

DIMENSIONS OF FIXTURES

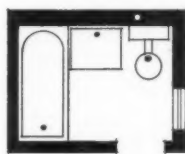
Average dimensions and, where possible, the representative range of dimensions of all standard types of fixtures and bathroom accessories, are shown in



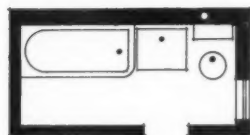
ECONOMICAL GROUPING
OF BATHS-BACK TO BACK



ECONOMICAL



Bath at left has shorter
run of waste. Bath at right
will require either special
floor framing or hung
ceiling below

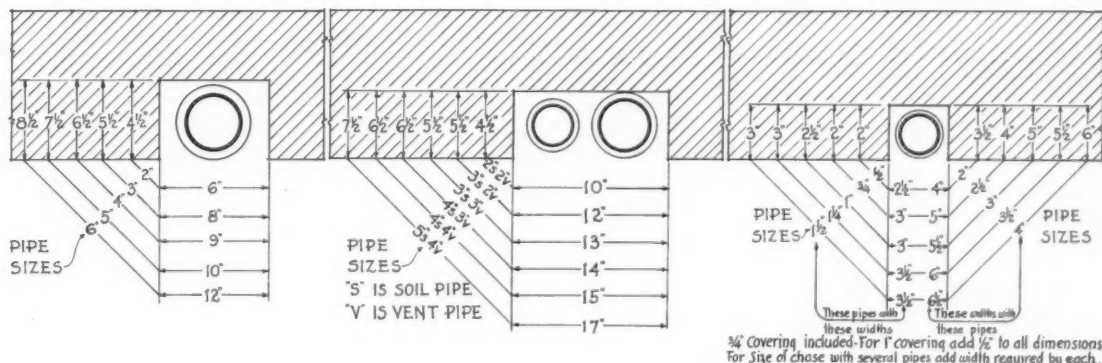


UNECONOMICAL

Bath at left has shorter
run of waste. Bath at right
may require hung ceiling
below if joists are shallow

Figure 1. LOCATION OF FIXTURE OUTLETS FOR PIPING ECONOMY

HOW PIPE SIZES AFFECT WALL CHASES



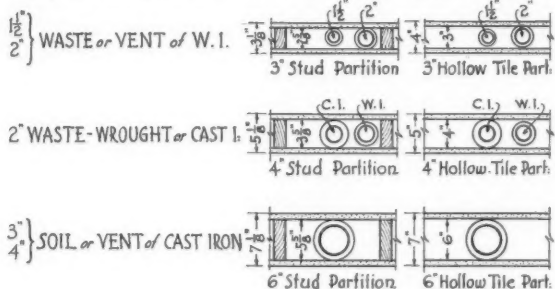
ONE SOIL, WASTE or VENT PIPE TWO SOILS, WASTES or VENT PIPES.

WATER PIPES

HOW PIPE SIZES AFFECT PARTITION THICKNESS

HOW BEAM DEPTHS LIMIT SOIL RUNS

MINIMUM PARTITION WIDTH for SOILS, WASTES & VENTS



MAXIMUM RUN HORIZONTALLY-FROM WATER CLOSET INCLUDING BEND-BETWEEN WOOD JOISTS USING 4" C.I. SOIL

8" Deep floor joists Run of 4'-0"
10" Deep " " " 12'-0"
12" Deep " " " 15'-0"

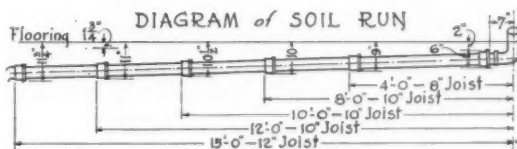


Figure 2. PIPING in WALLS PARTITIONS and FLOORS

Fig. 4. These dimensions should be used only as a guide for preliminary planning, for precise dimensions of individual fixtures are often critical in the development of the final plan, and these vary between the products of different manufacturers. It is important that built-in fixtures, such as baths, shower compartments, scales, medicine cabinets and, in some cases, closets, be selected and specified concurrently with the development of working drawings.

MINIMUM-SIZED TOILETS

The minimum clearances given in Fig. 3 are combined in Fig. 5, top, to show good minimum practice in the arrangement of toilets, consisting of lavatory and closet. Such toilets are suitable for use as a convenience toilet on the living room floor, as an adjunct to guest rooms which cannot be equipped with a complete bathroom, as an adjunct to more commodious powder rooms and retiring rooms, and as segregated parts of a health center.

It will be noted in Fig. 5 that the fixture sizes are designated by letters, and these refer in turn to the tables in Fig. 4 which give the range of dimensions for these fixtures. See also Tables I to V.

MINIMUM-SIZED BATHROOMS

The diagrams shown in Fig. 5, center and bottom, indicate good practice in minimum three-fixture bathrooms, consisting in one group of closet, lavatory and tub, and in the other of closet, lavatory and shower compartment. For practical utility these layouts should be extended rather than diminished. The great variety of arrangements that are possible in rooms of irregular shape are not shown in Fig. 5, but may be developed from the data in Fig. 3.

Minimum bathrooms of the types shown may be used as private bathrooms serving guest rooms or master's bath, provided one utility bathroom of larger size is available on the same floor. They are also adaptable to hotels and apartments, to servants' quarters, to low cost housing and to alteration work where space limitations are severe.

UTILITY BATHROOMS

This term, "utility bathrooms," refers to bathrooms commonly used by two people jointly and to bathrooms serving two or more bedrooms. At least one utility bathroom should be provided on the main bedroom floor and should preferably be located conveniently to children's rooms. The utility bathroom should provide ample floor space for two people, with room for the temporary introduction of an infant's bathtub or an invalid's wheelchair.

The convenience of the utility bathroom may be augmented by including a dental lavatory in addition to the regular lavatory. Typical utility bathrooms are included in Figs. 6 and 7.

THE HEALTH CENTER

One modern concept of the bathroom is expressed in the term "health center," where all health func-

tions, including the elimination of body wastes, personal cleanliness, exercise and sun bathing or ultra-violet radiation, are provided for.

The health center is an enlarged utility bathroom equipped with either a large window glazed with ultra-violet transmitting glass or ultra-violet lights, and such exercise machines or vibrators as the client may desire, plus adequate space in which to use these facilities in comfort. Accessories include a massage table or rest couch for sun bathing, a built-in scale, and whatever supplementary fixtures the client may afford, including bidet and plunge. The space requirements for health center equipment are presented in Table V. The water closet should always be segregated in a separate compartment.

SPECIAL BATHROOMS

In addition to these more or less standardized forms, bathrooms may logically be developed for special purposes, among which the following are appropriate:

Dressing Room Baths. Where private dressing rooms are provided for master and mistress the dressing room may be combined with a private bath, or immediately adjacent to the private bath. The combined unit is logical if the closet is segregated in a toilet compartment and the room of comfortable size. The dressing room bath is distinguished by the addition of fitted closets, dressing tables, and adequate mirrors. See plans in Fig. 7.

Invalid's Bathroom. In large houses where a room or suite is isolated for occasional use as a sick bay, or where the family includes a chronic invalid, the bath serving this suite should be developed accordingly. Tubs may be sunk below the finished floor, or equipped with special grab rails to aid the invalid in entering or leaving the tub. Space should always be provided for an attendant, and doors should be large enough to admit a wheelchair. A shower stall may be used by some invalids who cannot enter a tub. Special fixtures, including the sitz bath, foot bath, and bidet may be needed. The water closet may be equipped with a bed-pan washer or a special utility sink may be added.

Luxury Bathrooms. The difference between a luxury bathroom and the health center is found principally in the completeness of fixtures and equipment, the spaciousness of the room, and the quality of its appointments, decorations and surfacing materials. A plunge may take the place of a bathtub. This is in no sense a swimming pool, but is usually recessed in the floor and ranges in size from 4 feet wide to 8 to 10 feet long, and about 4 feet deep.

ARRANGEMENT PROBLEMS—WINDOWS AND DOORS

Regardless of the size or type of bathroom, there are a number of basic planning problems which may be reduced to rules or principles. These rules are not mandatory, but are based upon ideal conditions. Some of them conflict with others when an attempt is made to adjust an ideal arrangement to a specific

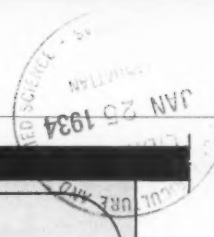


Figure 3 MINIMUM DESIRABLE FIXTURE CLEARANCES

TABLE 1—MEDICINE CABINETS WITH MIRRORS

Types	Mirror Width	Size Height	Uses
1. CURVED HEAD			This type is most expensive
Large	1'9"	2'6"	Luxury Type Bathrooms
Medium	1'6"	2'2" or 2'4"	Master's Bathrooms
Small	1'4"	1'10" or 2'0"	Guests' Bathrooms; Toilets
2. FULL MIRROR FRONT OR NARROW FRAME			High quality, less costly type
Large	1'8"	2'4"	Master's and Utility Bathrooms
Medium	1'6"	2'0"	Master's and Guest Bathrooms
Medium	1'4"	1'10"	Guest or Children's Bathrooms
Small	1'1" or 1'3"	1'7"	Guests' Bathrooms; Toilets
3. MIRROR OF DOOR SIZE	For overall size add 2" to 4" to mirror.		Less Expensive. Used where appearance is unimportant
Large	1'4"	1'10"	Master's or Utility Bathrooms
Medium	1'2"	1'6"	Guest or Children's Bathrooms
Small	1'0"	1'4"	Children's Bath
4. OPEN BOTTOM SHELF	For overall size add 3 1/2" to 5" to width and 9" to 11" to height of mirror.		Low cost (no other shelf needed)
Large	1'4"	1'8"	Servant's Bath
Medium	1'2"	1'6"	Servant's or Children's Bath
Small	1'0"	1'4"	Children's Bath

NOTES.—Sizes are not standardized but sizes shown are generally available. Depths vary slightly but are such that they may be built in 4" stud partitions. Deeper cabinets are made to order. Large, Medium and Small are used to indicate average sizes in each range; both larger and smaller units are obtainable.

TABLE II—SUPPLY CABINETS, STEEL

Width	Height	Depth	Notes
1'6" or 1'8"	5'0"	4 1/2"	
" "	" "	6"	Doors may be
" "	" "	8"	all steel or may
" "	" "	10"	have mirror
" "	" "	12"	panels.

TABLE III—STORAGE FOR TOWELS

The Following Number of Towels May Be Stacked
in 1'0" of Height or in Two Drawers or Trays

Doz.	Type	Shelf Sizes		Drawer Height
		Folded	Spacing Width	
1	TURKISH	10"x12"	16" o.c. 16"	8" or 10"
2	TURKISH	9"x22"	16" o.c. 12"	8" or 10"
2	SMALL BATH	8" x 9"	{ 16" o.c. 12" 20" o.c. 16" }	8"
2	LARGE FACE	8" x 9"	{ 16" o.c. 12" 20" o.c. 16" }	7"
2	SMALL FACE	5" x 6"	16" o.c. 14"	7"

TABLE IV—SHOWER RECEPTORS, STOCK SIZES

		Width	Depth
ENAMELED IRON		3'0" x 3'0"	
Not standard; see catalogs.	Nominal sizes only	3'2" x 3'2"	
		3'4" x 3'4"	
PORCELAIN		3'6" x 3'6 1/2"	
Not standard; see catalogs.	Nominal sizes only	3'0" x 3'0"	
		3'6" x 3'6"	
TERRAZZO		Range 2'6" x 2'6"	
Not stocked.	Any size made to order	to 4'0" x 3'0"	
STEEL		2'4" x 3'4"	
Integral with Steel Stall Enclosures.	Stock sizes overall	2'8" x 2'8"	
		3'0" x 3'0"	
		3'4" x 2'4"	

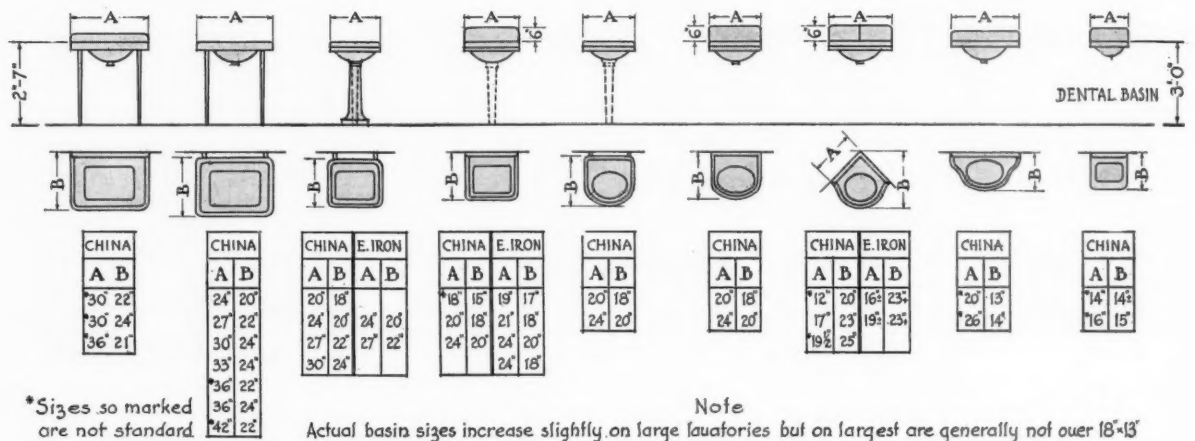
TABLE V—MISCELLANEOUS EQUIPMENT

Equipment	Width	Depth	Out from Wall	Height
Bidet	1'2 $\frac{1}{2}$ "		*2'4"	
Sitz Bath.....	2'8 $\frac{1}{2}$ "	*2'6 $\frac{1}{2}$ "	*2'6 $\frac{1}{2}$ "	
Manicure Table	1'6"	2'8"	2'8"	2'6"
Child's Bath..	1'8"	2'8"	2'8"	2'6"
" " " "	2'0"	3'0"	3'0"	
" " " "	2'0"	4'0"	4'0"	
Foot Bath.....	2'2"	*2'1"	2'1"	
" " " "	*2'0"	*1'10"	*1'10"	
Massage Table	6'0"	2'6"		2'8"
" " " "	6'6"	2'0"		

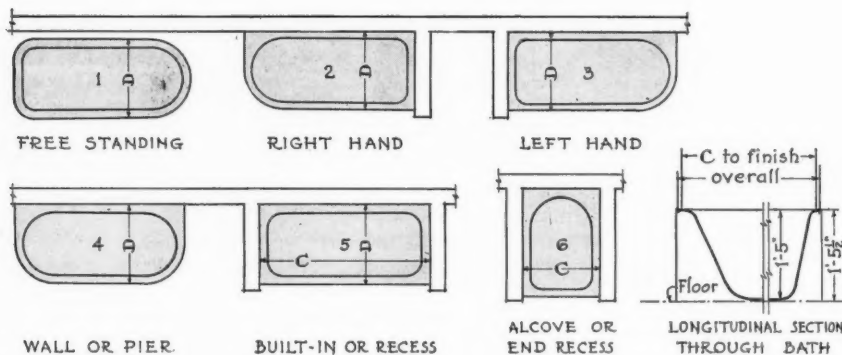
* Subject to variation.

AVERAGE DIMENSIONS of PRINCIPAL BATH ROOM FIXTURES

Figure 4



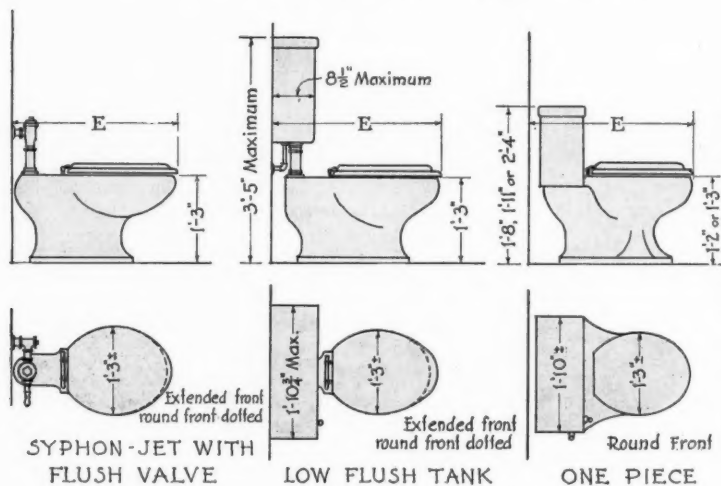
LAVATORIES - Dimensions A and B



NOMINAL SIZE	OVERALL	C	D
THESE ARE MAXIMUM REQUIRED BY ANY MFR. SEE CAT. FOR EXACT SIZE			
* 3'-6"	3'-7"	3'-5 1/2"	
* 4'-0"	4'-0"	3'-10 1/2"	
4'-6"	4'-7"	4'-5 1/4"	2'-4" x 2'-6 1/2"
5'-0"	5'-1"	4'-10 1/2"	2'-5" x 3'-0 1/2"
5'-6"	5'-6"	5'-4 1/2"	
6'-0"	6'-1"	5'-10 1/2"	

NOTES:
Baths usually build in 1/4" or 7/8" except tile faced baths build in 1 1/2".
Fittings may be at either end and are designated as left or right hand.

