Shannon *The Architectural Forum*

THE CITY BANK
FARMERS TRUST
BUILDING
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CROSS & CROSS
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THE SMALL HOUSE
A PROBLEM TO BE SOLVED

This article presents the newer conception of the small house and in stating the problem that is involved opens another avenue for constructive architectural thought. A second article in the August issue deals with structural and planning possibilities.

BY

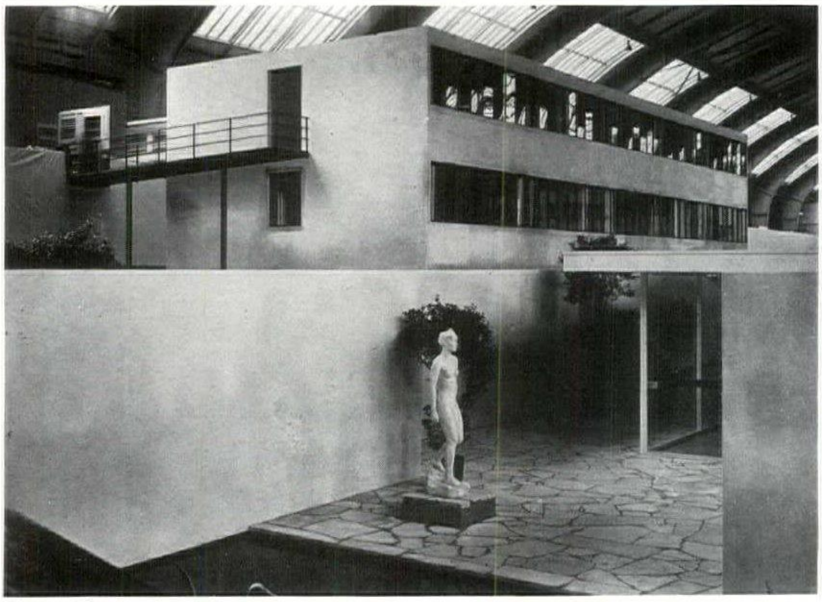
NORMAN N. RICE

THERE are two types of housing which demand consideration of architects, engineers and city planners, on both sociological and economic grounds; one, the multi-family house; the other, the single-family dwelling. We will not consider here the questions of the advantages and disadvantages of each type but may assume that there will be a continued demand for the low-cost small house, even though the multi-family dwelling is gaining proportionally.

There is still a desire, on the part of most people, to live in a single-family dwelling. This is a psychological factor that must be considered, for it seems to be universal, even among apartment and model tenement dwellers. The successful sale of cheap speculative single-family houses is evidence of this. The operative builder's house is high in price and in cost of carrying charges, the latter often leading to the tragedy of foreclosure. Coupled with this is its jerry-building quality as to construction, planning and land subdivision, and its negative aesthetic value. All these inadequacies have brought profound social evils and great economic losses upon the community. The majority have been forced to sacrifice health, safety, happiness, education and social progress because of the exorbitant cost of adequate housing, and the community is forced to support blighted areas and the misconceptions of the speculative housing areas.

The eradication of such areas can be aided by producing a high quality house, the cost of which is within the buying power of the family of low income. The housing industry has thus far failed to produce it. A high quality house is available to relatively few, in conspicuous contrast to numerous products, both luxuries and necessities, which are within the buying power of nearly all. The economic solution is not to be found in subsidies or philanthropy; both methods evade the issue and support the innate evils of the present system. To cheapen construction costs by lowering standards and quality is undesirable and dangerous. The crux of the question is the creation of the necessary economic balance which will place the products of the housing industry within the buying power of wage earners in other industries.

According to the National Bureau of Economic Research, Inc., of all income recipients in 1926 the income limit of the 99% having the lowest incomes was $8700 (more recent statistics from this source are not yet available). This data does not reveal the distribution within this group of the incomes classified in the above table. There are the oft-quoted figures that 84% of those gainfully employed have incomes of $2000 or less. The Call Buying Power Survey made by the "Public Ledger" in the Philadelphia area collected the following data among 459,000 families: 48% have incomes of $2000 or less, 27.5% have incomes of $2001 to $2999, 11.7% have incomes of $3000 to $3999.



German Tourist Info. Office

One of the residential exhibits of The German Building Exposition, now being held in Berlin. Though not essentially a factory-built house, it illustrates the use of simplified building methods. Mies Van Der Rohe was the architect

A rule has it that a family should not spend more than one-quarter of its income for rent. The Home Building and Home Owning Committee of the United States Building and Loan League, after receiving answers to a questionnaire sent to its members in all parts of the country, stated that it was sound, economically, for families with income of $100 to $400 per month to purchase a home costing approximately twice their yearly income. The following estimated prices are based on the cost of carrying charges under present financing methods.

Yearly Income	Average Price Estimate from Towns over 20,000	Average Price Estimate from Small Towns
$1200	$2100	$2000
1800	3200	2500
2100	4000	3500
2400	4500	4000
2700	5100	4500
3000	5600	5000
3600	6700	5600
4800	9000	7100

From the foregoing data it follows that by far the greatest majority of houses should range in price from $2000 to $4000, a lesser quantity from $4000 to $5500, and the minority from $5500 upwards. If improved financing methods create lower carrying charges, these prices can be raised somewhat. However, they give a relatively exact idea as to the cost of the product which the housing industry must produce in order to make it readily available to workers in other industries under present wage scales.

A house of high quality and adequate size to sell for approximately $3000 may seem impossible of achievement, but the automotive industry boasts of a greater achievement that once seemed impossible. In 1924, six better cars were produced for the same amount of labor and capital required to produce one poorer car in 1904. The solution of the house problem calls for the same quality of logic, imagination and perseverance that developed the automobile.

To create the inexpensive small house of high quality, the problem must be stated comprehensively and open-mindedly, if we are to reach a sane solution. The conception of its basic principles must be in terms of present day demands upon the house and must consider all its aspects —manufacture, biology, structure, surroundings, finance and aesthetics. It must be understood that the house is to be considered as one of the vital and immediate things of life before there can be any question of regarding it as a source of aesthetic delight.

I. PRODUCTION OF THE HOUSE

This question has two phases which are intimately related, production methods and production organization. Under the present system, the house is built on a handwork basis using very high priced labor. The specialization of handwork has led to the sub-constractor system with its inefficiencies and waste, its divided responsibilities, and its temporary and loose organization during the construction period. Jerry-building is the rule; opportunism and expediency are the guiding principles.

On the other hand we have rationalized and industrialized production in other fields—modern industrial technique with machine methods, closely knit and synchronized production procedure, unified and scientifically managed production organization. Intelligence and rationalism

A house at Boulogne-sur-Seine, France, Le Corbusier and Paul Jeanneret, Architects. It is another example of the simplification of structure and plan toward a complete rationalization of the house as a "machine for living"

are the guiding principles. Under this regime, even complex products have risen in quality and have sunk in price.

The first point, therefore, is that *the production of the house is to be submitted to a rationalized and industrialized manufacture under a unified organization.*

II. PLAN AND STRUCTURE

The house has both biological and structural aspects. Biologically, it is a shelter for domestic life against heat, cold, rain, thieves and the inquisitive. It is a receptacle for light and air. It comprises certain rooms and equipment for the various functionings of domestic life—cooking, eating, washing, sleeping, working, leisure, storage, etc. The biological aspects of the house determine the layout and the structure. The structure of the house is the assembly of various materials according to mechanical and economic laws so as to provide for the sheltering and functioning of domestic life with the best possible comfort, health and efficiency. The one is a system of circulation, the other a system of construction and equipment; the one is function, the other technique.

The first thing to do is to set up, with reasonable precision, the minimum biological standards of the house as to space, air, light, warmth, stability, comfort, sanitation, etc.; the second, find the structural system, floors, walls, roof, windows, doors, mechanical and sanitary equipment, furniture, etc., which will most efficiently and economically serve the assumed standards. The second point in the statement of the problem is that *biological and structural standards must be determined.*

III. SURROUNDINGS

A large portion of house cost is represented by the ground on which it stands. The price set upon this ground is often entirely out of proportion with its actual value. The value of a lot should not consist only in its street frontage and location. More important is its guarantee of ample air and sunlight, of open spaces on it and nearby, of comparative quiet and privacy, of pleasant surroundings, and of protection against undesirable encroachments that might destroy its value. Speculation should not exaggerate its price, nor should the cost of utilities and improvements be excessive. To make the third point of our statement, *residential areas should be part of a good city plan, properly zoned, and intelligently and economically subdivided.*

IV. FINANCING

The finance of home building and purchase, especially second mortgages, is perhaps the most backward segment of our whole credit system. It is easier to borrow 70% on an automobile and repay it on the installment plan than to buy a home on that basis, and the home generally requires a rate of interest that approaches usury. Construction mortgages, permanent first and second mortgages, all call for bonuses and premiums and the financing costs of a residential development becomes excessive.

However, it is pointed out that these costs will remain excessive as long as the waste and risks entailed by divided responsibility in the production and selling of homes is not eliminated. Therefore, the solution of this particular problem depends upon the satisfactory solution of the preceding ones, and only when the building in-

Smith

The mass production of the jerry-builder. Such houses make slums, for the deterioration is rapid

dustry is rationalized and the house is of a high quality and its surroundings of a guaranteed high standard will it be possible to *make a system of home finance that is satisfactory and inexpensive.*

V. AESTHETICS

The use of new materials and new technique in the production of the house of modern dwelling standards will lead to a new domestic architecture. The aesthetic value of such an architecture is not to be judged by its first strangeness but by the same approach that is used in the judgment of all architectures—the measure of the perfection of the unification of biological intention with structural technique. *The house should express its fitness for a full domestic life.*

The statement of the whole problem can be integrated, as the small house is to be the high quality and relatively inexpensive product of a rationalized and consolidated industry. Its purchase is to be financed on a low cost and secure basis, so that it will be possible for anybody of sound character and industrious habits to provide his family with an adequate, livable and attractive home in pleasant and healthy surroundings.

THIS leads to a consideration of the characteristics of the house as built today compared to the fabricated or manufactured type of house which is being developed.

THE BUILT HOUSE

1. Materials of Construction: Usually natural materials adapted to structural use; either small units to fit the mechanic's hand, or larger units requiring cutting and fitting at the job, or materials made up and applied at the job.

2. Production Method: A slow building up of the various house elements (floors, roof, walls, etc.) at the job; relatively few elements standardized and fabricated before assembly into the house; practically all labor is handwork.

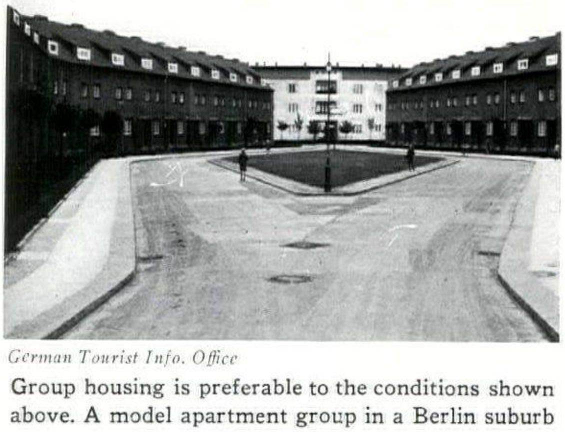
3. Production Organization: Loose and temporary coordination of the various building trades entailing waste of time, money, labor and materials; cut-throat competition among irresponsible and incapable sub-contractors resulting in low quality materials and degraded workmanship.

THE FABRICATED HOUSE

1. Materials of Construction: The fabricated house is still in its experimental stage: although numerous designs have been developed both here and abroad, few of them have proved entirely satisfactory both structurally and economically. Much research and experimentation will be required to arrive at satisfactory results. Research is directed towards the development of structural systems, and the selection of known materials and development of new materials which will most economically and efficiently perform their function in the structure. Of the known materials, steel has presented itself as an ideal material for the supporting structure provided it is used with maximum effect to offset its high cost as compared to wood framing.

The materials of the fabricated house must permit a maximum of machine and shop fabrication. For this reason, the European designers place great emphasis on the development of what they name "dry construction," meaning an assembly of the building units without the use of water, as in the case of all-wood or steel construction. Dry construction is the most rapid and economical construction.

2. Production Method: To what extent can the principles of modern industrial technique (and organization) be applied in the formation of a possible house manufacturing industry? As



German Tourist Info. Office

Group housing is preferable to the conditions shown above. A model apartment group in a Berlin suburb

long as the prevailing sentiment is opposed to mass-produced, standardized house models, it cannot be expected that their application could be as thorough and complete as that exemplified by the automotive industry, for example.

THE potential house market may not warrant the production volume characteristic of the automotive industry, but there is another factor to be considered. The house may be the first building type to be industrialized, but it may well be the starting point for the complete industrialization of all buildings. This revolution in building technique is not beyond realization in the near future and already is foreshadowed by many developments. In such a case, building manufacturers would fabricate the parts for all types, and the consequent production volume could warrant a progressive development within the industry comparable to that already experienced by the automotive industry. Although the manufacture of a product depends upon the demands of the market, it is no less true—and the automobile has clearly proved this—to say that the extent of the market rests upon the effectiveness with which the product can be manufactured. Thus, the house can take advantage, in part, of the economic benefits which accrue from the employment of the industrial technique.

Since, under present conditions, the design of the various elements of the house depends on the individual architect's or builder's discretion, these elements vary greatly between different houses and each is unique in layout, shape, size and construction; consequently their constituent materials must be small units or of a character that allows cutting or molding. Building becomes far more difficult and costly than is necessary. However, the standards and orbits of the different dwelling functions can be set with reasonable precision by agreement along scientific principles;

An air view of Radburn, N. J., a community planned for the conventional type of house shown above

Grant

Though of a traditional aspect many parts of these houses are standardized. Clarence S. Stein, Architect

as a result, the structural elements to serve these functions can be standardized as to design and dimensions. This accomplished, the first principle of industrial technique can be applied—standardization and interchangeability of parts.

With machine tools and adaptable materials, the dimensions of elements would be more accurate than at present, but the assembly of the various elements into the house would not call for the extremely high precision found in automobile parts, for example; interchangeability of house parts should not prove difficult of attainment. High precision would allow a more rapid and a cheaper assembly of elements into the finished house. Waste would be reduced to a minimum.

ONCE standardization is agreed upon, it would be possible to develop continuously the machine tools to fabricate them. As these machines are perfected, they would bring to the industry an increasing reduction in manufacturing costs comparable to those the machine has brought to other industries. Personal craftsmanship would be replaced by highly specialized and accurate machines that would reduce the number of man hours spent per building element. The following data is enlightening in connection with this point: From 1904 to 1929, wages of a typical building trade, bricklayers, increased 92%, while production per man decreased 40%, a net increase of unit labor cost of 220%; during the same period, factory wages increased 118%, while production per man increased 49%, the resultant net increase in unit labor cost being 50%.

Transportation facilities and costs would prevent complete shop assembly of the house. The extent of shop assembly would be limited to the sub-assembly of the largest units that could be transported economically, such as wall and floor sections. But in the fabrication and assembly of these units there could be applied the second principle of industrial technique—progressive performance through the decentralization of productive operations. That is to say, there would be a development of the methods of material routing, of machine layout, and of assembly.

3. PRODUCTION ORGANIZATION: The forerunner of a rationalized production organization has been inaugurated in the house building division of a well known mail order company. The one organization undertakes to design, build and finance a home. Plans are either chosen from their catalogue or designed according to the client's wishes for a nominal fee. The company controls material factories and furnishes the materials already cut to fit; a local builder can assemble the house, or the company will furnish the labor to complete it. Their financing terms are very attractive; they will place a single mortgage up to 75% of the total value of house and lot, the mortgage to be paid off in monthly installments—including 6% interest—at the rate of $8.56 per thousand loaned, the amortization period being 14 years, 8 months. This unified service ameliorates conditions for the client and eliminates many defects of the usual architect-builder-subcontractor-financier system. However, it is still based upon the traditional materials and methods and is probably the limit of the possibilities inherent in them.

THE change from the traditional materials and methods to different materials and to industrial technique would require a corresponding change in the production organization. The first transformation would be the replacement of the usual building mechanics by new types of factory mechanics trained to operate the machines and to assemble the building units. In the field, a type of mechanic similar to the steel erector would be employed.

This transformation would be coincidental with a second one; the present loose grouping of specialized building trades would give way to the consolidated organization necessary to finance and manage industrial production. The housing corporation would take its place among the large group of industrial corporations already developed. Efficient management, coupled with first-rate scientific, architectural and engineering thought applied to continuous and organized research, would result from competition between companies in the various price classes.

As pointed out before, transportation facilities and costs would prevent complete shop assembly of the house; this fact would determine the method of merchandising the fabricated house. The fabricated building units, consisting of a series of standardized models of various qualities permitting different combinations, would be distributed to local assembler-dealers. These agencies would sell the complete house, would furnish the equipment and mechanics necessary to erect it with the greatest dispatch and economy, and would maintain service departments for repairs, alterations and additions.

THE SMALL HOUSE MARKET

According to Edwin E. Hunt, secretary of the President's Conference on Unemployment, 400,000 new houses are needed each year to house the people of the United States properly. At the Conference on Home Building and Home Ownership, it was estimated that at least $50,000,000,000 will be spent on new residential construction in the next twenty years. These estimates give an idea of the potential market for a house building industry.

In addition, there are the vast blighted areas of the large cities to be rehabilitated. The managements within the housing industry would find it necessary to make thorough studies of this market, collecting data as to buying power, population trends and related matters, the interpretation of which would direct intelligent price levels, production and distribution. Similar studies are made in regard to other markets, but they are more necessary in the case of the house since it depreciates more slowly, and while the consequently small replacement sales the saturation point would be reached more quickly. Such studies would reduce to a minimum the costs and evils due to inexperience and faulty merchandising practice.

The first products of the house manufacturer might be more expensive than the present builder's product or merely equal it in price. But if the fabricated house proves its superior quality and advantages, the market for it will develop, and, as the industry progresses, the house will undergo the same morphology that all industrial products have experienced—an increase of quality accompanied by a decrease in price. To reach that point, the house manufacturers must possess the optimism to carry them beyond this first defective period which has been characteristic of nearly all industrial production in its infancy.

At the beginnings of the steel industry, hand-wrought products could compete with machine products. Today, the methods of brick and wood building produce a house that could compete with the first industrialized houses. But whereas the one has reached the limit of its possibilities, the other is still in its beginnings and formation, and inherently contains the factors which point to future production of a better and cheaper house.

Curtiss-Wright

An air-view of downtown New York. The City Bank Farmers Trust Co. is the white building in the center

THE DESIGN OF A BANK'S SKYSCRAPER

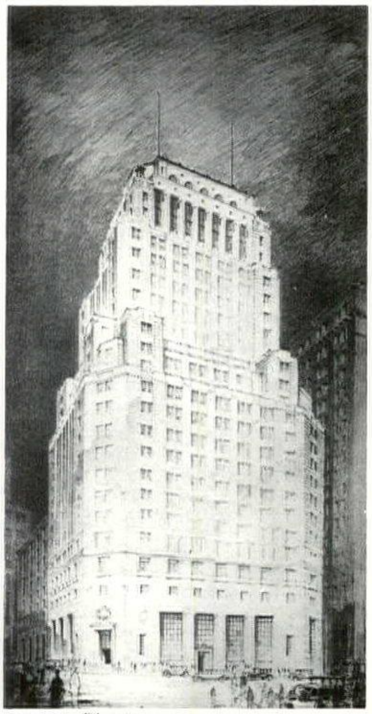
THE CITY BANK FARMERS TRUST COMPANY, NEW YORK, N. Y.

CROSS & CROSS, ARCHITECTS

THE design of a modern skyscraper is not primarily a matter of æsthetic expression. It is rather a coördinated solution to complex mechanical problems and the strenuous demands of economics, and the æsthetic approach must be made after such major problems have been adequately solved. In the planning of the City Bank Farmers Trust Company building this was especially true. The architects were confronted not only by the usual tangle of economic and mechanical requirements but also by the further complication of an unusual site and the mandatory provisions of the New York zoning laws. A brief survey of the importance of these factors will facilitate an explanation of the ultimate design of the building.

As is usual in almost every project of this type, the final scheme was an outgrowth of an entirely different *parti*. On the following page, three of the preliminary sketches for the building have been reproduced which illustrate graphically the progress of the project. It is noticeable that as the economic factors became more and more important the shape and size of the building changed accordingly.

The plan of the building was determined entirely by the requirements of the two banking institutions which were to use it, and by the irregular site in the heart of a congested area, which is bounded on three sides by narrow streets and dense blocks of buildings. The banks required two important entrances and space for approximately 5,000 people; the office space needed a central location and area to accommodate 2,000 people, giving the building a density of one person to 70 sq. ft. in the banking quarters and one person to 100 sq. ft. in the rentable areas. The density and the total building population, together with the required type of elevator service (the interval being in this case from 20 to 25 seconds) determined the general allocation of space in the building layout. In detail, spaces were planned to give the greatest possible efficiency in their use. The elevator banks were placed in the center of the plot, so that there would be no interruption of shafts to the top of the tower,



Shannon Photos

Three of the architect's early sketches for the building. During this stage of the project, frequent changes were made in the requirements that demanded radical revisions in the structure

and the service features were located where they would interfere least with desirable office space and where an economy of mechanical installation could be effected.

The mass was developed from these factors, influenced by the necessary mechanical equipment, the structural requirements and the legal limits of the zoning envelope.

Once these various requirements had been met, the æsthetic approach to the problem was considered. The narrowness of the plot and the panel arch construction made much windbracing necessary; univent heaters and air intakes required pierced spandrels, and these factors created the vertical character of the building.

The architects hold no brief for any particular architectural style and have been at some pains to clothe the structure in material and form to serve as a frank expression of the mechanical and economic forces involved and at the same time to express, with some degree of originality, the place of the building in the life of its location. No effort, however, was made to invent new forms or to accept the dictates of the machine except where such forms and such dictates appeared obviously desirable toward the larger end which was in view. In doing this, exaggeration of forms for originality's sake alone was discouraged.

Throughout the problem, an effort was made by means of properly placed decoration and well proportioned mass to translate the requirements of logic and use into a graceful whole. In doing so, scale models played an important part in the study and development of the structure. With the clay conveniently following the elevation studies in the office, progress was positive. The models were made at 1/32, 1/8 and 1/2 in. scale, and it was from these plastic studies that the full-sized models were finally developed.

In many instances, the mechanical features (such as the air intakes of the second floor and the univents on the lower floors of the building) required a very definite architectural treatment and wherever this was necessary a decorative feature was included in the design. The buttresses of the 15th floor will serve as an illustration of this point. They were designed to give a visual support to the tower above and to serve as a concealment for the exhaust vents which are conducted through their backs to invisible louvred outlets. Again, the stone buttresses to the tower at the last setback contain exterior trusses to transfer loads from certain tower offset columns.

Franke

A BANK AND OFFICE BUILDING

FOR

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NEW YORK, N. Y.

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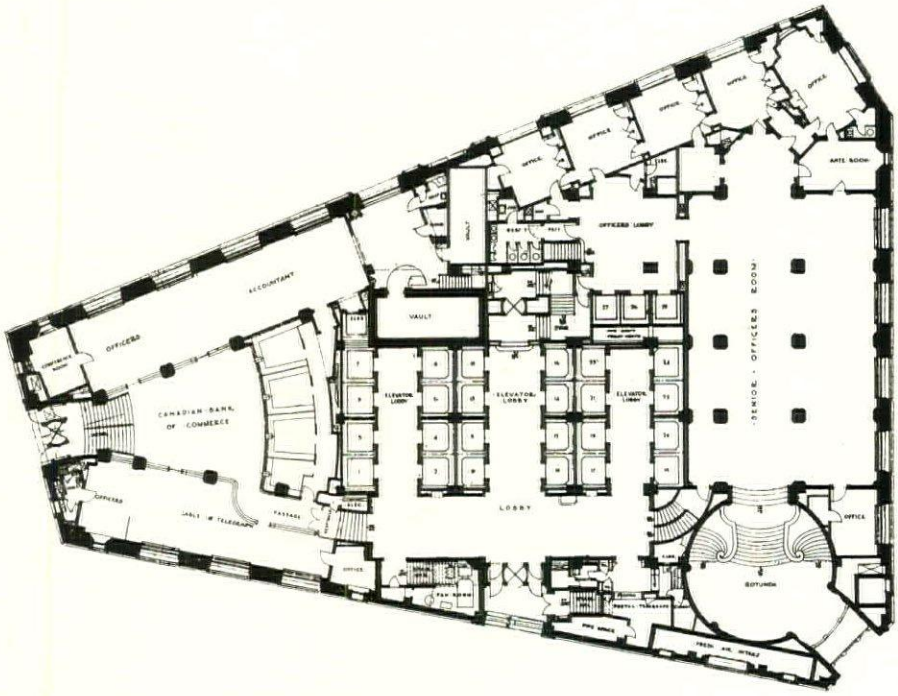
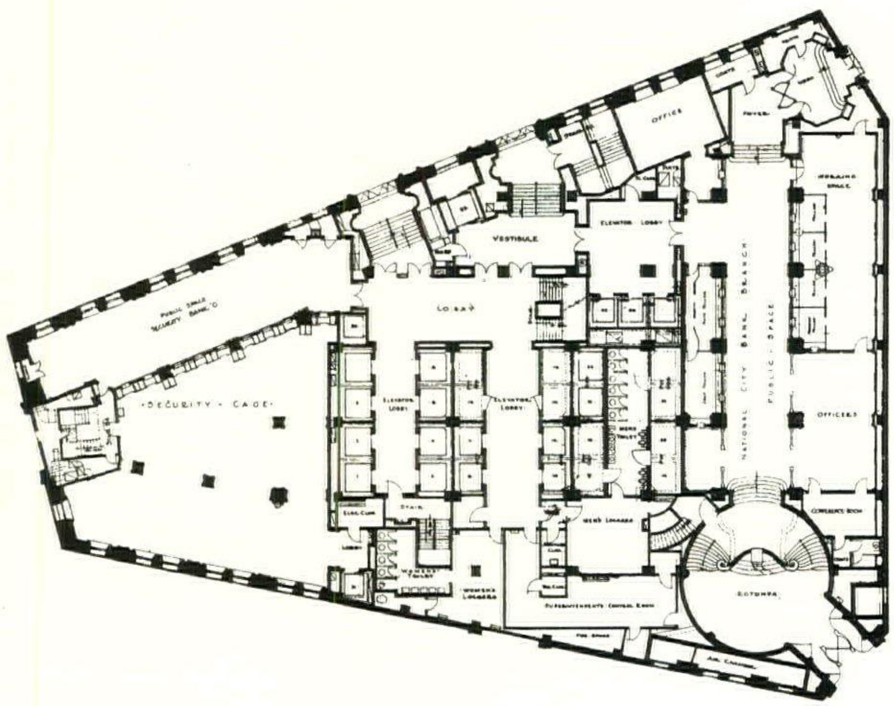


FIRST FLOOR PLAN



GROUND FLOOR PLAN

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CORNER ENTRANCE, WILLIAM STREET AND EXCHANGE PLACE

CITY BANK FARMERS TRUST COMPANY

NEW YORK, N. Y.

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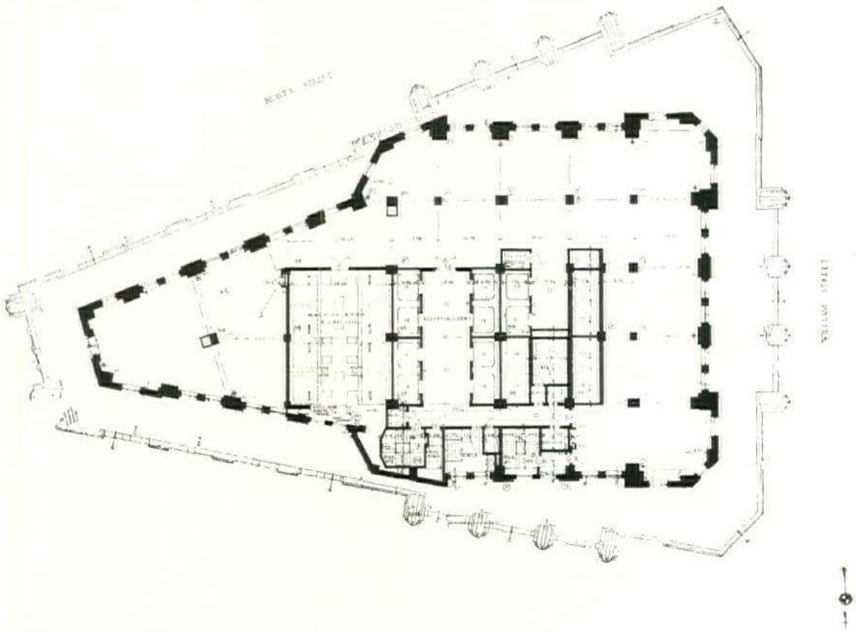
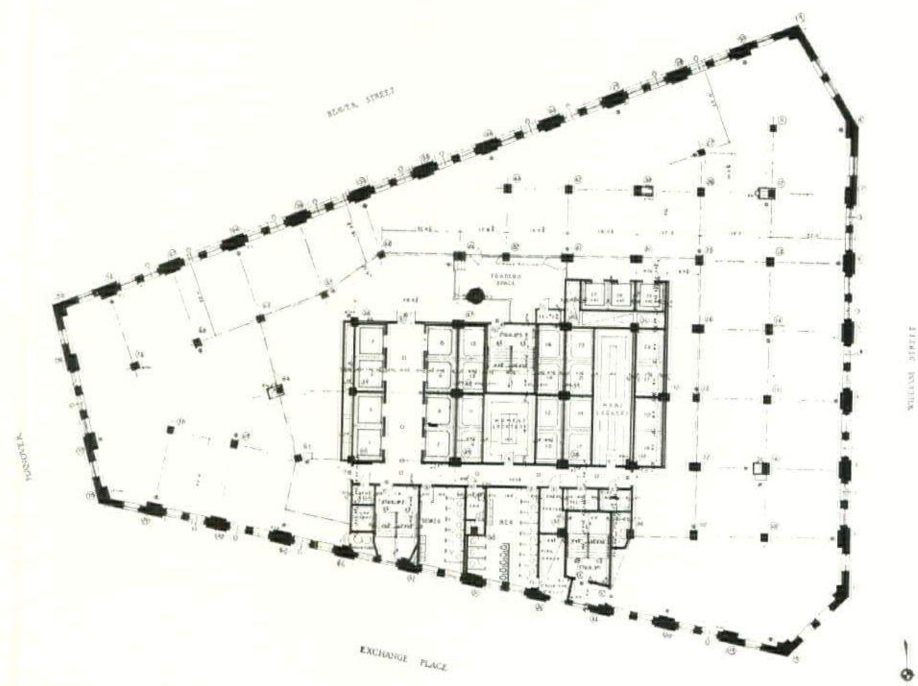


NINETEENTH FLOOR PLAN



FIFTH FLOOR PLAN

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ENTRANCE AT CORNER OF WILLIAM AND BEAVER STREETS

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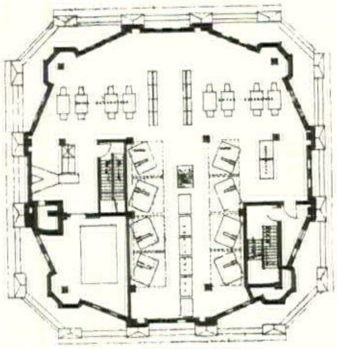
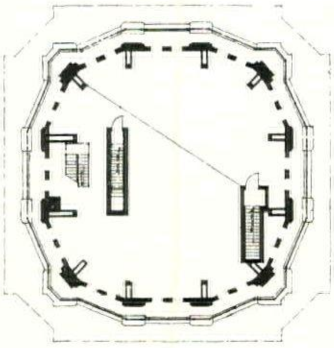
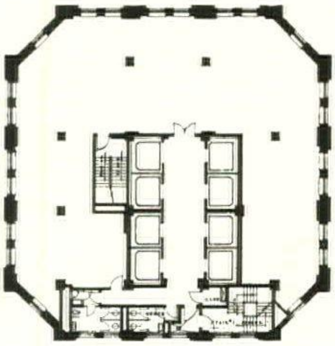


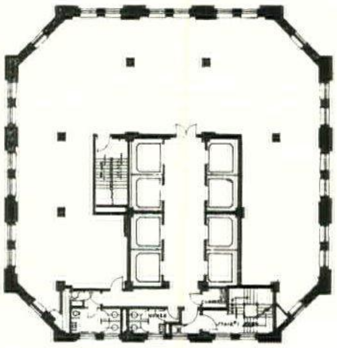
MACHINE FLOOR NO. 2



MACHINE FLOOR ROOF



30TH FLOOR PLAN



31ST FLOOR PLAN

The building was planned to accommodate approximately 5,000 employes of the City Bank Farmers Trust Company, the Canadian Bank of Commerce, and a branch of the National City Bank of New York. There is also rentable area sufficient for 2,000 additional people. A detailed description of the plan and design problems presented by the building may be found on pages 6 to 8. Data regarding mechanical features are presented on pages 96 to 108 of Part Two

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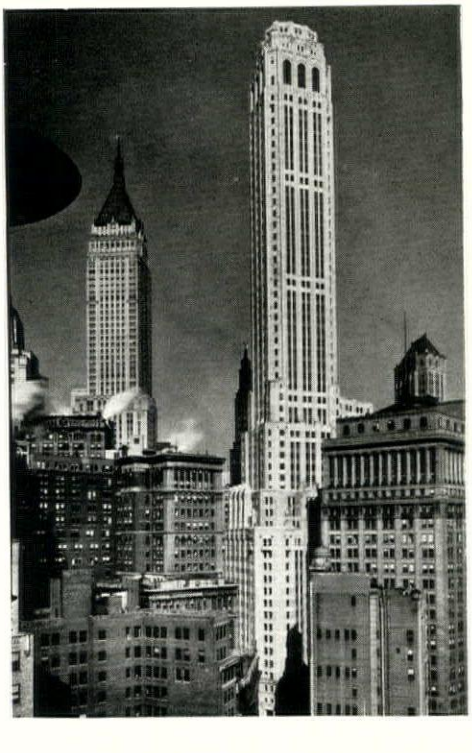
Latere Photos

Detail of the ornament at the nineteenth floor setback. The walls are of Alabama Rookwood stone. The aluminum spandrels beneath the parapet, and those below, of stone, have all been pierced to admit air to univents. Windows are of steel and are double hung



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DETAIL OF THE ROTUNDA FROM THE FIRST FLOOR LEVEL

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INTERIOR DETAIL, WILLIAM STREET AND EXCHANGE PLACE ENTRANCE

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The ceiling of the rotunda, of plaster with silver and gray stenciled designs, has a unique lighting arrangement. Reflectors, located above the ceiling and several feet away from the central feature, project light rays toward the plaster hemisphere which serves to reflect them into the room below

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Detail of the rotunda and stairs leading to the senior officers' room. Stair treads are of Golden Travertine; risers are Red Altico marble. The balusters and rails are Red Altico and Rosato D'or. The upper portion of the wall is Vaurian stone, as is the carved panel above the opening

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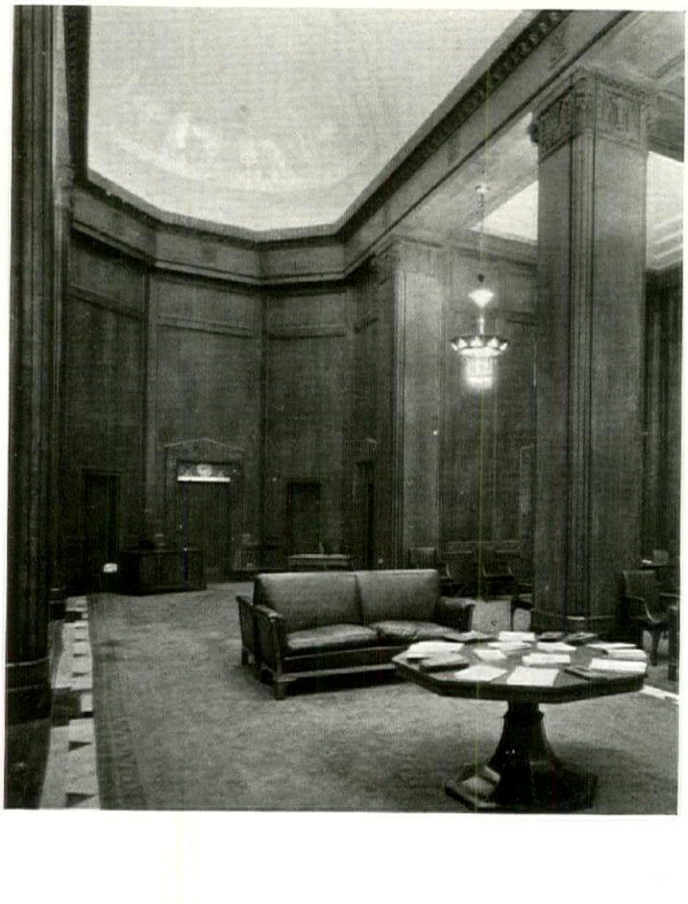
Franke Photos



Two views of the senior officers' room in the City Bank Farmers Trust Company section. The floor is vari-colored marble and the base is Verde Antique. Walls, columns and pilasters are English Pollard Oak veneer, applied on a fireproof core and finished with dull lacquer. The ceiling is acoustic plaster painted gray and silver. All metal is nickel bronze. Cove lighting units are concealed above the cornice

Van Anda

MAIN BUILDING LOBBY, LOOKING WEST

CITY BANK FARMERS TRUST COMPANY

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Fra:kc Photos

The ground floor banking room of the National City Bank section, looking toward the exit, a detail of which is shown below. The floor is Golden Travertine and marble. The base is Rouge Antique; the surbase, Red Altico. Door enframement, pilasters, columns and the stair treads are Rosato D'or; risers are Rouge Antique. Walls are Vaurian stone and the ceiling is acoustic plaster with painted decoration. All metal is nickel bronze

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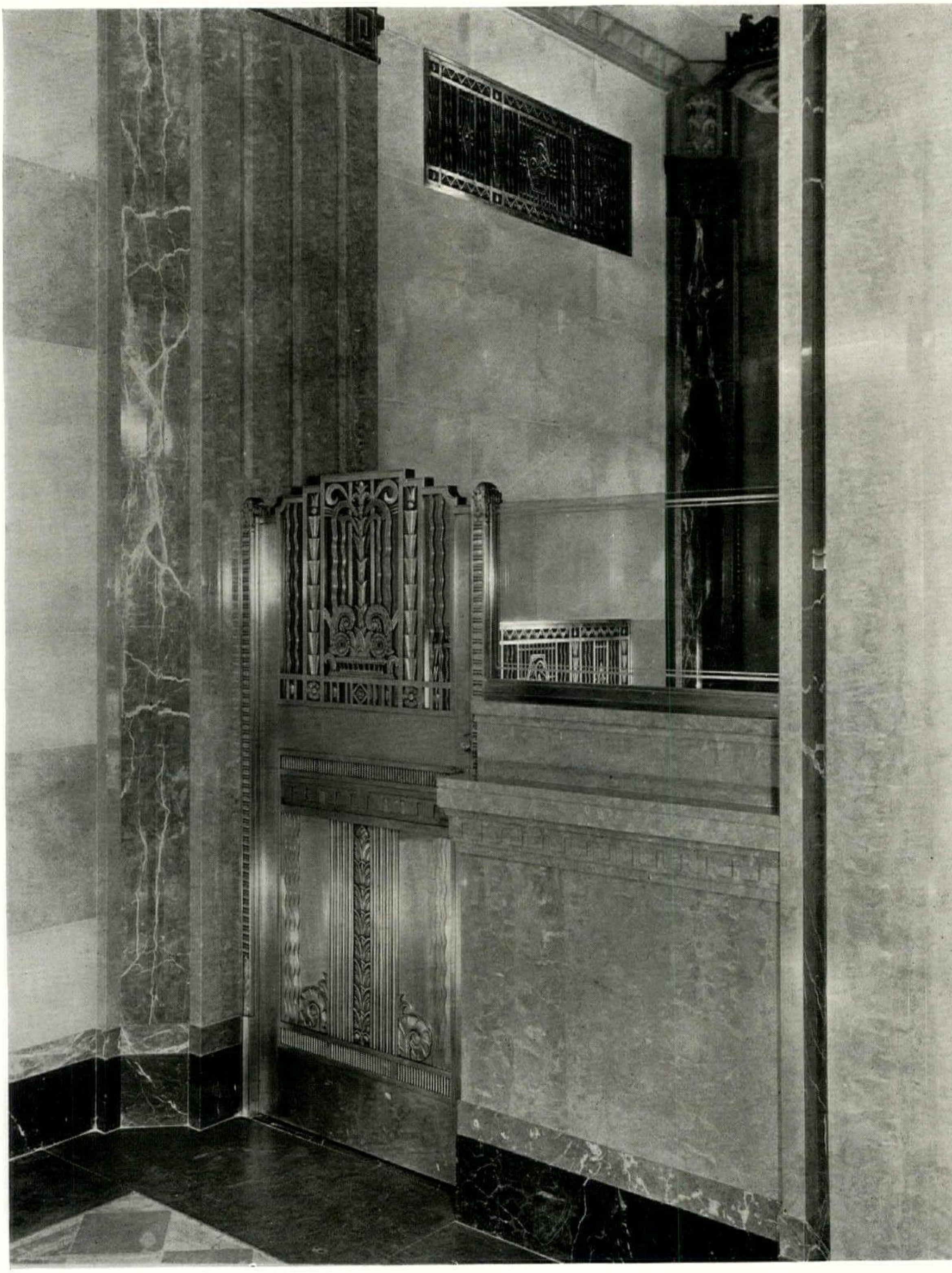


Davis

DETAIL OF GROUND FLOOR BANKING ROOM, NATIONAL CITY BANK

CITY BANK FARMERS TRUST COMPANY

NEW YORK, N. Y.

CROSS & CROSS, ARCHITECTS

Van Anda

THE PRESIDENT'S OFFICE

CITY BANK FARMERS TRUST COMPANY

NEW YORK, N. Y.

CROSS & CROSS, ARCHITECTS

Franke Photos

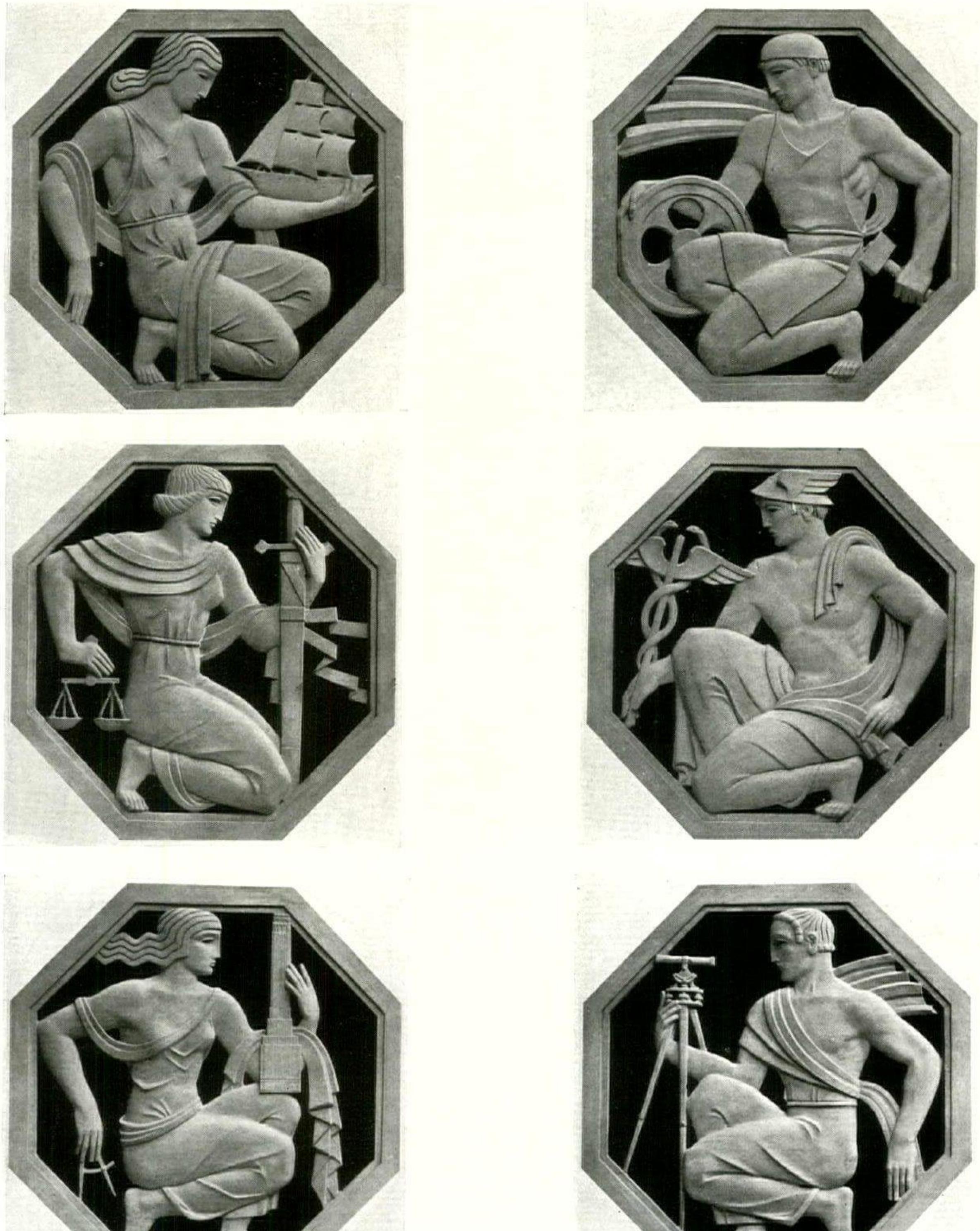
Private elevator lobby adjacent to the senior officers' room. The floor is Verde Antique marble and Golden Travertine; walls are English Pollard Oak and the ceiling is acoustic plaster painted a light cream. Lighting fixtures are white bronze

One of the six private offices on the first floor. Each has an individual design and is paneled in a different wood. All of these rooms have acoustic plaster ceilings

CITY BANK FARMERS TRUST COMPANY

NEW YORK, N. Y.

CROSS & CROSS, ARCHITECTS



Ward Photos

SCULPTOR'S MODELS OF THE BRONZE PLAQUES AT THE FIRST FLOOR WINDOW GUARDS

CITY BANK FARMERS TRUST COMPANY

NEW YORK, N. Y.

CROSS & CROSS, ARCHITECTS

Mott Studios

EL PASEO SHOPS, PALM SPRINGS, CAL.

JONATHAN RING, ARCHITECT

The building, which cost approximately $35,000, occupies a plot 100 ft. wide and 125 ft. deep, located at the juncture of a main thoroughfare and a side street. It is a good solution of the typical problem of the small community business structure, and contains, in addition to several shops, an art gallery, business suites, and several small apartments, the latter being well arranged for privacy and economy of room layout. The street arcade, shown on the following page, provides a needed shelter from the hot sun or inclement weather, and the open court within the building assures a maximum of light and air in addition to extra window space for the various shops. The building is of masonry construction, 12 in. hollow concrete tile being used for the exterior walls, and 6 in. tile of the same kind for the interior walls. Each wall is bonded at the top by a continuous band of reinforced concrete, and all piers are reinforced with vertical steel bars grouted in concrete. These measures have been used as a precaution against damage from possible earthquake shocks. The building has no basement. Except in the apartments and the business suites, floors are of cement tile laid on the ground. The walls are finished with one coat of waterproof cement paint, oyster white in color. The roof is red clay tile

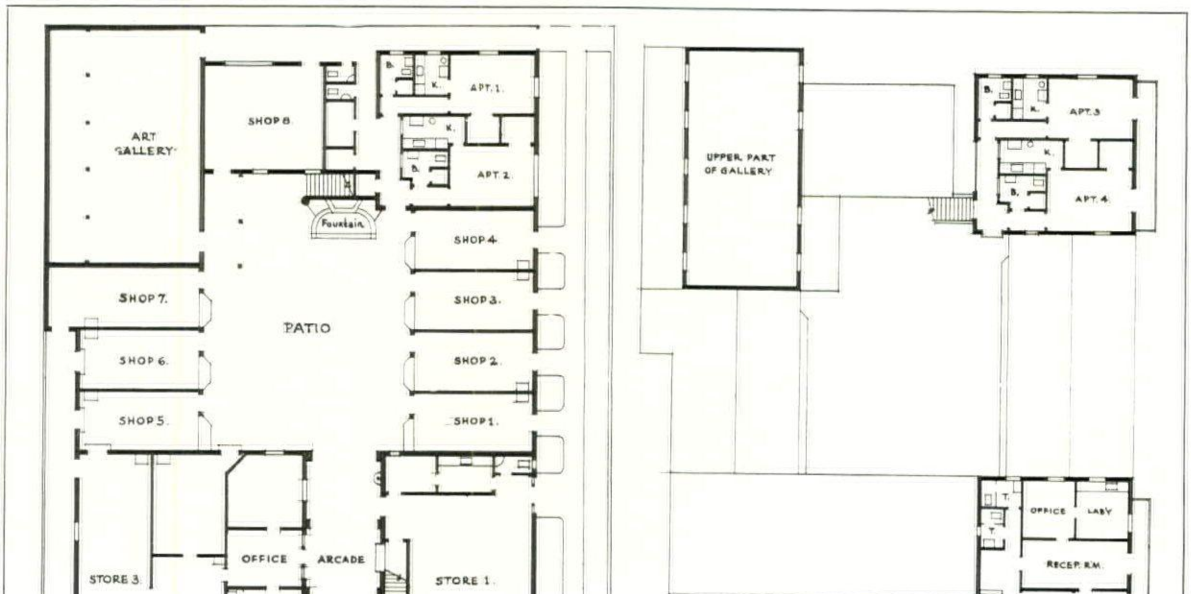
A COMMUNITY BUSINESS CENTER

Mott Studios

EL PASEO SHOPS

PALM SPRINGS, CAL.

JONATHAN RING, ARCHITECT

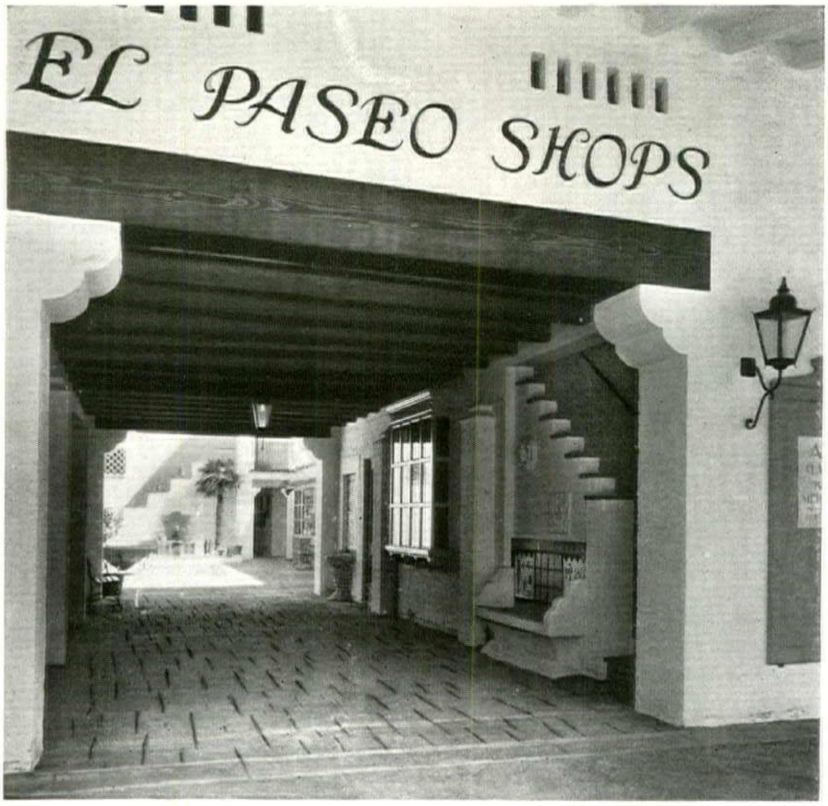


Mott Studios

EL PASEO SHOPS
PALM SPRINGS, CAL.
JONATHAN RING, ARCHITECT

Mott Studios Photos

EL PASEO SHOPS
PALM SPRINGS, CAL.
JONATHAN RING, ARCHITECT



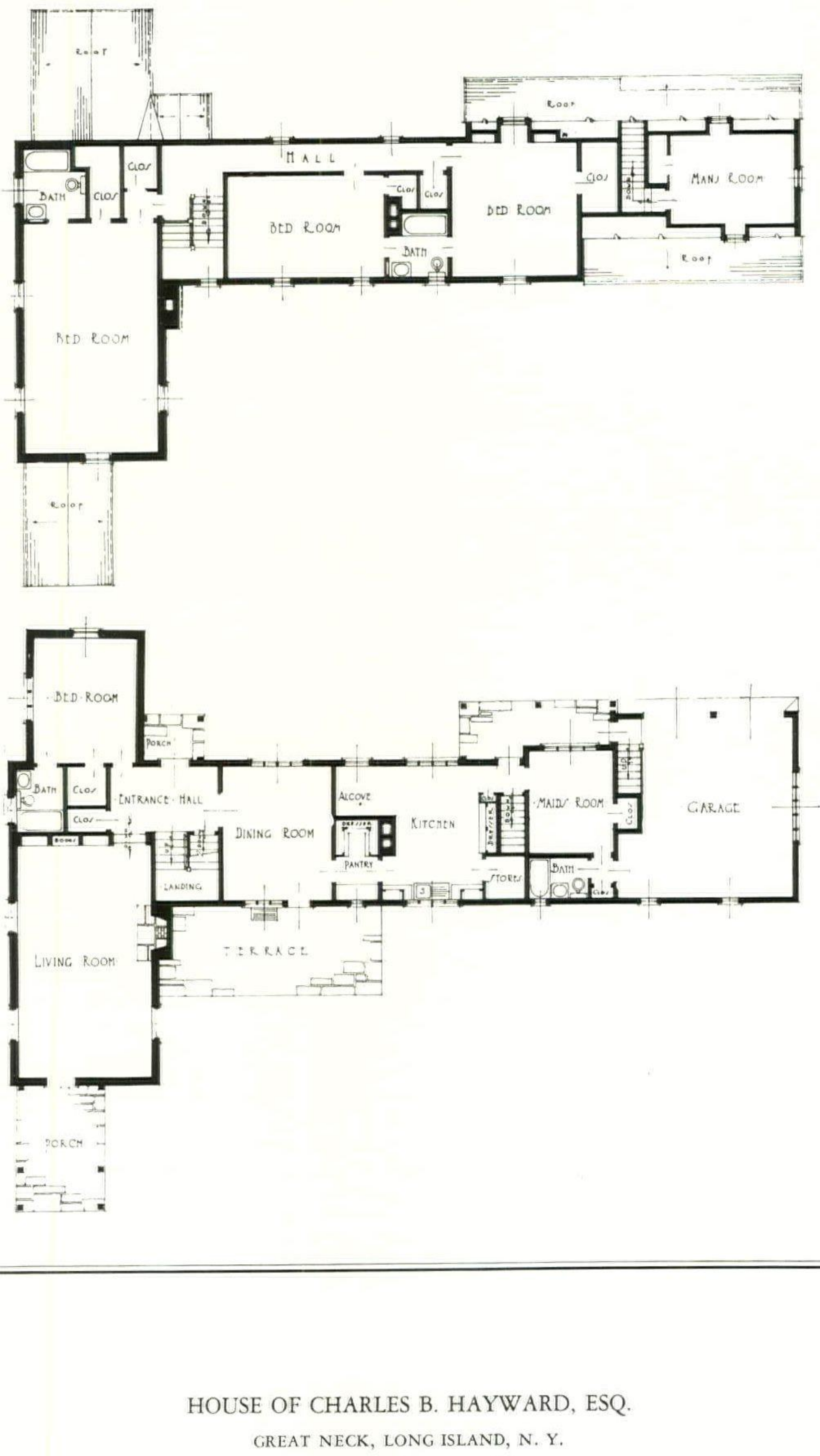
The timbers that support the ceiling of the arcade are stained, as are the wide shiplap bases of the shop window bays. The sash, doors, and frames are painted a strong yellow, with the moldings outlined in red, green and blue

Gillies

This residence, situated on a gently sloping hillside, overlooks the bay at Great Neck, Long Island, N. Y. Above is a detail of the main entrance porch on the southwest elevation

THE HOUSE OF CHARLES B. HAYWARD, ESQ.

FRANK J. FORSTER, ARCHITECT



HOUSE OF CHARLES B. HAYWARD, ESQ.

GREAT NECK, LONG ISLAND, N. Y.

FRANK J. FORSTER, ARCHITECT

Gillies

View of the elevation which faces the bay. The house is constructed of brick veneer and stucco on a wooden frame. The walls of the living room and one story bedroom wings are of common brick veneer finished with two coats of whitewash. All other walls are white stucco. Both brick and stucco walls have slightly uneven surfaces. The roof, with its rounded valleys, is random laid, graduated slate in weathering green and purple tones. The plan gives each of the main rooms an unobstructed view of the bay. Vapor heat is supplied from a triple duty, combination boiler, hot water heater and incinerator. The house contains 49,550 cubic feet and was completed late in 1929

HOUSE OF CHARLES B. HAYWARD, ESQ.

GREAT NECK, LONG ISLAND, N. Y.

FRANK J. FORSTER, ARCHITECT

View from the east. The posts and brackets of the porch at the left are of old, solid oak, refinished with creosote preservative and two coats of whitewash. This treatment gives a mellow, aged effect due to the flaking off of a part of the whitewash and the blending of the remainder with the preservative. The gable boarding is knotty white pine stained dark brown. The rock garden at the right was designed to retain the terrace fill

HOUSE OF CHARLES B. HAYWARD, ESQ.

GREAT NECK, LONG ISLAND, N. Y.

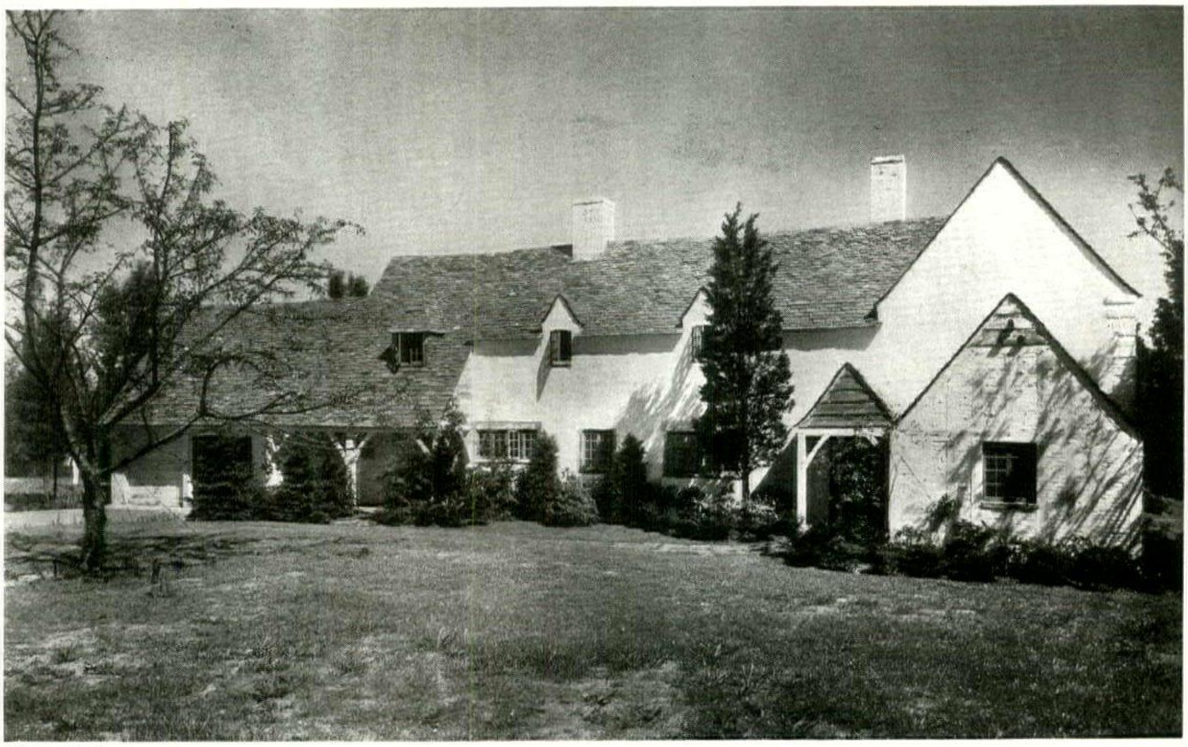
FRANK J. FORSTER, ARCHITECT

View from the south. Common brick nogging was used between the oak half-timbering of the guest bedroom walls shown in the foreground. The casements are of wood painted a gray-green. The flagging of the walks is blue-stone set in sand with grass planted in the joints after they had been filled with top soil. The two illustrations shown on these pages will afford an idea of the harmony, with variety, which the architect has obtained through the use of the simplest materials

HOUSE OF CHARLES B. HAYWARD, ESQ.

GREAT NECK, LONG ISLAND, N. Y.

FRANK J. FORSTER, ARCHITECT



Gillies Photos

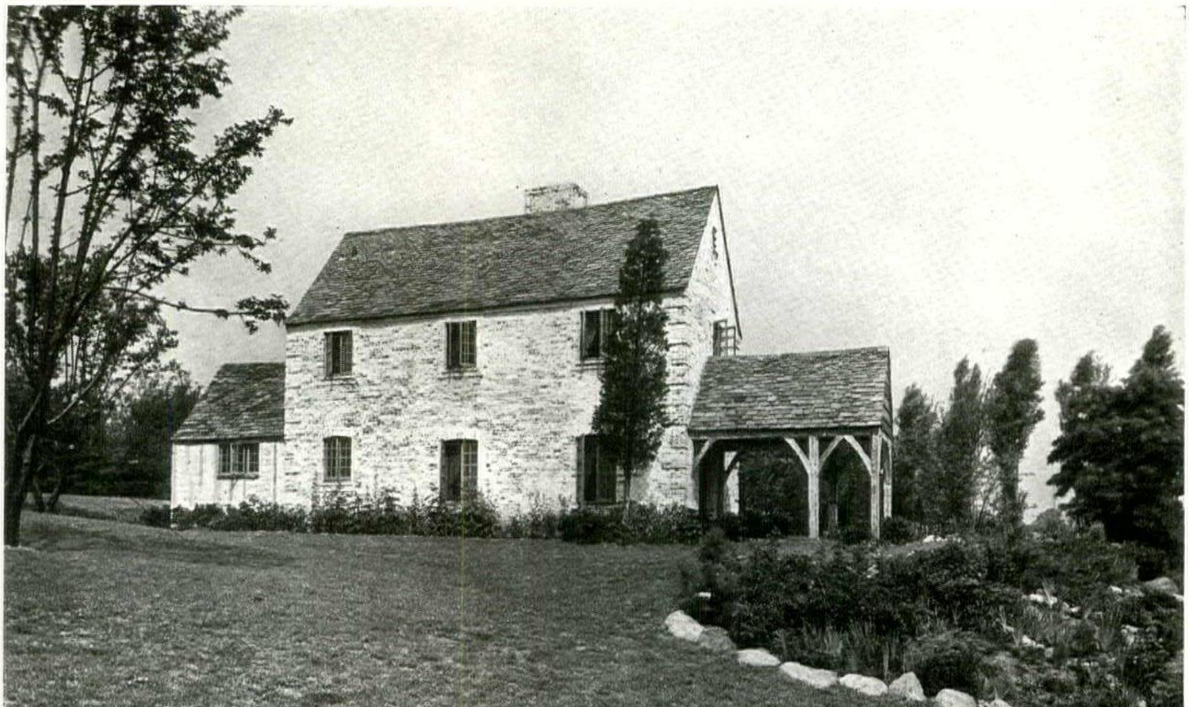
View from the southwest

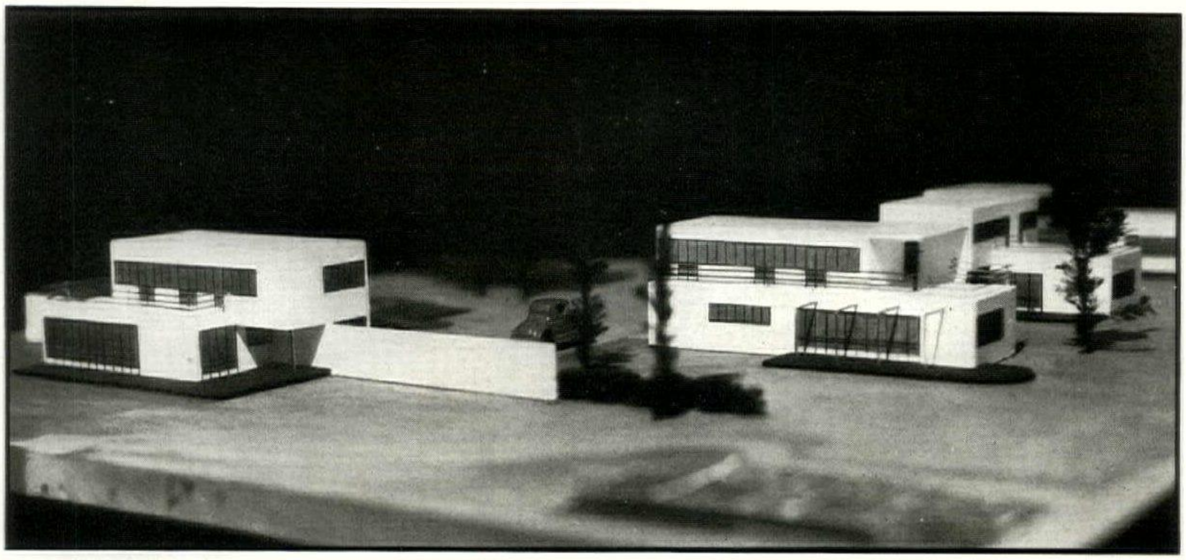
HOUSE OF CHARLES B. HAYWARD, ESQ.

GREAT NECK, LONG ISLAND, N. Y.

FRANK J. FORSTER, ARCHITECT

View from the southeast

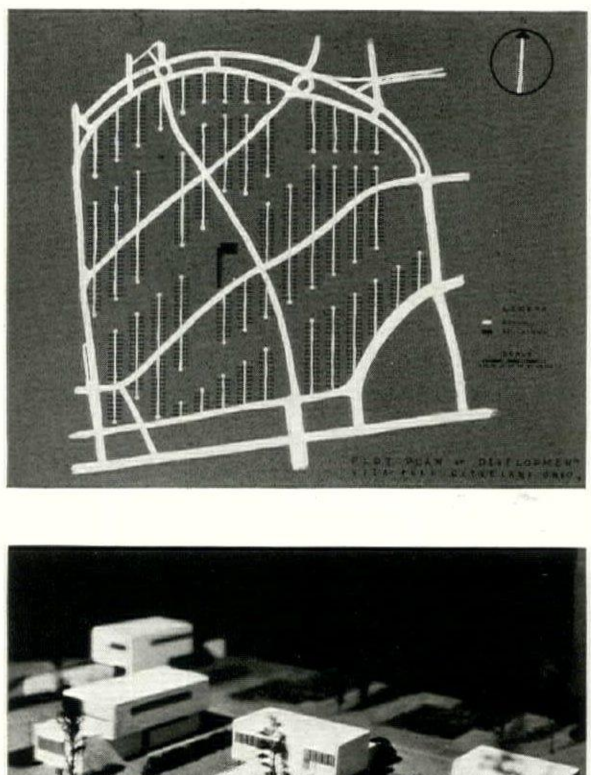




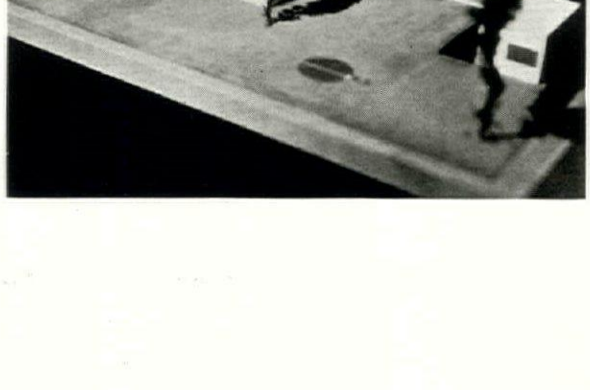
A PROPOSED HOUSING DEVELOPMENT

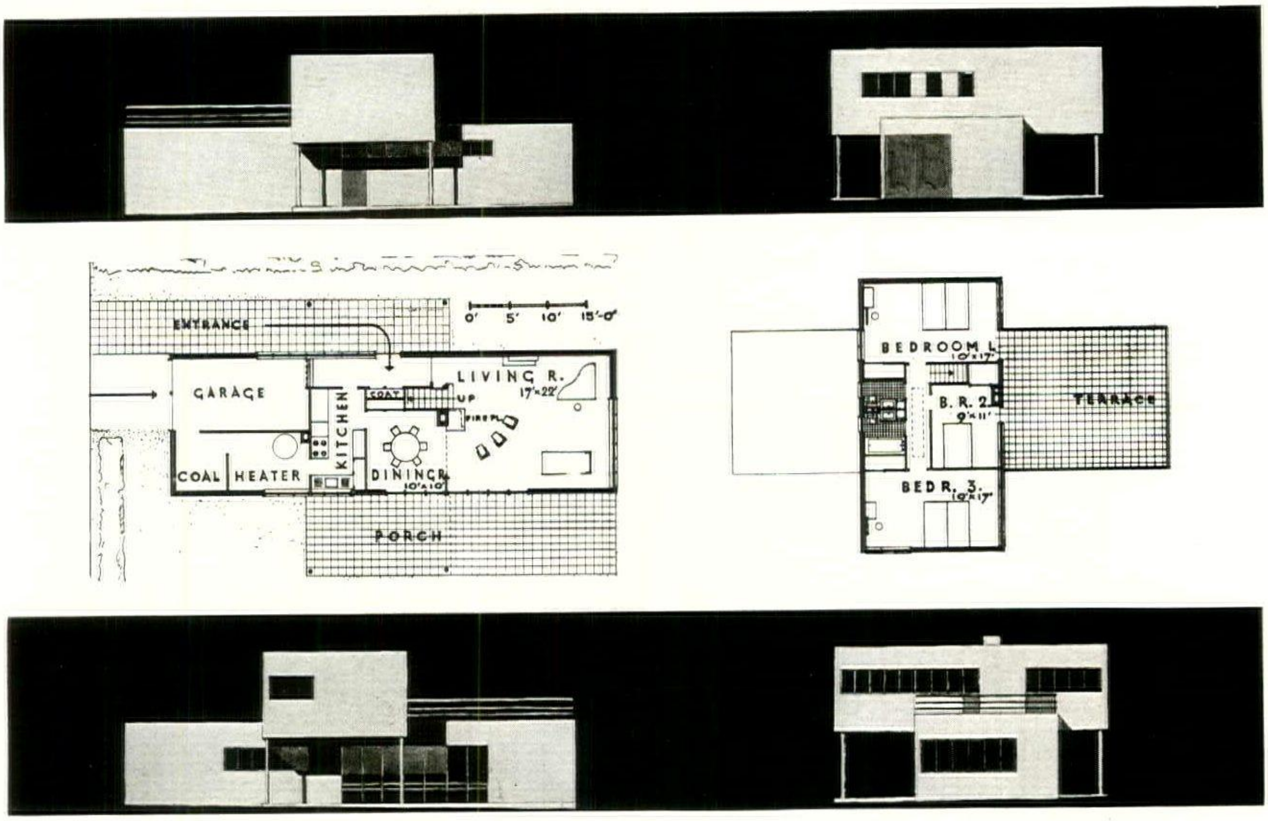
CLAUSS AND DAUB, ARCHITECTS

The project, called Vita Park by its developers, was conceived as a community of homes in Cleveland, Ohio, for above-the-average families, and does not attempt the solution of an industrial housing problem. The general plan limits the amount of vehicular traffic passing the houses by providing a series of short, dead-end streets leading from wide motor roads. The streets run north and south, and the houses are placed to get every benefit of the south and east exposures, as well as to develop maximum individual areas for gardens or play areas. They are planned also to give a maximum of privacy and at the same time the greatest possible amount of freedom to the inhabitants, the large windows in one house facing, in most cases, a blank wall of the house adjacent to it



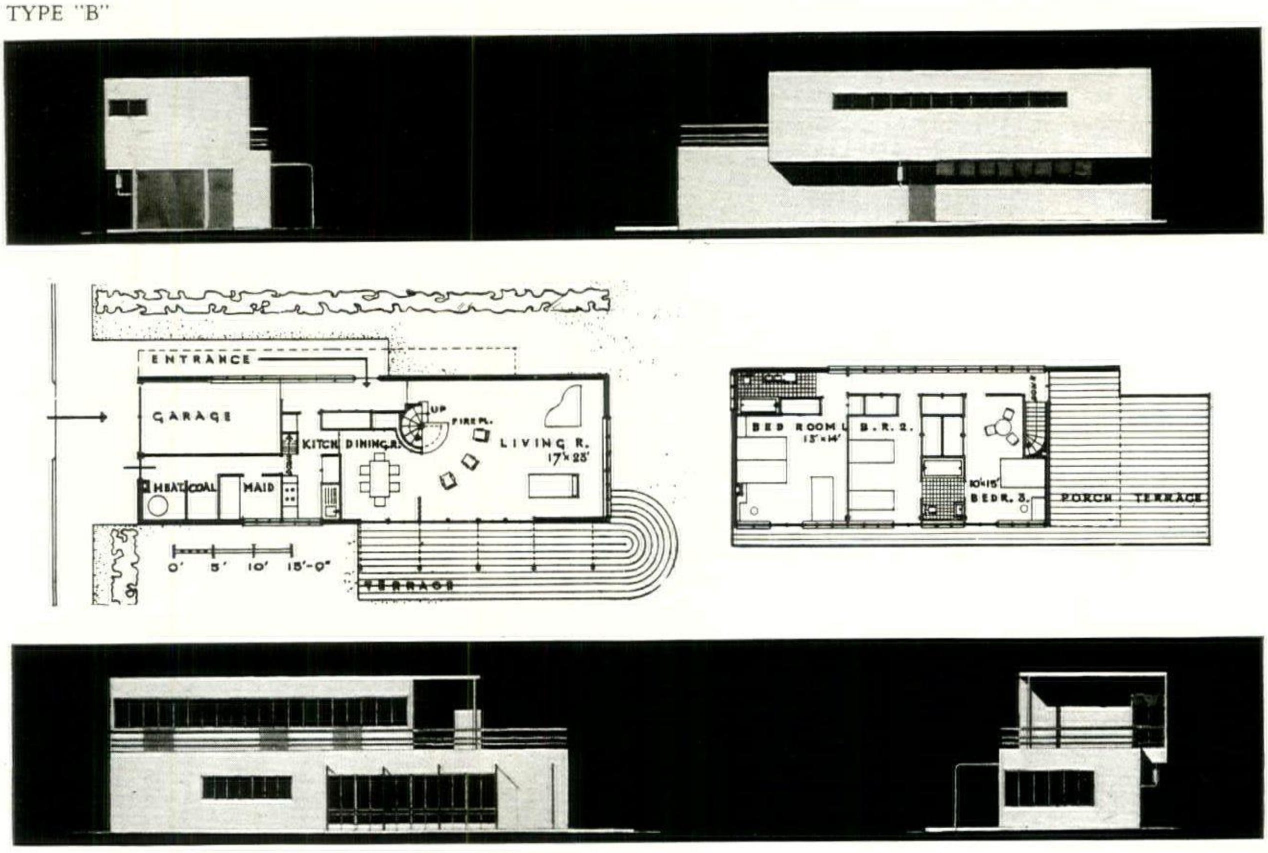
The average size of the lots is 60 x 150 ft., and the houses have been planned to sell for $90 per month, including financing charges, over a period of ten years. Their construction has been designed for economy in fabrication and adaptability to the individual tastes of the owner. The frames are of standard structural steel shapes, and the walls may be brick, cement block, stucco over insulated steeltex, or metal sheets backed with insulation. The floor and roof structure may be poured concrete, self-supporting tile, a combination of concrete with metal lath and joists, or an all-metal battledeck construction. The use of such materials in combination permits the use of large banks of windows, glazed on the south sides with ultra-violet ray glass. The houses have no basements or attics

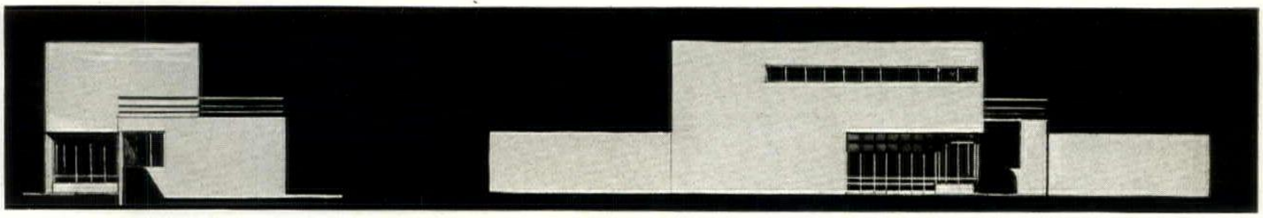


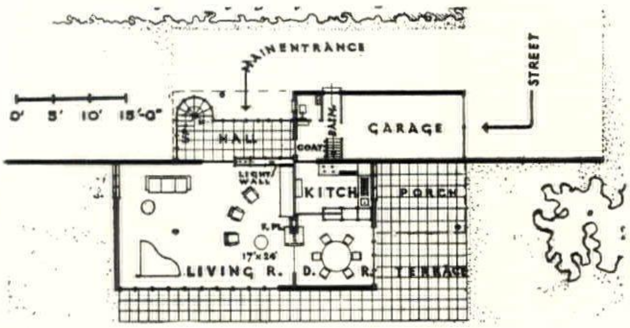

ENTRANCE
0' 5' 10' 15'-0"
GARAGE
COAL
HEATER
KITCHEN
COAT
UP
LIVING R.
17'×22'
FIREPL.
DINING R.
10'×10'
PORCH
BEDROOM I.
10'×17'
B. R. 2.
9'×11'
TERRACE
BED R. 3.
10'×17'

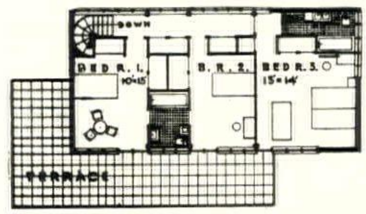
TYPE "A"

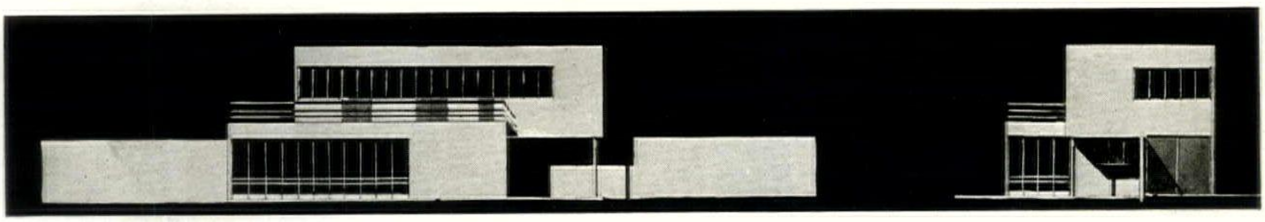
TYPE "B"


ENTRANCE
GARAGE
UP
FIREPL.
KITCH
DINING R.
LIVING R.
17'×25'
HEAT
COAL
MAID
0' 5' 10' 15'-0"
TERRACE
BED ROOM I.
13'×14'
B. R. 2.
10'×15'
BEDR. 3.
PORCH
TERRACE



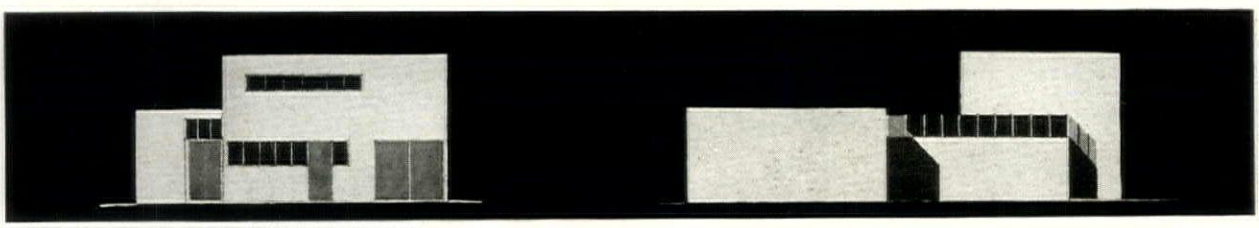

MAIN ENTRANCE
STREET
0' 5' 10' 15'-0"
HALL
GARAGE
COAT
BATH
LIGHT WELL
KITCH
PORCH
LIVING R.
17'×24'
D. R.
TERRACE

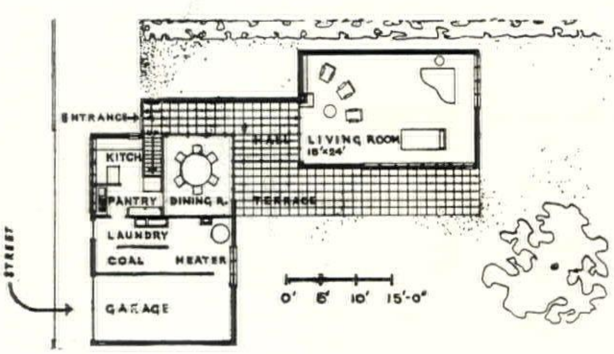

DOWN
BED R. 1.
B. R. 2.
BED R. 3.
15'×14'
TERRACE

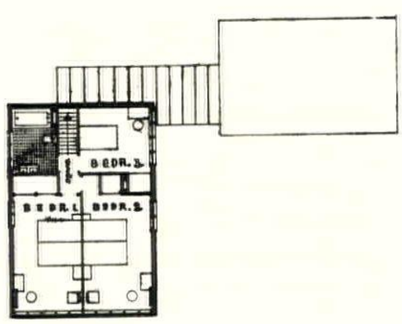


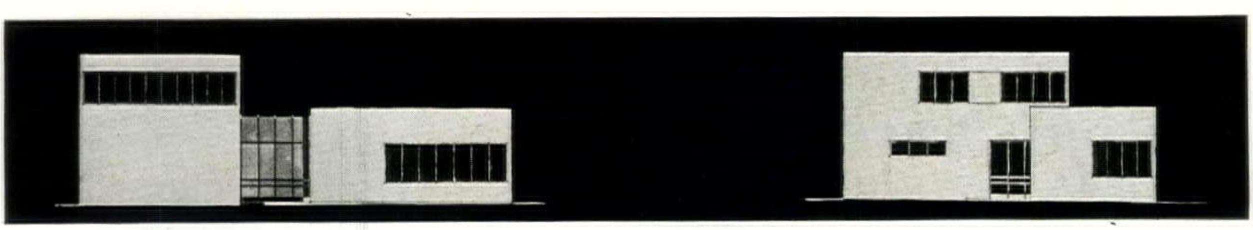
TYPE "C"

TYPE "D"




ENTRANCE
HALL
LIVING ROOM
18'×24'
KITCH
PANTRY
DINING R.
TERRACE
LAUNDRY
COAL
HEATER
STREET
GARAGE
0' 5' 10' 15'-0"


BEDR. 3.
BEDR. 1.
BEDR. 2.



Van Anda

PROPOSED HOUSING DEVELOPMENT

CLEVELAND, OHIO

CLAUSS AND DAUB, ARCHITECTS

IT DOES CONCERN US! The U.S.S.R. continues to announce progress with its Five Year Plan. Stuart Chase outlines A Ten Year Plan for America (in *Harper's* and the *Atlantic*). The National Civic Federation announces the "first definite move for setting up a ten year plan for American industry with the object of stabilizing production, eliminating unemployment and integrating the industrial and economic structure of the nation. . . ." The World Industrial Relations Congress will be held in Amsterdam during August to discuss "social economic planning and its possibilities for correcting the present lack of balance between production and purchasing power." President Hoover announced at Indianapolis that, "in the next twenty years we plan to build . . . 4,000,000 new and better homes, thousands of new and still more beautiful city buildings, thousands of factories. . . ." He did not give details of *how,* or *how well,* this would be accomplished, leaving this rather to American initiative. What part will be played by architectural initiative?

The present world-wide situation has centered attention on planning for the future, on endeavors to analyze the causes of the extensive inactivity, in order to eliminate them as far as possible. The crux of the matter seems to be that we have developed the capacity for producing goods (and buildings are, in this sense, goods) faster than the present system of economics allows of their consumption. Our elaborate financial structure seems lacking in ability so to distribute the ability-to-pay that production can be maintained to capacity. Intelligent thought is attacking the problem at both ends, the control of production through an analysis of demands and the establishment of a planned production program, at one end, and at the other, the development of our economic system whereby all engaged in production may be provided with the wherewithal to acquire the things produced, thus accelerating consumption to keep step with production.