BATH TUBS - Dimensions C and D



DIMENSION "E" FOR WATER CLOSETS				
TYPE OF FRONT	FLUSH VALVES		LOW TANKS	
	EXTENDED	ROUND	EXTENDED	ROUND
SYPHON JET	2'-4" x 2'-7"	2'-2"	2'-6 1/2"	2'-4"
REVERSE TRAP	2'-4"	2'-2"	2'-6"	2'-4"
WASH DOWN	2'-3 1/2"	2'-1 1/2"	2'-6"	2'-4"
ONE PIECE	—	—	2'-2"	2'-3 1/2" x 2'-5 1/2"
WALL BLOW OUT	2'-0"	—	—	—
WALL SYPHON JET	2'-2 1/2"	—	—	—
JUNIOR (13" HIGH)	—	2'-1 1/2"	—	—
BABY (10" HIGH)	2'-3 1/2"	2'-0" x 2'-2 1/2"	2'-5"	2'-1"

THE ABOVE ARE AVERAGES-NOT STANDARDS

WATER CLOSETS - Dimension E

MINIMUM SIZES for COMPACT BATHROOMS and TOILETS

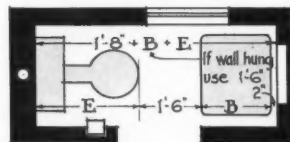
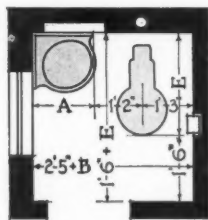
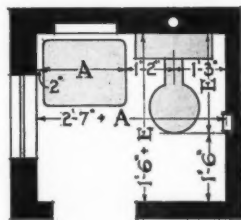
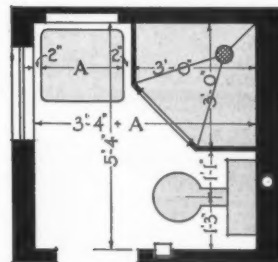
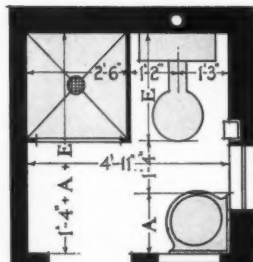
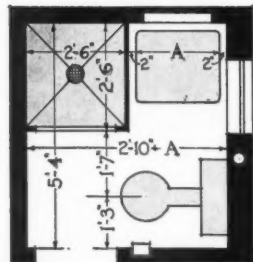
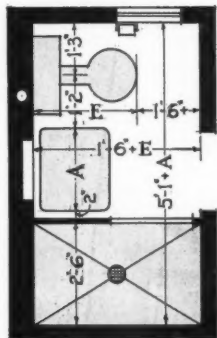


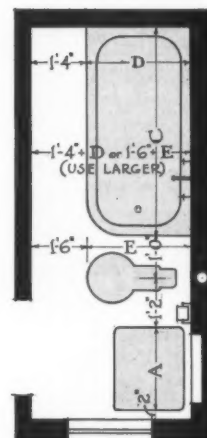
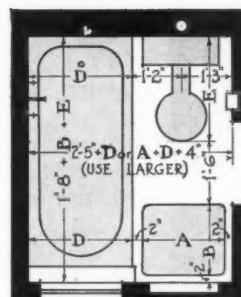
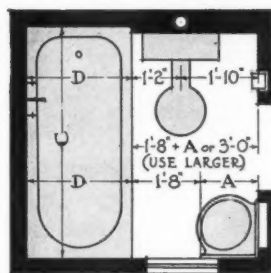
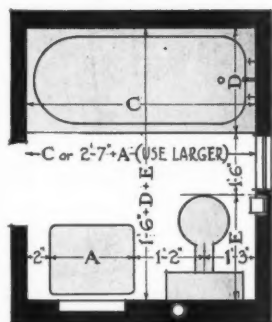
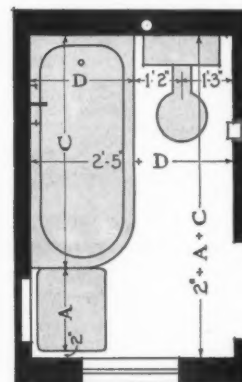
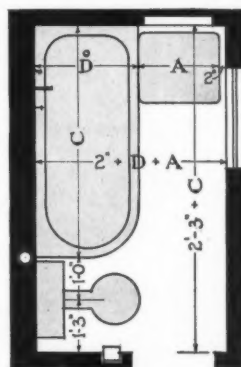
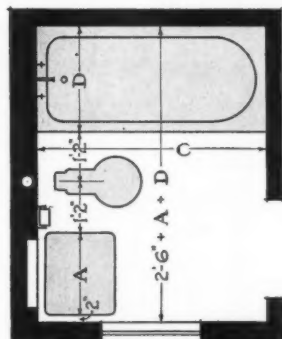
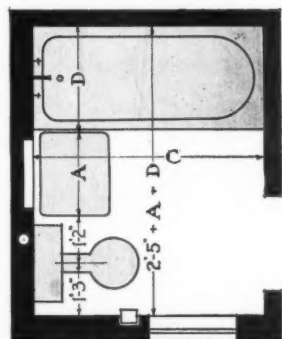
Figure 5
SCALE 1/4" = 1 FOOT

General Note
Windows and doors are shown
at ideal locations. See text for
other locations & for door swings

TWO FIXTURE TOILETS



THREE FIXTURE BATHROOMS with CLOSET LAVATORY and SHOWER



THREE FIXTURE BATHROOMS with CLOSET, LAVATORY and BATH

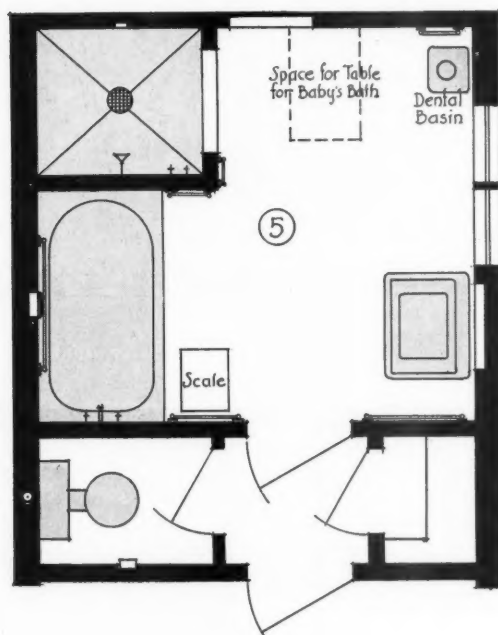
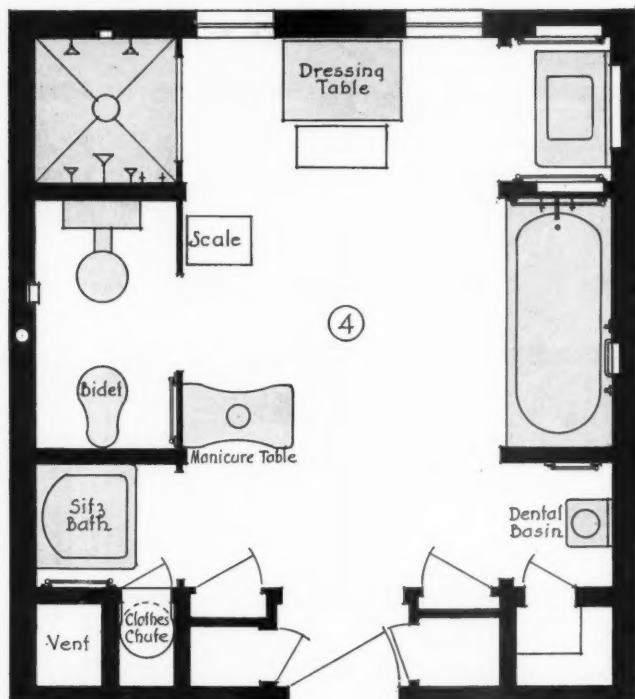
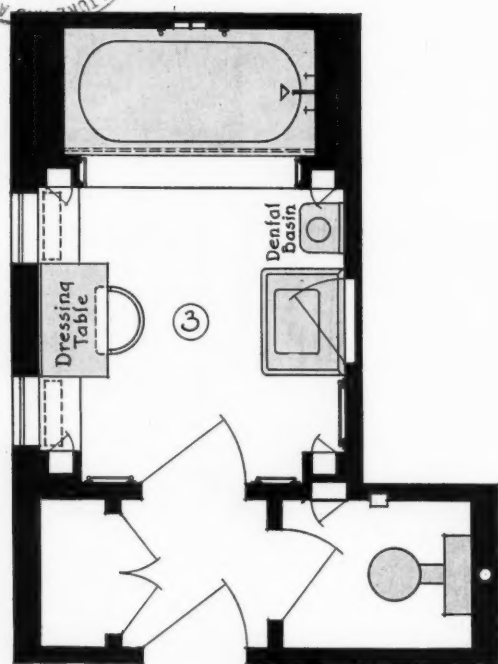
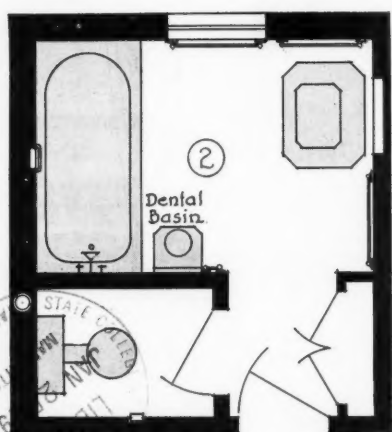
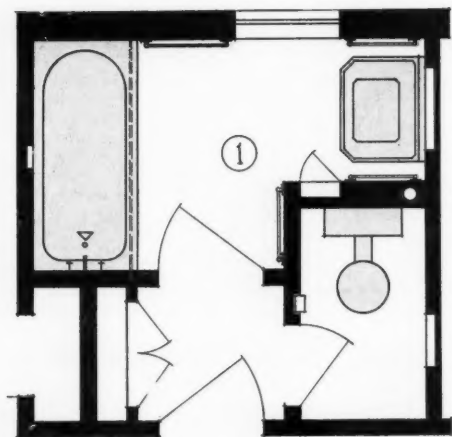


Fig. 6 UTILITY AND LUXURY TYPE BATHROOMS

Plans 1, 2, 3 and 5 show various logical developments of the "utility" bathroom, to serve two or more rooms from a common hall. In all cases the water closet is in a separate compartment. Plan 4 represents a "luxury" type bathroom in which all kinds of bathroom fixtures have been used to show their space relationships

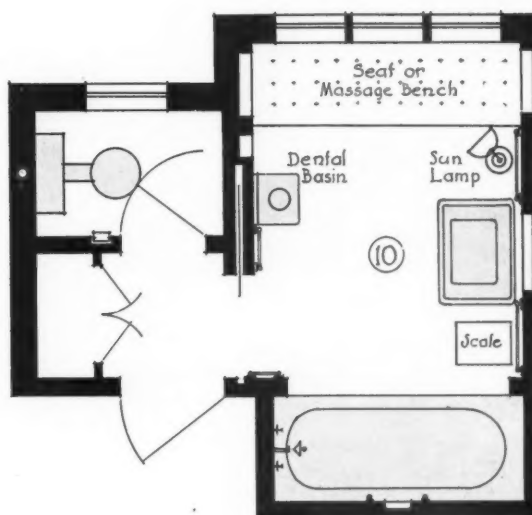
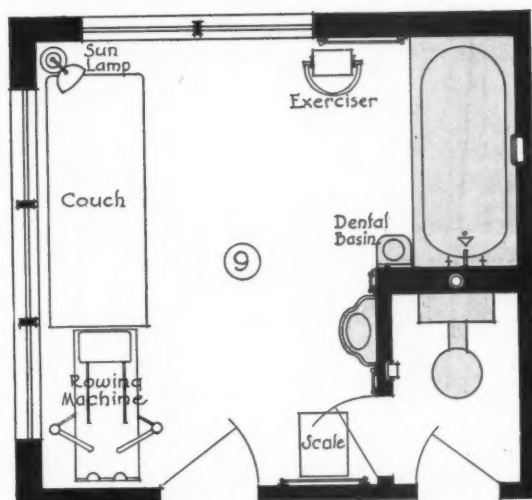
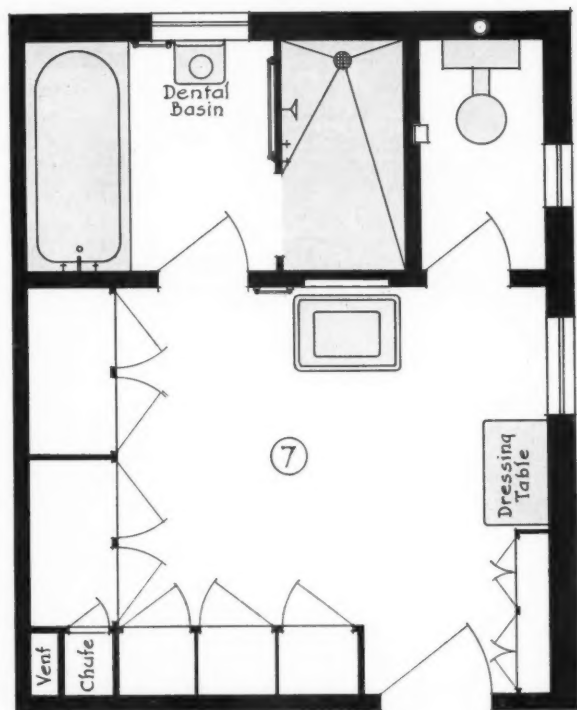
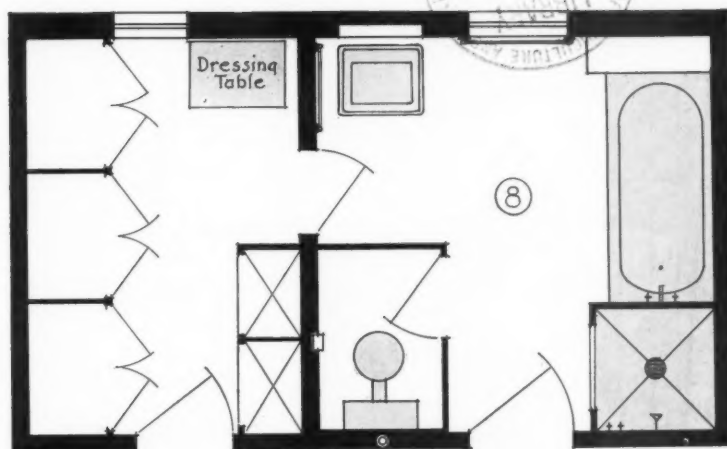
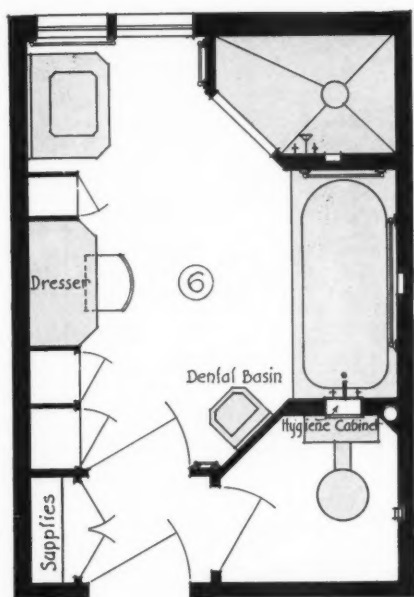


Fig. 7 DRESSING ROOM BATHS, HEALTH CENTERS

Typical dressing room baths are shown in plans 6, 7, and 8. Plans 9 and 10 suggest suitable arrangements of the bathroom as a "health center," incorporating exercise equipment, sun lamp, massage bench or couch, built-in scale, and windows glazed with ultra-violet ray transmitting glass

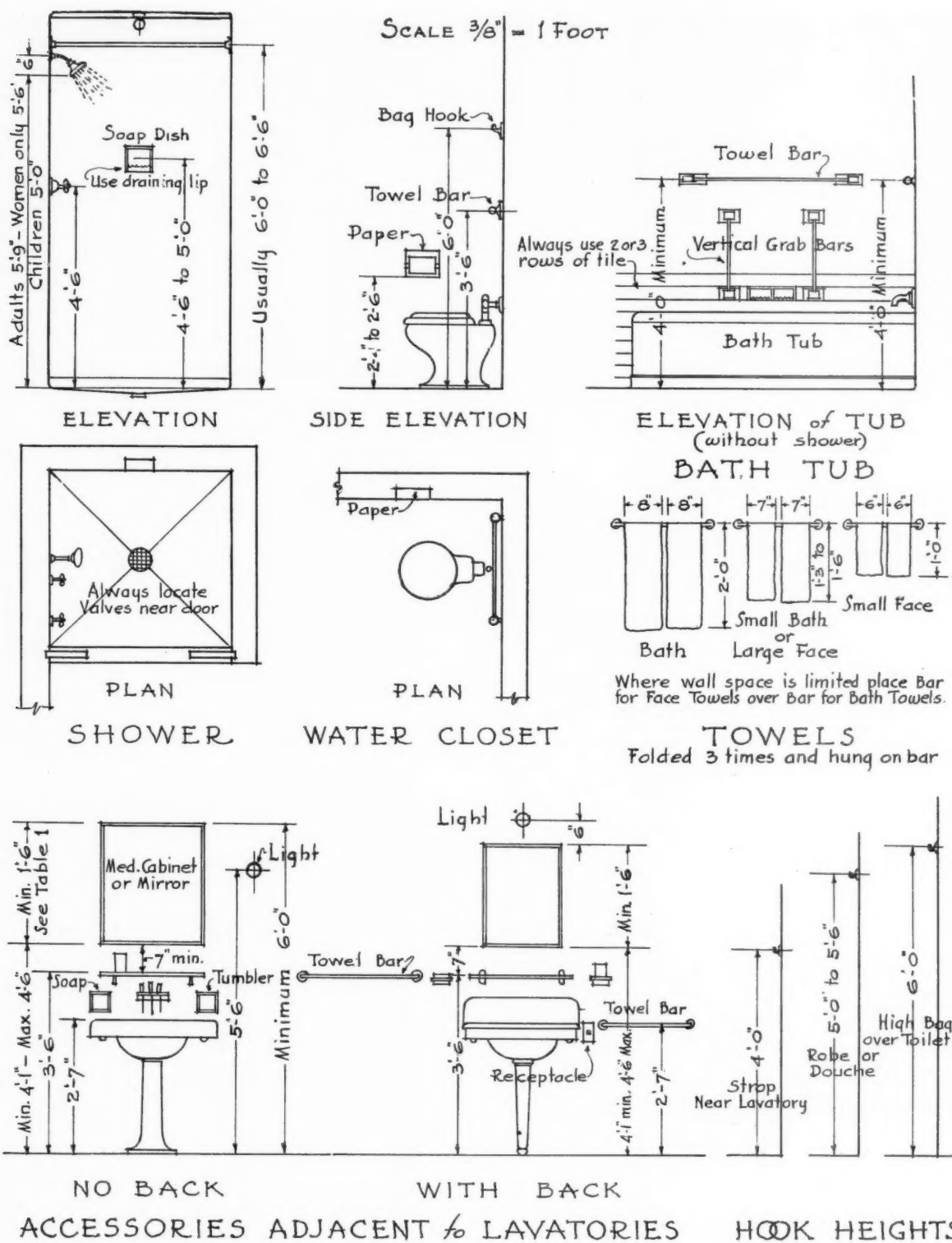


Figure 8. BATH ROOM ACCESSORIES

location on the plan. Factors such as the exterior fenestration of the dwelling or the position of doors with respect to furniture placement in adjacent rooms, may force the modification of an ideal layout. Consider these rules as a guide to good practice and depart from them only when other considerations of greater significance intervene.

10. *Windows should never be located over a bathtub equipped with a shower nor in a shower enclosure. They should seldom be located in back of a tub that has no shower as a shower may be added in the future. Permissible but often undesirable locations are behind the toilet and behind the lavatory. Favored locations are at either side of the lavatory, over a dressing table, and in a clear wall space where incidental equipment may be situated.*

Windows may be placed behind the lavatory if some provision is made for a mirror, either by providing pivoted mirrors at either side of the window, a swinging shaving mirror which may be projected in front of the window, or by glazing part of the window with mirror glass. A window may be placed behind the toilet if a low flush tank, a one-piece toilet, or a flush valve toilet is employed, but this location is objectionable to many.

11. *Door swings should be arranged so that (a) upon opening the door it will not strike any person using any fixture in the bathroom, (b) it will shield or conceal the closet, and (c) it may be left fully open for ventilation in warm weather.* Minimum sized bathrooms and toilets can often be made more compact by having the door swing outward from the bathroom, but normally the door should swing in so that it may be readily closed from within by the person using the room.