But what has all this to do with architecture and building? The building industry is basic. It must therefore be represented in any plan for an economic advance and must be instrumental in finding a solution to the underlying problem. It must also put its own house in order if it is to coöperate in any inclusive plan. It must have its own plan for the future and its own organized body to prepare a program of future correlated activity. A study of the possible integration of the industry is in order. It has enough advocates to insure active coöperation from all factors in the industry.

Three things are needed that this may be accomplished: *first,* a preliminary plan as a basis of further thought and action; *second,* a focusing of the constructive thought of all able minds in every branch of the building industry on the objectives, on the problems involved, on the ways and means of reaching solutions, and on the final plan; and, *third,* the active, organized leadership of those best fitted by training and experience to analyze and to plan.

It does concern us! Can architects coöperate with others in establishing a plan for the industry as well as they have in producing a plan for a building? Let the answer be affirmative and immediate!

Kenneth K. Stowell

EDITOR.

In the August issue, THE ARCHITECTURAL FORUM *will publish a Preliminary Plan for the building industry. It is submitted as a basis for study and definite action and inaugurates a program for coördinated effort and progress in the industry.*

Van Anda

THE MAIN ENTRANCE ON FIFTH AVENUE

The effectiveness of the design depends more upon contrasts in size and materials than mere ornamentation of surface. The predominating material is gray limestone; the base is a uniformly black granite. Most of the metal work is aluminum, though bronze has been used in the bands above the show windows, and to a lesser extent in the divisions of the large lobby window. The glass in this window is frosted to avoid reflection, and appears as a flat gray in contrast with the color of the other materials

THE EMPIRE STATE BUILDING

SHREVE, LAMB & HARMON, ARCHITECTS

XII. THE GROUND FLOOR LOBBIES AND SHOPS

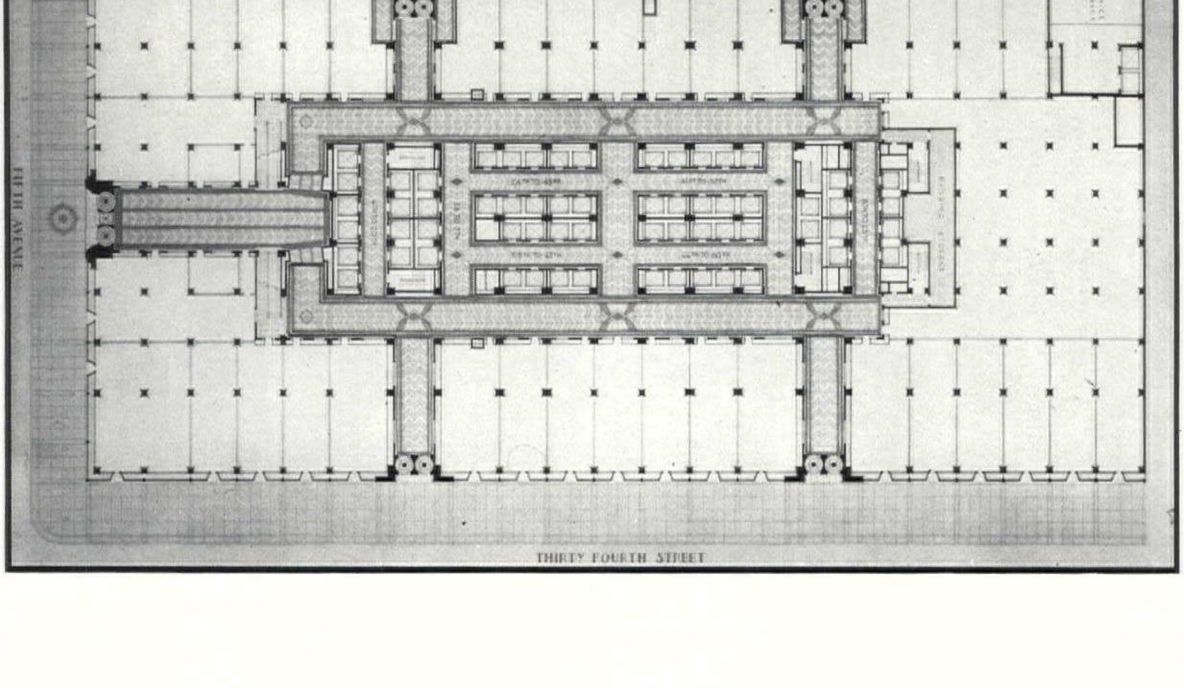
BY

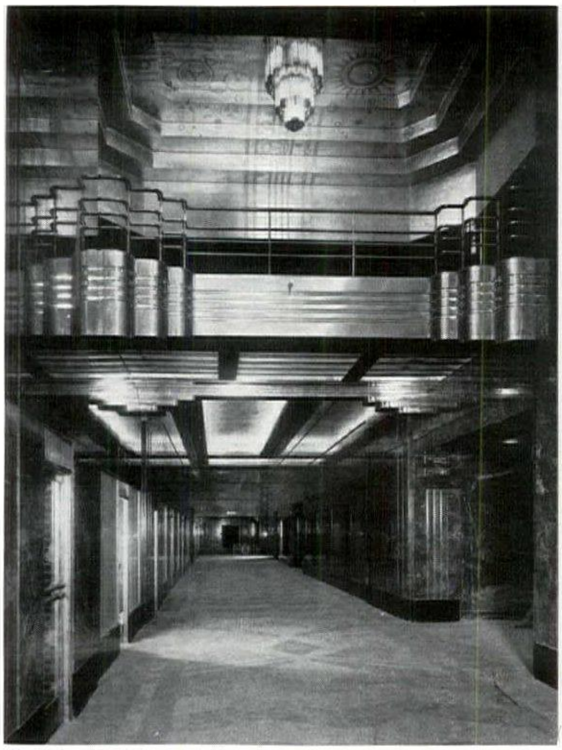
WILLIAM F. LAMB

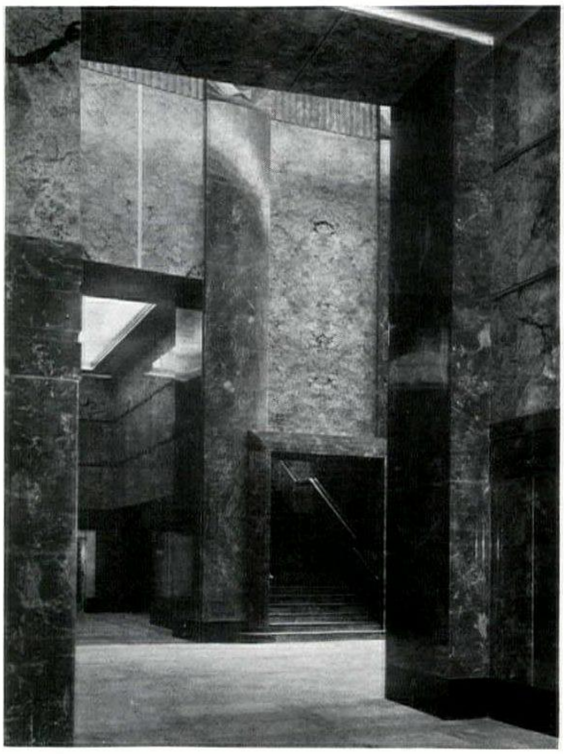
THE ground floor of an office building situated in a retail neighborhood has two extremely important functions to perform. First, it must provide an adequate and imposing entrance to the multitude of offices above, and second, it must produce many times the revenue of any other floor in the building.

The ground floor plan of the Empire State building conforms to these principles. There is a central core of utilities surrounded by shops facing the three streets, Fifth Avenue, 34th and 33rd Streets, the perimeter of shops being interrupted at five points by entrances to the building. Of these entrances, that in the center of the Fifth Avenue front is the most important, and opens immediately into the main entrance hall of the building, which is three stories in height and almost 100 ft. long. Stairways at either side lead directly to the second floor, and from branch halls to the arcade floor below. These branch halls at the right and left of the entrance hall open into two long side corridors which are parallel to it. These corridors, two stories high, serve as the main circulation system, leading on one side to two entrances on each of the side streets and on the other side to the seven elevator lobbies in the center of the building.

In the design of the entrance halls and lobbies much thought was given to the problem of adequate and easy access to the elevator system. The number and arrangement of the elevator banks had been determined by the size and the height of the building, and their compact layout, which proved very economical throughout the rest of the building, prevented the usual ground floor central corridor with the elevator groups on each side. Two great lateral corridors were therefore planned, each about 16 ft. wide, directly adjacent to the elevators. The side entrances lead into these corridors at about their third points, bringing these entrances close to the elevator groups. Thus travel from street to elevator is reduced







Amemya Photos

Interiors of the first floor lobbies. At the left is one of the two-story corridors with the aluminum bridge on the second floor. At the right is a view of the main entrance lobby from the long corridor

Van Anda

One of the many stores that line the outside walls of the corridors. This one is a florist's shop opening off the main entrance lobby. The trim is aluminum and the base black marble

Van Anda Photos

The shops from the exterior. At the left is a detail of one of the Thirty-fourth Street entrances; one of the typical shop fronts is at the right. Note the size of the windows and the simplicity of the entrance

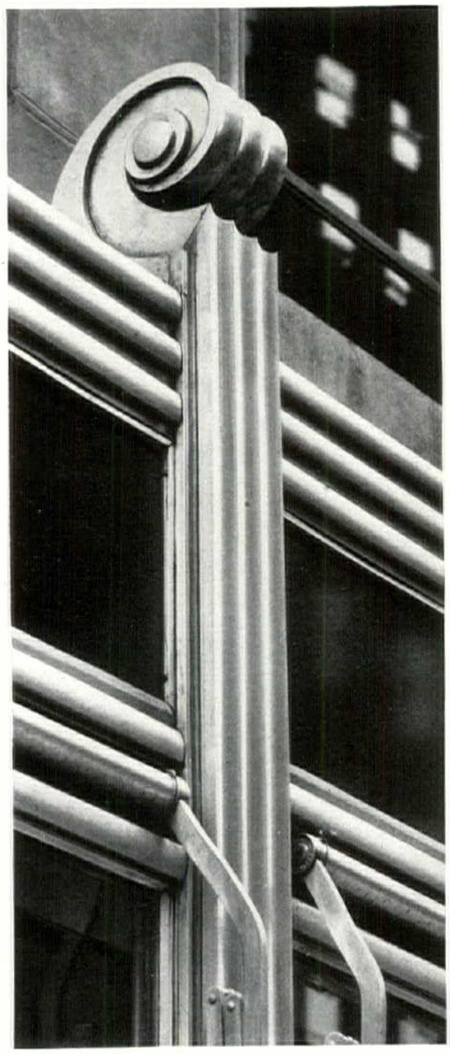
to a minimum and accomplished with as little confusion as possible.

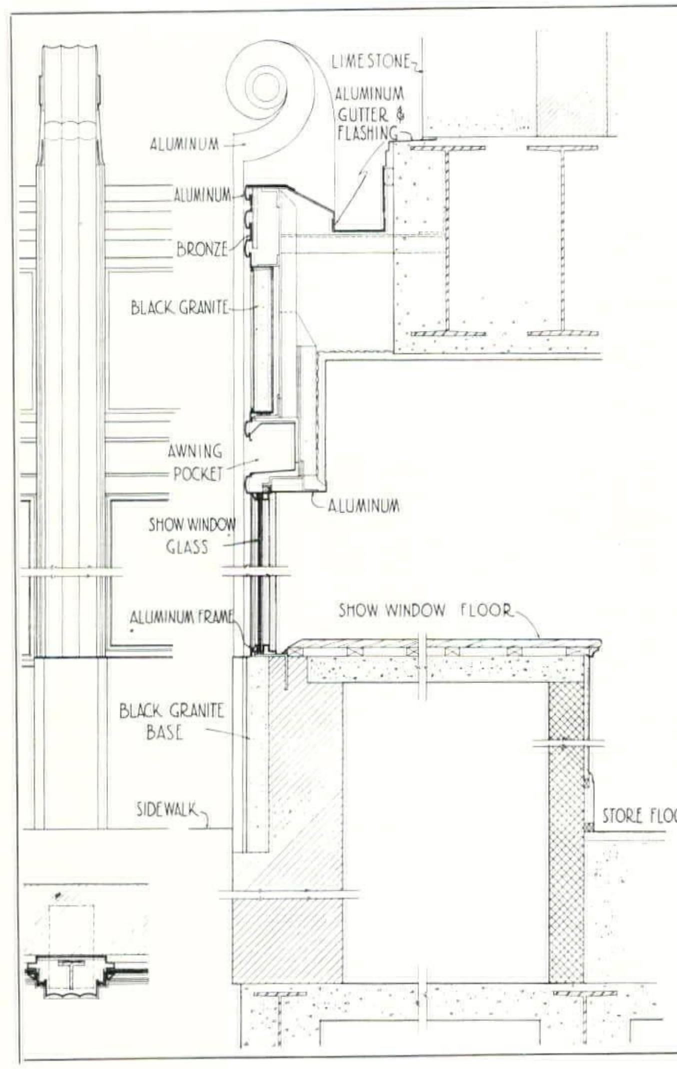
The problem presented by the entrance doors was solved early in the study of the building plans. Owing to the great up-draft in winter in a building of this height, the pressure against an ordinary flap-door was calculated to be somewhat over 150 lbs., making the use of such doors (except as required by the Building Department) out of the question. Revolving doors were therefore used, two to each entrance, and except for two at Fifth Avenue, the required flap-doors were massed in four alcoves at the 33rd Street entrances.

In order to be in keeping with the importance of the building, the treatment of the hall, or this series of halls, had to be imposing and of great scale. The final choice of marbles used was made after a long investigation, which included an inspection of many of the European quarries. The selection was limited by the time required for production because of the great quantity required in so short a space of time. These investigations resulted in the use of two German marbles, very rich and highly colored in tones of gray and red: Estrallante, with its rich, dark-gray background flashed with deep red, for the lower portion and above it Rose Formosa, with a pinkish-gray background, and the same deep red markings.

In order that full advantage might be taken of their color and veining, these marbles were used with the utmost simplicity, the effect of the entire scheme being dependent upon their own beauty, relieved by the use of bright metal and simply decorated silvered ceilings. The inlaid aluminum map at the end of the Fifth Avenue hall, the aluminum bridges which cross the center of the two-story side corridors and give access from the elevators to the second floor, and the further introduction of aluminum in the stair rails and in the interior show windows that line the halls accentuate the simple color scheme of gray, red and silver, which is dominated by the great ceilings that serve as the source of light.

The shops that surround the circulation corridors have an average depth of 60 ft. except at the west end of the building where a large interior barber shop is to be installed. In order to provide the maximum rental, which is based on the running foot of show window, the exterior shop fronts are entirely of glass with narrow aluminum mullions in front of each column. This wall of glass projects 3 ft. beyond the five-story building wall above and avoids somewhat the seeming lack of support which is inherent in the "all-glass" show window. It also gives importance to the shops and expresses their distinct function, which is further accentuated by a cornice of aluminum and black granite above and a black granite base.

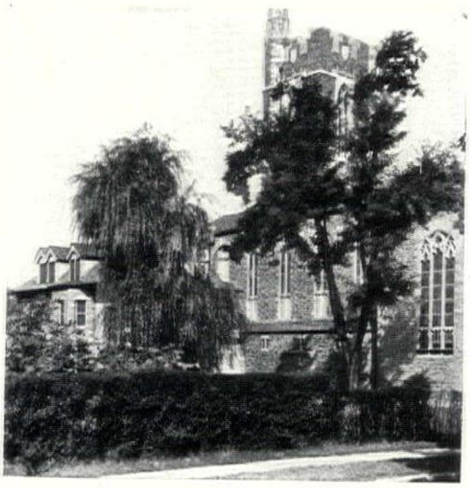




Van Anda

Details of the shop windows. It is significant that the effective simplicity of the design has been achieved by equally simple construction, the purpose of the entire scheme being to provide an unobtrusive setting for the display of merchandise. The pictures below illustrate how successfully this was done. Note the low base and the narrow corner posts

THE ARCHITECT AND DECORATOR COLLABORATE



The Design of the Church of St. Mary's, at Harrisburg, Pa., Link, Weber & Bowers and B. E. Starr, Associated Architects. Rambusch, Decorators

BY R. W. SEXTON

THE tendency of modern architecture results from an attempt to give to a building a logical expression of the purposes which the building is intended to serve. Consequently, it is obvious that all types of buildings, industrial, educational and residential, should be somewhat different in appearance from those that were designed 20 or 25 years ago, for our methods of living, our ways of teaching, our processes of manufacture have undergone a radical change from the methods that obtained a quarter of a century ago.

Seen in this light, it is reasonable to expect evidences of a similar change in contemporary church architecture. But in this type of building, other influences work toward the adherence of a more conservative architectural expression. For the main purpose of a church edifice changes very little from one generation to another. The Church, unlike many other institutions, is a perpetual thing; its customs and liturgical requirements today are nearly identical with those that prevailed in the earliest days of the Gothic movement. So the architectural expression of these customs and requirements will be generally similar to those of the past, changed only by the influences of new times, materials, and methods.

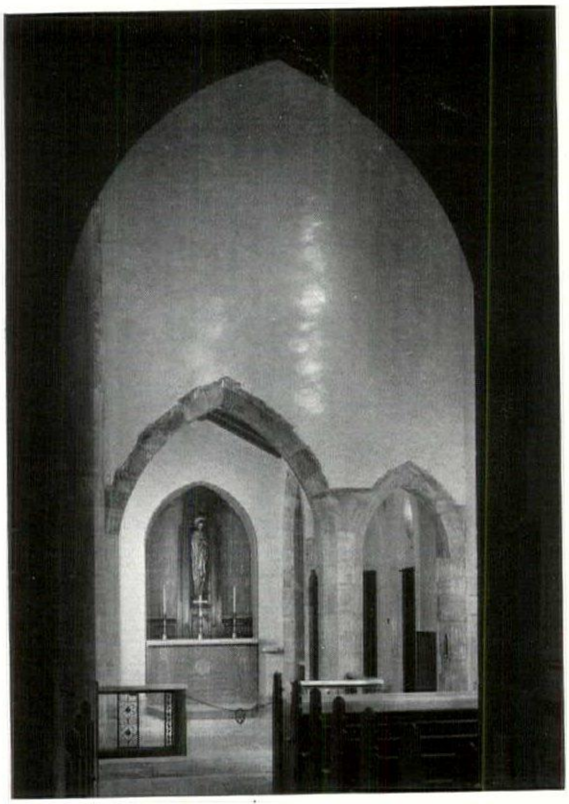
These forces have impressed themselves upon modern church architecture. In addition, the factions of the building industry are of increasing importance. The same combination of artistic elements that entered into the construction of a thirteenth century church are non-existent today. The element of time presents an added complication and the problem becomes a coördination of modern materials and methods of building toward the end of a necessarily changed but sincere expression of contemporary life in the prescribed liturgical garb of an old-established order.

Every church edifice is the setting for a particular ceremony, a ceremony invariably ordered by well established customs, which extend to a rigid supervision of the utilities, the forms and times of services and, especially in the Catholic church, to the many details of symbolism that are employed.

It would not be exaggerating to state that the liturgical requirements of the Catholic church, which have been adhered to throughout many centuries, from one generation to another, are the supreme influence in the design of the interior of a church edifice of this denomination. There are definite rules pertaining to altars, steps, candles, and so forth, both as to the number, the size, and the location of these various details, and there are even concise laws pertaining to the use of colors.

They have been formulated, however, not to suppress any inventive originality in a designer but rather to establish a fountain of inspiration from which an individual expression may be drawn.

IT is obvious that the process of design within so circumscribed a field presupposes a highly intensive study of the requirements involved, and in the design of the Church of St. Mary's, Our Lady of the Blessed Sacrament, are evidences of a sympathetic interpretation of these old laws to conform with the fresh demands of contemporary life. It is admittedly a successful building and much of that success is due to the collaboration of a specialist in the field of exterior design



Nyholm & Lincoln

One of the small altars from the nave. The structure and general effect of the interior was designed by the architects. The altars, furnishings and decoration were designed by the decorator who also supervised the execution of the work

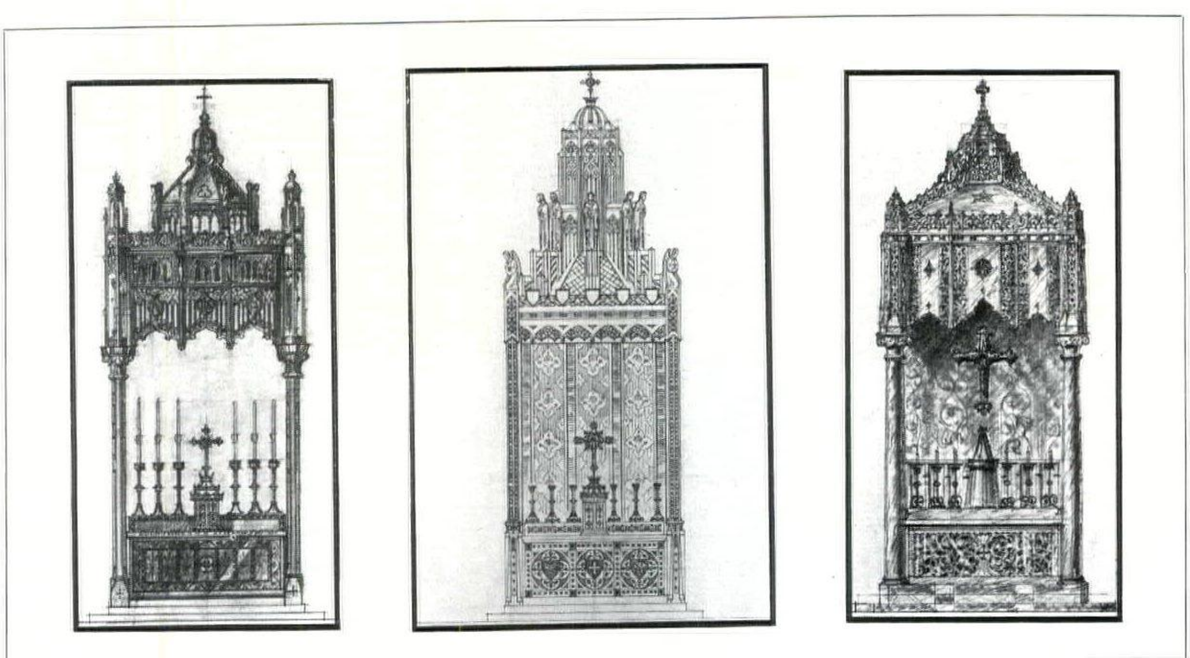
and planning and an artist well-versed in liturgical symbolism of interior church design.

The success of the church becomes more unique in the face of the usual and unfortunate lack of harmony between architect and interior decorator, and is an encouraging indication that the two can and should work in harmony with one another.

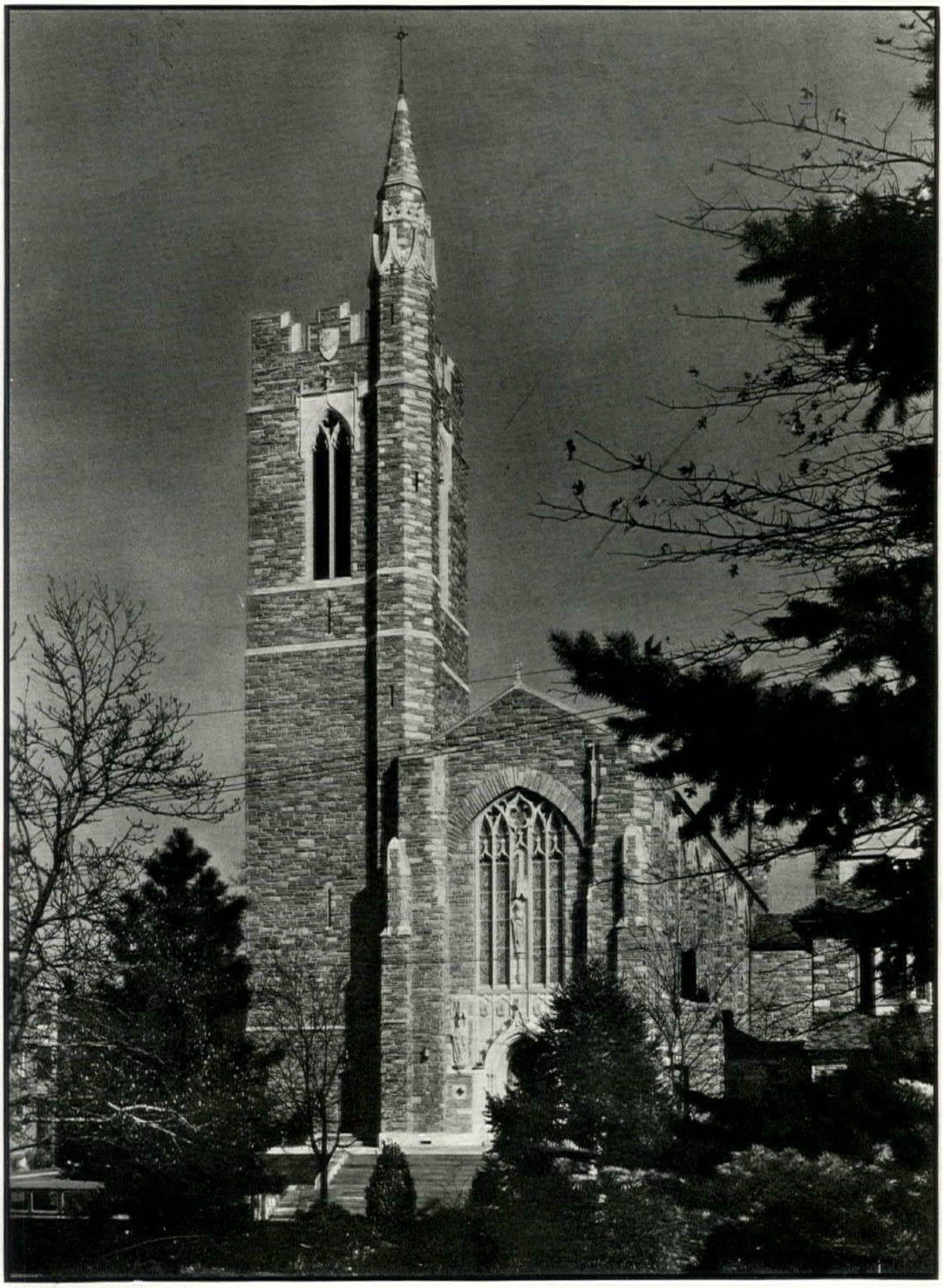
In the development of this particular church, the architects planned and directed the entire scheme, both exterior and interior. In the early stages of the project, however, they consulted designers of various interior details and, taking advantage of their intimate knowledge, made provision in the final scheme for the work of several specialists. The procedure in somewhat more detail should prove an interesting guide to others engaged with similar enterprises.

The architects prepared a sketch of the interior, indicating the general character of the architectural treatment. On it were shown the location of the altars, the rood, the screens and the lighting fixtures, the whole being done to convey an idea of the size and relative importance of the various elements. It was a study in scale rather than in detail and served as the point of departure for the actual working designs eventually executed by the interior decorators.

In this particular instance the interior decorator was an individual thoroughly familiar with architectural design in all its details and he was able, from the general interior scheme, to create a decorative effect enhancing the strength of the interior and to attain an harmonious blend of decorative motifs with the architectural form.



Three preliminary designs for the main altar

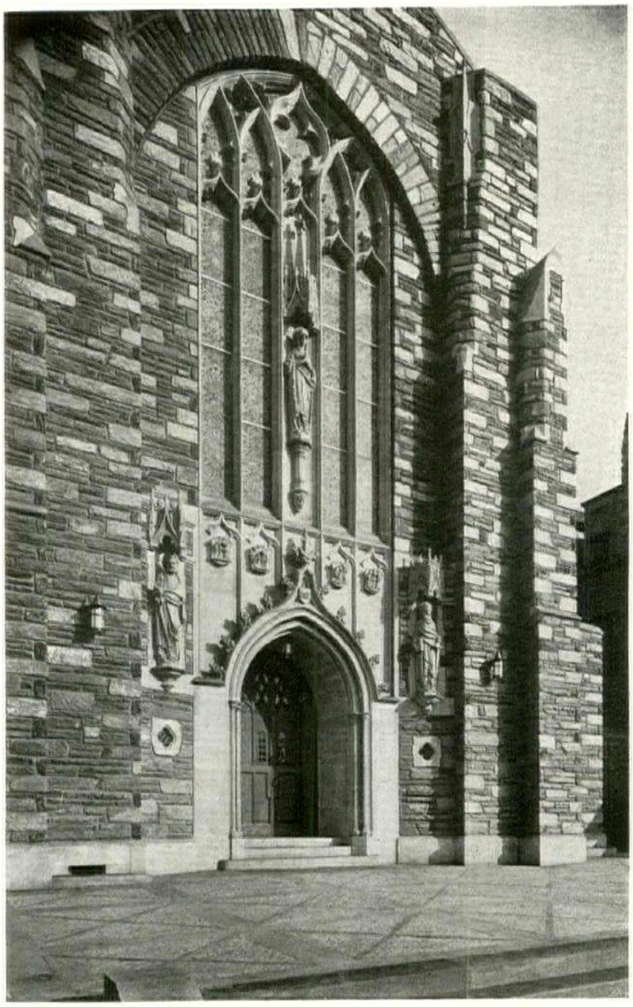


Nyholm & Lincoln

CHURCH OF SAINT MARY'S

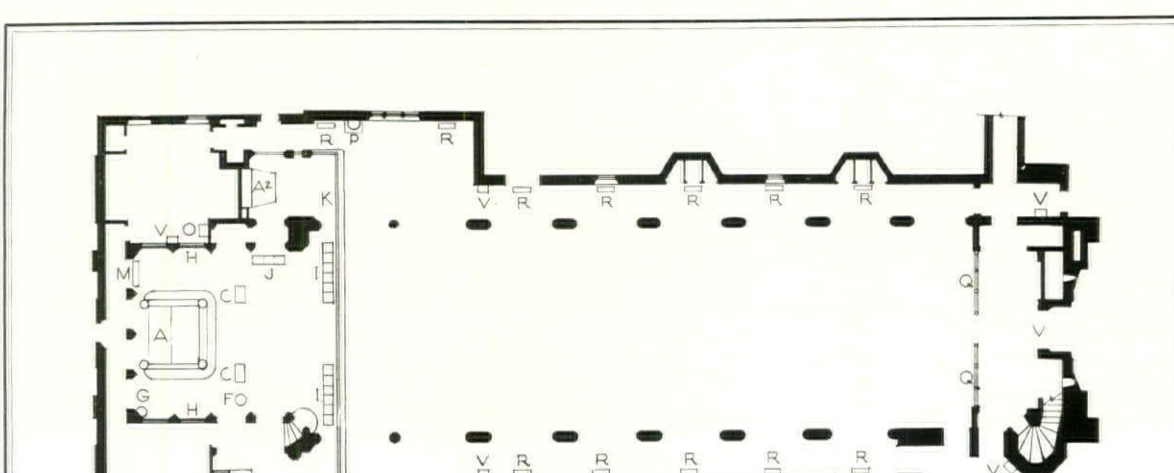
HARRISBURG, PENNSYLVANIA

LINK, WEBER & BOWERS AND B. E. STARR
ASSOCIATED ARCHITECTS



Nyholm & Lincoln

Key to the more important features of the first floor plan: A, A-1, A-2, Altars; C, Prie-Dieu; F, Paschal Candlestick; G, Holy Oils Case; H, Sanctuary Screen; I, Acolytes' Stools; J, Sedilia; K, Communion Rail; M, Credence Table; O, Piscina-Sacrarium; P, Votive Stands and Statue; Q, Narthex Screen; R, Stations of the Cross; S, Baptistry Gate; T, Baptismal Font; U, Baptistry Case; V, Holy Water Stoups. At the left is a detail of the principal entrance facade. The walls are of Foxcroft stone and the trim and tracery is Indiana limestone. The roof is Brittany shingle tile in dull red, sage brown, light blue and variegated green tones. The colors are subdued in tone, yet rich in effect



Nyholm & Lincoln

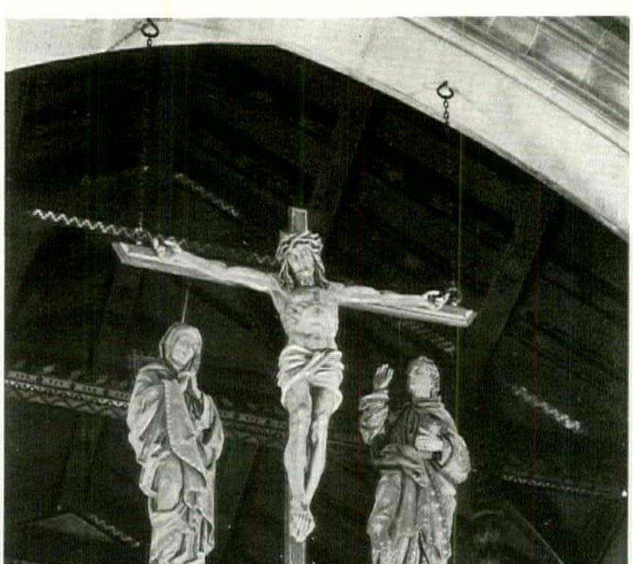
CHURCH OF SAINT MARY'S

HARRISBURG, PENNSYLVANIA

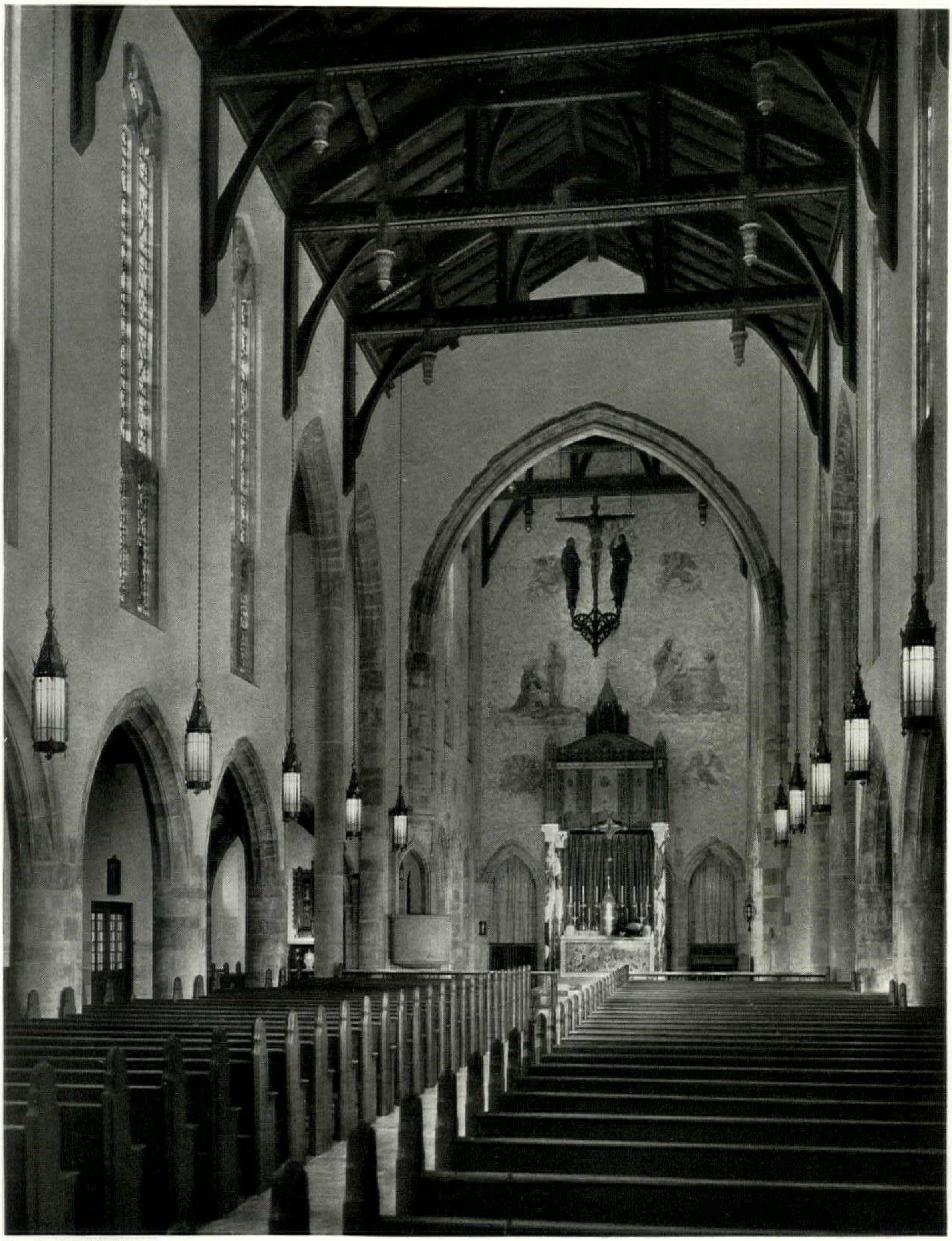
LINK, WEBER & BOWERS AND B. E. STARR

ASSOCIATED ARCHITECTS

Nyholm & Lincoln Photos



Detail of the nave ceiling. The timbers are oak, having stenciled, polychrome decorations in colors which harmonize with the walls, ceiling panels and stained glass windows. The panels are in symbolic blue, and have had the color applied with a special technique to insure the retention of their acoustical properties. At the left is a detail of the rood, suspended from the sanctuary arch. In this, as in all other features of the interior decorations and fixtures, the results were achieved through the close coöperation of the architects with The Rambusch Decorating Company, who executed the work



Nyholm & Lincoln

CHURCH OF SAINT MARY'S

HARRISBURG, PENNSYLVANIA

LINK, WEBER & BOWERS AND B. E. STARR

ASSOCIATED ARCHITECTS

Nyholm & Lincoln

THE ALTAR

CHURCH OF SAINT MARY'S

HARRISBURG, PENNSYLVANIA

LINK, WEBER & BOWERS AND B. E. STARR

Associated Architects

Nyholm & Lincoln

SANCTUARY AND PULPIT

CHURCH OF SAINT MARY'S

HARRISBURG, PENNSYLVANIA

LINK, WEBER & BOWERS AND B. E. STARR

ASSOCIATED ARCHITECTS

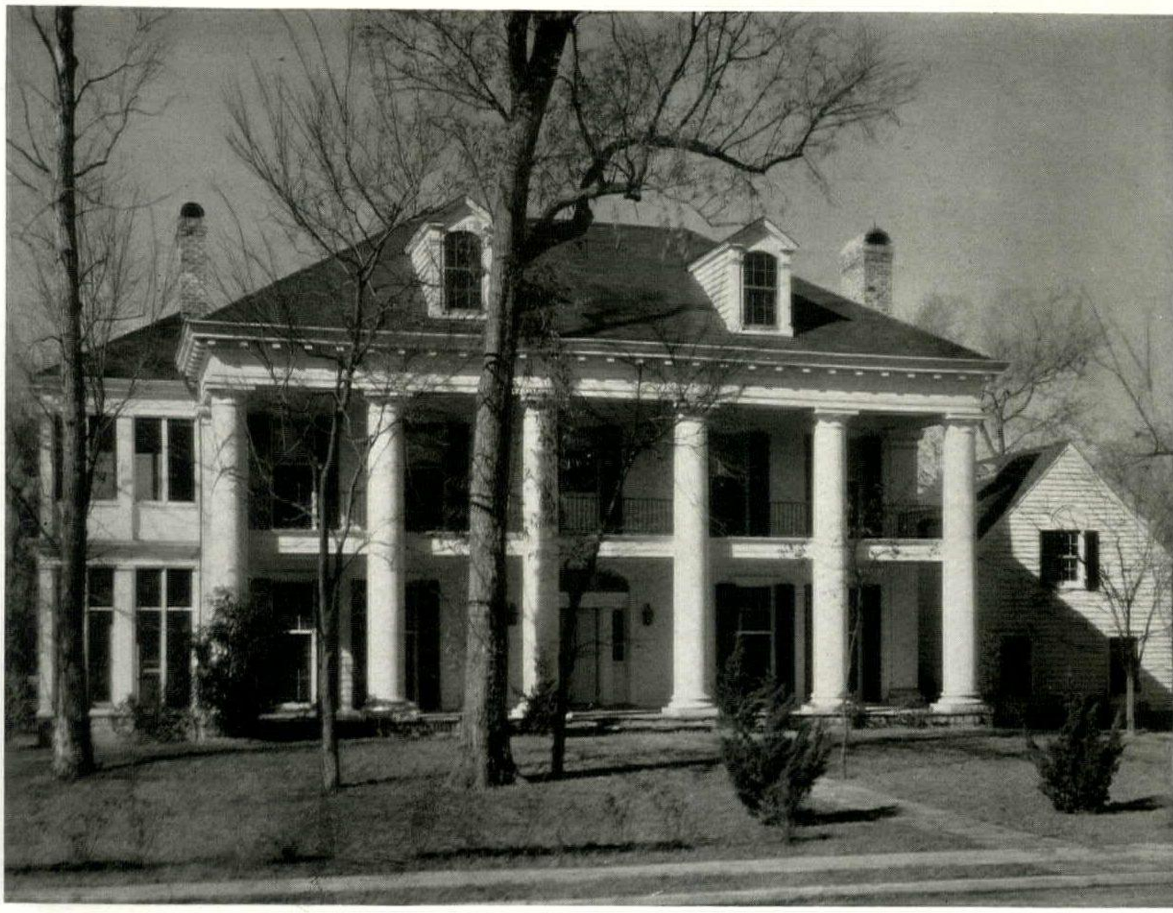
Nyholm & Lincoln

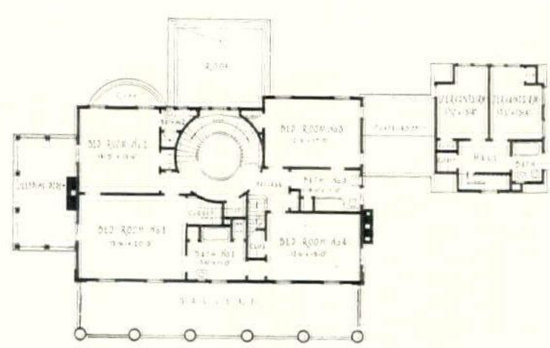
CHURCH OF SAINT MARY'S

HARRISBURG, PENNSYLVANIA

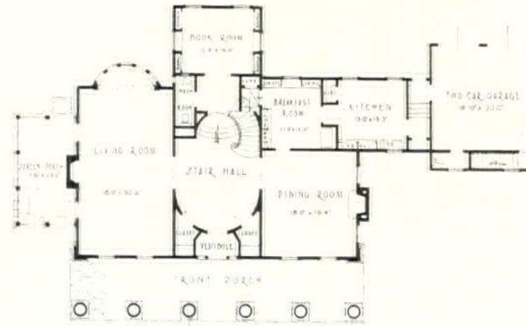
LINK, WEBER & BOWERS AND B. E. STARR

ASSOCIATED ARCHITECTS



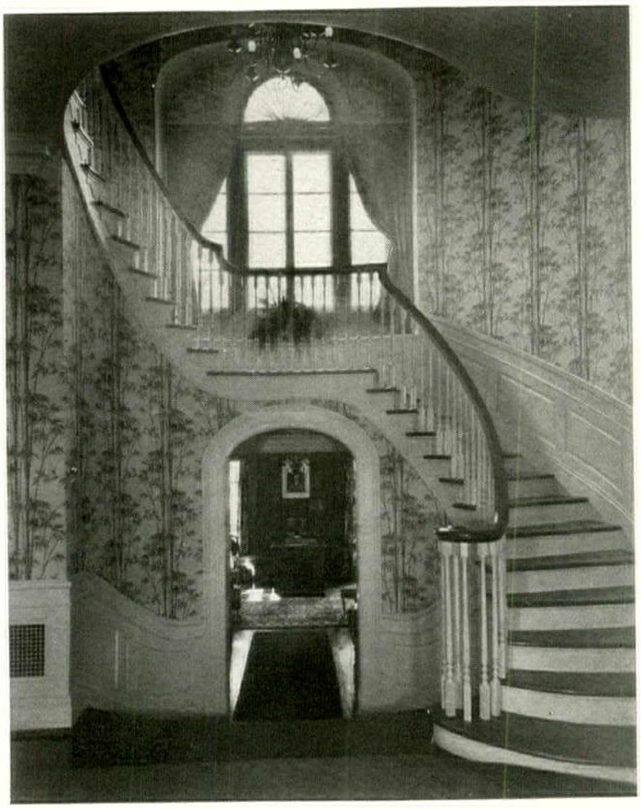


The house is a frame building, with columns of a patented lock-joint construction set on a limestone plinth. The porch floors are flagstone, laid over a cinder concrete fill. The attic is lined with insulating board; the windows are weatherstripped; and the house is heated with a forced-draft warm air system that includes an air washer



HOUSE OF REV. D. S. WATTLEY
NEW ORLEANS, LA.
LOCKETT & CHACHERE, ARCHITECTS

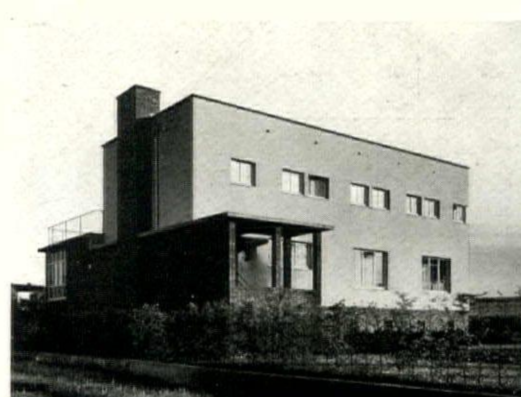
TWO INTERESTING SMALL RESIDENCES



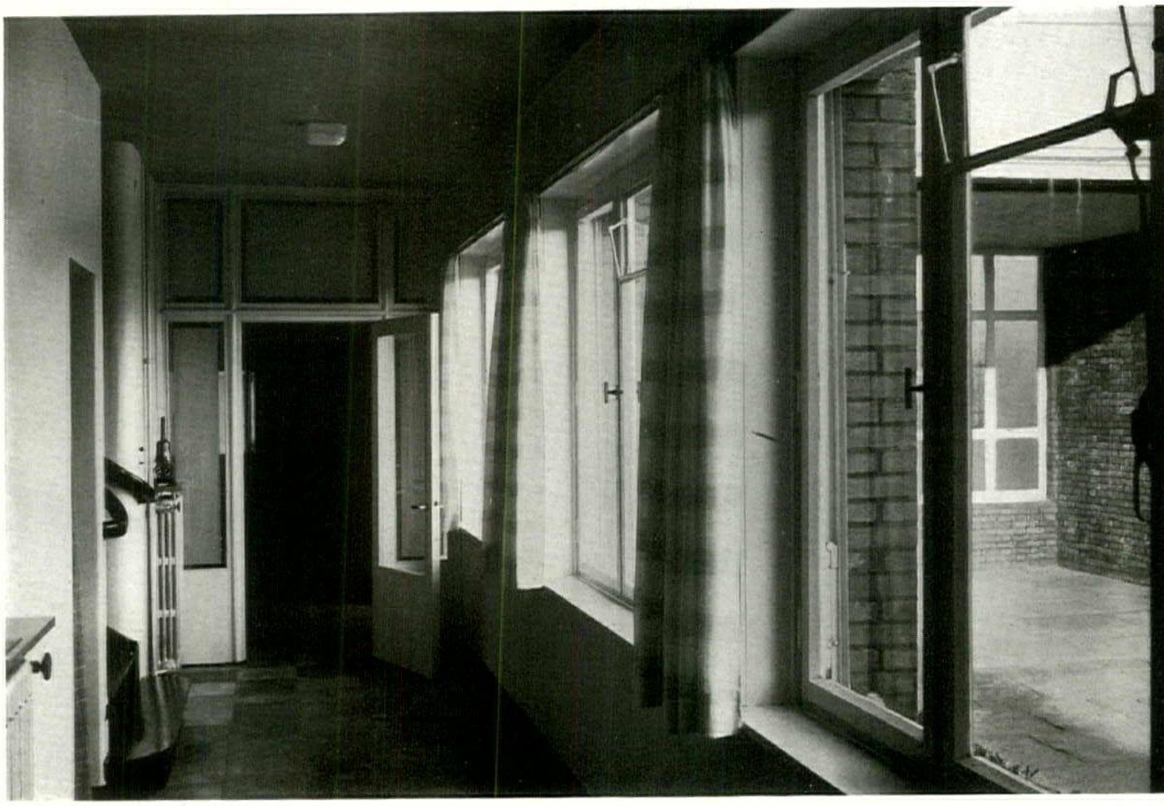
The stair hall, looking toward the book room. Below is shown the dining room. The floors throughout the house are of oak, and the walls, except those of the dining room and book room, have been papered. The book room is paneled in pine, and the walls of the dining room are of painted plaster with wood trim

Scheel Photos

The program was not concerned with traditional aspects and all elements have been combined to effect the most simple, efficient and pleasant solution. The construction, excepting that of the roof, is fireproof. The walls are of lime-sandstone brick, laid in a 13 in. wall without air space. They are faced on the porch and the living room bay with a hard-burned dark red brick, and elsewhere with a very light green stucco. The floors are of self-supporting hollow tile, cemented over and finished, in all living and bedrooms, with linoleum, a sub-floor of insulating board being included on the first floor. The interior partitions are non-bearing, and are made of blocks of a gypsum and cinder composition about 2½ in. thick, smoothly plastered on both sides. The roof is framed with wood and is covered with wood sheathing and two layers of heavy waterproof paper, without tar. The terrace on the second floor is covered with several thicknesses of asphalt tiles. The house cost approximately $13,850; the furnishings, including curtains and lighting fixtures, $3,800



HOUSE OF CARL RADICKE
HARBURG, GERMANY
DRYSSEN & AVERHOFF, ARCHITECTS



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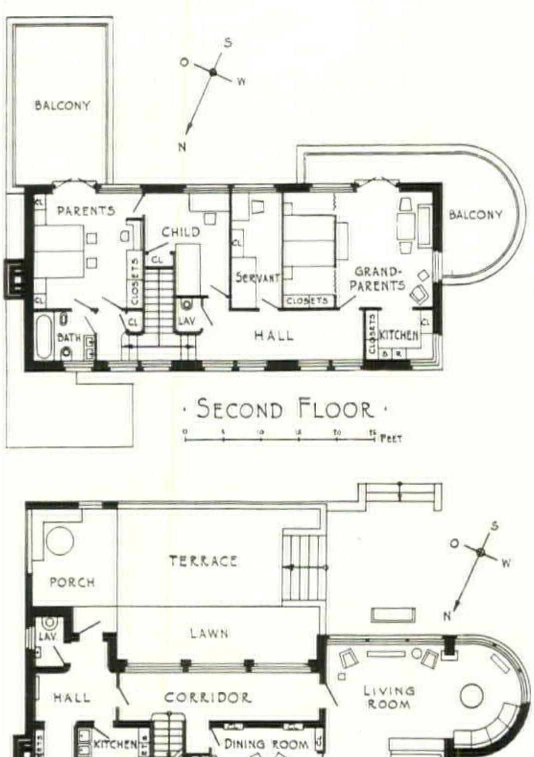
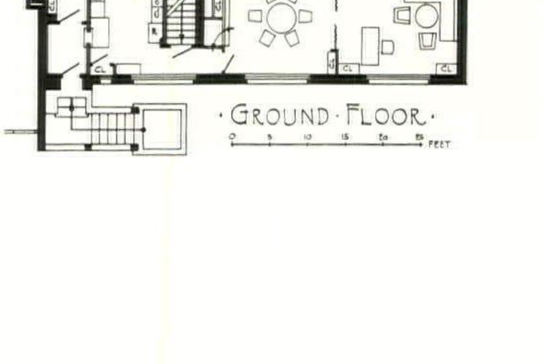




The plan is unique, and unusual in many respects. Of particular interest is the inclusion on the second floor of a separate living suite for the parents of the owner. Interesting also is the arrangement of the parents' and child's rooms and, on the first floor, the compact and practical layout of the living room. Large windows give the living spaces a maximum of southern exposure; and the distribution of furniture promotes the greatest utilization of space. The plan is especially noteworthy for the lack of congestion in areas of circulation and for a clear division of space for particular use

HOUSE OF CARL RADICKE

HARBURG, GERMANY

DRYSSEN & AVERHOFF, ARCHITECTS

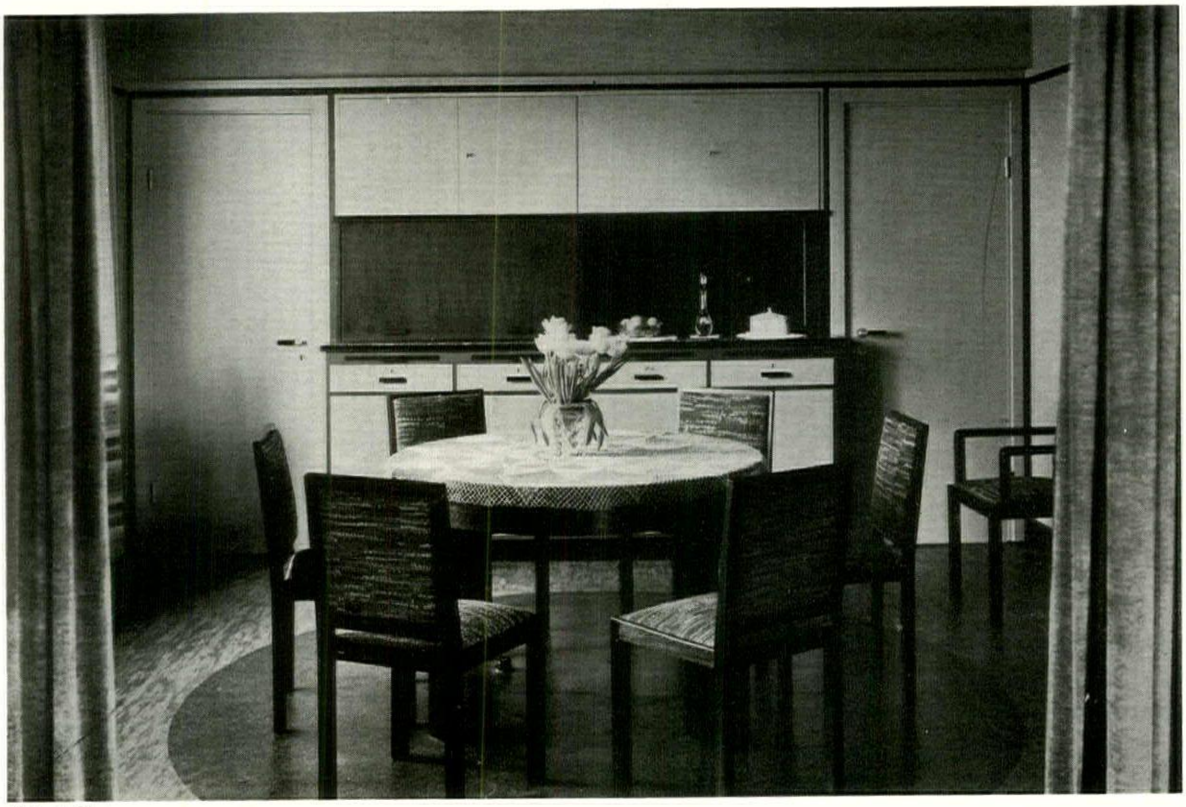
Scheel Photos

Two views of the living room, the lower one including part of the dining room. The flooring in both rooms is linoleum, and the walls of the living room are covered with a light colored, washable wall fabric. Notice the simplicity of the lighting fixtures; also the location of the furniture to form natural group centers

HOUSE OF CARL RADICKE

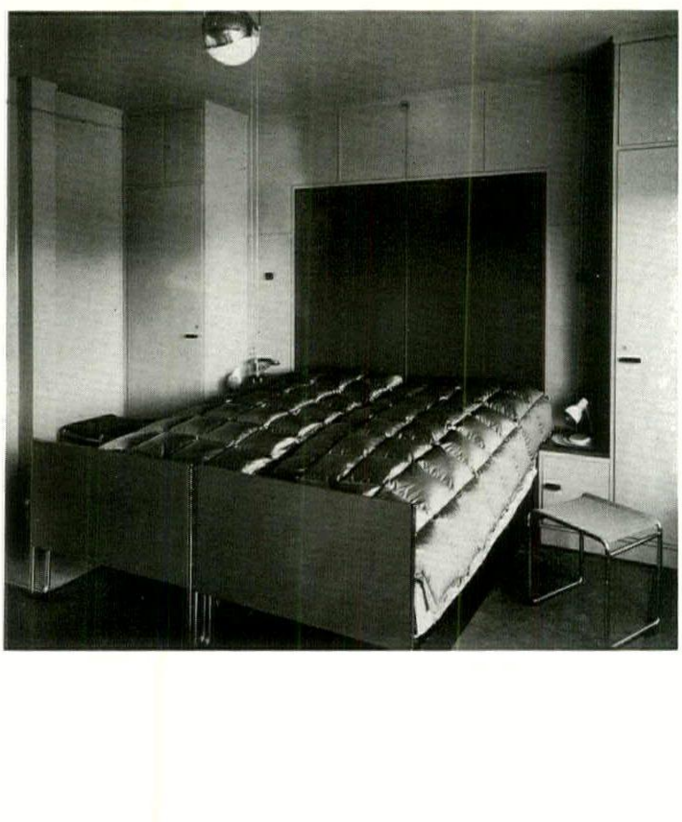
HARBURG, GERMANY

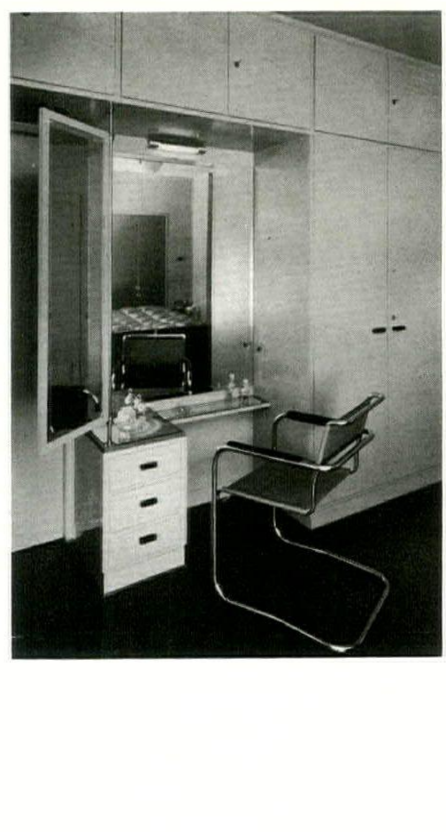
DRYSSEN & AVERHOFF, ARCHITECTS



Scheel Photos

The dining room, looking from the end of the living room. The walls are lined from floor to ceiling with smoothly painted wood, light in color, with darker joint strips. Below is the parents' bedroom. All closets, dressing tables, etc., are built-in, the other furniture and the lighting fixtures being standard units of domestic factories. The doors and woodwork throughout the house are of extreme simplicity, and are painted. All hardware is chromium plated



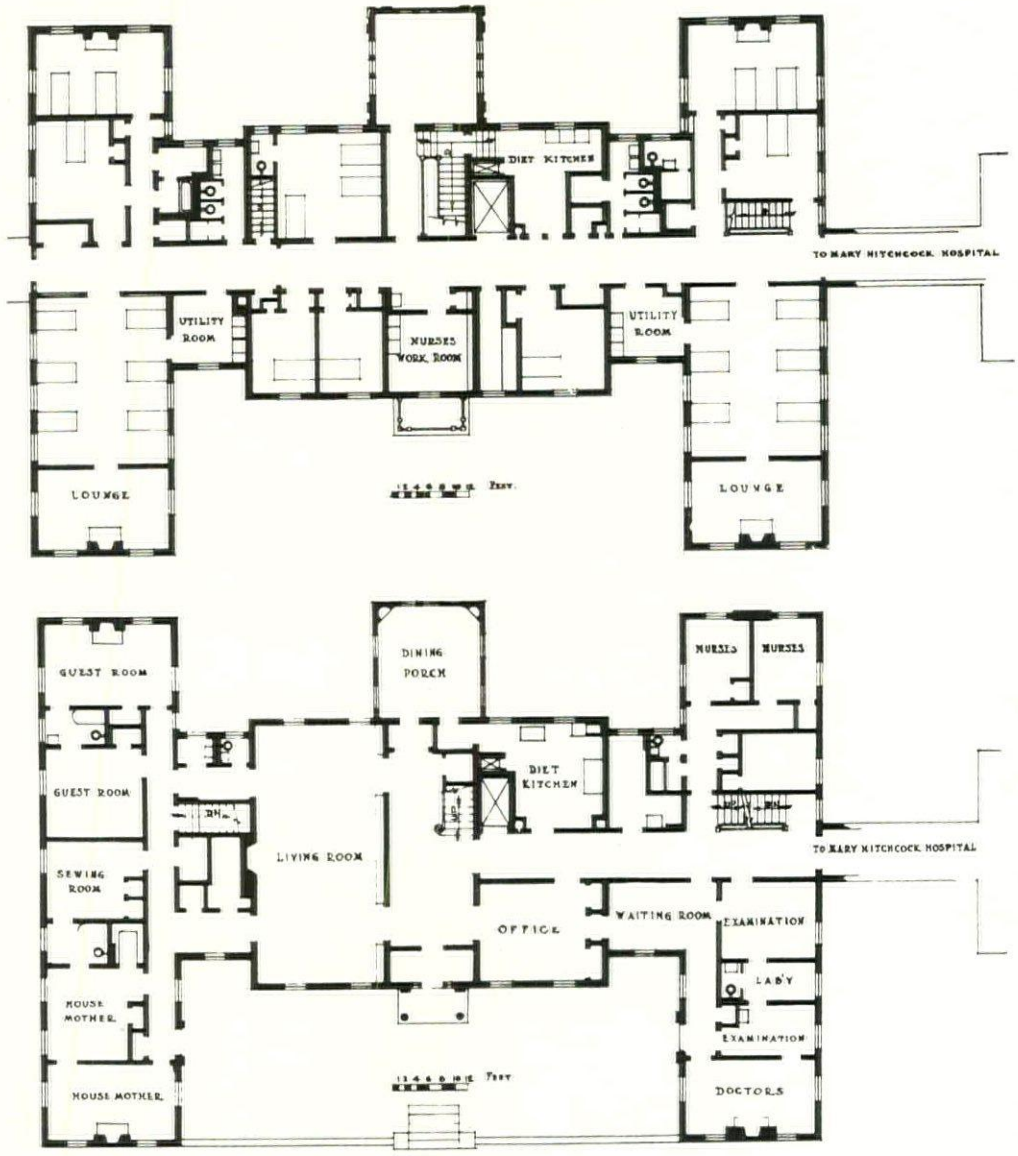


Weber

A Memorial Infirmary for the Use of the Students and Faculty of Dartmouth College at Hanover, New Hampshire

DICK HALL'S HOUSE AT DARTMOUTH COLLEGE

JENS FREDRICK LARSON, ARCHITECT



Although maintained as a separate institution, the infirmary depends upon the Mary Hitchcock Hospital for most of its facilities. The first floor of the infirmary is connected with the kitchen floor of the hospital and a similar connection places the second floor in direct contact with the operating rooms of the hospital proper. In the center portion of the building there is a third floor, used for isolation cases and divided into five single rooms, a ward with three beds, and a diet kitchen. The infirmary has a normal capacity of 40 beds, but has been planned to accommodate 60 in emergencies

DICK HALL'S HOUSE

HANOVER, NEW HAMPSHIRE

JENS FREDRICK LARSON

ARCHITECT

CONTINUED

(SKIP NEXT 5 SHEETS)
MISPLACED

WITHOUT BENEFIT OF PLAN

A VIEW OF NEW YORK, LOOKING NORTHEAST FROM THE TOP OF THE EMPIRE STATE BUILDING

THE
ARCHITECTURAL
FORUM

VOLUME LV

NUMBER TWO

AUGUST 1931

A PRELIMINARY PLAN FOR THE BUILDING INDUSTRY

BY

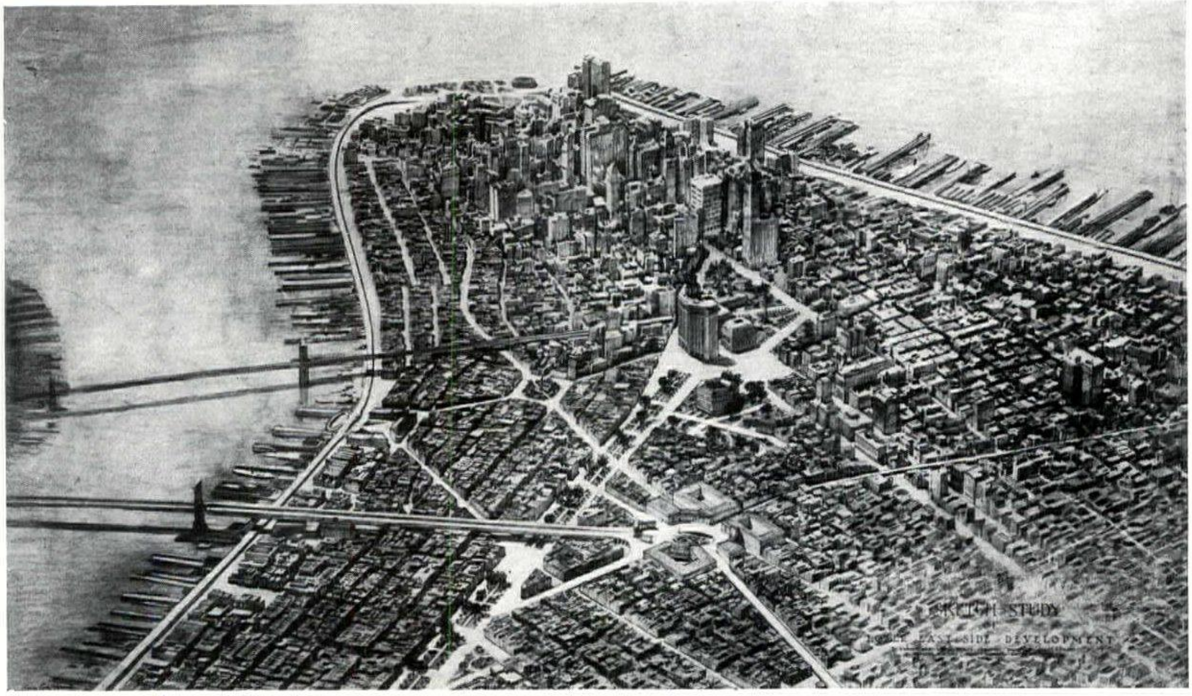
KENNETH KINGSLEY STOWELL

THE present state of relative inactivity in every branch of the building industry should allow the time, and does present the occasion, for a serious study of the causes of recurrent periods of depression, and suggests the possibility of so planning the production of buildings as to smooth the curve of its peaks of uncontrolled activity and its valleys of stagnation and despond. A plan is not only a possibility; it is a prerequisite of real progress. But a workable plan cannot be produced overnight; it must be evolved by the collaborative effort of the ablest minds in every branch of the industry.

The seriousness of the present situation is apparent when such an authority as Montagu Norman is quoted as saying, "Unless drastic measures are taken to save it, the capitalist system throughout the civilized world will be wrecked within a year." The basic social and economic problem, then, must be considered in relation to the special problems of the building industry. The evolution of a system for the distribution of wealth so that users of goods may be capable of obtaining them in return for their labors in producing them must be in the thoughts of the leaders of all industries if the plans of any one industry are to be effective. Study of economics in its largest sense, of practical social and political economy, must be the basis of future development. Whether the brains which have inaugurated and developed the processes of mass production can, in enlightened self-interest, evolve equally efficient means for distribution, exchange, and mass consumption, is the question we now must face. The plans of each industry depend on the answer to this question. Those who analyze and plan—architects, engineers, constructors, financiers and economists—cannot do better than to devote all effort possible to the solution of this fundamental problem, and coördinate the plans of their own industry to further its solution.

With this thought of the larger economic problem in mind, we may turn to the consideration of the possibilities of planning for the building industry. At the outset, preoccupation with various individual problems will have to be subordinated to the larger questions that affect the whole. Let the architect forget, for the moment, "modernism vs. traditionalism," "vertical vs. horizontal"; let the financier forget "this foreclosure" and "that financial set-up"; the contractor, "this bid" and "that bond"; let us consider rather the objectives of the industry as a whole and a plan for coördinating effort toward the common ends.

The object of this preliminary plan is to center the attention of those engaged in building, directly or indirectly, on the fundamental factors in the evolution of a workable plan; to state the objectives of such a plan and the requisites for its development; to state the common problems and to suggest the organization and action to be taken. It is not an attempt to provide a panacea, nor is it a plan for the immediate stimulation of building activity, however desirable that might be.



Juley, Courtesy, Regional Plan Assn.

A study of a planned street development for downtown New York. This is an apt illustration of the need for coordinated effort in the building industry, for such a scheme cannot be accomplished without the intimate association of all influential factors toward a common end

THE objective of the plan for the building industry may be summed up as: ***the building of coöperative effort in the production of better buildings to fulfill real needs, scientifically determined.*** The implications of this objective are far-reaching and include a multitude of contributory objectives, some of which must be looked upon as ends in themselves worth while.

The first step toward the attainment of the objective is the immediate formation of a Building Industries Plan Board to convene at the earliest possible moment to state concretely the problems to be solved and the research to be undertaken, and to appoint the necessary Working Divisions. The initial Plan Board should consist of an architect, a financier, an engineer, a contractor, a realtor, a city planner, a labor representative, and a government official, augmented as they found advisable. Each Working Division will devote its energy to research and recommendations on one particular phase of the objective, reporting within a specified time what it believes can be done, and how. These Working Divisions will naturally be made up of leaders in the various branches of the industry who are already organized in studying the particular problem and who have knowledge of and access to the pertinent research already made. Duplication of effort, in all cases, is to be avoided; existing organizations, committees, conferences, institutes, and bureaus are to be used and consulted as far as possible. The number and scope of the Working Divisions spring naturally from an analysis of the statement of the objective, as will be seen.

There will be the following Working Divisions, perhaps more, each of which will constitute a fact-finding or research body, will interpret the results of its research, and will present definite recommendations to accomplish its part of the objective:

1. Organization, charged with analysis of functions of branches of the industry, with a view to integration, closer coöperation and improvement of contractual relations.
2. Plan, charged with analyzing building needs as to types, quantities and locations, from year to year and over stated periods in all regions.
3. Finance, charged with analysis of present methods and sources in order to arrive at a system of greater facility, stability and lower cost in construction finance.
4. Materials and Methods, charged with the analysis of present materials and methods of construction on a comparative basis of use, efficiency, and cost, in order to standardize, simplify and eliminate waste.
5. Education and Information, charged with the correlation and dissemination of the results of research and recommendations

both within the industry and in relation to the public.

6. Legal and Governmental, charged with the study of the legal aspects of the other Divisions with the object of inaugurating legislation to accomplish the purposes of the plan, and coöperating with government agencies.

The recommendations of courses of action will then be correlated by the Plan Board and submitted to a general conference of the representatives of all branches of the building industry for acceptance and action.

THE implications of the general objective toward which the Building Industries Plan Board must direct its efforts include a multitude of contributory objectives, social as well as economic. Study of this objective, phrase by phrase, will indicate the problems to be solved, ways and means of reaching solutions, and the fact-finding which must be undertaken.

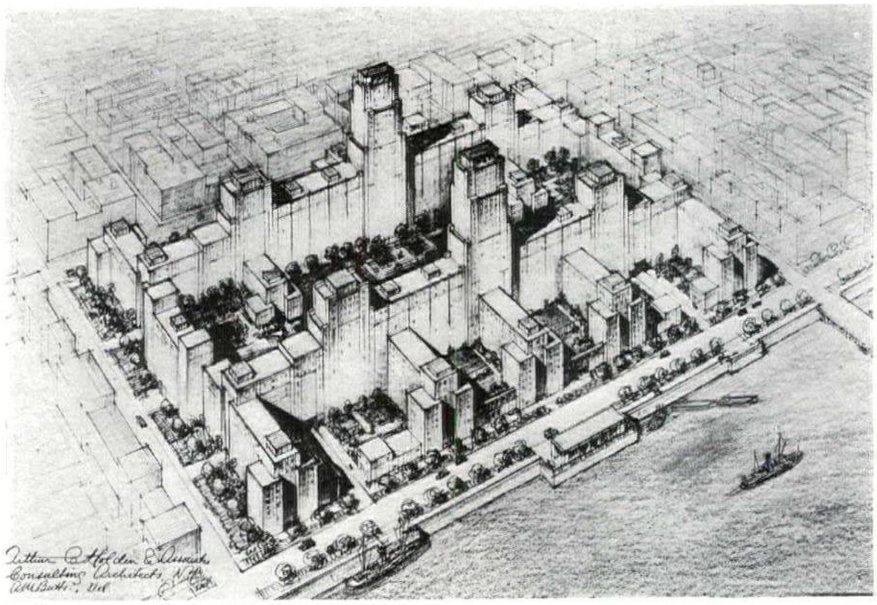
"The building of coöperative effort" can be accomplished through the expansion of the Building Congress idea and the establishment of such organizations in every region of the country. By mutual agreement, Building Congresses should make study of The Plan for the Industry their major activity. Personal contact, discussion, and exchange of ideas in this type of organization can be most effective in developing a collaborative spirit in the solution of common problems.

One of the first studies to be made in the interests of "coöperative effort in the production of better buildings" is the analyzing of the functions of each branch of the industry, the interrelations of those functions, the contribution each makes toward the attainment of the objective, and the relative rewards due each for such contributed service. Such a study of the present relationships would indicate a more rational and more economic organization of the industry, would define functions more definitely and prevent overlapping, friction and waste. It might suggest a more equable distribution of the wealth created, based on the relative contributions. It would also suggest changes in contractual relations and probable integrations to make for closer contact and fewer separate factors.

"The production of better buildings," on the physical side, involves research into materials, equipment, and methods of construction, a subject to which there is seemingly no end. Much of the waste in the industry and much of uneconomic cost is due to the lack of exact, unbiased knowledge of these subjects. The plan should endeavor to correct this as far as possible by making available the impartial scientific analysis of materials, equipment, and processes, which would include comparative cost studies, both first cost and maintenance, as well as physical characteristics and relative efficiency. This immediately suggests, as part of the plan, a system of organized testing laboratories supported, in part at least, by the industry, including government, university, and endowed scientific laboratories as well as those engaged in commercial work. This is just one phase of the problem. Others are: standardization and simplification of materials; the creation of methods of comparative analysis of plans for buildings; the standardization of methods of appraisal; the relation of building codes to the production of modern buildings; the possible elimination of the seasonal unemployment due to the effect of the rental dates, May and October; research into methods of the elimination of waste—waste of material in manufacture and in construction, waste of time, labor, and effort in construction methods, waste of space and materials due to inefficient planning, all of which are elements of cost and subjects to be included in the studies of the comprehensive plan.

"To fulfill real needs, scientifically determined"—This is the problem of ascertaining what buildings are needed, where, and in what quantities. This is the crux of the problem of planned construction, of stabilization of the industry and of eliminating the worst phases of boom and depression, as well as avoiding the seasonal operations with their attendant unemployment. This type of planning has already been applied to buildings constructed through government funds—federal, state, county and municipal—the idea being that such buildings should be planned and ready for construction when the emergency of the slump in other building activities should make such action necessary. Further steps in this direction are now advocated with stress on the need of acquiring sites and arranging financing funds well in advance of the emergency. Some building projects that would aid in the present situation are not ready for actual construction because of the necessity of acquiring sites, although money has been appropriated.

Yet this rational determination of the needs for buildings is not an impossible task nor one that defies solution. The same methods that have been adopted by the telephone companies, for instance, can be effectively used in determining the needs for other classes of buildings—schools, hotels, office buildings, industrial buildings, residences, churches—in fact, the entire list. The study of existing needs and of future needs due to obsolescence, increase in population, and trends in demand is one of the essentials on which any plan, to be effective, must be based. The methods of study can be developed for uniformity in fact-finding and reporting by the appointed Working



Stadler, Courtesy, Regional Plan Assn.

A projected development to house 1000 families, which will become in effect a "city within a city." The development of such centers cannot be accomplished without a plan in which architect, builder, and financier entirely collaborate

Division and the research accomplished by the local organization under expert guidance.

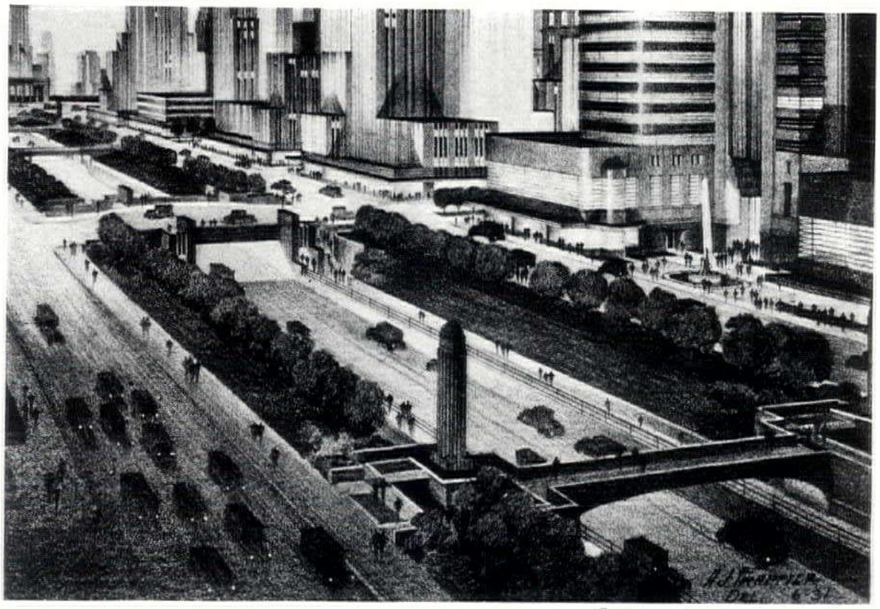
Active associations interested in particular types of buildings are already improving the technique of fact-finding and forecasting needs. The task of the industry collectively is to develop this type of research further, to correlate the results and to make them available to all involved. These results will be a guide to the financier as to the soundness of proposed projects, serving to curb the speculative tendency to build beyond needs (in the hope of "getting-out-from-under" quickly and at a profit), leaving the investor "holding the bag." The published results of the research will likewise be a guide to the manufacturer, making possible market analyses that will permit more accurate production schedules. And so on throughout the entire industry.

No amount of research incorporated in a plan for the building needs of a community will be effective unless there can be some control of those who would build, irrespective of the plan; those who would rely on their own judgment as to what was needed and where, no matter what the collective experts had found advisable. The "inalienable right" of the individual to organize, promote, and build for his own quick profit, regardless of social need or of the ultimate effect on the building and renting situation, will continue to be exercised and will result in structures poorly planned, shoddily built and excessive in number—until money is not easily available for such operations. And then there are the financial interests of the same ilk who can persuade the public, the small investors, to provide the capital for buildings that are uneconomic. Dealing with such a situation is difficult, yet it must be faced in the evolution of this plan for the industry. Only by governmental control or by enlisting, on the side of the plan, those in control of capital, can the uneconomic speculation be minimized.

The economics of building, especially of financing, are but imperfectly understood even by those engaged in this work. That the present system of financing is not the most effective that can be devised is fully realized. The plan for the industry will therefore include a thorough study in this field with these ends in view—lower financing costs, greater safety of principal (the planned program of building being itself a factor), a system of valuation and marketing to make real estate securities "liquid" instead of "frozen" assets, the creation of a central "reservoir" of funds for construction (similar to the Federal Reserve System), a more uniform and unified system of home-building financing based on long term credit in larger amounts in relation to the equity without "junior financing."

The molding of public opinion through organized publicity in favor of planned construction, soundly financed, is perhaps the only weapon in the present economic organization against the speculative builder of an undesirable type. There will still be plenty of opportunity for the profitable employment of individual initiative within the recommendations of the plan.

This brings us then from an analysis of the objective of the plan to the consideration of one of the prime requisites for its evolution and success, "industry-mindedness"—for want of a better term to express the attitude of mind that considers the whole rather than the narrow confines of a particular branch of building activity. One



An example of what planning may achieve. A sketch of the Chrystie - Forsythe development which, through the pressure of economics and the concerted effort of members of the building industry, is being created from intolerable slum conditions

Courtesy, Regional Plan Assn.

of the most important problems of the future coordinated industry is therefore that of the development of a group-consciousness or industry-consciousness in widely diversified types of mind and individual interest. The realization of the fact that each one is but a part of a large and complicated body is growing, and the plan for the industry must include steps to engender and continue the state of mind of coöperation.

This is being done, to a large extent, by organizations, local and national, such as the Building Congresses, where all branches of the industry meet on the ground of a common purpose.

The power of the press and its value in education and the creation of constructive opinion throughout the industry will not be overlooked in the educational and publicity program of the plan. The development of a consistent, continuous and constructive publicity in the trade and professional press, as well as in newspapers and general periodicals, must be a part of the plan. There has been much research of value which has never reached a fraction of its potential usefulness because it has not been brought to the attention of the industry as a whole but has been published for only a relatively small number.

The advisability of a collectively supported medium for the dissemination of news of the progress of the plan and of the results of research, for the information of all executives in all branches of the industry, should also be considered as a necessity.

A further task in education to be undertaken in connection with the industry's plan of publicity is that dealing with the public. The problem is that of educating the public to taking as much pride in their buildings as they do in their automobiles. Home building, one of the largest items in the national building budget, must continue to compete with luxuries for the consumer's dollars. An awakened public could aid the plan in demanding the replacing of slums with modern housing developments. Public support of the plan can be gained by popular publicity.

We have dealt with the objective; we have analyzed it and discussed its various phases and problems involved, indicating ways in which they can be met. We have also brought up the prime requisite and, in part, the means of providing it. As this is a preliminary plan, only the larger topics have been discussed, and those not in detail. The division of each item into its component parts, the preparation of the detailed studies to be made and the recommendations to be presented—this is the work of the Plan Board. The Plan Board will find many of the detailed problems of the plan are being worked out practically in a multitude of organizations, associations, conferences and committees, and this should contribute to the respective parts of the comprehensive plan, thus simplifying and expediting their work.

In welding together the forces of the industry under a definite plan, time is an important element. Immediate action can be effective. In allowing one year for the collapse of capitalism, Governor Norman may have been exaggerating the imminence of the danger, but he was not exaggerating the danger itself. It remains for the building industry, in many ways partially responsible for the sorry economic condition of the world, to be the first to move forward in a united effort to restore and maintain the bright economic condition toward which the world is, at present, only stumbling.

TO MAKE A PLAN EFFECTIVE—

That the architectural profession is alert to the need for immediate coöperative action in the building industry is signified by the nationwide response to the editorial on that subject in our July issue. The following paragraphs are but a few excerpts from the many letters received. Although not all agree on the nature of the industry's ills, there is unanimity in the belief that something must be done . . . at once!

BY

ROBERT D. KOHN
WILLIAM GREEN
RALPH W. YARDLEY
WILLIAM A. STARRETT
HUBERT G. RIPLEY
WIRT C. ROWLAND
CHARLES C. WILSON

A TEN-YEAR PLAN FOR ARCHITECTS

WE must strengthen the professional sense of the architects of the country; their sense of a service which they are to perform and which is to be perfected aesthetically and practically and broadened in its scope. The best professional service is to be at the call of every class of society. Strengthen also the architects' sense of the solidarity of the profession. Make it inclusive. Make it democratic. Get the professional organizations in touch with all those who practice architecture whether their standards are ours or not.

We must strengthen our coöperative sense and thereby help us to understand what motivates those other human beings who do other parts of this work of ours of building habitations for human activities. Widen our appreciation of the interrelation of function with function within our chosen field so that in the end we may become an understanding part of an integrated, efficient industry. This will happen when the centripetal forces within the building industry have mastered the centrifugal.

And the third step is to relate our functions to all other functions in a vital way. Thus far our plan looks towards a profession of architecture trying to realize its distinctive purpose as part of a larger industry purpose to which it is related functionally. But at the same time, we must relate this industry to all other necessary industries in a more vital way. The motive we set up for our work, a professional motive; to fulfill a vital need in a disinterested way, must replace for all industry the present "production for profit" motive. We must do our share to think out the ways by which this evolution is to come about.

The granaries of the United States are bursting with unsalable grain—and millions of people starve. The banks of our country are overflowing with unused, uninvested money, and yet millions of people live in miserable hovels and tenements, and architects and builders and masons and carpenters have nothing to do. The causes are the same. The fault lies in the basic motive for production. The larger interrelations, then, are to be built up so that we may begin to develop the medium through which we can get at what really are the needs of the world in which we live.

In our field of building design we have been producing as has the rest of the world. Few have asked "What do people need?" They have asked "What will people pay most for?" We do not even know how to go about finding out what is fundamentally needed.

A ten-year program for architects has to tie in with a ten-year program for everyone else. And all of it will have to tend toward functional integration in the interest of an intelligent control of production.

ROBERT D. KOHN
PRESIDENT, AMERICAN INSTITUTE OF ARCHITECTS
New York, N. Y.

ORDER AND LEADERSHIP

The building industry is basic and tremendously important. It touches so many other industries, consequently when it is active it supplies work for many millions of people and serves to stimulate activity in numerous other industrial enterprises.