ARRANGEMENT OF FIXTURES

12. *Where the three major fixtures, bath, lavatory and closet, are compactly arranged with their wastes along one wall, it is desirable to place the lavatory between the tub and the closet.* This may affect piping costs slightly if the stack cannot be placed close to the closet. The reasons for this rule are: (a) Centering the lavatory provides ample space for the mirror and lights, and brings them centrally upon the wall, and it provides ample elbow room for persons using the lavatory. It also brings the closet adjacent to an end wall which provides a convenient location for the toilet paper holder. If the closet is placed between the tub and lavatory, and unless a flush valve closet is employed, the tight arrangement does not provide convenient space for the toilet paper holder and does not give satisfactory elbow room at the lavatory.

13. *Utility and other commodious bathrooms should have their fixtures arranged to provide the maximum free wall space for towel bars, hampers, dressing tables and other portable or temporary accessories.* Centering isolated fixtures on a wall area often destroys the utility of the space on either side for secondary equipment.

STORAGE FACILITIES

14. *Each bathroom or toilet should be provided with storage cabinets within the room for appropriate quantities of towels, face cloths, soaps, dentifrices, medicines and remedies, toilet paper, and fixture cleaning utensils.* While such facilities are seldom provided under present practice, any impartial analysis of the problem will reveal the logic of storing supplies at the point of use. The quantity of each kind of material to be stored will depend, of course, upon the type of bathroom, and to a degree upon the owner's preferences.

Convenience toilets on living room floor require reserve storage for hand and face towels, soap, toilet paper, and the simplest toiletries only. A deep medicine cabinet of small size will usually suffice.

Guest bathrooms require storage for towels and face cloths, soaps and simple toiletries, small packages of several types of dentifrices and toothbrushes, spare razors and blades, simple medicines and remedies, toilet paper, and fixture cleaning utensils. A small medicine cabinet and a cupboard for other supplies is normally indicated.

Masters' bathrooms, "utility" bathrooms and invalids' bathrooms require ample storage facilities for all supplies listed in the general rule, including all types of medicines and first aid materials. A large-sized medicine cabinet is required here for toiletries, dentifrices and remedies in common use. A large cupboard or small closet is required in addition for reserve storage of towels, soaps, toilet paper, and all infrequently used medical and surgical supplies, hot water and douch bags, bed-pans and cleaning implements.

Luxury baths and health centers have substantially the same storage requirements as master's and utility baths, plus additional supplies or equipment used in conjunction with dressing tables, sun bathing or exercising equipment. See Tables I, II, and III.

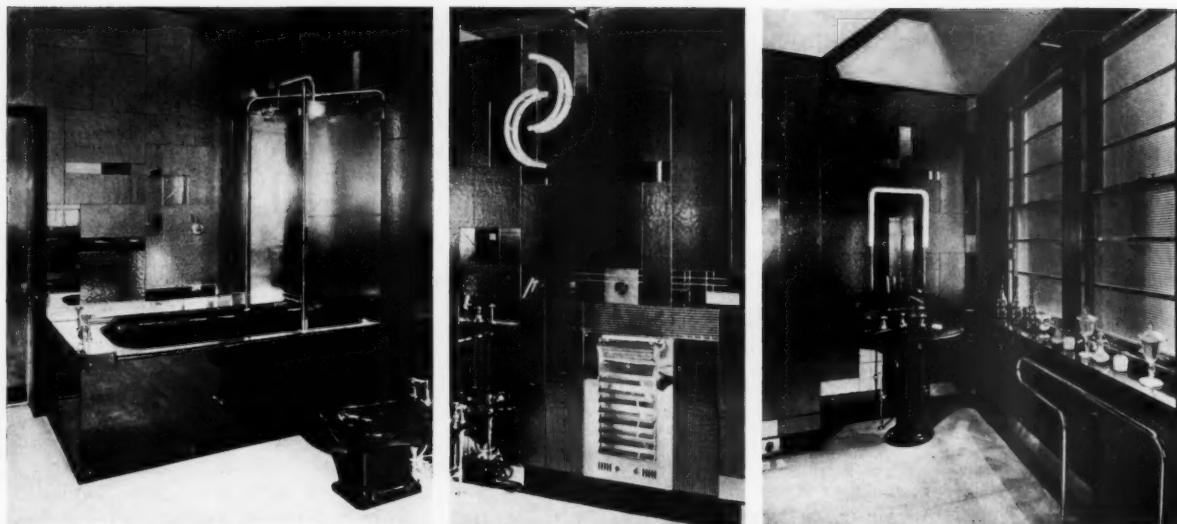
LAUNDRY DISPOSAL

15. *All bathrooms and toilets in frequent use should be equipped with a means for disposing soiled towels and clothing.* The ideal arrangement is to provide a laundry chute direct from the bathroom to a ventilated soiled laundry container on the ground floor or basement. Where only one laundry chute can be provided, this should serve the most actively used bathroom. Laundry chutes should be lined with non-rusting and non-staining materials.

Where a laundry chute is impractical a ventilated soiled linen hamper or cabinet is desirable. This may be built in as a unit of one of the storage cupboards or closets referred to in the preceding rule, or it may be a portable item for which space only need be provided in the bathroom plan.

ACCESS TO CONCEALED PIPING

When built-in bathtubs were first introduced it was necessary to provide an access panel from the opposite side of the wall for the repair or rewashing



ABOVE: Glass walled bathroom by Paul Nash, London. The various kinds of stippled, clear and reeded glass are alloy-silvered in colors. Floor, pink rubber. RIGHT: Exceptionally well-planned bath in Rostone House, A Century of Progress, Chicago, using ceramic structural slab material for walls. Walter Scholer, architect; Frank Sohn, designer



of valves and stops. Such access panels are no longer required, as bath wastes and shower valves may be selected of a type which can be repaired or adjusted from within the bathroom. Access to traps may usually be arranged for through the floor of the bathroom proper.

SELECTION OF FIXTURES—BASIC MATERIALS

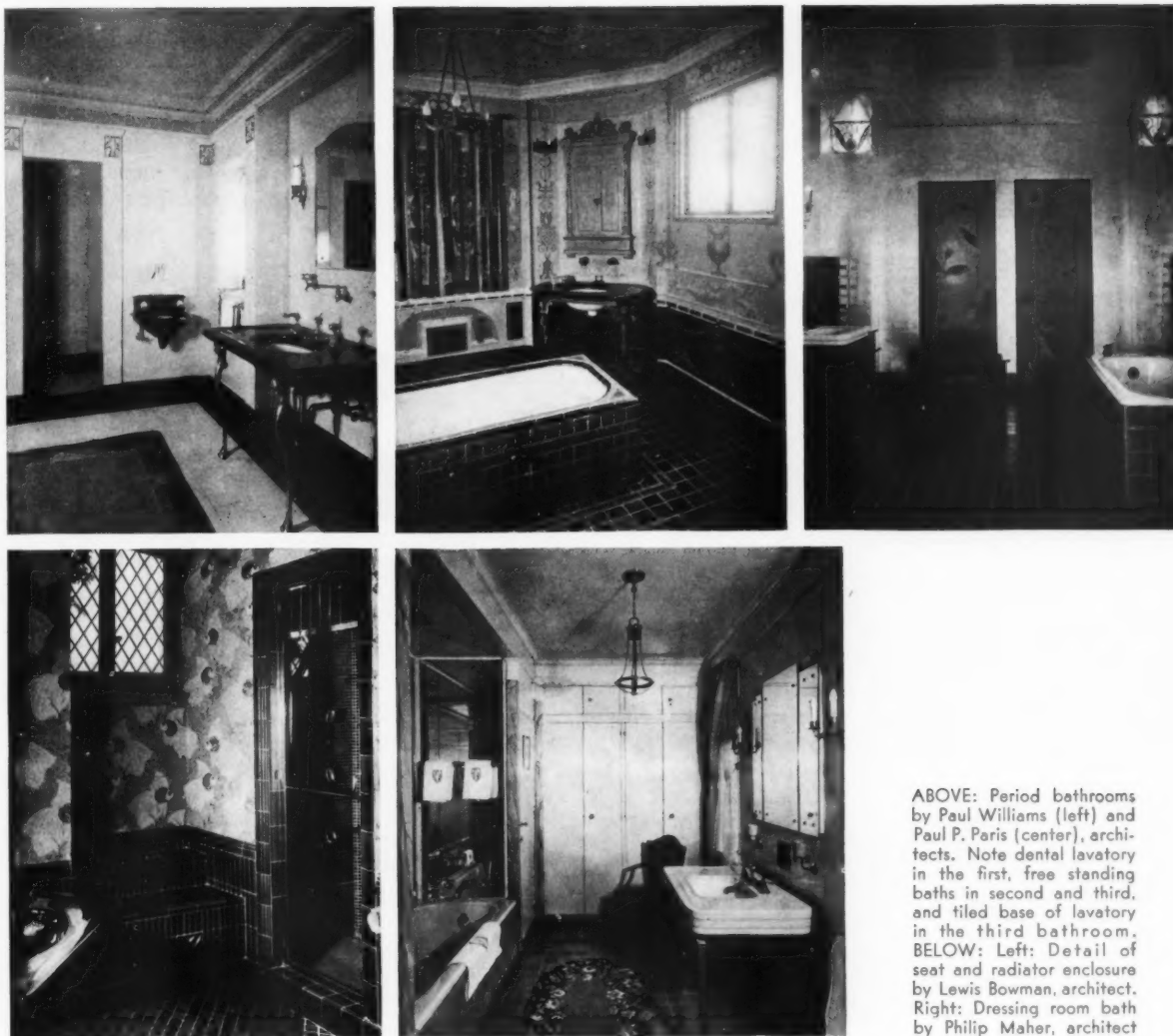
There are three basic materials used in the manufacture of the primary toilet fixtures: vitreous china, enameled cast iron and porcelain.

Vitreous china is a mixture of selected clays, feldspar and flint, vitrified at high temperatures and then glazed and re-fired to give it the proper finish. It is highly sanitary, being naturally tough, acid resisting, easily cleaned, and non-absorptive. It will not

craze, check or stain, but it cannot be used for the manufacture of bathtubs.

Enameled cast iron ware is a coating of silicate fused on a body of cast iron. A recently developed formula produces an acid-resisting enamel which is harder than regular enamel and which will withstand the action of practically all acids, except those used for etching or cutting glass. Acid-resisting enamel, though more expensive than regular enamel, is more easily cleaned, is not stained by household medicines, and is available in colors. Enameled cast iron ware is the standard material for the manufacture of bathtubs and is commonly used for lavatories.

Porcelain is made of fire-clay coated with a glaze and then fired. The glaze may check or craze, permitting the body to absorb moisture and stains.



ABOVE: Period bathrooms by Paul Williams (left) and Paul P. Paris (center), architects. Note dental lavatory in the first, free standing baths in second and third, and tiled base of lavatory in the third bathroom. BELOW: Left: Detail of seat and radiator enclosure by Lewis Bowman, architect. Right: Dressing room bath by Philip Maher, architect

Consequently, porcelain has been largely displaced by vitreous china and enameled cast iron ware.

SELECTION OF CLOSETS

There are five basic types of closets from which a selection may be made:

Syphon Jet Closet represents the most modern development, except the one-piece toilet, and is also the most expensive of the standard types. It provides a large water area to minimize fouling of the bowl; its deep seal prevents syphonage and the infiltration of sewer gas, and its jet impelled syphon provides quick, sure action that is reasonably quiet. It is suitable for use in all master's and guests' baths, except where extremely quiet toilets are required.

Syphon Action Wash-Down Closet depends upon

the weight of water for its flushing action, which often is accelerated by the addition of one or more water jets. Though next in desirability and cost to the syphon jet, this type has a small water area, a less positive flushing action, and is noisy.

Reverse Trap Type is similar to the last but provides a larger water area at a sacrifice in appearance. These two types are suitable for servants' toilets where some noisiness is not objectionable.

Blow-out Type Closet is a utility closet and has a shallow water seal and small water area. Its flushing action depends upon the pressure of the incoming water and is consequently noisy. Its compactness, however, makes possible the use of wall suspension; hence it solves certain alteration problems where piping must be installed without impairing the



NYHOLM LINCOLN

Lavatory in apartment of Alfred Fellheimer, New York, Fellheimer & Wagner, architects. Floor and base, rubber; lavatory wall laminated phenolic composition panel; other walls waterproof wall fabric, cut to pattern

ceiling below. It is also used in prisons and institutions and for public toilets where positive discharge is essential.

One-piece Closet represents the most recent advance in silent water closets. The tank and bowl are made in one piece, permitting a compact, space-saving design which may be installed as a free standing fixture. This type is made in both syphon action and a whirling or hopper type action, the latter providing the quietest flush though not as positive a cleaning action. Properly installed, these one-piece closets cannot be heard outside of the room in which they are located. Some are made with bowls one inch lower than the average toilet—a feature widely recommended by medical authorities.

One-piece toilets are appropriate where quietness is of paramount importance; syphon jet closets are appropriate where thorough self-cleansing action is the major requirement. In cost the one-piece toilet is approximately the same as a good syphon jet with tank.

Other factors of importance, regardless of basic type, are: The usual toilet has a clear passage way of from $1\frac{7}{8}$ inches to $2\frac{1}{8}$ inches, the larger size be-

ing commonly found in the syphon jet closet. Several manufacturers make special toilets with passage ways $2\frac{3}{4}$ inches to 3 inches in diameter, which are recommended for use in women's toilets to prevent the possibility of stoppage. All types of closets, except the one-piece closet, may be operated by flush valves instead of elevated or low-down tanks, saving approximately two inches in space from the wall.

SELECTIONS OF BATHS

The principal types of baths are diagrammatically shown in Fig. 4. They may be classified as follows:

Single shell baths on legs or enclosed base. These are made as free standing baths only and require painting of the outside surfaces. They are no longer recommended on the score that it is difficult to clean behind or beneath the baths, but are commonly used for maximum economy, and for servants' bathrooms.

Single shell baths with extended shell and painted iron body exposed. These are low cost baths having wings extending to the floor and walls and the exterior of the iron body exposed for painting. They are made in types 2, 3 and 5 in the diagram, Fig. 4.

Single shell baths for setting in tile or masonry. This group represents baths with square-edged rims designed for enclosing any exposed surfaces in tile, marble or other installed materials. They can be set in any of the arrangements shown in Fig. 4, Nos. 1 to 6, and may also be recessed into the floor as a free-standing bath with a low tiled curbing.

Double shell baths in which all exposed faces have the rim extended down to the floor with an enameled finish. These are available as wall baths, corner baths, deep alcove or end recess baths, recessed baths, and as free standing baths. See Nos. 1 to 6 inclusive, Fig. 4.

Special types of baths not shown include: a full length double shell bath with a built-in seat at one end to provide maximum luxury of space and accommodation in a single standard fixture; and an under-sized bath having the bottom on two levels and designed to combine the functions of a foot bath with seat, a sitting bath, and a shower receptor.

BATH SIZES

The lack of uniformity among manufacturers as to exact dimensions under widely used nominal sizes creates an annoying confusion, especially where two or more faces of the bath are built into the room. Nominal sizes may be used for preliminary planning purposes, but the exact fixture should be selected and data obtained from the manufacturer as to the provision made for building the bath against tile work, plaster or other wall materials, before completing the working drawings. This is particularly important with recessed baths where three dimensions are fixed in the structural walls or rough framing. While considerable leeway is permissible in the extent to which the flanges are set into tile-work, it is best to work with exact dimensions.

BATH SETTINGS

The shrinkage common to wood stud construction frequently causes the bath to settle away from tile-work or plaster walls, creating a troublesome open joint. This can be eliminated by the use of bath hangers which prevent the bath from settling at the wall joint. Another method employs a metal wall section having an integral hanger and a leak-proof wall joint; the section also serving to conceal all piping. Where baths are installed against exterior walls, it is important to insulate or otherwise sheathe the wall and floor concealed by the bath. Otherwise this space may become extremely cold, causing discomfort and loss of heat in the bathroom.

SHOWERS AND BATHS

The wide popularity and sanitary value of shower baths makes it advisable to equip all bathtubs with shower fittings, unless the more desirable separate shower compartment also can be installed. Objections to the use of the bath as a shower receptacle are limited space, and slipperiness.

SHOWER ENCLOSURES

Separate shower stalls, consisting of a receptor and enclosing walls, are preferred to the shower in a bath. The receptor may be of ceramic tile, terrazzo (preferably with non-slip aggregates), marble, slate, porcelain, enameled iron, or painted steel. Walls may be tiled or of structural glass, plate glass, marble or steel. Where glass is used for free standing walls and doors a translucent rather than a clear glass is recommended to minimize daily maintenance.

In selecting the materials used for the receptor preference should be given to non-slippery products. Receptor sizes are approximately indicated in Table IV. The recommended minimum size is 2'6" by 3', with the preferred minimum 3' square. A stall 3'6" by 3'6" is ample. A stall that requires no curb at the entrance is indicated in plan Number 7 in Fig. 7. All non-metallic receptors need lead pans beneath.

16. *Shower heads and controls should always be so located in shower enclosure or bath that controls may be reached without the operator's being wetted by the shower spray.* The preferred location is close to the door opening on either adjacent wall. See Fig. 8.

LAVATORIES AND DENTAL BASINS

Lavatories are made in both enameled iron and vitreous china, with but a slight differential in cost in favor of enameled iron. The approximate range of sizes is shown in Fig. 4. Basic types are also indicated in this diagram. Special types and sizes are made by most manufacturers, and their catalogs should be consulted, particularly when seeking units for limited space or of unusual proportions. Popular preference favors the pedestal type or units with metal or glass legs. Some metal stands are available which serve also as secondary towel racks.

Convenience and luxury are served by providing as large a lavatory as space will permit; by selecting



NYHOLM LINCOLN

Bathroom detail in apartment of Alfred Fellheimer, New York, Fellheimer & Wagner, architects. Wall behind lavatory, chromium plated sheet metal; side wall panels and ceiling painted; fittings and accessories, chromium plated

a lavatory with flat rims or shelves on which toilet accessories may be temporarily placed; and by equipping the lavatory with a single spout terminating above the rim. Cooled drinking water and cistern water supplies should have separate spouts.

Dental lavatories or basins are made in both enameled iron and in china, and are usually wall hung and provided with a special back. They only require a cold water supply and waste and thus are inexpensive to install. Some, however, are equipped for both warm and cold water. Their use in conjunction with a lavatory multiplies the utility of the room and adds sanitary advantages.

THE BIDET

The bidet is designed for use by both sexes (though primarily by women), after they have used the water closet, for sanitary purposes and to prevent or treat hemorrhoids. It should be located facing or adjacent to the closet and should be equipped with adequate towel racks immediately at hand. The bidet, though in common use in Europe, is seldom required in this country. Typical dimensions are shown in Table V.



SELECTION OF FITTINGS

17. *The operation of all bathroom fixtures is governed by the design and quality of their fittings; hence the utmost care should be taken in the selection of these highly important elements. Twenty-five to more than one hundred per cent of the cost of the fixtures themselves may be spent for fittings.*

18. *To prevent back-syphonage and contamination of the water supply, all lavatory and bath spouts should terminate above the rim of fixture, and all closet fittings, whether tank or flush valve type, should be equipped or installed in such manner as to stop reverse flow under vacuum conditions. Back-syphonage through submerged fittings may occur where there is a heavy draft of water from mains or small branch lines through fire hydrants or when several flush valves operate simultaneously. The fact that this action may occur under normal conditions and accepted installation methods has only recently been established, and may lead to more stringent regulations in plumbing codes.*

Practically all fittings are made of brass with exposed parts finished in the following materials: (a) —Chromium plate, polished or dull; (b) nickel plate (now almost obsolete due to the superior hardness and durability of chromium plate); (c) silver plate (seldom employed because of its rapid tarnishing); (d) gold plate, for extremely luxurious installations; and (e) china. Metal fittings are also made in solid white metal. China and composition handles and escutcheons are usually obtainable in colors to match or contrast with the fixtures. A slight advantage lies in their low thermal conductivity which prevents hot water valve handles from becoming unbearably warm, but the disadvantage of china handles is that they may break in use, causing injury to the hands.

CLOSET FITTINGS

19. *Closet fittings, whether tank or flush valve type, completely govern the functioning of this fixture; hence only fittings of high quality manufacture should be selected.*



Bathroom designed by George Sakier is shown on facing page. Modern electrical equipment, including health lamp, illustrated above at left. Right: Unique arrangement of fixtures in Florida House, A Century of Progress, using ceramic structural slab material for walls and ceiling. Robert Law Weed and Paist & Steward, Associate Architects

Closet tank fittings can be obtained in various grades based upon the design of their water ways to minimize the noise of filling and draining, and upon the design of the float balls and hush tubes. A stop should be inserted in the supply line to cut off the tank for adjustment or repair.

FLUSH VALVES

Flush valves have come into wide popular acceptance in residential work, particularly apartments, hotels and clubs, because of their space economy, simplicity of operation, and ability to repeat the flushing action as often as may be required without waiting for the tank to fill. Partly through improper installation or adjustment and partly through earlier designs, flush valves have been considered excessively noisy. Modern types are comparatively quiet in their operation, though not as quiet as the better grade low-down tank actions or the one-piece closet. The supply line serving the flush valve should be $1\frac{1}{4}$ " or even larger for quietness and adequate vol-

ume, although where high water pressures are available a one-inch supply will function at some sacrifice in quietness. The usual tank supply requires only a half inch pipe.

In selecting flush valves, the choice of pattern should thus be based upon the preferred position or height of the handle, the desired clearance from the wall, and the position of the spud in the selected water closet.

SHOWER FITTINGS

Shower fittings may be of single head or body types and may be equipped either with separate hot and cold water valves, or with mixing valves. The thermostatic type of mixing valve is preferred where more than one shower head is installed, and has the advantage of automatically preventing the possibility of scalding. Shower heads should be designed with a removable face, or should be self-cleaning and preferably should be equipped with a volume control. See Rule 16 for the location of control valves.



WINDOWLESS BATHROOM

Eliminating windows for complete privacy, Ernest Born has lighted this bath after the manner of the old Roman *oculus*, leaving all walls free for adaptation to decorative schemes or utilitarian equipment. The room thus imagined becomes a retreat for lounging in regal splendor, a complete escape from a humdrum world.

BATH FITTINGS

When the bath is equipped with a shower, fittings for both should be selected as a unit. The choice of bath fittings is largely a matter of preference. The trend is toward the use of over-rim spouts. The plug and chain waste is preferred by plumbing experts as the simplest and easiest to maintain and is returning to favor in spite of the wide popularity of pop-up and other mechanically operated wastes. The standing waste is considered unsanitary and requires an access door for maintenance. Both shower and bath valves should be of a type which permits reseating or changing washers from the face of the wall.

LAVATORY FITTINGS

Three types of lavatory faucets are offered: The compression fitting, recommended for all normal installations; quick compression fittings, which open in approximately one half turn; and self-closing fittings, which are inconvenient and are designed primarily to save water in public buildings. The combination fitting with a single spout is recommended by all authorities for general use.

Lavatory wastes of the pop-up or lever action type are more popular than the use of a ball and chain. Stop valves should be used in lavatory supply lines. Manufacturers' catalogs should be consulted for special patterns and for special types, including units equipped with shampoo sprays, drinking water faucets and spouts, etc.

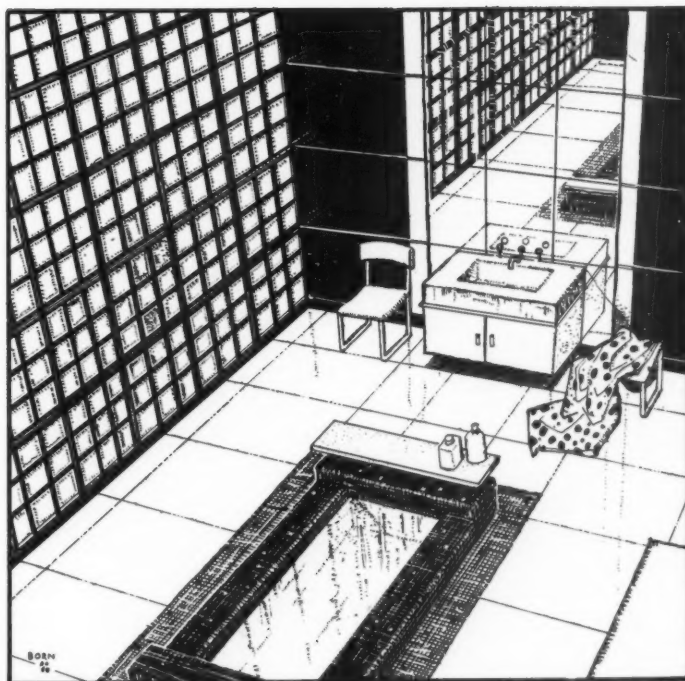
SELECTION OF ACCESSORIES

20. *Holders and racks for soap, tooth brushes, tumblers, bath sponges, towels and face cloths, and hooks for clothing and douche or enema bags, should be selected and located as part of the bathroom planning problem.* Neglect of these details until the room has been substantially completed usually leads to awkward or unattractive placement or to the omission of desirable units.

Points to consider are: If a dental lavatory is provided, a sanitary tooth brush holder and a cabinet or holder for dentifrices should be provided at this point. Otherwise at the lavatory there should be a single or double tumbler holder, a sanitary tooth brush holder, soap dish, razor blade disposal slot, and a medicine or other cabinet for dentifrices, toiletries and medicines. At the bath there should be a soap and a sponge holder combined with a grip; one or preferably two long vertical grips; and a douche bag hook five feet above the floor. At the toilet there should be a paper holder, preferably 2'6" from the floor and, where possible, on a wall at right angles to the back of the fixture and on the right side in line with the front of the seat. Above the closet should be a bag hook approximately six feet from the floor. At the bidet there should be a towel bar or towel storage cabinet.

Towel bars should be chosen for their holding capacity in definite relation to the habits of the owner and to the number of people using the bathroom. In utility bathrooms, bars or racks large

The opposite concept is a luxury bath that strives for maximum light and spaciousness. Here Ernest Born conceives a translucent but not transparent wall of structural steel and structural glass, giving light with complete privacy. The floor is marble, the plunge mosaic, and the wall with the mirror is glass. Many other modern materials are equally appropriate



enough to hold bath towel, face towel and face cloth may be needed for each member of the family, plus an additional rack for guest towels. Obviously the placement of these racks for convenience to the lavatory and bath introduces a serious problem of design, and may require wall space of considerable dimensions. See Table III and Fig. 8.

The medicine cabinet and mirror should be selected in accordance with the principles presented in Rule 11 and the associated text. Where mirrors are mounted on medicine cabinets, the bottom should be at least 4'1" above the floor and at least 7" above any extended shelf mounted over the lavatory. Where a single mirror is installed, it should be located over the lavatory. A full-length mirror is a desirable adjunct. See Table I.

SPECIAL EQUIPMENT

Consideration should be given to the inclusion of the following types of equipment wherever appropriate to the problem: (a) built-in bathroom scales; (b) towel dryers; (c) soiled linen hampers, cabinets or laundry chutes (see Rule 11); (d) exercise machines and devices; (e) ultra-violet radiation equipment, either in the form of fixed general lighting or high intensity hospital type lamps; (f) electric glow heaters for temporary heat; and (g) barber chair and manicure desk where valets or personal maids are employed. A special accessory is a built-in douche with metal enclosure and door. It requires hot and cold water supply lines and waste.

LIGHTING

21. *The general illumination in a bathroom should be supplied by a white diffusing glass globe or fixture mounted close to the ceiling and equipped with either a 60 or 100 watt lamp, depending upon the size and color scheme of the room.*

22. *Local lighting should be provided (a) at shaving mirror, (b) at dressing table, (c) in the water closet compartment, and (d) in the enclosed shower compartment.*

Side lighting is recommended at the mirrors, consisting of wall brackets, panels, or tubular lighting carrying approximately 40 watt lamps. Reflected lighting from beneath the mirror is recommended by some authorities alone or in addition to the side lights. If mirror lights are too small in area, too bright in intensity (compared to the general lighting intensity of the room), or too close to the eyes, they will cause the pupils to contract and thus automatically reduce their effectiveness.

Lighting of the shower compartment must be vapor proof and may consist of a standard vapor-proof ceiling unit or a recessed panel. Lighting in the toilet compartment may be a ceiling or wall unit.

Ultra-violet lamps of the G-5 and S-2 types may be employed in a special ceiling or side wall fixture located to direct the health rays on the back of a person using the washstand. In very small bathrooms equipped with secondary lighting, this unit may serve for general lighting, but normally it should be an auxiliary to the general lighting fixture.

Switch controls should be placed at the entrance door to govern the general lighting unit. Lights in water closet and shower compartments should have their switches on the outside immediately at the entrance.

OTHER ELECTRIC OUTLETS

A power outlet served by a special circuit should be provided for a built-in or portable electric heater. These units draw wattages of 1000 to 6000 watts. A duplex convenience outlet should be placed on the wall at the lavatory and another at the dressing table for curling irons, electric razor, immersion water heaters, and similar appliances. An outlet and switch should be provided for an electric ventilating fan if the bathroom, toilet compartment or shower compartment is to be artificially ventilated.

BATHROOM HEATING

Warm air heating registers should be located above the six foot level on the bathroom wall to avoid the creation of drafts, and should have an outlet velocity not greater than 120 feet per minute. Warm air systems normally using cold air return ducts should not have a return connection, but should be equipped with a vent to the outer air to prevent recirculation of odors.

Radiators or convectors should be installed under the window if possible. Where either toilet or lavatory is located at the window, a compact radiator or convector may be placed under the flush valve connection or tank, or behind the lavatory trap. Built-in convectors or wall-hung convectors or radiators are preferred to floor mounted units to eliminate the problem of cleaning around the legs. Auxiliary electric heating is always desirable and preferably should be a built-in heater placed 2'6" to 3'6" above the floor, and in a location (other than over a bath equipped with a shower) which will direct the heat toward the center of the room without being too close to any fixture where a person must remain for any considerable period of time.

VENTILATION

All interior bathrooms must be artificially ventilated under most plumbing codes. It is distinctly advantageous to equip outside bathrooms and toilets as well with an artificial means of ventilation, consisting either of a duct rising to the roof and of sufficient length to develop a constant natural draft adequate to effect six or more air changes per hour; or of an electric ventilating fan which can be operated as need arises to change the air in one to three minutes. Heating equipment should be designed accordingly. If a single ventilating duct is used, it should be placed in the closet compartment through which the rest of the room may be vented. Where no closet compartment is employed, the vent may be over the toilet or over the shower stall. It is advantageous to vent the shower to remove quickly excessive moisture which will condense on cold surfaces.

FLOORING MATERIALS

Ideal requirements for bathroom floors include: (a) an easily cleaned, non-absorptive surface which can withstand excessive dampness; (b) low thermal conductivity to provide warmth under foot; (c) resiliency and quietness; (d) non-slippery surface, whether wet or dry; and (e) good appearance.

No single material appears to meet all of these requirements, but practically all flooring materials may be installed or finished in such manner as to meet the majority of them. The choice between well-laid cork tiles, linoleum, rubber tile, asphalt tile, ceramic tile, marble, terrazzo, and a wide variety of floor composition materials, is thus reduced to a consideration of maintenance, permissible expense, decorative treatment and the client's preference.

The primary problem is to so specify and supervise the installation of bathroom flooring materials as to eliminate the possible development of cracks, joints and corners that are difficult to clean. See American Architect Reference Data No. 4, "Resilient Flooring Materials," March, 1933.

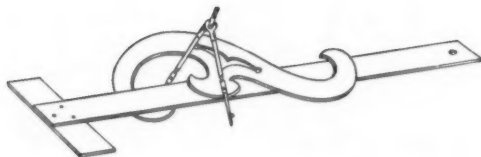
WALL FINISHES

The ideal requirements for bathroom walls are: (a) an easily cleanable and non-absorptive surface; (b) an installation that is free of hard-to-clean cracks, joints or corners; (c) ability to resist excessive moisture in the form of direct sprays or condensation; and (d) good appearance.

As in the case of flooring materials, the architect has an almost unlimited choice, ranging from water-proofed wallpapers and paints, lacquers or enamels, to the highest grade ceramic tiles, ceramic structural slab material and marble. New materials have entered this field, including cork composition wall coverings similar in manufacture to linoleums, various types of synthetic stones, structural glass, asbestos and composition wainscoting, sheet or cast glass in tile forms, plastic paints, and waterproof wallpapers and fabrics. Again the primary problem is to so specify the selected materials (preferably following manufacturers' instructions minutely) that all joints and corners may be easily cleaned. See American Architect Reference Data No. 2, "Interior Walls and Wall Finishes," October, 1932.

CEILING FINISHES

Because of excessive dampness in bathrooms, ordinary plaster ceilings finished in kalsomine or water paints are to be avoided in preference to more non-absorptive surfaces. Plaster may be painted or enameled, or the ceiling may be given a surface of acoustical material to assist in absorbing sounds generated within the room which are generally reverberated by the hard surfaces of walls, floors and fixtures. If acoustical materials are employed, they should be warranted by their manufacturers to be unharmed by high humidities and condensation, but their moisture absorbing proclivities are unimportant so long as they do not cause deterioration.



For bathrooms of beauty and duty...

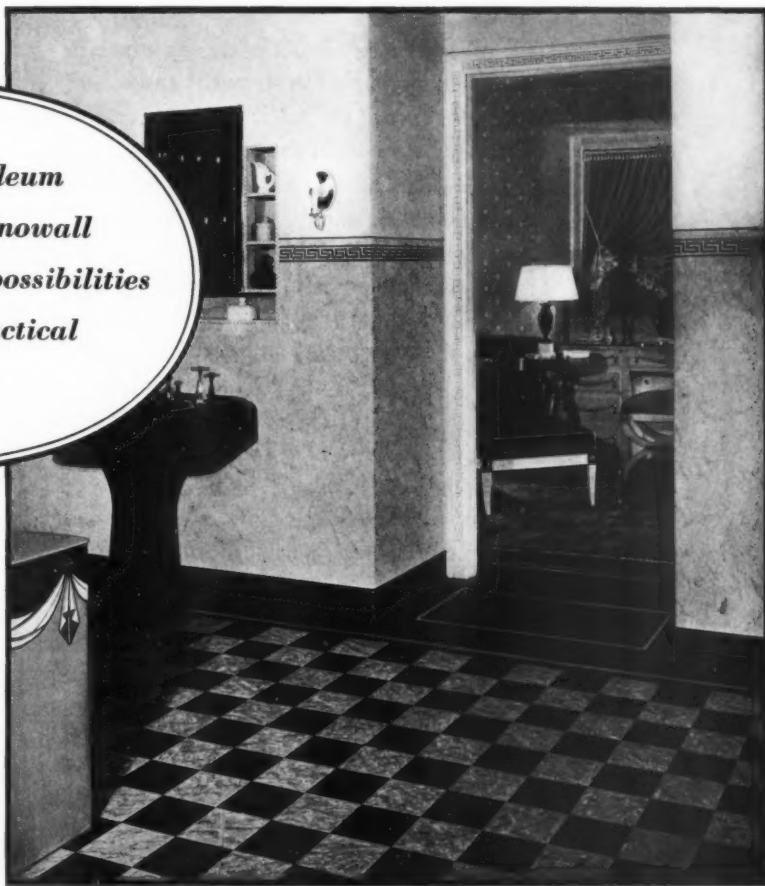
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and Armstrong's Linowall
offer unlimited design possibilities
plus important practical
advantages*

THE client of today demands more than gleaming cleanliness in bathrooms. Instead of white monotonies he expects you to create symphonies of color with smart fixtures, floors, and walls.

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1. They are sanitary.
2. They clean readily—splashed or spilled water cannot harm them.
3. They

In this charming modern bathroom, the floor is Armstrong's Straight Line Inlaid No. 236 bordered with Marbelle Inlaid No. 016 and yellow Linostrips. Walls are Armstrong's Linowall No. 721.

are simple to install. 4. Their cost is well within modern budgets.

For literature on Armstrong's Linoleum and Linowall, write Armstrong Cork Company, 1201 State Street, Lancaster, Penna.



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FOR JANUARY 1934

89

WHY VITROLITE FOR THE NEXT BATHROOMS YOU DESIGN?

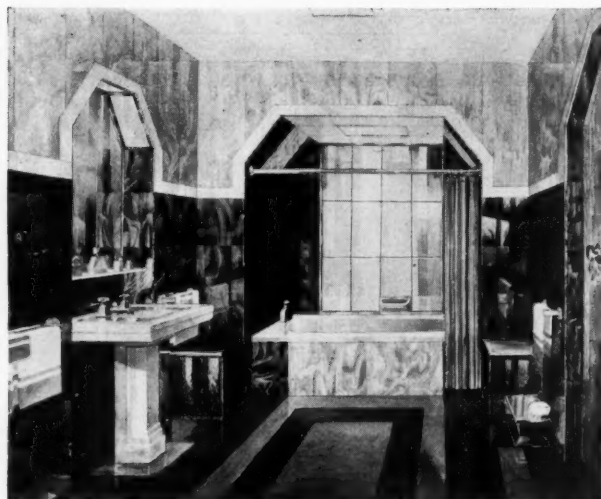
VITROLITE presents many superiorities as a material for bathrooms, whether used for a low wainscot or for facing the entire walls and ceiling. Its glasslike, hard, polished surface will never stain, craze or lose its luster. It is acid proof and impervious to moisture. It has an appearance of brilliant cleanliness and can be kept spotlessly clean with a minimum of effort.

As a medium for design and color expression, Vitrolite is a fascinating material to work with. It can be had in a wide variety of colors and sizes of plates. It combines perfectly with modern bathroom fixtures, and other materials such as washable wallpaper and the newer metals. It has that appearance of quality and perfection associated with interiors in which neither skill of design nor expense has been spared, yet its cost is so moderate as to be well within the means of the modest home. It is perfectly adapted to the new bathroom or to modernizing the old one, as it can be easily installed over the present wall surfaces.