Because of the importance of the building industry many people regard it as the barometer of industry. When the building industry is prosperous, all other industries are doing well. When it lags others lag. The country will move out of the unemployment depression in which it finds itself at the present time when the building industry becomes active. This industry more than any other will lead the way back to prosperity.

There needs to be a better and more orderly process in the origination of building construction and in the carrying forward of building enterprises. There are many questions connected in the building industry which are common and universal in their application. For this reason it seems that constructive thought could be focused upon not only the problems of industry but the objectives which are sought and which all hope to achieve. It would seem that standard ways and means could be adopted and some sort of an organization formed representative of architects, building employers, and managers, which would develop these standard processes so that building activity would not only be aroused but accelerated to the point where thousands of building tradesmen could be employed.

There should be active and constructive leadership made up of those best fitted and trained to lead. The building industry needs an organization representative of all groups associated with it so that order, orderly planning, and orderly process might be introduced into building construction and building planning.

WILLIAM GREEN
PRESIDENT, AMERICAN FEDERATION OF LABOR
Washington, D. C.

ANALYSIS AND FACTS

The editorial in the July issue of THE ARCHITECTURAL FORUM regarding the coöperation of the architectural profession in working out a solution for the relief of present conditions in the building industry is most opportune and timely. It is to be hoped that its purpose will be appreciated and that you receive their aid to the fullest extent in working out such a plan of concerted action. The answer to your last paragraph is most emphatically "Yes."

Architects *can* coöperate with others in establishing a plan for the profession and for the building trades. If necessary, they can gather the data to establish the facts as to existing building conditions including that as to the excess of some types, the lack of other needed types, and similar information which is necessary for the start of such a plan as you propose; although the securing of such data properly belongs to other professions and businesses. Architects seem to feel they should assume a "shrinking violet" pose. The fact is that as a class they are men who are broadly trained and extremely capable. They have to be, or they could not remain in the profession. If it is necessary that they become statisticians and economists, they can do so.

Abstractly speaking, any method of procedure which will be successful must be based on economic balance. Such economic balance must not only take care of present differences, but must include and provide for growth and development to at least as great an extent in each item considered as has occurred during a length of time in the past equal to that of the intended program.

The starting point is an analysis of the building situation with reference to meeting the economic needs of every community. The next consideration is the ability of the community to meet its building needs in the particular items in which it is lacking or the providing for the meeting of such needs if they have not been covered. These facts being known, the profession is in a position to coöperate with those directly interested in the construction operations involved and to work out and start a well-balanced building program spread over the proper length of time. Such procedure would not only result in resumption of activities but also would provide continuous development and progress for some years to come.

RALPH W. YARDLEY
ASSISTANT ARCHITECT, CHICAGO BOARD OF EDUCATION
Chicago, Ill.

PROTECT BY LEGISLATION

The answer to the whole question goes right to the roots of our economic system. Ruinous competition must be eliminated. Priority of investment must be vigorously protected by proper legislation to prevent the ruinous tearing down of competitors whose objective seems to be only the destruction of those who have succeeded in order that they themselves may succeed. Here we touch the archaic Sherman Anti-Trust Law and a lot of our archaic fallacies, the sum total of which is generally at the root of the present depression.

WILLIAM A. STARRETT
PRESIDENT, STARRETT BROS. & EKEN
New York, N. Y.

THE FINE ARTS COME FIRST

In the first place, I believe that architects should primarily devote their energies to perfecting themselves in knowledge of the Fine Arts.

I believe further, that it is incompatible with the highest standards of architectural practice, for architects to assume "organized leadership" in the building industry as it is conducted at the present day by "able minds in every branch." If they attempt it, they will get in a terrible jam, and forget all about the Nine Muses.

In this "present inactivity and freedom from business cares," an excellent opportunity is afforded for introspection, and the study of those branches of the Fine Arts, that, for the past decade, have been sadly neglected in the mad, mad pursuit of Mammon. Just look at what all this "focusing of construction thought," "coöperation," "stabilization," "integrating," etc., have done! Beauty, noble ideals, sincerity, all thrown in the discard. Architects, in whose veins courses a few precious drops of divine ichor, cannot work in a highly commercialized atmosphere. They need a spell of rarefied ether to breathe for a change, an opportunity to accomplish a little housecleaning.

Genius is given to but few, but we may all strive, at least, to keep the flame flickering, and when we learn to produce works of outstanding merit, "real leadership," which seldom goes for the asking, will come of its own accord.

HUBERT G. RIPLEY
ARCHITECT
Boston, Mass.

WHAT DO PEOPLE NEED?

While it should be the duty of every responsible person in the profession of architecture, first to think and then to coöperate in the present problem of building inactivity, the appeal, as it applies to me, serious as it may be, occasions a humorous situation.

I have been busy during the thirty years of my architectural experience in dressing the exterior of otherwise respectable buildings and hanging their interiors with more or less permanent decorations. Such an occupation precludes the expenditure of any real thought. Therefore the present dilemma would compel my perusal of a treatise aptly to be named "World Economics for the Infant Mind."

Like all practicing architects, I am now desperately seizing even the suspicion of a commission like the drowning man grasping at a straw. This without any thought as to actual need, a necessity, or the desirability for a building. Formerly, during the high period of business, the attitude of the architect was essentially the same, and without question as to anything but an immediate return. Buildings were promoted and built which now stand nearly or completely idle, yielding not enough income to pay their taxes. Building bonds are in default, and ruin and misery follow in the wake.

In the city where my lot is cast the business district is over-developed. Outside of its area large districts are either undeveloped or very badly developed. All is the result of a rabid optimism or a now devastating opportunism, and I do not believe my city to be an exception. The architect has been one of the foremost promoters with others.

Now, to pep up the building industry in the same manner as the automobile or other similar industries can result only in the same inflation and the same eventual catastrophe. In other words, by salesmanship and advertisement to sell people what they do not need because they are foolish enough to buy it, on easy payments or otherwise, cannot eventually be sound.

What buildings do people need? That must be the duty of the allied builders to find out, and they must base their operations accordingly. The architect alone cannot analyze the situation. It requires the close coöperation of real estate operators, bankers, contractors, material men, and— the buyers. The situation is now being analyzed in this city by a "Building Congress" and the results will depend upon such a coöperation, and the soundness of its policy.

I have been impressed by the needless expenditure and the mad waste of even ordinary building materials in the construction process, the lack of scientific adjustment which is applied to the manufacture of our automobiles. How long are people going to condone this fault? Things made for show and pride have been joyfully furnished by the architect, and when their real quality is discovered, what shall be his fate?

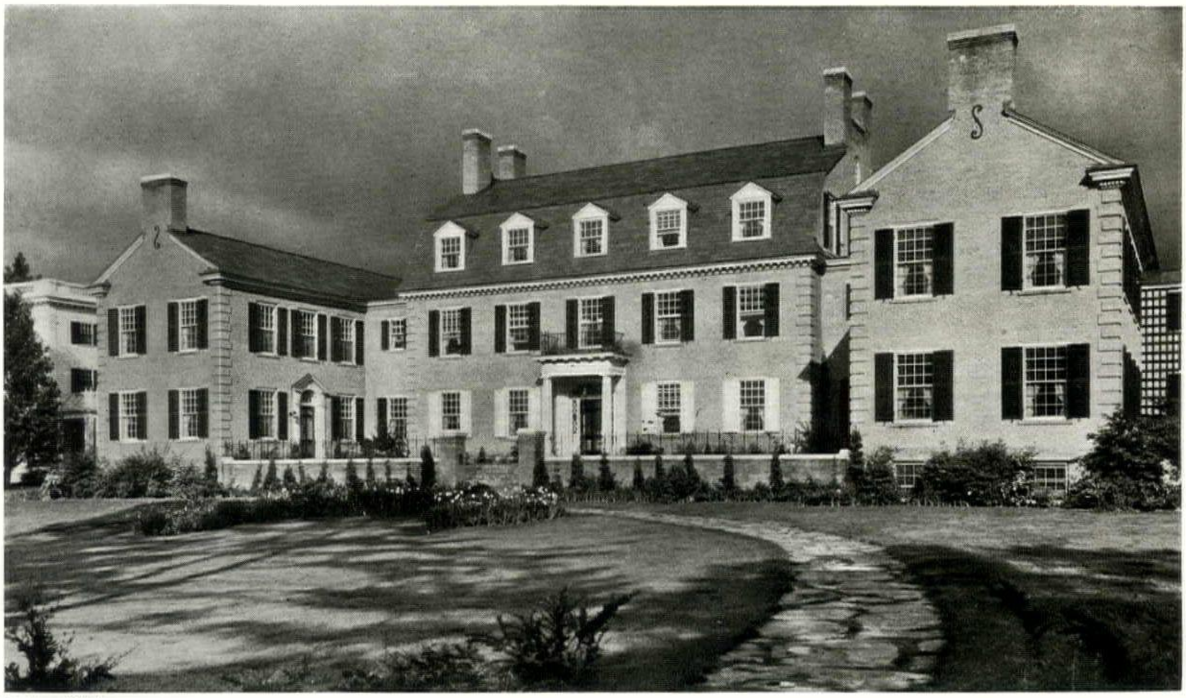
WIRT C. ROWLAND
ARCHITECT
Detroit, Mich.

FINANCING IS IMPERATIVE

The greatest drawback to building is the lack of mortgage financing. Even in normal times the smaller cities and towns have little access to the sources of such capital and financing is difficult, inadequate, and inordinately costly; today it is impossible.

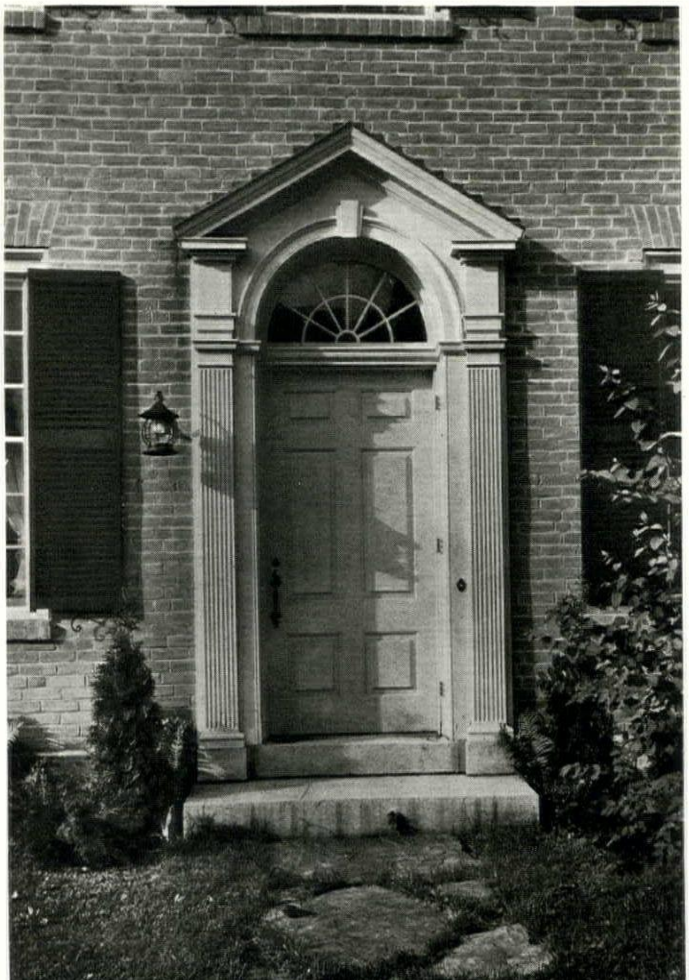
The whole building industry, including architects, realtors, contractors, manufacturers, and labor might unite on a nation-wide scale in the organization of a great mortgage banking house, to which every sound project, no matter where and no matter how small or how large, would have access. Against its accumulation of widely distributed and diversified first mortgages, such a bank could issue and insure its own bonds, which the public, the insurance companies, and the savings banks would absorb. . . . When the money is available under sound and reasonable conditions, the people will build.

CHARLES C. WILSON
ARCHITECT
Columbia, S. C.



Weber Photos

The walls are of water-struck brick, laid with a three-eighths of an inch weathered joint of natural colored mortar. The entrance trim, frames and window sash are of wood, painted a dulled white. The shutters match the trim in color, but the blinds are sage green. The roof is covered with a fading green slate in various shades. The terrace at the entrance is grass, with flagstone walks



DICK HALL'S HOUSE

HANOVER, NEW HAMPSHIRE

JENS FREDRICK LARSON

ARCHITECT

Weber

A corner of the living room, which serves also as a library. The floor is of rubber tile, colored to simulate Verde Antique marble. The woodwork is painted a dark blue-green, and the walls are covered with 12 x 24 in. oblongs of Japanese paper in slightly varying tones of warm tan. The ceiling has been tinted to harmonize with the woodwork, and is a very light blue-green

DICK HALL'S HOUSE

HANOVER, NEW HAMPSHIRE

JENS FREDRICK LARSON

ARCHITECT

Weber

The guest room. The character of this room is similar to that of the house mother's suite. The floor is of Verde Antique marbleized rubber tile; the woodwork is painted white, and the walls are covered with lacquered paper. All the interiors of the building have been finished and furnished to create a cheerful and homelike environment

DICK HALL'S HOUSE

HANOVER, NEW HAMPSHIRE

JENS FREDRICK LARSON

ARCHITECT

Weber Photos

The dining room. The natural lightness of the room has been intensified by light-colored wall paper and painted, cream-colored woodwork. For contrast the hangings are a red-spotted white muslin, and some of the moldings of the cornice have been striped with red. The floor is Verde Antique rubber tile

The entrance hall. The floor is rubber tile in alternate squares of gray and Verde Antique; the woodwork is painted blue green. The wallpaper has been heavily lacquered to preserve the colors, and the plaster of the wainscot below is covered with canvas

BAXTER HALL, JACKSONVILLE, ILLINOIS

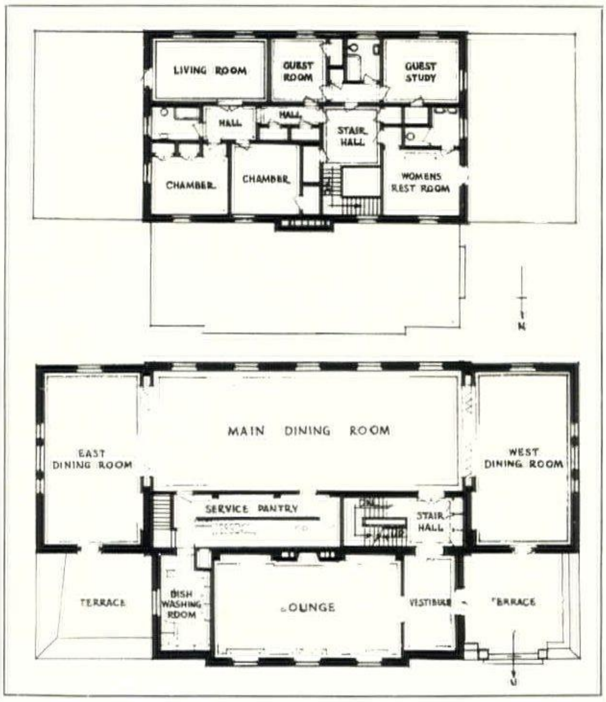
The building was planned primarily as a dining hall for the men students of Illinois College at Jacksonville, Ill., but provision has been made for its use as a social center upon occasion. In addition it contains a living suite for a resident manager and two guest rooms. It is of fireproof construction, the walls being of red sand-mould brick, laid in a light-colored mortar and faced on the interior with split furring tile and plaster. The foundations are concrete, the exposed parts being faced with limestone. Sills and belt courses are also limestone and the trim, cornice, windows and main entrance are white pine painted white. The flat roofs are laid with cement tile over composition roofing, and the pitched roof is insulated with gypsum tile and covered with black slate. The floors are terrazzo and cement to be finished with linoleum or mastic tile in the future. On the second floor they are of oak, laid in mastic. The building is heated by a vapor system, steam being supplied from a central heating plant. It was completed in 1930 and contains 133,972 cu. ft. The cost per cu. ft. was $.529, the total cost being $70,921.25

A DINING HALL AT ILLINOIS COLLEGE

DENISON B. HULL & STANLEY W. HAHN

ASSOCIATED ARCHITECTS

BAXTER HALL, ILLINOIS COLLEGE
JACKSONVILLE, ILL.
DENISON B. HULL & STANLEY W. HAHN
ASSOCIATED ARCHITECTS



The building is set on the edge of a small hill, allowing the entrance to the kitchen and store rooms from the lower level. The east and west dining rooms may be separated from the main dining room by folding partitions. The partition between the lounge and the dish-washing room has been sound-proofed and consists of 4 in. hard-burned hollow tile, a ½ in. layer of wood fiber insulation board covered with a facing of split furring tile, and plaster on both sides

BAXTER HALL, ILLINOIS COLLEGE

JACKSONVILLE, ILL.

DENISON B. HULL & STANLEY W. HAHN

ASSOCIATED ARCHITECTS

BAXTER HALL, ILLINOIS COLLEGE
JACKSONVILLE, ILL.
DENISON B. HULL & STANLEY W. HAHN
ASSOCIATED ARCHITECTS

The picture above is of the main dining room. The floor is terrazzo; the walls, ceiling and trim are painted. At the left is the mantel in the men's lounge. This room has a floor of smooth-troweled, brown cement, waxed and polished. The walls are plaster with a sand-float finish, painted a flat, gray green. The trim, cornice, chair rail, base and mantel are all painted a slightly darker tone of the same color. The facing and hearth of the fireplace are of polished Belgian Grande Antique marble; the lining and underfire are honed soapstone

Zubillaga

The central portion of the Seville National Palace

NEW CASTLES IN OLD SPAIN

BY

W. FRANCKLYN PARIS

A DISTINGUISHED Spanish psychologist, Salvator de Madariaga, in a brilliant analysis of the characteristics of three races—the English, the French and the Spanish—has advanced the hypothesis that the psychological center of gravity of each of these is placed respectively: for the English, in the body—will; for the French, in the intellect; for the Spanish, in the soul. His conclusion is that the natural reaction toward life in each of these peoples is: for the Englishman, action; for the Frenchman, thought; for the Spaniard, passion. Senor de Madariaga, expounding on this thesis, finds Spain the richest of the three nations in the raw material of art, for "in the beginning of art there is passion."

A visit to the Ibero-Americana Exposition now being held in Seville goes far to prove Senor de Madariaga's contention. To be sure, the exposition is not "international," but grouping as it does the Latin republics of South and Central America together with Cuba, Mexico, Portugal and Spain—to say nothing of the United States—it might well have assumed the characteristics of all world expositions, that is, diversity of expression, contrast, heterogeneity.

Instead, we find the various buildings all eloquent of the same spirit, touched with the same beauty, sprung from the same "passion." Spanish art, whatever its manifestation, is above all, Spanish. In Spain, art is a spontaneous and universal attitude. It is one of the most potent manifestations of popular life, influencing directly the house, dress, language, habits of living and of travel, ceremonies, religion. Because they are so "local," these constructions offer an interest absent from other architectural agglomerations of a similar character and leave behind a lasting memory, clearly and distinctly individualistic.

In contrast with the exposition at Barcelona, which is international, the exposition at Seville

The Palace of Fine Arts, also designed by Anibal Gonzales. It overlooks the Plaza d'America and is a permanent addition to Seville's public buildings

Spain Square. A tower at one end of the Seville National Palace, Anibal Gonzales, Architect. After the Exposition the Palace will be used for a university

is spiritual rather than materialistic. The commercial exhibits are in the background; the accrumation is the blood-fellowship of the American republics with the mother countries, Spain and Portugal. History and Art occupy a much larger space than Commerce and Agriculture. Possibly trade benefits may accrue to Seville and Spain as a result of the exposition, but what was aimed at was a rapprochement of the souls of the Latin republics of America with the soul of Spain, and apparently it has been achieved, for in the Mexican Pavilion may be read this inscription to "Madre Espana" (Mother Spain): "Because the Sun of your culture has bathed my soil and the lamp of your spirit enlightened my soul, today my lands and my heart both have blossomed."

The main buildings of the exposition are permanent constructions designed to be used for a Pan-American University and only in this manner could such imposing edifices have been incorporated. As a matter of fact, while Seville will lose several million dollars by reason of the exposition, she will gain a new bridge over the Guadalquivir, a new canal navigable to ships up to 13,000 tons, materially enlarging its port facilities, and a series of important buildings which

Bética

The building of the United States. It is a permanent structure, and will be used as the American Consulate. William Templeton Jones was the Architect

will render it possible to make Seville the greatest Spanish-American center of learning on earth.

The dominating structure of the exposition is the semi-circular edifice within whose arc is located the Plaza de Espana. It is four stories high, two hundred meters long and covers an area of 50,000 square meters. It is the work of the distinguished architect, Don Anibal Gonzalez, and while employing several elements of the baroque style, is close to a modernized Spanish Renaissance.

Two lofty towers rise to a height of 80 meters at extreme ends of the hemicycle and a noble arcaded gallery of brick, marble and brilliant polychrome tiles runs the length of the entire facade. A lazy canal bridged over by four ornate bridges, dedicated respectively to Castille, Leon, Aragon and Navarre, reflects the many arches of the colonnade and the pleasing details of the balustrade. A happy use is made of the ceramic tiles of Triana in this balustrade as well as in a series of forty-nine monumental benches disposed within the curve of the main gallery, fronting on the central fountain. Each one of these benches, dedicated to a different province of Spain, presents a ceramic pictorial representation of the most important event in the history of the province, and also in tile a map of the province.

The central patio of this very consequential monument is flanked with arches and columns arranged in graceful combination and allowing a perspective down the Avenue Isabel which invites comparison with any vista of Versailles or the Buen Retiro. The slender columns and their profusion reflect a Moorish influence, and bring a distant memory of the patios of the Alcazar and the Alhambra.

Next in importance, and also erected as a permanent addition to the public possessions of the municipality, are the buildings looking out on the Plaza de America—the Palace of Decorative Arts, the Palace of Fine Arts and the Royal Pavilion. All of these palaces are from plans and designs of Anibal Gonzalez. He demonstrated his versatility by utilizing the Gothic style for the Royal Pavilion, the Spanish Renaissance for the Palace of the Fine Arts, and the Mudejar-Moorish for the Palace of the Decorative Arts. Senor Gonzalez died a few days after the opening of the exposition, just as fame was about to descend upon him.

The Palace of Decorative Arts, while it attempts a modernization of the later Arab-Moorish style of the Mudejar period, is distinctly exotic in its aspect. There is, as in all architecture of this period, a profusion of Azulejos—or colored tile ornamentation—with brick, marble and gesso (low relief sculpture of plaster) entering into the composition, as its chief elements.

Zubillaga

THE NEW PAN-AMERICAN UNIVERSITY

A detail in the court of the Seville National Palace. It is the work of Anibal Gonzales, Architect, and in style is characterized as "modernized Spanish Renaissance," though the inclusion of an open interior court follows a well-established Spanish tradition. At the completion of the Exposition the building will become part of a Pan-American University

Carmona

The interior court of one of the provincial buildings. Most of these are not permanent structures, and will be torn down after the close of the Exposition

The Palace of Fine Arts is of white sandstone with pure classic lines that interpret Spanish Renaissance at its best. The delicately carved cornice, silhouetted against the blue sky, may shock the modernists who seem to be going in more and more for flat roofs and ornamented skylines, but it will gladden the eye and quicken the pulse of the classicists who consider ornament a necessary adjunct to architecture.

As for the Royal Pavilion, it is ornate Gothic in its superstructure, but of a chaste near-Renaissance style in its facade and lower story. The combination is a very happy one and the aspect of the building and of the Palace of the Fine Arts, with terraces, gardens, lagoons, pergolas and fountains in the middle distance is one never to be forgotten. Never in any world exposition has such good advantage been taken of gardens as a setting.

The contribution of the United States to the exposition consists of one permanent edifice, eventually to be used as the American Consulate, and two professional structures, one of these a motion picture house devoted exclusively to the showing of educational and industrial pictures.

The United States pavilions are from designs of William Templeton Jones, and while adequate in every respect, offer no particular interest. The eventual consulate is of Spanish-Colonial or Mission style, without ornament save in the framing of the window openings. The cinema building is more pretentious.

The pavilions of the American republics and Spanish provinces and colonies are divided into four groups and offer, here and there, original notes of very real interest. The Mexican building stands out in this respect. It is inspired by the ancient Maya and Nahoa architecture and derives many of its features from the ruins found at Zayi in Yucatan. It is the work of a young Mexican architect, Don Manuel Amabilis, whose design was selected in a prize competition.

The Argentine building is also the product of a newcomer, Don Noel Martin, who has daringly combined the baroque style and the Spanish-Colonial, designated as Vice-Royal, from the fact of its development in the countries ruled over by the Spanish Viceroys in the golden days of the conquistadores.

Peru is represented by a mongrel edifice incorporating Spanish and Neo-Peruvian elements in mésalliance, while Chile boasts an imposing citadel which cost three million pesos to erect.

The Brazilian pavilion is a massive structure of nondescript style, the work of the Brazilian architect, Don Pedro Paulo Bernardez.

The Venezuelan building has a noble entrance of perfect proportions due to the cooperation of

Senores Granda and Falla, and is one of the few structures in which the modernistic influence is apparent—like the United States and Portugal.

Cuba has erected a permanent building. In it are blended the Spanish baroque and the Spanish-Colonial styles, by the architects, Govantes and Cabarrocas.

Space is lacking in which to describe the seventy-four distinct constructions which constitute the exposition, but a word must be said of the small but very attractive buildings erected by some of the provinces of Spain. In nearly every case, the architects have sought to interpret the local spirit, the regional influence, the genius loci, and the result is highly gratifying to the student of racial characteristics.

A splendid building, the new Seville Casino, is an exposition building only incidentally, being intended as a permanent addition to the many attractions of Seville as a pleasure resort. This jewel of the Andalusian baroque style of architecture is the work of the famous Don Vincente Traver, and rivals the best work of this kind to be found in the play centers of the Riviera.

To others whose interest is either artistic or romantic, Seville did not need the exposition to make her more attractive. Not for nothing is the saying: "Quien no vio Seville no vio maravilla" (He that has not seen Seville has not seen a marvel). What the Sevillians think of their city, now the third in importance in Spain and during the time of Cortez and Pizarro, the very first, is exemplified in the popular saying "From Seville to heaven and once there, quickly to a window from which to gaze on Seville."

Every period in the art history of Spain has left monuments in Seville for the delight of the archaeologist, the artist or the architect. The Roman period is represented by vestiges of a wall or of an aqueduct, the Visigoth period by a number of columns and capitols, the Arab-Byzantine by fragments of sculpture, some of them utilized in the construction of the Alcazar and the unique tower of the Giralda.

The Giralda itself is the purest specimen extant of the Arab-Moorish architecture, while ogival art from the thirteenth to the sixteenth centuries is represented in a score of churches. The Seville Cathedral is a majestic example of the late flowering of this style in the fifteenth century. The city is also rich in examples of Mudejar art, the Alcazar being the bright particular jewel of this period. In Renaissance and Plateresque there are a dozen examples and in Baroque nearly a hundred.

The Seville Casino, designed by Vincente Traver, will not be torn down after the Exposition. It is intended as a permanent addition to Seville's pleasure resorts

CRAM—THE YANKEE MEDIAEVALIST

AN IMPRESSION OF THE SENIOR PARTNER OF CRAM AND FERGUSON, ARCHITECTS — ARTIST AUTHOR, LECTURER, ROMANTICIST, ACADEMICIAN, IDEALIST

BY

GEORGE H. ALLEN

Blank & Stoller

DR. RALPH ADAMS CRAM

". . . There are two kinds of genius. The fictitious kind starves in a garret; while the other does not starve himself into being one. Mr. Cram is a well-fed genius"

RALPH ADAMS CRAM is a phenomenon. He is a thoroughly apprised and morally sincere man who carries his intrepidity of conscience to so tense a degree that it becomes startling. He is not the aristocrat, but a pronounced Yankee, a homespun feudalist from Boston, with a mind convinced through training and environment. To him a gift of intellect is nothing more or less than that which is derived from hard work and application, endowing upon the acquisitor a divine right. He would not veer one iota from his dictums if it meant a sudden holocaust of all his beloved churches.

Cram, the son of a Congregational minister, is one of the few prominent architects that have come out of stern and ironbound New England, though he derives from the same genre as Andrew Carnegie, Henry Clay Frick and Walter Gifford. There was no recognized artistic ability in his family before him, but today he stands out in his profession—an aesthete who really can write.

He has run the gamut of scholastic art—from designing Gothic cathedrals to composing blank verse Arthurian drama. To his mind, one such drama—called "Excalibur," and practically unknown—is the best work that he has ever produced.

Educated at Exeter, Williams and Notre Dame, he wears a Phi Beta Kappa key, and has received the degrees of Doctor of Letters from Princeton and Doctor of Laws from Yale.

THE highly interesting career of Cram is a tale of application, dissemination and an enormous amount of fervor. At the age of 22 he was art critic for the *Boston Transcript.* H. H. Richardson was his greatest architectural inspiration at that time. He has always been interested in style, having been successively inspired by the Japanese, absorbed by English monastic work, enthusiastic about French Gothic, and, at a later date, influenced by Spanish. But he is broad-minded, and—of all things—has done remarkably successful modern work.

Today he is 67 but looks 50; his immediate canker is that he cannot smoke when he is eating or shaving, for he is an inveterate smoker and a pipe is his constant companion. He is clean-shaven, wears horn-rimmed glasses all the time, and is reported to be the first architect to wear them.

He is the "Abbott," as he is affectionately called, from his gaiters to forelock; confident, but in no sense vain; on the contrary Cram is quiet. His dress is unstudied—almost staid—and at times even careless. Clothes do not make this man but they are indicative of his nature.

Retiring, aloof, bookish, preoccupied, yet direct in action . . . he is almost naive, with a touch of the ascetic and a spark of quick, nervous humor.

HE worked for only one firm of architects, Rotch and Tilden of Boston, from 1881 to 1886. Since then he has been his own master. He keeps constantly in touch with his drafting room, and is acquainted practically with every detail, no matter how minute. He abominates being around any construction; designs in ¼ in. scale. When working on a design, he is constantly making thumb-nail perspectives around the edge of his paper. He delights in creating an impressive facade, always done with an HB pencil, and revels in beautiful massing. He is an extremely proficient draftsman and can visualize in three dimensions with little effort.

For many years, however, he has done little finished sketching. In the past he did much, his favorite mediums being water color and the pencil, the latter used on metallic paper.

Cram has tremendous enthusiasms. His hobby is writing; and his dissipation . . . writing. He also has a "platform complex," and his ability as an agile orator is amazing. A story goes that on one occasion he was delivering an address before a chapter of the Institute, members of which were visiting one of his churches then under construction. He delivered the address standing on an I-beam, and pointed out to the assembled architects that not a single ounce of steel was being used in any part of the whole building.

A former client once said: "Mr. Cram would much rather give a lecture on the structure he is building than inspect it on the job."

His stamina is remarkable, and vacations are a rarity with him. Twenty-five years ago he used to cough a great deal and thought he was going to die—he is still coughing, and now takes but fifteen minutes for lunch.

HE concentrates intensely on things that interest him, and he has been known to digest the contents of seven or eight books in one evening. He will uncover some fact concerning a church from a tome hundreds of years old, and find it a germ of inspiration for some beautiful detail in one of his edifices.

He loves to putter around in his garden, but has no pets. He has, however, one son and two daughters. An enormous drafting table stands in a very small, oak paneled office and at home—his library. His books and buildings are his breath of life.

Goodhue once said of him: "There are two kinds of genius. The fictitious kind starves in the garret; while the other does not starve himself into being one. Mr. Cram is a well-fed genius."

FROM "WHO'S WHO IN AMERICA"

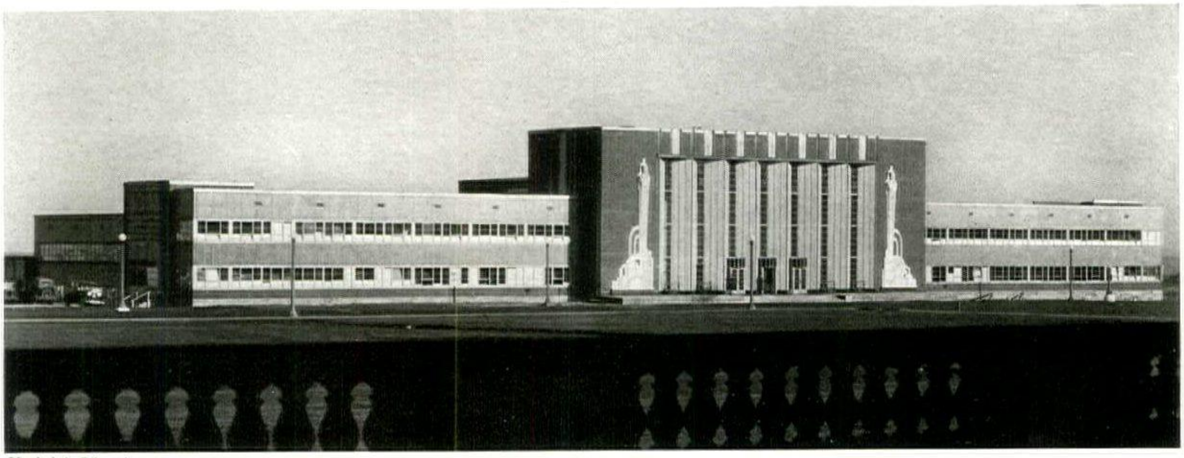
Ralph Adams Cram, architect, author; *b.* Hampton Falls, N. H., Dec. 16, 1863; son of Rev. William Augustine and Sarah Elizabeth (Blake) C.; ed. Augusta, Me., Westford, Mass., and Exeter, N. H.; Litt. D., Princeton, 1910; LL.D., Yale, 1915, Notre Dame, 1924; hon. Phi Beta Kappa, Harvard, 1921; *m.* New Bedford, Mass., Elizabeth Carrington, *d.* late Capt. Clement Carrington Read, C.S.A. of Va., Sept. 20, 1900; children: Mary Carrington (Mrs. Jerome C. Greene), Ralph Wentworth, Elizabeth Strudwick. Architect, since 1889; supervising architect, Princton U. Mem. Nat. Inst. Arts and Letters; ex-pres. Boston Soc. Architects; fellow Am. Academy Arts and Sciences, A.I.A., North British Acad. Art, Royal Geog. Soc. London; hon. corr. mem. Royal Inst. British Architects; A.N.A.; mem. Am. Federation of Arts, Archtl. Assn. London. *Club:* Century (New York). *Author:* The Decadent; Black Spirits and White; Church Building, 1901; The Ruined Abbeys of Great Britain, 1906; Impressions of Japanese Architecture and the Allied Arts, 1906; The Gothic Quest, 1907; Excalibur, 1908; The Ministry of Art, 1914; Heart of Europe, 1915; The Substance of Gothic, 1917; The Nemesis of Mediocrity, 1918; The Great Thousand Years, 1918; The Sins of the Fathers, 1919; Walled Towns, 1919; Gold, Frankincense and Myrrh, 1919; Towards the Great Peace, 1922.

THE ADMINISTRATION BUILDING

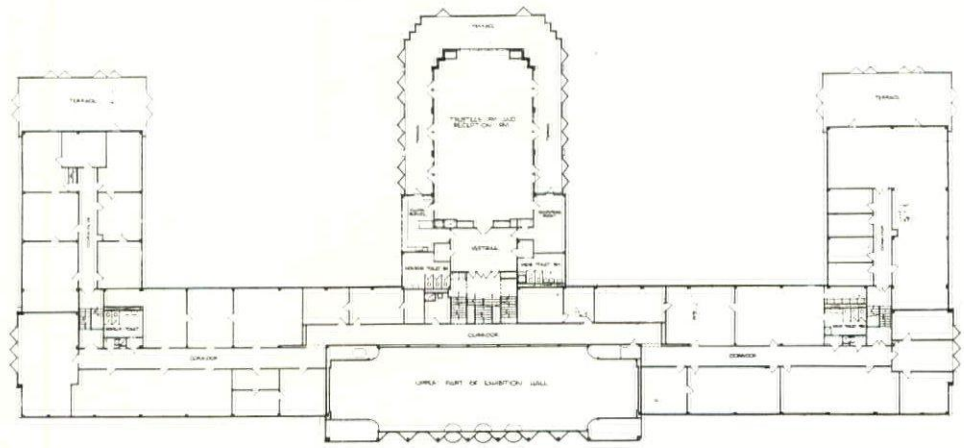
E. H. BENNETT, H. BURNHAM AND J. A. HOLABIRD
ARCHITECTS

This is the first building to be completed for the "Century of Progress" Exposition, which will be opened to the public in 1933. It occupies a commanding position in the plan of the Exposition Group and some idea of the importance of its location may be gained from the picture above, taken from the Field Museum. The building itself embodies many unique features of plan, construction, and equipment, which are discussed on page 213 through page 216 of this issue. Many of the Exposition buildings now in the process of erection will have an important influence on future design and methods of construction. As they are completed, they will be shown and their unique features fully explained in future issues of *The Architectural Forum*

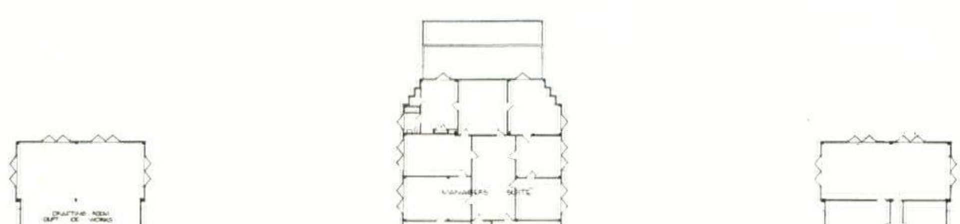
A CENTURY OF PROGRESS EXPOSITION
CHICAGO, ILLINOIS



Hedrich-Blessing



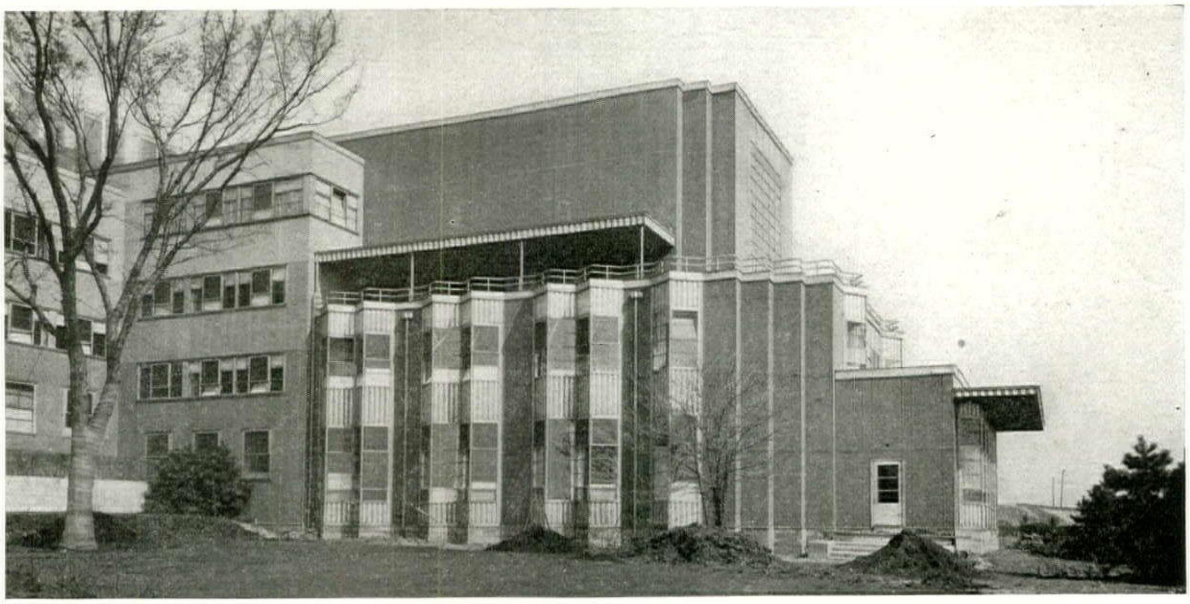
SECOND FLOOR PLAN



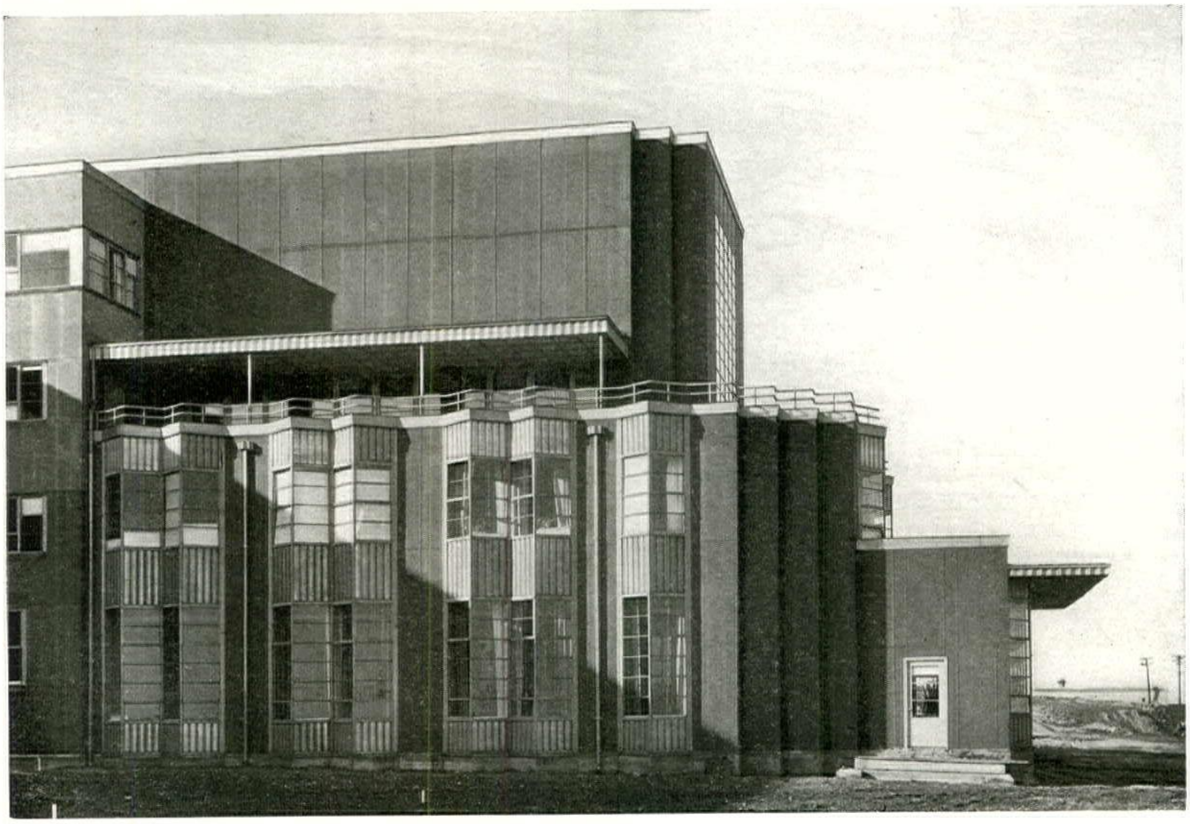
FIRST FLOOR PLAN

The central portion of the main facade of the building which faces Leif Eriksen Drive. This portion, which contains the entrance lobby or exhibition hall and the Trustees' Room, is defined in white, the wings on either side being a midnight blue. In the striking color scheme white was chosen to accent the entrance, and the dark blue was selected to help "eliminate glare from direct and reflected sunlight." The decorative features of the building are emphasized in a lighter blue, except for the V-shaped piers of the main entrance, which are a light gray, emphasizing their depth while preserving the general light tone of the central block. Ornamental metal is of aluminum, and red is used sparingly to offset a possible monotony of the other colors. The window trimmings are royal blue and silver

THE ADMINISTRATION BUILDING
A CENTURY OF PROGRESS EXPOSITION
CHICAGO, ILLINOIS
E. H. BENNETT, H. BURNHAM AND J. A. HOLABIRD
ARCHITECTS



The office portion of the building from the
side facing the lagoon and Lake Michigan



Hedrich-Blessing

THE ADMINISTRATION BUILDING
A CENTURY OF PROGRESS EXPOSITION
CHICAGO, ILLINOIS
E. H. BENNETT, H. BURNHAM AND J. A. HOLABIRD
ARCHITECTS

Hedrich-Blessing

THE ADMINISTRATION BUILDING
A CENTURY OF PROGRESS EXPOSITION
CHICAGO, ILLINOIS
E. H. BENNETT, H. BURNHAM AND J. A. HOLABIRD
ARCHITECTS

The exhibition hall, or entrance lobby. A model of the completed Administration Building is shown in the foreground, the others being the Transportation Building and the Electrical Group, respectively. Note how the simplicity of the room helps to focus attention on the exhibits

THE ADMINISTRATION BUILDING
A CENTURY OF PROGRESS EXPOSITION
CHICAGO, ILLINOIS
E. H. BENNETT, H. BURNHAM AND J. A. HOLABIRD
ARCHITECTS

Hedrich-Blessing

The exhibition hall or entrance lobby looking toward the main entrance doors. The floor is of polished black rubber. The walls are covered with a warm gray fabric and the ceiling is a deep plum color. The piers at either end of the room are of polished aluminum, as are the cornice strips and the entrance door enclosures

THE ADMINISTRATION BUILDING
A CENTURY OF PROGRESS EXPOSITION
CHICAGO, ILLINOIS
E. H. BENNETT, H. BURNHAM AND J. A. HOLABIRD
ARCHITECTS

Hornby & Freiberg

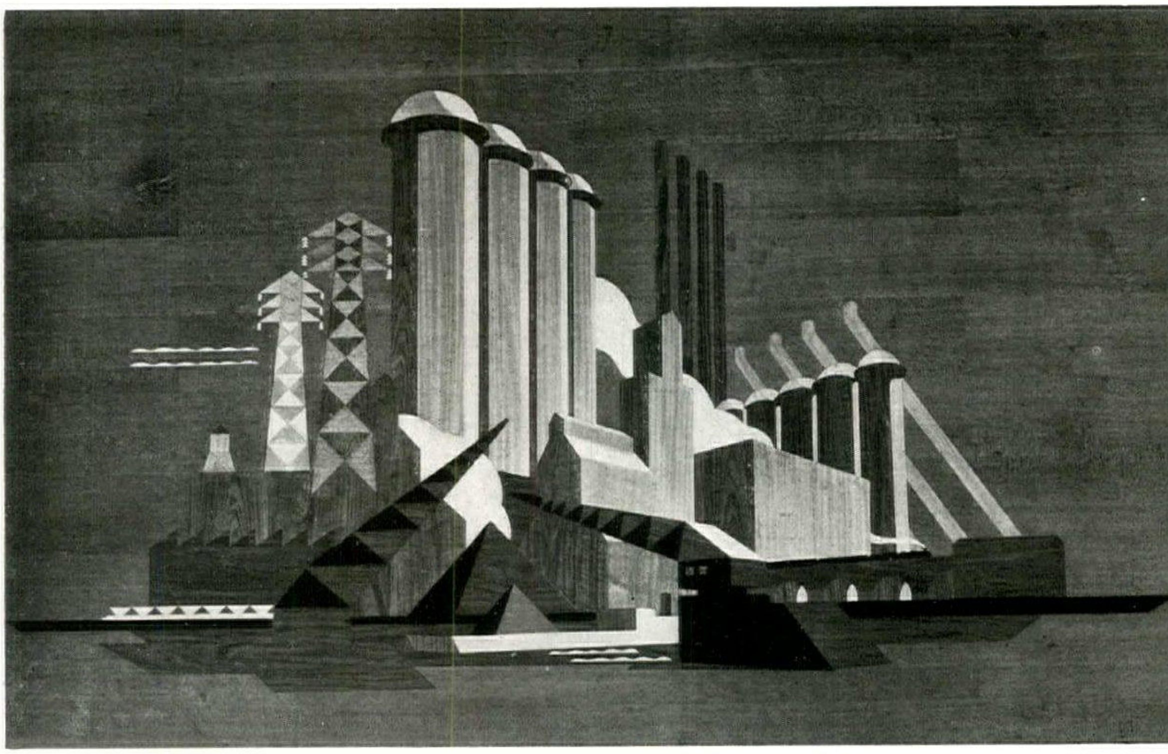
Hedrich-Blessing

The Trustees' Room has been treated in the utmost simplicity of form and its effectiveness is dependent upon the richness of color, materials, and lighting. Above is a general view of the room; on the opposite page is a view toward the entrance. The floor is of wood blocks in a tile pattern, and the walls and part of the ceiling are covered with a veneer of Australian lacewood, snuff brown in color, which appears dull gold under the red-orange lights. The central portion of the ceiling is purple; and the recessed panel at the entrance is covered with gold leaf. The designs in the center of the two large wall surfaces are executed in a mosaic of wood veneer. The picture at the left is of one of the entrance doors in the first floor exhibition hall

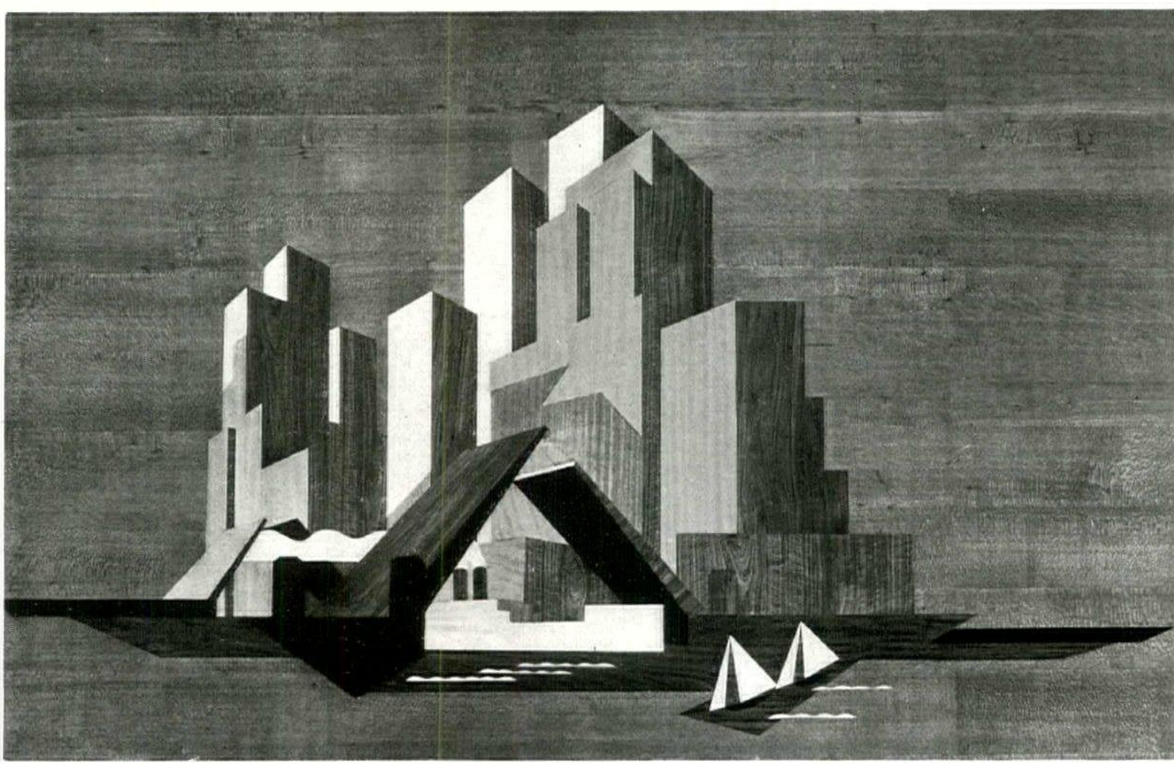
THE ADMINISTRATION BUILDING
A CENTURY OF PROGRESS EXPOSITION
CHICAGO, ILLINOIS
E. H. BENNETT, H. BURNHAM AND J. A. HOLABIRD
ARCHITECTS

Hedrich-Blessing

THE ADMINISTRATION BUILDING
A CENTURY OF PROGRESS EXPOSITION
CHICAGO, ILLINOIS
E. H. BENNETT, H. BURNHAM AND J. A. HOLABIRD
ARCHITECTS



Hedrich Blessing Photos



THE ADMINISTRATION BUILDING
A CENTURY OF PROGRESS EXPOSITION
CHICAGO, ILLINOIS
E. H. BENNETT, H. BURNHAM AND J. A. HOLABIRD
ARCHITECTS

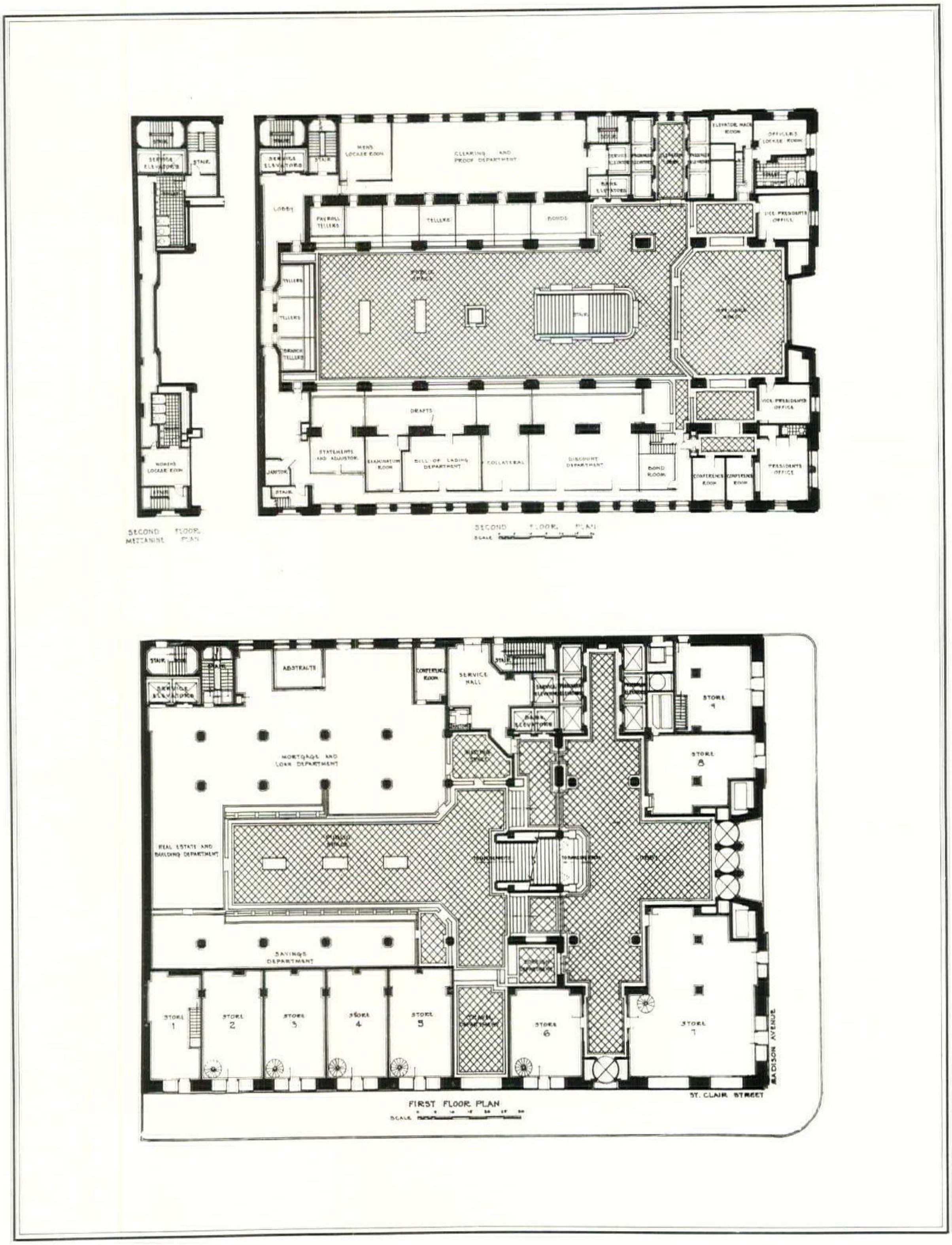
Hance

The entire exterior of the building is faced with Indiana limestone except the first story street fronts, which are faced with black Wisconsin granite. Metal at the entrances and stores is bronze

THE OHIO BANK BUILDING

TOLEDO, OHIO

MILLS, RHINES, BELLMAN & NORDHOFF, ARCHITECTS



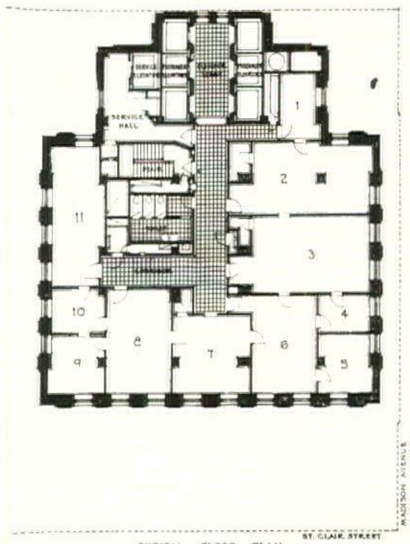
THE OHIO BANK BUILDING
TOLEDO, OHIO
MILLS, RHINES, BELLMAN & NORDHOFF
ARCHITECTS

The building is 30 stories high including the basement and sub-basement, the tower roof being 365 ft. above the sidewalk. Of the gross floor area of 355,600 sq. ft., the bank occupies 122,859 sq. ft. and the other tenants 135,451 sq. ft.

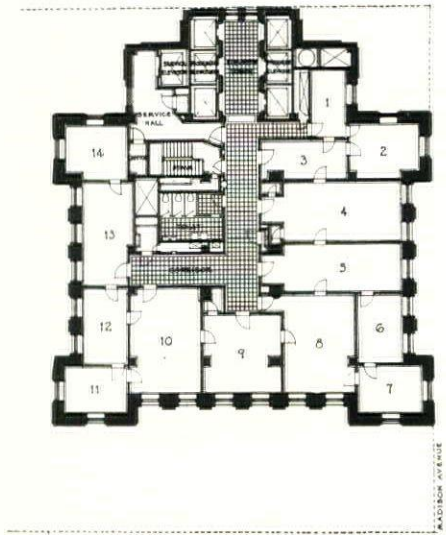
Hance

The main entrance on Madison Avenue. The materials, the simplicity of line and detail, and the solidity of the structure in general are intended to suggest the strength of the banking institution which the building houses

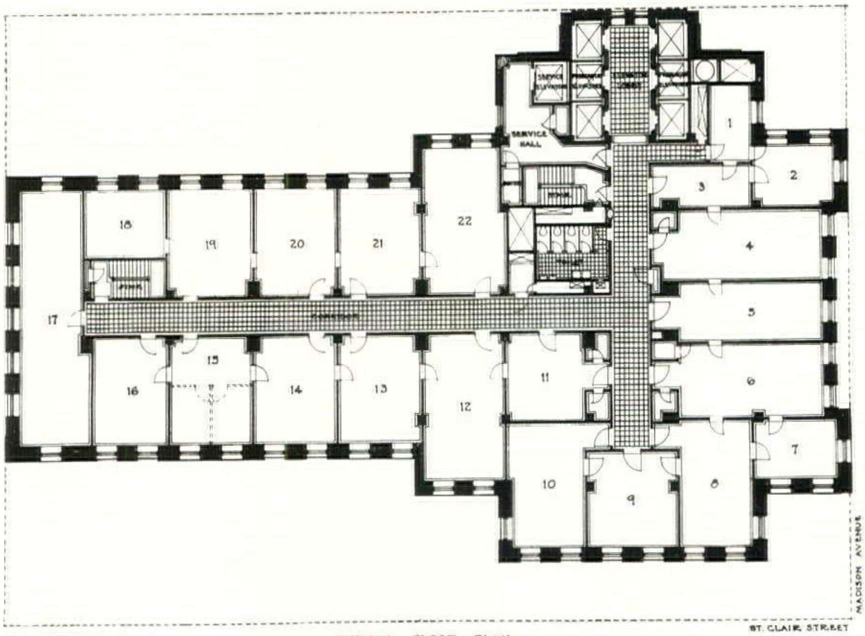
THE OHIO BANK BUILDING
TOLEDO, OHIO
MILLS, RHINES, BELLMAN & NORDHOFF
ARCHITECTS



TYPICAL FLOOR PLAN
TWENTY-SECOND AND TWENTY-THIRD FLOORS



TYPICAL FLOOR PLAN
EIGHTEENTH TO TWENTY-FIRST FLOORS INCLUSIVE



TYPICAL FLOOR PLAN
EIGHTH TO SIXTEENTH FLOORS INCLUSIVE

THE OHIO BANK BUILDING
TOLEDO, OHIO
MILLS, RHINES, BELLMAN & NORDHOFF
ARCHITECTS

For flexibility in planning offices, the floor and ceiling areas on all office floors were finished in terrazzo and plaster, respectively, before partitions were erected. Elevator lobby and corridor walls are faced with Italian Cremo marble

Hance

The main banking room, extending through three stories to a height of 42 ft., has a travertine floor, walls of the same material, and a plaster ceiling decorated in gold and bright colors. The bases and balustrades are of dark Levanto marble

THE OHIO BANK BUILDING
TOLEDO, OHIO
MILLS, RHINES, BELLMAN & NORDHOFF
ARCHITECTS

The building lobby has a floor of travertine in two tones and walls of Sienna travertine. The ceiling is plaster, decorated in bright colors. The stair leads to the main banking room

Hance Photos

The directors' room, located on the 4th floor, has a carpeted floor, walls paneled in walnut, and a ceiling of plaster. Concealed cast iron radiators are located beneath the windows

Graham Studio

HOUSE OF EUGENE MILES, ESQ.
CLEVELAND, OHIO

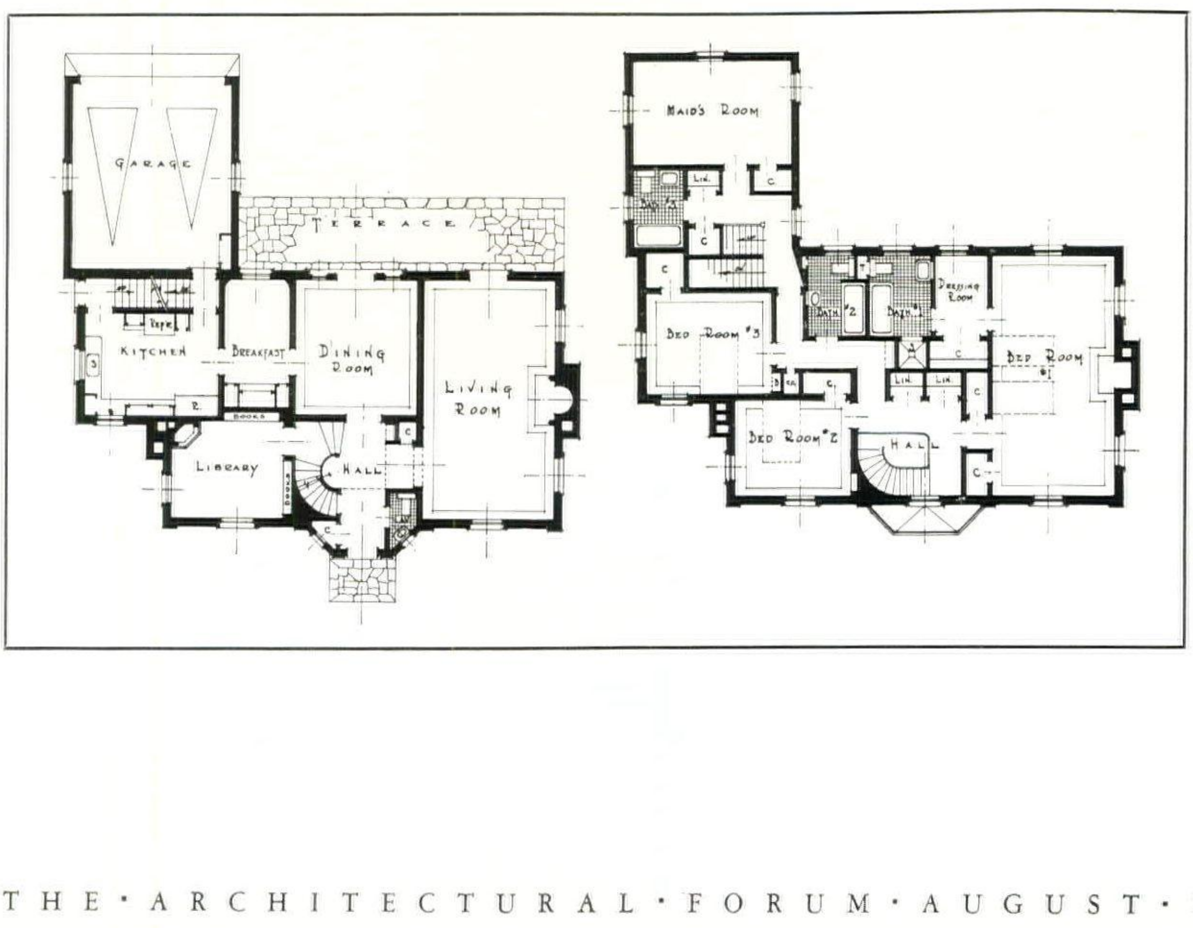
The house, completed in 1930, was built for an artist who has collected many authentic European objects of art. The simplicity of its design constitutes an admirable background for the collection, parts of which, the fireplace tiles, for example, have been built into the house. In construction the house is of the usual type of wood frame, the walls being veneered with 4 in. sand-mold brick. The horizontal joints below the belt course are raked out and the wall painted with white cement paint. The roof is black slate, the railing and grilles are of hand-wrought iron, and the shutters are of wood, painted gray. The house contains 41,580 cu. ft. and was completed at a cost of approximately $25,000. Heating is from a steam vapor system supplied by a gas-fired boiler

AN ARTIST'S RESIDENCE IN OHIO

JOHN SHERWOOD KELLY, ARCHITECT

Graham Studio

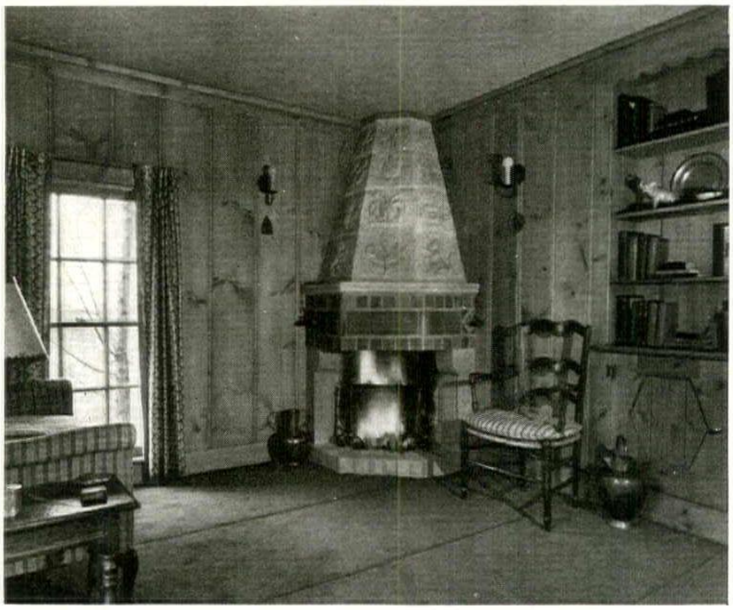
The living room. The walls are of sand-finish plaster, textured with a wet brush before the plaster had entirely set. The cornice and ceiling are painted plaster, the latter having a slightly uneven but smooth surface. The fireplace was modeled in wet cement, and the tiles are from Belgium, being typical of 15th century work. The picture on the opposite page is of the stair hall looking from the entrance vestibule. The floor of the hall is black and gray marble, the stair treads are stained black, the risers are white, and the hand-rail is wrought iron. The plaster of the walls and ceilings in both hall and vestibule is slightly modeled



Graham Studio

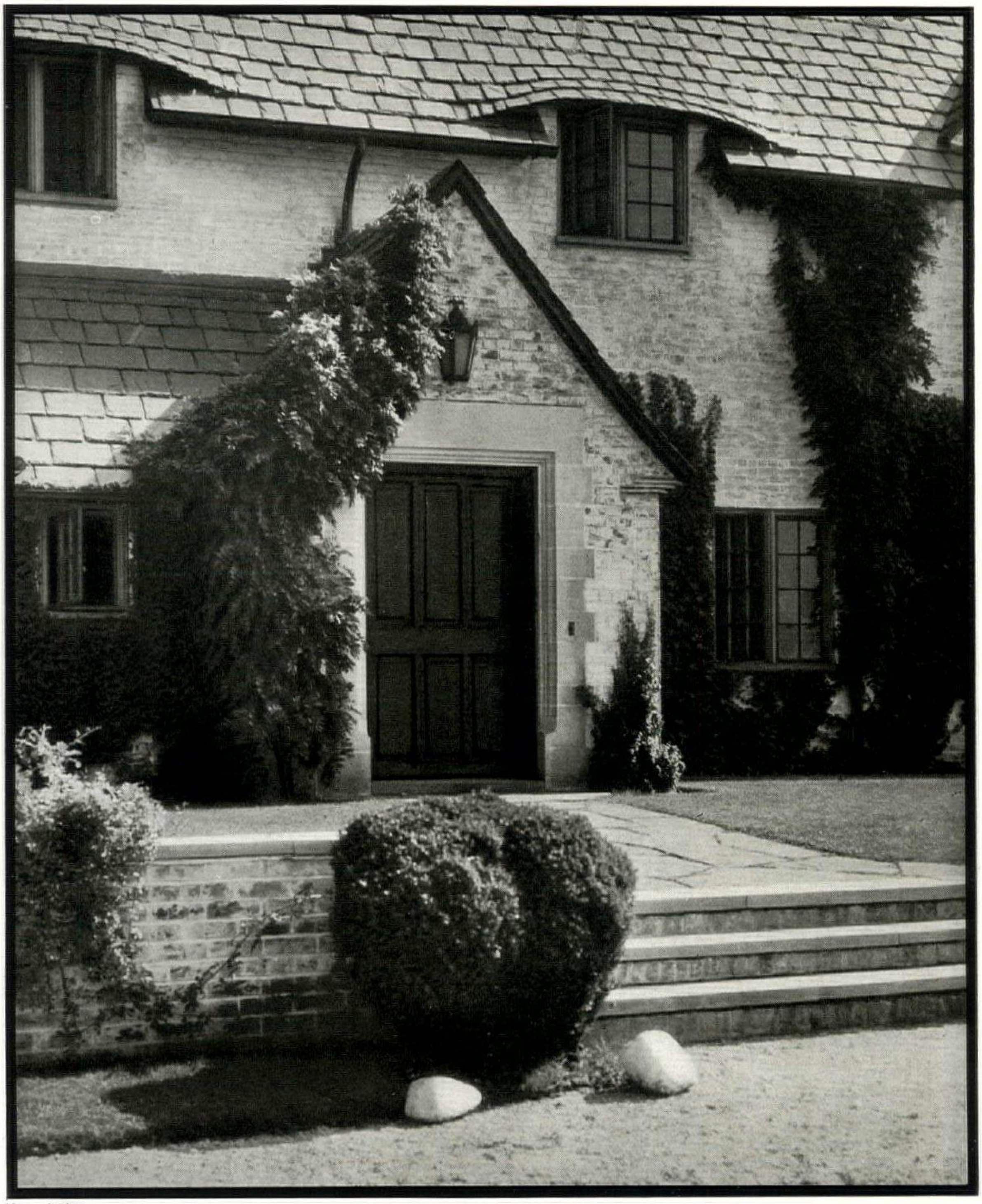
HOUSE OF EUGENE MILES, ESQ.
CLEVELAND, OHIO
JOHN SHERWOOD KELLY, ARCHITECT

Graham Studio Photos



Above is the basement recreation room. It has a cement floor, brick walls painted white, and a blue, sand-finish plaster ceiling. At the left is the fireplace corner of the library. This room is paneled in knotty pine, stained a light gray-brown. The ceiling is plaster, painted a robin's egg blue over-glazed with brown. The fireplace contains 15th century Belgian tiles, the hood being of cement, modeled while wet

HOUSE OF EUGENE MILES, ESQ.
CLEVELAND, OHIO
JOHN SHERWOOD KELLY, ARCHITECT



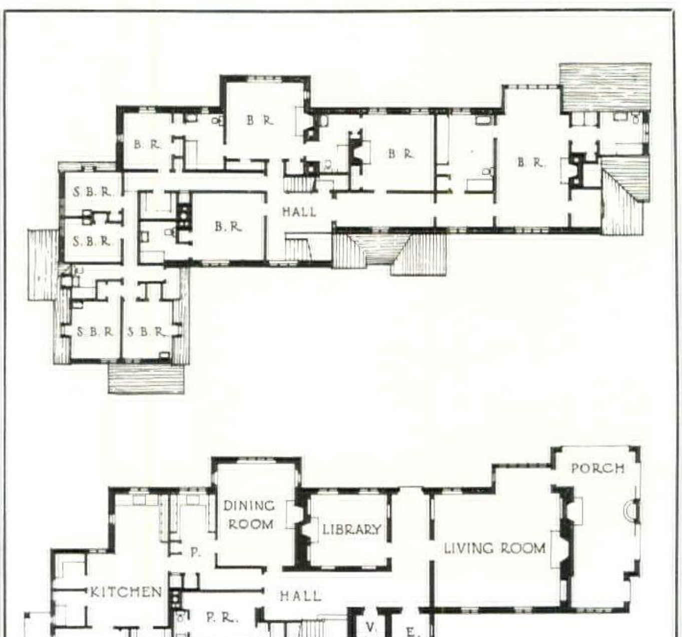
Van Anda

The residence of Henry E. Coe, Jr., is located in Syosset, Long Island, N. Y., and is placed on the crest of a slight elevation that overlooks Long Island Sound. The entrance faces north, giving all the main rooms of the house a southern exposure

A COUNTRY HOUSE ON LONG ISLAND

ROGER H. BULLARD, ARCHITECT

Van Anda



The house, which contains 113,000 cu. ft., is of masonry exterior construction, the interior partitions being non-bearing. The exterior is faced with brick laid in slightly irregular courses and painted white; all of the exterior woodwork is stained oak, and the main entrance is framed in limestone. The roof is of dark gray slate and has been laid evenly to emphasize the horizontal lines of the house. The house is heated with a vapor system, the radiators in the master's portion being concealed. The picture on the opposite page is of the service wing and entrance terrace, which is formed by a painted brick retaining wall capped with stone

Van Anda

HOUSE OF HENRY E. COE, JR.
SYOSSET, LONG ISLAND, N. Y.
ROGER H. BULLARD, ARCHITECT

Van Anda Photos

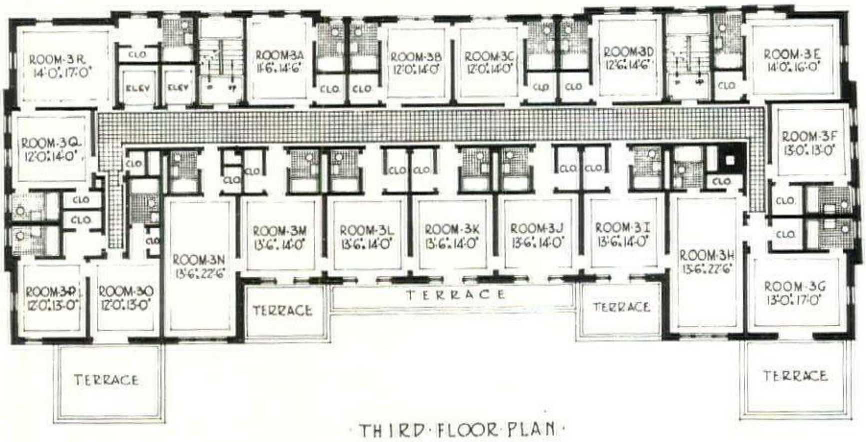
The library, shown at the left, has plaster walls and ceiling and wood trim. The walls, trim, and book cases are painted a warm gray; the ceiling is a light cream. Below is the west side of the living room. The floor is of wide oak planks, stained dark, and covered almost entirely by a carpet. The woodwork is also oak, and the ceiling is plaster with smooth-textured surface

Nyholm & Lincoln

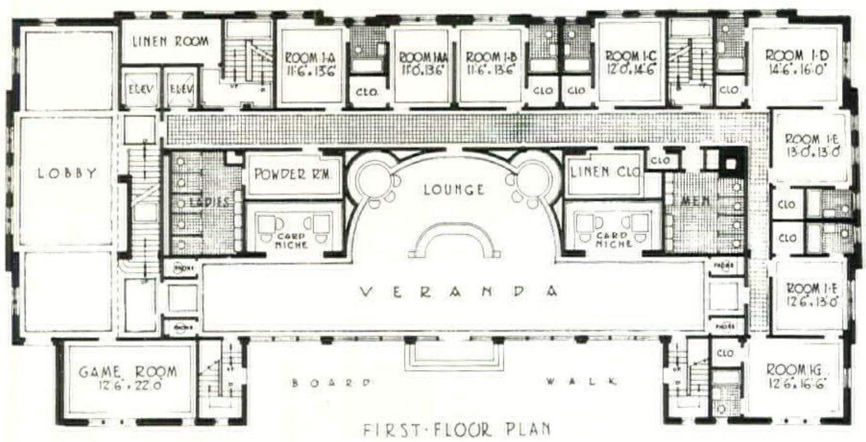
ATLANTIC BEACH CLUB

ATLANTIC BEACH, LONG ISLAND, N. Y.

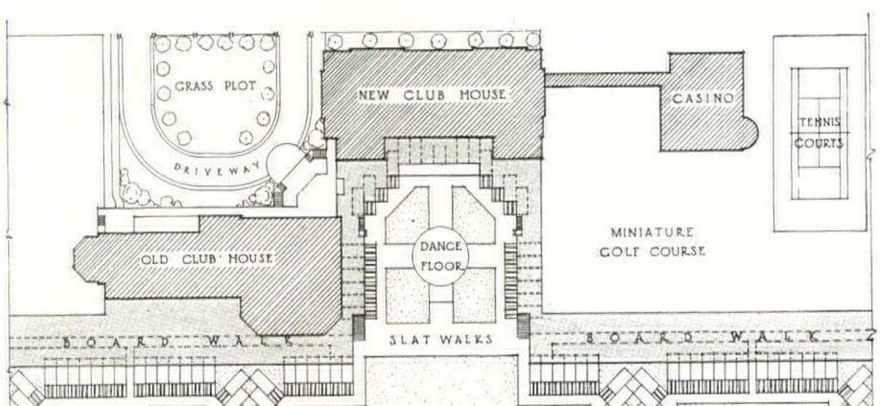
JOSEPH URBAN, ARCHITECT



THIRD·FLOOR·PLAN·



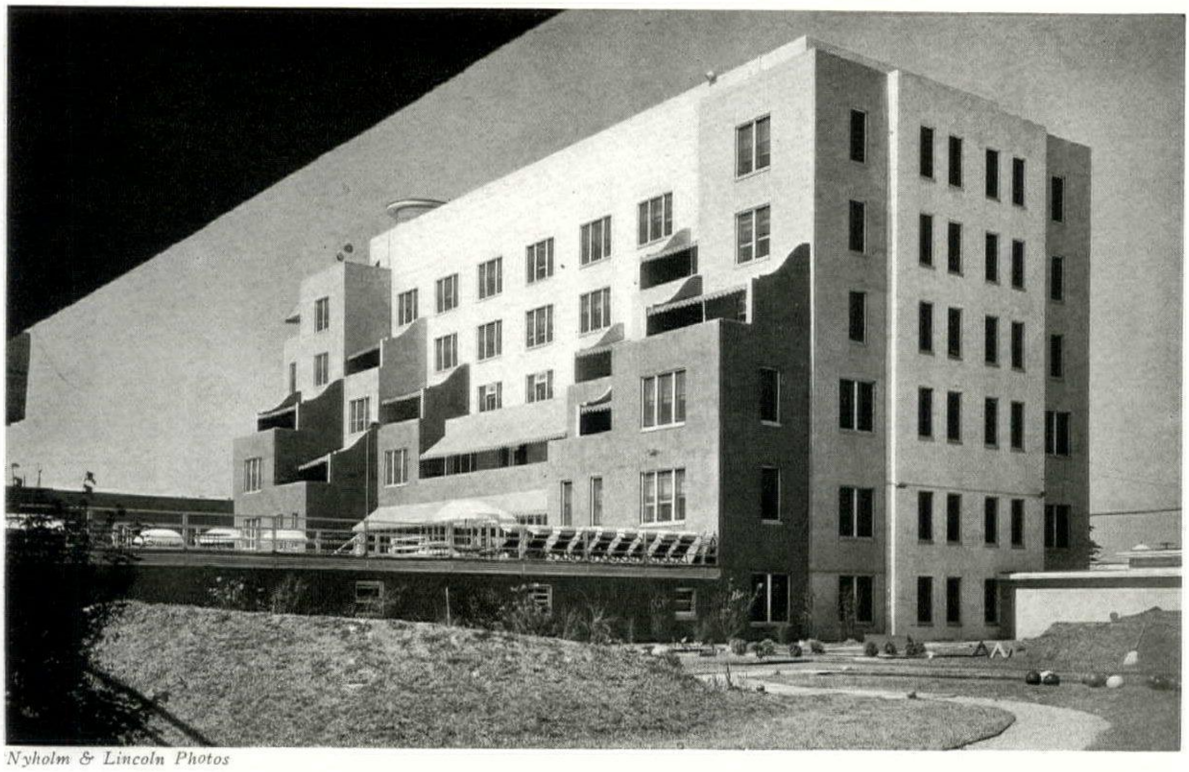
FIRST·FLOOR·PLAN



ATLANTIC BEACH CLUB

ATLANTIC BEACH, LONG ISLAND, N. Y.

JOSEPH URBAN, ARCHITECT



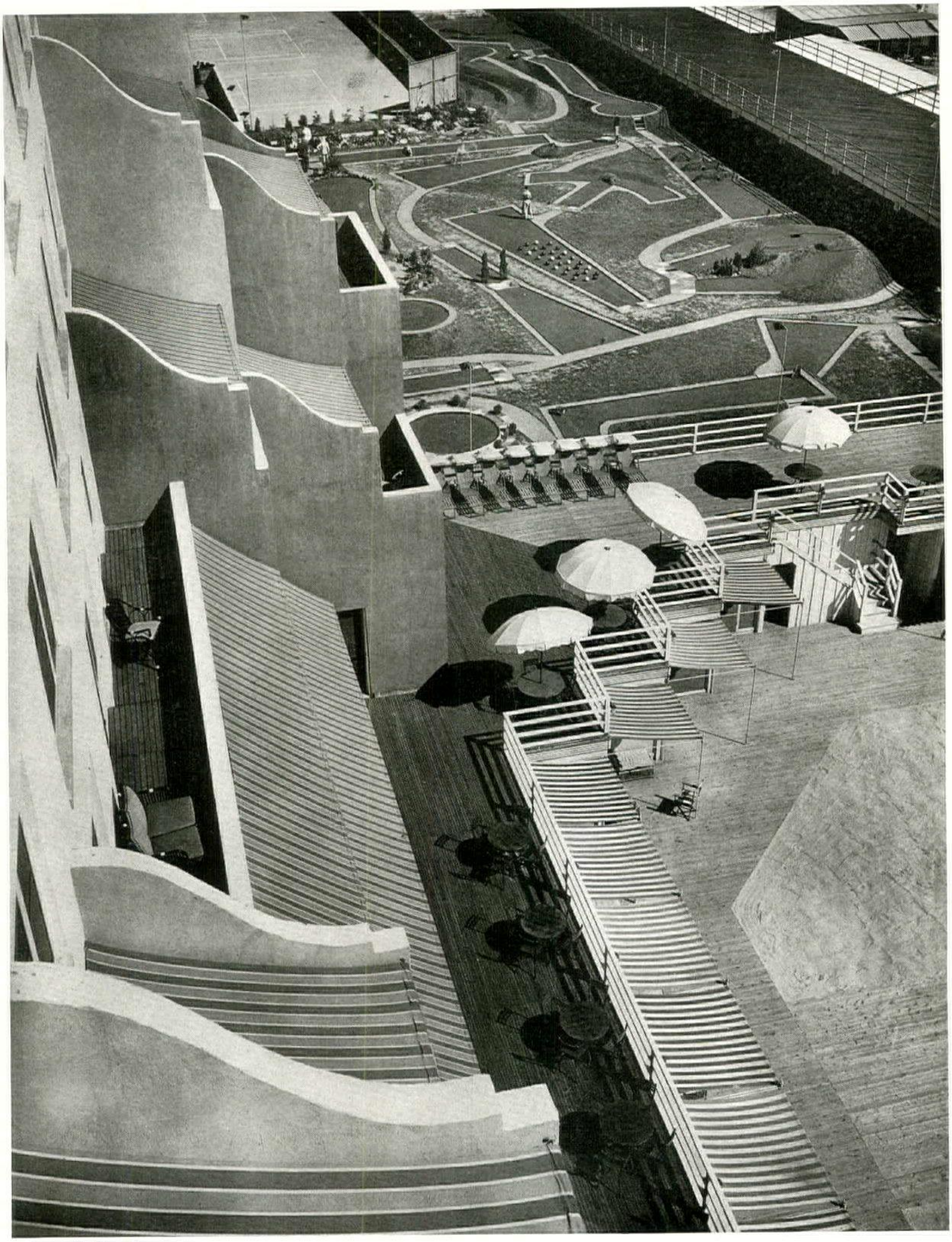
Nyholm & Lincoln Photos

The building is of solid masonry, stuccoed in white, a strong ochre, and brick red, the latter color being confined to the terraces of the ocean front and parts of the entrance, shown at the right. The terraces opening from the rooms on the second, third and fourth floors have been arranged to provide an unrestricted vista of the ocean, and are fitted with awnings, striped in red, yellow and white

ATLANTIC BEACH CLUB

ATLANTIC BEACH, LONG ISLAND, N. Y.