At the Century of Progress Exposition, each of the leading manufacturers of bathroom fixtures, in their own buildings, chose to display their finest fixtures against settings and backgrounds of **VITROLITE** — so faultlessly does this most modern of modern materials lend itself to bathroom design. In bathroom design competitions of recent years, many prize winners have made use of Vitrolite.

Right — The vogue of gleaming black Vitrolite is nation-wide. This shows what can be done to modernize a bathroom with an inexpensive Vitrolite wainscoting.

Below — The rich variety of the **VITROLITE** walls, ceiling, and tub facing makes this a bathroom of which any one might be proud.





VITROLITE is a highly polished, ceramic material, commonly known as "structural glass." It has the hard, brilliant surface of glass, combined with the toughness of stone (its crushing strength is about 40% greater than marble).

For the fine, specially designed bathroom, Vitrolite may be cut to any required sizes. However, it is not advisable to exceed pieces over 30" x 36" or borders over 48" long.

Where economy is a principal factor, the use of standard 8" x 12" wall pieces, 6" base and 3" cap members will effect considerable reduction. $1\frac{1}{32}$ " thickness is commonly used for wall facing; base or other trim, top slabs, etc., may be any required thickness up to $\frac{1}{4}$ ". Vitrolite can be cut to fit in corners and around pipes or other openings on the job.

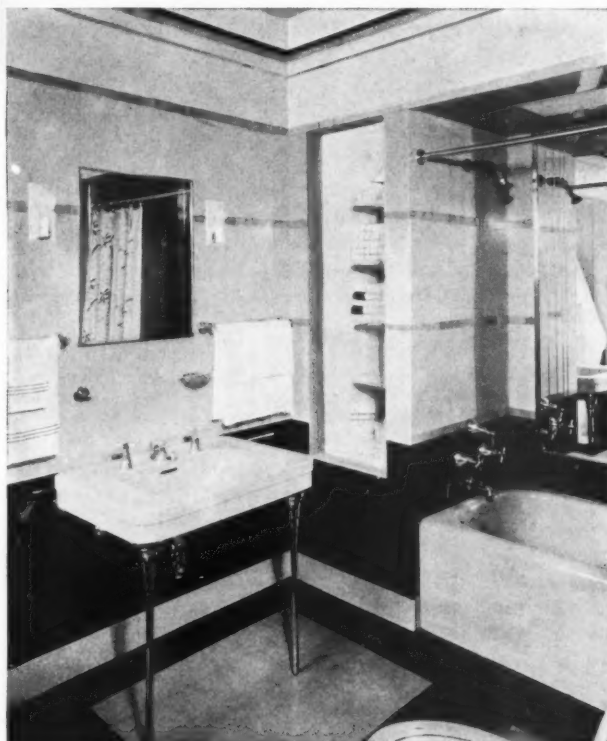
Vitrolite may be applied to any hard, dry, rigid wall surface with special plastic cement, of which a thickness of $\frac{1}{4}$ " to $\frac{3}{8}$ " is sufficient. The wall should first be coated with a waterproof sizing compound. All joints are hair-line contact joints, pointed and sealed with a cement compound in matched or contrasting colors.

MORE VITROLITE Bathrooms at the Century of Progress. Left: The Florida House, with black, jade, and white on walls, floor and ceiling. Below: The Rostone House, a bathroom gay with jade, emerald, golden agate, and ivory.

In VITROLITE the architect finds a rich assortment of colors. Black, white, ivory, jade, gray, orchid, emerald-agate, walnut-agate, ebony-agate, jade-agate, orchid-agate and golden-agate.

Vitrolite is installed only by authorized representatives in each locality, thus assuring satisfactory workmanship. The Vitrolite representative should be consulted with reference to construction details or controlling costs on any installation.

The Vitrolite Art Department will prepare color sketches for the architect suggesting VITROLITE arrangements and color schemes, without obligation.



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- ☐ Vitrolite Bathrooms and Kitchens
- ☐ Vitrolite Construction Details and Specifications
- ☐ Vitrolite Displays at A Century of Progress

Name

Address

City



Model bathroom in showrooms of the Crane Co., New York. The floor is a black Sealex Veltone, white veined, with sea horse Linsignia and single line border in ivory. Sealex Wall-Covering, in three marbleized effects, used on all walls and doors.

The all-linoleum Bathroom



The use of linoleum floor and linoleum type walls in this Crane bathroom, results in unique decorative effects at moderate cost.

A new and interesting feature of this bathroom is that, between its floor and its walls, there exists not only harmony of *color* but also harmony of *texture*. The floor is Sealex Linoleum and the walls are a material closely related to linoleum—the new Sealex Wall-Covering.

Using these two Sealex materials together, the architect can create bathrooms of the greatest luxury and individuality. Yet the cost will be only a fraction of the expense of carrying out the same effect in materials that are traditionally used in bathrooms.

Sealex materials give the designer the widest latitude. Any two-dimensional shape or figure can be cut out with the greatest exactitude in either the linoleum or the wall-covering. The sea horse inset in the floor and the horizontal bands on the walls of this bathroom, are examples of this cut-to-order work.

When properly installed, Sealex materials are not

affected by steam, hot or cold water, or long-continued humidity. Colors are waterproof, stain-proof, and fade-proof—cannot wear off because they are *inlaid* clear through to the backing of the material.

A room like the Crane bathroom will therefore never need to be repainted or redecorated. The durability of Sealex floors is well known. On the walls, where there is no wear and tear of traffic, there would seem to be no limit to the life of a linoleum-type material like Sealex Wall-Covering. When Sealex materials are installed by authorized contractors of Bonded Floors or Bonded Walls, both materials and workmanship are backed by a Guaranty Bond. For further information, see our catalog in Sweet's or write Architectural Service Bureau, Congoleum-Nairn Inc., 207 Belgrove Drive, Kearny, New Jersey.

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AMERICAN ARCHITECT

The Readers Have a Word to Say

• LETTER TO THE PRESIDENT

Editor, AMERICAN ARCHITECT:

THE architects throughout the country are indeed grateful for the vigorous efforts being put forth by the various architectural magazines to stimulate interest in our favor.

In Cleveland things have been down at the bottom so long, that we are beginning to wonder if we will ever be architects again. Many of us were hopeful that the splendid housing projects would go ahead this past summer, but it is already winter and the Government red tape is broader than ever. Just at present, we are praying that the C. W. A. will put most of the architects and unemployed draftsmen to work for a few months.

I can best express my views on the situation by sending you herewith a copy of a letter that I wrote the President.—*Charles C. Colman, Treasurer, Cleveland Chapter, American Institute of Architects, Cleveland, Ohio.*

*Hon. Franklin D. Roosevelt
The White House
Washington, D. C.*

Dear Mr. President:

ALL architects have suffered for the last four years with not enough work to provide a living. What little we have saved has gone long ago; and all of us maintain a like social attitude of indifference about the obligations we have incurred. However, we are long past our ability to borrow and no relief is in sight. Heretofore, architects have maintained an ethical standard in business and a conscientious viewpoint towards and faith in the Government.

The Government has done little to assist the great number of architects and architectural draftsmen, in fact has forgotten all the professional men who have done most to serve other people with minimum gain for themselves.

Conditions will not improve in this country until the building trades are put back to work, producing types of buildings for which there is a demand. At this time there are plenty of people who have definite and legitimate building programs. But it is impossible to proceed with these, as there is no method of financing.

The Government should make every effort without further delay to free

funds in building loan and saving associations for building purposes. Besides, the Government should set up funds with established banks, who have shown themselves to be substantial and trustworthy, in Federal Reserve districts—these monies to be loaned at a reasonable rate of interest for new construction. Building with a purpose will put more people back to work than any other plan.—*Charles C. Colman, Treasurer, Cleveland Chapter, American Institute of Architects, Cleveland, Ohio.*

• CONTACTS WANTED

Editor, AMERICAN ARCHITECT:

WE respectfully submit for your information a brief outline of the organization and activities of The Architectural Guild of St. Louis.

Organized August 7th, 1933, and composed of architectural and allied draftsmen definitely identified with the building industry in this metropolitan area of over a million population, the Guild has rapidly grown to a membership now comprising the majority of the active draftsmen here. While the organization was precipitated by the National Recovery Act, its activities are planned to encompass a far larger field and to extend beyond the period of recovery. A summary of our program will illustrate this.

A Code Committee is functioning to protest the Architect's Code and has submitted recommendations for its revision to the proper authorities.

A Public Works Committee is now making a study and an analysis of Public Works measures for the purpose of obtaining a reasonable portion of such work for this vicinity, and to see that the work is properly apportioned among the architects and draftsmen. This Committee had a profitable and encouraging interview with Miss Perkins, the Secretary of Labor, during her recent visit to this city.

A Statistics Committee is making a comprehensive and revealing compilation of facts relating to not only the draftsman and his condition, but to the profession as a whole and its relation to society. A Professional Advancement Committee using the data of the Statistics Committee is formulating a program of such action as the name of this committee suggests.

We are desirous of making contacts with similar groups throughout the country, and to this end we communicate the above information to you for your consideration and possible publication. Should you desire to know more of our interesting program please communicate with the undersigned.—*Alfred H. Norrish, Secretary, The Architectural Guild of St. Louis, St. Louis, Mo.*

• THANKS

Editor, AMERICAN ARCHITECT:

I WISH to thank you for your efforts in aiding us fellows by publishing our letter in your November issue pages. We have received three letters in response and the issue is but a week old.—*Charles H. Gearhart, Cincinnati.*

The letter to which Mr. Gearhart refers asked for advice regarding European travel. Mr. Gearhart and two companions are planning an 80,000-mile trip by automobile through every country in Europe that will take about two years to complete. His letter was published on page 112 of the November issue.—Editor.

• OBSTACLES TO BUILDING

Editor, AMERICAN ARCHITECT:

I REALIZE the importance of the constructive work you and your associates are trying to do on behalf of the architectural profession. There are several important obstacles that are standing in the path of any program that will be helpful to the architectural profession.

The first of these is the excessive amount of space which, in my opinion, has been brought about by tremendously big buildings. This has involved large ground areas and has concentrated in limited localities an amount of rentable space that should have been distributed widely. This also was partly responsible for the unwarranted inflation of land and building values which, in turn, has produced excessive taxes. The third obstacle is the inability to secure mortgage money.

My personal feeling is that an effort should be made to remodel or rebuild on a moderate scale, properties in different sections of the City where conditions are such as to provide moderate rentals both for business and residence. To do this, however, it will be imperative that some governmental agency

make it possible to provide long term funds at reasonable rates of interest.

The tax situation is one that has been expanded upon so actively, it is almost unnecessary to comment upon it. However, it is something that requires drastic revision both as to assessments as well as to rates.—*Argyll R. Parsons, Vice President, Douglas L. Elliman & Co., New York.*

• ALUMINUM WALL COVERING

Editor, AMERICAN ARCHITECT:

WE call your attention to an illustration on page 48 of your November issue of AMERICAN ARCHITECT, showing our Aluminum Wall Covering Material as used in Radio City, and as designed by Mr. Donald Deskey. The writeup accompanying the picture is so erroneous and misleading that we would like to give you particulars concerning this material.

In the first place it is not aluminum leaf, but a solid rolled sheet of pure aluminum, laminated to a special wall paper stock which facilitates the installation. The design is not stenciled on, but has been printed by means of the hand-blocking method. It is also practically impossible to cut out designs and place them on a background of a contrasting color, nor could we ourselves recommend "niello" work as mentioned in the description.—*W. P. Suter, Reynolds Metals Co., Inc., New York.*

• MORE ON ALUMINUM WALL COVERING

Editor, AMERICAN ARCHITECT:

YOUR letter of December 12th, quoting a letter from Mr. Suter of the Reynolds Metals Co. to you is very interesting. I realize that he is anxious to have exact information given; and we are anxious to give it. However, in this case I feel that absolute accuracy, though desirable, is not essential. The main idea is to suggest wall treatments; and stenciled aluminum leaf would have nearly the same effect as "pure aluminum, laminated to a special wallpaper stock . . . and printed by means of the hand blocking method."

As for the cut-outs and niello, I am pretty sure that some interesting effects could be made. True niello would probably be difficult to obtain on such thin sheets, but any designer with a little imagination would interpret "niello" otherwise than strictly as a "line metal inlay on metal," and the suggestion could produce results.—*Leopold Arnold, Columbia University, New York.*

• THINKS IDEA GOOD

Mr. J. G. MacArthur,

AMERICAN ARCHITECT:

YESTERDAY I wrote you and asked if you could send me a copy of the September issue of AMERICAN ARCHITECT.

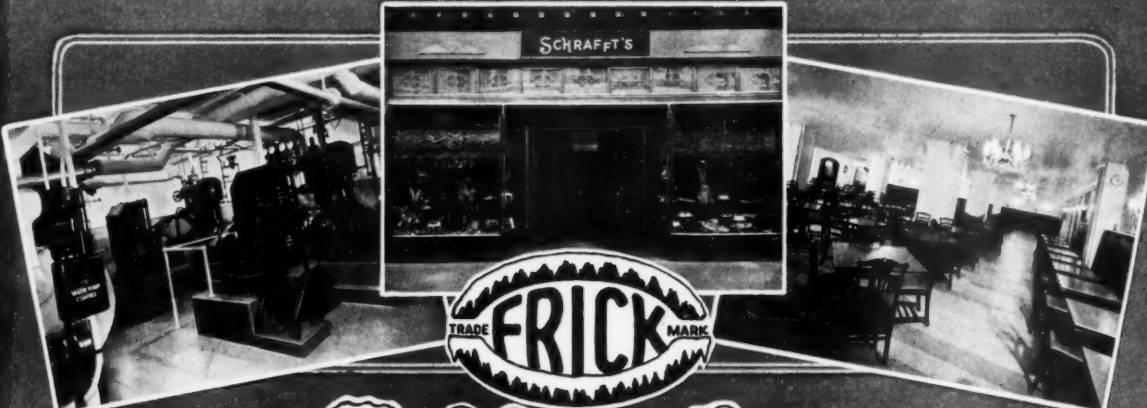
What I particularly wanted was the article "Jobs for Millions Through Revival of Building." I have a preprint of this in four-page form, and I would like to send a copy to each one of the directors of the Home Building Exhibit of Kansas City.

I think Mr. Betts' suggestion for a Building Division or Department of Building for our Government is fine.—*P. E. Kendall, Adv. Mgr., Long Bell Lumber Sales Corp., Kansas City.*

• HIGH PRAISE

Editor, AMERICAN ARCHITECT:

WE reprinted your article "Jobs for Millions" in full in the October issue of the *American Building Association News*. I am glad we did. I realize that this was an excellent article, but I did not realize how good it was until I went to Columbus to attend the annual convention of the Ohio Building and Loan League, and heard Harry Kissel, Chairman of the Board of the Fifth District Federal Home Loan Bank, stand up before that crowd of six hundred building and loan men, and say that no building and loan man should fail to read the article from start to finish. Mr. Kissel quoted several paragraphs from the article.—*American Building Association News, Cincinnati, Ohio, D. K. Ross, Associate Editor.*




Refrigeration

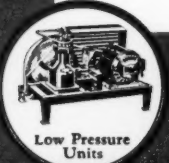
Is used for air conditioning in a series of the famous Schrafft's Restaurants — as well as in hundreds of theatres, hotels, stores, etc.

We furnish refrigerating machines of all commercial types and sizes. Branch offices, distributors and stock points in over 100 cities.

LITERATURE AND ESTIMATES ON REQUEST

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Carbon-Dioxide Machine



Modern
Architecture
Calls for
Walking
Safety
Where
Crowds
Gather

ALL the terrazzo in Worcester's new Auditorium—in entrance vestibules and corridors, in the foyer and the beautiful Memorial Chamber—has been made non-slip with Alundum Aggregate. On the many main stairways precast Alundum Aggregate Treads provide walking safety. The stairs to the Little Theater and its balcony have nosings of Alundum Stair Tile.

Lucius W. Briggs . . . Worcester
Frederic C. Hiron . . . New York
Associate Architects

Geo. A. Fuller Co., Boston
General Contractors

Precast Alundum Aggregate Treads
(made and installed) and Alundum
Terrazzo by DePaoli Mosaic Co.,
Boston

NORTON COMPANY, WORCESTER, MASS.

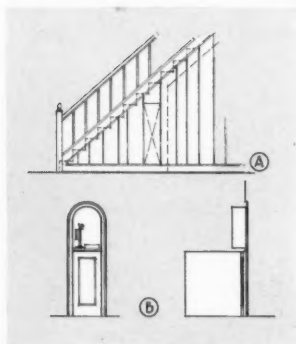
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Cleveland Hamilton, Ontario London Paris



T-363

NORTON PRODUCTS—Grinding Machines; Lapping Machines ♦ Grinding Wheels; Abrasives of Polishing; India Oilstones, Pulpstones ♦ Laboratory Ware, Refractories; Porous Plates ♦ Non-slip Tiles and Aggregates

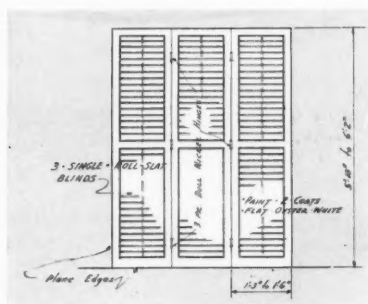
... Things You Didn't Learn in School



- CLOSET FOR CARD TABLES

By Luis Van Rooten
Cleveland, Ohio

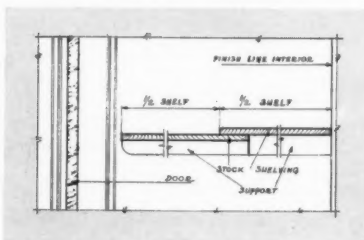
STORAGE space for card tables is a convenience that can be easily anticipated by architects. Sketch A indicates such space under a stairway concealed by vertical panel boards. Sketch B suggests a combination card table rack and niche for a telephone. This can be placed under a stairway or wherever else space permits.



- AN OFFICE SCREEN

By Mike Mebane
Houston, Texas

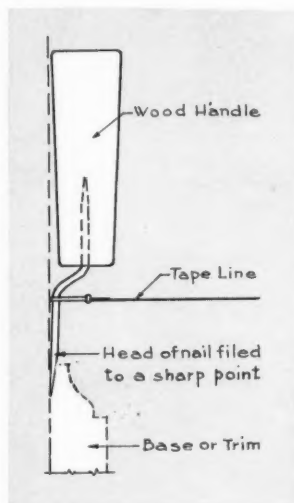
EVERY architect's office has corners that are disorderly and unattractive. It is an easy matter to hide them from view with a neat, inexpensive screen that is easily made. Have your carpenter hinge together three single, roll-slat blinds that may usually be obtained from a house wrecking company or second-hand lumber yard. Clean them, sand, and paint two coats of flat oyster white. The result will be well worth the small amount of work.



- **SHELVES IN DEEP CLOSETS**

By Sanford B. Wells
Washington, D. C.

WITH deep closet shelves it has proved convenient to lap the back portion of the shelves over the front part. The stop so formed prevents frequently used articles from slipping back out of reach and makes those in back more accessible.