JOSEPH URBAN, ARCHITECT



Nyholm & Lincoln

ATLANTIC BEACH CLUB

ATLANTIC BEACH, LONG ISLAND, N. Y.

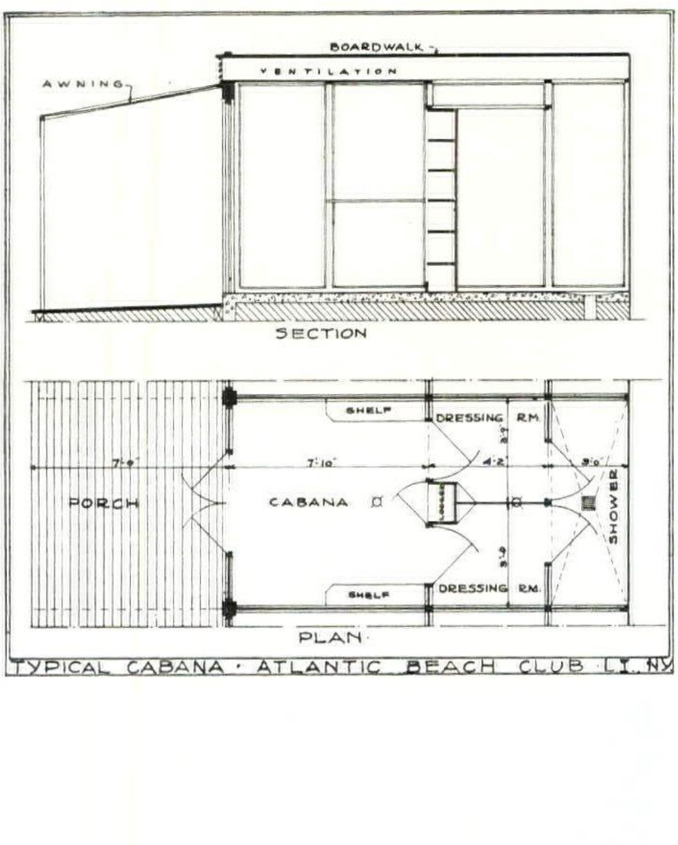
JOSEPH URBAN, ARCHITECT

Nyholm & Lincoln

ATLANTIC BEACH CLUB
ATLANTIC BEACH, LONG ISLAND, N. Y.
JOSEPH URBAN, ARCHITECT

Nyholm & Lincoln

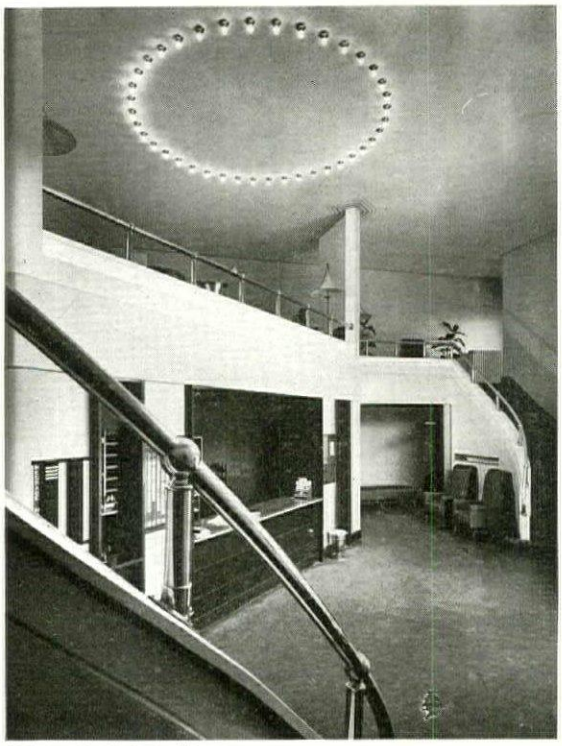
A general view of the ocean front, showing the location of the cabanas. The picture on the opposite page gives a clear idea of the board and slat walks, shown in the plot plan on page 158. The boardwalk serves as the roof of the cabanas, shown below, which are ventilated through a continuous grille just below the boardwalk railing. The railings are painted white, and the umbrellas are a cerulean blue



The cabanas are in effect private beach houses and may be reached from the club by a passage under the boardwalk. They are made of ½ in. thick asbestos board, stiffened by 3 x 3 in. posts, and are painted in vivid colors. The various cabanas are cerulean blue, each cabana having a distinctive basic color with moldings and awnings accented by contrasting colors. The furniture of each cabana is painted the same color, so that identification is made easy

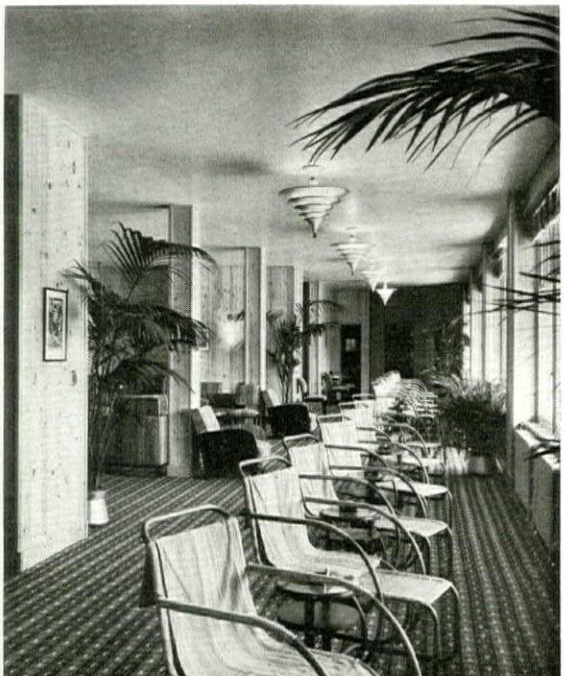
Nyholm & Lincoln

ATLANTIC BEACH CLUB
ATLANTIC BEACH, LONG ISLAND, N. Y.
JOSEPH URBAN, ARCHITECT



Nyholm & Lincoln Photos

At the left is a view of the lobby from the mezzanine. The walls and ceilings are in varying tones of yellow and white; the woodwork and furniture are black; the upholstery is a deep ultramarine blue. Below at the left is the reading room, with walls of plaster painted in black, carmine, and white. The ceiling is white, as are the edges of the screen, made of dressed 2 x 4's. Upholstery is carmine, and the carpet is patterned in a predominating red. Below at the right is the veranda. The walls and columns are faced with V-cut knotty pine of a natural color, and the ceiling is of painted white plaster. The upholstery of the chairs is straw color, and the carpet has a predominating tone of yellow-brown. The doors and furniture are black



ATLANTIC BEACH CLUB

ATLANTIC BEACH, LONG ISLAND, N. Y.

JOSEPH URBAN, ARCHITECT

THE EDITOR'S FORUM

UNIFICATION

ONE step toward a plan for bettering conditions within the building industry has been taken by the A.I.A. (Perhaps forceful strides is a better characterization than one step.) The need for the unification of the architectural profession was expressed in the resolution adopted by the Convention of the A.I.A. in San Antonio last April. The Committee of the Institute, of which Edwin Bergstrom is Chairman, and the State Societies Committee, of which Robert H. Orr is Chairman, met in June to develop a tentative plan of unification. The report of this Committee has just been made known. The report does not attempt to solve all the problems of unification, but does express the fundamental ideas which will be the basis of a future definite plan to be decided upon by both the State Societies and the Institute.

This is the proper method of proceeding with any plan, for it is only on a common meeting ground of fundamental principles that unification can be brought about. Realizing this, the Committee has taken up various phases of the problem, and invites comments and suggestions. In this way, a wide acceptance of the general scheme may be obtained, and the details will be worked out in a joint conference with full knowledge of the reactions of architects throughout the country, both in State Societies and in the Institute.

IN order to exert their proper influence in the building industry, it is imperative that the architects be united in a single organization. The work of the Committee seems destined to accomplish this within a short space of time. The idea has met with the approval of practically all of the architectural organizations, and the tentative plan included in the report of the Unification Committee provides a reasonable basis for presenting a united front without interfering with the freedom of action of local or regional organizations. It is a plan of coordination through which leadership of architects in the building industry can be brought about. *K. K. S.*

A TEST CASE

FOR many years the Lower East Side of New York City has been the other half of the world about which the important half knew little or nothing. The fourteen acres included in the district from the Bowery to the East River and from Fourteenth Street to the Brooklyn Bridge have degenerated into a pest-hole of human misery as well as a wasteland of real estate. Whatever interest has been taken in this blighted region was the result of righteous compassion; but, unfortunately, the roots of existent evils were buried too deep in the decadent soil of neglect for philanthropic aid to improve to any significant degree the vicious character of the neighborhood.

Reclamation has been urged by various civic committees, but the undertaking was of such huge proportions that public spirit failed to obtain what it most sorely needed—financial support. Within the month, however, a definite program has been adopted by the financial interests themselves. The executives of more than a dozen savings banks, in an effort to protect their mortgage holdings and to restore a normal ratio between the value of the buildings and the value of the land, have announced a plan for the rehabilitation of the entire district at a cost of approximately $1,000,000,000. It is expected that the program will be completed in the next twenty years. Architects, regional planners, real estate men, builders, civic officials, and financiers are to combine in one great movement to remake what amounts to a city.

The most significant feature of the project is not its size, although that is certainly the most remarkable, it is the fact that its origin lies in economic necessity. Undoubtedly civic improvement, better living conditions, and greater happiness for inhabitants will be the inevitable results of its successful completion, but none of these was the dominant reason for its inception. As in all developments of this character good business and good architecture are inseparably linked; and the architect who does not recognize the tie is living behind the times.

IN a sense, the East Side development is also a test case for the industry; in its success or failure will be found the answer to the question which all are asking: Can the building industry organize itself into a cooperative body, capable of handling the problems of regional planning and building which the industrial age has thrust upon it? Rehabilitating an area that shelters almost 1,000,000 people is an undertaking which requires the utmost in cooperative effort from all the elements involved, and it sets a precedent for the type of accomplishments which can be made possible with the growing realization that disordered, independent action is not an adequate basis for building activity. *J. C. F.*

JUDGING THE SMALL HOUSE

BY

ALEXANDER KLEIN

A GRAPHICAL METHOD for the purpose of comparing and testing various types of plans opens up new possibilities in the region of the comparison and valuation of plan types. In the criticism of house plans, whether in the case of competitions, designs or existing buildings, it has been customary to make use of a number of technical expressions such as clarity, economy, form and arrangement of rooms, "traffic-ways," exploitation of area, general impression, and so on. The quality and value of a plan depends upon these. Most of these expressions, however, are taken by some in a positive, and by others in a negative sense, while most laymen and professional men tend to attach merely a subjective significance to many of these terms. It is often scarcely possible for professional men to agree in their judgments, as a general and objective valuation was until now difficult.

The graphical method of analysis differs from former methods of plan-valuation to the extent that by its means the qualities of the plan can be determined in an objective and clear manner. The graphical method also may be used for the teaching of beginners and for purposes of self-checking by architects of experience.

The graphic analysis may indicate possible plan improvements either by retaining the same area and increasing the "habitable effect," or by retaining the same "habitable effect" and so planning that the area of the dwelling (habitable minimum) may be diminished.

In the following diagrams the most important (primary) qualities of each plan are examined. The height of rooms, color, treatment of walls, complete furnishing and artificial lighting are left out of consideration, as they may be altered easily. Though they naturally influence the general im-

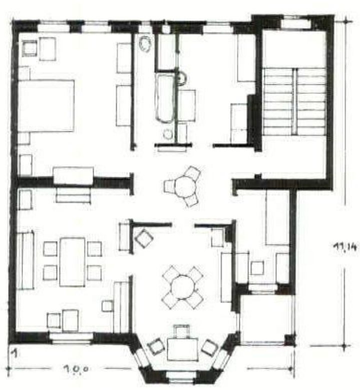


FIGURE 1: MODERN 3½-ROOM FLAT ERECTED IN BERLIN

(a) No common aspect of the rooms; (b) no purposeful grouping of the rooms; (c) complicated connection of the rooms of the "eating-group" (kitchen and dining room) with those of the "sleeping-group" (bedrooms, bathrooms and lavatories); (d) no freedom of movement owing to unhappy disposition of furniture; (e) darkening of a bedroom by the balcony; (f) unfavorable lighting. No spaces suitable for repose or work. Six doors in the hall

FIGURE 2: COUNTER-PROPOSITION OF EQUAL BUILT-UP AREA, BY THE AUTHOR

Principal aims: order and spaciousness. (a) Distinct separation of the living rooms into two main groups: 1. living, eating and cooking group, connected with the balcony. 2. bedroom group, connected with bathroom and lavatory; (b) combination of sitting and dining rooms, with possibility of separation by curtain or folding-door; (c) kitchen as small as possible, to the advantage of the main living room; (d) clothes to be kept in a special cupboard room, lighted by a glass door; (e) connection between kitchen and balcony (trap-door through which food can be handed); (f) the balcony does not darken any of the main rooms; placing of beds in the less well lighted parts of the rooms, so that the better lighted parts remain free: (g) concentration of furniture in groups

FIGURE 3: "PATHWAYS" IN EXISTING EXAMPLE

The lines are very complicated and cross each other at several points. Length of the line: 1 = 1.10m, 2 = 8.2m, 3 = 8m, 4 = 4.20m, 5 = 8.50m, 6 = 8m; altogether 41m

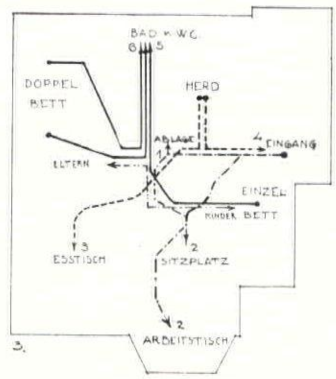


FIGURE 3

FIGURE 4: "PATHWAYS" IN COUNTER-PROPOSAL

The principal functions—cooking, eating, resting, sleeping and washing—may take place at the same time without causing disturbance. The "pathways" do not cross each other. Length of the lines: 1 = 2.30m, 2 = (average) 4.50m, 3 = (average) 2.35m, 4 = (average) 3.20m, 5 = 3.20m, 6 = 10.90m; altogether 26.45m

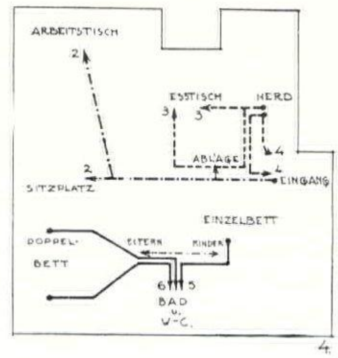


FIGURE 4

FIGURE 5: "TRAFFIC-AREA" IN EXISTING EXAMPLE

Almost the whole area of the hall serves for the "traffic." The arrangement of the furniture shown in the hall (Figure 1) is not possible. The way to the balcony is narrow and complicated and passing to and fro inconveniences others sitting in the rooms

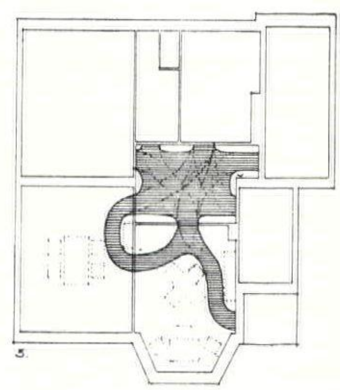


FIGURE 5

FIGURE 6: "TRAFFIC-AREA" IN COUNTER-PROPOSAL

Only a narrow space in the middle of the hall is required for the "traffic." The placing of furniture against the walls is possible. The passage to the balcony is straight and free. It is not necessary to go around any pieces of furniture

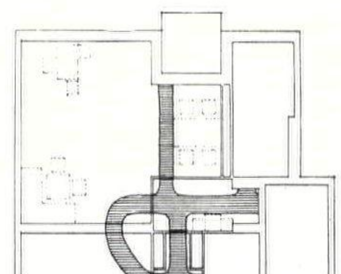


FIGURE 6

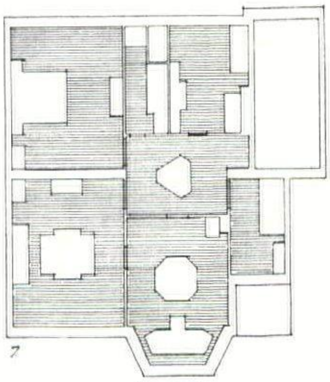


FIGURE 7: FREE AREA IN EXISTING EXAMPLE (COMPARE WITH FIGURE 1)

Owing to unsatisfactory arrangement of the furniture, the free spaces are split up. Half of them lie in the poorly lighted rear parts of the rooms. Their connection with each other is complicated

FIGURE 7

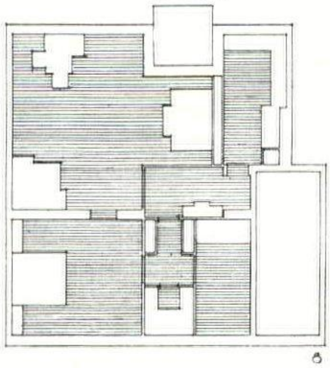


FIGURE 8: FREE AREA IN COUNTER-PROPOSAL (COMPARE WITH FIGURE 2)

The spaces which remain free after the arrangement of the principal pieces of furniture are united to form comparatively large areas, are situated in the well-lighted portions of the rooms, and are suitably joined

FIGURE 8

pression favorably or unfavorably and are therefore important, they are really of secondary importance in the objective valuation of dwelling plans.

The primary qualities of the plan are those determined by:

1. Its efficiency in natural communication or travel; "traffic-ways";
2. Its concentration of free areas;
3. Its geometrical similarities and coherence; of plan elements; and
4. Its wall surfaces in relation to furniture and free space.

These are given detailed consideration in graphic form in the illustrative diagrams and may be described as follows:

1. Arrangement of "traffic-ways" and courses of pathways.

These indicate the possibilities of managing the household in regard to the expenditure of physical energy. (See Figs. 3 and 4.) A second factor to be considered is the loss of area which must be kept free for "traffic-stripes."

For example, a considerable number of turnings in the course of short passages indicate unnecessary physical exertion caused by the repeated slowing-down and hastening of the step, and by the continual turning of the body. The crossings of the pathways shows the impossibility of a simultaneous and undisturbed performance of the principal functions of the dwelling: cooking and eating, sleeping and washing, working and resting.

"Traffic-areas" which are too large and "traffic-stripes" which are too long cause a loss of useful area, necessitate splitting up the floor-surface and make furnishing difficult. The use of the parts of the living room reserved for resting, eating and working is hindered by the bad disposition of such "traffic-stripes."

2. Concentration of free areas.

The space which remains after the arrangement of the indispensable furniture (for instance, the beds in the bedrooms) is considered as free area. The comfort and spaciousness of the dwelling, and also the possibility of setting up other furniture, depends upon the concentration of these areas. (See Figs. 7 and 8.) The casting of shadows by window-breasting and by furniture is a second factor having optical and psychic influences. (See Figs. 8 and 9.)

A deficiency of well lighted, communicating free spaces of sufficient size, which are not required to be used as passage-ways, decreases the space at the disposal of the family, especially children, makes necessary an unsatisfactory arrangement of furniture. This results in a more complicated manner of living, and finally leads to an unnecessary expenditure of energy in the course of all household duties. (See Figs. 7 and 8.)

These conditions become worse from an optical and psychic point of view, if large pieces of

FIGURE 9: SHADOWS ON THE FLOOR IN EXISTING EXAMPLE

The furniture which is placed in the centers of the rooms throws shadows which split up the floor surface. High cupboards against the side walls cast shadows and form dark corners, giving unfavorable psychic and optical results. The small bedroom is overshadowed by the balcony

FIGURE 9

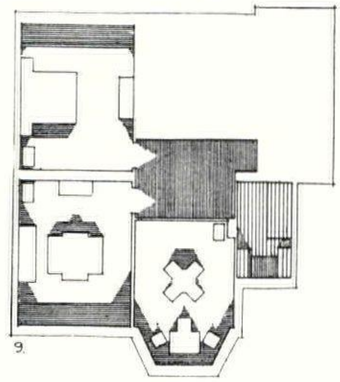
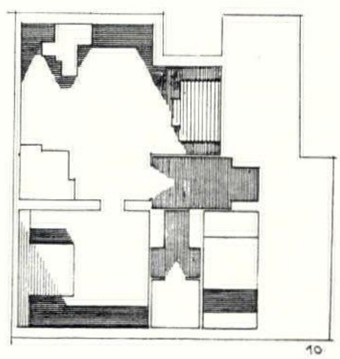


FIGURE 10: SHADOWS ON THE FLOOR IN COUNTER-PROPOSAL

The shadows on the floor are limited to a minimum by suitable arrangement of the furniture. High pieces of furniture are avoided. The balcony overshadows only a part of the dining-niche, part of which is directly lighted. The use of glass doors in the passages causes regular lighting and lessens the shadows on the floor

FIGURE 10



furniture are so placed that the shadows are thrown upon the free spaces. In the case of unsystematically arranged plan-elements and the impressions which they cause, indications of psychic exhaustion which would have an unfavorable effect upon the nervous systems of the occupants are to be feared.

3. Geometrical similarities and coherence of the various elements of the plan.

The elements of the plan are those which produce surfaces at the level of the eye which are at once mentally absorbed when entering the room. The general impression of the dwelling, which will be consciously or unconsciously felt by the occupants, depends upon these. The strain on the nerves of those using the dwelling is increased by the number of different impressions to which they are subjected, which in turn depend upon the elements of the plan, the forms, order, differences of level, windings of passages and the sudden change from light to darkness during the hours of daylight. In order to determine these impressions, the combinations of rooms which occur most frequently during the occupation of a dwelling in daily life, are here examined in pairs. (See Figs. 13 to 26 inclusive.)

Complicated forms of rooms at the eye-level, for instance, are to be avoided, as also the disorderly arrangement of rooms connected by crooked passage-ways which lead through semi-lighted ante-rooms and do not lead out into the middle of the room. (See Figs. 27 to 37 inclusive.)

4. Splitting up of the wall surface and contraction of space.

This occurs in the case of pieces of furniture which are more than half the height of the room and project above the eye level. (See Figs. 27 to 33 inclusive.) A second factor which increases the optical and psychic effects of these manifestations is the shadow-formation. (See Figs. 34 to 37 inclusive.) By means of these diagrams it is possible to test the practical value of a plan before its execution.

The examination of numerous plans of the same size and type will give empirically the outside values of all results.

The example of plan analysis which is shown here is taken from a number of examinations which were undertaken by the author. This is not intended as a criticism of the plan as such, but is meant to show to what extent it fulfills the conditions which are set by present-day economical and social circumstances, and to emphasize the significance of the above-mentioned principles. This example shows the importance of a definite separation of the living rooms from the bedrooms, and of substituting for two living rooms having distinct functions, one large room which fulfills all purposes (eating, working and resting, etc.). It also shows the importance of a correct disposition of the furniture.

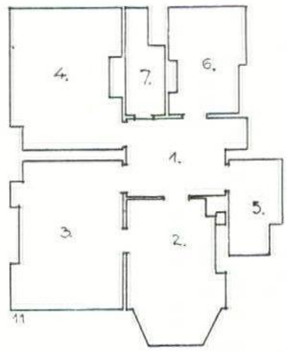


FIGURE 11

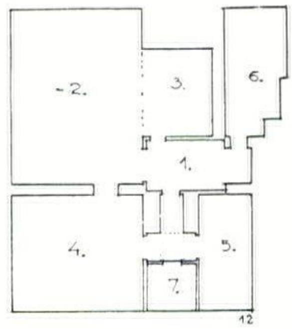


FIGURE 12

FIGURE 11: EXISTING EXAMPLE

Horizontal section at the eye level. Stoves and high cupboards in cross-section. Owing to the latter, the free spaces are narrowed and the perspectives shortened. Insufficient differentiation in the sizes of the rooms

FIGURE 12: COUNTER-PROPOSAL

The horizontal section at the eye level is the same as at the floor level. Maximum of spaciousness. Principles of planning: (1) as few "units" as possible; (2) all saving of space to be to the advantage of the main room; (3) the various units to be, as far as possible, directly connected with each other and as simple as possible; (4) the hall and corridor to be lighted by glass doors. The various "units" to be differentiated in regard to size and shape (succession)

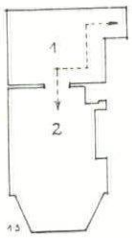


FIGURE 13

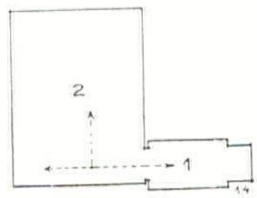


FIGURE 14

FIGURE 13: ENTRANCE AND LIVING ROOM IN EXISTING EXAMPLE

Only slight differentiation. Indefinite communication

FIGURE 14: THE SAME IN THE COUNTER-PROPOSAL

Definite succession of rooms. Clear path. Inviting aspect caused by the view of the seating arrangement

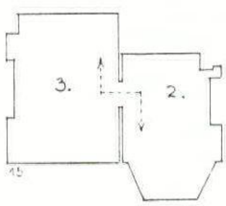


FIGURE 15

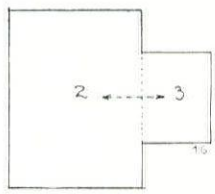


FIGURE 16

FIGURE 15: LIVING ROOM AND DINING ROOM IN EXISTING EXAMPLE

Unsystematic placing of rooms next to each other. Indefinite communication

FIGURE 16: THE SAME IN THE COUNTER-PROPOSAL

Two areas joined together to form one "unit." Definite communication

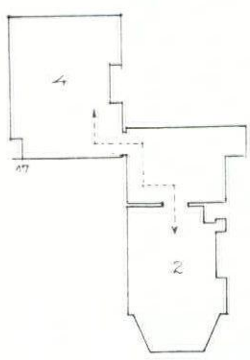


FIGURE 17

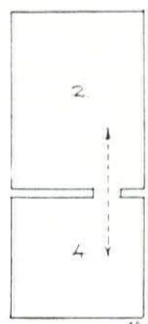


FIGURE 18

FIGURE 17: LIVING ROOM AND BEDROOM IN EXISTING EXAMPLE

Complicated connection by means of a long and crooked path through the semi-dark hall

FIGURE 18: THE SAME IN THE COUNTER-PROPOSAL

Direct and straight communication between the two rooms. The line of communication ends opposite the windows

ANALYSIS OF COMPONENT PARTS

JUDGING THE SMALL HOUSE BY ALEXANDER KLEIN

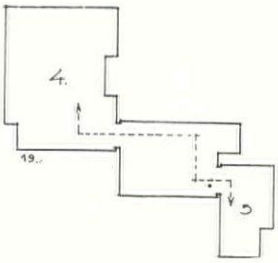


FIGURE 19

FIGURE 19: BEDROOM AND SMALL BEDROOM IN EXISTING EXAMPLE

Connection as in Figure 17. The lines of communication end in narrow, badly lighted corners

FIGURE 20: THE SAME IN THE COUNTER-PROPOSAL

Straight, short path through a light passage (glass doors). The lines of communication lead into light and spacious parts of the rooms

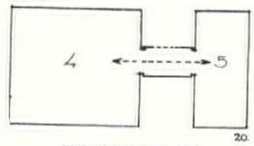


FIGURE 20

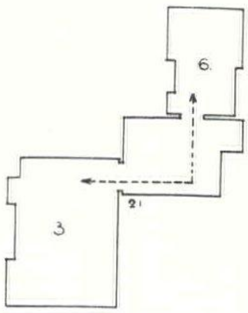


FIGURE 21

FIGURE 21: DINING ROOM AND KITCHEN IN EXISTING EXAMPLE

Indefinite communication through the large semi-dark hall

FIGURE 22: THE SAME IN THE COUNTER-PROPOSAL

The communication is considerably improved by the trapdoor through which food may be handed

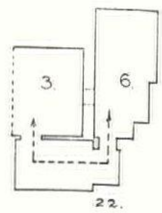


FIGURE 22

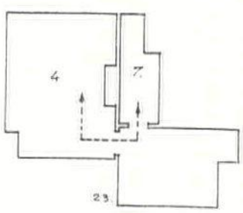


FIGURE 23

FIGURE 23: BEDROOM AND BATHROOM IN EXISTING EXAMPLE

Only access through the hall

FIGURE 24: THE SAME IN COUNTER-PROPOSAL

Communication short and direct; a small passage lighted by means of glass doors

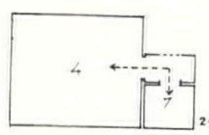


FIGURE 24

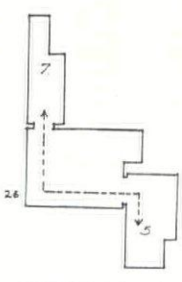


FIGURE 25

FIGURE 25: SMALL BEDROOM AND BATHROOM IN EXISTING EXAMPLE

Only access through the hall

FIGURE 26: THE SAME IN THE COUNTER-PROPOSAL

Communication short and direct; short passage lighted by glass doors

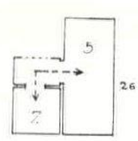
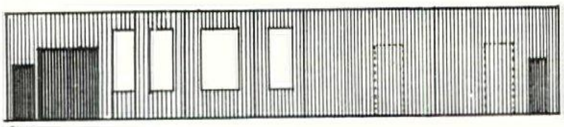


FIGURE 26

ANALYSIS OF COMPONENT PARTS

JUDGING THE SMALL HOUSE BY ALEXANDER KLEIN



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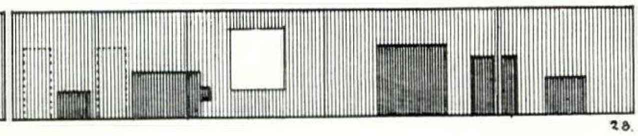


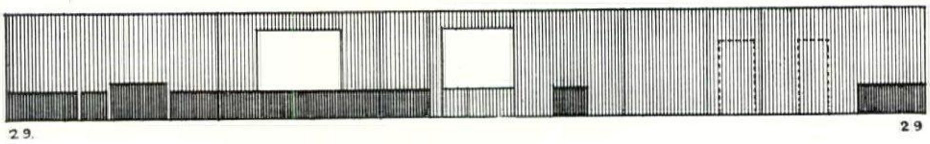
28.

FIGURE 27

FIGURE 28

FIGURES 27 & 28: ELEVATION OF THE WALLS OF THE LIVING AND DINING ROOMS OF THE EXISTING EXAMPLE

The high furniture cuts up the wall surfaces and shortens the perspectives to the disadvantage of the general impression

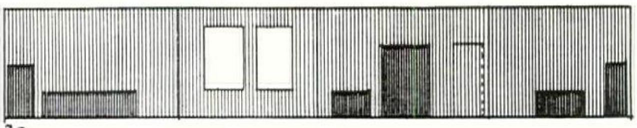


29. 29

FIGURE 29

FIGURE 29: ELEVATION OF THE WALLS OF THE PRINCIPAL ROOM IN THE COUNTER-PROPOSAL

An aspect of harmony and repose is obtained by means of the low furniture



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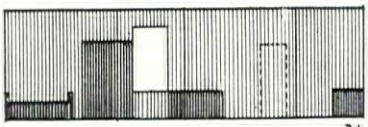


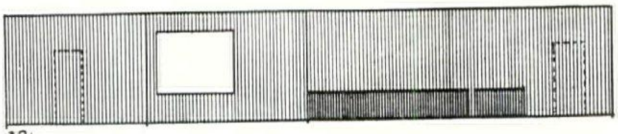
31

FIGURE 30

FIGURE 31

FIGURES 30 & 31: ELEVATION OF THE WALLS OF THE BED-ROOM AND OF THE SMALL BEDROOM IN THE EXISTING EXAMPLE

Effect as in Figures 27 and 28



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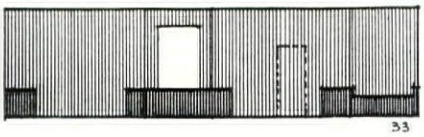


33

FIGURE 32

FIGURE 33

FIGURES 32 & 33: THE SAME ROOMS IN THE COUNTER-PROPOSAL

Effect as in Figure 29

ANALYSIS OF FURNITURE AND WALL SURFACE

JUDGING THE SMALL HOUSE

BY

ALEXANDER KLEIN

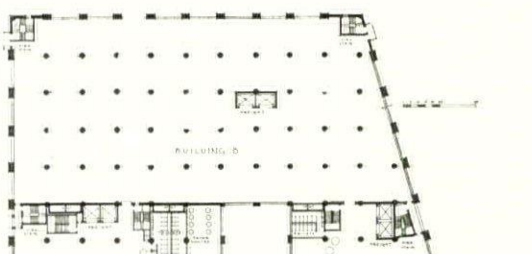
Fuermann & Sons

A PUBLISHING PLANT

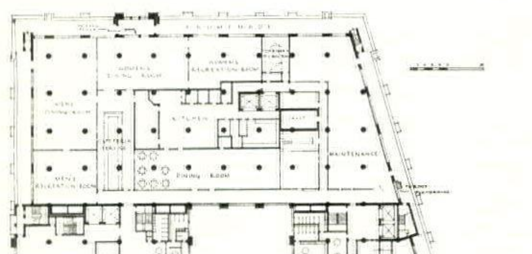
R. R. DONNELLEY & SONS CO. BUILDING
CHICAGO, ILLINOIS
HOWARD SHAW ASSOCIATES, ARCHITECTS

Fuermann & Sons

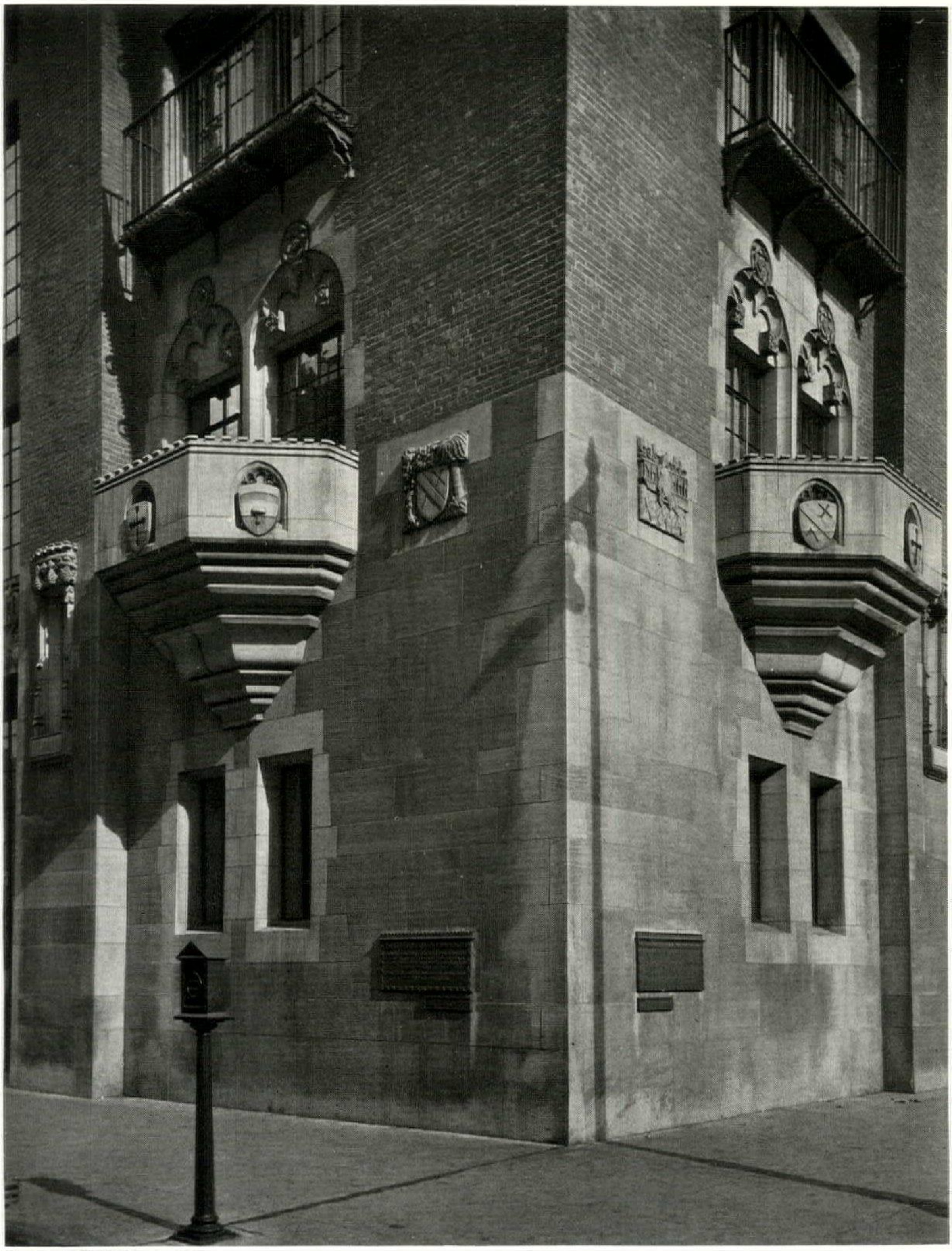
General view of the completed building, the first unit of which was illustrated in the September, 1923, number of *The Architectural Forum.* Flat slab reinforced concrete construction with columns spaced 25 ft. on centers each way and floors designed for a live load of 300 pounds accommodate the large printing presses. The exterior finish materials are Indiana limestone and dark red brick



TYPICAL FLOOR PLAN



EIGHTH FLOOR PLAN



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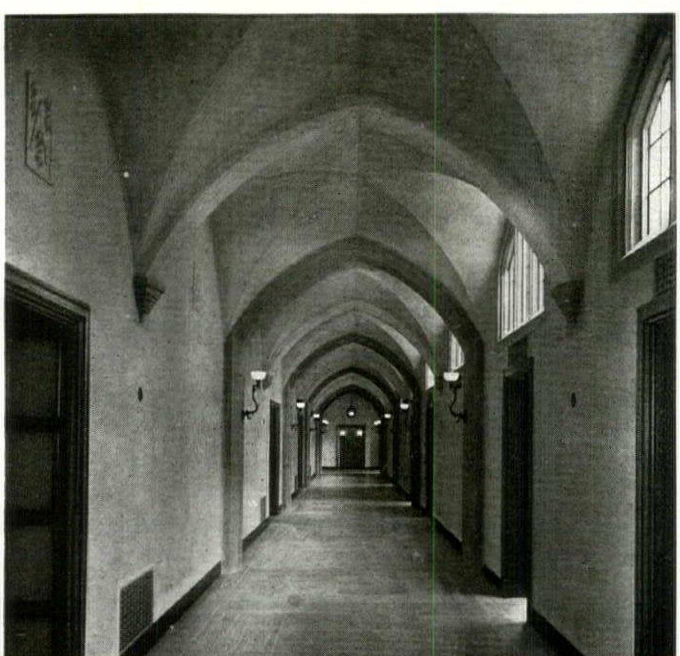
DETAIL OF CORNER

R. R. DONNELLEY & SONS CO. BUILDING
CHICAGO, ILLINOIS
HOWARD SHAW ASSOCIATES, ARCHITECTS

Fuermann & Sons, Photos



Above is a detail of the main entrance lobby which has a floor of black and gray marble, walls of travertine with Ohio sandstone trim, and a sand-finish plaster ceiling. The entrance door enclosures, directory, grilles, etc., are natural finish wrought iron. At the left is a detail of the vaulted hall on the eighth floor. The floor and base is marble, the walls and ceiling are sand-finish plaster and the door trim is of oak. Ohio sandstone was used for the arches and piers

Fuermann & Sons

A corner of the library on the eighth floor. The floor is random width teakwood; the walls and ceiling are Ohio sandstone. English oak was used for the bookcases, and balcony rail and hardware is of natural wrought iron. The decorative panels in the window are leaded stained glass in high color. This particular portion of the building was designed by Charles Z. Klauder, Architect

R. R. DONNELLEY & SONS CO. BUILDING

CHICAGO, ILLINOIS

HOWARD SHAW ASSOCIATES, ARCHITECTS

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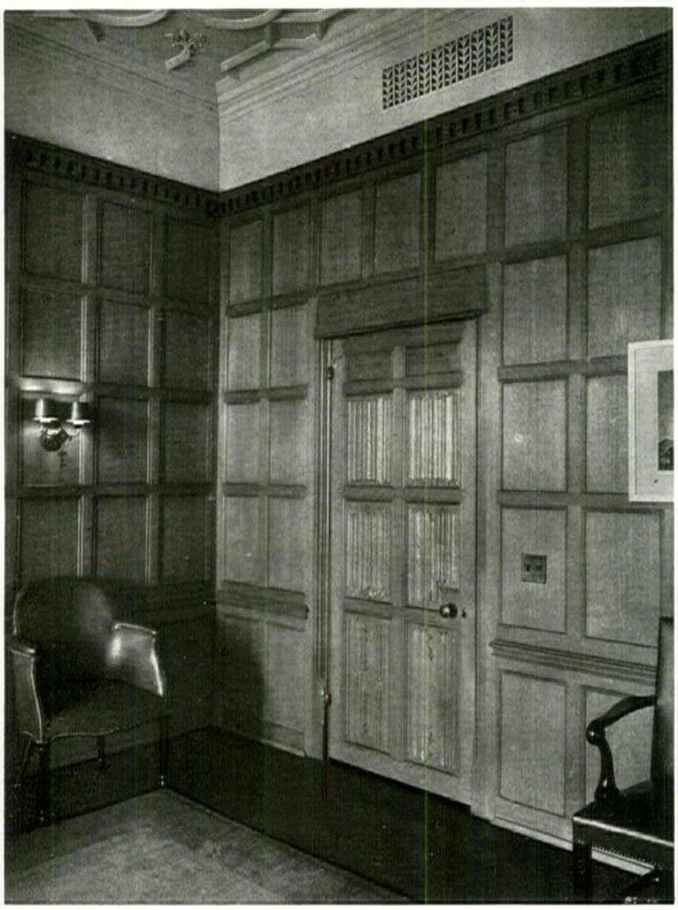
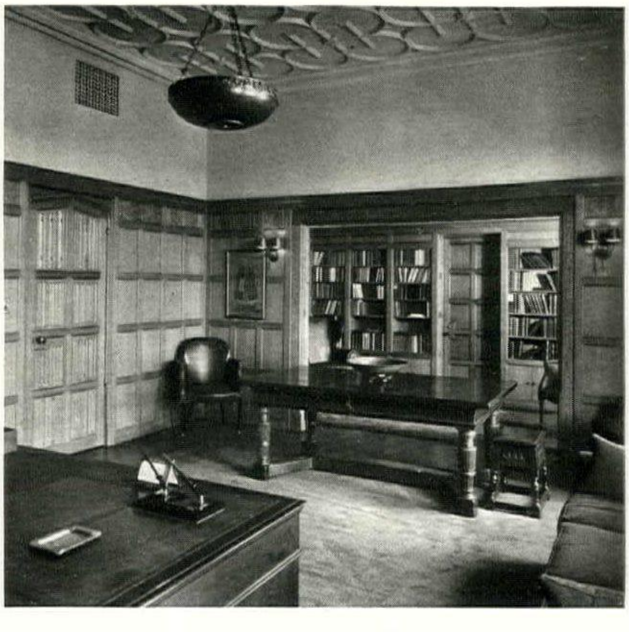


The exhibition hall, shown above, has a floor of Napoleon gray marble with white joints. Lower walls are soft wood, covered with monk's cloth, and the upper walls are sand-finish plaster. The window and door trim is Ohio sandstone and the ceiling is of dark stained oak.

At the left is a detail of paneling in one of the private offices

Fuermann & Sons, Photos

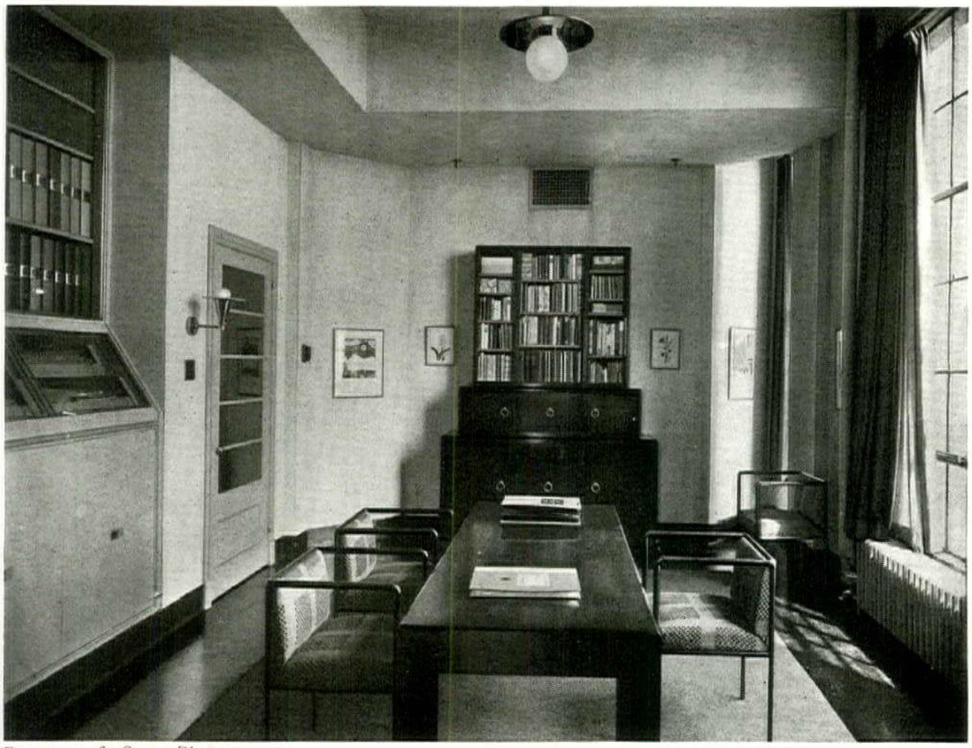
Two views of the office of the president. Random width oak boards stained dark were used for the floor; the paneling is natural color white oak, and the upper walls and ceiling are smooth, painted plaster. The hand carved panels are symbolical of printing and printers, the one over the portrait in the upper illustration being a reproduction of the Donnelley "mark"



R. R. DONNELLEY & SONS CO. BUILDING

CHICAGO, ILLINOIS

HOWARD SHAW ASSOCIATES, ARCHITECTS



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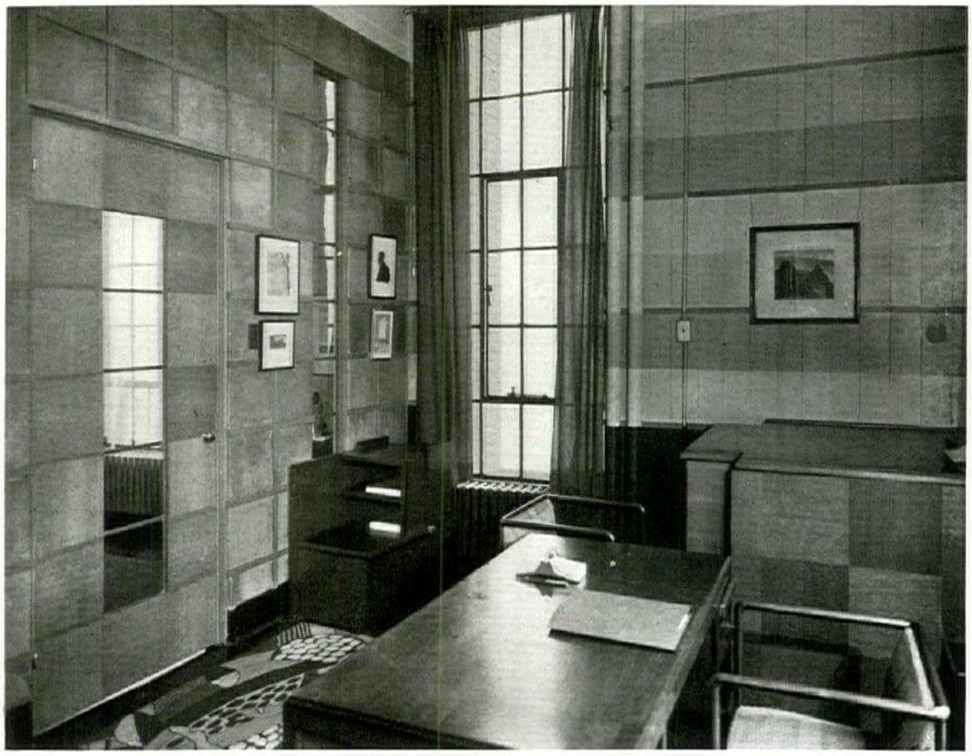
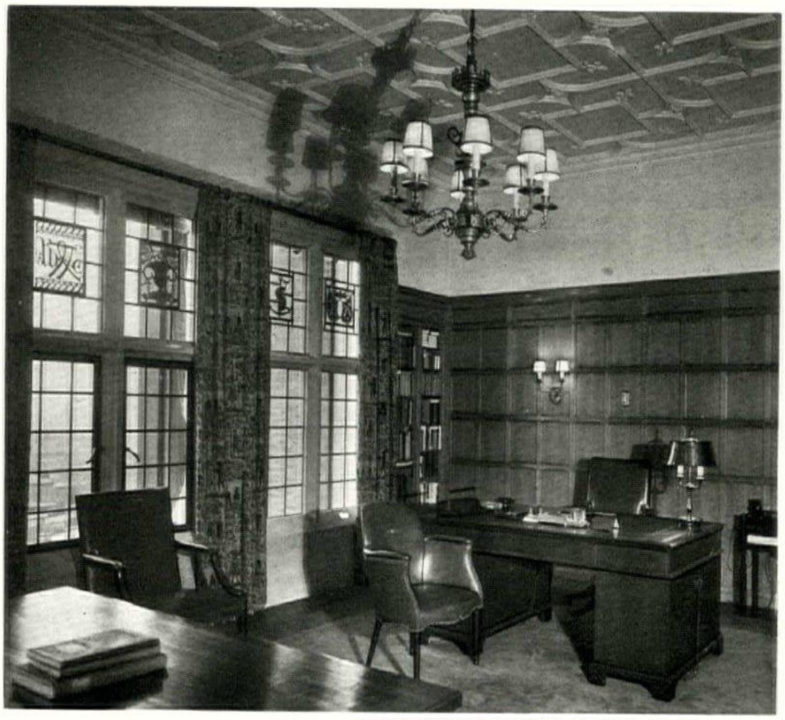
Consultation room in the design department. The floor and base in this room is cement painted black and the walls and ceiling are of sand-finish plaster. The trim is painted wood. The furniture is walnut and the hangings are in blue and gold. A private office in the same department is illustrated below. Here the concrete walls have been painted in three shades of French gray; the natural tile walls have been waxed and have stained oak strips over the joints, and the cement floor has been painted black. The hardware is chromium



Fuermann & Sons, Photos

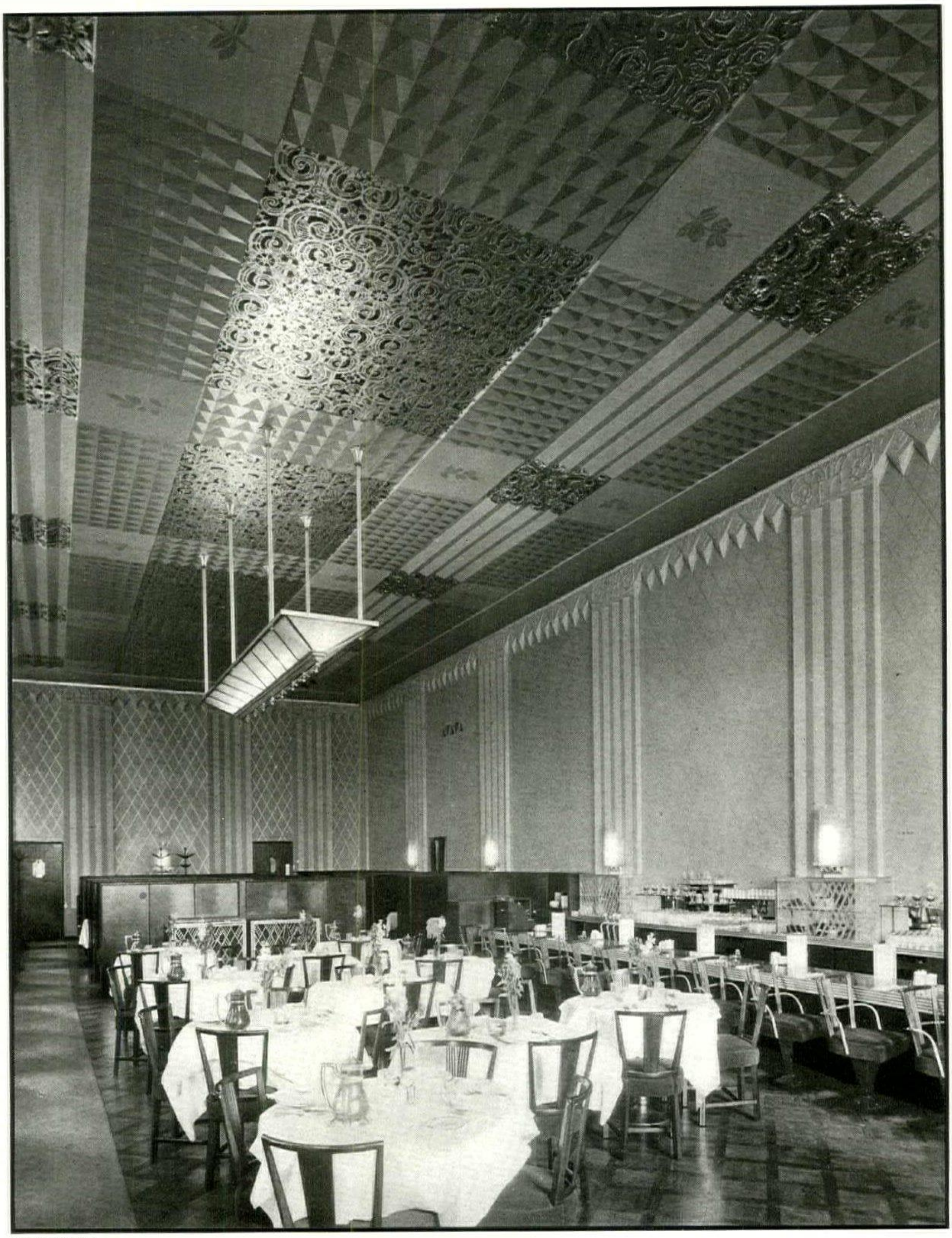


Details of the two private offices. The one above has pine paneling and painted plaster walls and ceiling; the floor is covered with green carpet. The office shown at the right has an oak floor and oak paneling, painted plaster walls and ceiling, and window trim of Ohio sandstone

R. R. DONNELLEY & SONS CO. BUILDING

CHICAGO, ILLINOIS

HOWARD SHAW ASSOCIATES, ARCHITECTS



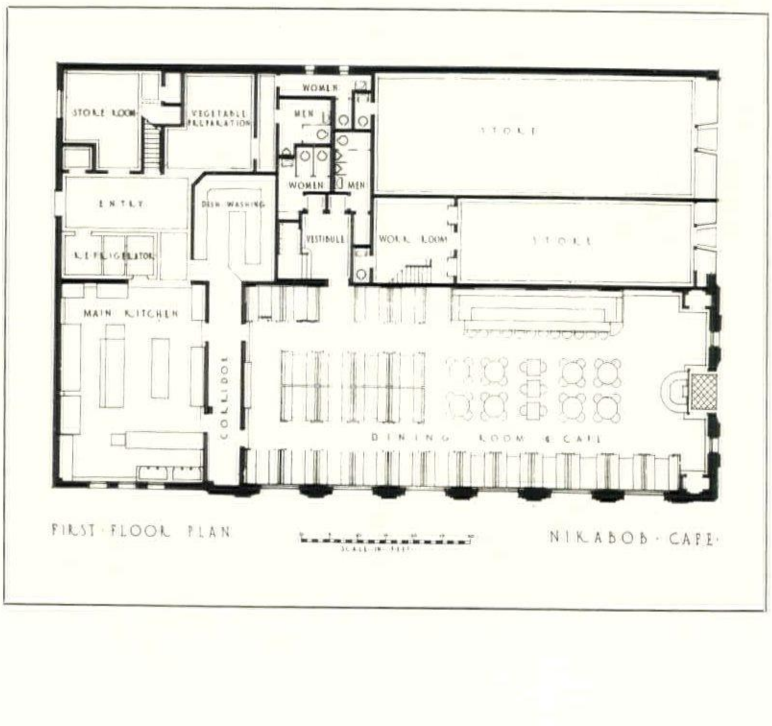
Mott Studios

THE NIKABOB CAFE

LOS ANGELES, CALIFORNIA

MORGAN, WALLS & CLEMENTS, ARCHITECTS

Mott Studios



The building is of brick construction with an exterior plaster finish marked off in stone joints, painted, and given a splatter coat to imitate granite. The sign tower is of sheet metal. Awnings of a novel type, by permitting free passage of air through them, eliminate stagnant hot air under the awning. The sidewalk is terrazzo in contrasting colors

THE NIKABOB CAFE

LOS ANGELES, CALIFORNIA

MORGAN, WALLS & CLEMENTS, ARCHITECTS

Mott Studios

The dining room arrangement provides for three types of service: Semi-private booths, tables and counter. The floor is wood parquet and the walls and ceiling are of plaster. The wall panels are light salmon with diagonal stripes in silver. Pilasters and ceiling border are painted a buff color and the decorative panels in the ceiling are pierced for ventilation. The counter has a Formica top, extruded white metal facia, mahogany die and a black rubber tile base; the counter chairs are wood with a white metal die and arm rest. The upholstery of the chairs and dining cubicles is Frieze of an unusual shade of purple and drapes are a salmon color, slightly darker than walls. The seating arrangement gives a sense of openness and at the same time develops an efficiency in operating service. All booths and tables are served by two main aisles leading directly to the kitchen, the location of the booths being such that the maximum of privacy is obtained

THE NIKABOB CAFE

LOS ANGELES, CALIFORNIA

MORGAN, WALLS & CLEMENTS, ARCHITECTS

Sigurd Fischer

The building is 40 stories high and has been planned to give the greatest amount of flexibility in office layout. The lower floors are reserved for shops, each one being 18 feet wide and six stories high. Each has a private elevator in addition to a circular stair

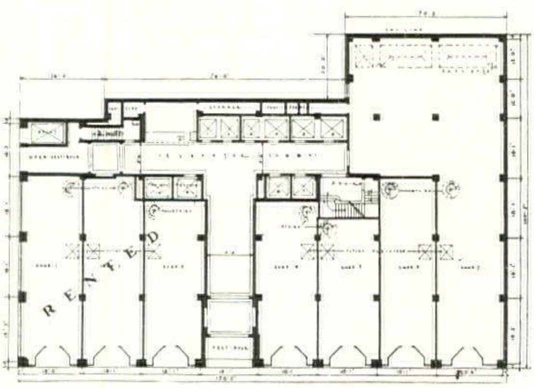
THE GEORGE A. FULLER CO. BUILDING

NEW YORK, N. Y.

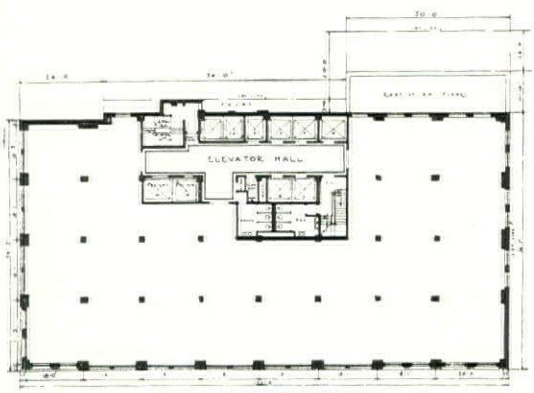
WALKER & GILLETTE, ARCHITECTS

Sigurd Fischer

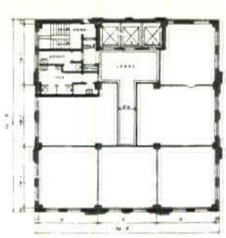
The exterior color scheme is black and white. The building is faced on the lower six floors with black Swedish granite and elsewhere with white Rockwood stone, except the pent-house which is decorated with a pattern in black and white tile. All metal is dull gold bronze



FIRST FLOOR



9TH AND 10TH FLOORS

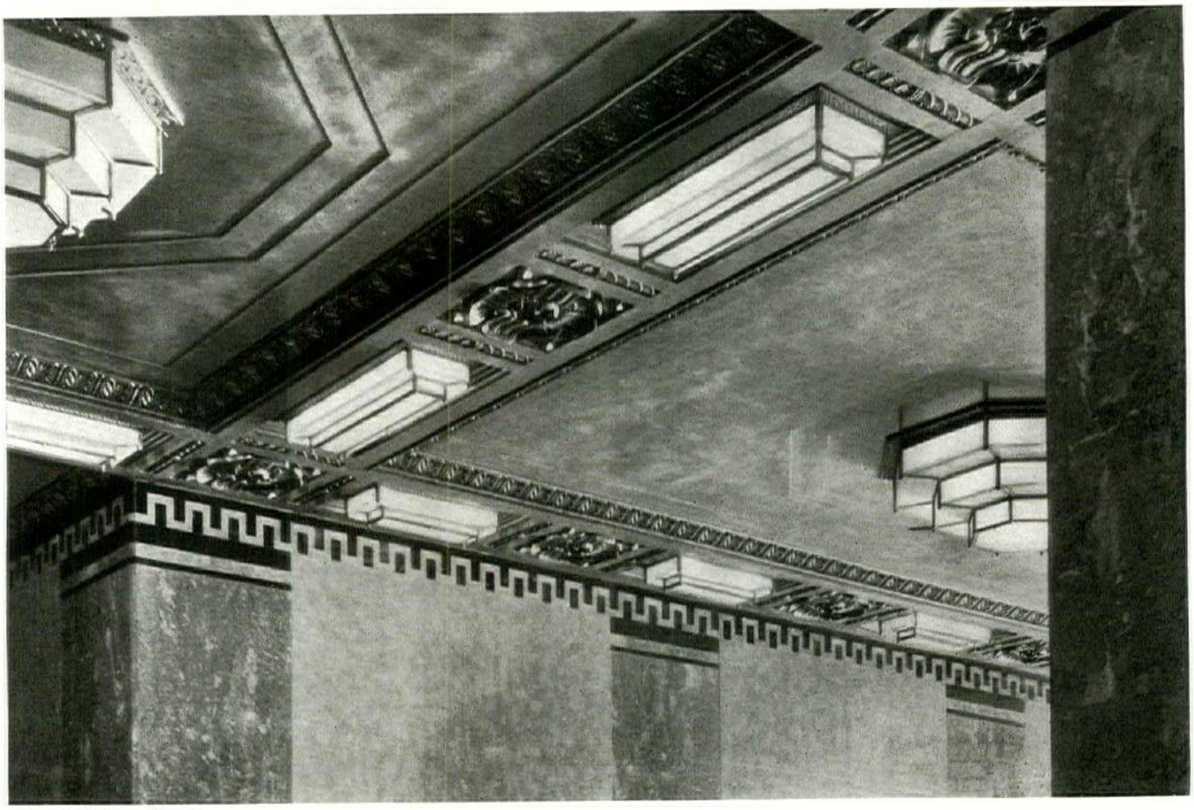


22ND TO 26TH FLOORS

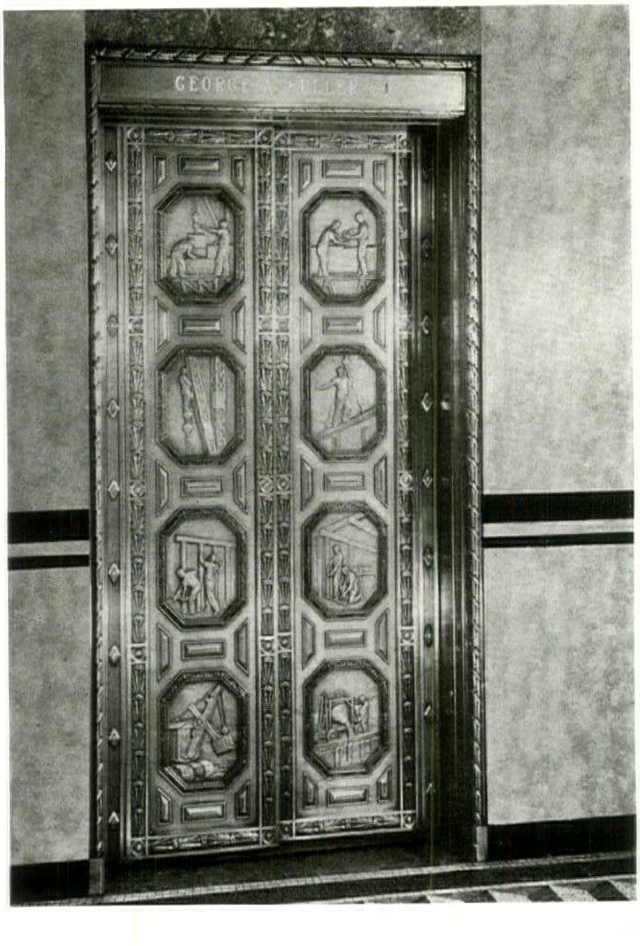
The building has a structural steel frame, fireproofed with terra cotta and short span cinder concrete floor slabs up to and including the 22nd floor. The floors above are constructed with a long span, two-way floor block system. The office floors are of cement; the walls are painted plaster and the trim is hollow metal

Sigurd Fischer

FULLER BUILDING
NEW YORK, N. Y.
WALKER & GILLETTE, ARCHITECTS



Sigurd Fischer Photos



Above is a detail of the lobby ceiling which is decorated with dull gold. The walls of the lobby are of a mottled-gray marble with a patterned frieze and dado of Belgian Black. The floor is terrazzo with a mosaic border and decorative plaques. At the left is a detail of a typical elevator door for owner's use

FULLER BUILDING

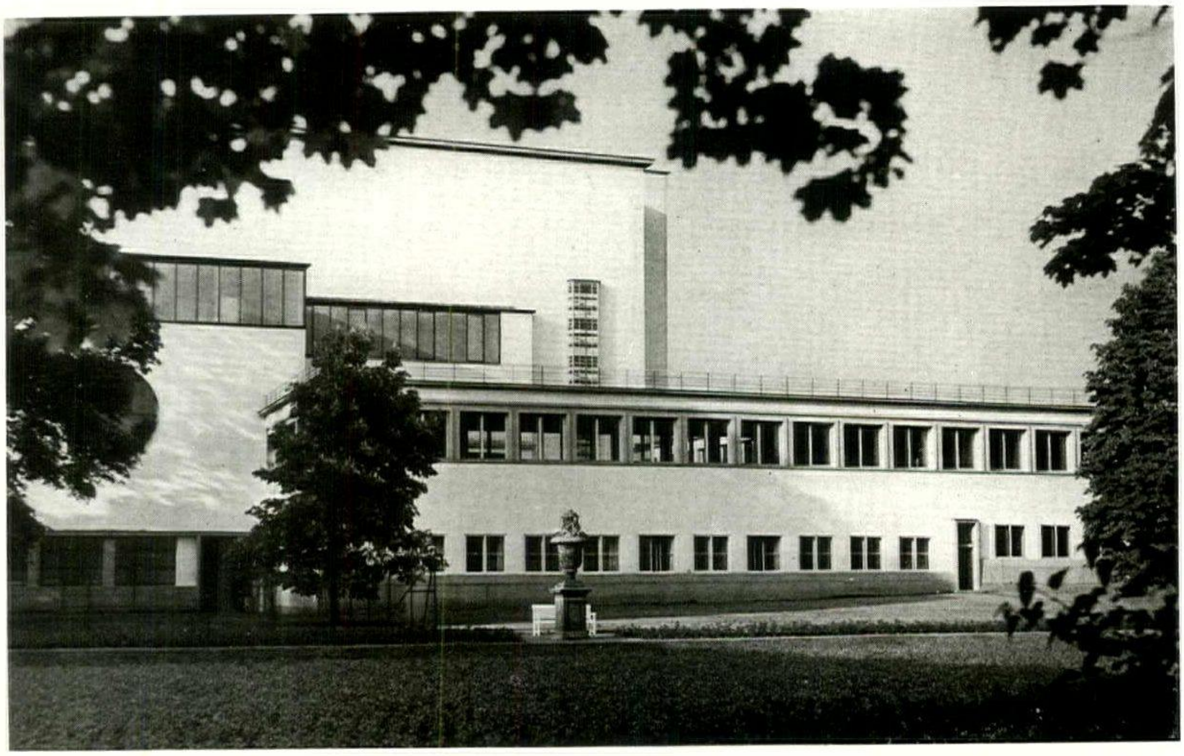
NEW YORK, N. Y.

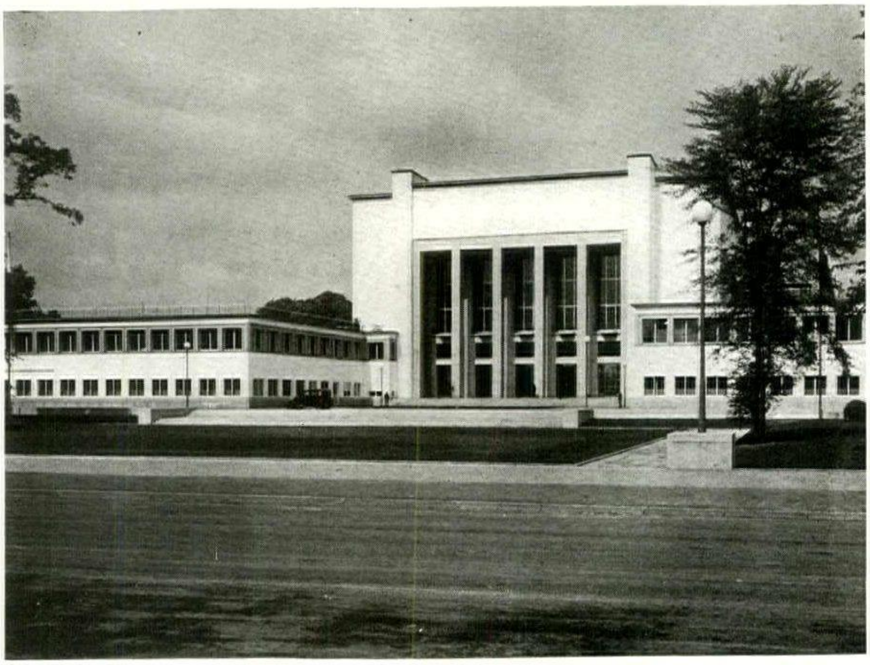
WALKER & GILLETTE, ARCHITECTS

GERMAN HYGIENIC MUSEUM
DRESDEN, GERMANY

CONTEMPORARY GERMAN ARCHITECTURE

WILHELM KREIS, ARCHITECT





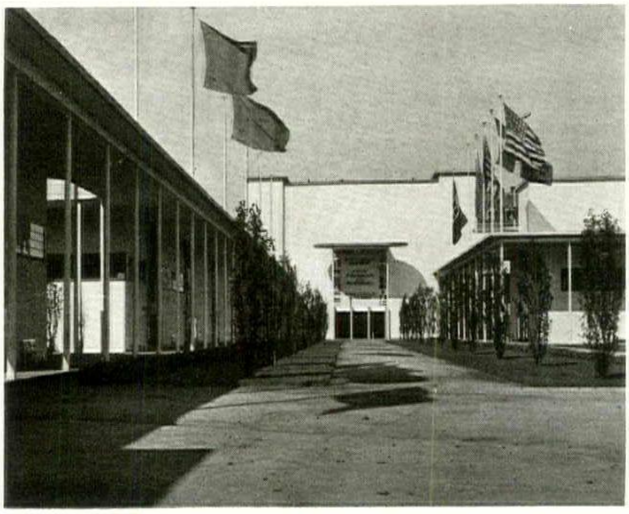
The building houses a permanent health exhibition and is used as a school for special students. The views on this page are of the front and rear; opposite is a picture of one of the halls

GERMAN HYGIENIC MUSEUM

DRESDEN, GERMANY

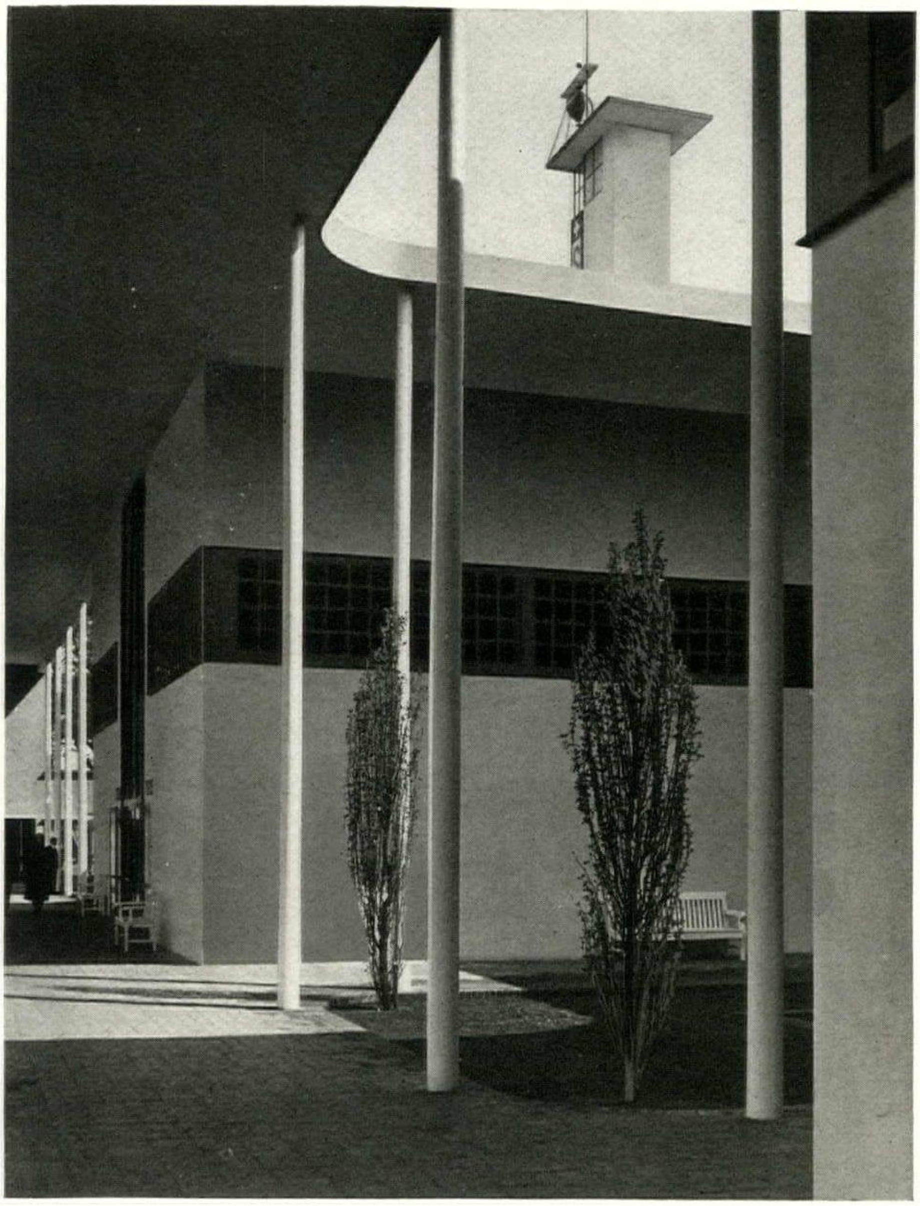
WILHELM KREIS, ARCHITECT

GERMAN HYGIENIC MUSEUM
DRESDEN, GERMANY
WILHELM KREIS, ARCHITECT

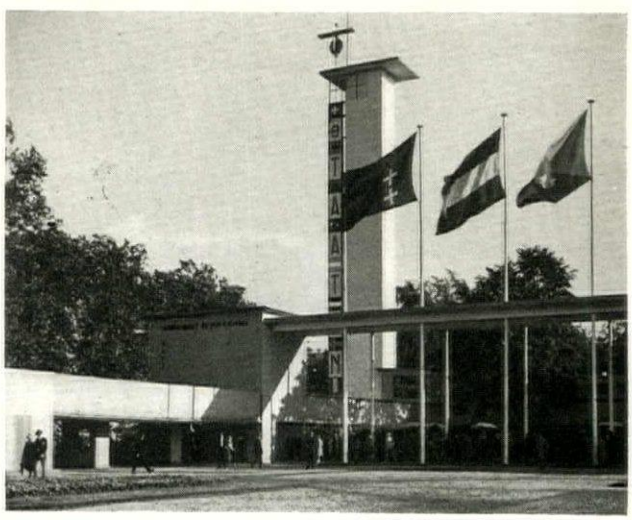


The group of buildings houses many exhibits of hygienic supplies, and has been designed to form a simple setting for them. On this page is a detail of the entrance to the League of Nations building

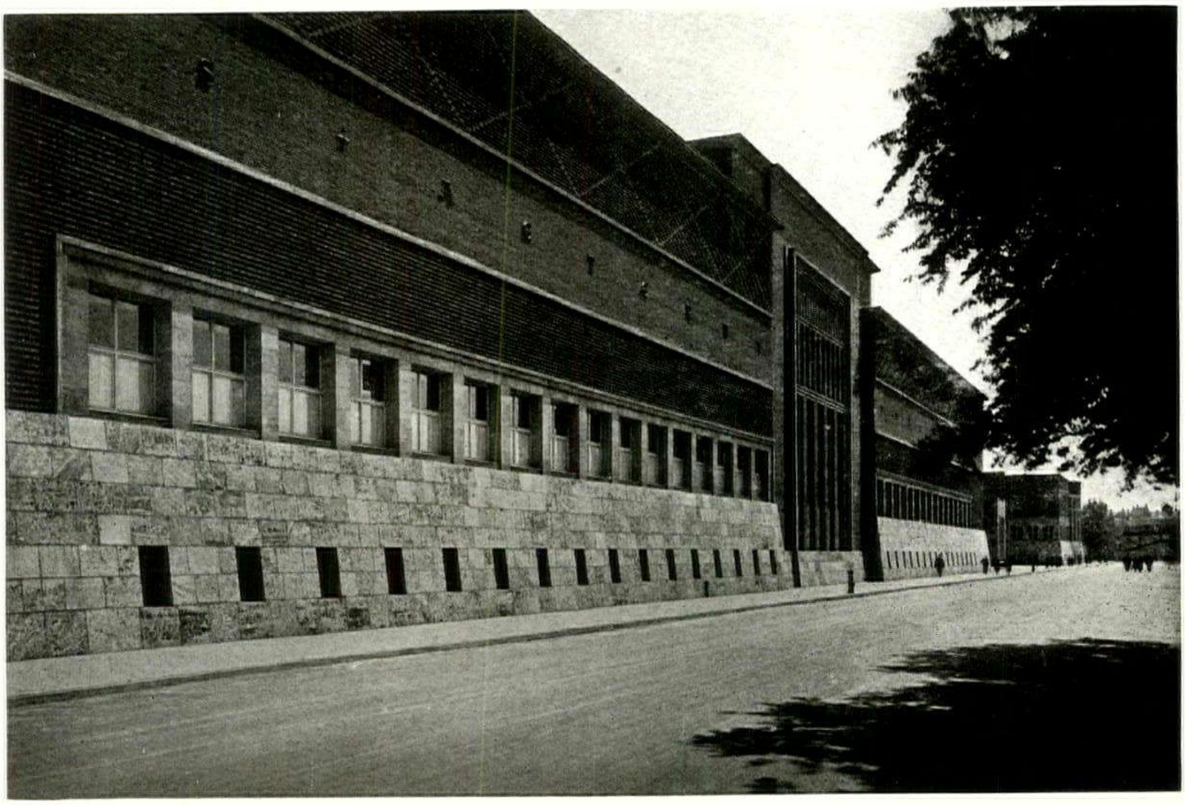
THE INTERNATIONAL
HYGIENE EXHIBITION
DRESDEN, GERMANY
WILHELM KREIS, ARCHITECT

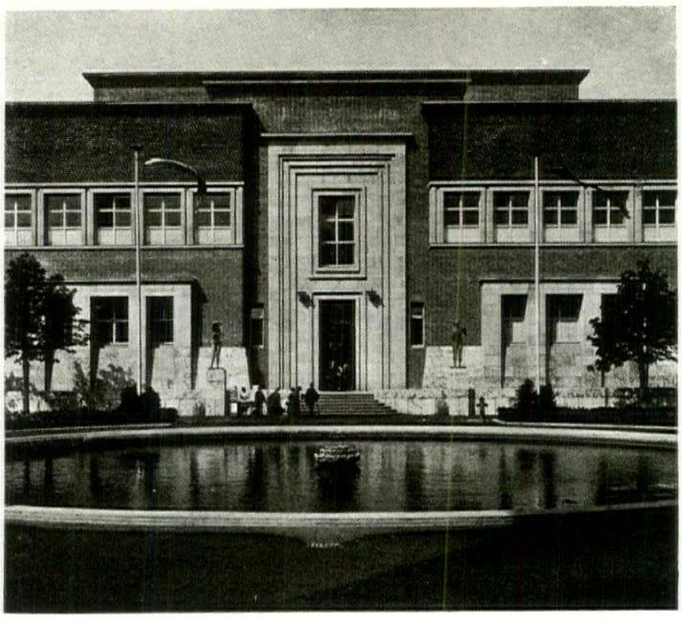


The buildings are surrounded by an arcade which serves architecturally to unify the group, and to form an open court. Above is a detail of the arcade, and at the right is the International Restaurant



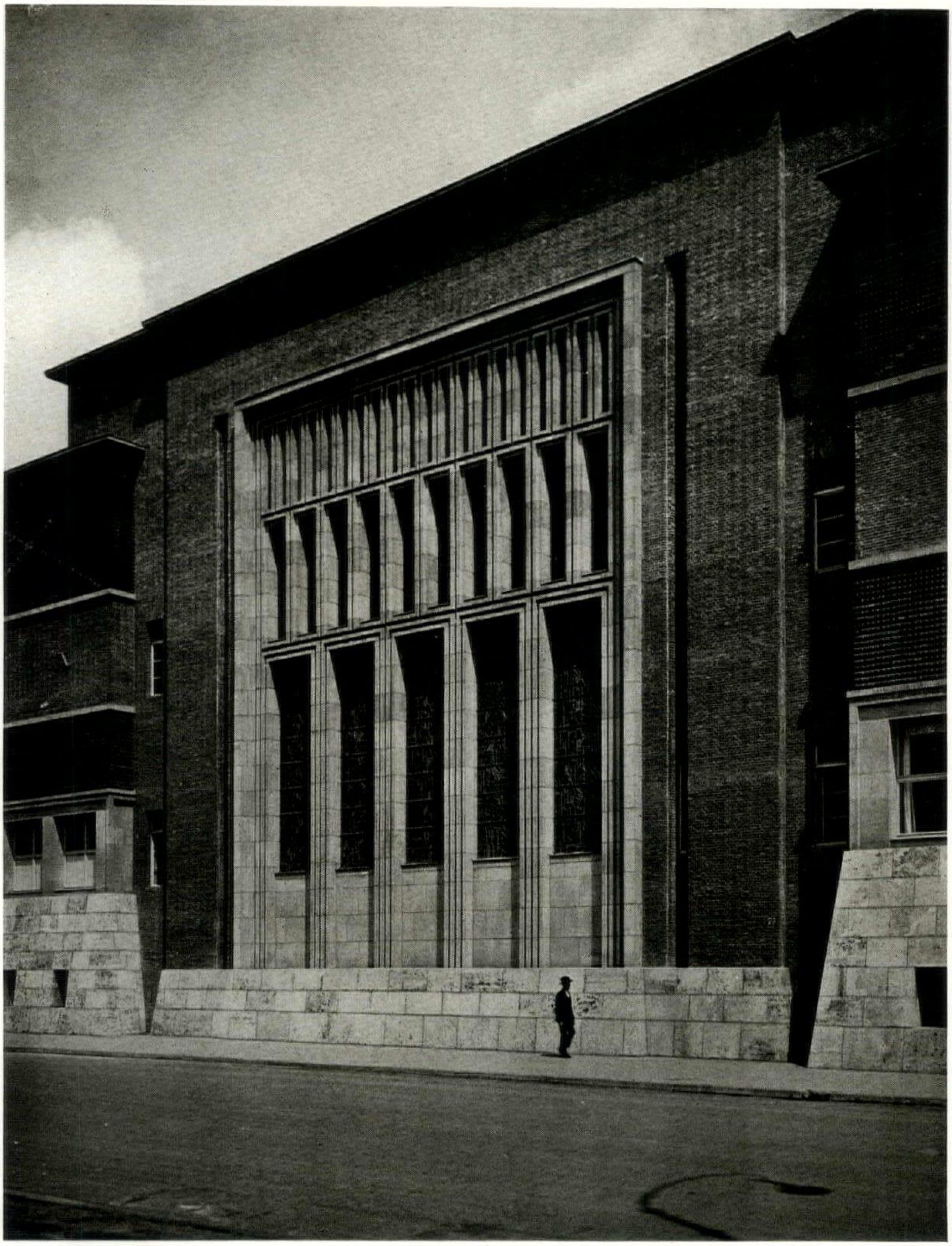
THE INTERNATIONAL
HYGIENE EXHIBITION
DRESDEN, GERMANY
WILHELM KREIS, ARCHITECT



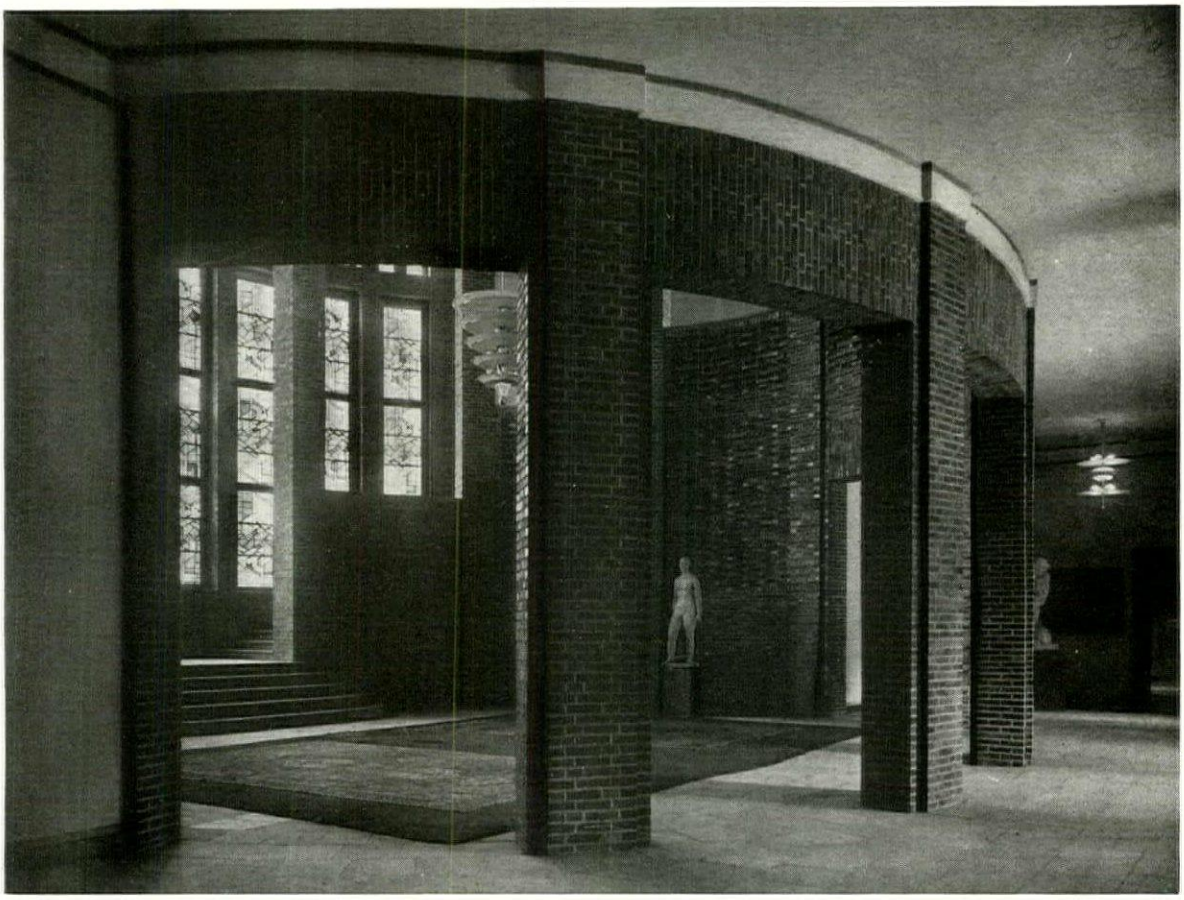


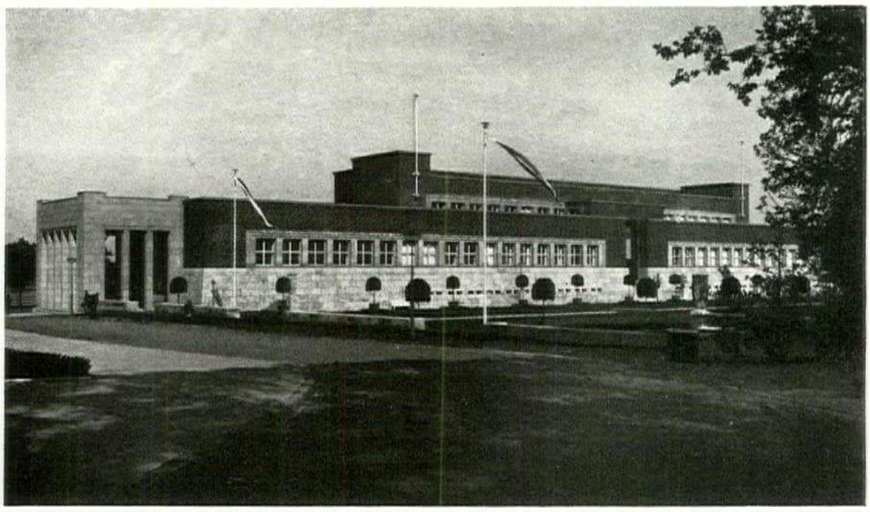
The building illustrates an unusual and interesting use of brick and stone in combination. Note the pronounced batter of the stone base and the strength of pattern in the brickwork. Above is a general view of the building from the rear, a detail of which is shown on the opposite page. At the left is a detail of the main entrance facade

MUSEUM OF FINE ARTS
DUSSELDORF, GERMANY
WILHELM KREIS, ARCHITECT



MUSEUM OF FINE ARTS
DUSSELDORF, GERMANY
WILHELM KREIS, ARCHITECT





At the left is a general view of the building; above is the entrance to the main stair hall. Note the general similarity to the Museum of Fine Arts shown on the two preceding pages

MUSEUM OF INDUSTRY
DUSSELDORF, GERMANY
WILHELM KREIS, ARCHITECT

THE NEW CITY OF TOMORROW

THE DEVELOPMENT OF INDUSTRY AND COMMERCE HAS CHANGED THE COURSE OF CITY GROWTH. WHAT NEW ELEMENTS MUST OUR CITIES CONTAIN TO ASSURE ORDER, HEALTH, AND BEAUTY?

BY

WILHELM KREIS

DR.-ING. WILHELM KREIS

". . . the far-sighted architect must have an elastic plan ready to prevent a new chaos"

FOR the last half century, architecture has been undergoing fundamental changes, influenced by technical, economic, sanitary, and particularly, social forces. Progress in the technique of construction and the migration of the population into large cities have been influential factors in Germany and the United States especially. Towns and large cities have been growing without interruption in both countries, with the result that the process of building movement has been very irregular. As time went on, hasty development not only reacted seriously upon traffic conditions, but it also brought about unsanitary living and working conditions.

It is almost impossible to depict a city of two generations ago and to get a clear conception of it; it is just as difficult for the majority of men to conceive the future city which architects are endeavoring to build. Let me describe briefly the architecture of Germany in former years, the desires our German architects had for municipal planning, how our architecture has developed, and what our cities might look like in approximately thirty years hence.

In order to reflect upon the cities of the past, we must forget the new type structures which developed immediately after the war. Whether we are considering a venerable town with a glorious past or a comparatively new city of spontaneous growth, we find that they have all developed around old centers, and connected themselves netlike with the surrounding, economically dependent suburbs and villages by long inhabited lines. These cities have grown systematically through a logical will. If you come within the neighborhood of these towns, however, the picture of organic growth disappears, and you see ugly buildings on poorly built streets, together with storage places and factories, mixed with fields and gardens, sheds and wasteland.

What in olden times crystallized slowly and developed harmoniously in several styles, almost like an architectural museum, has, with few exceptions, been destroyed in a half century of industrial development. The unprecedented progress of technique, and the expansion of commerce and traffic came too fast and were too surprising to conform to all the rules of modern city architecture. This almost chaotic growth was not only accompanied by ugliness but also by discomfort; and it disregarded sanitary conditions, increased traffic problems and the social difficulties which followed in its wake.

A new realization of hygienic and social necessities, however, has gained more and more followers, who are bringing about a complete denial of this disorderly, undisciplined manner of building. Basic rules were demanded and a new science of city planning developed from this realization. The science of city planning, begun more than thirty years ago, attempted at first to learn from the best of the old order of things, and tried to work in that spirit, but it took another direction when

Morse

The Exhibition Buildings at Dusseldorf, Germany, for which Dr.-Ing. Wilhelm Kreis was the architect. Other views of the group are shown on pages 194 to 196 inclusive

the completeness of the change from the old order was fully appreciated. Architecture became a research science, which, following the demands of our times and the new social formations, tried to find new principles for our whole building system. Where in the past kings, the nobility, and the Church built cities and settled human beings, we find today land and city planning an affair of the people.

City planning today is of an extremely complicated nature. It is not enough when even great artists, such as le Corbusier, for example, try to enter into the secrets of things, and make enormous decorative construction proposals. On the contrary, the growth of a city is an organic matter, in which thousands of forces, artistic, economic, and technical, have to combine themselves in order to form a correct plan which will be elastic enough to be handled correctly in every detail and moment.

Even the most talented architects cannot avoid the responsibility of attempting to understand the life necessities of their fellowmen. There are still millions of men, women, and children living in bad, unsanitary, old tenements and workshops. From them is sent from year to year new generations whose memories of those conditions last until the end of their lives, and which tend to undermine the stability of the state.

Therefore, the first principle of the city builder of today is: Service for men, not for art. To spread the joy of life and work must be the purpose.

Are the light and airy city structures which we are already beginning to build part of the future city? Yes, they are. Even when they are not in accordance with every progressive principle, the architects have, nevertheless, tried to think ahead of their time, and have recognized that health must be the first principle.

What are, then, the principles for the reorganization of our city plans? Traffic must be unhindered and shall not lead through narrow streets. Industrial plants must be situated at points away from our supplies of fresh air. Residential cities must be airy, full of light and sunshine, intermingled with green. Verdant belts must form the connections, and streets leading to working places must be comfortable and agreeable.

Around every large German city, suburban towns will form themselves, built on a uniform basis, in a clear, distinct, airy manner. The multitude of buildings and the arbitrariness of many stylistic formations will disappear, and systematic organization will supplant individualistic chaos. Today we have good and bad examples. The best are those which fulfill the requirements of modern construction, economy, and hygiene without the standardized monotony and emptiness of some of the new large settlements. The bad features, which are today usually attached to cooperative buildings, must be eliminated; and barrack-like appearance must be avoided.

The park is a further detail of our beautiful city of the future, for the unpopular "Keep off the grass" is no longer the slogan in Germany. There is, however, greater social value in a simple green strip of land than in an artistic park. Here a natural life can develop if we include at the same time swimming pools and other sporting features. The geometrical magnificent gardens of the baroque age were relics of royal parks and gigantic architecture; the new parks for the masses must be in contrast to the architecture of

Another building in the Dusseldorf group. ". . . the arbitrariness of many stylistic formations will disappear and systematic organization will supplant individualistic chaos"

Morse

the city, to dissolve the strict character of the city plan, and to remove its rigidity.

One of the most difficult tasks for the future city is the construction of the industrial town. If it were economically possible to demolish whole industrial plants and to build them anew, our advanced construction methods could produce many beneficial changes. We know today that the factory town must be built as light and healthy as the residential city; we know that there is no need for ugliness. The Fuld and Company plant in Frankfort and the Ford plant in Cologne are fine examples of the work being done in this direction. Light walls, big glass windows, and tree-lined streets leading to the workshops are rapidly dispatching to oblivion the gloomy, tragic-looking districts which distinguished the chaotic growth of the last sixty years.

The most difficult chapter in city planning, however, is the sanitation of the city, how to transform the narrow, dark districts, in which there is not sufficient fresh air to breathe properly into districts which conform to our modern ideas of sanitary living. Until a few years ago the old inhabitants of such areas did not recognize the benefits of a more natural life; for them it was no torture to live in cramped quarters with only a narrow yard to view.

The extraordinarily fast development of American cities led, according to our German ideas, to irregularities, exaggerated construction, overutilization of the smallest space, and fantastic skyscrapers with their magnificent effects and bad consequences. In Germany, the realization of this exaggeration has led to a complete halt of such developments, and building plans are examined carefully to detect any attempt to cut off light and fresh air. In America, the increasing scarcity of these elements has forced the introduction of setbacks.

How do we solve the problem in our old German city districts? They are too narrow to be healthy, and too densely settled to be spacious enough for heavy traffic. There are only two ways to utilize the heart of a city and to make it healthy at the same time. The more conservative, but less economic way is to separate the historically and artistically valuable part from the main traffic, and so to preserve it as a museum. The more radical way is to make use of the center of the city by breaking through it with streets and opening it up for traffic. Good examples of the latter method are the Hausman modernization developments in Paris, the new streets built in London after the great fire, and the broad passage through old Cologne in Germany. It must be obvious that this is the proper way to transform the old dying city districts.

With the present depression upon us, it is hard to imagine that there ever will be a new great growth of our cities, but it is possible that they might become again the centers of booming business life. When this moment does arrive, the far-sighted architect must have an elastic plan ready to prevent a new chaos.

How could a Fata Morgana bring the picture of the future city before our eyes? Let us imagine that we are entering a German city about thirty years hence in a mammoth airplane. About thirty miles distant from the city itself we find the residential sections, divided by gardens, not too geometric. Small traffic stations are seen here and there, with netlike streets flanked by trees leading into the city. Far away we see a main traffic center, the point of distribution, from which goods come and go. Farther in the distance, we see the outlines of a gigantic white factory town, run by electricity without smoke and dirt. Before our eyes is a large open area, with stadiums, swimming pools, and open fields. Railway Zeppelins drive around the outer city. In one region we see large tenement houses, separated from each other by gardens for play and planting. The main traffic belt around the inner city has four different divisions, two for railway Zeppelins, upper and under, one for automobile roads, and the other for pedestrians.

Within the inner city, the density increases gradually; office and business buildings arise. Around a few large open spaces, about the size of the Augustusplatz in Leipzig, we find the department stores and largest business houses illuminated at night. No smoke hinders our outlook on our airplane flight. We circle the city and finally we land. Everything around us is ordered in a clear, exact, beautiful style; everything is useful but still beautiful.

But how is it possible to construct our new city so natural, healthy, and beautiful? Must we build so soberly and so materialistically? The answer is that our new style of building must agree with the spirit of the times. I mean, we must recognize the new facts, and find new happiness in a new art. Must the work of our new technique be, of necessity, without a soul? Certainly it has the enthusiastic approval of the masses, of our youth, and even of the intellectuals, but only because it is new and surprising. I hope soon for the arrival of the moment when the happiness shall be greater than the surprise. One cannot be surprised often; one gets over it, and becomes cool until the sensation passes, and then something else new is expected.

But this is not the approach of the new art. "Happiness is virtue," says Spinoza, and Werfel says of today, "The standardized brain triumphs and a new spiritual militarism threatens." Are we then without ideals? We have an ideal—the realization of happiness. But that is the last goal, and first we must moderate the material misery of the masses, and bring them into a state of "not suffering." This is only the first condition for happiness, and is not happiness in itself. In the saga of Orpheus, we find that his song not only moved the souls of animals but also of stones. The stones, in our case, might mean the principles of the new reality, and the poetical man shall liberate the imprisoned soul.

I am of the same opinion as our poet Werfel: "The revolutions of our times have buried many beautiful things." It is sufficient to liberate the roots for things to grow again, for then the soul thirsts. It is not true that our soul is only a part of economic dynamics. Naturally, after an earthquake it is difficult to talk about the architecture of the destroyed houses. The starving soul, so says Werfel, jumps on its next victim, the body. And sport, body culture, is our idol.

Does not this help us over the sterility of our materialism? Surely faith in our present times and belief in a new happiness will grow out of our rediscovered healthy body, and the individual liberty of thinking and feeling will lead again to spirituality. We listen again to ourselves, we recognize new indefinite possibilities, and from our heart streams a flood of new melodies.

This day of a new culture will come and reconcile the present. The builder realizes that he has not only to take care of the physical necessities, but also of the desire for the happiness of those for whom he builds. The objects that he builds may be standardized, but the spirit shall be free.

EDITOR'S NOTE:

It is one of the unfortunate consequences of the too slow development of friendly international relationship between architects that Dr. Wilhelm Kreis is not better known to the profession in this country. Of all the leaders of German architectural thought, he stands as one whose civic consciousness and ideals of professional responsibility represent the fulfillment of the aims of progressive American architects.

As president of the *"Bund Deutscher Architekten,"* he directed many of the city planning reforms and low-cost housing movements which have played such a significant part in the establishment of Germanic architectural eminence. That his achievements have not been wholly unrecognized in the United States is indicated by his election to honorary membership in the American Institute of Architects.

Wilhelm Kreis was born March 17, 1873, in Eltville, a small village of the Rhineland. After study in Munich and Brunswick, he became assistant in 1898 to Paul Wallot. Only two years later, in 1900, he won the Silver Medal at the World's Fair in Paris; this was followed by other honors, the Gold Medal at Dresden, the Grand Prix at Turin, the Gold Medal at the World's Fair in St. Louis, the Grand Prix at Bruxelles, and the Gold Medal at Berlin. Degrees have been conferred upon him by many German universities, and he has been elected to honorary societies in Austria and Argentina as well as in the United States. He is a member of the Prussian Academy of Arts, the Academy for Building, and the Building Commission of the League of Nations.

Heurlin

Fresco in the Town Hall of Stockholm, Sweden, by Prince Eugen

OLD TECHNIQUES FOR NEW WALLS

BY

EUGENE CLUTE

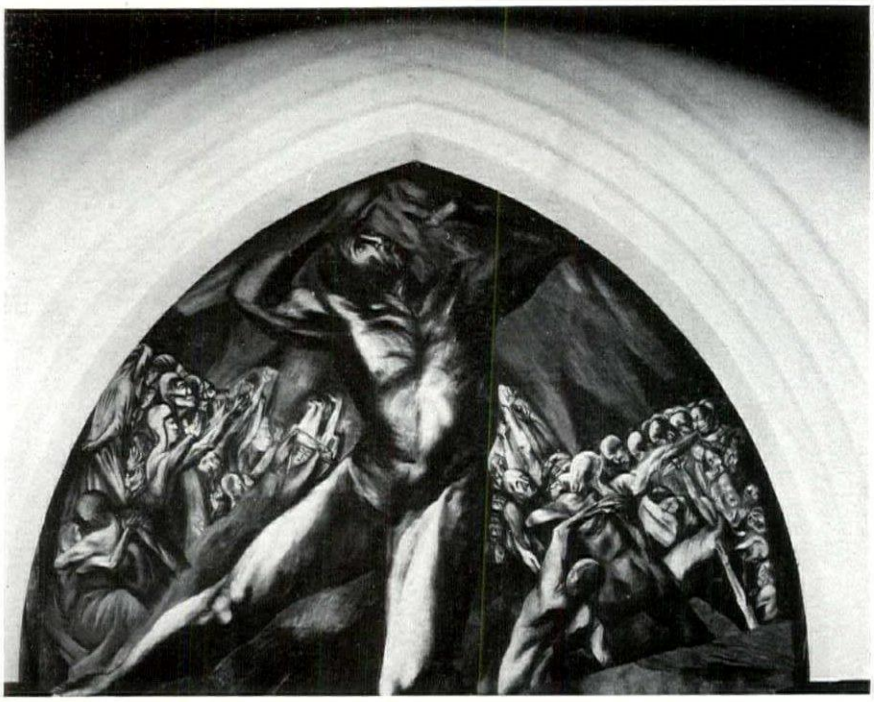
THE photographs herewith show the technique of a number of very old methods of decorating plaster surfaces which are now being revived, since they lend themselves admirably to the rendering of the most modern designs as well as those of an historic type. This is a timely matter because a need is strongly felt in modern architecture for some suitable means of enriching walls without encumbering them with pilasters, columns, and paneling, after the old manner, and of giving character and interest to ceilings without the use of coffering, false exposed beams and the like. Decorations in true fresco, al secco, tempera, and sgraffito meet the requirements especially well.

Only so much will be given here as may be of value to architects in using these mediums in present-day practice—a general idea of the characteristics, possibilities and methods of working. The illustrations are from the work of several artists, including Olle Nordmark, to whom the writer is indebted for much practical information.

TRUE FRESCO

The methods employed by artists differ somewhat, for each has his own way of working, but the technique described below may be regarded as basic.

In true fresco the colors are applied to lime-sand mortar before it has dried, by painting with powdered pigments mixed only with pure water. A limited area of surface is plastered and painted at a time, being completed before the mortar becomes too nearly dry to absorb the colors properly. The boundaries of these areas, which are decorated on succeeding days, are made to follow outlines of the design or are otherwise made where they will not be noticeable. This finished coat of mortar is applied upon a backing of rough coats of mortar.



Courtesy, Paramount Pictures

Fresco by José Clemente Orozco in Pomona College, Claremont, California

Tina Modotti—Courtesy, Weyhe Gallery

Fresco for a public building in Mexico City by the great revolutionary Mexican painter, Diego Rivera

The quality of being a part of the wall is one of the most valuable properties of true fresco decorations: When properly executed they show the texture and the warm gray color of the mortar, even in the deepest tones of the design. The enforced breadth of handling gives dignity and strength to these decorations. Frequently the painting is confined to three tones, highlight, shadow and intermediate. Occasionally a light wash is passed over two adjoining tones to give further gradation, but if this practice is abused, it results in a loss of clarity. It is well also to limit the number of colors for the sake of simplicity of effect. The darker tones are produced by repeated applications, as heavy color tends to remain on the surface instead of sinking in, forming a "dead" spot lacking in vibrancy.

The highlights and shadows are painted-in first; then, when the artist feels that the "golden hour" has arrived, during which the mortar is in best conditions to receive the color, the intermediate colors are put in. Rapidity, freedom and sureness in working are necessary, otherwise the medium becomes "tired," dull and lifeless. Cleanliness is important in every part of the process; clean sand, colors, water and brush must be used. Fresco painting should have clarity and a soft luminosity that improve with time, especially during the first year.

THE MORTAR

The preparation of the plastered surface is important. The finished coat of mortar which receives the painting must be floated with care to produce the required texture and the necessary power to absorb the colors properly. For a smooth, hard surface, a steel float is used, while a wooden float or a pad made by folding a piece of coarse linen is used for medium and rough textures. Coarse-textured mortar is desirable for its richness of effect and strength of character, while the smoother surface is required for designs that contain fine detail.

When plastering is done on brick work, any hard-burned bricks which might cause efflorescence to strike through should be cut out and replaced by others that have not this fault. Such bricks are sometimes coated with asphaltum, but this tends to interfere with the absorption. Occasionally the rough coats of mortar are applied to a thickness of two inches or more and in that case it is good practice to reinforce it with interlaced copper wires attached to copper nails driven into the brick work.

The preparation of the mortar backing is very simple in most modern buildings, for it is plastered on metal lath. The use of hydrated lime instead of ordinary lime saves time and permits the fresco work to keep pace with the present-day demand for speed.

Sand containing sea salt is not permissible. The lime should be thoroughly slaked and the mortar should be allowed to mature fully. This is true of the mortar for the backing of rough coats, as well as that for the finish coat. Both the backing and the surface must be absorbent, with uniform suction in all parts.

The colors used in fresco paintings are mainly permanent mineral colors, though manufactured colors are used as substitutes for a few natural pigments that are prohibitive in price, and they are satisfactory when of the best quality. The names of these colors are given further along in this article for they are used in some other methods of decorating as well as in fresco.

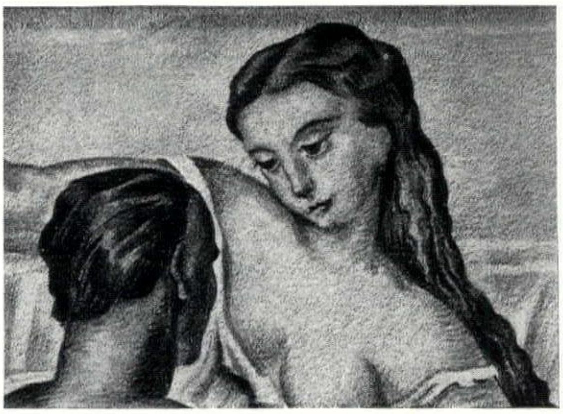
AL SECCO

Al secco painting is done on lime-sand mortar after the mortar has dried. The colors are mixed with lime water, the water that rises on the top of slaked lime. A good lime-sand plastered wall or ceiling is all that is needed as a ground for al secco painting. The texture should be fairly coarse. This process is much simpler and more rapid than fresco painting and gives excellent results, though it does not have as great beauty as fresco. The latter is, consequently, used for the more important decorations. Al secco is especially good for conventional and abstract ornamental designs, all-over decorations, etc., which can be executed in this medium very effectively and with great speed. The colors are mainly earth colors, the same that are used in fresco. Some color is likely to remain on the surface, but can be washed off by spraying with water before the work is entirely dry.

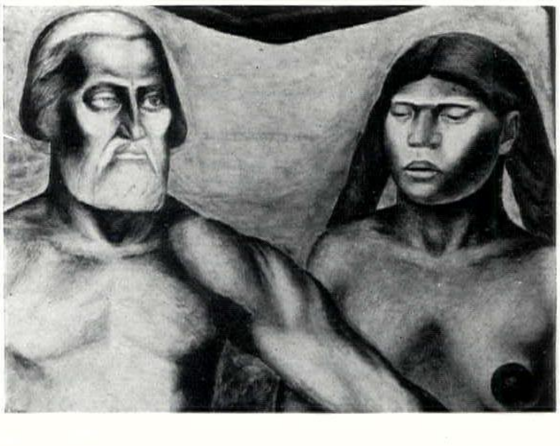
TEMPERA

In tempera painting the colors are mixed with a medium composed of egg and linseed oil upon an especially prepared ground. Tempera painting should be done in a very free, flowing manner or with a dry-brush technique. Anything between is unsatisfactory. Tempera may be regarded as the best of this type of decorative medium excepting fresco.

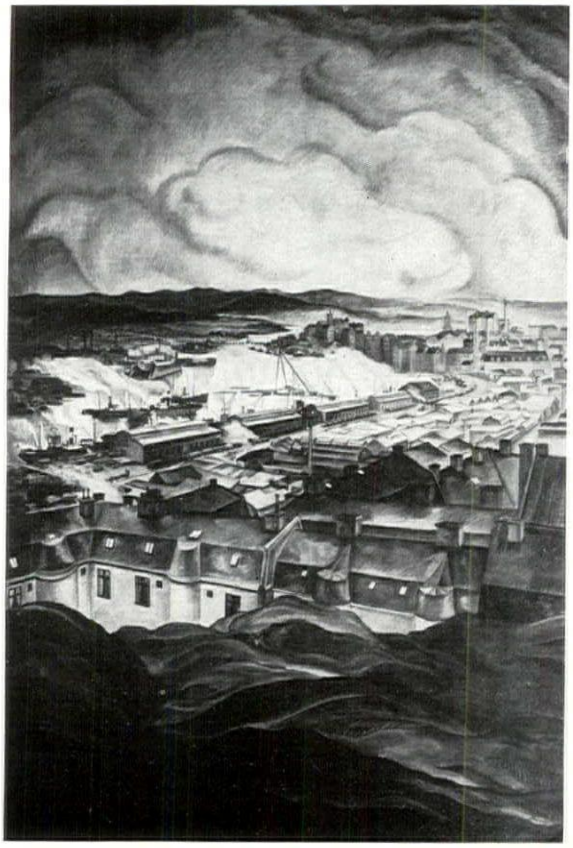
TEMPERA VEHICLE. In preparing the vehicle with which the pigments are to be mixed for tempera painting, the yolks and whites of eggs are put in separate earthenware vessels and beaten with a long-haired brush, then set away overnight, still in separate covered bowls. The next



Peter A. Juley & Son



Two frescoes, the one above a detail from a decoration by Olle Nordmark, and below, a detail from the "Cortez and Malintzin" murals by Rivera in a Mexican academy



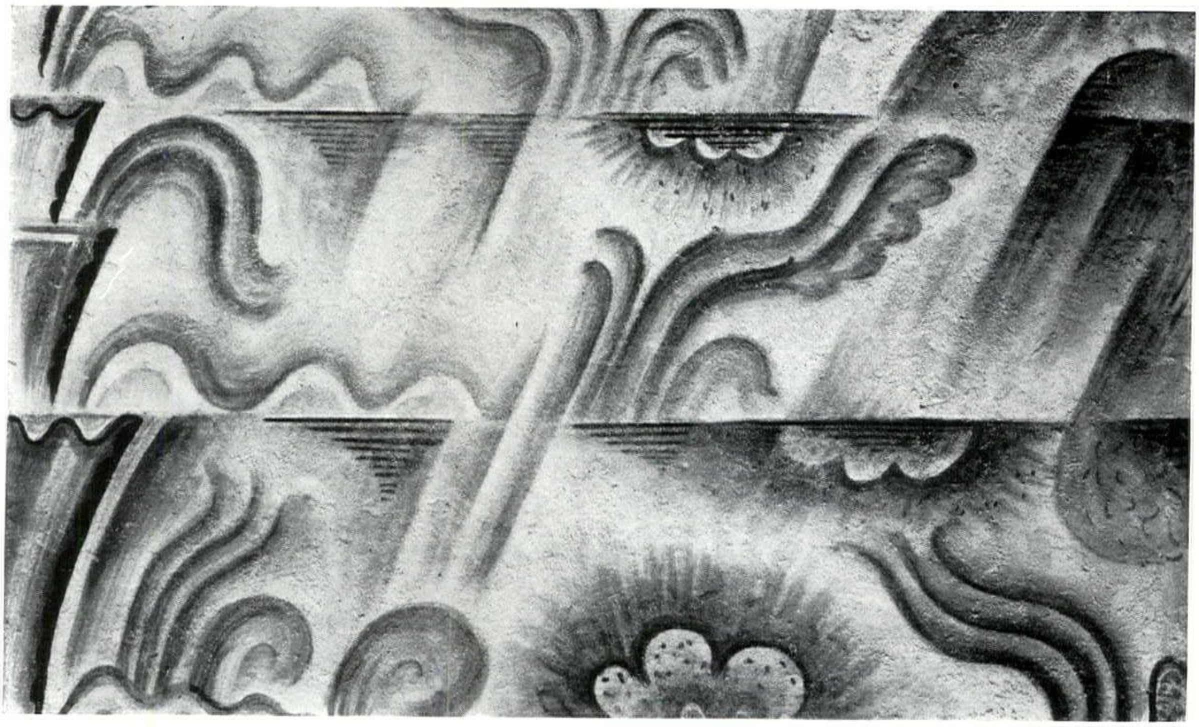
Two wall decorations by Olle Nordmark. Above, a wall panel in tempera technique for the dining room of the Grand Hotel, Guttenberg, Sweden; and below a detail of an all-over decoration in al secco painting

day the skim which has formed on the top is removed and the fluid contents of the two bowls are poured together into a bottle and shaken. Then, good boiled linseed oil is added in the proportion of one part of oil to two or three parts of egg and the whole stirred and beaten with a paddle or brush in an earthen bowl until an emulsion is formed—this is the tempera vehicle. In order that it may be kept a few days without spoiling, a few drops of oil of cloves may be added or a little alum dissolved in the mixture. The pigments used are the same as for fresco and al secco painting, principally earth colors.

Tempera Ground. To prepare an ordinary plastered wall or ceiling to receive painting in tempera, it should first be given a thin coat of oil paint, composed of good boiled linseed oil and zinc white. This coat should be a bit fatty and it should sink in and be left to harden. Then two thin coats of plaster of paris should be applied. The plaster of paris should be mixed with an excess of water and allowed to stand and settle. It should be kept under water until it is to be used and then mixed with good rabbit-skin glue, parchment glue or the best grade of gelatine.

For tempera painting on wood it is well first to cover the wood with thin linen that has been shrunk by washing. The linen should be moistened with glue and applied. On this the plaster of paris ground should be applied as described above. There are many old examples of tempera painting on wood. The fine old Russian ikons were painted in tempera. Tempera painting can be done on canvas by using the ground described.

Peter A. Juley & Son



OIL TEMPERA

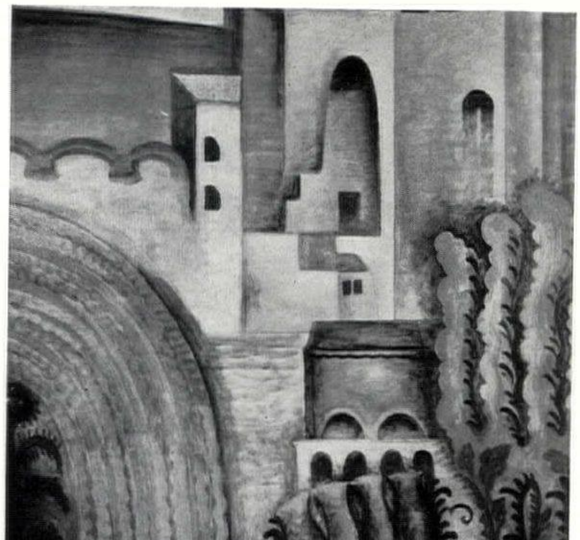
A variant of the tempera technique is oil tempera decoration in which the general massing and deeper shadows are painted in tempera as described above; but the intermediate tones and highlights are painted in oil colors, which should be sufficiently transparent to permit the under painting in tempera to show through them. Such painting has greater luminosity than work done entirely in oil colors, and more life than tempera alone. The oil colors should be artists' tube colors, mixed with raw linseed oil, a little turpentine and a little copal varnish. This method is more speedy than oil painting, for the under painting in tempera dries within a few hours.

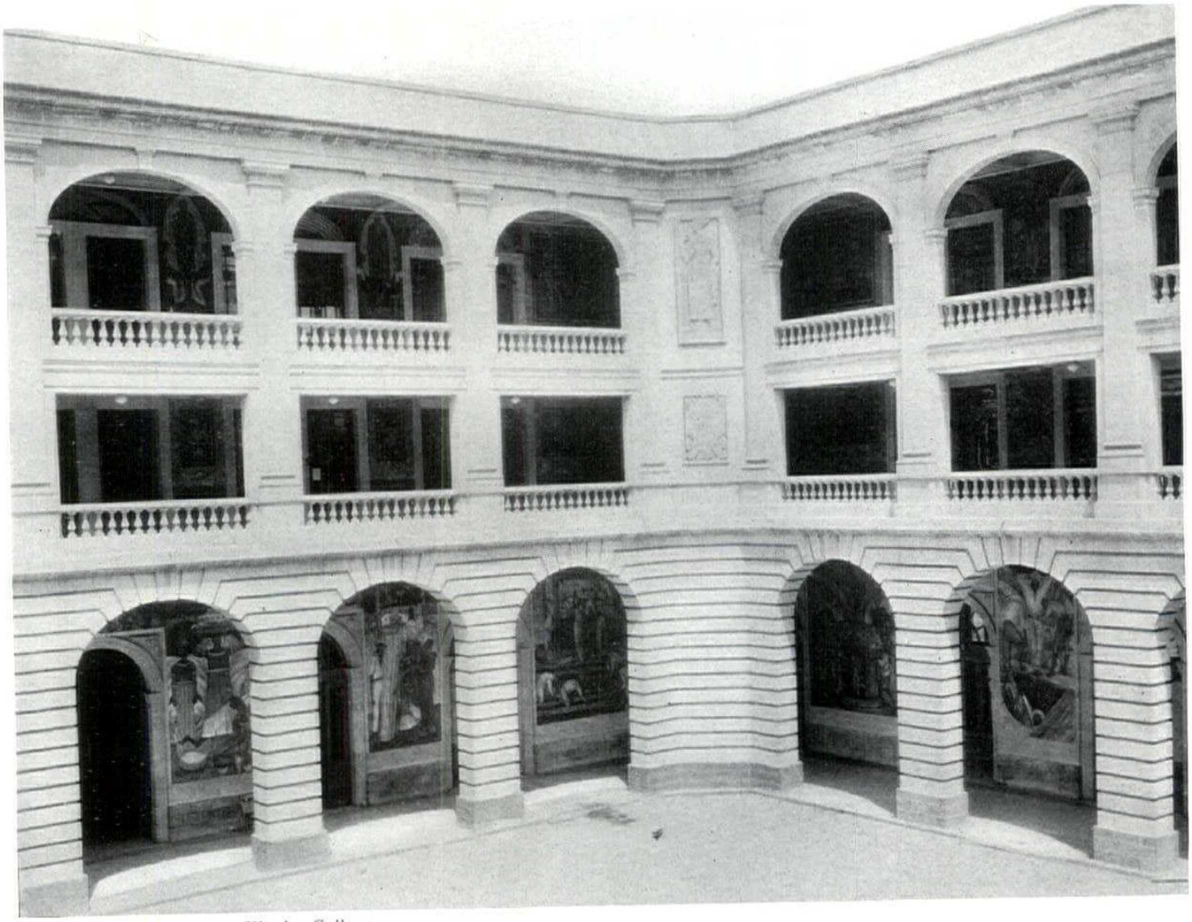
SGRAFFITO

As is generally known, sgraffito work is done by cutting through one coating down to the underlying coat and scraping away portions of the upper coat before it has completely hardened. The backing is of lime-sand mortar and the top coat or coats are of lime either white or colored with the same pigments used in fresco work. A sharp stylus set in a wooden handle very much like a carpenter's scratch awl is used for the outlines and for hatching, while chisels are used for removing the material when it is desired to produce exposed areas. The line technique plays almost, if not quite, as important a part in sgraffito decoration as does the handling of the masses of the design. Frequently two coats of lime are used, the under one tinted, giving with the plaster three colors.

Peter A. Juley & Son

Above, a panel showing a variety of textures and hatchings in sgraffito by Olle Nordmark; below left, a panel in oil tempera by the same artist used as the background for a church pulpit; below right, a detail of the panel





Tina Modotti—Courtesy, Weyhe Gallery

The courtyard of a public building in Mexico City showing frescoes by Diego Rivera in the arcades. This is a typical example of the use of this old technique employed in Medieval and Renaissance times which has been revived by moderns

PIGMENTS

Among the pigments most commonly used in fresco, al secco, tempera and sgraffito decoration are the following: Blue—ultra-marine blue, French ultramarine and Cobalt blue; Green—earth-green (terra verte), and veridian; Red—Venetian red, light red, Indian red (either purple or brown shade); Brown—raw umber, burnt umber, burnt sienna; Black—Italian earth black (terra nera); Yellow—yellow ochre, golden ochre (either transparent or opaque), raw sienna, and Naples yellow. A rare yellow ochre from Cyprus, which is very fine, is sometimes used. Medium cadmium may be employed with discretion for its brilliancy.

For the guidance of the artist, the design is often transferred to the wall from a full-size drawing, before the work is begun. A common method is to perforate the outlines in the paper of the drawing with a needle set in a handle or with a sharp-toothed wheel that revolves freely in a slot in the end of a short rod set in a handle, known as copying wheel. By placing this pattern against the wall and striking it with a pounce, made by tying a small quantity of starch in a piece of fine, thin cloth, the outline of the design is formed upon the wall by a white powder driven through the perforations. Frequently, however, the design is drawn directly upon the plastered surface by the artist, especially in al secco work.

We have become so accustomed to thinking of wall and ceiling decoration as limited to large mural paintings in oil colors, executed in the studio, on the one hand, and the common stencil work in calsomine or flat oil paint, on the other, that we have largely lost sight of fine old methods of decorating plastered surfaces. True, we have known about fresco, al secco, tempera and sgraffito decoration in an academic way, as something one looks at with admiring reverence in the great monuments of European architecture. Now, fortunately, we are beginning to use them in our work and happily these arts never were lost in Europe, so there are men available today who have the requisite skill and the knowledge of the old technique to adapt them to modern needs.

ON TO PARIS—

——*AND BACK*

This article contains as many of the incidents of the Beaux Arts alumni trip to Paris as the author could remember, and as the editor of the FORUM could publish without embarrassment or litigation

BY

KENNETH M. MURCHISON

The versatile Mr. Murchison himself—architect, author, speaker, bouquet and brickbat thrower—practising the intricate art of wearing a high hat, flannel trousers, and a cane, and looking dignified at the same time

WHAT is life to a college man without his class reunion? What indeed? Twenty years out, thirty years out, back they come, the old boys, cutting up capers and raising Cain for three or four days in their class tent.

Suddenly, one day, while at a luncheon without wine, an idea sprang up in the egg-like dome of one of the Beaux Arts architects: "We've never been back to Paris, to our Alma Mater, the Ecole des Beaux Arts!"

The idea grew. It fostered. Feelers were extended. They took. They held on. They planted themselves. And grew. And grew.

But they could not go back to their Alma Mater empty-handed. They must carry back to the Ecole some token, however slight, of their gratitude, their allegiance, their homage, their affection.

All sorts of propositions were made. Scholarships? No. Too many now. A tablet? Certainly not. A collection of photographs of American skyscrapers? *A bas, Messieurs!*

More ponderings. Great knittings of bulging brows.

"I have it!" cried out Student Hirons one day at the Architectural League, on the verge of a mental spasm. "I have it, comrades! A great memorial flagstaff, mounting heavenwards in the Court of the Ecole des Beaux Arts, a fitting demonstration of our loyalty, our . . ." Here Mr. Hirons almost choked to death on one of those *ragouts de mouton* which have made the League so unpopular. "Yes, a flagpole, and I will design it myself—myself, the great Hirons!"

The cheers that greeted this outburst of patriotic enthusiasm nearly rent the walls of the League in twain, but there it was, complete, the Big Idea, the *Raison d'Etre,* the Real Thing.

SO the plans grew. The architects of the United States were circularized in ringing appeals to lay down their T-squares and let go their secretaries for a month. A steamer was chartered from the United States Lines, the *American Banker*—her name being changed immediately to the *American Architect.*

The eastbound voyage was marked by a round of tournaments, concerts, lessons in singing, lessons in conversational French and in pillow French, practice in wearing their high hats and cutaway coats, how to curtsy gracefully without falling, and how to drink champagne without spilling any.

In corroboration of the well-known fact that architects are often better singers than architects, it may be noted here that architects Ware, Gompert, Mott, Schmidt, and LaBeaume were the nucleus of the ship's choir. Nothing terrified them, except perhaps an empty glass during choir practice.

Henry Saylor took it upon himself to edit the daily newspaper published by Sparks, the radio operator. We regret to inform our readers that

Messrs. Edwards, Covey, Kahn, Chadbourne and O'Connor resting from their labor of painting panels in the Social Room of the ship. Need any comment be made on what Mr. Kahn thinks of the work of his fellows?

the Federal laws of our great free country stand in the way of its publication on land. "The Private Life of Artie Ware" was published in three exciting installments, with finally—"The End, Thank God."

Some of our most accomplished litterateurs contributed to the daily, Hubert Ripley, J. Monroe Hewlett, Louis LaBeaume, Fred Murphy, and Peter Grimm.

Having what might be termed a galaxy of artists aboard, the boys set to work one stormy day and decorated the Social Hall and Smoke Room in a most charming manner. Tony Sarg did animal scenes all over the Smoke Room, while the Social Hall blossomed forth with scenes of Europe, done by George Wharton Edwards, Arthur Covey, D. Putnam Brinley, J. Monroe Hewlett, Philip Chadbourne, Ralph Gray, E. A. Dennison, George Idell, Arthur Ware, Hubert Ripley, and C. Howard Walker.

The effect of these decorations was marvelous, and immediately put the little old *American Banker* in a class by itself, far ahead of anything in history.

WE approached Cherbourg on May 30, Decoration Day. Out came the tender. A group of cheering enthusiasts. American flags. French flags. Mathé, Maigrot, Pacon—architects all. A large bouquet of flowers from the wife of one of us, Madame Raspetti. (Modesty prevents the revealing of the name of the blushing recipient of the bouquet.)

Ashore! Led by that little Napoleon of the

A. I. A., the S. B. A. A., the S. P. C. A. and the I. W. W., Julian Clarence Levi, we were passed through the French customs with bows and smiles, and there the 53 Marco Polos beheld their *train de luxe*, first time on the rails, a train designed by Henri Pacon, the handsome and distinguished French architect of the State Railways, who dedicated the train to the Americans.

Paris! 6:15 P.M. What's broken loose? What's all the mob about? Is there a revolution? A riot?

No, sir. No revolution! All for us! The Gare St. Lazare crowded to suffocation with a yelling, cheering, singing mob of students from the Ecole des Beaux Arts! Banners waving. American flags everywhere, everyone shouting the song of the Ecole, "Les Pompiers," a song in which we joined *fortissimo,* much to their delight.

Then the cavalcade! Old-fashioned *char-a-bancs* drawn by four ancient horses, motor buses, motor trucks, a brass band, more banners, pandemonium! All traffic stopped in the Place de l'Opéra, three of America's best-known architects dancing all the way to the Latin Quarter, a girl on each arm.

Home was never like this, men!

The Place St. Germain-des-Prés! More crowds. More noise. We hoist a banner over the entrance of the Café des Deux Magots. We invite them all in for a drink. The café looks like the New York subway! Waiters couldn't move. Beer splashed all over everything! Altogether, the greatest and grandest mix-up in the history of international good fellowship!

After a few hours, the old boys were pretty well played out. They went back to their new homes, the Madison Hotel and the Palace Hotel, right across from the Eglise St. Germain-des-Prés, whose early matin chimes often rang the *anciens* into their beds, along about 6 A. M.

The voyageurs broke up into parties for dinner and to see the town. Some of them had had a date for that night for four months past—and how they rushed to keep those dates!

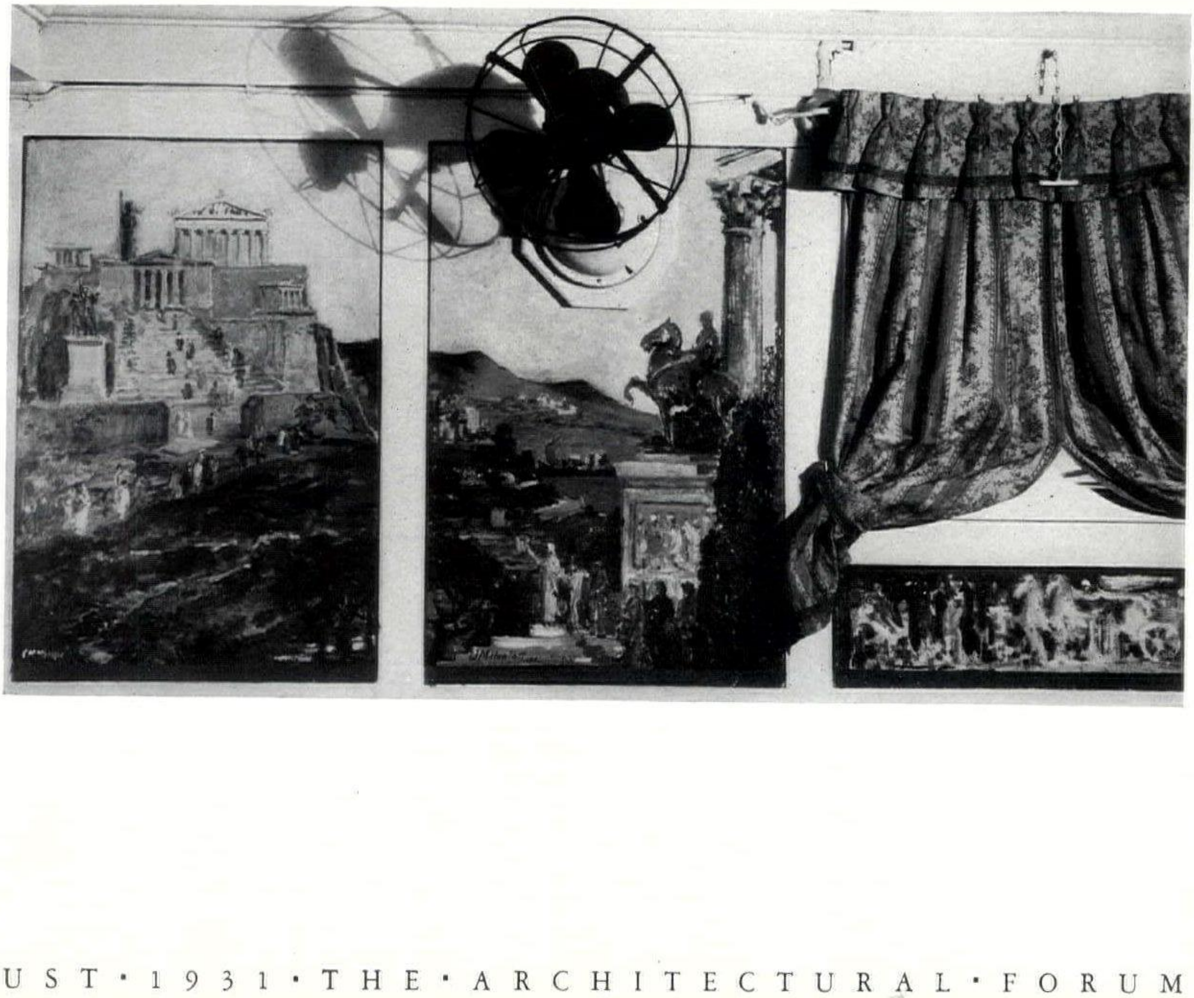
THE ceremony of the presentation of the monumental flagpole took place on the morning of the fourth of June. The 53 voyageurs, following orders, brought out their high hats and cutaway coats, and believe me, it set a record for high hats in the Quarter.

Arriving at the school, we formed a cortege. Zantzinger and Murchison placed a memorial wreath on the tomb of the students of the Ecole fallen in battle; then we formed around the flagpole in the Cour d'Honneur. The flagpole is really a beautiful job and everyone congratulated Fred Hirons on his design.

Speeches were in order, all in the Gallic tongue, quite naturally. The French were represented by M. Petsche, *Sous-Secrétaire d'Etat des Beaux Arts,* and M. Baumier, *Sous-Directeur* of the Ecole.

C. C. Zantzinger of Philadelphia made the presentation address on behalf of the Americans, and Kenneth M. Murchison accepted the American flag donated by the French Government to the Society of Beaux Arts Architects of New York. Julian C. Levi then made the address of welcome at the exhibition of one hundred drawings made by American students, which were hung in the *Salle des Grands Prix* in the *Ecole des Beaux Arts.*

At the left, Ely Kahn pleading with D. Putnam Brinley for a little modernism in his work, but Mr. Brinley remained true to the Beaux Arts traditions. And below, the finished handiwork of C. Howard Walker and J. Monroe Hewlett, tentatively titled, "The Cool Hills of Greece," "The Breath of The Gods," or "Another Argument for Concealed Ventilation." As Mr. Murchison says, the paneled decorations put the ship far ahead of anything in history, and unless the same group repeats the excursion, history will never catch up



This day was really the biggest of all our big days. The presentation of the flagpole and the exhibition were really the *raisons d'être* of the expedition and the arrangements went off perfectly, due to the efficient cooperation of Levi, Raspetti, Shepard, Maigrot, and Mathé, the latter two representing the student body.

THE next day, the fifth, was set aside for the visit to Rheims, under the guidance of W. W. Bosworth, John D. Rockefeller's representative in France. An early start was decided upon, so as to get the boys back to Paris in time for a nine o'clock dinner. As an example of everybody in the gang doing his bit, and doing it right up to the handle, Louis Jallade called up everybody in the hotel at 5 A.M.

A great tureen of onion soup at 5:30 A.M. strengthened the weaker ones and off they rolled toward Rheims in a giant motor bus, where, by special invitation from the Marquis de Polignac, we were conducted through the great *caves* of Pommery and Greno. Ten miles long, these *caves* are, and icy cold.

Big Artie Ware had, up to that time, easily retained his position as President of the Architectural Consumers Association, but when he saw twelve million bottles of champagne, in endless rows, he turned back to his fellow voyageurs and said sorrowfully, "Boys, I'm licked!"

Then the dégustation of the champagne began. Just as much as we could drink—and such champagne! Everything seemed to brighten up, the world took on a pleasanter aspect, the Building Department seemed far off, in a deep fog—all Nature seemed to smile.

Next we went to the City Hall of Rheims where the Mayor, a jolly old soul, greeted us with a long, prepared speech and a great table in the Banquet Hall laden down with champagne. Our regular union orators answered the Mayor in the dialect of Rheims, with the usual ending:

"Vive la France! A bas la prohibition!"

That made two parties.

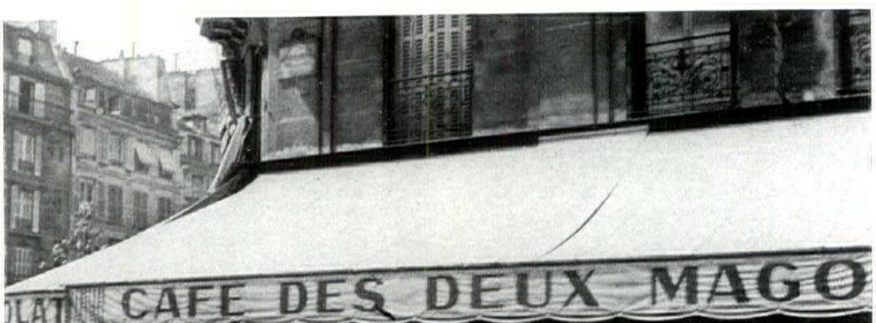
Next to the hotel for luncheon, where the architects of the Marne gave us our third champagne feast. More speeches. Songs in French and in English.

Then to the Cathedral. Low visibility, seen as though through a slight haze. The bearded architect of the Cathedral, together with Bosworth, showed us the restorations, and those who could navigate went up to the top of the towers.

Next, on to the Tennis Club de Rheims. The president of the club was a professional champagne taster. Needless to say, every architect present offered to swap jobs with him.

The following day we turned back again to things architectural and went to Versailles in a body, having already visited Fontainebleau and the American School some two days after our arrival. The American Club of Paris also took in Versailles the same day, so special courtesies were served by the Governmental representatives, and parts of the château seldom seen by tourists were opened in our honor.

That evening we attended the Folies-Bergères, sixty of us. Louis Walsh said they had as good shows as that down at Poli's, in Waterbury. After the theater, we held the annual supper part of the Beaux Arts Ball Committee, the first one ever held in Paris.



Typical morning, noon or night scene of social activities of the delegation. *Cafe des Deux Magots*, the unofficial rendezvous of the alumni as it was in their student days at the Ecole

Sunday was devoted to sleeping and to various private parties given to us by residents of Paris, but on that peaceful Sabbath we felt that we had to rest a bit and prepare for a big day on Monday.

This big day was devoted to the Colonial Exposition in the Bois de Vincennes. As an exposition, it is the most attractive, the most alluring, and the most beautifully lighted job that one could imagine. Bordering the Lake of Vincennes, it rears its minarets and towers in picturesque plan and in a wealth of color.

The official day of the American architects commenced with a reception at Mount Vernon by U. S. Commissioner C. Bascom Slemp. He showed us Washington's bed (probably made at Grand Rapids) and the original wallpaper, and husks of corn from Io-way, pineapples from Hawaii, and other things calculated to soothe and cool the architectural mind.

The next fête was given us by Marshal Lyautey, of World War fame, who is in personal charge of the Exposition. Although the Marshal was in mufti, he was very military. His white moustache went up and down violently with every word, but the American architects simply could not keep their eyes off the Marshal's checked pants, the finest pair we had ever seen.

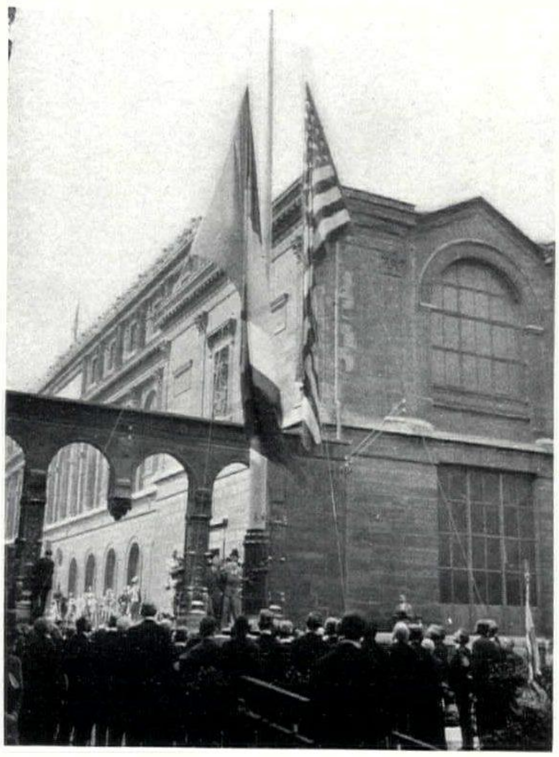
The next party given the visitors was restful, for they could sit down. The function consisted of a banquet given at the *Musée Permanente* by the French *Diplomes* of the *Ecole*.

AFTER the speeches—and by this time our American orators were practically holding their own with the French—a marvelous entertainment was offered. A tragic dance performance by a troupe of Annamites (Annamites are people, not bugs), attired in most gorgeous Indo-Chinese costumes and accompanied by the most awful Annamite band that was ever listened to. I paid strict attention to the music but could discover neither melody nor rhythm. However, they all ended together, so they must have rehearsed it.

When the show was over—and it was a show without parallel—we were conducted to the Temple of Angkor-Vat, which was illuminated for the first time in our honor. Only the American architects were permitted to enter, the crowd being kept out by Majordomo Louis Jallade, aided by seven *gendarmes*.

The old boys took a rest the next morning and then set out in two *chars-a-bancs* for the wonderful château of Vaux-le-Vicomte, near Fontainebleau. It was on account of the magnificence of this château that Louis XIV was constrained to build the Palace of Versailles.

The present owner, Monsieur Sommier, the "Sugar King" of France, received the Americans.



Performing the official business—raising French and American flags on the commemorative flagpole

Wednesday, June 10. Biggest day, next to the flagpole day! The day of the Quat'z'Arts Ball! One of the things we had been most excited about. For the Committee of the Ball had been good enough to change the date of the Ball from the 13th to the 10th, just to accommodate us!

Ely Jacques Kahn did the job of preparation for the Ball. Ely did the costumes, killed a lot of goats to make beards of 'em, ordered four hundred bottles of champagne, constructed the American *loge* and arranged the myriads of details.

The *anciens élèves* were attired as Greek patriarchs, long robes, long white whiskers, deep tan make-up, gilded sandals and all. In order to make it architectural, we gilded the perfectly formed domes of Louis LaBeaume, Jimmy Hewlett, Jack Tracey, and Peter Grimm.

When we arrived at the Ball, at 11:30, it was already in the throes of a riot. But when they beheld the sixty aged Græco-American sages in solemn procession around the hall, the Gallic spirits fairly overflowed. We were the center, the bull's-eye, the *clou!*

The Americans in their box dispensed champagne like water. (It cost about the same per quart as White Rock.)

And—after thirty years—how was the Ball? It wasn't a ball at all. It was a riot. A rout. A rough-house. Without parallel.

A sad and solemn duty soberly performed. Burial of John Barleycorn one day out from the Land of Liberty. The author states that the bottles were full at the ceremony, but he fails to add that the coffin was looted

In the cold gray dawn of the morning after, the boys took a vote and decided that the Kit-Kat Ball, the Illustrators' Ball, and the Beaux Arts Ball, all of New York, had it all over the Quat'-z'Arts Ball of Paris.

Why? Because the Quat'z'Arts is so rough, and so savage that none of us has the slightest desire to repeat the experience. And with the girls being more and more afraid each year to go to the ball—afraid of the roughness of the students—how can it last much longer? Ten men to one girl is no ball. And the way they treated those few girls was appalling. In fact, sad to relate, many of them rushed to the American's *loge* for protection, where they were comforted by the kind old papas.

The next day there were three different receptions, one at Crane & Company's, Hotel Ritz; one *chez* Père Laloux and the third at the home of Defrasse, a great French architect.

Friday. Our last day in Paris. Tired out. No sleep. Some leaving for Sweden; others for England; others for Germany.

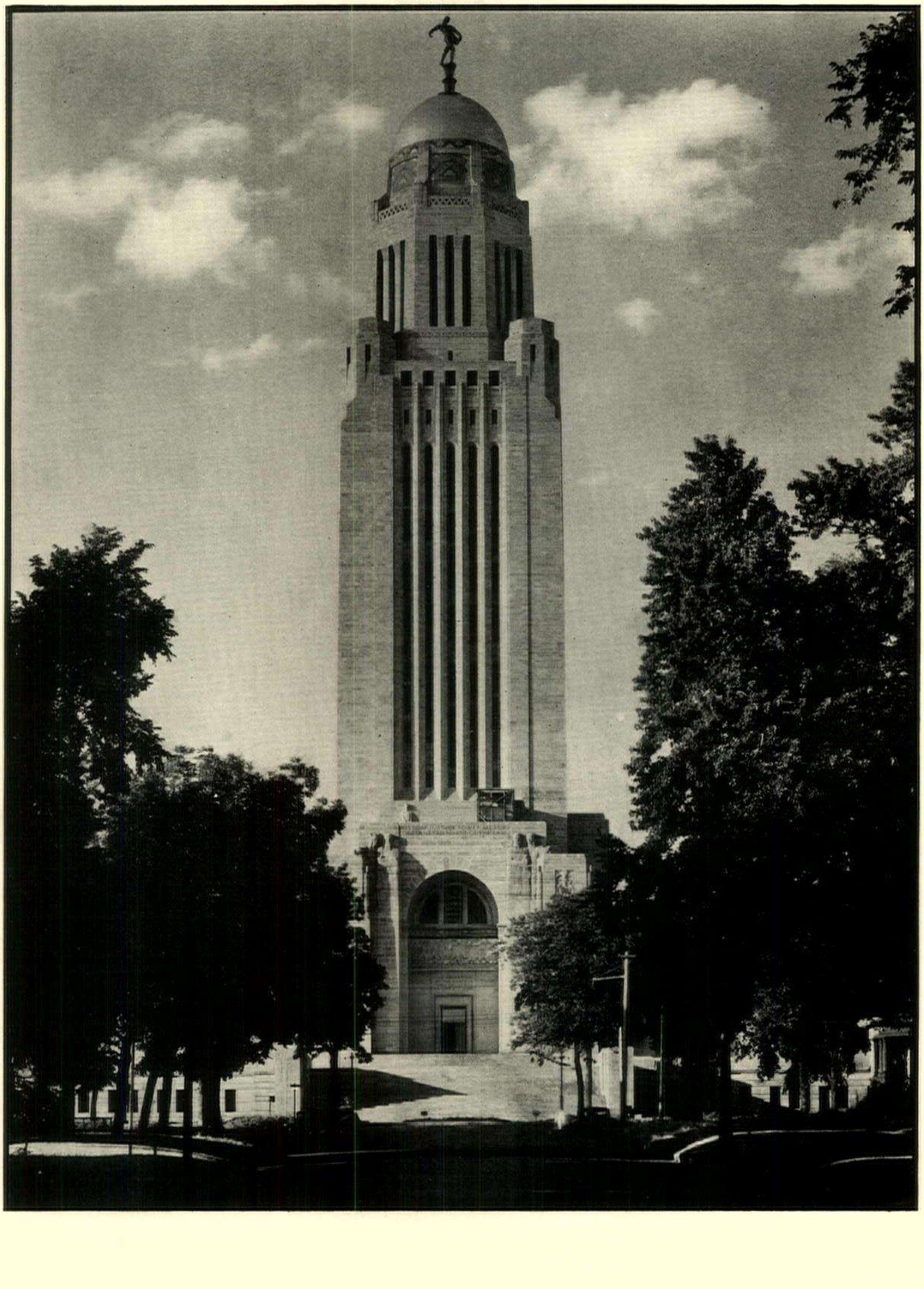
A big garden party at the Ministry of Beaux Arts was one of the high spots of the visit to Paris, where we were cordially received by the Secretary of State for Beaux Arts, M. Paul Leon, and by other noted Frenchmen.

On June 13 we boarded the good ship *American Sleeper*. A sad ceremony on the last day out was the consigning of the unused bottled goods to old Father Neptune. Yes, there was some left over, believe it or not.

So this, the first architectural invasion of France, came to a glorious end.

Will it ever happen again? Who can tell? We would like to repeat it next week, but we doubt whether the French could stand the strain!

—THE END



THE NEBRASKA STATE CAPITOL

BERTRAM GROSVENOR GOODHUE ASSOCIATES, ARCHITECTS

THE ARCHITECTURAL FORUM

VOLUME LV NUMBER THREE

SEPTEMBER 1931

THE DESIGN OF PUBLIC BUILDINGS

BY

PHILIP SAWYER

OF YORK AND SAWYER, ARCHITECTS

THAT our public buildings—Federal, State, County, Municipal—should be so planned as to fulfill their purpose, at least as well as private structures, raises no question, but when one attempts to say what they shall look like there is trouble at once.

In the early part of the last century when the classic pepperpot dotted the map with all the names of Greece and Rome, making it necessary for a good American to explain that he wished to die in Paris, France, the tradition of classic architecture was fixed upon us. We had been reasonably fortunate in the United States Capitol, in the White House, in Mount Vernon, in the Sub-Treasury in Wall Street, and in many of our earlier buildings, which might so easily have been far worse. Thomas Jefferson had given the "Italianate" a push forward, and columns were recognizably literate to the classically read American. In fact they were required, and any attempt to employ pilasters was looked upon with suspicion. Columns were the "real thing"; pilasters, a cheaper substitute. That pilasters had their use and place was not readily explicable.

State capitols followed generally the lead of Washington, some quite charmingly, as at Columbus, Ohio, where the lantern dome has an individual character of its own. Even McKim, Mead and White built a capitol at Providence of this type, though its detail was rather that of the New York City Hall, a building dear to McKim's heart.

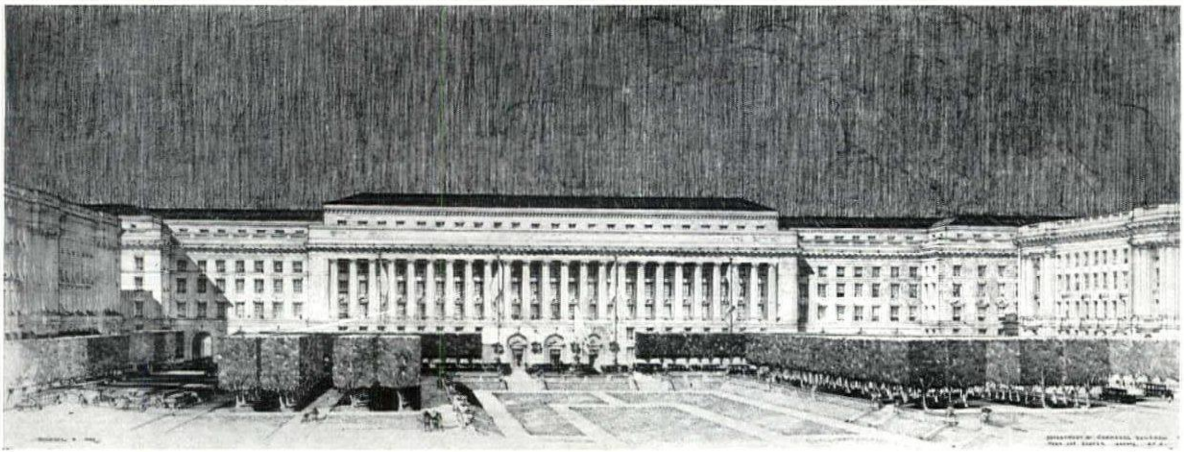
Goodhue's Nebraska Capitol is the modern instance of complete and successful divergence from this type, the State having been so fortunate as to choose a mature architect of vision and originality, and the architect being so persuasive as to be able to educate the State to the point of authorizing such a monument.

In buildings designed by the Government there had been, as with private architecture, a sterile period. Instead of the simplicity of the old Court House on the axis of "Fours and a half Street," Washington, Mr. Mullet, Supervising Architect of the Treasury, had built such atrocities as the State, War and Navy Building in Washington and the Post Office in New York. In the first he used slab granite of the greatest size, so applied as to give the appearance of a building without visible joints; while in the latter even the rusticated columns, apparently laid up in alternate hexagonal and round drums, were yet cut from single blocks at much expense and to no purpose.

Under the Tarnsey Act the Treasury was later allowed to employ private architects, and the Post Office at Cleveland by Brunner, and the New York Custom House by Gilbert are examples of this period.

The question of the character of public building design and the degree to which it should be formal and "monumental" depends, of course, largely on its location. For motives of economy it is usual to house as many varied activities as possible in a single building. The Municipal Building in New York and the Federal buildings in Atlanta are examples.

In New York, Chicago and several other large cities, this is well enough, since no matter how large the building, it will not be so important as to be out of scale with private structures. In a smaller city, however, it may well happen that a

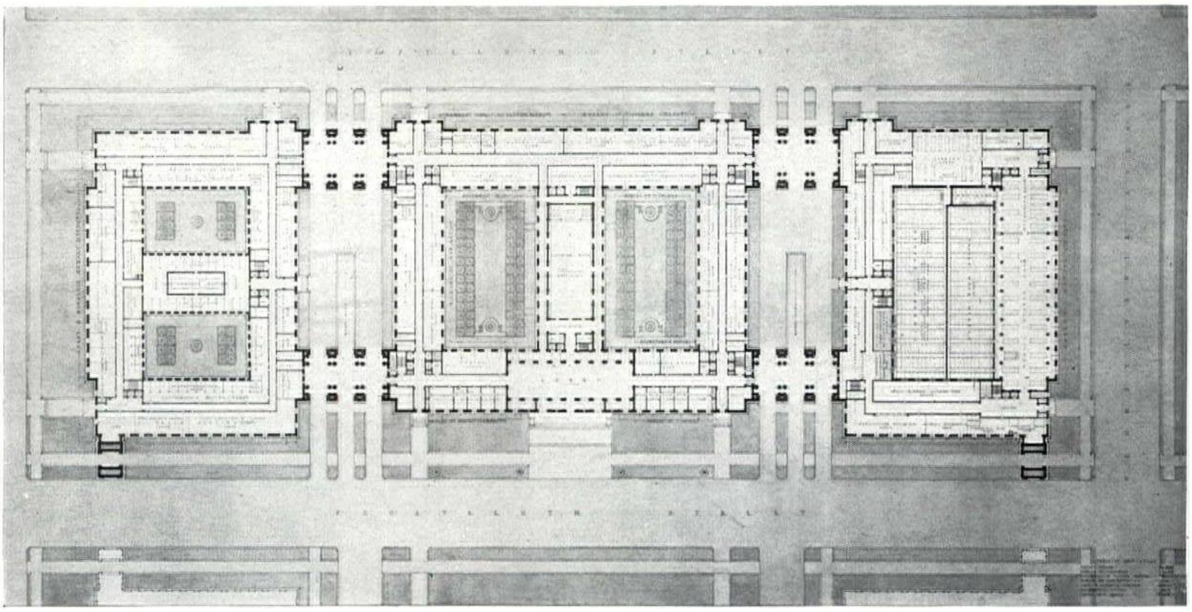


Department of Commerce Building, Washington, D. C. York & Sawyer, Architects

Federal building, containing perhaps courts, post office, offices of the army engineers, the health service, the weather bureau, the customs, etcetera, etcetera, will require a building greater in mass than the city can live up to, much more expensive in character than a private building can afford to be, and more ponderous in design than is desirable for it, or for any other structure. Moreover, it is likely to be located in a position which gives it no proper setting.

Instead of designing Federal buildings to contain everything that can be gathered together, and locating them in narrow streets in congested neighborhoods, the interests of the city and special local conditions should be the determining consideration in Federal construction. This is, perhaps, an impossible ideal, but it is interesting to speculate on the possibilities. Suppose, for example, that a whole square were bought, not in the center of things, but in the line of the local business trend, and developed as a park, with the Federal Courts placed in an individual building at the head of it; and suppose that this park were flanked on one side by a post office and on the other by a building housing the remaining government activities. Suppose, further, that all these buildings were then kept down to the height of only two or three stories and built of simple materials using those indigenous when any are available, and the architecture employed, so far as possible, being that of the region. A logical unity of effect could thus be achieved immeasurably superior to the ponderous masses we now sometimes see, an adornment to the community, and a credit to the Government.

Where this sort of thing has already been done, in many towns where the Government post office is in scale with the surroundings, where it faces a public square already established, and furnished with other buildings of corresponding size and



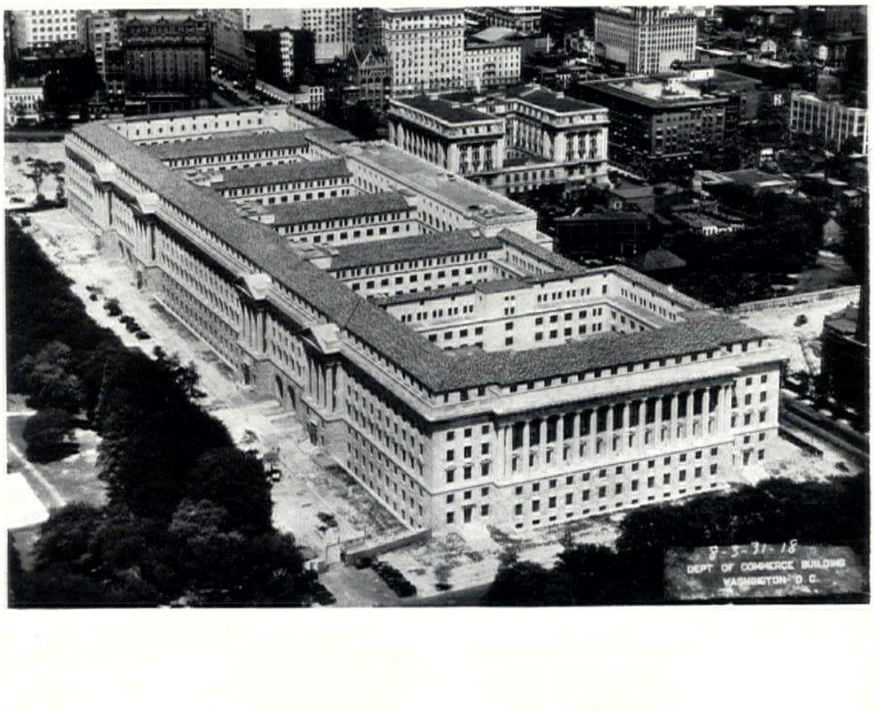
Pennsylvania Avenue Elevation, Department of Commerce Building. York & Sawyer, Architects

character, the effect is charming. For, with all the difficulties under which the Government labors it has done as high a percentage of satisfactory work as the "private architects." The Treasury Department has in many instances designed buildings which are appropriate to their surroundings and pleasing in character. It is usually in the larger towns or smaller cities that they are likely to become overwhelming.

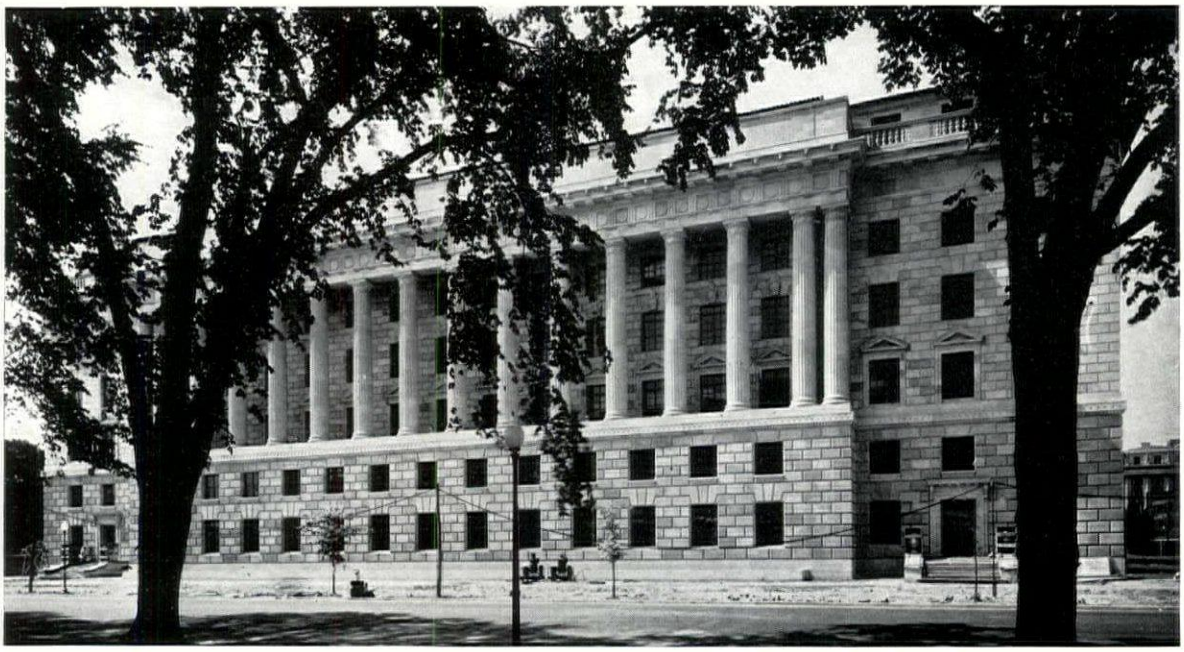
The character of the design of our public buildings is a difficult question. They should certainly be eminently practical in their planning and lighting; the space should be admirably adapted to its purpose and no government employe should be allowed to feel that he could work under better conditions in rented quarters than in those constructed by the Government or the city or the county.

One element of importance to a private enterprise, however, is in these buildings non-existent. Privately owned buildings are built for advertisement. Mr. Chrysler may desire a building which will cause at the moment the greatest volume of newspaper comment and attract the attention of the greatest number of people. His interest in the way his building may be regarded ten years hence is probably comparatively slight. Recent banks in New York or Chicago or Detroit may be as new and bizarre as they can be made in the year 1931, on the theory that when they begin to look queer in ten years or so they can be "redone" and the cost charged to advertising.

But the public building has a longer life. It is not designed to create the maximum interest this year or next. It is intended that it shall be equally useful and equally acceptable many years hence. It is, therefore, a serious question whether the use of a style which has been acceptable in the last few hundred years, so modified as to fulfill the requirements absolutely, and to sacrifice nothing



A progress photograph of the building taken from the top of the Washington Monument



A Recent Progress Photograph of the Pennsylvania Avenue Side

to "architecture," is not more satisfactory in the long run than something designed like a movie theatre to catch the eye of the crowd at the moment. Just now, for example, we are largely influenced by the Scandinavians, and we are also striving hard for the newest thing in every direction. Square headed openings have been done; round arches are things of the past; pointed arches lack interest. No one has recently used, I believe, two short lintels set up against each other at a right angle to make a single point over an opening, probably the first device of a mason who lacked a single stone long enough for the span. But when that primitive mason having three stones, one of them not quite long enough to span an opening, set up two of them at a slight angle, tilting them in sufficiently to receive a third, he concocted a figure that has been rediscovered in the Chrysler Building as new, and has been copied in a hundred others.

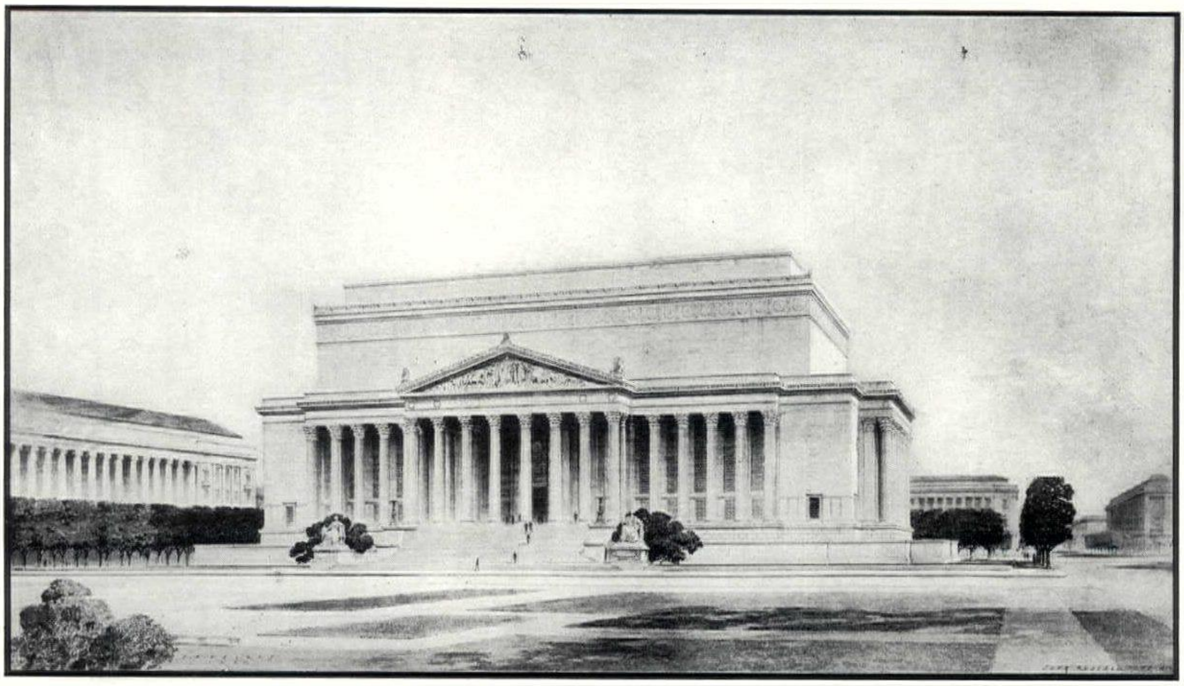
The use of black is another fad of the moment as is also the use of white metal instead of bronze. Desirous of avoiding classic ornament or the Egyptian detail used many years ago on the Bowling Green Building, our architects have borrowed fish and birds from Japanese primers with which to decorate the Chanin Building, and from William Morris and the Eastlake School in the International Telephone and Telegraph Building.

In the employment of all these styles and motives the endeavor has always been, it would seem, not to choose the most appropriate or the most beautiful for development but only to adopt—frequently not even to adapt—the most strange. "We must be different at all costs." That's one slogan.

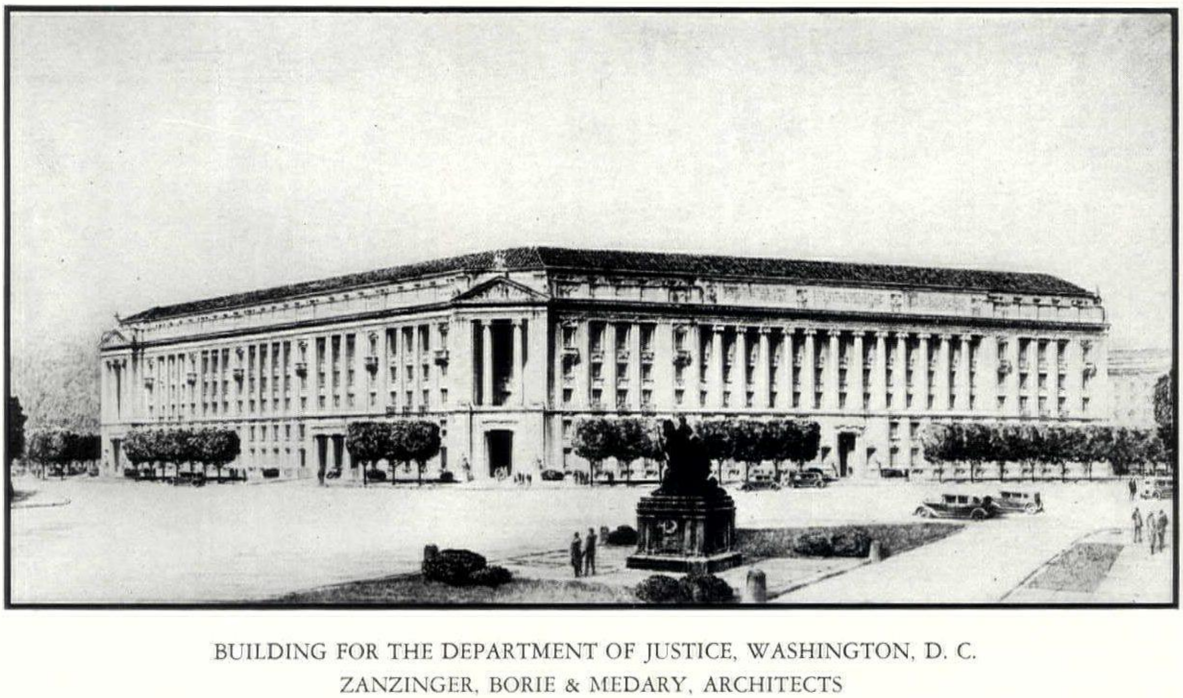
Unfortunately, as is always the case, the few men like Paul Cret, who in the development of a new style has thrown overboard the whole language of tradition, but who still writes charmingly, as he has done in his recent Philadelphia bank, are imitated by a hundred others who have never written grammatically in any style, and are entirely unhampered in their "modernistic" work.