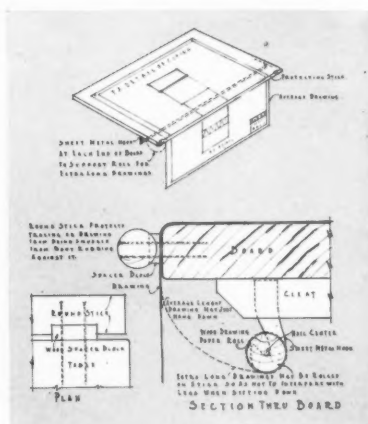


- **HANDY TAPE HOLDER**

By Earl N. Dugan
Tacoma, Washington

AS an aid to taking measurements on remodeling jobs a home-made tape holder is suggested. Drive a 6-penny finishing or box nail into a wooden handle approximately 2"x½". Cut the head off and bend the nail as shown in the illustration so that the two sections are parallel to one another with about ¼" shift in line. Then file the point sharp and flat to permit insertion behind casings, baseboards, corner boards, etc. When this

instrument is used with a 50' steel tape and a 6' rule, one person can easily and quickly obtain all measurements necessary for the average repair or alteration job.



- ATTACHMENT FOR DRAFTING BOARD

By D. Van Reyendam
Detroit, Michigan

HERE is a simple and economical device that prevents excessive smudging of large drawings and makes them easier to do. Nail a round stick from a roll of tracing paper to the edge of the drafting table after having first cut flat surfaces on each end to receive spacer blocks between stick and table edge. To keep long drawings in good condition attach two sheet metal hangers underneath the board at each end. In both ends of another round stick drive a tenpenny nail. File off the nail heads. The stick then becomes a spindle on which drawings can be rolled out of the way giving plenty of leg room beneath the table.

- **TIME-SAVER FOR WORKING DRAWINGS**

By Norman L. Irwin
Old Mill, Ontario

WHEN making drawings for blue-printing much time can be saved on the elevations by drawing carefully the front and end elevation on one sheet. Then pin this sheet face down and trace the outline of walls, roofs, projections and window heights on a second sheet. This will eliminate a lot of "laying out."

American Architect will pay \$5 for each suggestion published on this page

NEW CATALOGS . . .

Readers of **AMERICAN ARCHITECT** may secure without cost any or all of the manufacturers' catalogs described on this and the following page by mailing the prepaid post card printed below after writing the numbers of the catalogs wanted. Distribution of catalogs to draftsmen and students is optional with the manufacturers

MONEL METAL KITCHENS

339 . . . An Architects' Reference Bulletin on Monel Metal in modern residential kitchens, has been issued by The International Nickel Company, Inc., New York. This 8-page bulletin, A.I.A. file 29-H-6, illustrates a variety of well-planned new and modernized kitchens in dwellings and apartment houses in which Monel Metal has been used for sinks, dishwashers, work tops, and other elements. Two pages are devoted to Monel Metal range boilers, water softeners and other products.

ILG UNIVERSAL BLOWER

340 . . . Ilg Electric Ventilating Company, Chicago, has issued a 40-page complete catalog, No. 833 (A. I. A. file 30-D-1) on Ilg Blowers. It illustrates each basic type of blower, shows logical applications, provides complete dimensional and capacity data and contains instructions for selecting the proper type and size of blower for each application.

BATHROOM FURNISHINGS

341 . . . A complete line of bathroom furnishings, including vanities, dressing tables, hamper, cabinets, towel racks, toilet seats, mirrors and shelving, is presented by C. F. Church Manufacturing Company, New York, in a spiral bound portfolio 6" x 9".

WELDED PIPING IN BUILDINGS

342 . . . Air Reduction Sales Company, New York, demonstrates the advantages of welded pipe lines for heating and other services in buildings in a 12-page and cover filing bulletin entitled "The Facts About Welded Piping for Buildings." Emphasis is placed on welded piping in residences and small buildings.

MINNEAPOLIS-HONEYWELL CONTROLS

343 . . . In a 12-page and cover architect's manual on automatic control (A. I. A. file 30-F) Minneapolis-Honeywell Regulator Company, Minneapolis, presents a basic analysis of automatic control equipment applied to heating and air conditioning systems, and explains what types of control can be effected with their equipment. This manual also illustrates typical equipment and provides data for the preliminary planning of control installations, engineering details of

which are developed by Minneapolis-Honeywell specialists.

A condensed complete catalog and price list effective November 1, 1933, is also available.

CHIMNEY POTS

344 . . . Atlantic Terra Cotta Company, New York, has issued a new edition of their chimney pot catalog, a sixteen page and cover booklet, A. I. A. file 5-H-3. The booklet illustrates typical installations and contains carefully dimensioned drawings and several color reproductions of terra cotta chimney pots. A page is devoted to correct fireplace construction details.

ECCLESIASTICAL DECORATION AND LIGHTING

345 . . . Conrad Schmitt Studios, Milwaukee, have prepared a board bound portfolio, 12½"x9¼" containing color reproductions of church interiors mounted on black paper, and various other plates and folders descriptive of church lighting fixtures and decorative treatments of all types completed by the Studios.

JENKINS VALVES

346 . . . In a cloth bound general catalog of 264 pages, size 6" x 9", Jenkins Brothers, New York, present their complete line of valves, mechanical rubber goods, and Moncrieff Scotch gauge glasses. The catalog illustrates the construction and operation of each type of valve and gives sizes, prices, operating pressures, and costs of parts for the complete line.

RUBEROID PRODUCTS

347 . . . The Ruberoid Company, New York, has issued a 68-page general catalog (A.I.A. file 12) of Ruberoid products, including shingles, sidings, roll roofings, roof coatings, waterproofings, building papers and felts, and related products. A section is devoted to Eternit Asbestos Cement Shingles and Sidings. Complete data, except costs, are given for each product.

HOWELL CHROMSTEEL FURNITURE

348 . . . A new 24-page catalog of Howell Chromsteel Furniture of modern design has been issued by the Howell Company, Geneva, Ill. The catalog illustrates a complete line of tubular-framed upholstered and garden furniture with appropriate desks, tables and related items.

WEBSTER SYSTEM RADIATION

349 . . . A new type of concealed convector is illustrated and described in a 24-page bulletin, B1500, issued by Warren Webster & Company, Camden, N. J. This filing size catalog explains details of construction and presents diagrams and tables giving complete dimensions, capacities and installation details.

FORMICA STORE FRONTS

350 . . . The Formica Insulation Company, Cincinnati, offers a folder portfolio containing three color plates illustrating four designs for modern store fronts in which Formica has been employed with bright metal trim. The fold-

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AMERICAN ARCHITECT
New York City

January 1934

Please have the following catalogs reviewed in this issue sent to me.
Numbers

• I also desire further information about the new products described in this month's "New Materials and Equipment." . . . (See pages immediately following this insert)
Numbers

• I would like to have catalogs and information concerning the following products advertised in this issue. (See advertisers' list on following page).....

Name
Firm name
Address
City
Occupation

FOR JANUARY 1934

These NEW Catalogs may be obtained through AMERICAN ARCHITECT

er contains data on installation and attachment methods and shows typical construction details.

PORCELAIN ENAMELED IRON IN ARCHITECTURE

351 . . . "Relation of Porcelain Enamelled Iron to Modern Architecture" is the title of Armco Architectural Bulletin No 12, published by the American Rolling Mill Company, Middletown, Ohio. This is an attractively printed 16-page filing size bulletin, composed in magazine style, thoroughly illustrated with many photographs and detailed drawings showing practical applications of porcelain enameled iron for exterior and interior uses. A brief specification outline is included.

GRADED WIRING SYSTEMS

352 . . . A wholly new and thoroughly practical approach to the layout and specification of wiring installations has been developed by General Electric Company, Bridgeport, in their "Architects' Manual—GE Graded Wiring Systems" (A. I. A. file 31-C-61). This 40-page manual establishes three grades of wiring systems adapted to various types and qualities of buildings; presents the wiring materials appropriate to these systems with an interpretation of the proper use of each product; and concludes with time-saver specifications for each grade.

AUTOMATIC CONTROL IN MODERN BUILDINGS

353 . . . In a monumental brochure of 72 pages, size 14 x 17 7/8", handsomely printed by offset and well bound in a colored cover, Minneapolis-Honeywell Regulator Company, Minneapolis, presents a series of crayon etchings by Margaret Bradbury showing buildings "From Maine to California" in which modern automatic control systems of Minne-

apolis-Honeywell manufacture have been installed. Individual installations are briefly described and typical control systems are analyzed in diagrams and text at the end of the book.

DATA ON ALUMINUM

Aluminum Company of America, Pittsburgh, offers the following new publications:

354 . . . "Specifications for Architectural Finishes Applied to Aluminum Alloy Sand Castings" (A. I. A. file 15-J) is an 8-page and cover booklet describing the available finishes and the proper method for obtaining them.

355 . . . "Specifications for Aluminum Paint Made with Alcoa Albron Powder or Paste" (A. I. A. file 25-B-252) is a 4-page and cover complete specification, covering all practical interior and exterior applications for aluminum paints.

356 . . . "The Welding of Aluminum and Its Alloys" is a pocket size 44-page manual for the technician.

357 . . . "The Riveting of Aluminum and Its Alloys" is a pocket size 28-page manual for technicians.

BRADLEY WASHFOUNTAIN

358 . . . Bradley Washfountain Company, Milwaukee, has issued a four-page folder (A. I. A. file 29-H) describing and illustrating the various models of washfountains and other products for group washing in schools, industrial plants, stores, etc.

COLOR AT CENTURY OF PROGRESS

359 . . . American Asphalt Paint Company, Chicago, has published a brochure of 16 pages, 7"x10", presenting a faithful reproduction of the flat color effects designed by the late Joseph Urban for the Century of Progress. It is printed in 13 water colors, silver and gold, and contains 35 reproductions of the actual buildings in their correct colors.

WATER COOLERS

360 . . . The Westinghouse Electric & Mfg. Co. have issued a 28-page booklet dealing mainly with their line of dual-automatic water coolers. The booklet is profusely illustrated with photographic reproductions, dimensioned drawings and sectional diagrams.

STURTEVANT AIR CONDITIONING

361 . . . In an eighteen-page pamphlet the B. F. Sturtevant Co. of Boston, Mass. illustrates its line of air conditioning equipment. The booklet is not designed as a technical bulletin but is a visual presentation of the company's products.

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New York, N. Y.

New Materials and Equipment



Jacketed Spencer Boilers

252M A two-tone jacket is now offered as optional equipment for Spencer Magazine-feed Boilers made by Spencer Heater Company, Williamsport, Pa. The jacket entirely encloses the boiler except for the water gauge, pressure gauge and relief valve.



New Crane Dental Lavatory

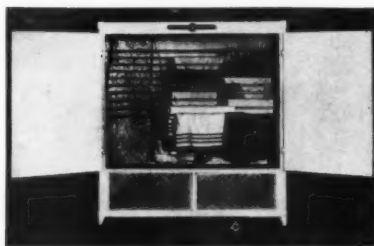
253M A new dental lavatory, to be known as the "Dentrix," has just been announced by Crane Company, Chicago. It is to be a moderate priced fixture of compact size (12" x 12") that can easily be added to existing bathrooms or included in small space in new units. It is made of sanitary vitreous china with integral open strainer and a compact hot and cold water supply fixture.

Cast Iron Arco Convector

254M A new convector heating unit of finned cast iron sections has been added to the Arco line by American Radiator and Standard Sanitary Corporation. The headers, also made of cast iron, are tapped to give a wide choice of piping connections, thus simplifying installation and the sections are connected with individual tie bolts at malleable nipples, developing a sturdy construction. The convectors are available in several sizes and are equally well adapted for steam, vapor or hot water systems.

Elgin Hardimeter

255M Using a photo-electric cell to test automatically the hardness of water, the Elgin Softener Corp., Elgin, Ill., has developed the Elgin Hardimeter to control water softening installations. The mechanism operates by sampling water under control at predetermined intervals and mixing it with a chemical which affects the color or turbidity of the water if the sample is not up to standard. Any change is caught by the electric eye which can not only measure the degree of hardness, but can also be arranged to operate an alarm or other signal.

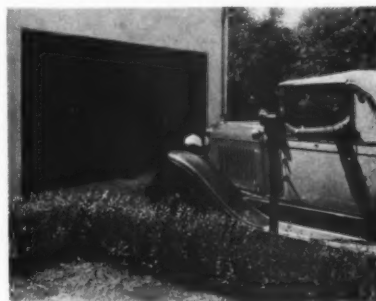


Laundry Cabinet Dryer

256M Domestic laundry work can be made a continuous process by the use of the newly announced General Electric Laundry Cabinet Dryer in conjunction with a washing machine and ironer. This new dryer will take the entire content of an 8-lb. washer and dry it ready for ironing in less than an hour. The cabinet is heated by six 500 watt strip heaters providing warm air which is blown through the cabinet by a direct driven blower. The unit is 60" wide, 66" high and 24 3/4" deep.

Humidity Controls

257M Minneapolis-Honeywell Regulator Company, Minneapolis, has introduced a line of humidity controls operated by the hygroscopic properties of multiple groups of human hair. These controls are said to provide accuracy and sensitivity not heretofore available for small residential or commercial installation. A mercury switch actuated by the mechanism makes or breaks the line voltage electrical circuit. The range is from 20 to 80 per cent relative humidity and under normal conditions the control would operate within a 2 per cent variation.

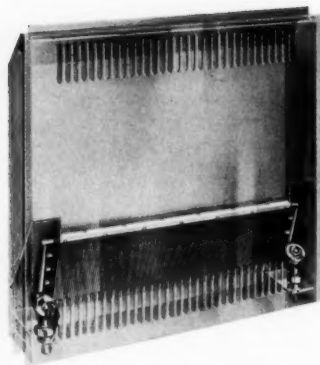


New Garage Door Controls

258M Barber-Colman Company, Rockford, Illinois, has announced an electric door opener for garages equipped with Barcol Overdoors and an improved automatic radio control for electrically operated garage doors.

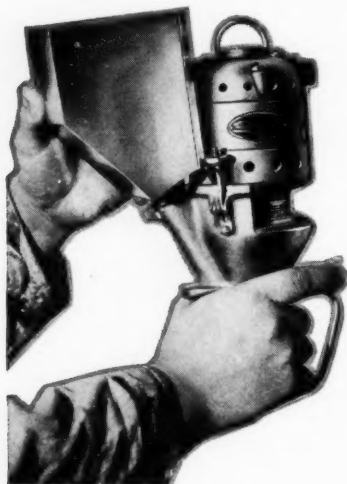
The electric door opener illustrated requires that the door be closed by hand in the usual manner. A remote control switch operated by a key or toggle electrically releases the door latch and an extra spring on the over-door mechanism raises the door automatically. This is a low cost compromise between hand operation and full motor-driven equipment.

The radio garage door control employs a small radio transmitting equipment mounted in each car having access to the garage. A receiving aerial is buried in the driveway over which the car passes. A transmitter timing unit automatically sends a radio signal to which the receiving mechanism is tuned and which no other car can imitate. By this means either of two garage doors may be opened or closed and garage lights turned on or off by the driver.



Webster System Radiation

259M A new product introduced by Warren Webster & Company, Camden, New Jersey, is the Webster System Radiator embodying a light-weight, concealed, convection-type heating unit, an orificed radiator supply valve, and a thermostatic return trap within a suitable enclosure. The heating element is of new design, having aluminum fins on copper tubing; and the entire unit is sloped within the enclosure for maximum heating effect. Enclosures may be installed with plaster, metal or tile front or with cabinet work and are available in a wide range of sizes and capacities.



Electrical Painting Machine

260M The new airless electrical painting machine illustrated on this page has been introduced by Electrical Painting Equipment Co., Inc., New York, which claims for the device absolute control of fan-shaped paint spray so that paint may be applied to a sharp line or to broad surfaces at a rate of five times faster than brush painting. The device consists of an electric motor and a centrifugal paint distributor with adjustable cutoffs for the spray. It is said that no paint fog is developed and that waste of paint is eliminated.

Gamewell Vitalarm Signal

261M A new electric fire alarm appliance which fits into an ordinary lamp socket operating at 115 volts, 60 cycles A.C., has been introduced by The Gamewell Company, Newton, Mass. Mounted in a ceiling fixture or in a wall bracket, this appliance sounds a loud and distinguishing alarm whenever the temperature rise in the room exceeds 15 to 20° F. per minute, or when the temperature rises above 150° F. regardless of the rate. A small neon-type glow lamp burns continuously to identify the unit and visibly assure that it is in operating condition. Extension alarms can be arranged so that a basement or attic alarm will also be sounded at any other desired point.

Aluminum Foil Insulation

262M Adapting the heat reflecting properties of bright metal foil to thermal insulation of buildings, Reynolds Metals Company, New York, has introduced Reynolds Metallation in several forms. The product primarily consists of thin, highly polished aluminum sheets cemented to a sheet of paper. The permanently bright metal surface is said to reflect 95 per cent of the radiated heat that reaches its surface and to absorb and transmit only 5 per cent of these heat waves. This efficiency is claimed whether the paper backing or aluminum surface faces the source of heat. Another form has metal foil on both sides of a paper core; a third is a metallated Ecod lath which combines functions of the heat reflecting foil with those of a plaster base.

Domestic G. E. Oil Furnace

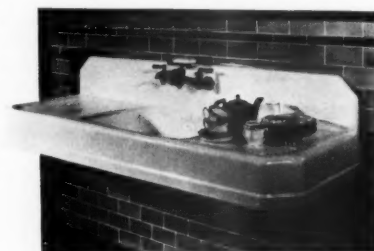
263M General Electric Co. has introduced a new oil furnace for smaller residences that is similar in principle and design to the large unit announced last year. The new furnace can be used with steam, vapor or hot water systems and is rated at a maximum output of 133,000 b.t.u. per hour. Either thin or heavy grade oil can be used. It is circular in shape, is 60 in. high and 29 in. in diameter. All working parts are enclosed in a lacquered, chromium trimmed shell.

New Residence Elevator

264M A new type of positive control residence elevator has been introduced by The Warner Elevator Mfg. Company, Cincinnati. The car is operated between two floors by means of a continuous threaded shaft which is capable of fully supporting the car at any point. No cables or overhead work are required, the entire mechanism being mounted in a hollow shaft installed in the basement. The five-ply wood and aluminum cab is a yard square and re-

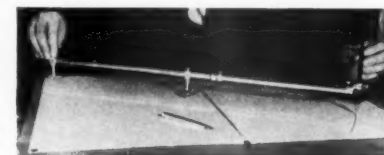
quires a shaftway only 4' x 3'9" inside permitting installation in existing or new residences with utmost space economy.

The same type of mechanism has also been developed in the new Warner All-electric fully automatic undercounter dumbwaiter for installation between basement and sales counters in stores.



Pressed Steel Sinks

265M The Youngstown Pressed Steel Company, Warren, Ohio, have introduced a complete line of vitreous enameled sinks pressed from heavy steel sheet, providing great strength together with light weight. The result of improvements in enameling on sheet steel and of advances in forming of steel under pressure, these sinks are said to include excellent appearance and acid-resisting enamel surfaces with low installation cost.