To attempt a literary parallel to our problems of design . . . it is not necessary that we should confine ourselves to the language of the Elizabethans or even the Victorians. We may employ slang and colloquialisms. We need not always write sonnets, or in a meter which will scan. But we should use a language; we should write grammatically; and we should spell. Amy Lowell, James Joyce or even conceivably Gertrude Stein can depart from accepted usage and still produce work of individuality and charm. The range is as wide as from Santayana to Sherwood Anderson or from George Meredith to Ernest Hemingway, but in each case the work itself is homogeneous however individual and it conveys a definite impression to any intelligence. The content lends validity to the manner.

But the old is not necessarily bad, nor the new of virtue. We may still say with Ben Jonson in his "Sylvia": "Expectation of the vulgar is more drawn and held with newness than goodness; we see it in fencers, in players, in poets, in preachers, in all where fame promiseth anything; so it be new, though never so naught and depraved, they run to it and are taken."

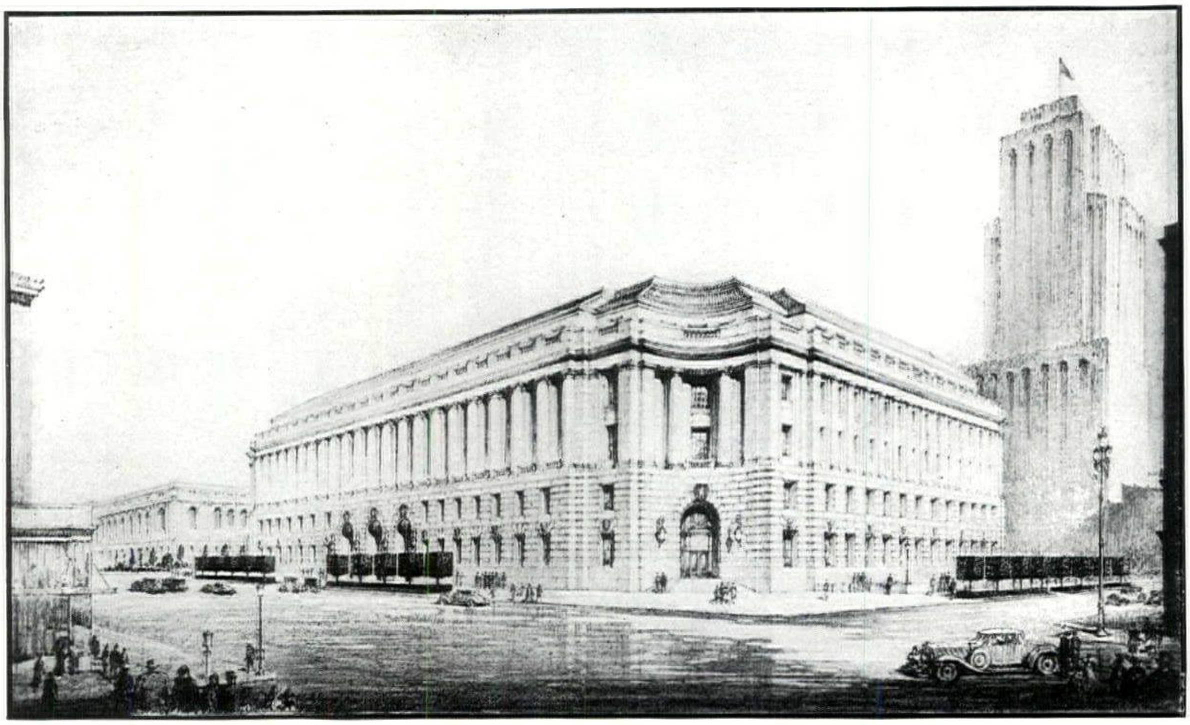


BUILDING FOR THE NATIONAL ARCHIVES, WASHINGTON, D. C.
JOHN RUSSELL POPE, ARCHITECT
RENDERING BY O. R. EGGERS



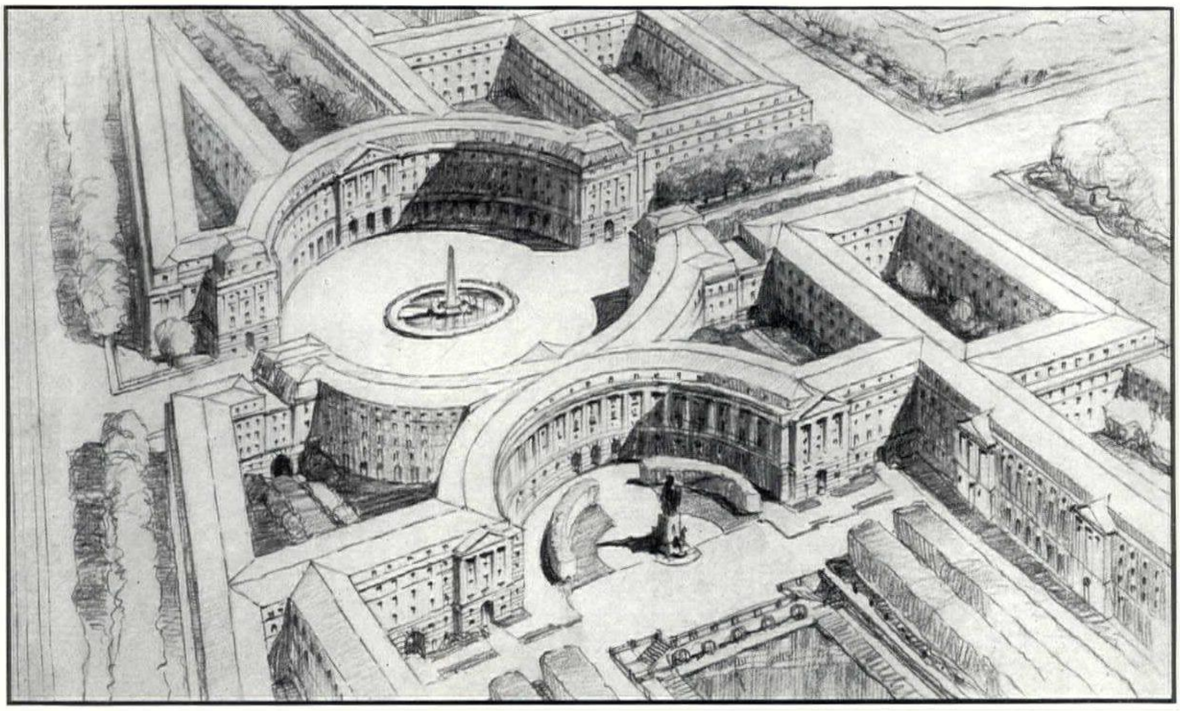
BUILDING FOR THE DEPARTMENT OF JUSTICE, WASHINGTON, D. C.
ZANZINGER, BORIE & MEDARY, ARCHITECTS
RENDERING BY SCHELL LEWIS

GOVERNMENT BUILDING PROJECTS

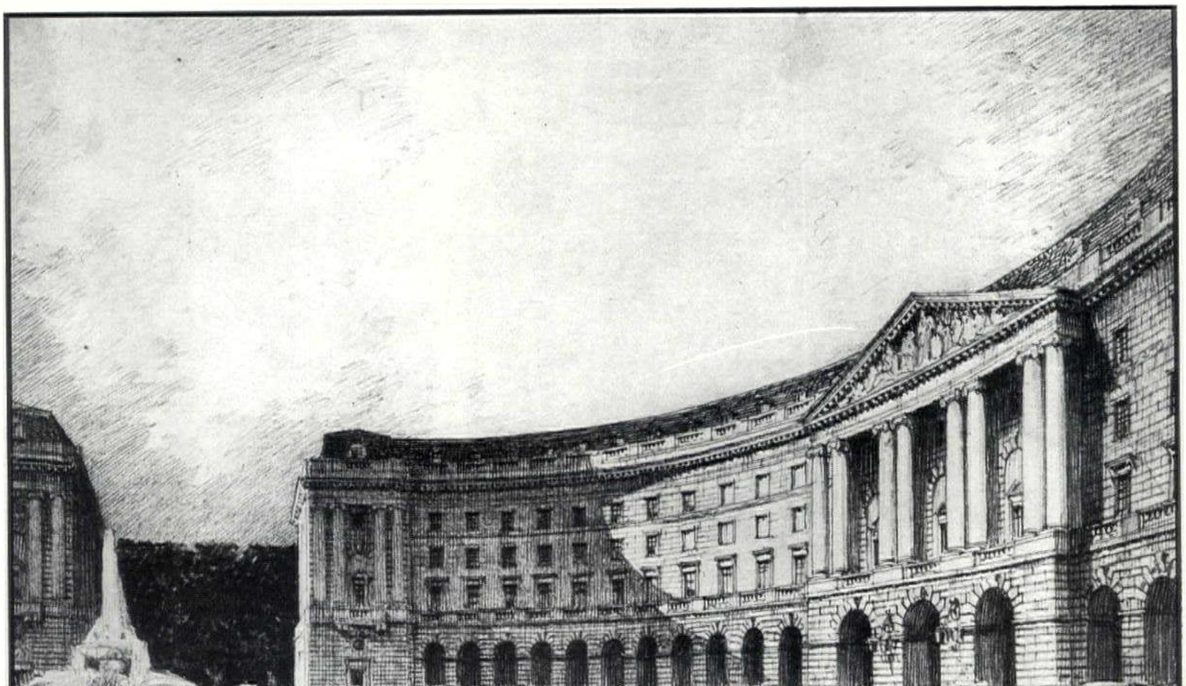


PROPOSED FEDERAL OFFICE BUILDING
SAN FRANCISCO, CALIFORNIA
ARTHUR BROWN, JR., ARCHITECT

FEDERAL BUILDING
PORTLAND, OREGON
MORRIS H. WHITEHOUSE, ARCHITECT



AERIAL PERSPECTIVE, POST OFFICE DEPARTMENT BUILDING
WASHINGTON, D. C.
DELANO & ALDRICH, ARCHITECTS



POST OFFICE DEPARTMENT BUILDING, WASHINGTON, D. C.
DELANO & ALDRICH, ARCHITECTS
RENDERING BY CHESTER B. PRICE

POST OFFICE AND COURT HOUSE
PITTSBURGH, PA.
TROWBRIDGE & LIVINGSTON, ARCHITECTS

UNITED STATES POST OFFICE
CHICAGO, ILL.
GRAHAM, ANDERSON, PROBST AND WHITE, ARCHITECTS

CITY PLANNING AND CIVIC PROGRESS

BY

TRACY B. AUGUR

PLANNING CONSULTANT, DETROIT

The relation of governmental buildings to the city plan, heretofore so haphazard, is occupying the attention of many city fathers; it becomes the duty of the architect to guide and counsel with vision, profiting by the mistakes of the past, providing for the needs of the future.

THE words "City Planning," in spite of accumulated evidence to the contrary, mean city planning. A city is an agency for the collective operations of individuals, and planning is a process by which a desired goal is consciously achieved. City planning, therefore, implies a concept of what the nature of a city ought to be to meet the needs of each new era of an advancing civilization, and a program for its accomplishment.

We have been so occupied with considerations of what cities are that we have been prone to dismiss their more Utopian aspects as the colored father dismissed the millennium. "My son," he said, "it is just about like a centennial, only it's got more legs." Similarly, we take it, the glorious city of the future will be not unlike the city of today, except that it will have more streets. Wherewith we work importantly upon the streets and designate the effort City Planning.

This recent emphasis on streets can be blamed with easy conscience on the automobile, which in its mass descent upon town and country has so thoroughly inoculated our whole life that it has become the symbol of the modern era. We are living the opening chapter of the motor age, so utterly enchanted with its hero that we are uninquisitive about the plot. Even cities, enthralling principals of the preceding epoch, have lost their interest, except as they obstruct the full enjoyment of our latest wonder.

But to those unromantic souls who would forever ferret out the future from the scant indications of the past and present, the motor age seems destined to introduce a most engrossing and exciting theme and to give to our complacent urban mode a shock as deep as that which industry gave farm and fireside in the last century. The widely prevalent aches and pains of traffic seem less important in themselves than as recurring symptoms of impending changes in the urban pattern that only city planning in its larger sense can properly direct.

TRENDS IN THE URBAN PATTERN

Already two prophetic trends become discernible. The motor car has weakened the old dominance that the preceding epoch gave large cities. Its widespread use has hurled the first effective challenge at the forces of concentration which the industrial revolution set in motion. Much that the metropolis heretofore has offered as peculiarly its own has been made available throughout broad regions by the new modes of transportation and attendant advances in communication.

The element of choice in the location of home or mill or office, has been increased ten or a hundred fold. The field for new enterprises has been widened in proportion, and large centers find themselves in competition with the small, and the small with one another, to secure their quota. This competitive element is heightened also by the dwindling field for new recruits in population. Hitherto the nation's growth, the lessening need of man power on the farm, and foreign immigration have seemed to furnish a limitless supply. But today these fields are losing their fertility and may even cease their yield within the present century. If cities are to continue to grow, they must soon begin to grow at the expense no longer of the farms but of each other, the large at the expense of the small, or the small at the expense of the large, the east from the west or the west from the east, the fit from the unfit, the attractive from the unattractive. The ensuing struggle, made possible by the motor age, will be not alone a competition for new enterprises but an actual struggle for existence from which not even those few towns that are content to hold their own will be exempt.

The other trend is the growing popular appreciation of the beautiful, nurtured in the very ferment of the new era through the development of the motor car itself. And it is significant to this discussion that the full florescence of this element in motor car design came as the result

The Los Angeles City Hall, part of the Civic Center Street Plan now being executed at a cost of more than $50,000,000. Sponsored by civic and architectural groups, further developments are designed to extend over a period of twenty years, and will include the entire city

of competition. The automobile originated as an object of utility alone, and with staunch singleness of purpose the Model T fought valiantly the losing battle of machine appeal, until a more enlightened product forced it to yield. This epic struggle needs no reviewing here, for its echoes are still reverberating from the walls of bathtubs and the sides of saucepans, and back and forth across the fields of commerce, while the cause of beauty adds new triumphs to its victory.

These two phenomena of the new era contain an omen for those engaged in any branch of city planning, for they indicate that in the future man will live and work more where he *wishes* to be and less where he *has* to be, and that his choice will be swayed, as it is with his motor car or kitchen sink, by those considerations of æsthetics which have for so long been the disdain of the self-styled practical.

IMPORTANCE OF PUBLIC BUILDINGS

This suggests the role played by the governmental buildings in the city plan. They constitute the physical embodiment of what the city is, they represent its entity, they are its dwelling place. And as a house expresses the personality of those whose chosen home it is, so the houses of the city government express the collective quality of those they represent. Many staid citizens may bristle at such inference, but summer habitues of the town hall steps in turn may feel exalted. If a city's buildings are inadequate, whether in appearance, location, or utility, they give strong indication of insufficiency to the town that tolerates them.

If the community has a proper sense of the values that go to make up good living, it will appreciate the need of efficiency and order in its buildings, and will have pride enough to make them beautiful. No bank or business house that claimed progressiveness would stay in quarters that were cluttered or unattractive if for no other reason, because a large part of the appeal to patronage is based on the building that it occupies. And similarly no town that calls itself progressive dares neglect its civic buildings when towns, like businesses, compete for patrons.

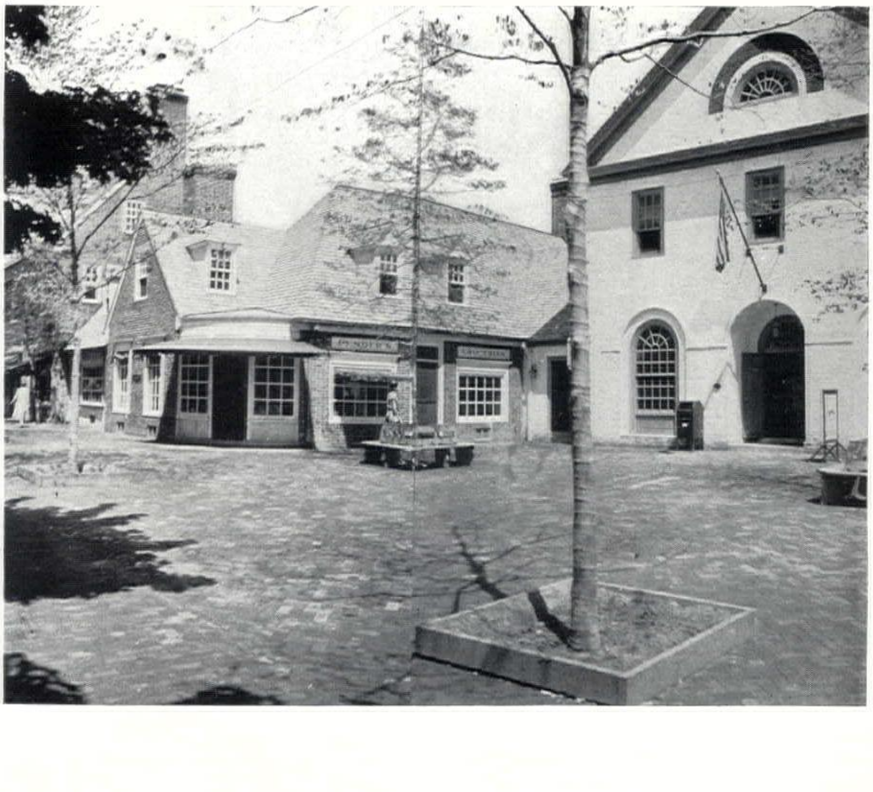
If city plans are merely charts and diagrams depicting boundary lines, or legislative documents defining powers and rights, this abstract reference to public buildings would have small bearing. But if instead the thought of planning is conceived more broadly as a program for the maintenance or establishment of standards of high quality in the community, the public buildings become concrete exponents of the plan's ideal. If a town would be more than the third dimension of a map, if it would be a place where men may live contentedly, may work conveniently, may play wholeheartedly, then let its buildings express good order, utility and beauty, for such qualities, maintained through changing decades, build towns that live and prosper.

When an American thinks of his nation, he is apt to have a mental picture of the Capitol, with its great breadth and lofty dome. It is a focal point for his conception of the Government, a tangible contact between it and himself. It has inspiring greatness and impressive beauty, as befits the country of his allegiance. If he is a metropolitan, he gropes for something equally expressive of the bigness of his city, and finding it not, turns to skyscrapers to satisfy the urge. If he is by choice a townsman or a villager, he has a keener sense of the differentiation between his national and local government. The town has comprehensible extent, his contacts with it are more intimate, its people are his fellowmen to know by sight and mix with on the street.

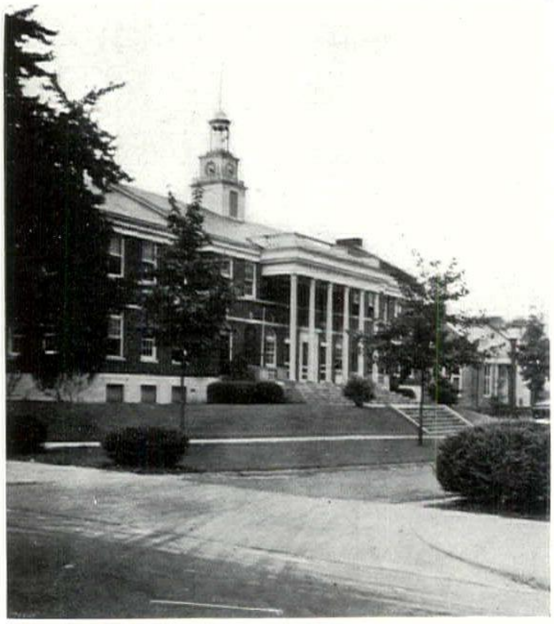
But lest the town lose that essential element of unity that the metropolis has lost, there is need to focalize it in a governmental center. This is especially true in those suburban places whose normal unity is dissipated by unreal boundaries and split allegiance. The town must have a figurative center, a rallying point for civic interest and pride. For this a busy intersection will not do, no matter how it throbs with the town's life, nor will a park suffice, for its essence is extent and openness. The latest popcorn king's commercial monument, though it out-tops all buildings in a half-day's driving and is as pivotal as a fine pointed needle, is still a private enterprise, in which an ordinary voter can claim no proprietorship. There is only one real center for a town—the building that its people have subscribed to to house their government. In all the growing complexity of urban life, the regional cross-currents that tend to minimize city lines, the one thing that remains effectively to represent the city as a unit is the capitol of its administration.

THE CIVIC CENTER

The civic center then is more than a monument, it is the incarnation of the city's spirit. Its treatment is an index of the city, a first reference for those seeking a community in which to live. Looked at from this angle, beauty becomes a first consideration because it exerts the first appeal, and points of function, convenience, and economy follow in close and natural sequence, instead of being set up as primary objects to satisfy the cry for practicality. It does not follow that because a municipal building is attractive to the eye, it will be eminently useful to the administration, but there is nothing in the brackets of utility that



The smallest community is not without civic pride, and is not to be neglected as a field for plan development. The restoration of Williamsburg, Va. makes interesting use of the old Post Office, preserving the intimacy of the town. Perry, Shaw & Hepburn, Architects



The photograph above and the one below are views of the civic center development in Verona, N. J.

renders beauty unattainable, and when new buildings and locations are being thought of no city can afford to slight the element of beauty for considerations of less permanence.

In the new governmental buildings erected during the last few decades the quality of architecture has averaged high. Few towns indeed have failed to take pride in their municipal headquarters or to show good judgment in approving their design. Yet many of the finest buildings are ineffective in appearance (and for the same reason inefficient in use) because located on too small a site or inexpertly related to it.

For a city like New York, where greenery has become a sort of museum exhibit, it might be expected that the characteristic barrenness should surround the city hall as it does the later office structure, yet in this case the setting that was thoughtfully provided centuries ago now preserves the historic architecture of the building that otherwise would have long since been lost in the depths of the surrounding canyons. How much more appropriate is it that in places where grass and trees are still appreciated attributes of city life, the city hall should count them in its setting. Yet in how many cities of this type does false economy or lack of forethought lead to the building of a city hall so much a part of the Main Street row that visitors must wonder whether its distinguished architecture denotes a bank or church or telephone exchange.

If there be a fault more common than others in the relation of new governmental buildings to the city's basic structure, it is this parsimony in site provision. Fine buildings are erected on poor sites, and their effectiveness diminished or destroyed by lack of opportunity to view them properly, the incrowding of disturbing elements about them, or lack of that enframement essential to a completed picture. Buildings of costly permanence are built on plots that leave no room for possible expansion, or for those exigencies, such as the coming of the motor car, which make efficient usage of the building dependent on open space about it. Back of this fault is frequently the semblance of economy in using land already belonging to the public, instead of buying new.

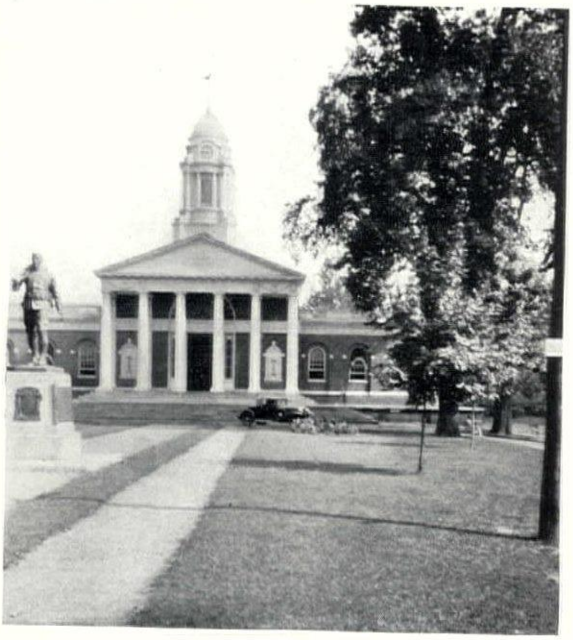
A downtown corner, originally adequate for a small village hall enjoying the full benefit of the lawns and trees of the surrounding neighborhood is used a century later for a city building requiring the full plot and deprived of either vista or

enframement by commercial neighbors that have replaced the spacious lawns of earlier years. Historic lore is called upon to clothe such folly in the glamour of tradition, or solicitude is expressed for the tax-payer's dollar, but at the bottom of the choice frequently will be found the interest of nearby merchants or occupants of offices whose business would be inconvenienced by a changed location.

Again, a small site may be dictated by a desire to locate on a main street front where land is costly instead of on a more spacious site of less initial prominence. Such a desire proves nine times out of ten to be short-sighted, not only because of the less adequate space securable for the same money, but because the noise and confusion of a principal thoroughfare is apt to prove inimical to the conduct of the city's business.

It is seldom necessary for a city to build on a main street, even for purposes of advertising, for unlike the corner druggist or lunch wagon operator, it is not subservient to the status quo, but has inherent power to give to quite inferior locations the necessary attributes of prominence without accepting the limitations of expensive and congested frontage. It can accumulate by condemnation such parcels as it needs, it can close or open streets or direct their traffic, and with its tenancy assured need have no fear of purely psychological objections to sites not of the best repute. The city, therefore, can profit from that unfortunate phenomenon, the blighted area, which often proves the ruin of smaller and less powerful investors.

The city hall has fewer routine contacts with private business enterprises than has a post office or county court, for instance, and while it should be placed convenient to the town's commercial life, it need not rub elbows with it or partake of its parking problem. If there is no road fork at the fringe of the town center to furnish an accented site, or a stream or park to open up a vista, there can generally be found a cross street sufficiently unnecessary to the traffic scheme to be converted to æsthetic purposes and made the axis of a building placed well back of the high value area. A hill that has formed a barrier for business may frequently be used, but it is well not to count too strongly, as in one recent instance in the Middle West, on the continued domination of an eminence of fifty feet or so unless accentuated



The Town Hall, Milford, Conn., has an enviable setting. Egerton Swartwout, Architect

Retention and improvement of existing beauty is just as important an element in the community plan as the uprooting of existing ugliness. The pond and park behind the Town Hall, Milford, Conn.

The municipal building at Teaneck, New Jersey, another small community which has realized the importance of maintaining a civic center of sufficient size to allow of growth without constriction

by clear approaches or by height control of buildings erected on the lower ground around it.

If the main street be not too costly or otherwise objectionable a mall may be run back, as in the New Jersey borough of Verona, and made the foreground and approach for one or several of the city's buildings.

THE LOCATION IS IMPORTANT

The possibilities of good treatment are too various to submit to generalities, but it would be a sad admission for a town to make that there was no spot in it capable of being given some outstanding quality to establish it apart from the private and individual possessions of the people.

That spaciousness alone may serve such purpose is demonstrated at Teaneck, N. J., where men of foresight a few years ago fought for and won the acquisition of a seven-acre plot for the new borough hall in place of the alternative proposal of slightly enlarging an ordinary city lot on which the old hall stood. Broad lawns at the new site give pleasing foreground to a building which has room to grow, and ample parking space behind increases its convenience. But more important is the local pride engendered by this wise achievement which has done much to cement the interest of Teaneck's scattered settlements into a unified community.

Another New Jersey municipality is worth citing because it now admits the error of its way in departing from the plan made for its civic center almost a quarter of a century ago. Montclair prepared one of the earliest of the modern series of city plans in 1907, as part of which there was suggested a group of public buildings about a park in a location central to the village but a block removed from its main street. This plan was disregarded, as plans so often are, in bursts of penny-wise intelligence, and a municipal building erected on a downtown corner, in neither architecture nor surroundings a credit to the town. Within the past few years the growing noise and attendant inconveniences of passing traffic, and the lack of opportunity for necessary expansion have forced reconsideration of the question of town hall location, and a new town plan, now under way, will seek a new solution for a problem that might have been far more easily and cheaply settled years ago.

A drive through several adjacent communities suggests that Montclair's new resolve may have been aided somewhat by the competitive endeavors of its neighbors. Verona, on the west, has a civic center achieved through the cooperation of several public agencies, of which it is most justifiably proud. Bloomfield to the east has completed recently a town hall on a site large

Grossman-Knowling

Perspective of a proposed development for the Detroit waterfront, designed by Eliel Saarinen

enough at least to display to advantage the very excellent architecture of the building, and Glen Ridge has under way a new structure whose scaffolded outline gives promise of attractiveness although the crowded site is a reproach to the community.

These four adjoining towns are all dependent on New York's suburban population for their success, and their recent concern with the appearance of their governmental buildings appears significant of the new trend.

A most happy association of an historic site, a central location, and an attractive setting is found in the old New England town of Milford, Conn., where a fork in the Boston Post Road (soon to be relieved of heavy traffic at this point) is utilized to give a long approaching view of the white portico and tower of the town hall, flanked with old arching elms. But the opposite facade, more intimately the possession of the town itself, is even more impressive through the use by the architects of an old mill pond as a reflector for the curving colonnade and well proportioned outline of this front.

The well studied but informal relationship of pond and shore and building creates a setting of outstanding beauty for architecture of great grace and dignity, and creates a center with few equals in the country. It is a constant inspiration for new civic enterprises, and demonstrates for others how from such simple assets as a mill pond and established trees there can be made by skillful handling a creation expressive of a town's ideal, eminently useful and emphatically beautiful.

These few instances, to which many others might be added, indicate that any community may place its governmental buildings with good effect if it will but make the effort. Few cities possess potential sites as unique as the island which Cedar Rapids, Iowa, is developing with Parisian spirit as its civic center, or have the opportunity still open to Detroit, if it has the enterprise to grasp it, of recapturing the termination of its axial street at an important river front.

Where such possibilities exist, it is a reflection upon the city that fails to profit from them, or allows them to be pre-empted by commercial structures diverting to themselves the notice and perhaps the admiration that should be the city's own. But even the city which boasts no lakes or ponds or rivers, and whose streets compose the flattest and most regular of checkerboards, need not despair at finding a point which may be focalized as the town center.

Many of the smaller towns and villages of Europe contain a lesson in public building placement which we have been far too slow to learn—that where other opportunities are lacking, the mere enframement of a building in groups of trees will set it off with remarkable effect. The whole device may consist in nothing more than the recessing of the accented building and its separation from surrounding structures just enough to permit the planting of a little square of trees, sometimes formalized, at either side. A minor accent of this sort is used to good advantage in Williamsburg, Va., to give distinction to the post office, but on the whole this expedient, at once simple, inexpensive, and effective, has been in this country either overlooked or abandoned in the translation of sketch to finished building.

What latent power there is in well articulated landscape treatment to raise a building above the level of its fellows, or even to redeem indifferent architecture and make it pass for something finer than its bald face warranted! And what could be more appropriate in towns where grass and trees are still appreciated attributes of city life than that the city hall should count them in its setting?

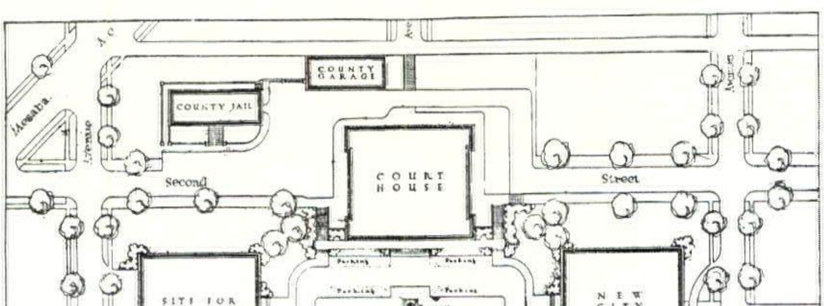
No building or group of buildings forms a completed picture in itself. Its approaches, background, and surroundings form with it a single composition. To give distinction, therefore, to a governmental building necessitates its study as an intimate part of the surrounding city. For approach there are the opportunities of axial or curving streets, of plazas, squares, lawns or water areas; for background massed foliage or the unobstructed sky, or the bulk of higher buildings softened by intervening distance; for separation from immediate surroundings no better element than space and well placed trees. This asks a generous site, one big enough for the building of any additions that may be reasonably foreseen, as well as for attendant services, a site that will support the green of trees or grass, and will itself supply, if its position in the city does not, the necessary foreground for the buildings it contains.

Such sites are costly? No, not if they are chosen as elements of larger plans, in which the city, through its sovereignty over all its parts, can transmute the ordinary into the unusual; not if the civic center is regarded as the real exponent of the city's worth, for centuries to be exhibited to those it would retain or have become its citizens as the symbol of their collective enterprises.

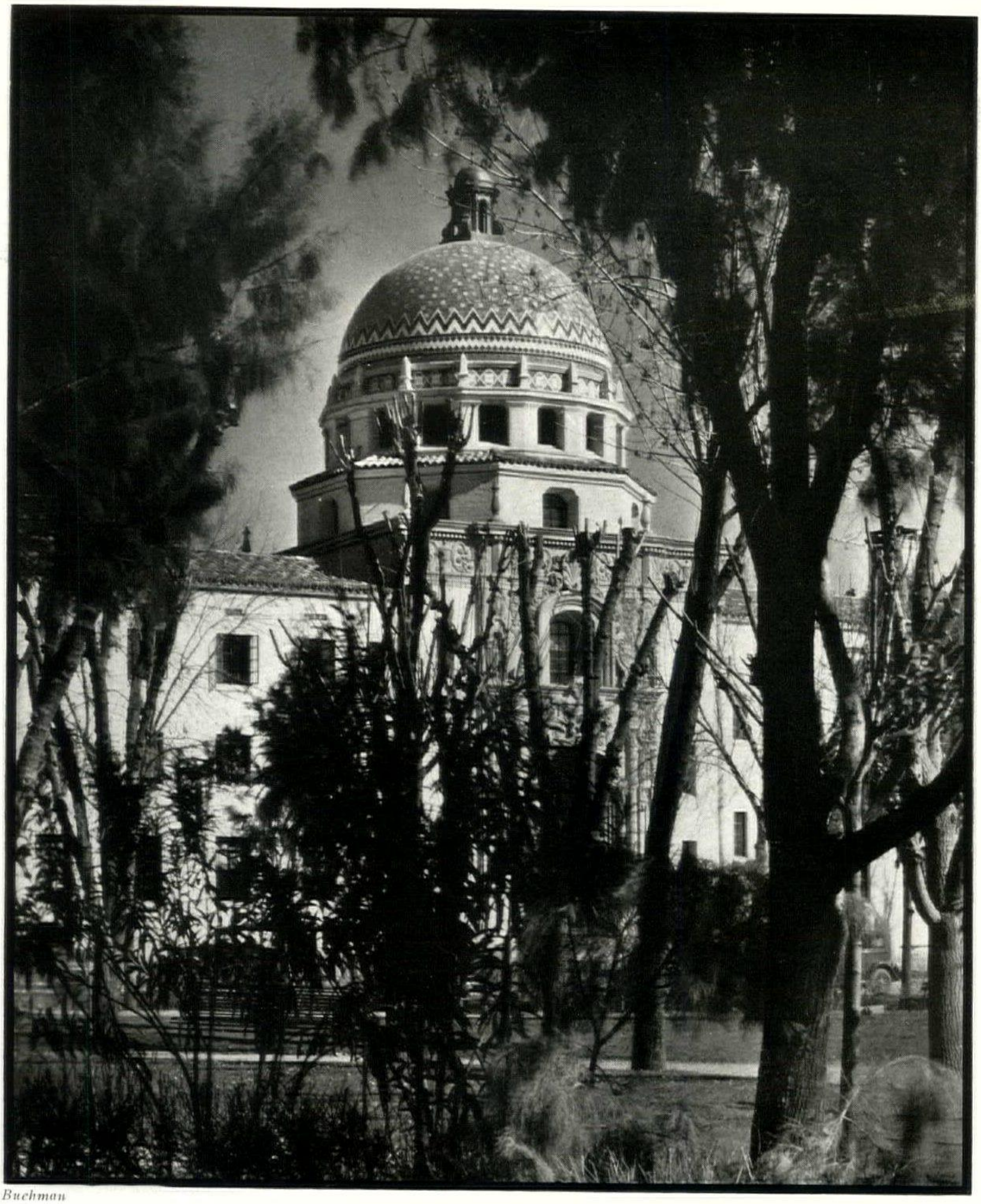
Woe to the city that has no center to capture the imagination of its people, to make them feel that they belong to a community, to rally them from wide stretching area about a single standard. Disintegration is in the air, propelled by all the dispersive forces of automobile and telephone, electric power and radio, aircraft and television. It tends to dissipate men's interests, to spread metropolises out without break or end, to destroy all consciousness of local unity. Yet local unity is of the essence of the urban scheme, and without it the proper functioning of cities fails.

Against these active forces, the city that would retain its integrity and power has one effective weapon which it alone can wield, the building of a center strong enough to hold the single concept of the city high above conflicting currents, to concentrate divergent interests upon a single theme, to form a nucleus for a coherent whole.

The government is something vague, involved in laws and precedents and regulations, its forms lack interest and inspiration. But through its buildings it gains concreteness; in them each citizen finds that which is his city, they are the common ground at which the city meets. They must be strongly central, in thought and fact; physically, socially, politically the heart of the community, its inspiration and its pride. Here the abilities of architect and landscape architect, and of that analyst and prophet, the city planner, may be advantageously combined, for the civic center, whether its buildings are one or many, will need their several arts to gain perfection.



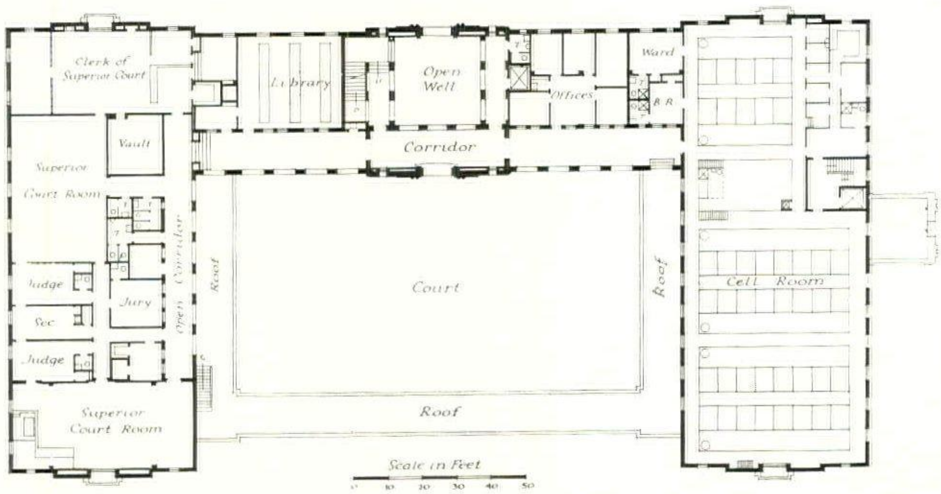
The Duluth Civic Center, originally designed in 1910 by Daniel H. Burnham. The City Hall, built in 1928, and the Federal Building recently completed were the final developments in the plan



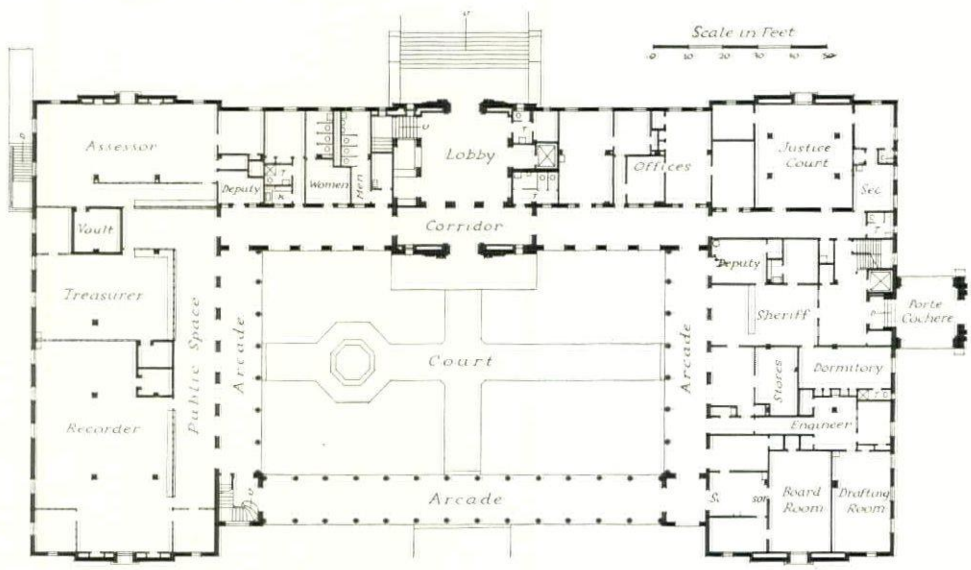
Buchman

PIMA COUNTY COURT HOUSE
TUCSON, ARIZONA
ROY PLACE, ARCHITECT

COUNTY COURT HOUSES AND JAILS

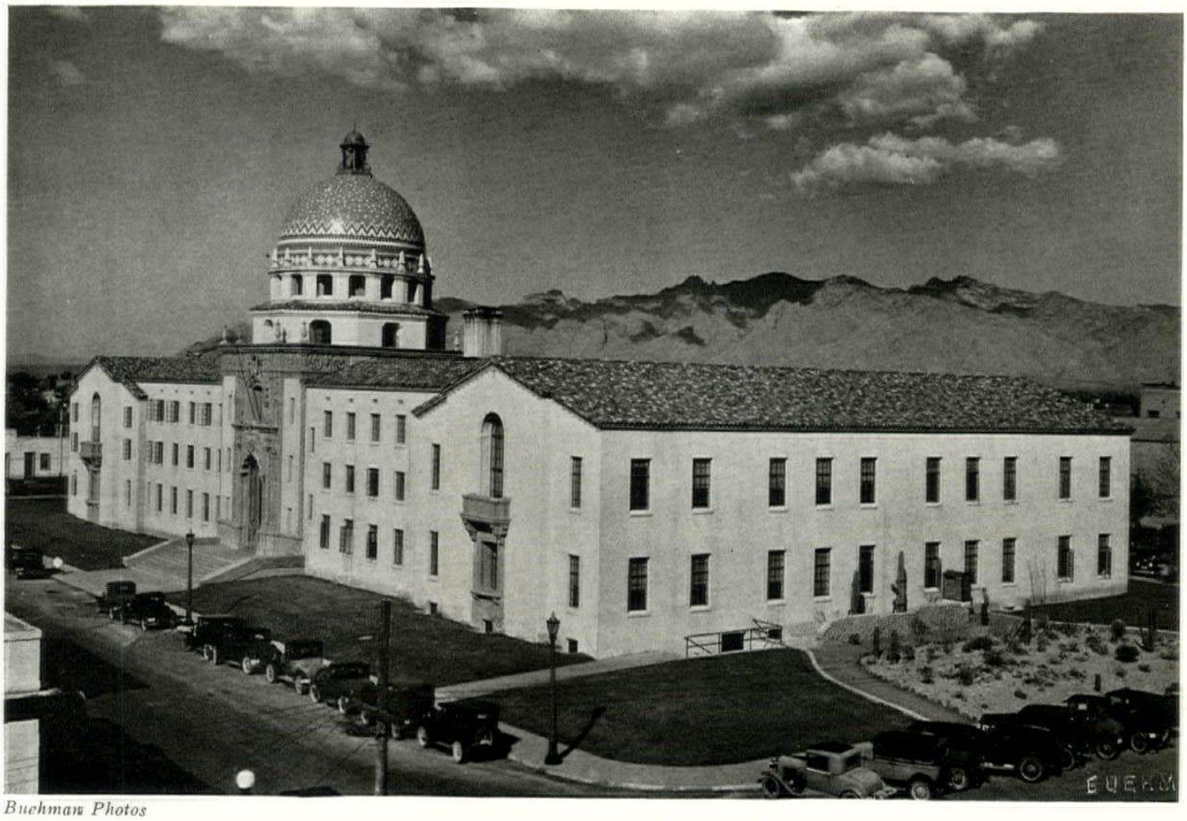


SECOND FLOOR PLAN



FIRST FLOOR PLAN

PIMA COUNTY COURT HOUSE
TUCSON, ARIZONA
ROY PLACE, ARCHITECT



Buehman Photos

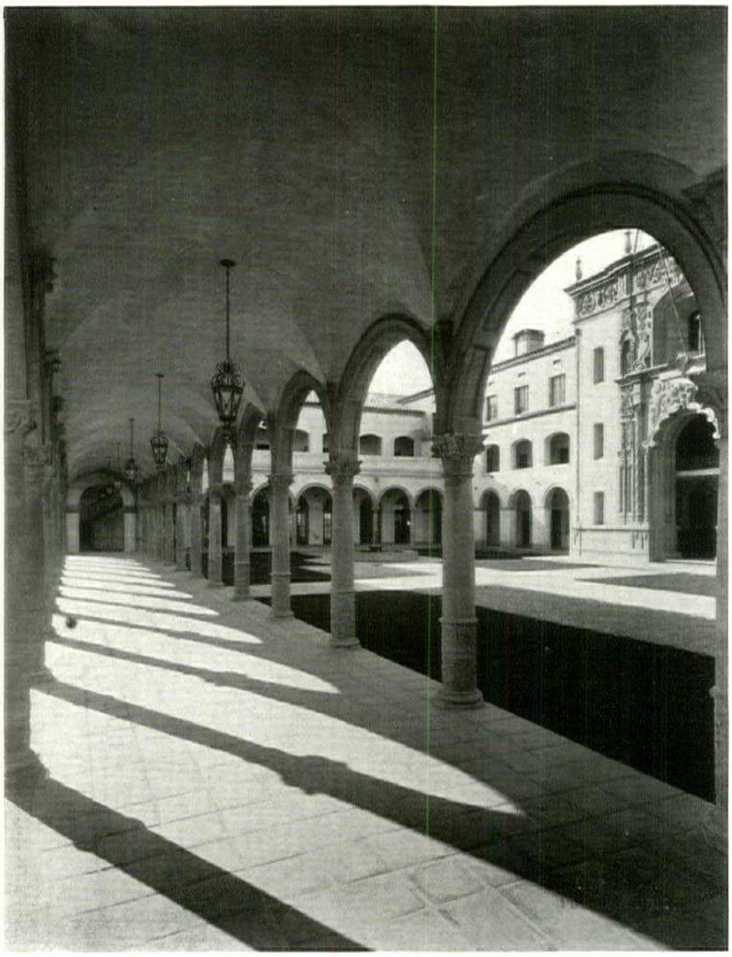
EXTERIOR: Walls are concrete, roof variegated tile, steel casement windows. The roof of dome is colored glass tile.

INTERIOR: Walls treated with acoustical plaster, linoleum floor coverings, heating by direct radiation

CONSTRUCTION: Class A concrete construction on concrete foundations. Cost, $300,000

PIMA COUNTY COURT HOUSE
TUCSON, ARIZONA
ROY PLACE, ARCHITECT

Buchman Photos



The architectural character of the building conforms with the local traditions, an adaptation of the Spanish style of the West

View of the arcade and patio, showing cast stone ornamentation around entrance and cast stone arcade columns. The arcade walk is of promenade clay tile

PIMA COUNTY COURT HOUSE
TUCSON, ARIZONA
ROY PLACE, ARCHITECT

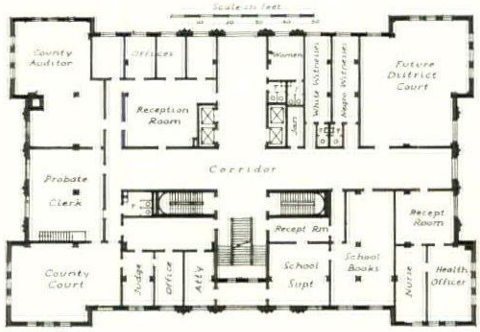
Jordan-Ellison Photos

The exterior of the building is faced with cream colored Cordova Shell Texas limestone. The spandrels are of cast aluminum, and the windows are steel casement

TRAVIS COUNTY COURT HOUSE

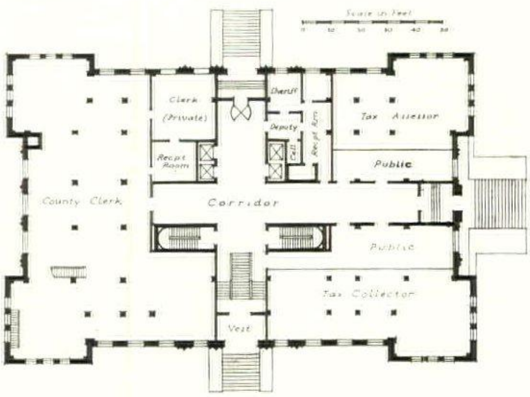
AUSTIN, TEXAS

PAGE BROTHERS, ARCHITECTS

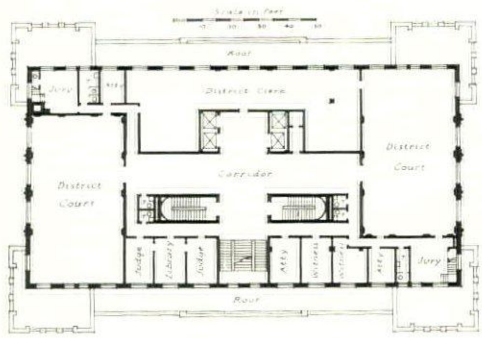


SECOND FLOOR PLAN

FOURTH FLOOR PLAN



FIRST FLOOR PLAN



THIRD FLOOR PLAN

EXTERIOR: Walls are limestone with solid brick backing; roof is high grade built-up type over 1 in. insulation. All windows are metal, and spandrels are of aluminum

INTERIOR: Floor finishes are terrazzo and tile, walls sound and heat insulated. All doors and trim are of metal. Vacuum heating system is used with column type radiation. Toilet and rest rooms have forced ventilation, all other rooms depending on 100 per cent window openings for ventilation

CONSTRUCTION: Reinforced concrete construction on concrete foundation. Floors composed of reinforced slabs with tile fillers. Gross cubage, 1,315,134; cost 59 cents per cu. ft.; total $777,816.40. Building completed June 22nd, 1931

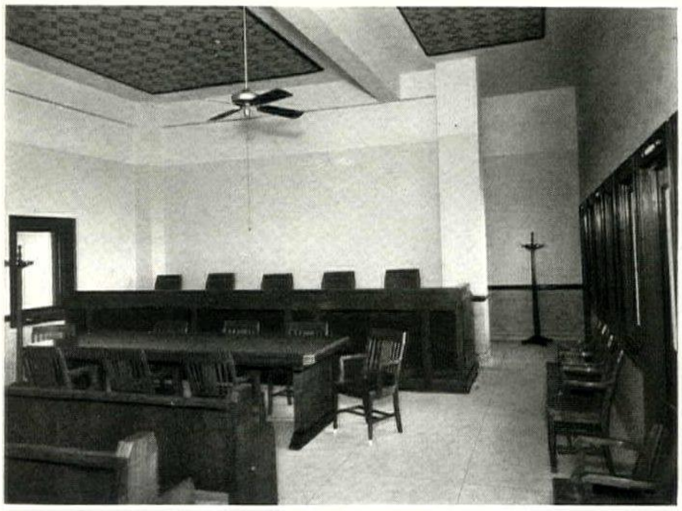
TRAVIS COUNTY COURT HOUSE

AUSTIN, TEXAS

PAGE BROTHERS, ARCHITECTS

Jordan-Ellison Photos

DISTRICT COURT (ABOVE), AND COMMISSIONERS' COURT ROOM

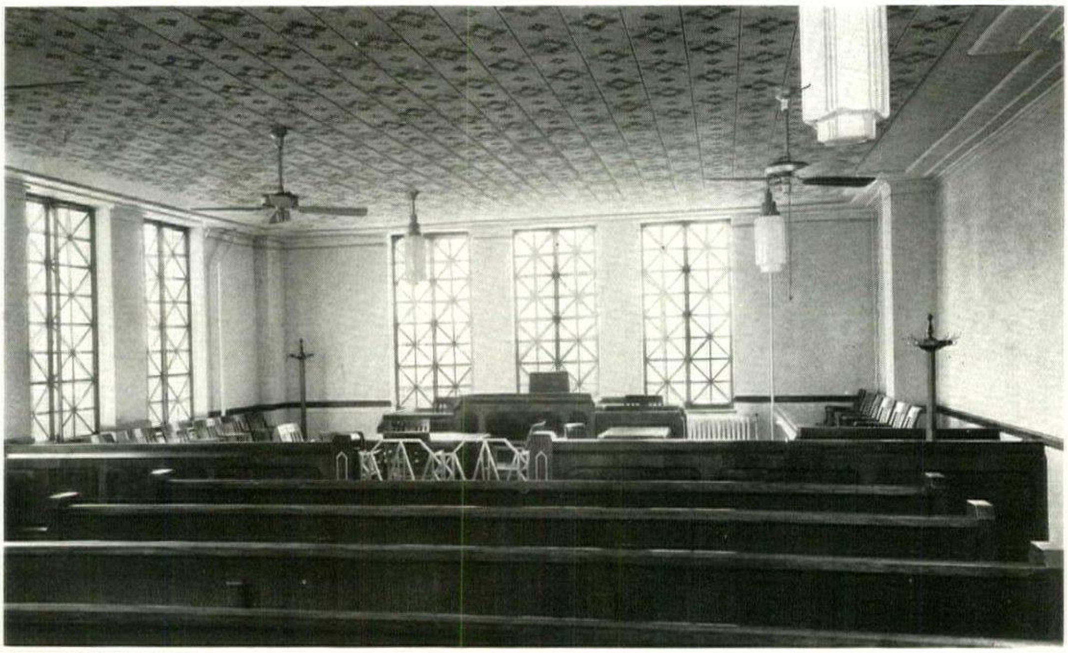


Woodwork in the district court is veneered walnut with inlaid panels of matched grain and ebony strips. The gates, hardware, and other trim is of cast aluminum. The chairs are of walnut and birch. Counters, rails, and desks are of metal

TRAVIS COUNTY COURT HOUSE

AUSTIN, TEXAS

PAGE BROTHERS, ARCHITECTS



Jordan-Ellison Photos

COUNTY COURT ROOM

TAX COLLECTOR'S OFFICE

TRAVIS COUNTY COURT HOUSE

AUSTIN, TEXAS

PAGE BROTHERS, ARCHITECTS

Chicago Architectural

FRONT ELEVATION

MATERIALS: The exterior walls are of Indiana limestone, and those of the interior marble in the lobby and main corridors. Court rooms have marble wainscoting with wood and fiber board panels. Marble is used for the flooring in the lobby, and rubber tile in the public corridors and court rooms

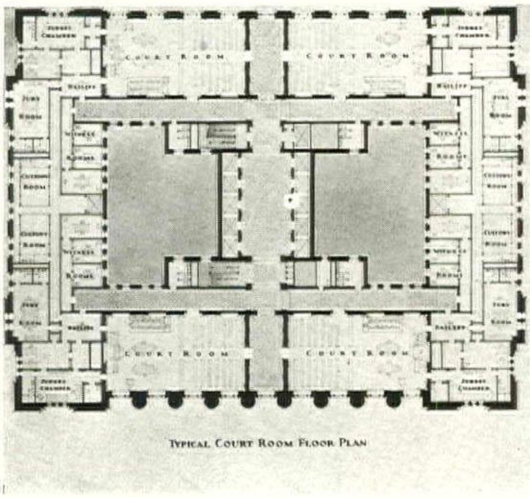
COST AND CONSTRUCTION: The criminal court unit of the building is of steel frame construction, with long span concrete floor joists. The portion of the building devoted to the jail is of "battle-ship" type of construction, composed of special tool-proof steel and concrete. The court section has a cubage of 5,190,907, and cost $2,543,590, or 49 cents per cu. ft.; the jail administration division, containing 737,900 cu. ft., cost 63 cents per cu. ft. for a total of $464,940; and the cost of the jail, because of the special construction and equipment, was $1.64 per cut. ft., or $4,058,527 for 2,466,438 cu. ft.

COOK COUNTY CRIMINAL COURT

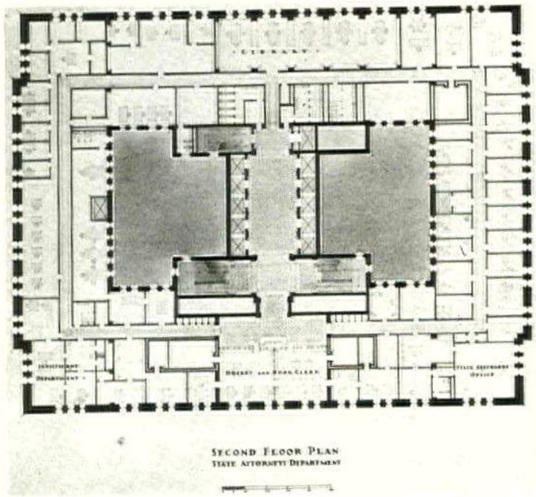
CHICAGO, ILLINOIS

ERIC HALL, COUNTY ARCHITECT

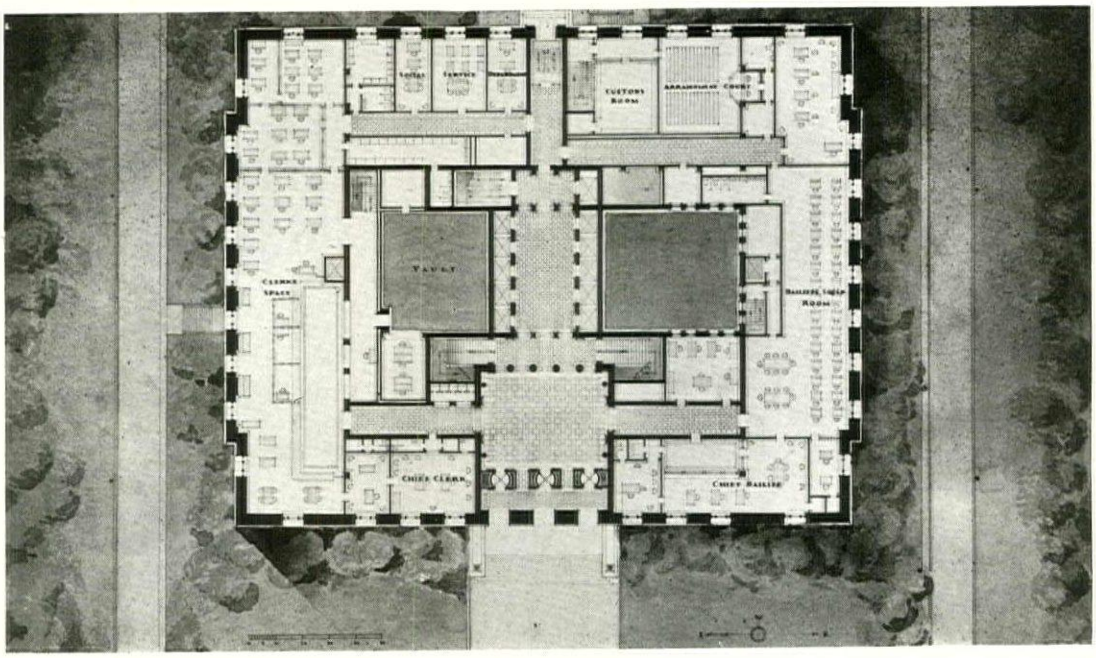
OF HALL, LAWRENCE & RATCLIFFE, INC., ARCHITECTS



TYPICAL COURT ROOM FLOOR PLAN



SECOND FLOOR PLAN



FIRST FLOOR PLAN

COOK COUNTY CRIMINAL COURT

CHICAGO, ILLINOIS

ERIC HALL, COUNTY ARCHITECT

OF HALL, LAWRENCE & RATCLIFFE, INC., ARCHITECTS

Trowbridge

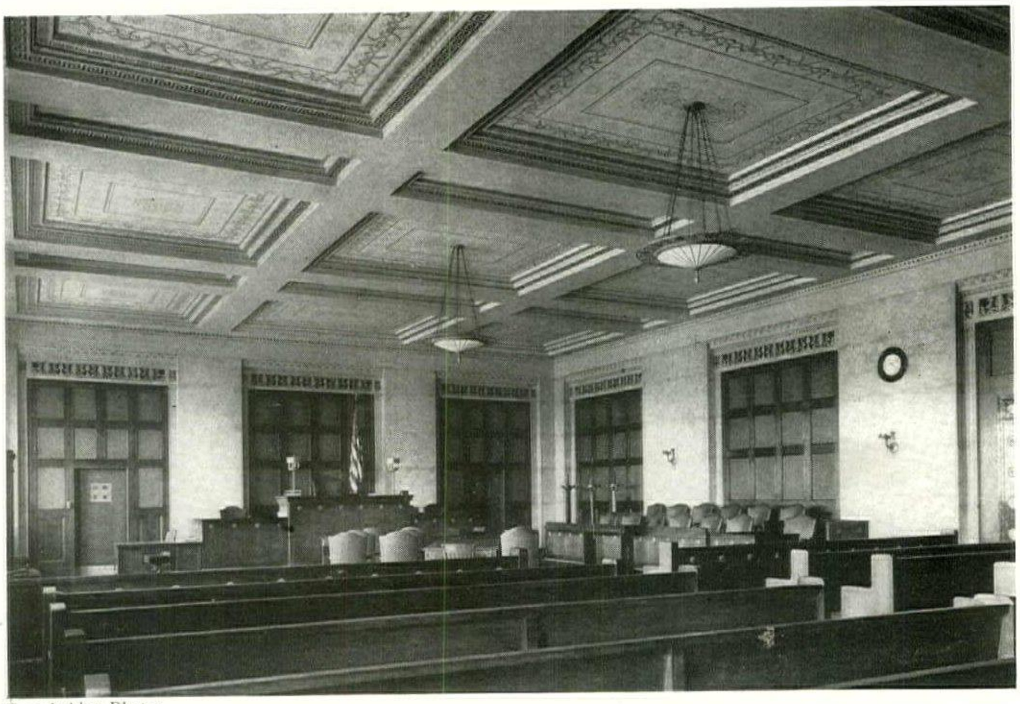
COURT ROOM CORRIDOR

COOK COUNTY CRIMINAL COURT

CHICAGO, ILLINOIS

ERIC HALL, COUNTY ARCHITECT

OF HALL, LAWRENCE & RATCLIFFE, INC., ARCHITECTS



Trowbridge Photos

TYPICAL COURT ROOM

SPECIAL CHAMBER

COOK COUNTY CRIMINAL COURT

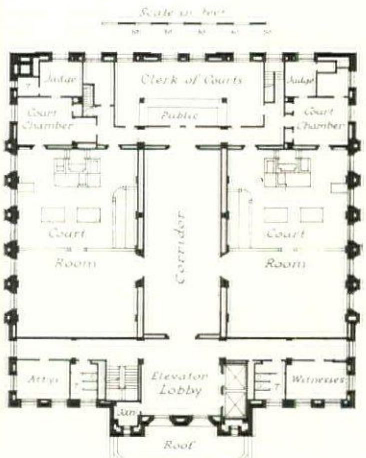
CHICAGO, ILLINOIS

ERIC HALL, COUNTY ARCHITECT

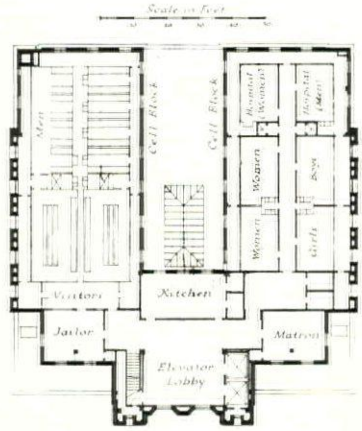
OF HALL, LAWRENCE & RATCLIFFE, INC., ARCHITECTS

ENTRANCE DETAIL

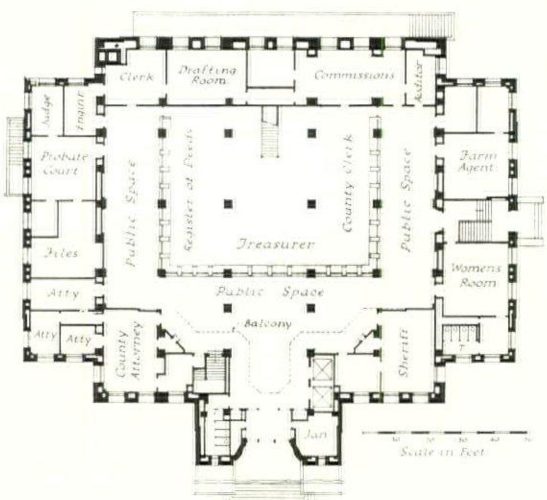
RENO COUNTY COURT HOUSE
HUTCHINSON, KANSAS
W. E. HULSE & CO., ARCHITECTS



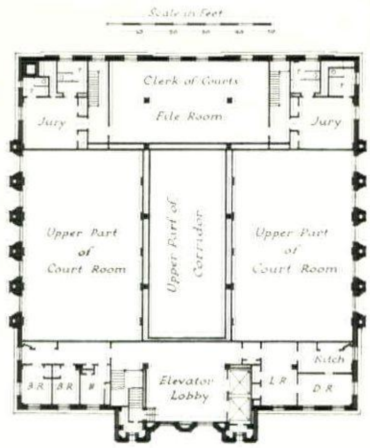
THIRD FLOOR PLAN



FIFTH FLOOR PLAN



FIRST FLOOR PLAN

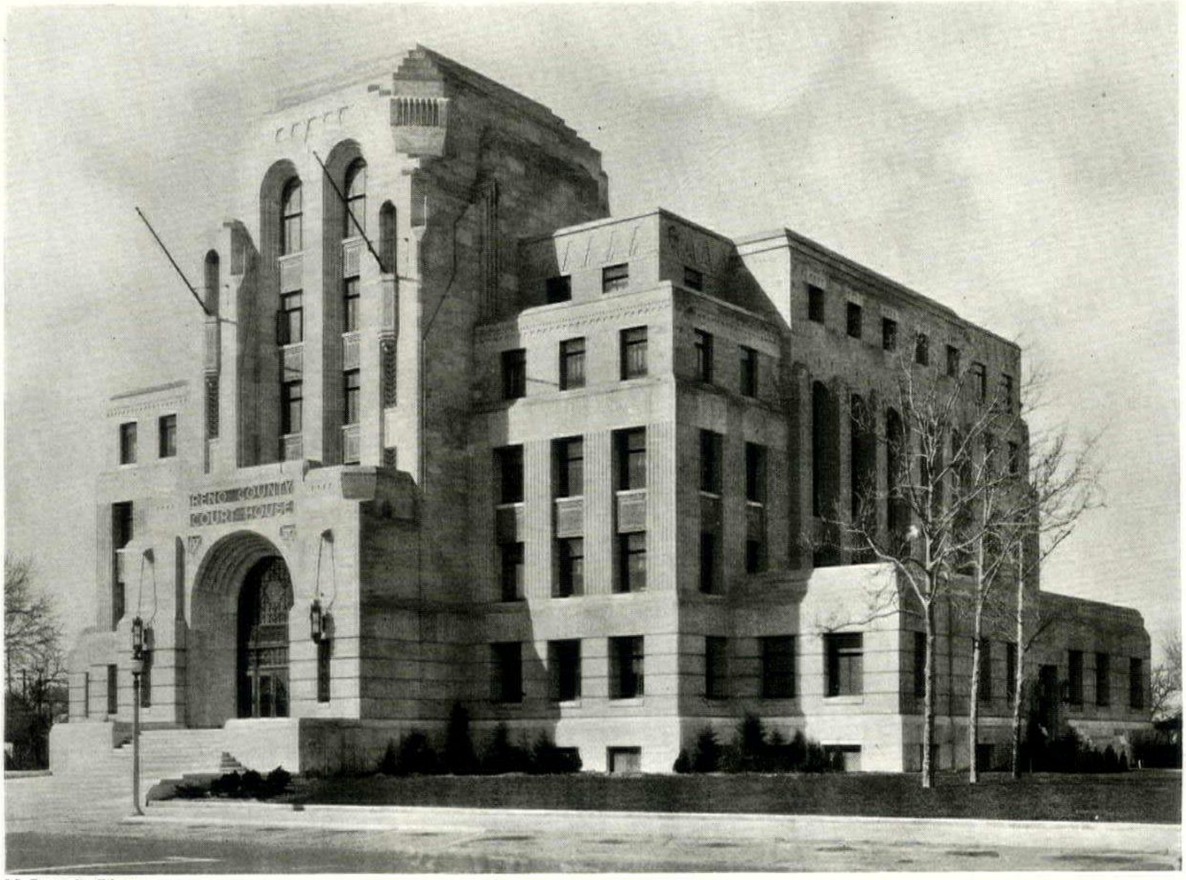


FOURTH FLOOR PLAN

RENO COUNTY COURT HOUSE

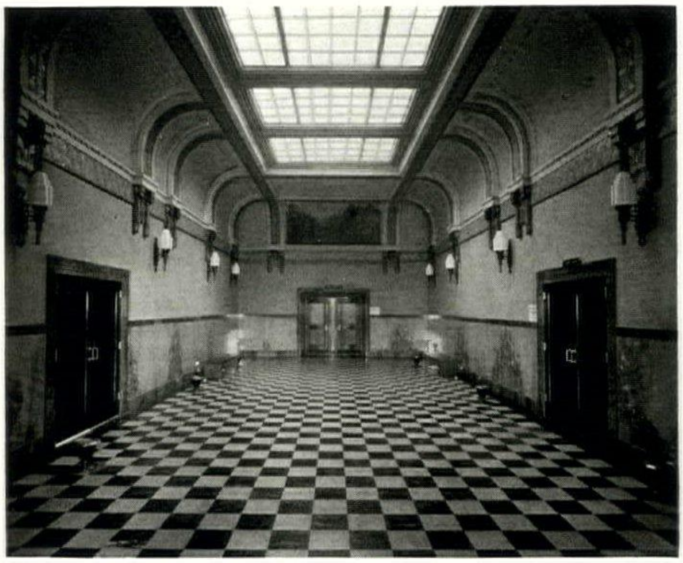
HUTCHINSON, KANSAS

W. E. HULSE & CO., ARCHITECTS



McInturly Photos

COURT ROOM CORRIDOR



EXTERIOR: Walls are limestone and face brick, and roof is built-up pitch and gravel. Windows are steel sash, with spandrels of aluminum and brick

INTERIOR: Floors in public spaces rubber tile, marble wainscoting, and textured plaster walls. Other rooms have special treatments

RENO COUNTY COURT HOUSE

HUTCHINSON, KANSAS

W. E. HULSE & CO., ARCHITECTS

McInturfy Photos

COURT ROOM

COUNTY COMMISSIONERS ROOM

CONSTRUCTION: The building has a reinforced concrete frame, with concrete rib floors. Balsam wool is used for sound and heat insulation. Its gross cubage is 1,000,000 ft., and cost 51 cents per cubic foot

RENO COUNTY COURT HOUSE

HUTCHINSON, KANSAS

W. E. HULSE & CO., ARCHITECTS

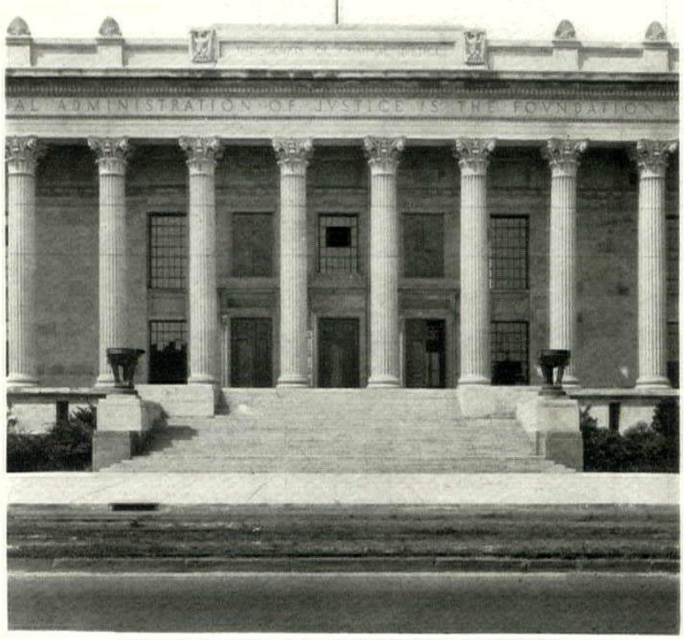
Fritch

FRONT ELEVATION

EXTERIOR: The walls of the prison building are of concrete, and those of the court house are of limestone. The roof is tar and gravel over concrete, and the windows are metal, double-hung

INTERIOR: Floors in public areas are of marble and terrazzo, in the jail concrete, and in offices and special rooms pine and asphalt tile. Direct radiation is used in the working areas, indirect in the corridors and prison, and a unit ventilator in the courtroom

CONSTRUCTION: The building rests on a wood pile foundation, and is of reinforced concrete foundation. A tunnel runs from the prison to all court rooms and to the identification bureau. Total costs: prison $568,279 and court house $1,134,553. Cost per cu. ft. was 41 2/3 cents for the prison and 35½ cents for the court house

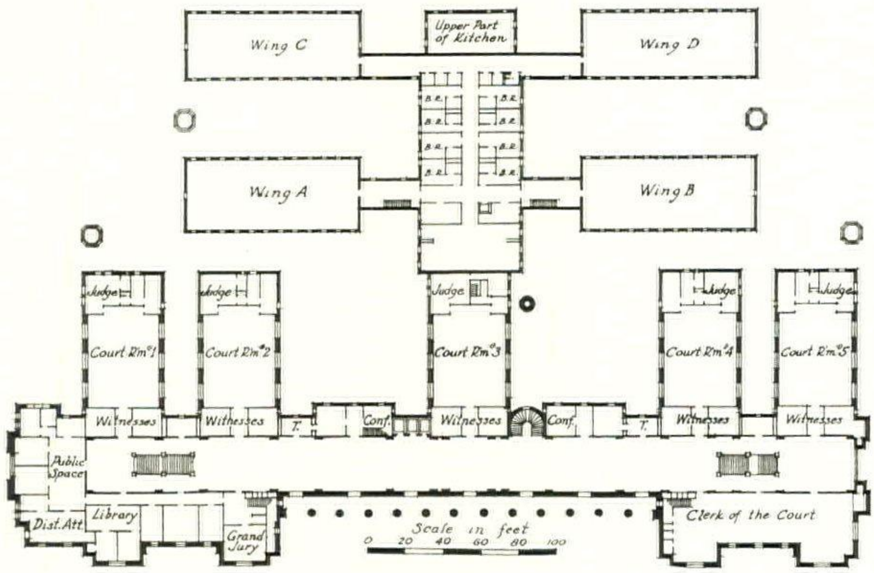


COURT HOUSE ENTRANCE

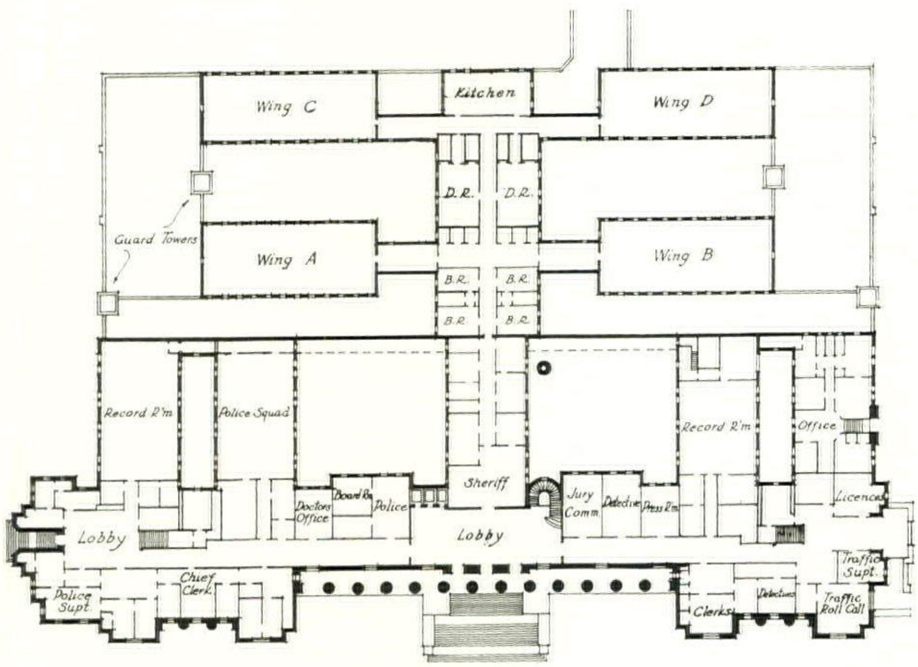
CRIMINAL COURTS AND JAIL BUILDING

NEW ORLEANS, LA.

DIBOLL AND OWEN, LTD., ARCHITECTS



SECOND FLOOR PLAN



FIRST FLOOR PLAN

CRIMINAL COURTS AND JAIL BUILDING

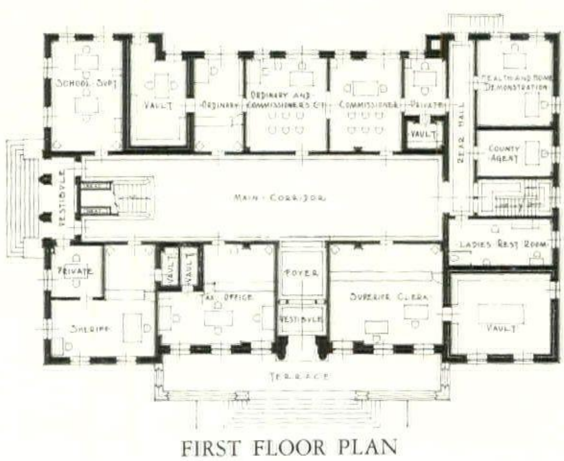
NEW ORLEANS, LA.

DIBOLL AND OWEN, LTD., ARCHITECTS

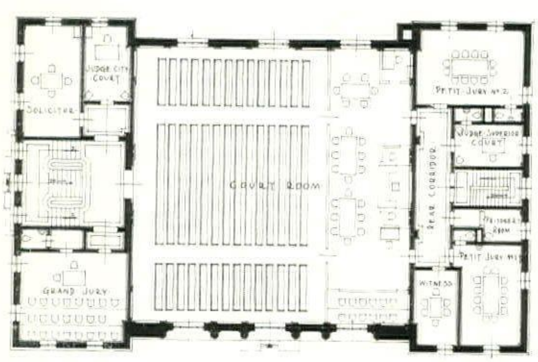
CARROLL COUNTY COURT HOUSE
CARROLLTON, GEORGIA
WILLIAM J. J. CHASE, ARCHITECT

McIlwaine Robertson

Exterior walls are Alabama limestone, interior walls in public spaces, Georgia travertine; floors alternated squares of Tennessee and Georgia marble. Floors in offices are cellized oak laid in mastic over concrete floors. Ceilings treated with acousti celotex. Doors and trim are of steel with baked enamel finish, windows have steel sash. Total cost was $175,000



FIRST FLOOR PLAN



SECOND FLOOR PLAN

CARROLL COUNTY COURT HOUSE

CARROLLTON, GEORGIA

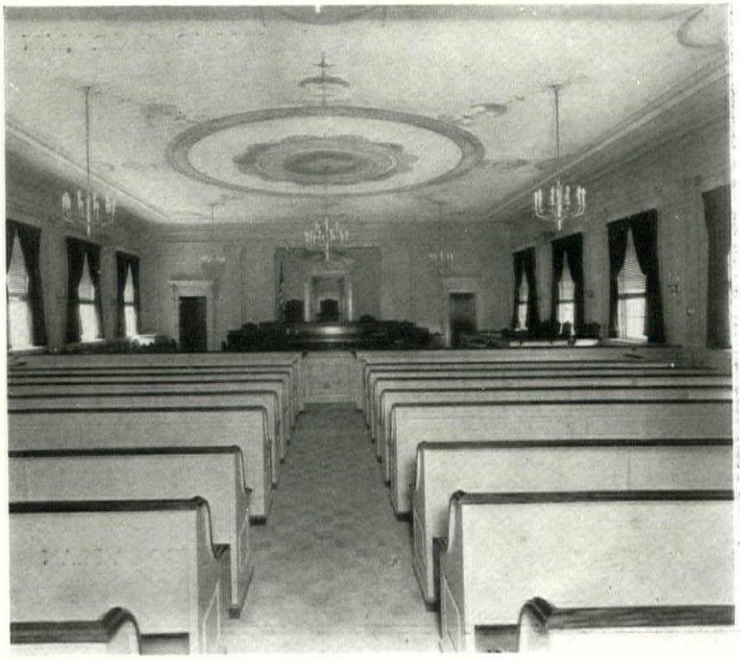
WILLIAM J. J. CHASE, ARCHITECT

Green Photos

EXTERIOR: Walls are white marble; windows, both wood and metal, are double hung. The roof is of copper

INTERIOR: Corridor floors are terrazzo; cork tile, wood, and linoleum are used for office and court room floors. Marble is used for corridor walls, all others being plaster. Column radiators and unit ventilators supply heat from central steam system

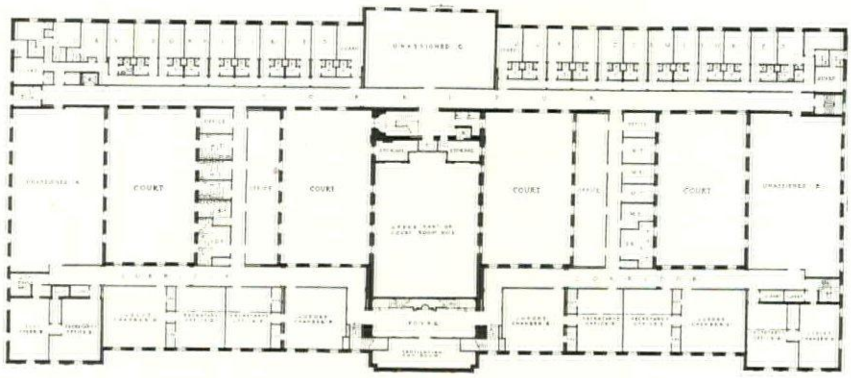
CONSTRUCTION: The building is fireproof, and rests on a concrete foundation. The center portion, built previously, was underpinned and one story added to it. Gross cubage is 2,300,000 cu. ft., and cost approximately 75 cents per cu. ft. Total cost was $1,800,000 plus $350,000 for equipment, plus architect's fee



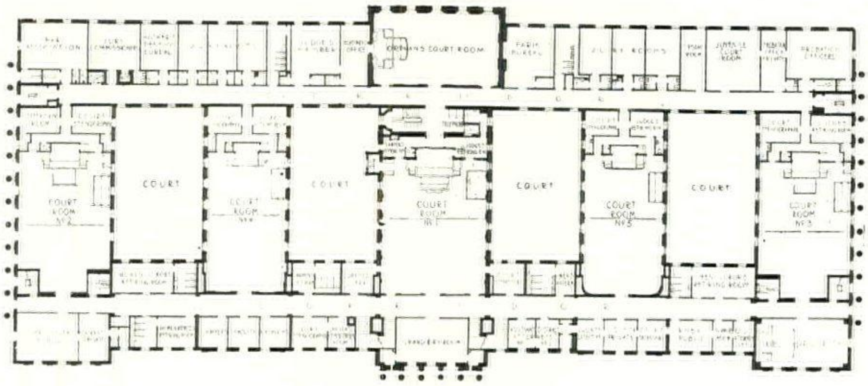
DELAWARE COUNTY COURT HOUSE

MEDIA, PENNSYLVANIA

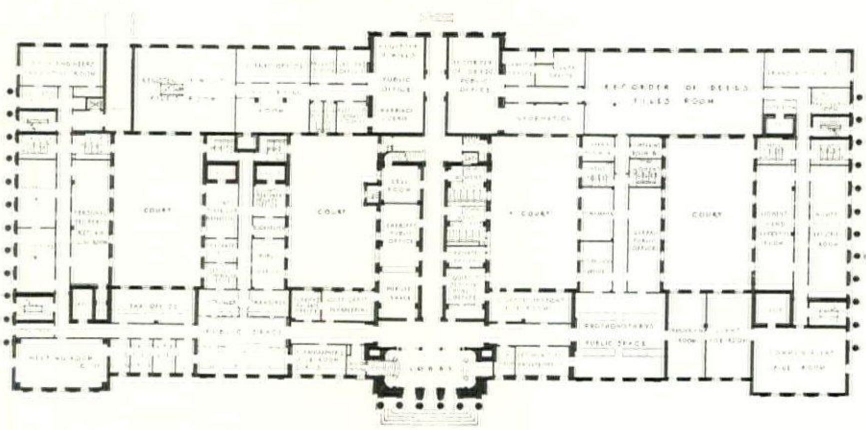
CLARENCE W. BRAZER, ARCHITECT



THIRD FLOOR PLAN



SECOND FLOOR PLAN



FIRST FLOOR PLAN

DELAWARE COUNTY COURT HOUSE

MEDIA, PENNSYLVANIA

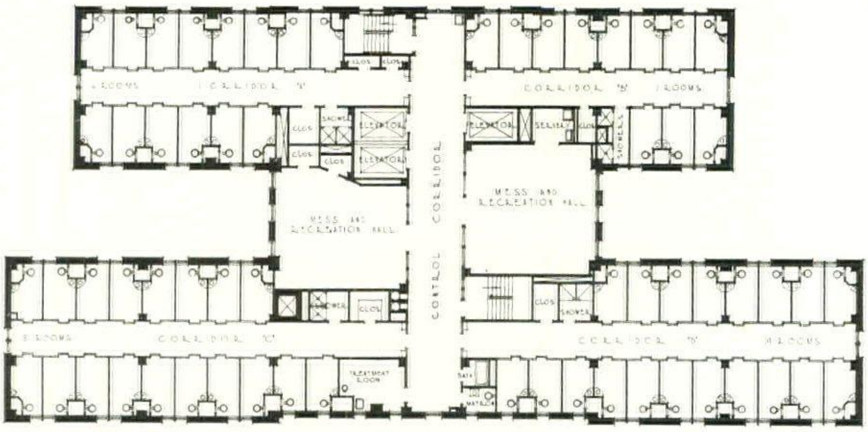
CLARENCE W. BRAZER, ARCHITECT

General

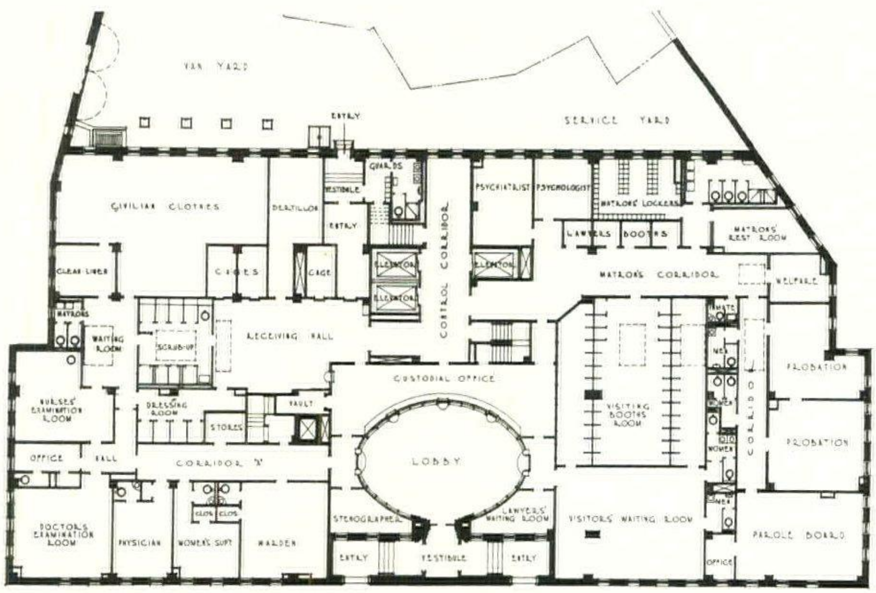
HOUSE OF DETENTION FOR WOMEN

NEW YORK, N. Y.