Improved Beam Compass

266M Wade Instrument Company, Cleveland, has introduced an improved beam compass consisting of a 10" rectangular beam with extensions 15" long for very large work; a center wheel support for use with the extension; micrometer adjustment; and uniform clamps to hold any drawing tool such as pen, brush, scriber, etc. The compass is made in hard Duralumin highly polished.

Integral Waterproofing Liquid

267M A newly perfected waterproofing liquid which gives added plasticity, increased strength and weathering resistance to mortar and concrete has been announced by The Master Builders Co., of Cleveland, Ohio. The material is called Omicron "4-in-1" Waterproofing. It contains pure stearate mixed with a puzzolanic ingredient which reacts with the free lime released by hydrated cement to form an insoluble material tending to check efflorescence.

Van Service Bar Workboards

268M The John Van Range Company, Cincinnati, has introduced a de luxe series of standard stainless metal service bar workboards for installation in hotel, restaurant and club kitchens. Units are made in 6', 8' and 10' lengths or in special lengths to order. Standard units contain a two-compartment sink, insulated cracked ice sink, removable bottle racks, shelf for pony glasses, etc. Construction is of heavy gauge stainless metal, welded and reinforced with all corners rounded.

Toridheet Oil Burner Boiler

269M A new heating unit which combines an oil burner and boiler and has a capacity of 750 sq. ft. of connected load is the latest product of the Toridheet Division of Cleveland Steel Products Corp., Cleveland, Ohio. The unit is self-contained in air-cell insulated sheet steel and is equipped with low limit controls, low water cut-out and feeder and a built-in domestic waterheating coil. The oil burner is the rotary type and the unit is under complete automatic control.

Consolidated Odor Filter

270M Most odors exist in the form of particles of solid material or as gaseous vapors and require a physical action for their elimination. Consolidated Air Conditioning Corp. of New York offers an odor filter which utilizes coconut shell carbon to accomplish this. The carbon is contained in a number of cells which are enclosed in a standard cabinet designed to produce a free flow of air. The filter is adaptable for air deodorization in both commercial and industrial buildings.

Kewanee Boiler Improvements

271M Kewanee Boiler Corporation, Kewanee, Illinois, has introduced three optional improvements for the Kewanee Residence Type R Boiler. The first is coil equipment for domestic hot water heating as a built-in unit. The second is an incinerator grate as optional equipment with Square Type R Boilers. The third is the optional addition of spinner blades in tubes of oil, gas or stoker-fired boilers. The first two additions convert Type R Boilers into triple-purpose units for heat, hot water and incineration. The addition of spinner blades or twisted baffles further increases the heat-absorbing capacity under intermittent high temperature firing.

Emulmastic Floors

272M The Barber Asphalt Company, Philadelphia, has introduced "Emulmastic," a Native Lake Emulsified Asphalt which, when mixed with Portland cement and aggregate, forms a mortar for patching or resurfacing

ALL SPECIFICATIONS THE SAME



... but are they?

You can specify details up to a certain point. You can tabulate and compare quantities, capacities and sizes... and prove to yourself that all specifications are equal. But can you tabulate "beneath-the-surface" workmanship and materials? Can you tabulate years of experience and intensive research? Can you tabulate lower maintenance expense, longer life, greater dependability, and overall plant efficiency? Can you tabulate a factory trained field organization in which you can concentrate full responsibility for sound engineering, correct installation and proper functioning of the completed plant in the years to come? If you can... you will arrive at the true measure of value.



YORK ICE MACHINERY CORPORATION • YORK • PENNSYLVANIA
REFRIGERATION • AIR CONDITIONING
MILK & ICE CREAM PLANT EQUIPMENT

factory floors, basement floors of residences, and other similar surfaces. This new product is mixed and applied cold. It can bear heavy traffic in 48 hours. The surface is said to be non-slip wet or dry, moisture and vermin proof. It can be left in black or coated with cement floor paints.

Multi-V Type Air Filter

273M Staynew Filter Corporation, Rochester, New York, announces a new patented air filter. It features not only the V-shaped mounting of cells but also the use of a dry, fabric-type filter medium. This is installed in V shape within individual

cells to provide maximum area exposed to the air flow in a minimum space.

New Kohler Cabinet Sink

274M An enameled cabinet sink for building into new and modernized kitchens has been introduced by Kohler of Kohler, Wisconsin. The sink has a ledge 3" wide across the back for cleaning materials and utensils, and is equipped with a chromium plated swing spout mixing faucet, a disappearing spray hose for rinsing and Duo-strainer drain control. Models are available with 8" high ends for recess or corner installations, ventilated for utensil storage, with toe space base.

Wanted— A New System of Construction Finance

(Continued from page 12)

at its best, the implications of which should be clear to all who read. The Senate Investigating Committee has been delving into the tangled affairs of the Lincoln Building in New York. The following quotation is taken from the *New York Sun* of December 6th:

"Mr. Pecora said that the firm of Charles F. Noyes & Co., Inc., raised its appraisal on the building from a first estimate of \$25,800,000 to more than \$26,000,000. He suggested that this was done to make the \$16,000,000 first mortgage bonds legal for trust investments by making them less than 60 per cent of the appraised value.

"He then placed in the record a letter from the Chase Securities Corporation, the investment affiliate of the bank, to the New York Real Estate Securities Exchange, saying that the Noyes appraisal made the first mortgage bonds legal investments for trust funds. The letter added, however, that Chase Securities did not care to recommend the bonds for such investment until the earnings of the building were better established."

It is hard to follow the sinuosities of the financial mind. To almost any one but a Banker it would seem that a Builder was the logical person to supply an expert opinion on building values, for Architects, Engineers and Building Contractors have accumulated quite a store of useful information about them! But the Banker's mind is not as other men's.

The simple, direct and obvious is not for the Banker—he goes to a Real Estate Agent. It's an old banking custom, the conventional thing to do. They did it in the 1850's when Real Estate Agents actually had some knowledge of building values and they continue to do it in the 1930's when they have none at all!

There is an Alice-in-Wonderland atmosphere about the whole performance. Nevertheless it may serve to focus attention on the next indicated step in a proposed recovery program for the sorely stricken industry. The main objective still remains as before—the restoration of confidence in the mind of the building investor. After examining the record to see what it is we are asking him to restore his confidence in, the next step in the program begins to take shape.

There can be no doubt that the average American still retains his confidence in America and in the fundamental soundness of American industry, the efficiency of American labor, the extent of American resources. Safety of investment under these conditions must therefore be obtainable. He does not question the security of the country. It is the "securities" that have been issued against it and

the system that perpetuated them that are a stench in his nostrils. Does any one really suppose that he can be induced to forget his bitter and costly experience of the system's workings and re-open his purse in response to the pep-talks of his Chamber of Commerce? Would it be in the least desirable if he could be induced to do so?

WHAT remains, then, before there can be any hope of the requisite restoration of confidence necessary for the recovery of the building industry? It is the old system of construction finance that is the stumbling block. The first essential to recovery must therefore be the elimination of that system and the second, the creation of a new system to take its place and to perform properly the functions in which it failed.

The creation of such a new system is entirely possible. Its main characteristics are already obvious. First, it should be capable of guaranteeing to the investor the closest possible approach to *entire security* for his investments. Second, it should provide for the investor a market for his securities which would make them freely and easily negotiable. Third, it should operate as a constituent part of the construction industry, and not as an independent and frequently hostile and domineering outside power.

To prepare specifications for this necessary change will require a concentration of the ablest minds in the country, including those representatives of the banking world who do not, as Stuart Chase says, "fancy they can master the technical operation of a complicated industry by reading a few reports and twirling their glasses at directors' meetings." But the main responsibility should rest on the shoulders of those who know most about what is required,—the Architect, the Engineer and the Building Contractor. It is the greatest opportunity that has ever presented itself to the profession to do something of lasting benefit to themselves, to the country and to the world at large.

THE old order is changing. Dean Potter, in resigning the Presidency of the American Society of Mechanical Engineers, pointed out that the engineer can no longer stand aside while the financier, the promoter and the politician "so tragically bungle" the economic management of the country. Stuart Chase has seen a vision of a new economic class, scientific-minded, technically trained, which may do for economic efficiency what has already been accomplished for industrial efficiency. The time may yet come when the man who knows his business can have something to say about it.

PERSONALS

• The firm of Joseph Urban is being continued under the name of Joseph Urban Associates. Offices at 5 East 57th Street, New York, are being conducted by Irvin L. Scott and Otto Teegen.

• The office of William E. Lehman, 972 Broad Street, Newark, N. J. is engaged in working out a development of low-cost one-family houses and is interested in receiving manufacturers' catalogs of products applicable to such a project.

• Alton Craft and Harrison Gill have opened offices at 6 East 45th Street, New York, for the practice of architecture under the firm name of Craft & Gill. They would like to receive manufacturers' catalogs, particularly those pertaining to residential and remodeling work.

• The following have been elected officers of the Allied Architects and Engineers of Detroit.

President.....W. G. Malcomson, F. A. I. A.
1st Vice President.....G. W. Hubbell, Engineer
2nd Vice President.....H. A. O'Dell, A. I. A.
Secretary.....L. R. Hoffman, Engineer
Treasurer.....W. R. Lentz, A. I. A.

• Walter Thomas Williams, architect, announces the removal of his office from 41 East 42nd Street, New York City, to No. 2 Park Avenue.

• George L. Walling announces the opening of an architectural office at 2136 Ashland Avenue, Toledo, Ohio.

• Werner Hegemann, international authority on town planning, will give two courses of lectures at the New School for Social Research at 66 West 12th Street, New York City. The first course deals with Social and Economic Problems in Town Planning. The second will be concerned with Civic Art and Modern Tendencies in Architecture.

• Herbert C. Heath, A. I. A., has removed his office from 1919 Harold Avenue to 608 Bankers Mortgage Building, Houston, Texas. He would like to receive manufacturers' literature at his new address.

• Louis E. Jallade was recently elected President of the New York Society of Architects. Gregory B. Webb was chosen Secretary and Henry S. Lion, Treasurer.

• Blaine and Olson, architects, announce the removal of their office from 1801 Franklin Street to Room 1801, 1212 Broadway, Oakland, California.

• The firm of Gates & Standish, architects, announce the removal of their office from the National Bank Building to 234 Cabot St., Beverly, Mass. They request that manufacturers' samples and literature be forwarded to their new address.

• Robert C. Kilborn, architect, has opened an office at 43 West Street, Danbury, Connecticut. Manufacturers' catalogs are desired.

FOR JANUARY 1934

DECORATING A RESTAURANT?



Guests dine in an atmosphere of pleasing quiet at the recently remodeled Clark Restaurant, Cleveland. Architects Ockert & Teare used one material to simultaneously banish noise and decorate the ceiling — Armstrong's Corkoustic.

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Armstrong's Corkoustic is a cork product, with an exceptionally pleasing texture. Each panel is individual, eliminating monotonous repetition of surface appearance. Since it is made of cork, Corkoustic is an insulator as well as a sound-absorbent. Three types of Corkoustic are available, all of which may be spray painted any color without decreasing acoustical efficiency.

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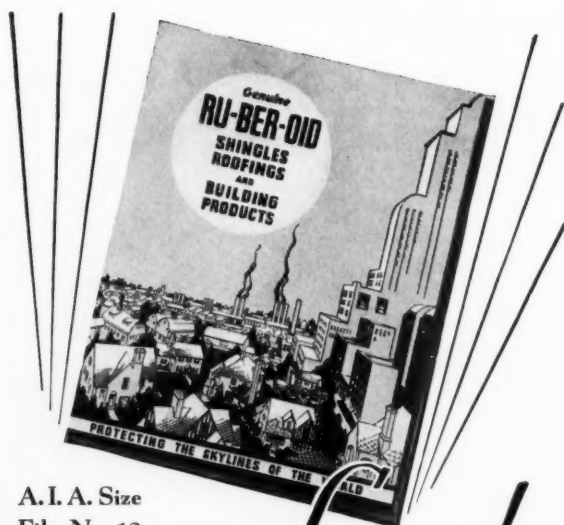
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A.I.A. Size
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A.A.-1-34

• Robert M. Ayres was elected President of the West Texas Chapter of the American Institute of Architects.

• Atlee Ayres, San Antonio architect, has been named a member of the State Advisory Committee of art projects of the Public Works Administration. Under his direction local unemployed artists will be put to work to execute decorative murals for the walls of San Antonio public tax-supported buildings.

DEATHS

• Richard Henry Dana, Jr. died November 29th at his home in New York City. Mr. Dana, who was 54 years old, was an authority on colonial architecture and had been a practicing architect in New York since 1906, having been a partner in the architectural firm of Murphy & Dana. Mr. Dana was born in Cambridge, Mass. He graduated from Harvard and the Columbia University Business School. After two years of study at the Ecole des Beaux Arts in Paris he began his active practice in New York. In addition to his professional work, Mr. Dana lectured at the Yale School of Architecture and at Columbia University. He was a member of the American Institute of Architects, the Society of Beaux Arts Architects and the Architects' League of New York.

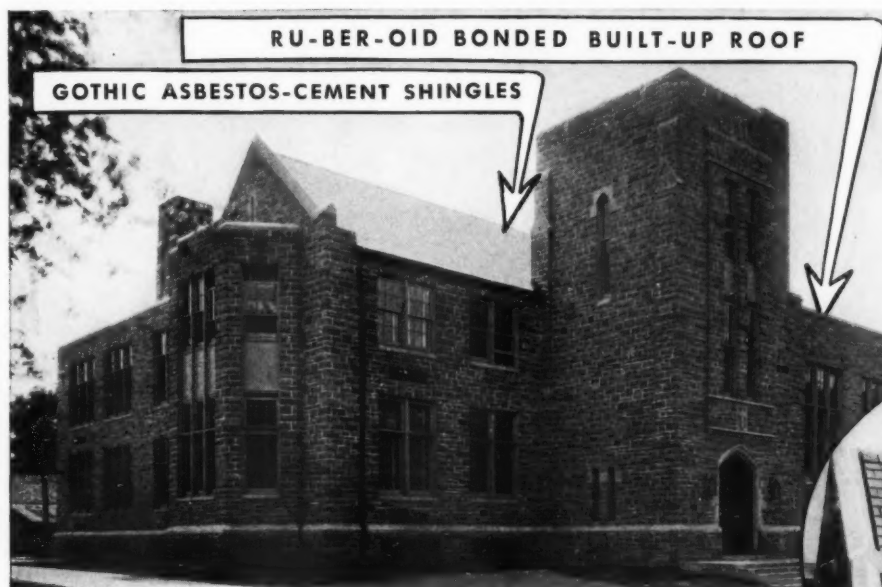
• Philip H. Johnson died in Philadelphia, November 29th at the age of 65. For thirty years Mr. Johnson had been architect for the Philadelphia Department of Public Health and was responsible for the design of many city hospitals. In addition he was architect of the City Hall Annex, the Philadelphia Convention Hall and the Exposition Hall in Buffalo, N. Y.

• Alfred Oscar Elzner died November 26th in Cincinnati, Ohio. He was 71 years old. Mr. Elzner was said to be the first architect to use concrete for buildings. He was born in Cincinnati and studied architecture in that city and at the Massachusetts Institute of Technology. Mr. Elzner had practiced architecture in Cincinnati since 1887 as a member of the firm of Elzner & Anderson.

• George Ernest Merrill died in Montclair, N. J. on November 23rd at the age of 63. He was born in St. Paul, Minn. and studied at the Massachusetts Institute of Technology and the University of Minnesota. At one time he was associated with Ernest Flagg in the construction of several buildings for the Navy Department. In 1920 he was elected head of the Architectural Department of the American Baptist Home Mission Society and acted as consultant on many church building projects. Mr. Merrill held an honorary degree of Doctor of Science from Kalamazoo College and was a member of the American Institute of Architects and the Technology Club of New York. He was also a past Commander of the Knights Templar.

• Harold Jewett Cook died in Buffalo, N. Y. the week of December 18th.

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Architect — Childs and Smith, Chicago, Illinois.

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SEE 1934 SWEET'S ARCHITECTURAL CATALOGUES

GREAT GEORGIAN HOUSES OF AMERICA

Published by the Architects Emergency Committee, 112 E. 55th St., New York. Illustrated; 264 pages; size 11 x 14; price \$20.00.

THIS volume is the result of the skill of fifty unemployed draftsmen and architects who have worked under the direction of prominent New York architects as members of the Architects Emergency Committee. The subject of the book is well expressed in its title. The Great Georgian Houses of America have been carefully documented in a great number of striking photographs and excellent measured drawings that include plans, elevations and details. No one locality of America has been stressed; and examples of American houses include all the important structures with an authoritative historical background.

In make-up and technical execution the book is comparable to any of the most excellent architectural monographs that have been so extensively bought by architects heretofore. It is undoubtedly worth having purely for the architectural value of its contents. In view of the fact that proceeds from its sale will be used to further the work that the New York Architects Emergency Committee is doing to aid unemployed members of the architectural profession, its acquisition has a double significance. To every architect the book will prove an instrument of practical value; and its ownership will be, in addition, a certificate of helpful generosity and cooperation. This illustration typifies the careful delineation and excellent draftsmanship of the volume's many plates.

ENGLISH ART SERIES; LONDON BUILDINGS

By F. P. Brown, A.R.C.A. (London). Published by Pitman Publishing Co., New York. Illustrated, indexed; 99 pages; size 7 1/4 x 9 3/4; price \$2.50.

ONE of three volumes dealing with English art, this Volume 1 is a more or less casual outline of those buildings in London which form the background to the story of English art. The subject is treated from the standpoint of style and material is arranged, therefore, in more or less chronological order. The book serves more as an illustrated guide for London travellers who are interested in architecture, than as an exhaustive treatise on the several buildings which it discusses.



1933 BOOK OF A.S.T.M. STANDARDS

Published triennially by American Society for Testing Materials, Philadelphia. In two volumes: Part I—Metals, 1,000 pages; Part II—Non-metallic Materials, 1,300 pages. Size 6 x 9. Price to non-members: Either part alone—cloth \$7.50, half leather \$9.00; both parts—cloth \$14.00, half leather \$17.00.

OF increasing importance to the architectural profession are the standards and recommended practices adopted by the American Society for Testing Materials. The eventual simplification of architectural specifications by reference to these standards is already indicated by the trend of architectural and building practice.

Every three years the Society pub-

lishes the "Book of A. S. T. M. Standards" containing all operative standard specifications. This year the book appears in two volumes. Part I, containing 1,000 pages, includes all standards relating to metals. Part II, of 1,300 pages, contains standards covering non-metallic materials. While the contents of both volumes vastly exceed the scope of architectural practice, they cover such important products as Portland cement, gypsum, reinforcing steel, structural steel, and other basic materials.

Each volume contains a complete subject index. Supplements containing new standards adopted in 1934 and 1935 will be furnished without charge to all purchasers of either volume.

AMERICAN ARCHITECT

COLOR SCHEMES FOR THE MODERN HOME

By Derek Patmore. Published by The Studio Publications, Inc., 381 Fourth Ave., New York. Illustrated; 29 pages of text; size 7 1/2 x 10; price \$4.50.

THIS interesting volume is arranged in an unusual way. The book consists chiefly of plates reproduced in natural color from actual interiors which indicate a wide range of modern decoration. Each plate is accompanied by an analysis of its design that includes a notation regarding the materials employed. A short text treats of color and its use in relation to furniture and fabrics. Although primarily designed as a guide for laymen, the book is of interest to architects engaged with problems of interior decoration.

BEAUTY LOOKS AFTER HERSELF

By Eric Gill. Published by Sheed & Ward, Inc., 63 Fifth Ave., New York. Illustrated; 253 pages; size 5 x 8; price \$2.00.

ERIC GILL thinks that the artist is simply a responsible workman and his latest volume is an exposition of that thesis. It is difficult to classify this book as argument, discussion or

comment. It contains some of all three and in addition a section of statements which have the form and almost the force of blank verse. Mr. Gill treats of industrialism in modern architecture and philosophies of art, clothes and stone carving among other things, and does so in a manner that is entertaining and often unusually instructive. The majority of the essays have not been published, others have appeared in little-known periodicals.

THE YOUNG PEOPLE'S STORY OF ARCHITECTURE

By Emily Helen Butterfield. Published by Dodd, Mead & Co., Inc., 443 Fourth Ave., New York City. Illustrated; 393 pages; size 5 1/2 x 8 1/4; price \$3.00.

ALTHOUGH concerned with architectural history this book constitutes almost a collection of short stories. It has not been written for professional architects, but for children; and the significant points of architectural history are simply told in a way that should interest any youngster. The volume is an unusual and interesting primer of facts in architectural history. It is illustrated with small free-hand sketches by the author who is herself an architect.

MODERN PICTURE HOUSES AND THEATRES

By P. Morton Shand. Published by J. B. Lippincott Co., Philadelphia, Pa. Illustrated; 40 pages; size 7 1/4 x 10 1/2; price \$5.00.

IN so small a volume it is obviously impossible to include every type of theater; and the author has wisely confined his subject to that type of theatrical architecture which he calls "neo-baroque modernism." In choosing examples of this type he expounds his belief that a classical style is not adapted to the needs of the modern theater. The large number of excellent illustrations seem to bear out Mr. Shand's theory, though some architects may be disappointed in not seeing representation of much English or American design.

The text is divided into well-defined topics of design, equipment and planning. These set forth many things that are good and some that are bad in the modern motion picture house. One deals with the essentials of theater acoustics; another with construction and decoration. As a whole the volume is undoubtedly one which architects will enjoy and which they will find a practical addition to their library.

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of March 3, 1933

Of AMERICAN ARCHITECT, published bi-monthly at New York, N.Y., for October 1, 1933.

State of New York }
County of New York } ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared R. F. Gardner, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the AMERICAN ARCHITECT and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:
Publisher—International Publications, Inc., 959 Eighth Ave., New York City.

Editor—Benjamin Franklin Betts, 959 Eighth Ave., New York City.
Managing Editor—Roger W. Sherman, 959 Eighth Ave., New York City.
Business Manager—R. F. Gardner, 959 Eighth Ave., New York City.

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3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

R. F. GARDNER
Business Manager.

Sworn to and subscribed before me this 3rd day of October, 1933.
(Seal.) WILLIAM J. SPERL,

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FOR JANUARY 1934

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Trends and Topics of the Times

(Continued from page 67)

Work will be administered through forty branch offices located in architectural centers. Squad leaders will be paid \$1.10 per hour and the regular men \$.90. All will work on a thirty hour per week basis.



- Architects who happen to be in the vicinity of Cleveland should stop at Nela Park to see the new General Electric Institute which was formally opened December 22nd. In more than 22,000 sq. ft. of floor space are housed an amazing number of exhibits and demonstrations which will be a revelation of the way electricity has been applied to solving the problems of our modern world. The new Institute has been staffed and equipped to function also as a clearing house for authoritative information and advice on all types of lighting and electrical equipment problems. It is in charge of L. C. Kent and Paul H. Dow.

- As Director of the Housing Division of the P. W. A. Robert D. Kohn has had an enviable opportunity to analyze at first hand housing needs throughout the country. Speaking of the slum problem, Mr. Kohn said, "We think of slums only in New York, Chicago, Cleveland and other large cities, but smaller cities would open your eyes."

- In the Journal of the Royal Architectural Institute of Canada, Joseph Emberton, F. R. I. B. A. says, "If we consider the house as a machine for living in, and demand the same efficiency from it as is demanded from an aeroplane, the sight of which produces in everybody, old and young, a sense of extreme satisfaction, we shall progress toward a new type of home which will be worthy of our times and a joy to live in; a home designed from the inside, carefully planned and offering every convenience and comfort, at a considerably lower cost."

- What may be the first step toward a complete survey of the country's building needs has been announced in the form of a Real Property Inventory under C. W. A. authority. Although this is regarded at present as a temporary unemployment measure, the scope of the

inventory indicates that a more detailed survey of a wider type may ultimately be projected. Repairs and improvements, numbers of vacancies, the physical character and equipment of structures and information of a similar character influencing the real property situation as concerns housing will be listed. Sixty cities have been selected so far as the field of the inventory. Work is under supervision of Willard L. Thorp, Director of the Bureau of Foreign and Domestic Commerce.

- A new floor panel which is said to approach an ideal for wood construction has been developed by the United States Forest Products Laboratory at Madison, Wis. It consists of plywood sheets glued to the top and bottom of wood joists, the top serving as a sub-floor and the bottom thinner membrane as the ceiling for the room below. The plywood forms what is called in airplane construction a "stressed covering." This is a shell which not only distributes, but to a large extent relieves the load on the framework which supports it. Because of this, 6" joists can be used in place of the usual 10" size for house construction without sacrifice of strength and stiffness. In tests, panels 4' wide and with 2" x 6" joists appear to offer the best all-round possibilities. With a loading in excess of 50 lbs. per sq. ft. over a clear span of 13½', the panel showed a deflection 15 per cent less than common building code allowance.

- Housing plans in Cleveland are now proving difficult to put through. Because of the city's inability to raise money necessary to match the Federal allotment, it is rumored that the Public Works Emergency Housing Corporation may construct part or all of one project calling for 3,500 rooms at a cost of three million dollars. It is said that rentals which will be lower than the \$8 originally set might be expected as one result of Federal organization.

- A program of housing rehabilitation to be administered by the Government is advocated by the Engineering Experiment Station at Ohio State University. The Station suggests that a technical staff be recruited from unemployed architects, architectural engineers and draftsmen to provide required technical service under direction of an Administrator appointed by the President. Work would include investigation of needed repair, modernization and new construction work; assistance in planning and in building; and dissemination of publicity pointing to the value of housing rehabilitation and the opportunity for assistance in construction. The suggested program also includes a provision for Government loans to make possible the repair or construction that the survey might list as necessary.

- The Architects' Code is reported to be ready for immediate action as soon as the Construction Industry Code has been approved by the President. One difficulty that the Code Committee has encountered has been the unwillingness of the N. R. A. to accept fixed schedules of charges either on a national basis or for local areas.

The policy of the Administration is in opposition to fixed schedules of charges on legal grounds and is generally against price fixing. The Code Committee of the Construction League, headed by Stephen F. Voorhees, is hopeful that the Construction Industry Code and perhaps the Architects' Division of it will be approved and ready for publication this month.

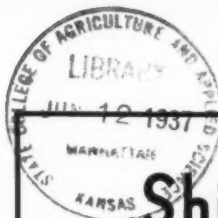
- Formation of a Federal Mortgage Discount Bank as a means of reviving the home building business is favored by the National Association for Better Housing, according to J. Soule Waterfield, president. He announced that a committee is now engaged in working out details of such a program as part of a plan for rehabilitation of individual communities. Another of the association's immediate objectives is a low-cost house of the garden homestead type. C. I. Auten, vice president of the Truscon Steel Co., in charge of the project, said the house would be the result of an unbiased study by architects, engineers and manufacturers in an effort to work out the best thing for the consumer. It is reported that plans are being perfected to build 250 such houses in Ohio.

- The Detroit housing project that was to have been built with P. W. A. funds for slum rehabilitation will probably not go ahead for some time. The bill designed to provide the necessary housing authority was recently defeated in the State Legislature.



- Doors that open automatically as they are approached have been installed in McKim, Mead and White's Pennsylvania Station in New York. Covered with red Formica inlaid with black lines, the doors show none of the usual hardware. Operation is by means of a photo-electric cell mechanism. When the light beam between the posts of the guide rails is interrupted the doors open. They close when the beam on the opposite side is passed.

- Another field of specialization in the building industry is indicated by an announcement from the Pittsburgh Testing Laboratories. The organization has formed a welding service for architects, engineers and contractors which includes reports on various welding processes, specimens, tests, the inspection of welded products and investigation of special welding problems. The new
(Continued on page 111)



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The Architect in Soviet Russia

(Continued from page 17)

endeavor to break away from traditionalism, that stage is past. Today they are thinking more in terms of the best kind of job. If that best kind includes traditional elements in its aesthetic expression, public opinion is as quick to hail it as it is to condemn the impracticability of the International "style" for the icy plains of Siberia.

THIS is perhaps best illustrated by the Palace of Soviets which is now being constructed in Moscow after the designs of Iofan. It adheres to no well-defined school of architectural thought and because of this has received much adverse criticism. Yet from several little understood standpoints it admirably fits the Russian problem. Though it was designed from the fund of Iofan's aesthetic ability, the design expresses ideas which the Soviets have decided best embody their political, social and economic aspirations as well as functional requirements.

The architect in Russia occupies an enviable social position. He is invariably a well-educated man. His salary—which the Soviets call a stipend—may run to a maximum of about 750 rubles per month. Variations in pay exist and they are due to differences of personal ability which occur among Soviet architects and draftsmen as well as among those of any other country.

Perhaps here is the place to emphasize that—American public opinion to the contrary—there exists very little regimentation of ability or opportunity in the Soviet Union. In no other country that I know of has the architect or architectural draftsman such a field of unlimited opportunity as exists in Soviet Russia today. It is true that Soviet architects do not control the country nor are they entirely free agents. But this situation can be easily recognized in any other country. Certainly it is true in America where architectural opportunity has been curtailed largely because of an economic situation over which the architect has absolutely no control.

IF the Soviet architect has no opportunity to amass an independent fortune, he at least has an unlimited scope for his professional talents. He receives his authority and his opportunity for work from society through organized channels instead of by "catch-as-catch-can." But within his own sphere of professional activity he has a great and definite responsibility and a correspondingly wide freedom of action. The actual difference in pay between individual architects is very small. Therefore, an architect who is primarily interested and proficient in monumental design is under no economic compulsion to attempt the solution of an industrial problem and vice versa.

For the same reasons his initiative always has an opportunity to assert itself through architectural competitions by which a great deal of the finer architectural work of Russia is awarded. Thus the finest talent in the architectural ranks is quickly discovered; and since all judgments of architectural

competitions are made public, the responsibility and public acclaim which constitute the major architectural rewards are automatically accorded to the winner. As to overcrowding in the profession, the Russian architect need have no worries for a long, long time. And when that situation occurs, it will be taken care of by the simple expedient of shorter hours, but not shorter pay.

Likewise, draftsmen have an equal opportunity to display their talents and to be educated in architectural schools because they have shown particular aptitude for their work.

No person can go uninterruptedly from secondary school to professional school and then into his father's office practice. In fact no one dreams of that in Russia. Talent is developed and watched through a careful system of vocational guidance which begins in the early grades. From the secondary school a boy—or a girl—goes into an architectural office to spend at least three years' apprenticeship. After that one of two things happens: Either he shows talent and is financed through an architectural school by the office he was working for, or he goes to the University on his own accord. All that is asked of him is that he pass entrance examinations and maintain satisfactory grades. If he does that, the Government maintains him throughout. What is more, the student may marry and may even have children and in either case he or she may move into the "dormitory," family and all.

NOW, just a word on the subject of "purism" vs. "practical" design. For all his legendary mysticism the Russian of today has a profound respect for the practical aspect of the thing that he is doing. Thus, many Russian architects have been known to rebel against a purist design which included sweeping areas of glass for sub-zero locations. Their argument was based on a recognition of the excellence of the design as such, but also on a condemnation of its impracticability under the present technique of material employed or the methods of heating which were to be employed.

Similarly, there exists some feeling between Russian and foreign architects, because a good many of the foreign architects in Russia are "modernists" or "purists" of one sort or another. It appears to be purely professional, however, and, so far as I could see, is confined to discussions of architectural theories, particularly as they relate to style and practicability under Russian conditions.

In other words, the Russian architect is a human being who reacts in exactly the same way to his work and life as any of the most commonplace which could be found in America. The fundamental difference is that the Russian lives under a planned economy with an unlimited opportunity for achievement. He is no more a slave to his drafting board than an American, nor is he under any more severe limitations of design, execution or economics than his American brethren.

Trends and Topics

(Continued from page 109)

service proposes to give the building industry unbiased information on welding, an increasingly important method of building construction. Because it is comparatively new, welding has not been accepted by the construction industry as rapidly as the advantages of the method seems to justify. Since many objections to the process center on testing and inspection of welds, the new service should help to widen the scope of welding technique.

- The Crystal Palace in London—built in 1851 and the first all-steel-and-glass structure—derived its structural design from a species of water-lily, according to Robert E. Martin, author of an article published in *Popular Science Monthly*. The building, unique in its time, was designed by Joseph Paxton, a gardener. Paxton found the reason for the great supporting strength of the *Victoria regia*; copied in steel the arrangement of its ribs; added glass panes of his garden nursery frames and the Palace was the result.

ANNOUNCEMENTS

- The American Academy in Rome has announced its annual series of competitions for fellowships in architecture, landscape architecture, painting, sculpture and musical composition. The competitions are open to unmarried men not over thirty years of age, who are citizens of the United States. Successful competitors will receive \$1,250.00 a year for a period of two years with an allowance of \$300.00 for transportation to and from Rome. Entries for competitions will be received until February 1st. Information and blanks may be obtained from Roscoe Guernsey, Executive Secretary, American Academy in Rome, 101 Park Ave., New York City.

- The Boston Society of Architects will receive applications up to February 15th for the James Templeton Kelley Fellowship in Architecture, which is eligible to any man or woman in Maine, New Hampshire, Vermont and Massachusetts. The award is made annually on the basis of evidence submitted by the applicant. The Fellowship has an income of approximately \$2,500.00 for one year. The holder is eligible for re-appointment. Applications should be sent to Niels H. Larsen, Secretary of the Committee on Education of the Boston Society of Architects, 814 Statler Building, Boston, Mass.

- The American Institute of Steel Construction is holding its Sixth Annual Bridge Design Competition for the benefit of students of architecture and engineering. First prize will be \$100, the second prize \$50. Information regarding the competition program may be obtained from the Secretary of the American Institute of Steel Construction at 200 Madison Avenue, New York City. Only those students registered for the current school year in a school of architecture and engineering in the United States are eligible. Competition closes March 3rd.

- Announcement is made that the partnership of Bacon & Tislow has been dissolved. B. H. Bacon and O. A. Tislow will independently practice architecture and engineering at 817 Architects Building, Indianapolis.

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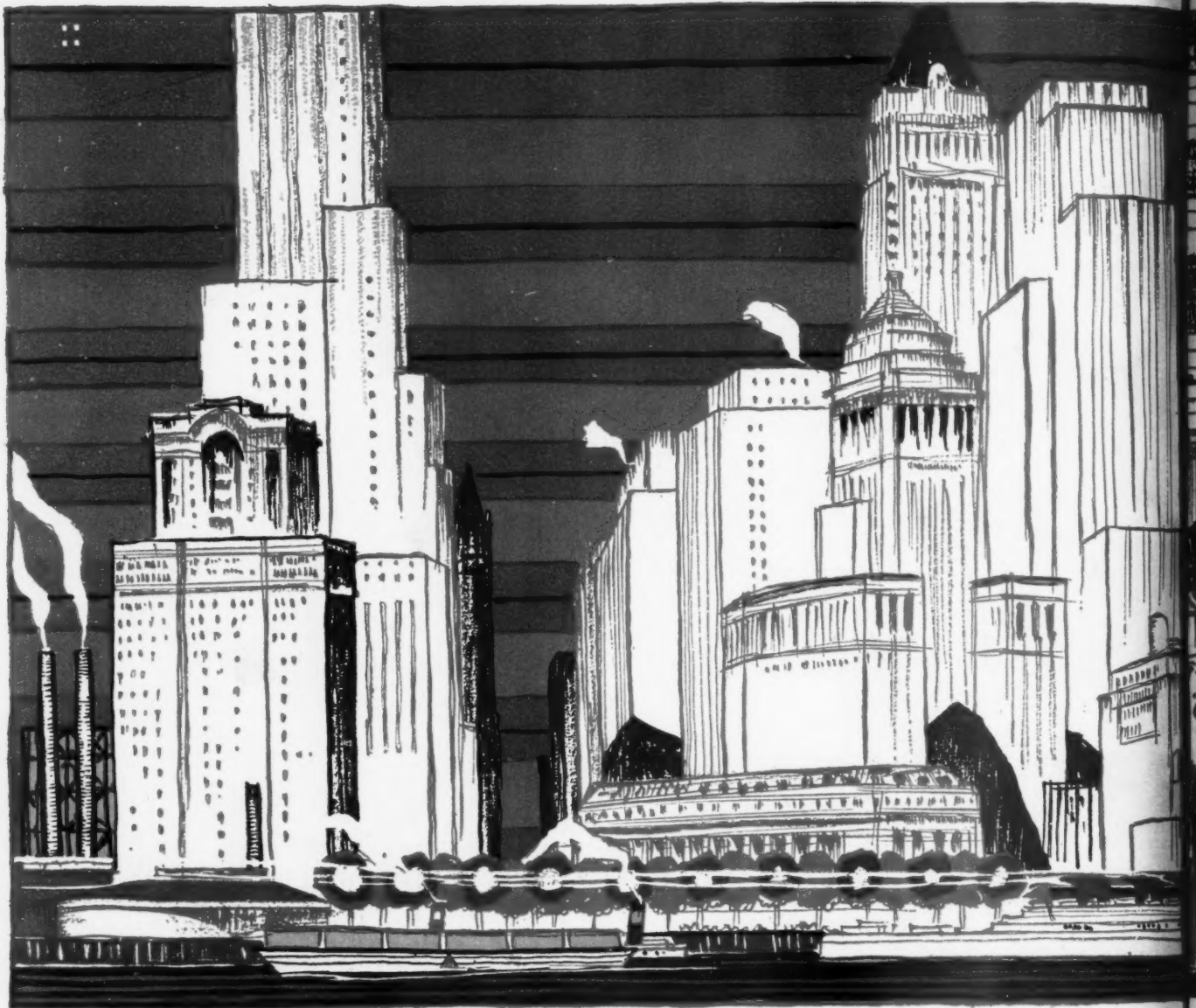


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