SLOAN & ROBERTSON, ARCHITECTS



TYPICAL FLOOR PLAN



GROUND FLOOR PLAN

The walls are of brick graded from deep brown to yellow, with a reddish-brown granite base and sandstone trim. Spandrels are of castiron. The building contains 184 detention rooms, 186 hospital rooms, with a recreation room and mess hall on each of the typical inmates' floors. The roof is used as an exercise area, and is covered by heavy gauge wire mesh

HOUSE OF DETENTION FOR WOMEN

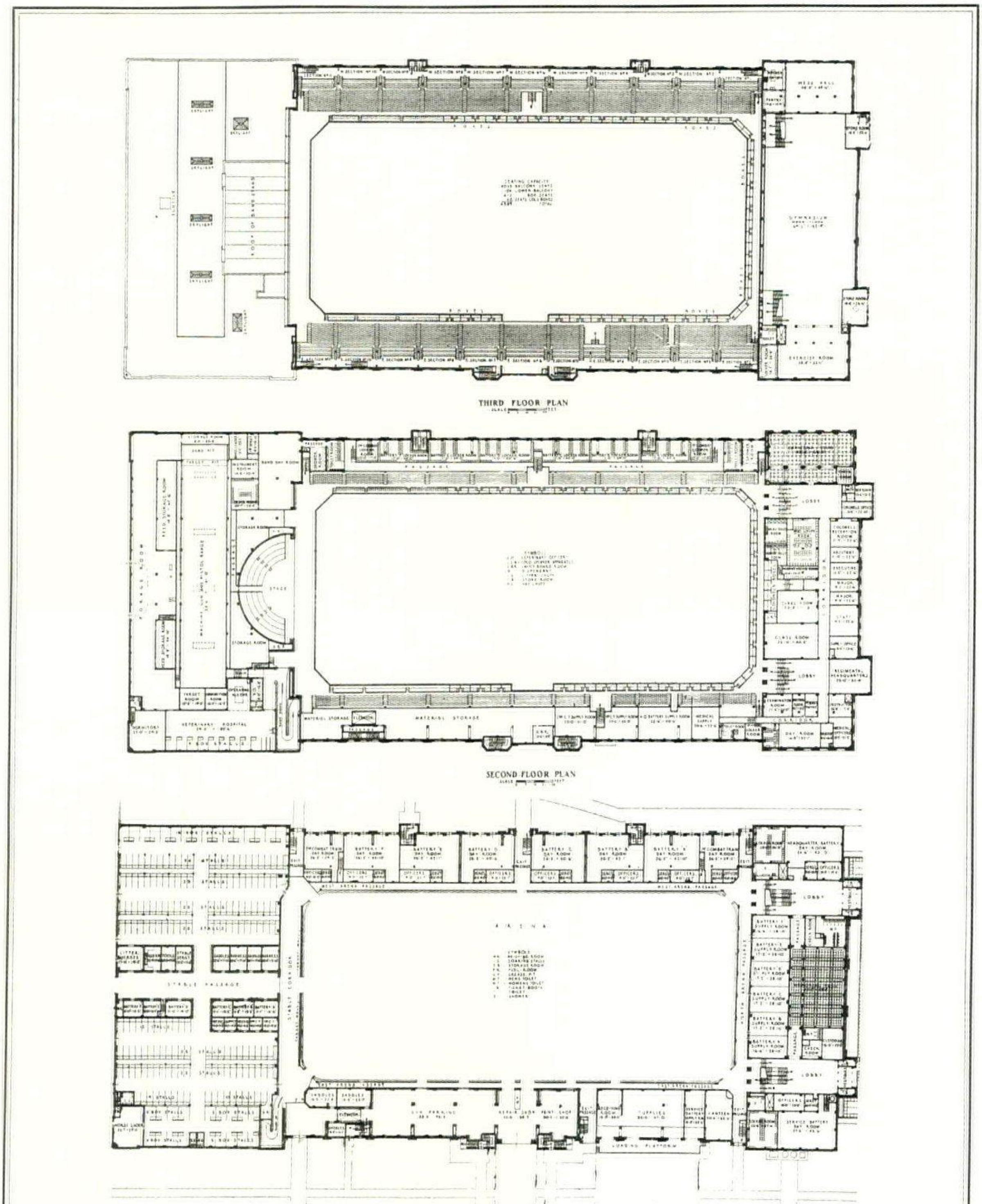
NEW YORK, N. Y.

SLOAN & ROBERTSON, ARCHITECTS

Hedrick-Blessing

124TH FIELD ARTILLERY ARMORY
CHICAGO, ILLINOIS
PERKINS, CHATTEN & HAMMOND, ARCHITECTS
C. HERRICK HAMMOND, SUPERVISING ARCHITECT

TWO STATE ARMORY BUILDINGS



124TH FIELD ARTILLERY ARMORY

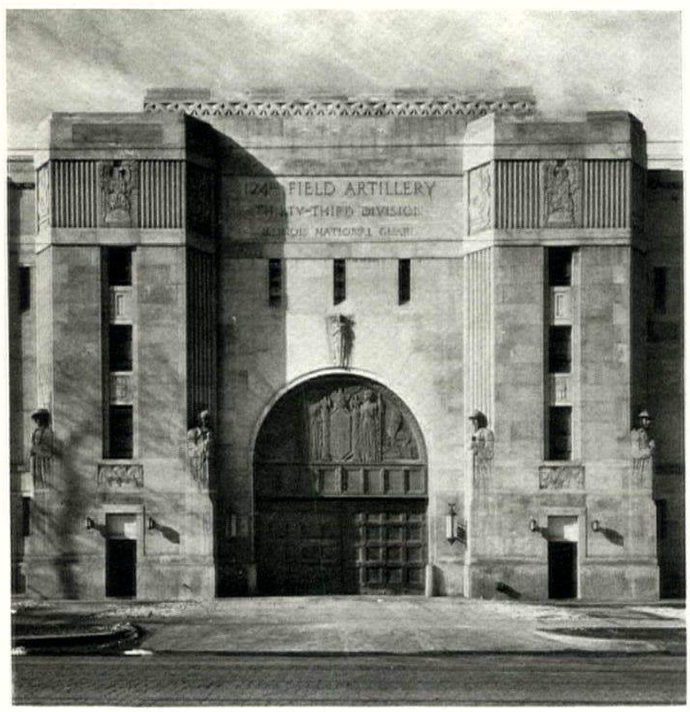
CHICAGO, ILLINOIS

PERKINS, CHATTEN & HAMMOND, ARCHITECTS

C. HERRICK HAMMOND, SUPERVISING ARCHITECT

Hedrich-Blessing

VIEW FROM PARKWAY
AND STABLE ENTRANCE



The building is composed of three units, the head house, arena, and stables, having a total cubage of 8,434,154 cu. ft. The cost per cu. ft. for the first unit was 29 cents; the second, 13 cents; and the third 25 cents, making an average of 23 cents, and a total cost of $1,454,768.73. Exterior is buff Indiana limestone

124TH FIELD ARTILLERY ARMORY

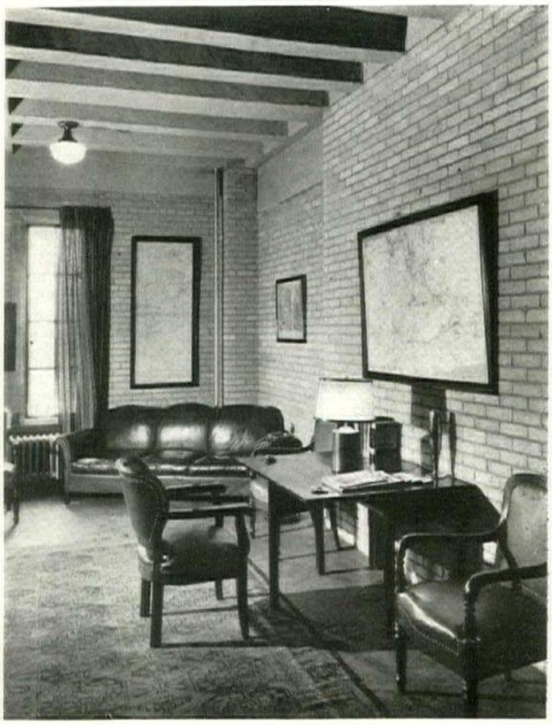
CHICAGO, ILLINOIS

PERKINS, CHATTEN & HAMMOND, ARCHITECTS

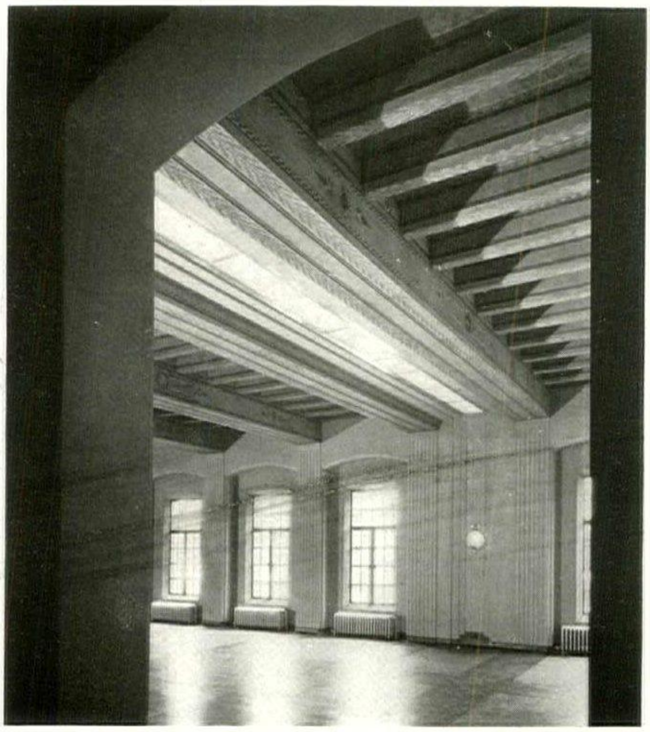
C. HERRICK HAMMOND, SUPERVISING ARCHITECT

Hedrich-Blessing Photos

CLUB ROOM



BATTERY CLUB ROOM



MEMORIAL HALL

The building is of fireproof construction with reinforced concrete floors and roof. The arena roof is lightweight precast concrete slabs and glass. Cement floors, face brick walls, and exposed concrete ceilings are typical interior finishes. Special rooms, the memorial hall and club rooms, have terrazzo floors, plastered walls, decorated concrete ceilings

124TH FIELD ARTILLERY ARMORY

CHICAGO, ILLINOIS

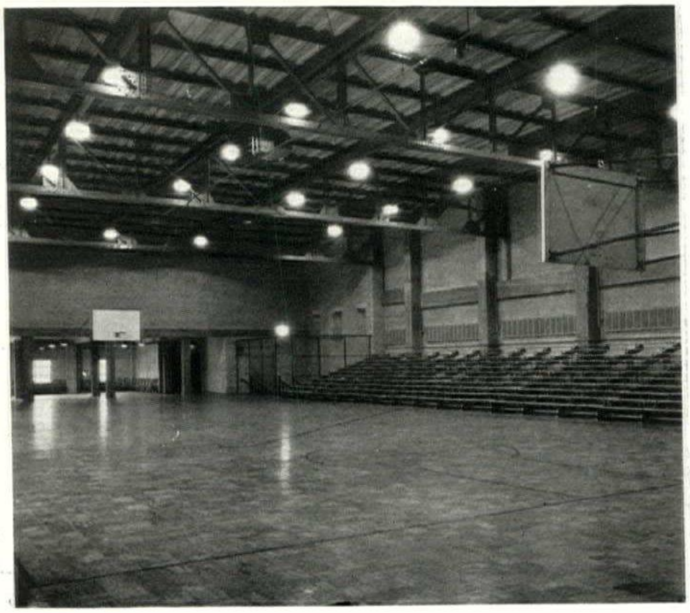
PERKINS, CHATTEN & HAMMOND, ARCHITECTS

C. HERRICK HAMMOND, SUPERVISING ARCHITECT

Hedrich-Blessing Photos

ARENA

The floor of the arena is composed of clay and sand, its walls are of brick, and steel trusses support the lightweight roof. The clear span of the trusses is 220 ft. with a 90 ft. height in the center; its area is 45,360 sq. ft., and it has a seating capacity of approximately 4,500. The floor of the gymnasium is wood block laid in mastic over concrete



GYMNASIUM

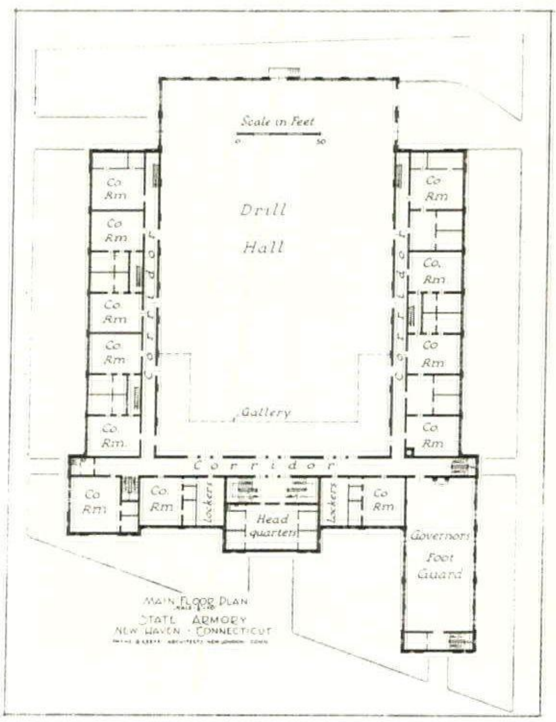
124TH FIELD ARTILLERY ARMORY

CHICAGO, ILLINOIS

PERKINS, CHATTEN & HAMMOND, ARCHITECTS

C. HERRICK HAMMOND, SUPERVISING ARCHITECT

FRONT ELEVATION



EXTERIOR: The walls are of brick with hollow tile backing. Flat roofs are of concrete, but the roof over the drill hall is gypsum poured in place over sheetrock. A built-up roofing material covers all

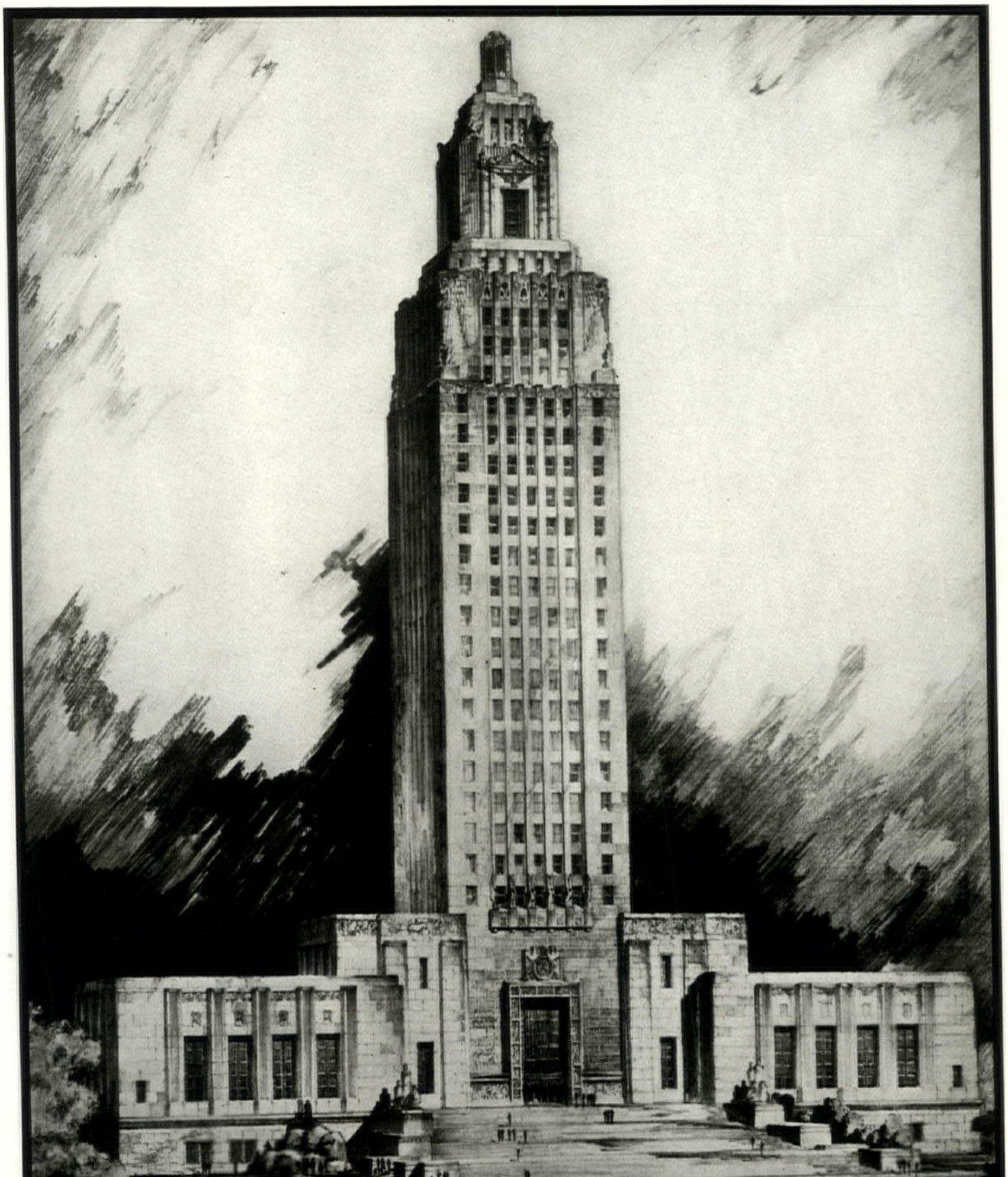
INTERIOR: With exception of maple floor in drill hall, and linoleum floor covering in living quarters, floors are of concrete. Walls are plaster in all but drill hall which has exposed brick walls. Unit heaters are used in the drill hall, standard radiators elsewhere

CONSTRUCTION: The building is fireproof supported on concrete piles. Steel trusses over 120 ft. span support roof in drill hall. Gross cubage 3,600,000, at 19.4 cents per cu. ft. Total cost, $700,000

STATE ARMORY

NEW HAVEN, CONN.

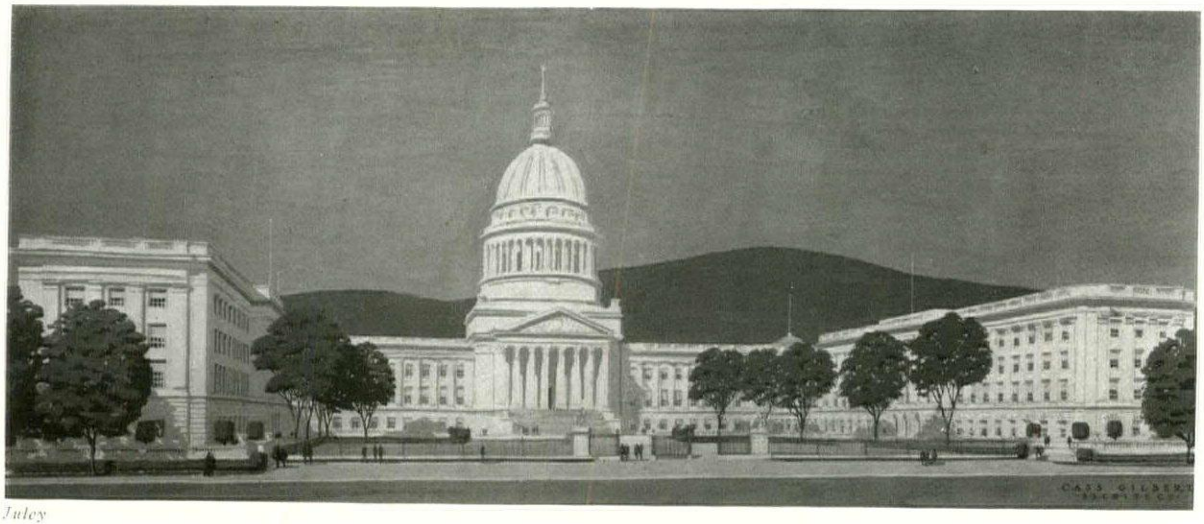
PAYNE AND KEEFE, ARCHITECTS



Billings

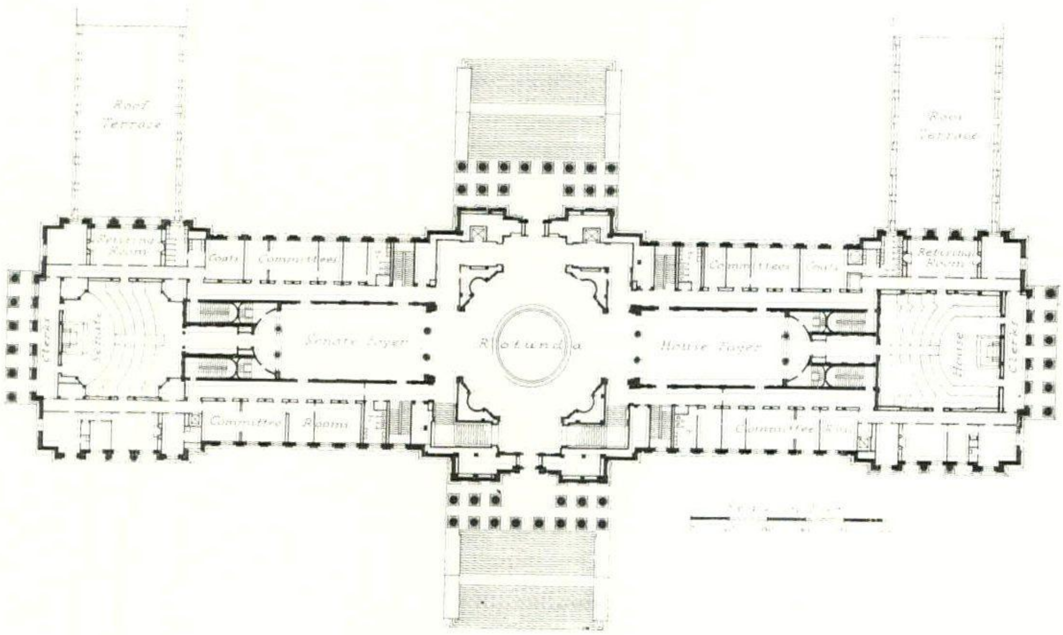
LOUISIANA STATE CAPITOL
BATON ROUGE, LA.
WEISS, DREYFOUS & SEIFERTH, ARCHITECTS

STATE CAPITOLS UNDER CONSTRUCTION



Juley

The West Virginia Capitol, soon to be completed, cost about $4,500,000 and contains approximately 6,500,000 cu. ft. The building is of steel frame construction with exterior walls of Bedford limestone. White Vermont marble is used for the floors and walls of the rotunda, legislative foyers, and other public spaces. Bronze trim is used throughout the building



FIRST FLOOR PLAN

WEST VIRGINIA STATE CAPITOL

CHARLESTON, WEST VA.

CASS GILBERT, ARCHITECT

THE EDITOR'S FORUM

THE PLAN PROGRESSES

THROUGHOUT the country there are architects who are thinking along lines that seemed to demand no attention two or three years ago. Today there is ample time for reflection. We look forward, in the light of the recent and the present experience, to the development of a better order of things, to the possibilities of coöperation and organization, of stabilization and planned progress. Architects are thinking in terms of the social and economic order, there is an intellectual and spiritual awakening. The problems to be faced are many and they will not be solved at once, but steps can be taken that will work for the good of all. Such steps are being taken now and the leaders in architectural thought are leaders in action as well. Architects will do their share in solving the problems of the industry and in bringing about a closer coöperation "in the production of better buildings to fulfill real needs, scientifically determined."

The excerpts printed here from letters discussing the editorial on the subject of preliminary plan for the building industry are evidence that the profession is alive to its responsibility—and its opportunity.

Kenneth K Stowell

EDITOR.

GROUP IDEALS AND ACTION

I AM at a loss to understand how our profession has so long ignored such things as the relation of building to our tax system, and the practices and purposes of our present economic structure, as if they were not our problem.

In any plan we devise, we must see to it that such national leaders in all phases of life—not only in industry—are brought together about the round tables. No branch can be safely left out, for the solution of the problem, if it is ever solved, cannot be superimposed on the citizens by experts. It must come from the citizens themselves, or their elected representatives. To accomplish this, what is possible of the old town meeting—the open forum—must be resurrected once more, it seems to me, in a systematic manner. Not only should free speech obtain once more to determine the "group ideal"—the "group will," but the expert and the wise must have such a vehicle before they can educate the citizens, and humanize their facts.

I believe the "congress" movement is the solution. It is past the experimental stage in the building industry. Everything possible should be done to make this a national movement, and I urge upon the architectural press the obligation of spreading the news of the movement, and of educating the industry to the full significance of its ideals. Through it, we may expect to put our own house in order, as far as those phases of the problem go which have to do with functionalization of our own groups.

However, that alone will not suffice, for there is scarcely any section of community activity on which we are not dependent. Certainly taxes, as now in force, put a premium on shoddy building and a damper on improvement of property.

Government concocts a new brand of taxation every year or two. The more you work the more is taken away from you. The more you build the more you pay. The better you build the more is your tax. Keep your property unimproved, pay a little tax and let the neighbors, by their improvements, fix you up with the unearned increment. It all sounds foolish, doesn't it? But what a damper on good architecture it all is! So with regulatory—restrictive codes that thwart professional skill in serving its community, to the best of its ability; with Uncle Sam, the States, the churches, etc., doing our job for us just as we are beginning to see the light of a functionalistic architecture; and with taxes that breed cheap building instead of good building and place a penalty on the improving of property—is it not time for architects to organize the mechanism in their communities as well as in their own industry, to the end that architecture may live fully and richly?

According to a leading statistical service, the financing of building operations offers the greatest of the abuses that stop progress. It is obvious how our problems overlap with activities of Health — Recreation — Art — Education — City Planning—Industrial Relations—Government—Religion—Sociology.

Therefore, any plan must provide contacts between these and other community activities based on sound principles of democracy. Provision must also be made to provide for the community activities to function nationally.

I think we will all agree to the enormous waste in past efforts, when fine facts and splendid solutions and schemes have gone by the board from lack of a proper vehicle to reach the heart of the public, through which the citizens may initiate. Facts and pretty pictures are not enough. It is a social problem—one of inter-relationship—and as such it must be faced.

ELLIS F. LAWRENCE,
PORTLAND, ORE.

THE PROBLEM OF THE PLAN

Having a highly perfected mechanism for production, we find today that our distribution is as antiquated as the oxcart. This has resulted in a dislocation of the economic structure affecting the entire world. Economists now point out (as they have for years without effect) the need for planning, for rationalizing industry, to bring order out of anarchy.

In organizing our economic structure the architects and the building industry should take a part. To suggest a few of the problems to which architects may address themselves in the attempt to balance our economic life:

1. *City and town planning.* One of the most serious problems facing us today. The wiping out of slum districts. Providing open spaces in congested areas. Proper housing for wage earners and the middle class. Civic centers and public buildings.

2. *The improvement of neglected areas.* The proportion of space in New York, for example, which is intelligently employed is almost negligible.

3. *Residential and commercial zoning.* To establish an acceptable system of plan, design and property control. Relief of traffic congestion.

4. *Decentralizing the city.* This is the next step for which adequate preparation should be made. At present each additional artery of transportation, opening up distant residential areas tends to increase the traffic difficulties in the most congested areas of the city.

Then such general items as:

The problem of garden communities with restricted areas for factory and commercial structures.

A system of education in architecture designed to create in property owners and in the general public an intelligently informed community consciousness and civic pride.

Active participation by architects in social and educational movements to attain the above objectives.

PHILIP SAWYER,
NEW YORK, N. Y.

A FUNDAMENTAL DISTINCTION

I read with interest your editorial in the July issue relating to a plan for the future. The problem is so complex that a letter of reasonable length can touch on hardly more than one angle of it. I will therefore merely comment on your statement that, *"The crux of the matter seems to be that we have developed the capacity for producing goods (and buildings are in this sense goods) faster than the present system of economics allows of their consumption."*

It is quite probable that I lay undue importance on the point I wish to make which, however, is that until we differentiate between the "goods" of the building industry and the "goods" of retail trade, to put it very roughly, we shall never get at the root of the stabilization problem.

Is it not true that the manufacture of goods for direct purchase and consumption, like clothes and food, can never alone create a consumer purchasing price capable of buying all such goods that it produces? The purchasing price must always include some percentage for reserves for depreciation, future capital investment or other purposes, in excess of the total payrolls.

Is it not true that the consumer purchasing power that will permit this process of manufacture to proceed must come from moneys spent for capital investment which is not producing goods for purchase except on the installment plan, as it were, so that only a small percentage must be spent currently in buying back these capital "goods"?

If so, is it not then true that the Construction Industry, including roads, reclamation projects, and all kinds of public and private construction, is the principal balancing factor in the production of this needed excess of consumer purchasing power? If so, then we must steadily think of the building industry in this way, as a balancing factor, not as just another "goods"-producing factor.

I find little evidence of any general tendency to think in this way about the building industry, yet, if I am right in my belief, this is a matter of fundamental importance and unless we all do so conceive of the industry to which we belong we will never be looking in the right direction to catch a glimpse of how our industry can be rightly used as a balancing factor.

WILLIAM STANLEY PARKER,
BOSTON, MASS.

THE MENACE AND MEETING IT

The architectural profession is faced with several strong competitive elements. In the field of small houses there are not only the newspaper plan services, plan services offered by magazines such as *The Ladies' Home Journal* and others, the so-called architectural service offered by speculative builders, and the inroads of the mail order houses. . . .

The second competitive class of free architectural service is that which is given by industrial builders and which is offered by at least one nationally organized concern which employs very excellent national publicity to assist its sales.

The third class consists of certain general contractors who, having established a reputation either locally or nationally, have thereby been able to establish an excellent credit line with financing houses, and who are, therefore, able to sell their services because they can offer financing for building projects. . . .

If it is to continue as a personal service protecting the rights of owners, the architectural profession must take some definite and well-considered action, based upon a forward-looking plan. The plan which I suggest is to take immediate steps to form a well-knit organization of the entire building industry, looking toward a large scale use of national publicity.

This entails, first, the organization of the architectural profession itself. A committee of the Institute is now at work on this very problem and is making a tremendous effort to accomplish a workable scheme. . . .

The architects should be the natural leaders in the unification of the building industry. If they do not take the leadership it is highly probable that some other group will. It is not inconceivable that this other group might be one of those which now comprises a menace to the architectural profession.

Eminent economists tell us that we must not expect a sudden recovery from the present unsatisfactory state of business but that it will be gradual and may take five or six years in its accomplishment. We have had two years of freedom from overwork with the consequent leisure to consider means for setting our own house in order. We may expect to have several more years in which to put these means to work. This is an excellent time for us to go about the consideration of an organization plan. The next five years present an equally excellent period in which to carry out the scheme. The building industry should emerge from the depression completely organized to do business on a sound, safe, and successful basis.

We have not considered that in order to educate the public concerning our own functions we must also explain the functions of the other elements of the building industry. Is it not obvious that the next step is to invite those other elements to join with us in spreading the word?

LANCELOT SUKERT,
DETROIT, MICH.

FINANCE AND OVER-PRODUCTION CYCLES

The building industry, while it is basic, is just one of a numerous group which constitutes the total volume of national business, and it is inextricably bound up with the general business cycle. While there are some people who say that general business goes largely as the building industry goes, it is probably general business which is carrying the building industry through the various stages of its cycle rather than the reverse. The economic collapse and failure of the boom period is a phenomenon which has certainly been witnessed many times in the past and is probably more the result of over-production in all lines of products, as the result of the selfishness and greed of individual operators, than any other factor. When an operator sees a chance to finance a deal, "even on a shoestring," he usually takes it, even if all danger signals have been passed, and there is no economic need for his project. He takes this chance because he thinks by some magic his deal will net a profit for him.

The over-production of building has been facilitated through the methods of investment bankers, bond houses, and the commercial bankers. Building has been permitted on entirely too small an equity and in many cases has not been on a conservative basis. The recent report of the American Investment Bankers Association indicates that there are several billion dollars worth of mortgage bonds floating over the country and on over half of this vast amount losses will probably range anywhere from 10 to 100 per cent. This situation starting with the greed of operators has been made possible by the greed of certain real estate bond investment houses assisted by commercial bankers. It is notorious that appraisals have in many cases been most liberally inflated, and loans have been arranged with secondary financing which have accounted for the entire building cost and more. If the equity was small, then the cost of the loan was greater, and in many cases exorbitant.

Another factor which has been undoubtedly operating against building is the high rate of taxation now ensuing, and this taxation rate should, if possible, be reduced through a study of the whole taxation system and more equitable distribution. The chances are that high taxes are partly the result of governmental inefficiency and in some cases of actual dishonesty.

When building starts again with the general business, over-production should be avoided through the proper dissemination of figures of various real estate boards, building managers associations, etc. There should be associations similar to building managers associations for all large and representative groups of buildings. The figures of all of the associations should be given out to the industry through a central committee based on the component associations, and also through the Department of Commerce, various chambers of commerce and real estate boards. It would be well to set up such an organization at the present time, because although it might not function in time for this crisis, it would be set up while there is plenty of time to give the form due care. It is only by avoiding the excesses of the unreasonable boom periods that the depths of despondency of the lower stages of the cycle can be avoided.

JAMES B. NEWMAN,
New York, N. Y.

THE BANK FOR BUILDERS

May I make one suggestion, and then elaborate somewhat on financing? The producers of building material, the largest and most potent factor in the industry, should have adequate representation on the Plan Board.

Your suggestion of a "central reservoir of funds for construction (similar to the Federal Reserve System)" is identical with mine for a Builders' Mortgage Bank. The building industry, notwithstanding the depression, is able to provide the necessary working capital for such an institution, and the public will provide further funds as the need develops and conditions warrant. Indeed, the government itself would be fully justified in supporting its second or third largest industry by subscribing substantially to the stock, as it did in the Federal Reserve and the Federal Land Banks, and give it the same government supervision. Why are not the millions of home owners, and shop, office, hotel and theater owners entitled to the same credit facilities as the merchants, speculators and farmers? The security behind such credit would certainly be no less substantial.

The organization of this bank should not wait on government support, which would require years of discussion, but should be undertaken immediately by the building industry itself with the assistance of financiers who doubtless can be interested. It could, perhaps, be accomplished in three or four months under good leadership, and government cooperation could be sought later.

Such a bank, with or without government support and supervision, would be an excellent medium for accomplishing quickly and efficiently all of the objectives of your plan. With metropolitan headquarters and a staff of experts, and with branches in all the States, it could determine accurately the real building needs of every community, and, while supplying the funds to meet those needs, it could effectively check over-building in any locality and in any class. It could ascertain with some assurance the ground and rental values, and the ability of borrowers to meet interest and amortization payments, and with such knowledge first mortgage loans might safely be increased to 75 per cent of the appraised value.

It would, as a condition precedent to any loan, require:

1. That the full services of an architect of recognized standing be employed; that the building be suitable to the locality; that it be efficiently and economically planned, of sound construction, properly equipped and of good design, and that the architect issue a final certificate that the finished building meets all the standards established by the bank.

2. That the building be erected by a competent and adequately equipped and financed builder, and that the cost be in line with independent estimates based on local conditions and made by the bank's own experts.

3. That all essential materials entering into the building be certified by an approved inspection laboratory to meet all the standards established by the bank. Such standards would be fixed from time to time and would be based upon the findings of the Department of Commerce, the Bureau of Standards, the A. I. A., the Producers' Council and other agencies now at work, and would look to efficiency, simplification and elimination of waste.

In order to be of maximum value to the building industry, and to minimize frozen credits, the bank would confine its loans to new construction, of course with an ample period of amortization, leaving the field of refinancing and so-called "permanent" loans to existing agencies.

CHARLES C. WILSON,
Columbia, S. C.

CITY HALLS AND TOWN HALLS

BY

WALTER H. KILHAM

OF KILHAM, HOPKINS & GREELEY, ARCHITECTS

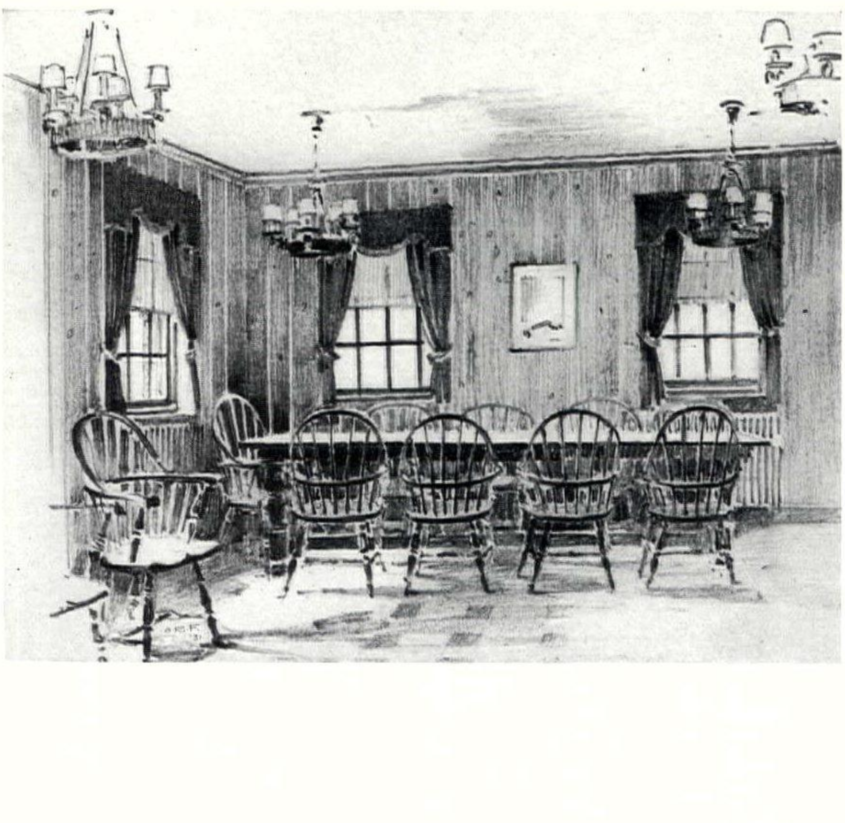
IN any municipality the seat of local government has always represented in a special way the civic pride of its citizens. The noble town halls of Italy and Flanders under whose lofty bell towers and spacious loggias the citizens could congregate established a precedent which later American municipalities are still glad to follow, though perhaps in a somewhat more matter of fact manner; but however that may be, the municipal building still continues to express visibly the prestige and aspirations of the community and often does manage to express also the degree of culture to which the place has attained.

Although much is said about operating a municipality in the same efficient manner as a business, the fact remains that its governmental quality introduces an element in which ordinary financial matters can play only a small part and brings about not only a monumental factor in the architecture but a paternal touch in its affairs. The same general requirements obtain in kind no matter whether the place is large or small; the only difference is in the number of officials and the amount of space they require for their departments. It is true that in some communities the executive functions are carried out by a Village Board or a Board of Selectmen, instead of a Mayor and Council, and in New England the town meeting of all the voters still functions, requiring a sizable hall for its debates, but otherwise the requirements of the departments are much as in regularly organized cities.

Of course, the super-monumental type affected by European cities with state entrances, noble courtyards, banquet halls and *Salles des Noces* of the first, second, and third classes is almost totally lacking in America, as befits a plain and sturdy democracy; when the President visits Middletown he is feasted at the armory or the hotel, but these ornamental features of European cities are supposed to be compensated for by more efficient and economical administration here. At least, I believe that is the theory.

A city hall for a medium size municipality requires usually accommodations for the following:

1. The Mayor, with his secretaries.
2. The City Council and Board of Aldermen also, if the government is of the two-chamber type.
3. The City Clerk, City Solicitor, and Purchasing Agent.
4. The financial departments, comprising the



Selectmen's Room, Lexington Town Office Building, Lexington, Mass. Kilham, Hopkins & Greeley, Architects

Carey Memorial, Lexington, Mass. The Auditorium is used for town meetings
Kilham, Hopkins & Greeley, Architects

Assessors, Tax Collector, City Treasurer, and Auditor or Accountant.

5. The Department of Public Works, i.e., water, sewer, streets, bridges, ferries, etc., and sometimes parks.

6. The more purely paternal departments, health, food inspection, sealer of weights and measures, city charities, city hospitals, jails, and other institutions.

7. The Building Inspector, Plumbing Inspector, City Electrician, City Engineer, Planning Board, etc.

8. The Police, Fire, and School Departments, which sometimes prefer to be housed separately. Municipal court rooms and lock-ups are occasionally included.

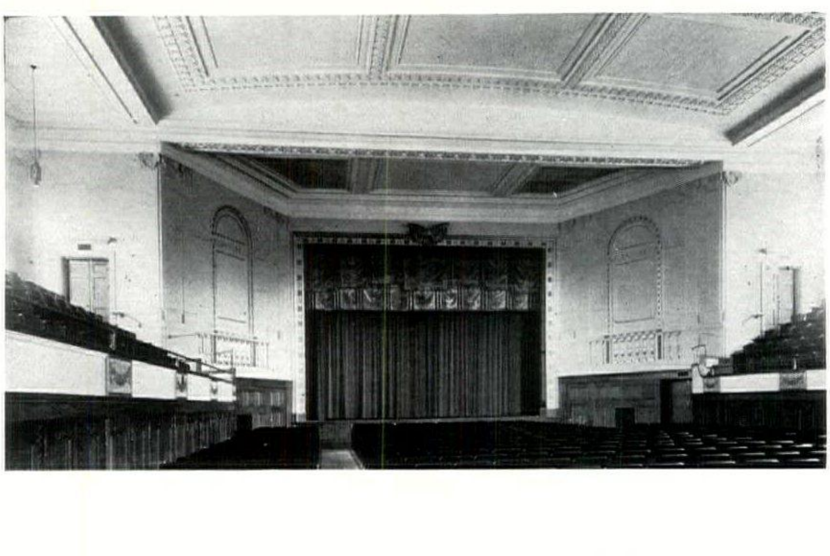
9. The Tree Warden, or Forester.

The sequences in which these rooms are placed may vary slightly according to local practice, but the following is a fair average layout:

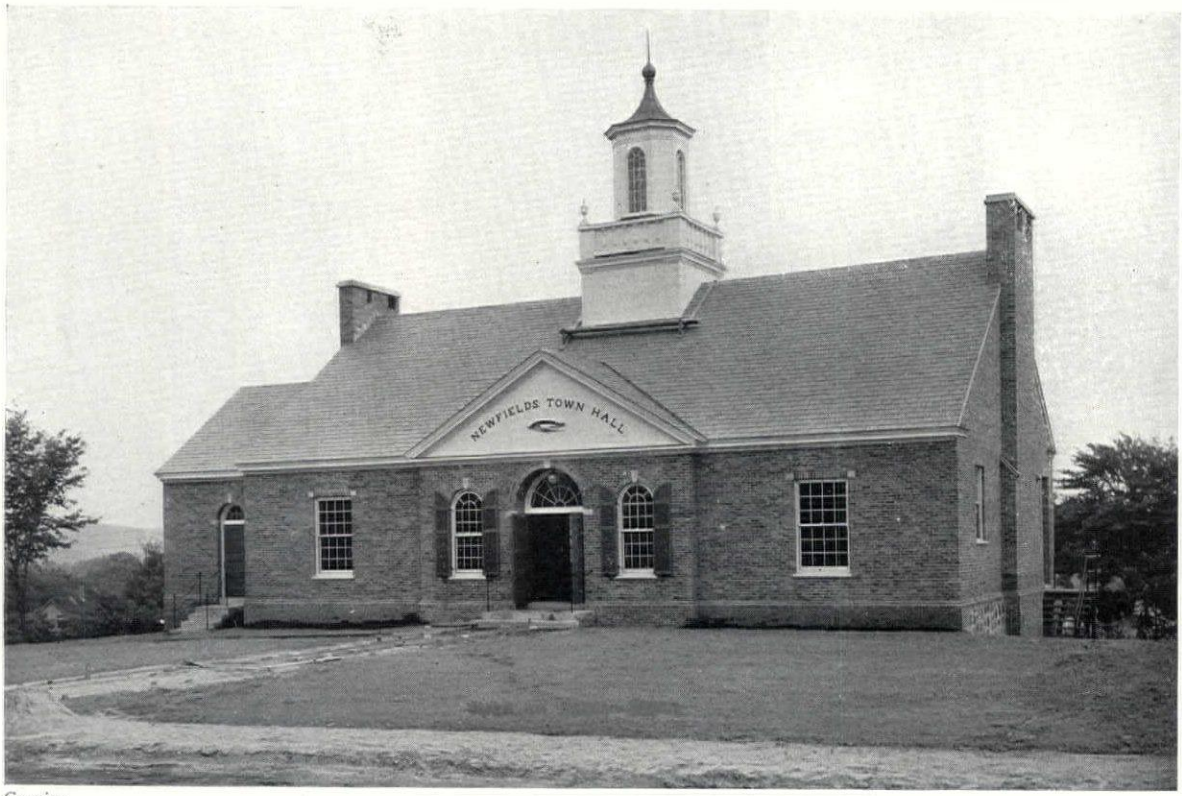
First Floor (Easily reached from the street): City Treasurer and Auditor; Tax Collector; Welfare Department (City Charities); City Clerk.

Second Floor: Mayor, Council Chamber and Committee Room; City Messenger; City Solicitor; Assessors; Purchasing Agent; Planning Board; Public Works Department.

Basement: Building and Plumbing Inspec-



The Auditorium of Cary Memorial looking toward the stage which has all the equipment of a regular theater



Currier

Newfields Town Hall, Newfields, N. H. The plans are shown below
Kilham, Hopkins & Greeley, Architects

tors; City Electrician; Health, Milk Inspection; and Police facilities, if such are required.

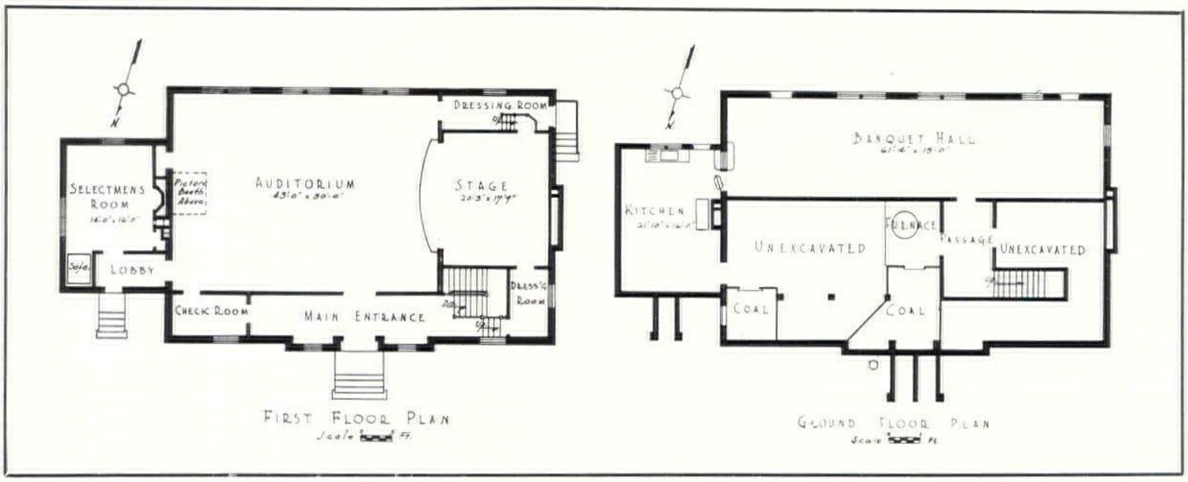
THE EXECUTIVE DEPARTMENTS

THE MAYOR'S SUITE is generally assigned to the pleasantest location in the building and the rooms which consist usually of an inner private office, with an outer office for the use of his secretaries and as a waiting room. These should be spacious and dignified. The private office should have seating accommodations for a dozen or more people at least, as delegations will frequently visit the Mayor and there should be room for a long center table for inspecting large plans and blueprints, as well as for the Mayor's own desk. This room should have a side door to the corridor which will permit the Mayor or his visitors to leave without passing through the waiting room.

The Mayor will have one or more secretaries whose desks should have some protection by means of a rail or counter from the public waiting space. A private toilet should be provided.

THE CITY SOLICITOR'S OFFICE is generally arranged in sequence with that of the Mayor, but does not require any special treatment except in the case of large or particularly contentious cities.

THE COUNCIL CHAMBER, usually on the same floor as the Mayor's office, requires a good deal

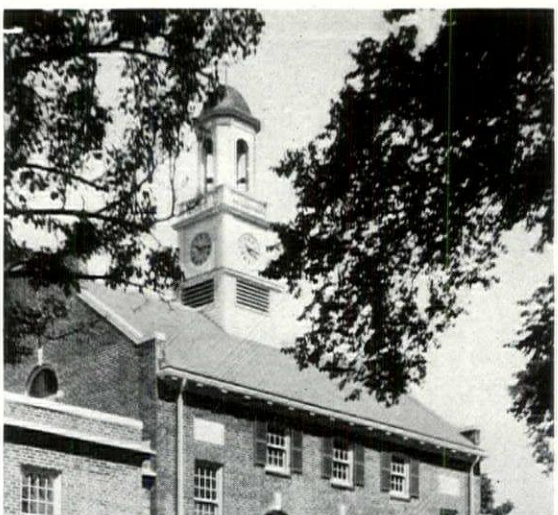


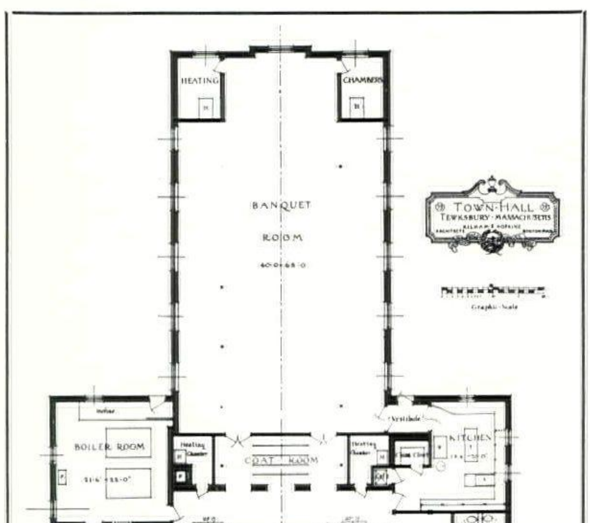
Town Hall, Westborough, Mass., is a modern adaptation of the Colonial, appropriate to an old and long settled community

of planning. Its architectural treatment may be quite elaborate and impressive, but exterior light is not so important, as meetings of the Council generally are held in the evening. If there is a Board of Aldermen, its chamber, as pertaining to the Senior Board, has the place of honor on the floor.

The Council Chamber proper has accommodations for the Councillors whose comfortable desks and chairs are arranged in a semicircle in front of the platform where the presiding officer's desk is located with that of his secretary. Space must be provided for the press close to the heart of affairs; but it is also important to have adequate seating space for the public which is rather insistent upon its right to be present at the meetings.

The City Messenger needs a small room, convenient both to the Council Chamber and the Mayor's office. Two or three committee rooms should be provided as close as possible to the





chamber. One of these may well be of size sufficient for a small hearing of 25 or 30 persons. Toilets for men and women are also necessary in this connection as some of the Councillors may be women. The main corridor outside the Council Chamber should be wide, provided with settles and have a dignified treatment.

In the Waltham City Hall, the loggia at the rear is a most attractive feature, overlooking as it does a shaded park, and forming not only a pleasant place on summer evenings, but an appropriate rostrum from which a distinguished visitor can address the public.

The City Clerk needs a large, well lighted room with a counter and space for several assistants, a vault and a private office. The vaults are primarily for protection against fire and in many states the type of their construction is definitely fixed by law. The clerk's office must provide for many filing cases to contain records of vital statistics and a host of other information, even including a dog licensing catalogue with the names of all the dogs and their owners.

The Purchasing Agent's Office may be smaller, but he also will want a private office and a stock or store room for samples, etc. The Purchasing Agent buys supplies for all city departments, and is a busy man whose knowledge must cover the characteristics and current prices of all commodities used by municipalities.

THE FINANCIAL DEPARTMENT

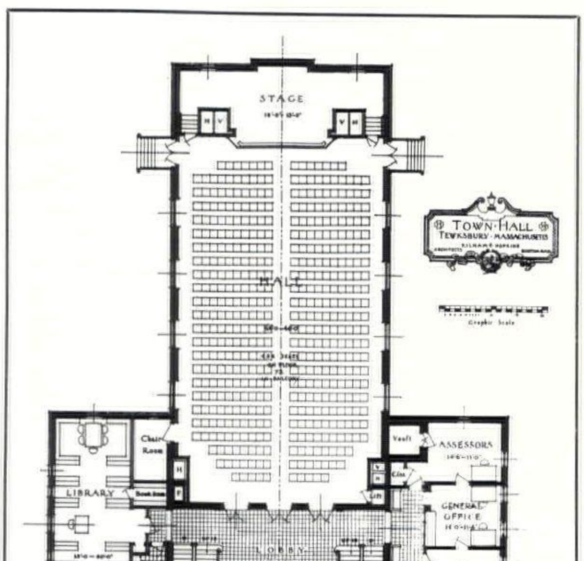
The Assessors require a well lighted public office of reasonable size, with a counter. As most of their conferences will be related to their maps, the conference tables and counters must be large enough to accommodate the maps easily. The Assessors will need an inner work room with a vault for storing the maps, and an inner conference room where the taxpayers will have many earnest conferences with the Board.

The Tax Collector. The work of this official is closely related to that of the Treasurer and Auditor. His office may be on the ground floor, where it is easily reached by the public. It will need a vault and a counter with a grille. (For equipment of this counter, see under "Treasurer.")

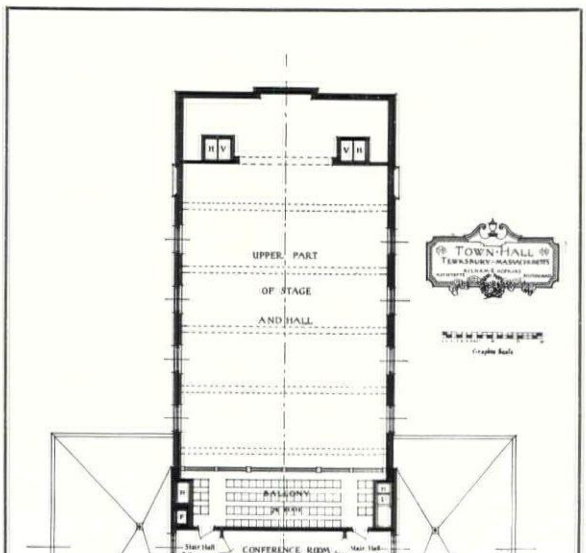
The City Treasurer. This office is also usually located on the ground floor. It should be provided with a good size burglar-proof vault and a counter with a grille like a bank. A small private office will usually be a convenience. Payrolls in the modern American city include many names of many styles. Although few can be pronounced, all have to be written and read and therefore the Treasurer needs desks for a considerable clerical force.

The Auditor will need a room for several clerks, a private office and a vault. His office should be near that of the Treasurer, but not necessarily communicating with it. In many towns the auditing is done by a "Town Accountant." The difference lies mainly in the name.

The Public Works Department is variously organized in different cities, but for the purpose of this article may be taken to include the Sewer and Street Departments, City Engineer, and



FIRST·FLOOR·PLAN



SECOND·FLOOR·PLAN

Dover Town Hall and Library, Dover, Mass.
Kilham, Hopkins & Greeley, Architects

Water Department, although the latter frequently prefers to maintain separate quarters. In any event, these various departments, whether separate or combined, will need counters for examining plans and records, adequate public space, private offices for the Chief and his subordinates and ample fireproof vault space for plans and records. The amount of space to be allotted to these activities will need much careful study, and time spent in efficiently planning the office layouts will be well spent.

The chief executive of the department is variously styled Town Manager, Superintendent of Public Works, General Superintendent, etc., and is an official of importance and some dignity. He should have a private office. A room is desirable with a desk each for the division superintendents, water and sewer, parks and playgrounds, highways, etc.

THE SCHOOL DEPARTMENT is apt to feel that it should be in a building of its own. Being generally independently elected, and not appointees of the Mayor, the Committees often like to be separated from the City Hall, but in a good many cities quarters are provided for them there. Their needs will vary according to the size of the city, and in a large city will be very complicated. In a place of about 50,000 inhabitants, the usual requirements are: an outer office, with a long counter, for several secretaries; an office and waiting room for the Superintendent and his secretary; a Board Room; rooms for the Schoolhouse Custodian; possibly a room for the Health Department, and much storage space. Architects who have to do much altering of school buildings will wish that a good filing system for schoolhouse plans might be installed. The storage requirements are quite formidable and this alone is almost reason enough for a separate building.

TOWN HALLS

The expression "Town Hall" means a municipal building for the smaller communities, such as those in New England, which cling to the town meeting form of government, with the executive powers vested in a Board of Selectmen.

The various offices under this system are not unlike the corresponding ones in city halls, except that in a good many cases the same official may perform two or more functions, so that one room may serve more than one department. The Board of Selectmen, which comprises usually five members, will need an office for their clerk and a meeting room, arranged with a desk for the chairman and clerk at the head and four other desks for the others. These may be contained within a rail, and the rest of the space, which ought to be of good size, reserved for those who may wish to attend the hearings which the Board will hold whenever matters arise which require one. An item sometimes forgotten, but which is of the greatest convenience, is a large table placed against the rail on which blueprints, town atlases, etc., may be examined by both the town officials and public together, as such matters as new street layouts, bridges, and building plans will continually come up and require its use.

This kind of a Town Hall will require an auditorium theoretically large enough to hold all the voters of the town who might wish to attend a town meeting. On account of the cost, this requirement was difficult enough to fulfill in former years but now, with the enfranchisement of women, it is practically impossible for most towns and consequently quite a number have been driven to the expedient of a limited town meeting, of perhaps 250 members, who are elected to the body from the different precincts. The hall, however, will have to be large enough to contain an indefinite number of other legal voters who usually have the right to attend and speak, but not to vote, so that a hall seating 500 or 600 may almost be regarded as a minimum size, Yankee thrift generally considers that this hall should also serve for entertainments, dances, and fairs, so a level floor is obligatory, with removable seats, and this leads to the feature of a "banquet" hall being installed in the basement with the usual facilities of a community house for serving food.

In the smaller towns the public library also is often accommodated, as for example in the buildings at Tewksbury and Dover, Mass., where it is allotted one of the wings on the ground floor. The Police Room with lock-ups for men and women (visitors to the town, of course, not regular residents) is a part of the structure, but generally has to take to the basement. Needless to say, this department requires a separate entrance.

THE TOWN OFFICE BUILDING

Changing conditions are causing quite a number of towns to try to avoid the expense of building an auditorium in conjunction with the town offices, reasoning that their rapid growth will soon make an acquisition of a city charter obligatory, in which case a hall would not be needed for town meetings. An example of this situation is

First Floor Plan and Details, Dover Town Hall and Library

The City Hall, Charlotte, N. C.
Charles C. Hook, Architect

that shown by the buildings at Lexington, Mass., a town whose present population is about 8,000. In this case, a very handsome auditorium was built as a gift to the town under a bequest, forming the central feature of a group of three buildings. While used for town meeting purposes, this building is provided with all the stage equipment of a regular theater and serves all the requirements of the community in that direction.

TOWN HALLS AS COMMUNITY BUILDINGS

In the smaller towns the machinery of government plays an important but not exclusive part in civic life. The public library, women's committees, American Legion, and other veteran associations need a home, while many occasions arise which call for a banquet hall, community kitchen, a dancing floor, and a well equipped stage for theatrical entertainments. The plans of the buildings at Tewksbury and Dover, population 5,000 and 1,000 respectively, both in Massachusetts, show what was done there to satisfy these needs. In both places I was informed that the construction of the building had an immediate beneficial effect upon the community life and spirit.

The Town Hall at Westborough, Mass., (population in 1930, 6,348) is perhaps less distinctly a community house but it contains so many features of this nature that a more detailed description may be of interest. Built on the site of the old wooden Town Hall on the main business street of the town, it occupies a narrow and very restricted lot between rather high buildings which accounts for the shape of the plan. The slope of the lot to the rear permitted the development of a good basement with public rest rooms, police rooms, lock-up, and a good size court room.

The style of the building is highly modernistic in detail and spirit while still preserving the red and white colonial flavor appropriate to an old and long settled community, the idea being to preserve a harmonious relation with the building's surroundings and at the same time link it up with present-day architectural movements. It would have been little short of a crime to put an ultramodern building on the main street of this New England town, but to condemn the town to the slavish copying of outworn precedent would have been equally bad.

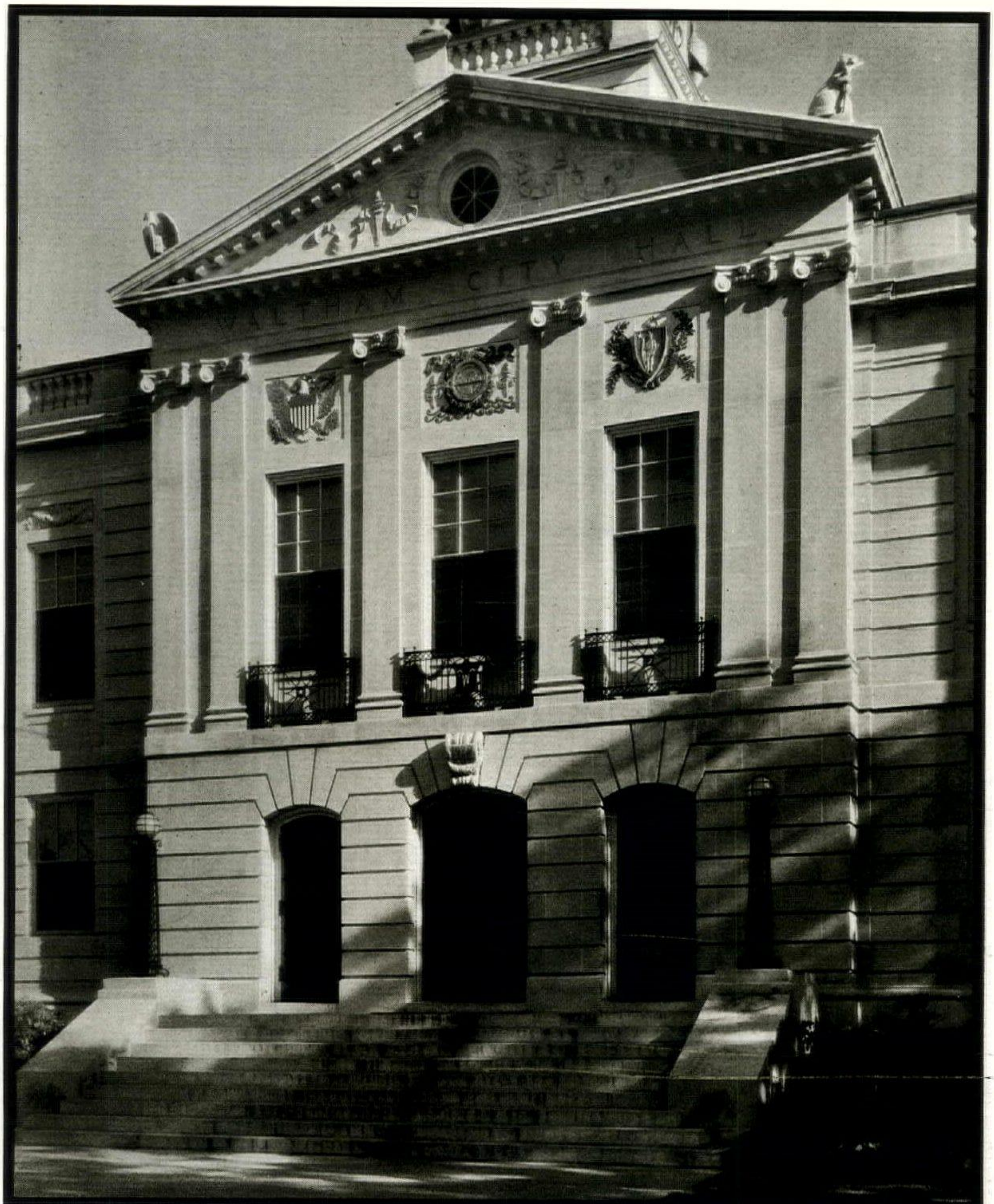
The small Town Hall at Newfields, N. H., is an example of a building which is almost entirely a community house, one room for the Selectmen being all that was required for the needs of civil government. There is a hall seating 200, a picture booth, check room, stage, and a dining hall and kitchen below.

SITE

The municipal building by its very nature demands an impressive site, spacious and yet central. The principal difficulty at the present time is to acquire such a site anywhere near the center of the city and still supply the insatiable demand for parking facilities. Parking spaces as such are ugly, whether full of handsome cars or empty, and it is absolutely necessary to have a good amount of attractively designed space at least at the front and sides of the building (and at the rear if possible) if any kind of a suitable effect is to be attained.

Such a space is appropriate for soldiers' and other memorials, which should be considered in laying out the grounds, the locations being planned when the designs for the building are being made. Furthermore, even in our democratic country many ceremonial occasions occur, visits of high officials, welcoming aviators, and polar explorers, and so on, when large numbers of people will wish to witness the exercises, so that the standing space about the building needs to be adequate for a good size crowd, and a shady park such as that at Waltham is very desirable.

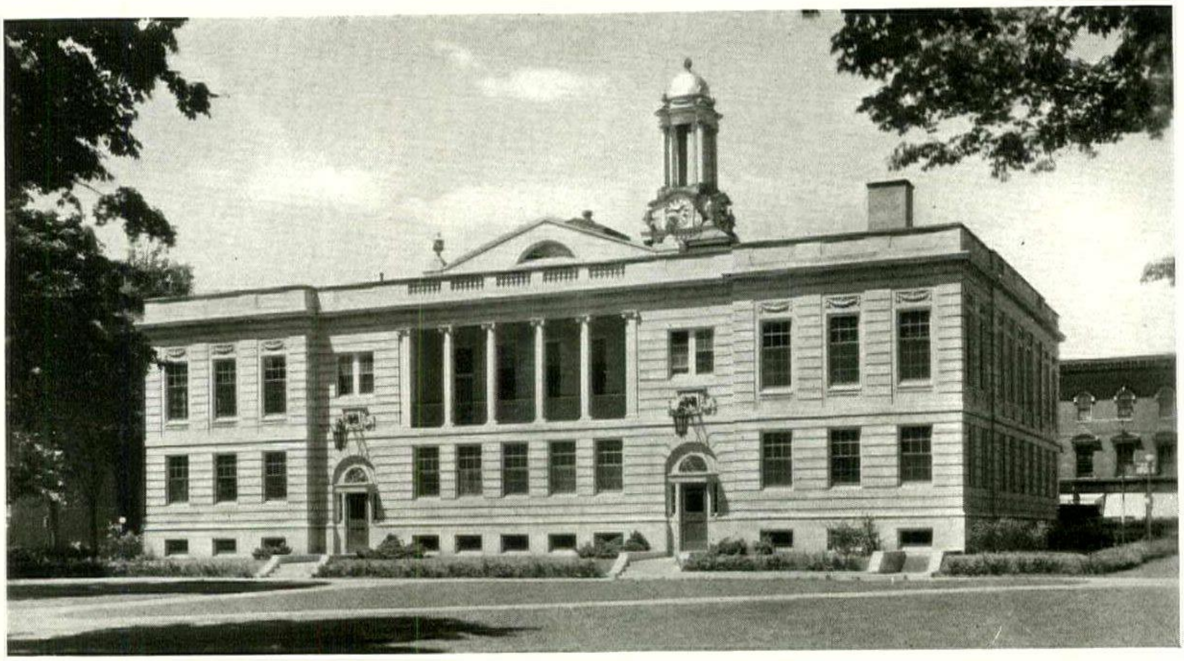
A clock tower is traditional and no city hall is supposed to be without one. Floodlighting is also thought to add a sort of meretricious glory to the job, but with the new developments in electric lighting it is to be hoped that lighting effects of a less obvious type will soon make their appearance.



Haskell

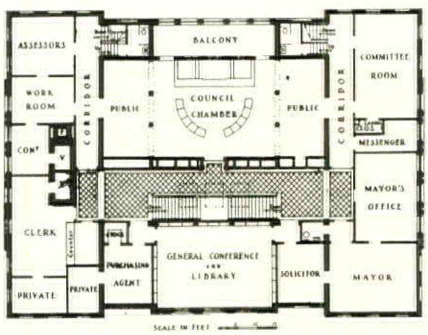
WALTHAM CITY HALL
WALTHAM, MASS.
KILHAM, HOPKINS & GREELEY, ARCHITECTS

CITY HALLS AND TOWN HALLS



Haskell

REAR ELEVATION

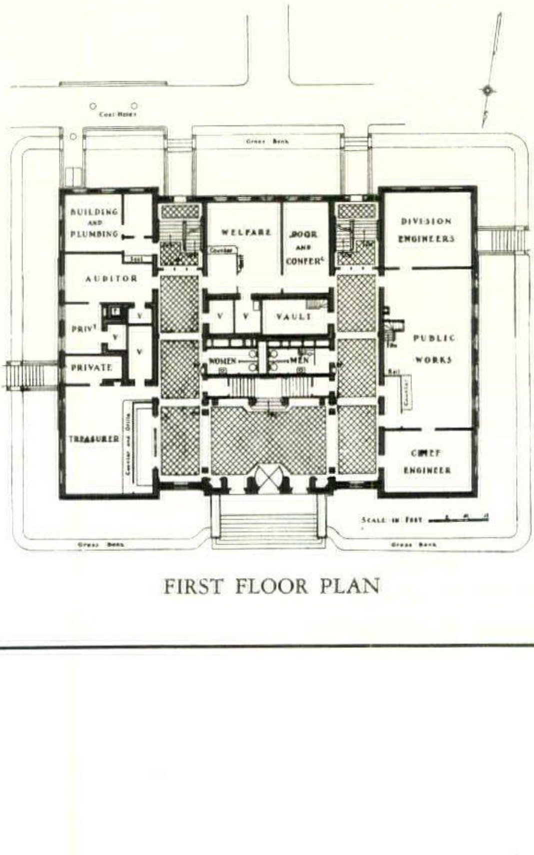


SECOND FLOOR PLAN

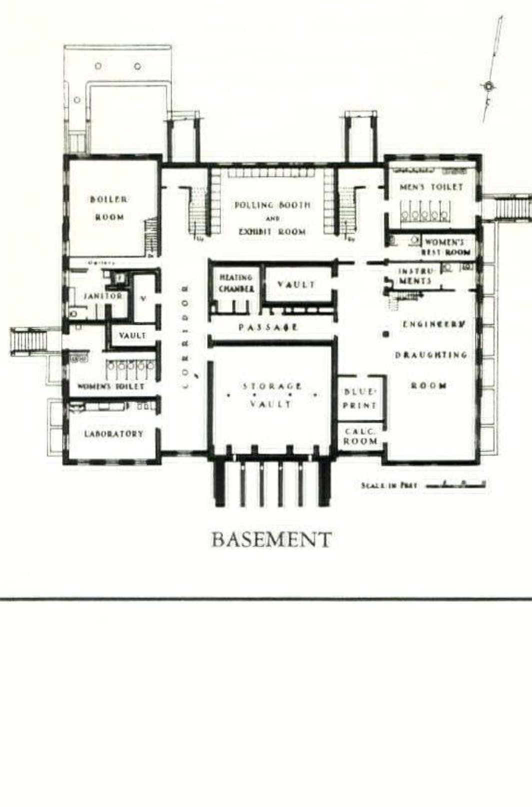
WALTHAM CITY HALL

WALTHAM, MASS.

KILHAM, HOPKINS & GREELEY, ARCHITECTS



FIRST FLOOR PLAN



BASEMENT

Haskell Photos

COUNCIL CHAMBER

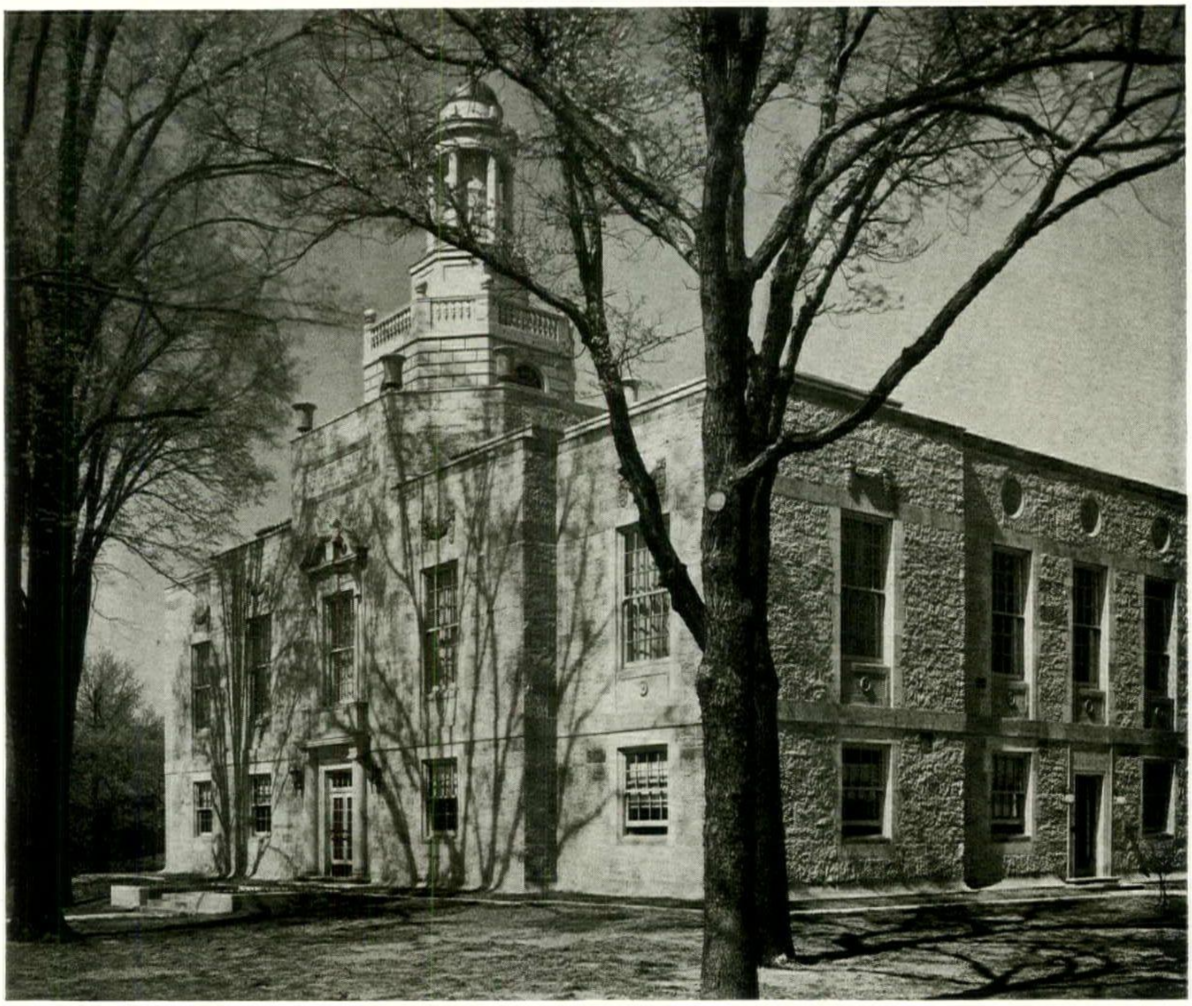
THE LOBBY

A typical city hall for a small municipality, embodying the principles of logical planning and impressive designs. The building is of fireproof construction, with limestone exterior walls and a concrete foundation. Terrazzo is used for flooring in the public areas, linoleum and rubber tile in the office spaces. With the exception of the lobby, which has limestone walls, the interior walls are of plaster. One unique feature of the design is the loggia at the rear of the building, used as a rostrum from which speakers may address the crowds in the shaded park below

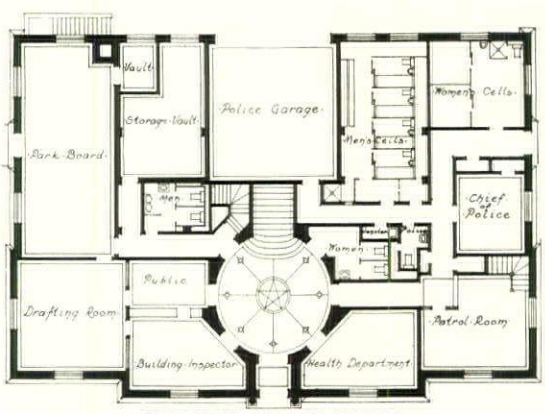
WALTHAM CITY HALL

WALTHAM, MASS.

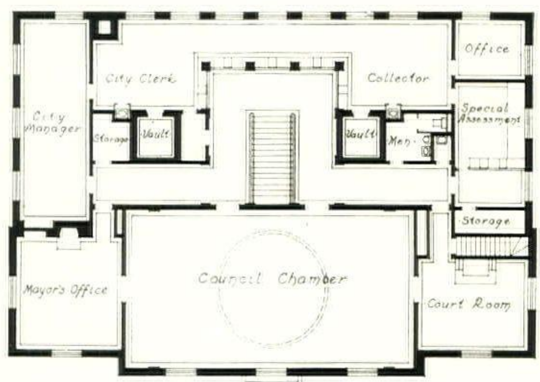
KILHAM, HOPKINS & GREELEY, ARCHITECTS



Trowbridge



GROUND FLOOR PLAN



MAIN FLOOR PLAN

HIGHLAND PARK CITY HALL

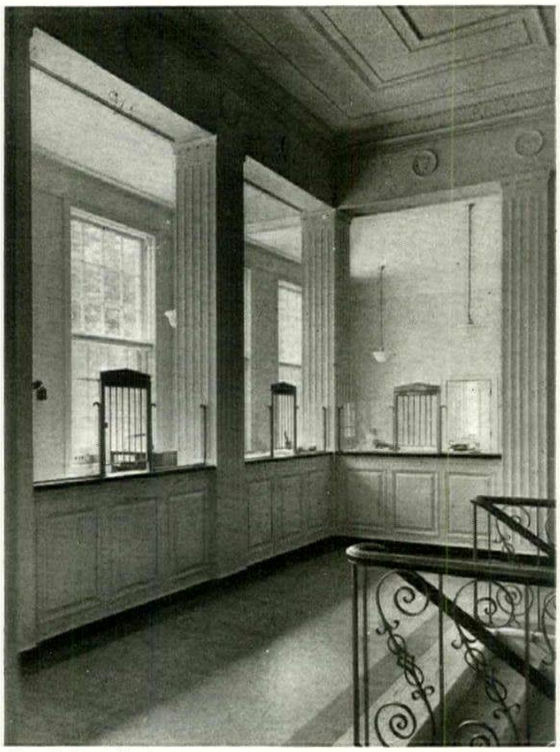
HIGHLAND PARK, ILLINOIS

FREDERICK HODGDON, ARCHITECT

STANTON AND HODGDON, ASSOCIATED

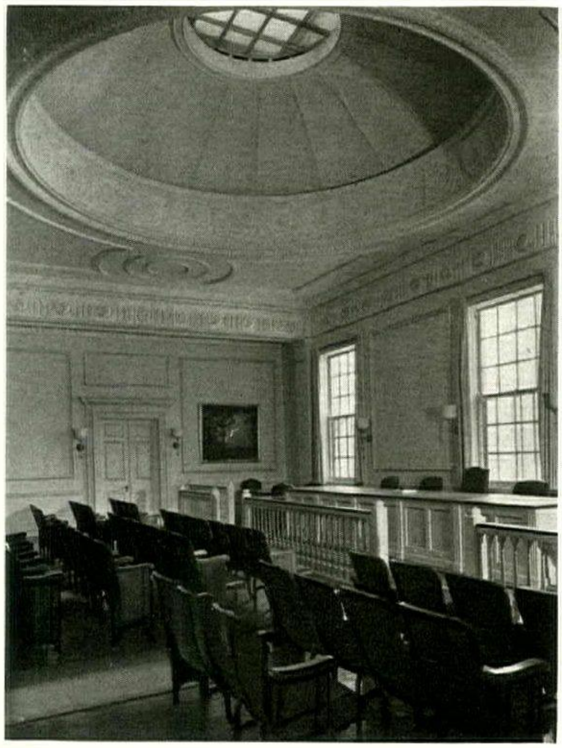
Trowbridge

HIGHLAND PARK CITY HALL
HIGHLAND PARK, ILLINOIS
FREDERICK HODGDON, ARCHITECT
STANTON AND HODGDON, ASSOCIATED

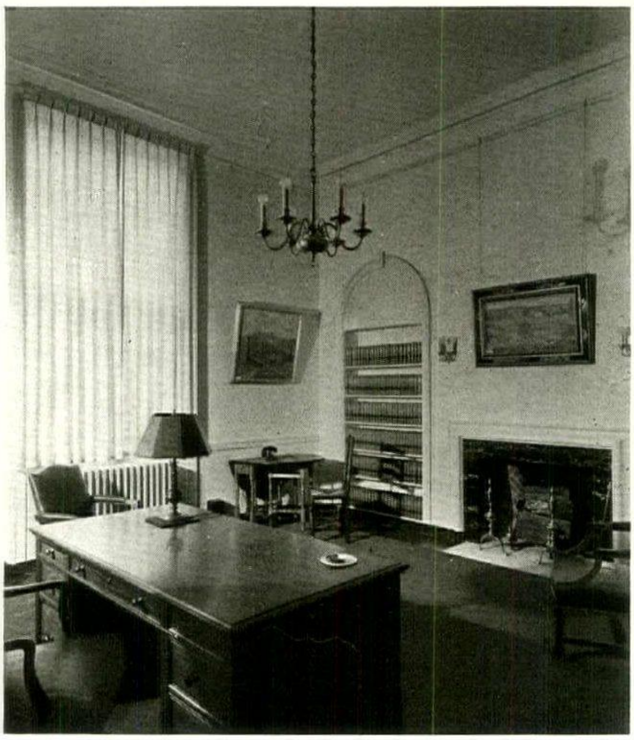


Trowbridge Photos

PUBLIC SPACE



COUNCIL CHAMBER



MAYOR'S OFFICE

The building is entirely fireproof, of reinforced concrete construction. The exterior walls are of Wisconsin limestone with Indiana limestone trim. Entrance lobby and stairs are of Italian travertine, the floor of the former and the floors of all main rooms being of terrazzo. Walls, pilasters and ceilings of public space and important rooms are plaster, generally light in color. Monel metal is used for doors, lighting fixtures and other trim. The total cost of the building, at 64 cents per cu. ft. including fixed equipment, was $120,000

HIGHLAND PARK CITY HALL

HIGHLAND PARK, ILLINOIS

FREDERICK HODGDON, ARCHITECT

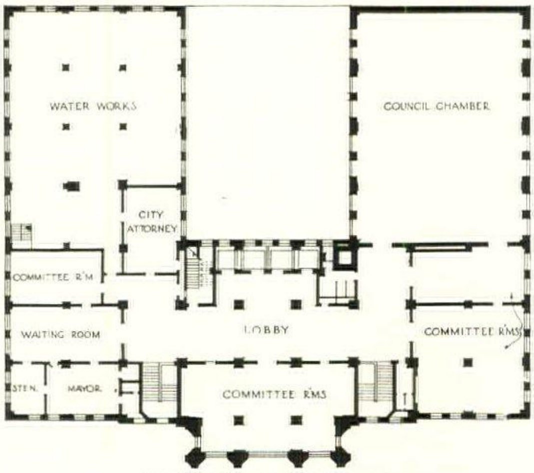
STANTON AND HODGDON, ASSOCIATED

Orr

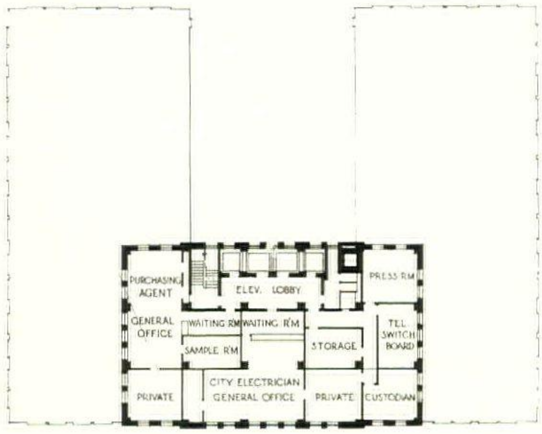
ATLANTA CITY HALL

ATLANTA, GA.

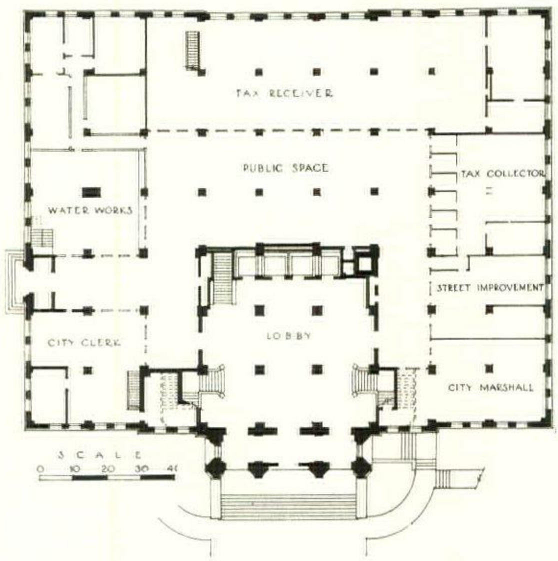
G. LLOYD PREACHER & CO., INC., ARCHITECTS



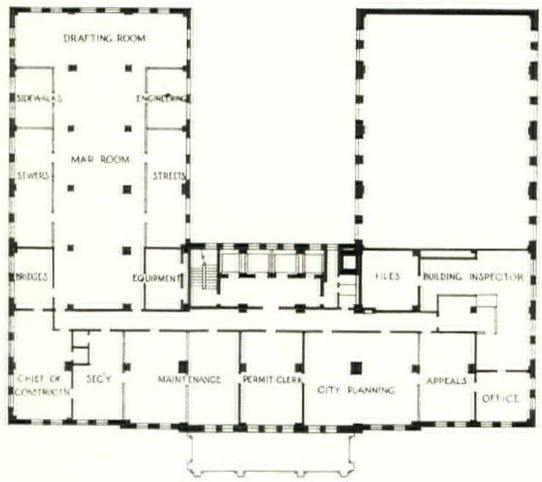
SECOND FLOOR PLAN



FOURTH FLOOR PLAN



FIRST FLOOR PLAN



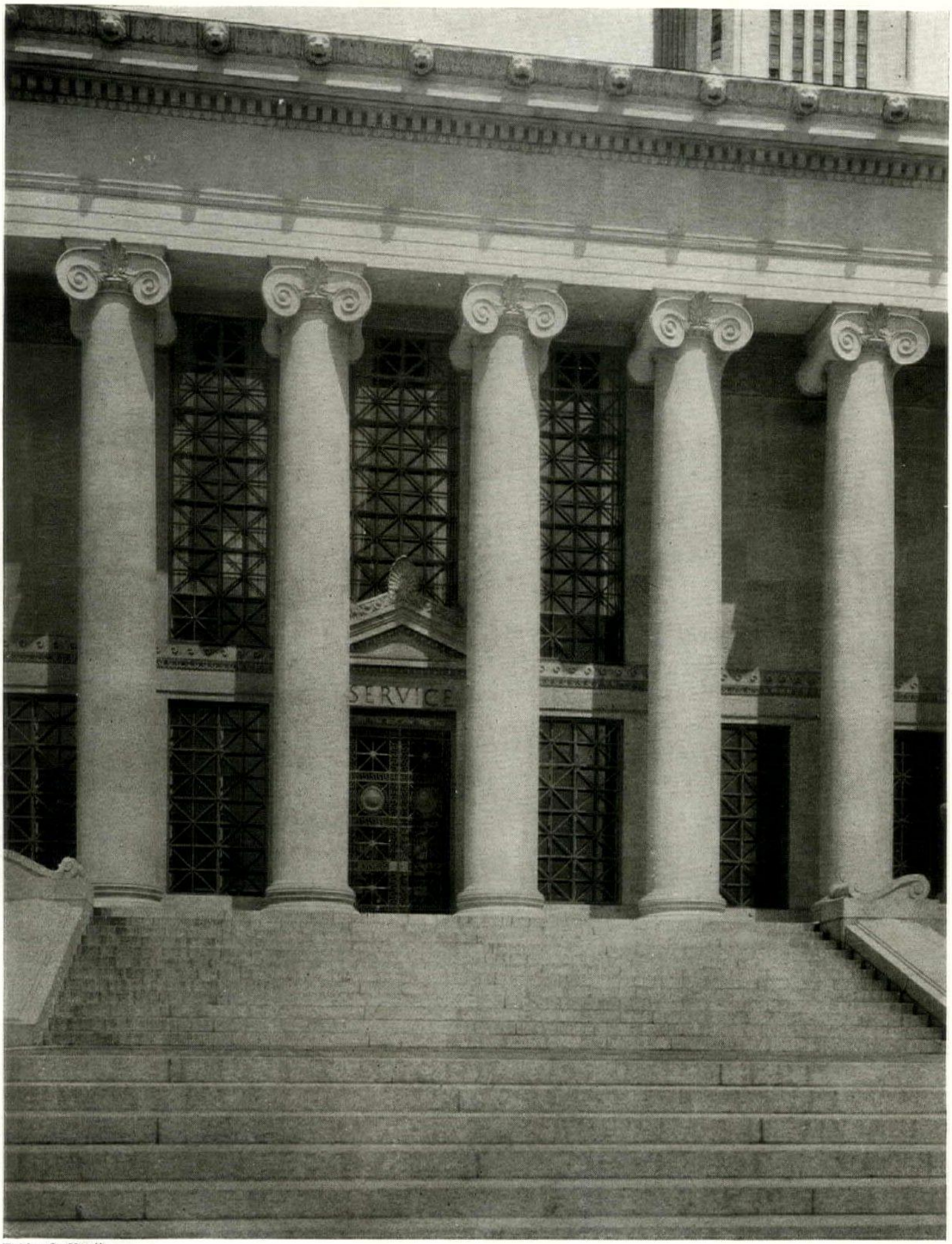
THIRD FLOOR PLAN

The building is of steel frame construction with a concrete foundation. Exterior walls are terra cotta, and windows are of steel, casement below the fifth floor and double hung above. Georgia marble is used extensively for floors, walls and stairs on the interior. The molded plaster cornices and column caps are highly ornamented in public spaces. Doors and trim are of bronze. Fourteen stories high, the building and the land cost approximately $1,500,000

ATLANTA CITY HALL

ATLANTA, GA.

G. LLOYD PREACHER & CO., INC., ARCHITECTS



Tebbs & Knell

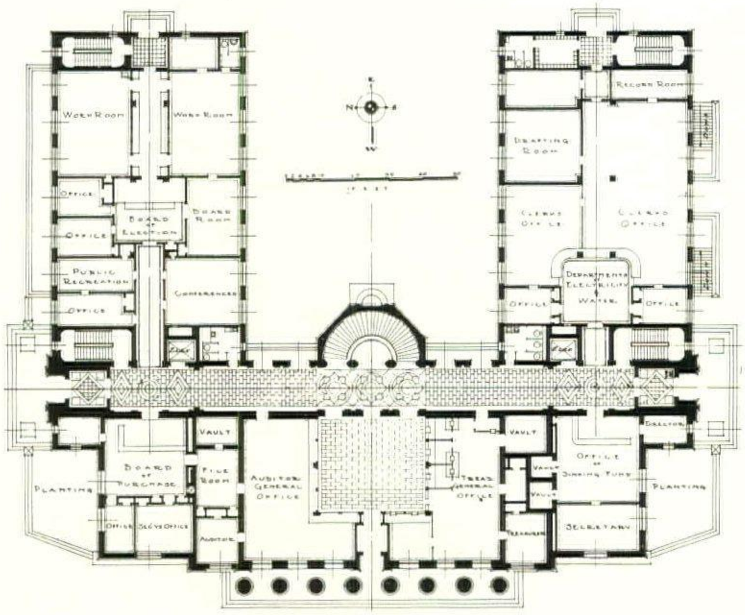
ENTRANCE DETAIL

COLUMBUS CITY HALL

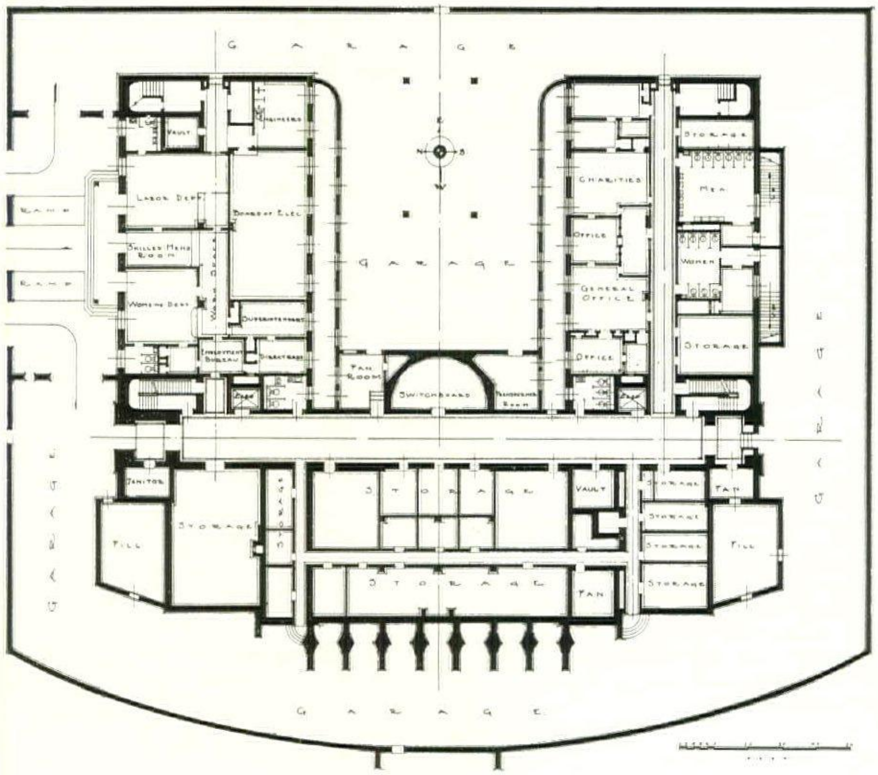
COLUMBUS, OHIO

ALLIED ARCHITECTS OF COLUMBUS, LTD., ARCHITECTS

HOWARD DWIGHT SMITH, CHIEF DESIGNER



FIRST FLOOR



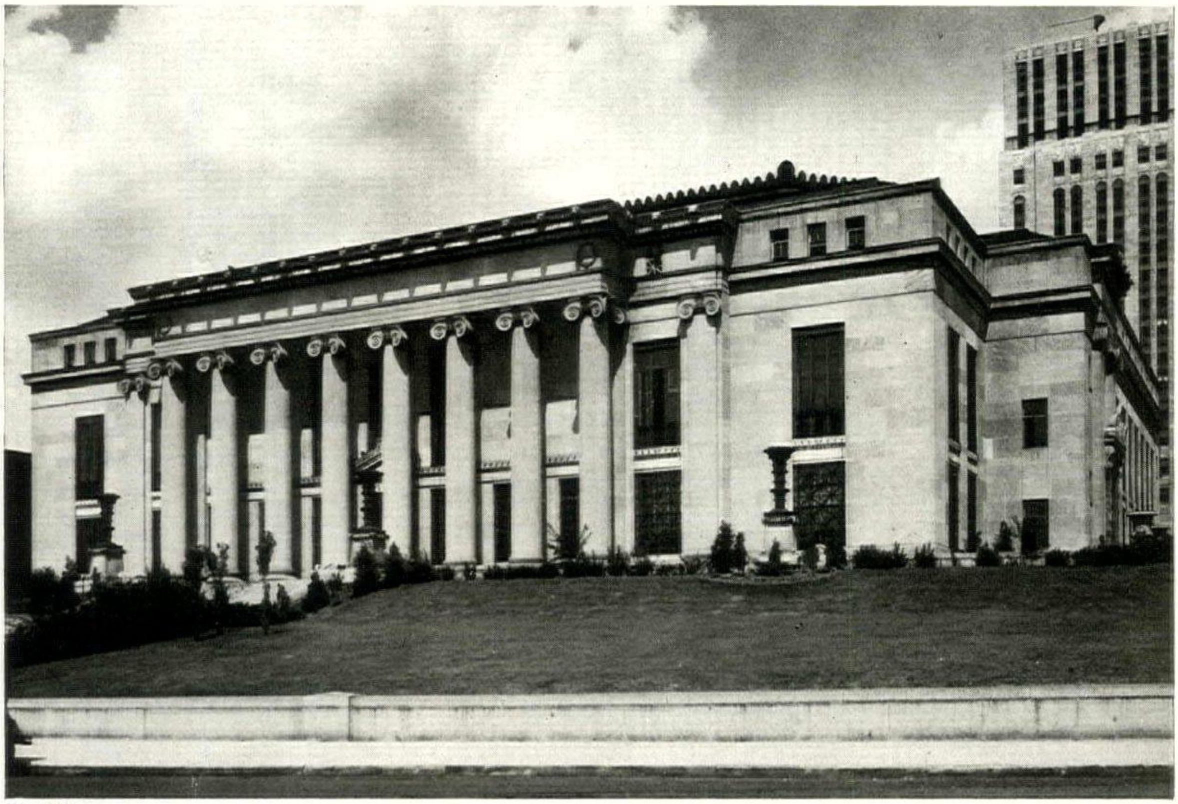
BASEMENT

COLUMBUS CITY HALL

COLUMBUS, OHIO

ALLIED ARCHITECTS OF COLUMBUS, LTD., ARCHITECTS

HOWARD DWIGHT SMITH, CHIEF DESIGNER



Haskell

VIEW FROM SOUTHWEST

EXTERIOR: The walls are of Indiana limestone, with base, curbs, and steps of granite. The court facing is brick graduated from a light shade at the bottom to the dark shade of terra cotta at the top, which ties in with the standing seam copper roof. Exterior doors are bronze; windows, both double hung and casement, are of steel, and grilles of cast iron. Floodlighting lamps are concealed in six cast bronze standards

INTERIOR: First and second floor corridors, and circular stairs are of veinless Carthage marble, with walls and wainscots of golden vein Tennessee marble. Typical corridors have terrazzo floors, marble wainscots, and plaster walls and ceilings. Executive offices are individually decorated, the mayor's office having cork tile floor, gumpaneled walls, and ornamented plaster ceiling; the council chamber has oak parquetry flooring, and black and gold marble wainscoting with acoustically treated ceiling

CONSTRUCTION: The building is of fireproof concrete construction, heated from a central plant. Toilet rooms have mechanical ventilation

Tebbs & Knell

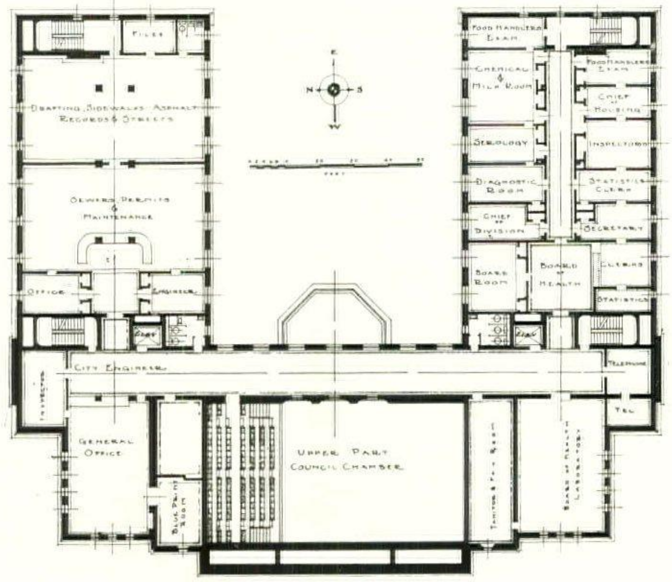
AMER. INS. BUILDING IN BACKGROUND

COLUMBUS CITY HALL

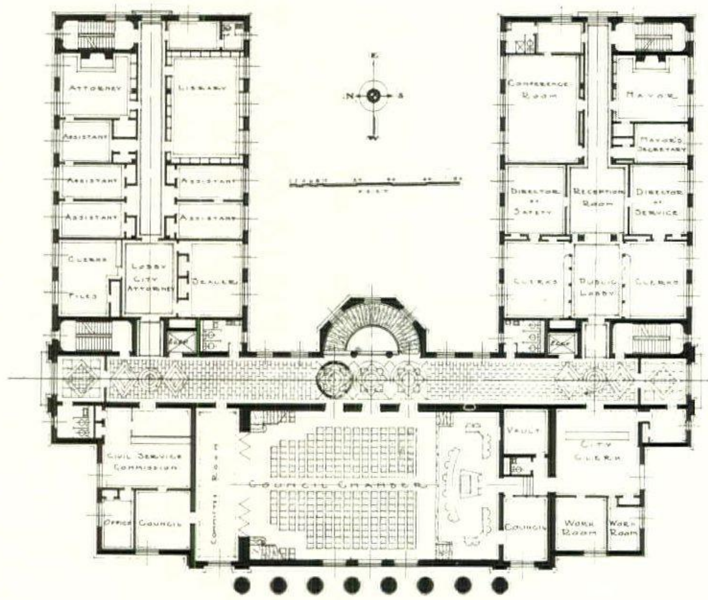
COLUMBUS, OHIO

ALLIED ARCHITECTS OF COLUMBUS, LTD., ARCHITECTS

HOWARD DWIGHT SMITH, CHIEF DESIGNER



THIRD FLOOR PLAN



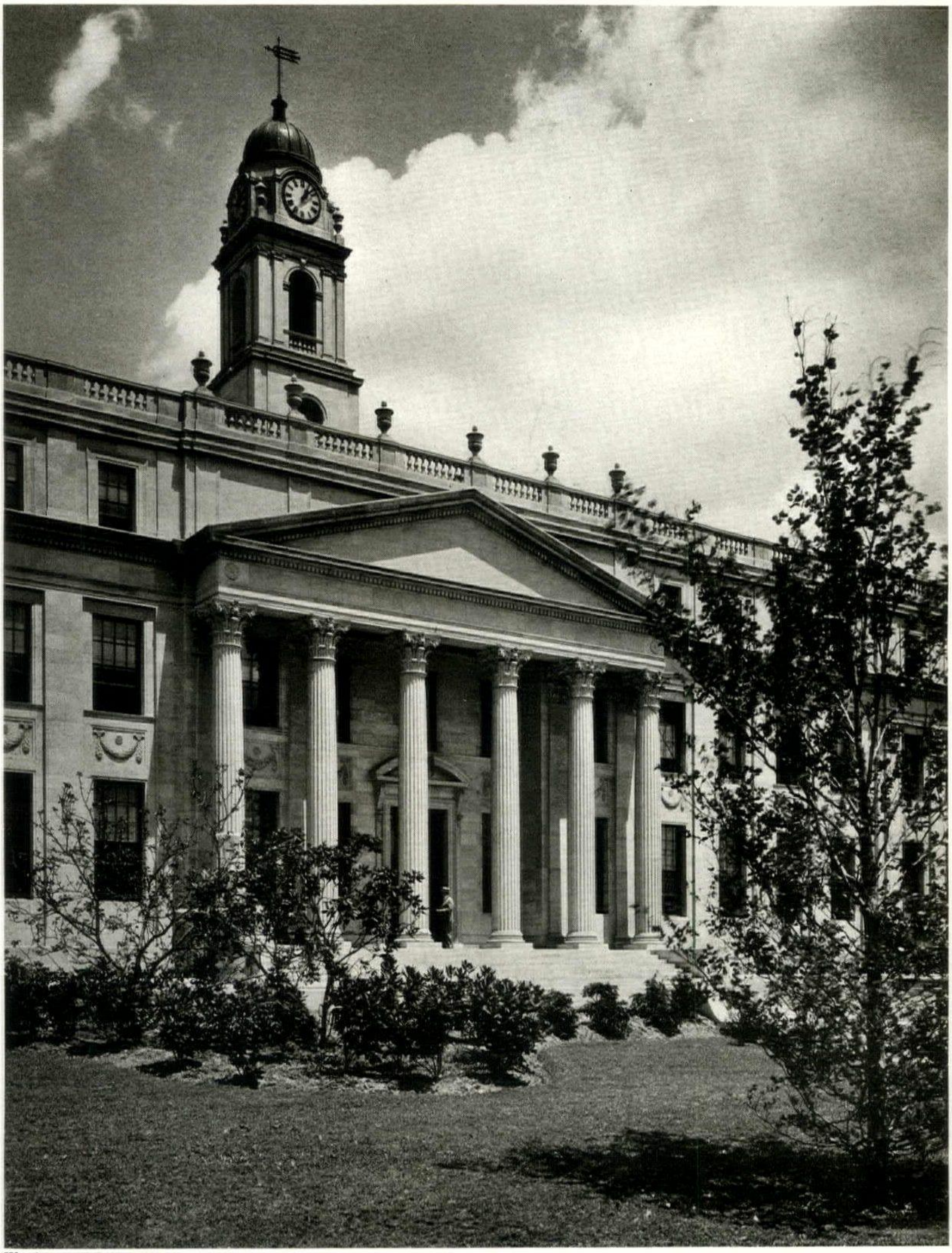
SECOND FLOOR PLAN

COLUMBUS CITY HALL

COLUMBUS, OHIO

ALLIED ARCHITECTS OF COLUMBUS, LTD., ARCHITECTS

HOWARD DWIGHT SMITH, CHIEF DESIGNER



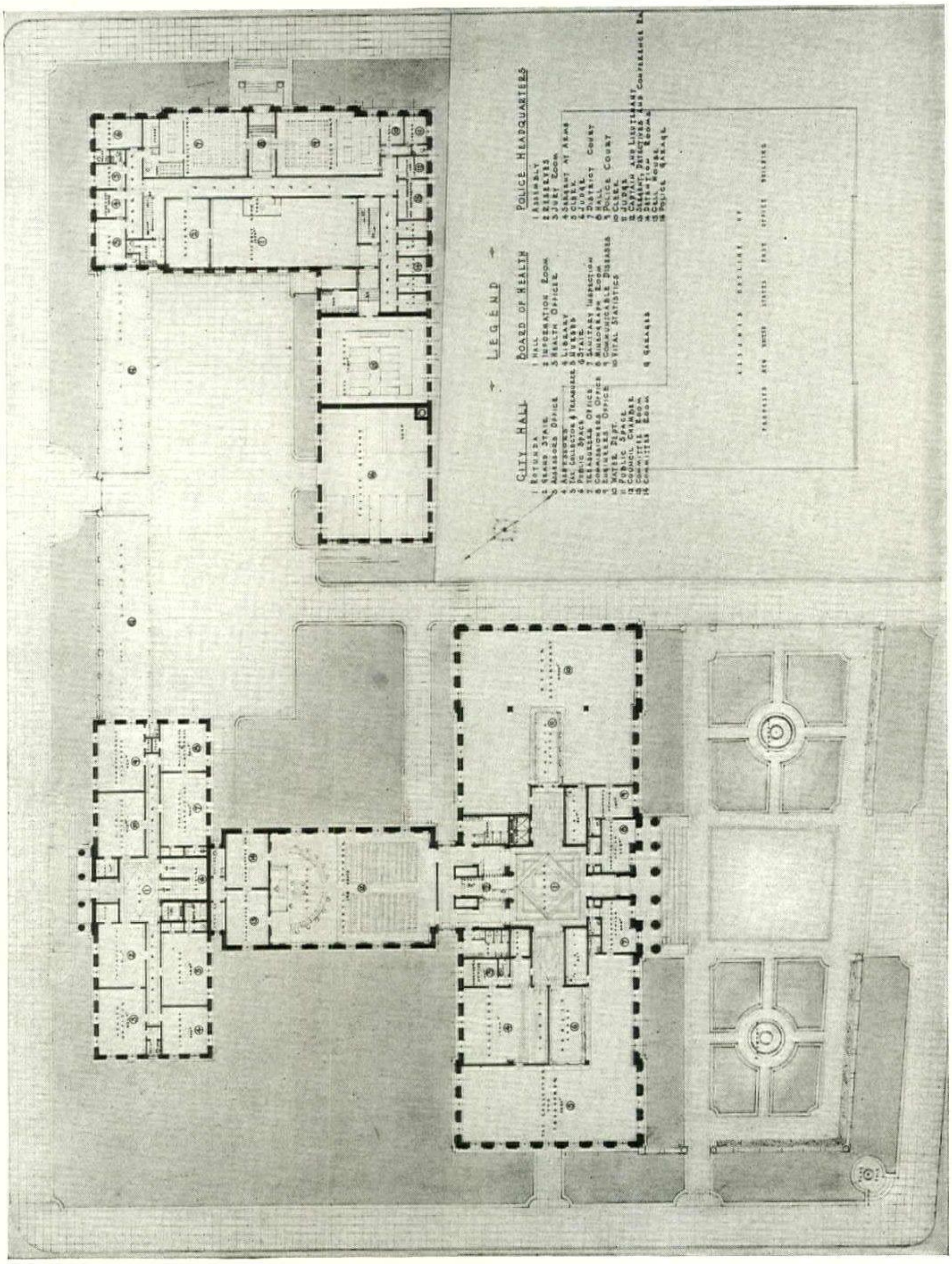
Wurts

ENTRANCE TO CITY HALL

CIVIC CENTER

EAST ORANGE, N. J.

JOHN H. AND WILSON C. ELY, ARCHITECTS



PLAN OF CIVIC CENTER

CIVIC CENTER

EAST ORANGE, N. J.

JOHN H. AND WILSON C. ELY, ARCHITECTS

Wurts

CITY HALL

Burpo

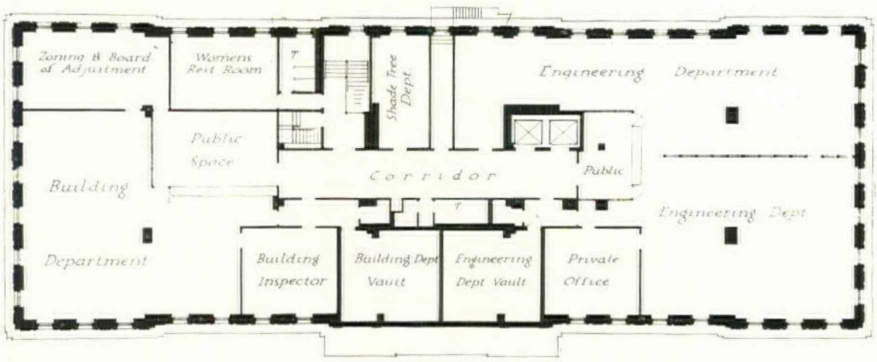
The City Hall is of steel frame construction with concrete foundation; exterior walls of limestone; and built up roof. Interior walls are of marble in lobby; corridor walls have marble wainscots; others plaster. Floors are concrete with linoleum coverings except in public areas, which are of terrazzo. The building is steam heated from a central plant

COUNCIL CHAMBER

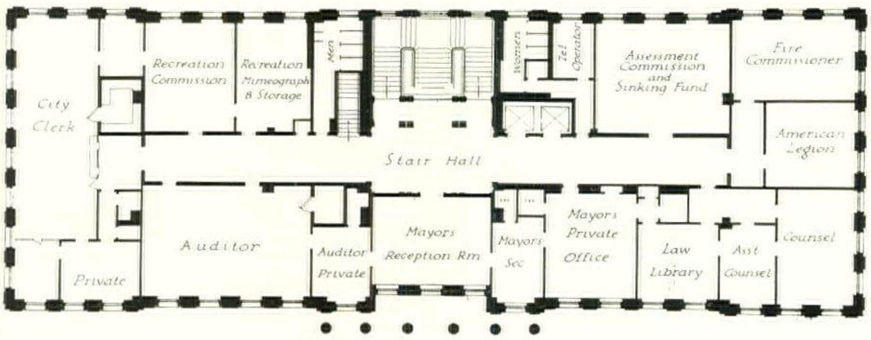
CIVIC CENTER

EAST ORANGE, N. J.

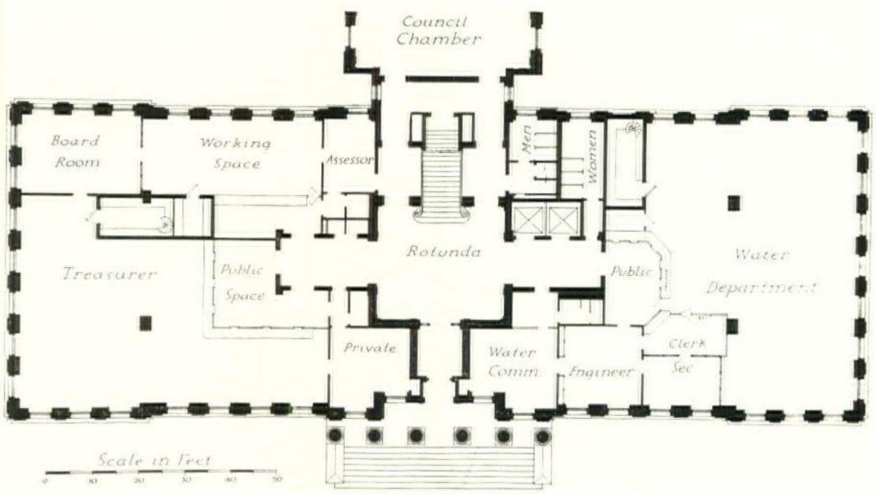
JOHN H. AND WILSON C. ELY, ARCHITECTS



THIRD FLOOR PLAN



SECOND FLOOR PLAN



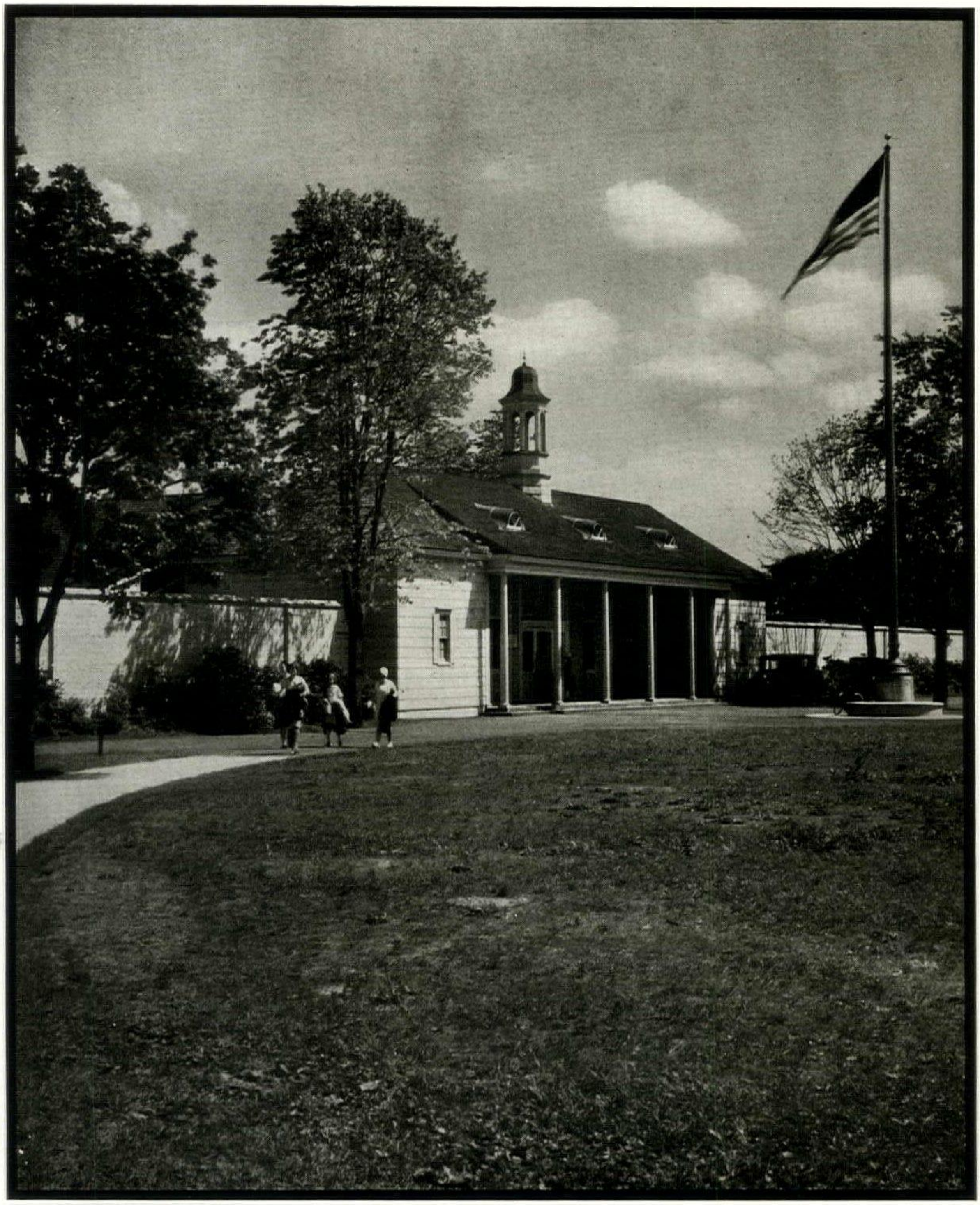
FIRST FLOOR PLAN

PLANS OF CITY HALL

CIVIC CENTER

EAST ORANGE, N. J.

JOHN H. AND WILSON C. ELY, ARCHITECTS



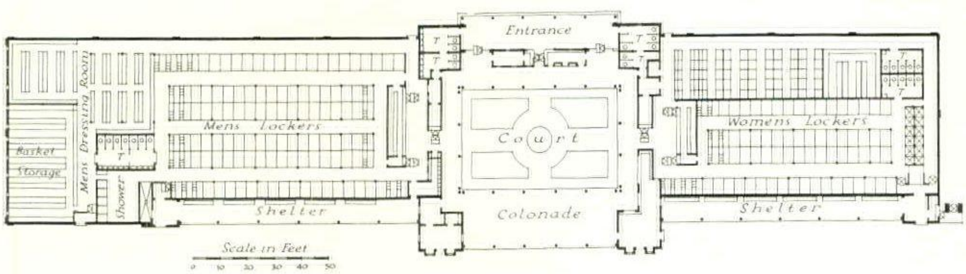
MAIN BUILDING

GLEN ISLAND BATHING PAVILION
NEW ROCHELLE, N. Y.
WESTCHESTER COUNTY PARK SYSTEM

TWO PUBLIC BATHING PAVILIONS

PORCH WING

The Glen Island Bathing Pavilion is one of several built recently under the supervision of the Westchester County Park System, for which Jay Downer is the chief engineer and Gilmore D. Clark is the landscape architect. This one was designed by Clinton F. Lloyd of Mr. Clark's office

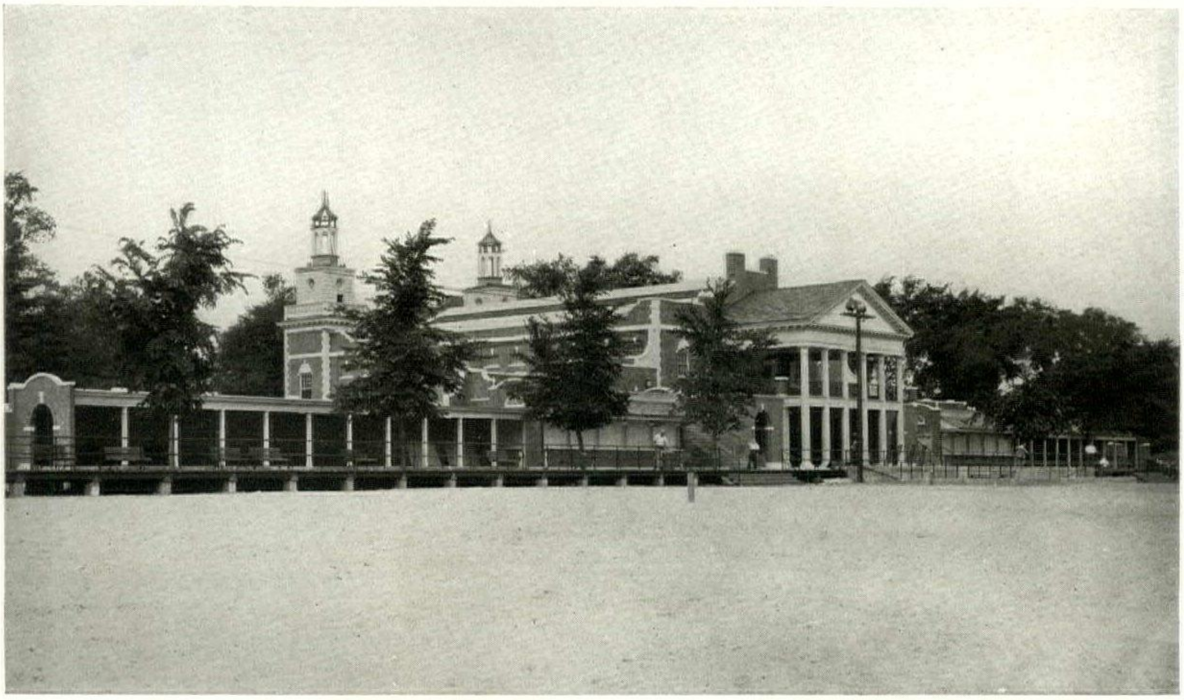


FLOOR PLAN

GLEN ISLAND BATHING PAVILION

NEW ROCHELLE, N. Y.

WESTCHESTER COUNTY PARK SYSTEM



VIEW FROM BEACH

EXTERIOR: Locker walls, walls of main building and comfort stations variegated red brick. Locker walls backed with cinder block. Locker houses built of asbestos board with wood framing. Roofs of main building and locker houses corrugated asbestos board, and roof of comfort stations random slate.

INTERIOR: Terrazzo is used for main building and comfort station floors, and cement for locker house floors. Porch floor is quarry tile. Interior walls of main building and comfort stations have brown glazed brick wainscoting, buff matt brick above. Ceilings are ivory sand float plaster, doors are metal, trim is oak.

CONSTRUCTION: All buildings of fireproof construction with concrete foundations for main divisions. Concrete slabs supported on pressed steel joists form the floors.

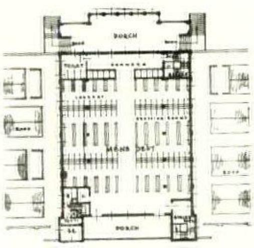
CENTER PORTICO FROM STREET

PUBLIC BATH HOUSE

ONTARIO BEACH PARK, ROCHESTER, N. Y.

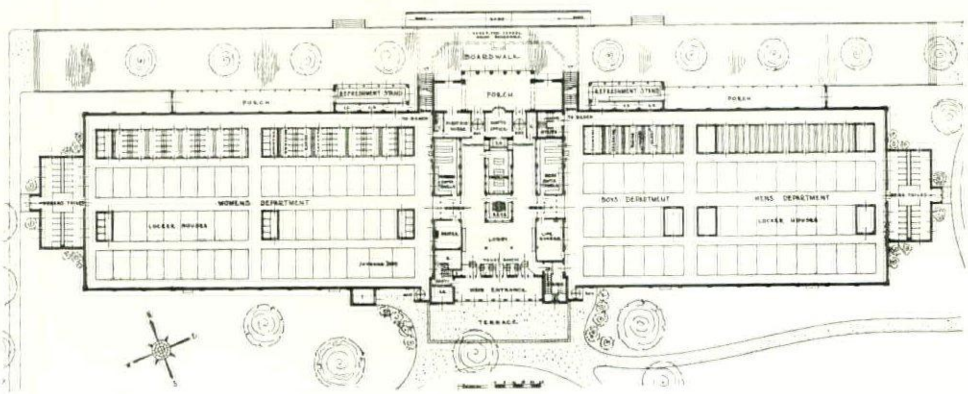
CHARLES A. CARPENTER, ARCHITECT

CENTER PORTICO FROM BEACH



COST AND EQUIPMENT: At 33 cents per cu. ft., the total cost for 681,974 cu. ft. was $224,000, excluding the architect's fee. Special equipment features include gas unit heaters for comfort stations, oil-fired vapor heating system in main building, and floodlighting for the beach

NOTE: Construction of bath houses is shown in Part II of this issue



PUBLIC BATH HOUSE

ONTARIO BEACH PARK, ROCHESTER, N. Y.

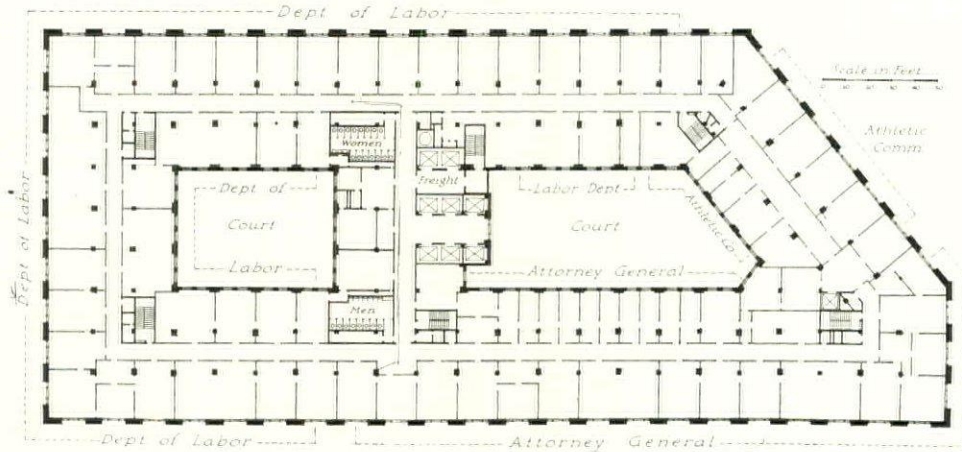
CHARLES A. CARPENTER, ARCHITECT

Gottscho

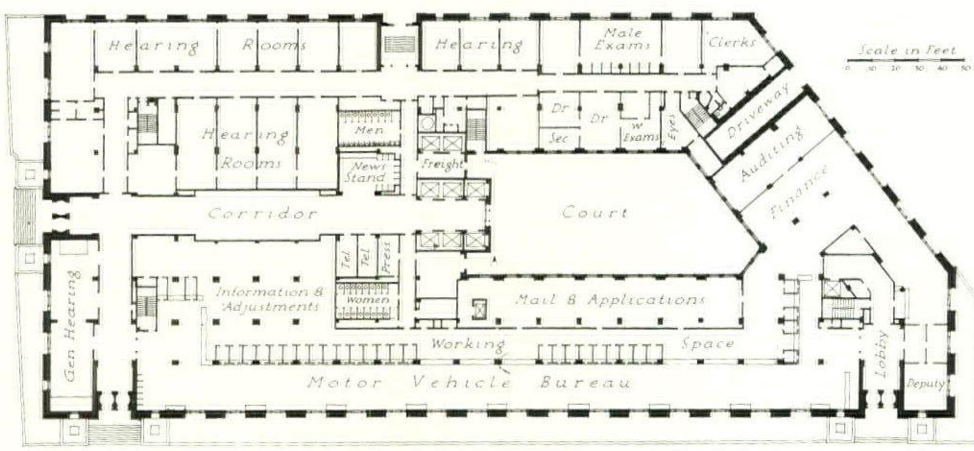
MAIN ENTRANCE

NEW YORK STATE BUILDING
NEW YORK, N. Y.
WILLIAM E. HAUGAARD, ARCHITECT

BUILDINGS FOR STATE OFFICES



FOURTH FLOOR PLAN



FIRST FLOOR PLAN

NEW YORK STATE BUILDING

NEW YORK, N. Y.

WILLIAM E. HAUGAARD, ARCHITECT

Gottscho Photos

GENERAL VIEW

The building is faced with New England granite, and has bronze casement and double hung windows, with Swedish black granite spandrels. The roofing is tar and gravel, except for quarry tile on terraces. Lobby, corridors, and Dept. of Labor hearing - room have marble walls and floors; other areas have plaster walls and mastic tile floors. Doors, light fixtures, and other trim of bronze. The total cost was approximately $6,000,000

FIRST FLOOR CORRIDOR

NEW YORK STATE BUILDING

NEW YORK, N. Y.

WILLIAM E. HAUGAARD, ARCHITECT

Hare

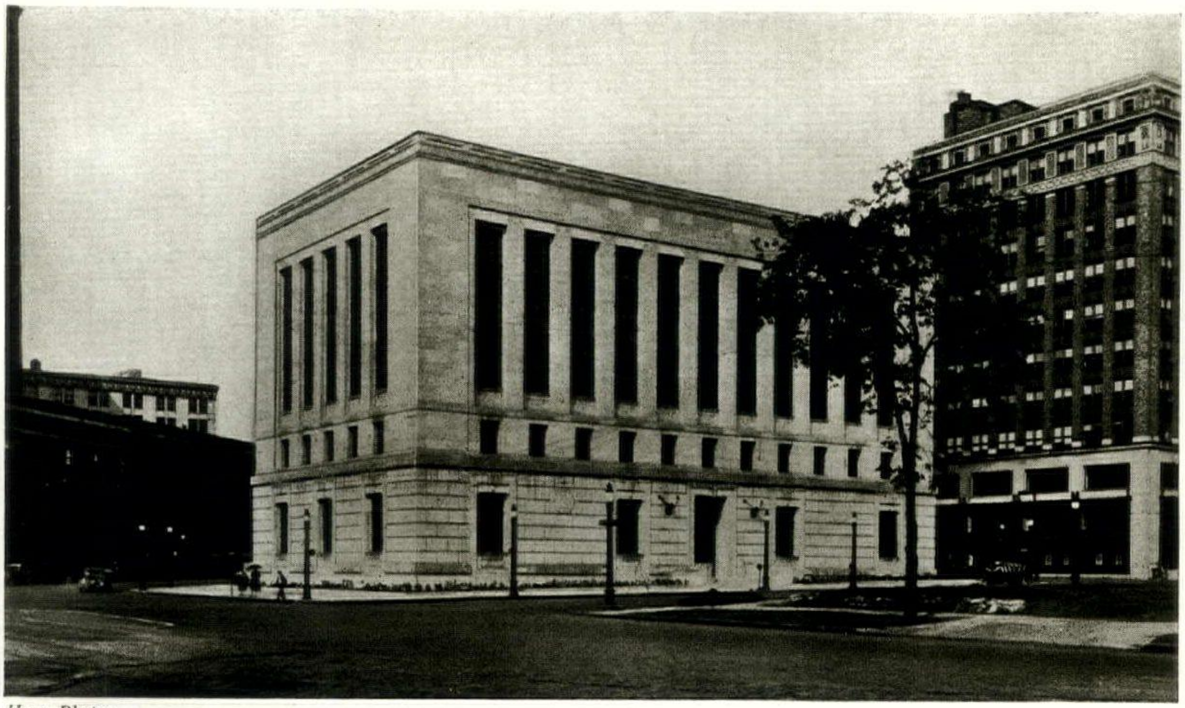
STATE OFFICE BUILDING

BUFFALO, N. Y.

WM. E. HAUGAARD, COMMISSIONER OF ARCHITECTURE

WM. B. GREEN & SON AND ALBERT HART HOPKINS

ASSOCIATE ARCHITECTS



Hare Photos

The unusual shape of the building, resulting from the contour of the plot and the requirements of the state departments housed in the building, was modified by the mass treatment of the exterior and the unbroken vertical of the window and spandrel treatment

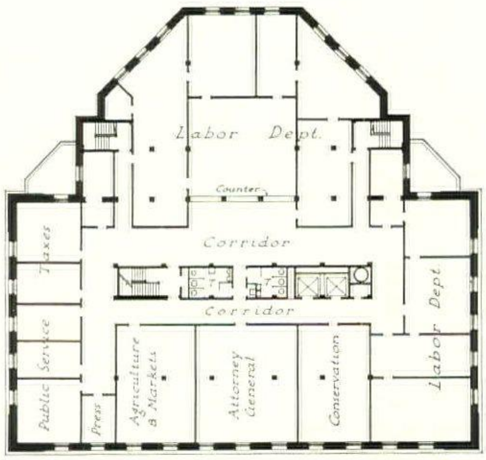
STATE OFFICE BUILDING

BUFFALO, N. Y.

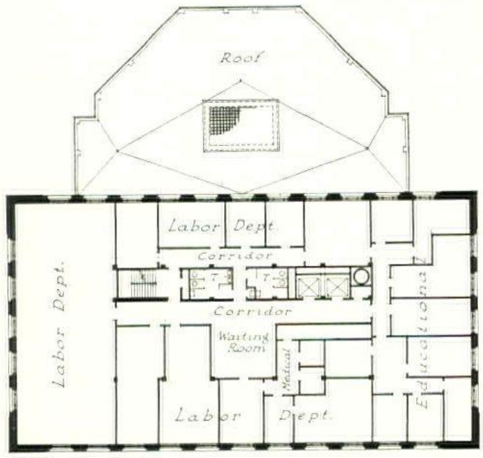
WM. E. HAUGAARD, COMMISSIONER OF ARCHITECTURE

WM. B. GREEN & SON AND ALBERT HART HOPKINS

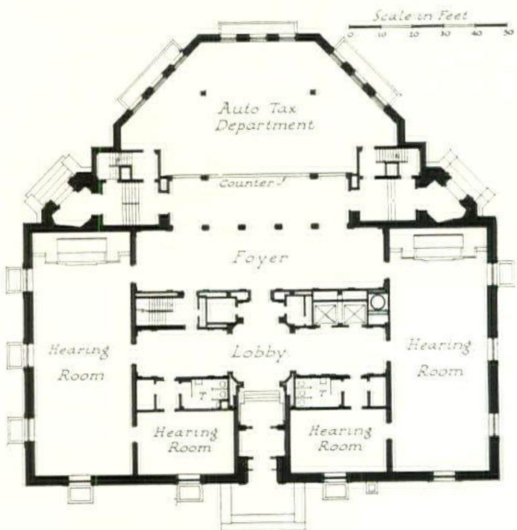
ASSOCIATE ARCHITECTS



SECOND FLOOR PLAN



THIRD FLOOR PLAN



FIRST FLOOR PLAN

The building is faced with Indiana limestone, and has metal double hung windows. The interior treatment is generally marble in public spaces, with bronze light fixtures, doors and trim. The office space has plaster walls, cement floors with linoleum and rubber tile covering. Provision has been made in the plan for the future extension of state departments

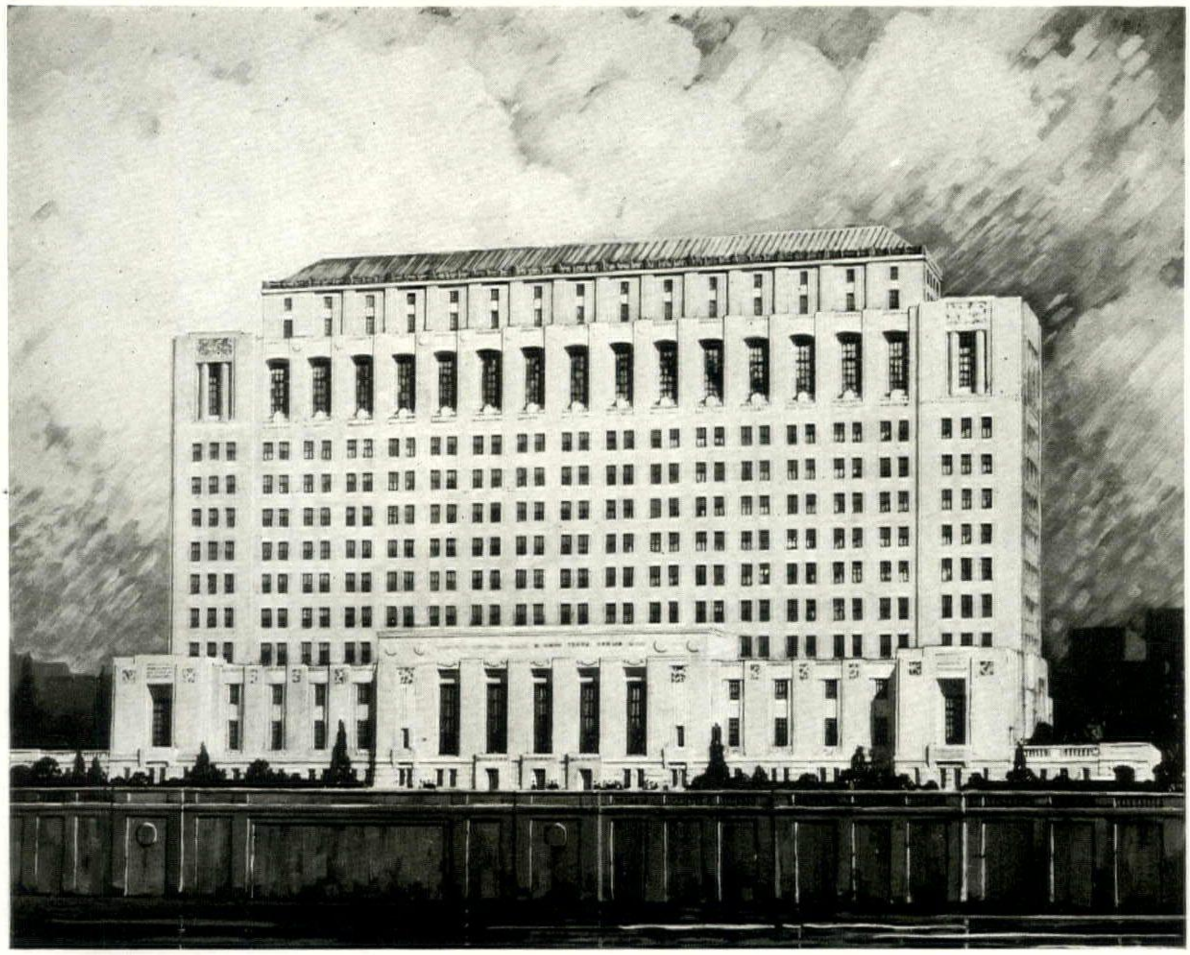
STATE OFFICE BUILDING

BUFFALO, N. Y.

WM. E. HAUGAARD, COMMISSIONER OF ARCHITECTURE

WM. B. GREEN & SON AND ALBERT HART HOPKINS

ASSOCIATE ARCHITECTS



PERSPECTIVE

EXTERIOR: The walls are of Georgia marble, the flat roofs of quarry tile, and the pitched roof of copper. Bronze casement windows are used on the first and second floors, steel double hung up to the 11th floor and steel casement above that

INTERIOR: Marble is used for flooring in all circulation areas and on the first floor, rubber tile and linoleum being used elsewhere. Plaster walls are used throughout the general office space, marble wainscoting being used for the first floor, and corridors. The walls of the hearing rooms are treated with acoustic tile. Direct radiation is used throughout; the basement and first floors are artificially ventilated. Cove and reflector lighting supply illumination in the public spaces, and semi-indirect fixtures are used elsewhere

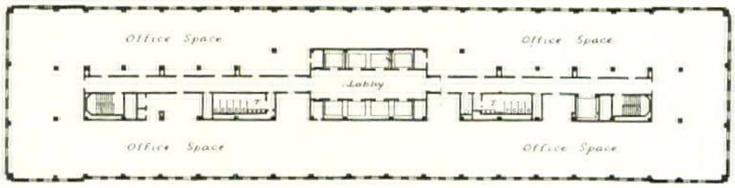
CONSTRUCTION: The building is of steel frame construction, with a reinforced concrete foundation, and reinforced concrete joist floors. The gross cubage is 5,214,963 cu. ft., and the estimated cost is $4,000,000

OHIO STATE OFFICE BUILDING

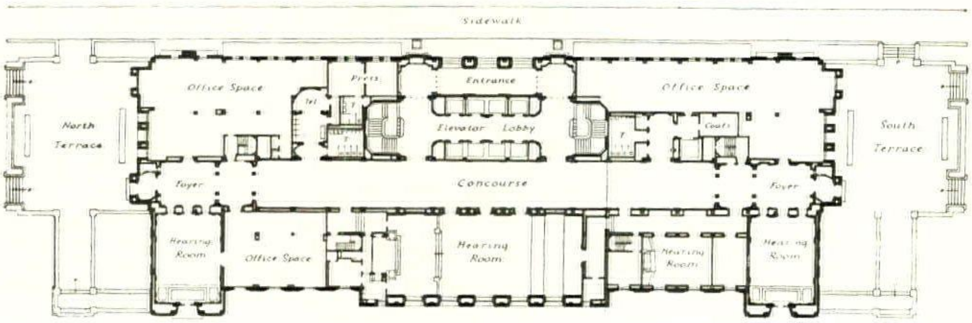
COLUMBUS, OHIO

HARRY HAKE, ARCHITECT

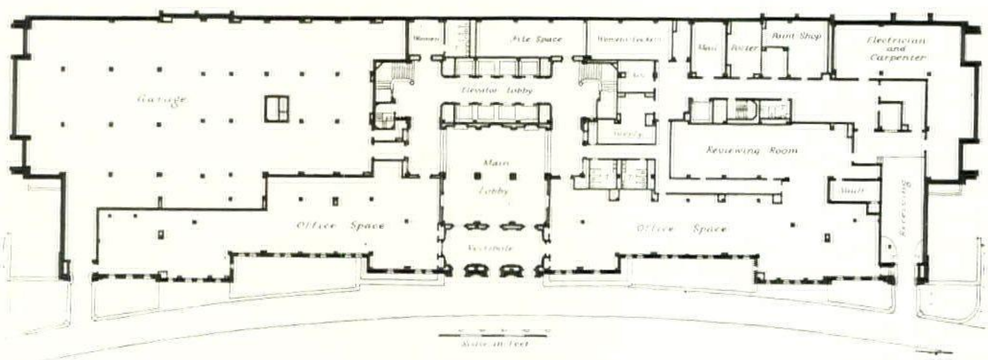
FRANK W. BAIL, ALFRED A. HAHN, CONSULTING ARCHITECTS



TYPICAL OFFICE FLOOR PLAN



FIRST FLOOR PLAN



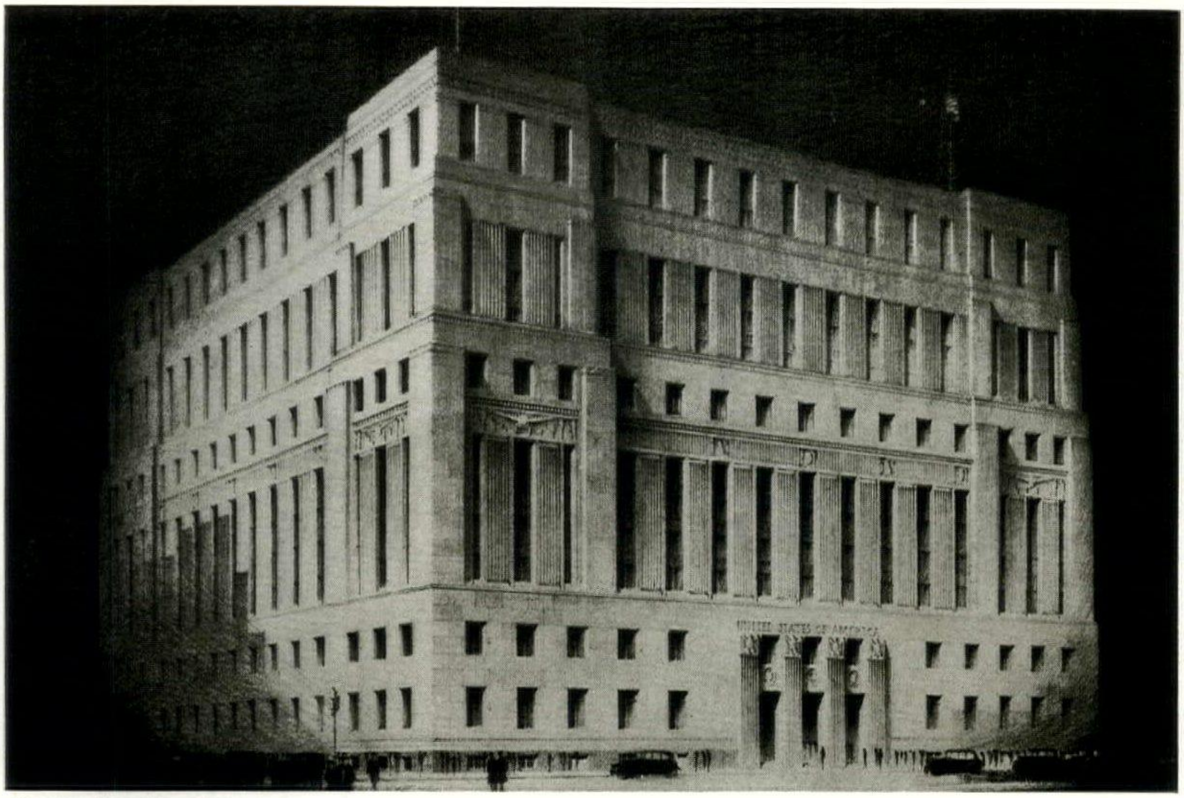
GROUND FLOOR PLAN

OHIO STATE OFFICE BUILDING

COLUMBUS, OHIO

HARRY HAKE, ARCHITECT

FRANK W. BAIL, ALFRED A. HAHN, CONSULTING ARCHITECTS

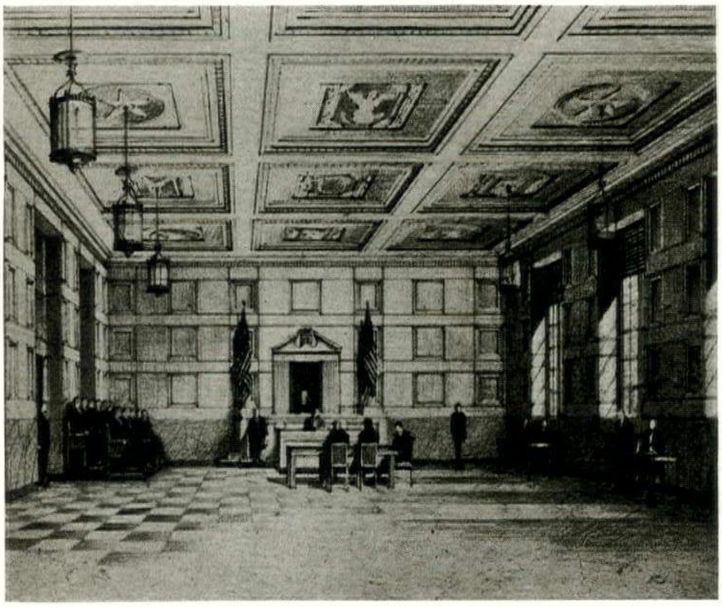


Grossman-Knowling Photos

PERSPECTIVE

CONSTRUCTION: The building is to rest on concrete caissons, and will be steel framed, designed to carry a load of two additional floors. Structural floors will be reinforced concrete, with marble finish for public spaces, and wood and rubber tile for office divisions. Windows are to be metal double hung, and tile is to be used for the roof. The plaster walls will be sound and heat insulated; steam will be used for heating, with cast iron radiation. Post office work rooms and court rooms will be air conditioned

COST: The gross cubage is 10,250,000; total cost at 55 cents per cu. ft. will be $5,650,000

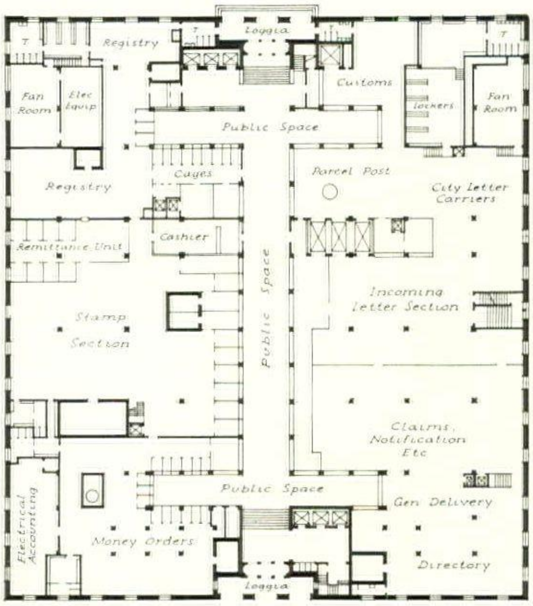


TYPICAL COURT ROOM

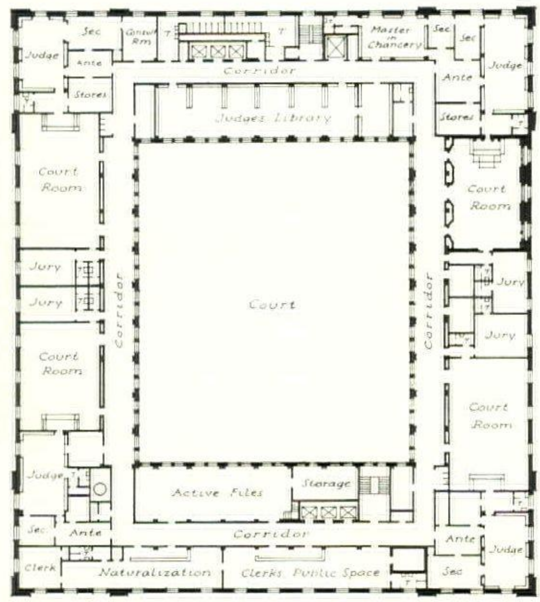
FEDERAL BUILDING

DETROIT, MICHIGAN

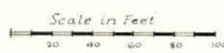
ROBERT O. DERRICK, INC., ARCHITECT

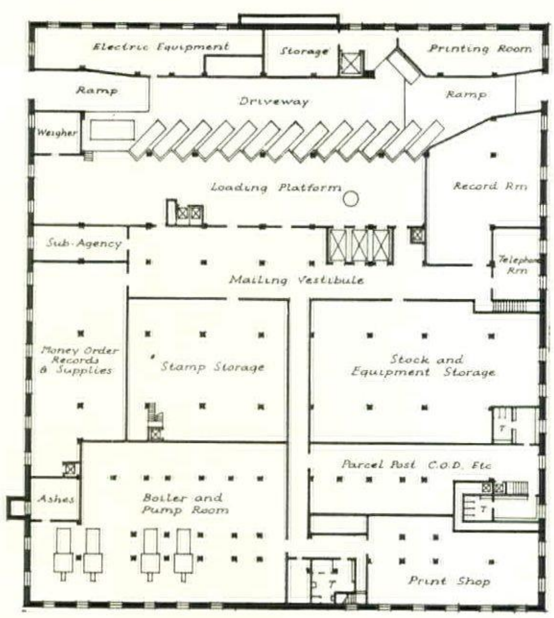


FIRST FLOOR PLAN



SEVENTH FLOOR PLAN





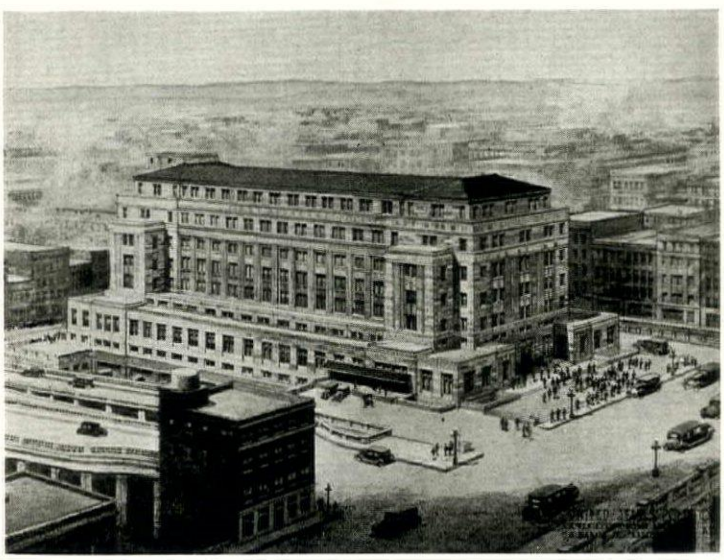
BASEMENT PLAN

FEDERAL BUILDING

DETROIT, MICHIGAN

ROBERT O. DERRICK, INC., ARCHITECT

F. & L. Photos



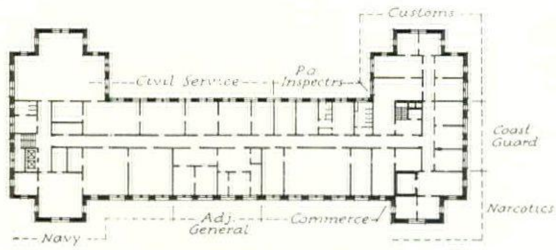
Construction work on this building, estimated to cost $2,975,000, began in May of this year. The building is of steel and reinforced concrete construction; it will have a granite base with a stone or terra cotta super-structure. Marble will be used for the lobby, with terrazzo floors and wainscots for the corridors. The building will have 225,000 sq. ft. usable area

UNITED STATES POST OFFICE

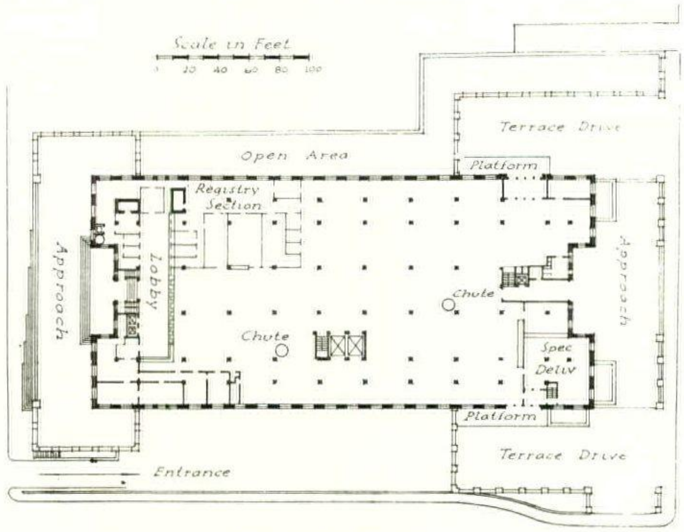
ATLANTA, GEORGIA

A. TEN EYCK BROWN, ARCHITECT

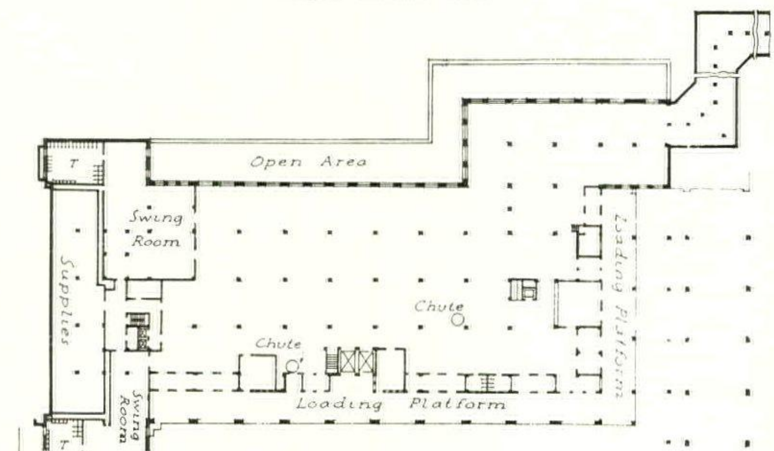
A. BARILI, JR., ASSOCIATE ARCHITECT



THIRD FLOOR PLAN



FIRST FLOOR PLAN



GROUND FLOOR MEZZANINE PLAN

UNITED STATES POST OFFICE

ATLANTA, GEORGIA

A. TEN EYCK BROWN, ARCHITECT

A. BARILI, JR., ASSOCIATE ARCHITECT

THE FEDERAL BUILDING PROGRAM

BY

FERRY K. HEATH

ASSISTANT SECRETARY OF THE TREASURY

This statement of facts regarding the work of the Office of the Supervising Architect of the Treasury Department throws light on its legal status and its operation, in view of the controversy being waged in the public press at the present time

IT would appear from statements in the daily press and in architectural magazines that considerable confusion exists in the minds of those not directly connected with the execution of the Federal Building Program as to the number of projects which it is possible to place under contract within a few months after the authorizing legislation has been passed by Congress.

In order to dispel some of this confusion, it may be stated that the program for the construction of Federal buildings is always preceded by the Treasury Department's country-wide survey of the building needs of the Federal Government in the various cities. The data as to their requirements are gathered from the ten Executive Departments, from independent establishments, etc., and on a basis of the conclusions reached from this information, decisions are made as to the places where Federal buildings are required and the amount of money which would be involved in order to meet the needs of individual cases.

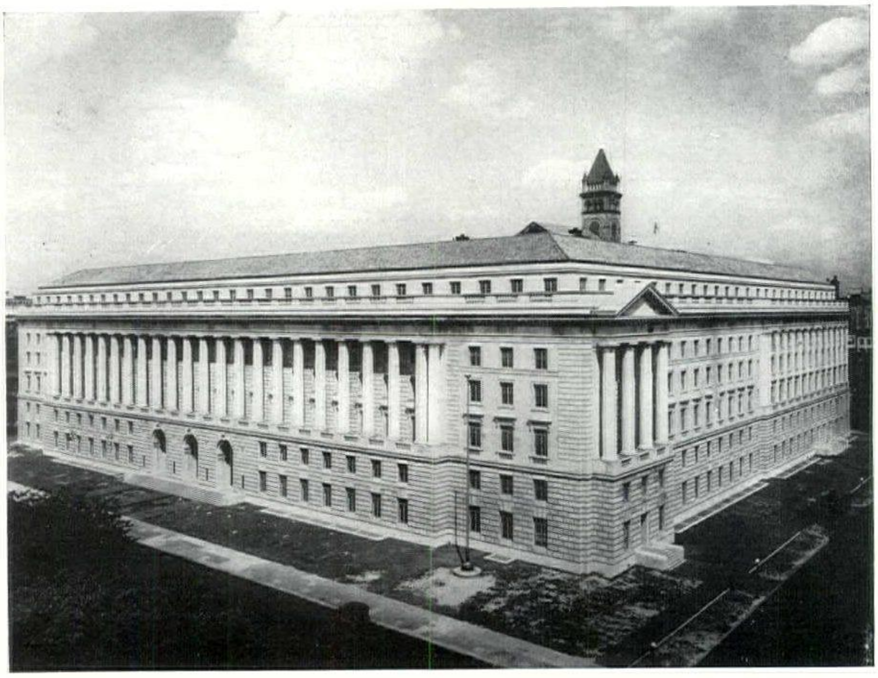
Following that procedure, general authorizations to the amount of some $700,000,000 have been made by Congress, but only such portions of the general authorization can be taken up as have been followed by specific authorizations for the different projects involved. Furthermore, the fact must be taken into consideration that many of the projects are authorizations for a site and building, involving the procedure of selecting and acquiring a site, which in many cases precipitates a controversy of interested citizens. Selection is often long delayed by circumstances which are entirely beyond the control of the Government because of divisions of opinions advanced by citizens with all the pressure that can be brought to bear on the various points of view held by factions which are created under such conditions.

In order to correct an impression that seems to have gained some credence among several Chapters of the American Institute of Architects, it seems proper to state that the Office of the Supervising Architect has been in existence for upwards of 50 years and during all of that time has been charged by law with the preparation of plans and specifications for public buildings. In fact, until the passage of the Tarsney Act in 1893, private architects could be employed only where specifically authorized by law. These specific authorizations were comparatively few. The Tarsney Act, it will be recalled, provided for award by competition and was not altogether satisfactory to this department or to private architects themselves. The law was finally repealed by an Act of Congress approved August 24, 1912.

From that time until the passage of the Keyes-Elliott Act of May 25, 1926, there again was no authority for the employment of private architects except by specific provision of law. The authority contained in this Act was extremely limited, restricting the employment of full architectural services to one building only (the Department of Commerce building) and permitted architectural contracts only for "floor plans and designs of buildings developed sufficiently to serve as guides for the preparation of working drawings and specifications," and certain engineering services. It was not until the passage of the second Keyes-Elliott Act of March 31, 1930, that complete architectural services could be contracted for.

The first legislation for public building construction since 1913 was provided by the Act of May 25, 1926, authorizing an expenditure of $165,000,000 over a period of 11 years. Legislation enacted during the year 1928 increased this authorization by $125,000,000 for land and construction in the District of Columbia.

In 1929 and 1930, the present administration strongly recommended the enlargement of the building program. As the result of this recommendation, Congress increased the building program $330,000,000 by Acts approved March 31, 1930, and February 26, 1931. These same Acts



The building for the Bureau of Internal Revenue, Washington, D. C.

increased the annual limit of expenditure so that the present enlarged program may be completed at a very much earlier date.

The total amount of the authorized program is $629,249,000 plus $69,000,000, which represents estimated proceeds of sale of obsolete buildings. Since Congress has authorized the Secretary of the Treasury to utilize proceeds of sales of old buildings in the construction of additional buildings it will be seen that the program under the Treasury Department approximates nearly $700,000,000.

Of the $700,000,000, specific authorizations have been obtained from Congress to the extent of $495,441,192.26 or 70 per cent of the total authorized program. At the present time, the Secretary of the Treasury is authorized to contract for projects up to this amount.

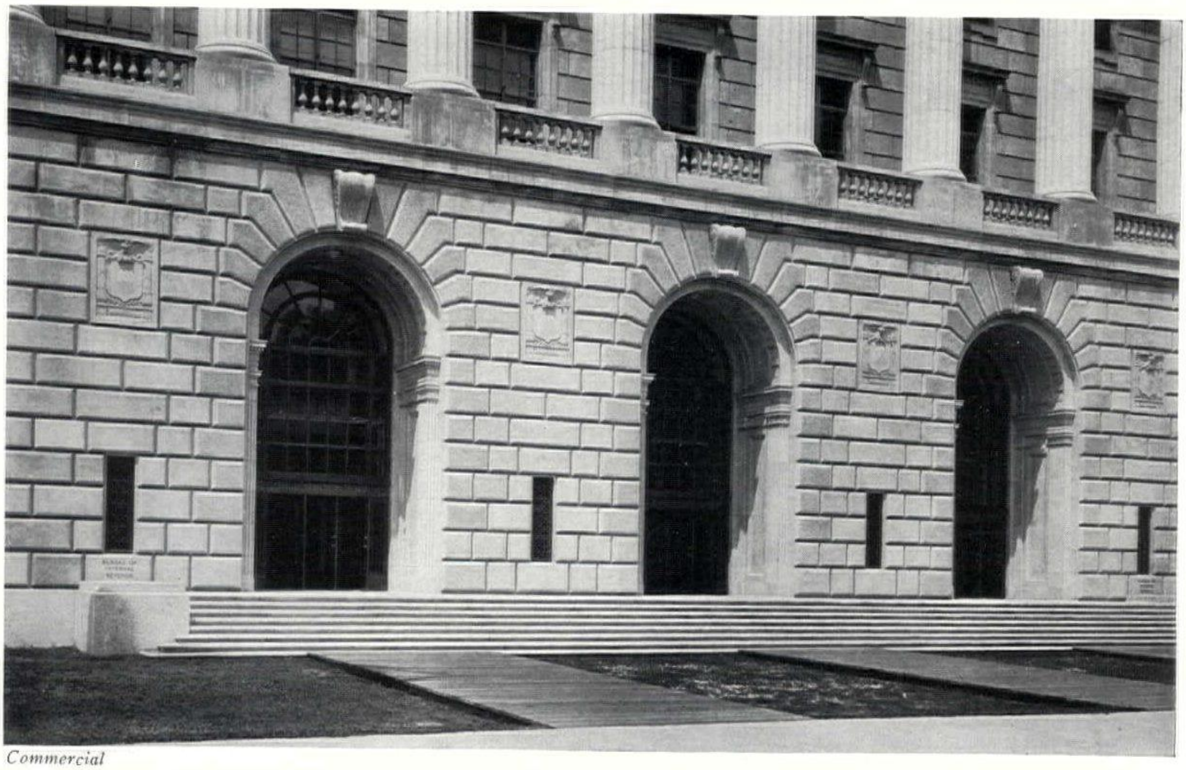
The status of the specifically authorized projects totaling $495,000,000, as of July 15, shows that $442,000,000 or 85 per cent of this total amount is represented by projects completed, under contract, on the market for bids or in specification stage, or in the drawing stage.

During the early stages of the Federal Building Program, when the general layout of the so-called "Triangle" group of buildings in Washington was under consideration, the Secretary of the Treasury decided to avail himself of a board of architects to coöperate with the Treasury Department. Accordingly, an organization was effected and designated the Board of Architectural Consultants, the membership being made up of six architects in private practice and one from the Supervising Architect's Office. The advisory services rendered by this Board are in the form of recommendations to the Secretary and the Assistant Secretary of the Treasury, with whom rest the authority of making final decisions.

The membership of the Board is made up as follows:

1. Edward H. Bennett, Chairman.
   Member of the architectural firm of Bennett, Parsons & Frost, Chicago, Illinois.
2. Louis Ayres.
   Member of the architectural firm of York and Sawyer, New York, N. Y.
3. Arthur Brown, Jr.
   San Francisco, California.
4. William A. Delano.
   Member of the architectural firm of Delano and Aldrich, New York, N. Y.
5. John Russell Pope.
   New York, N. Y.
6. Louis A. Simon.
   Superintendent, Architectural Division, Office of the Supervising Architect.
7. C. C. Zantzinger.
   Member of the architectural firm of Zantzinger, Borie & Medary, Philadelphia, Pa.

While the attention of the Board has been centered mainly upon those developments in Washington which are under the Treasury Department, and while the individual members of the Board have designs for particular buildings within the Triangle Group, the Board's services have been extended to include consideration of many questions relating to buildings outside of the District of Columbia.

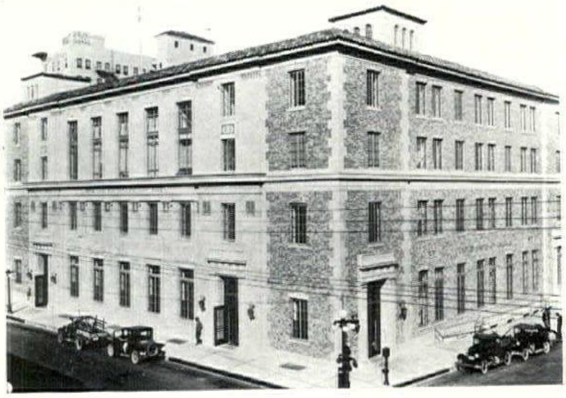


Commercial

The building for the Bureau of Internal Revenue, Washington, D. C., is one of the largest of the recent architectural works of the Office of the Supervising Architect. It is designed in keeping with the other buildings now being erected to house Government departments and bureaus, as part of the comprehensive plan for the development of the National Capitol

EXAMPLES OF THE RECENT WORK
OF THE
OFFICE OF THE SUPERVISING ARCHITECT

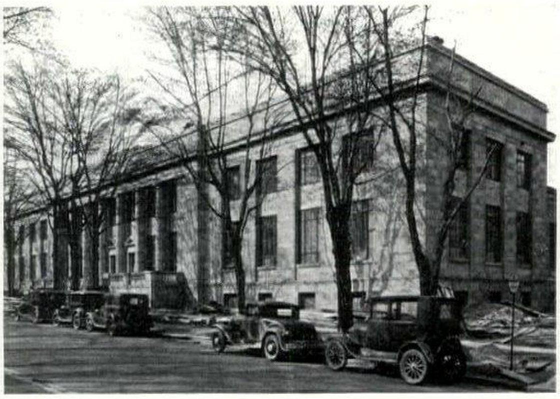
U. S. POST OFFICE, NEW PHILADELPHIA, O.



Buehman

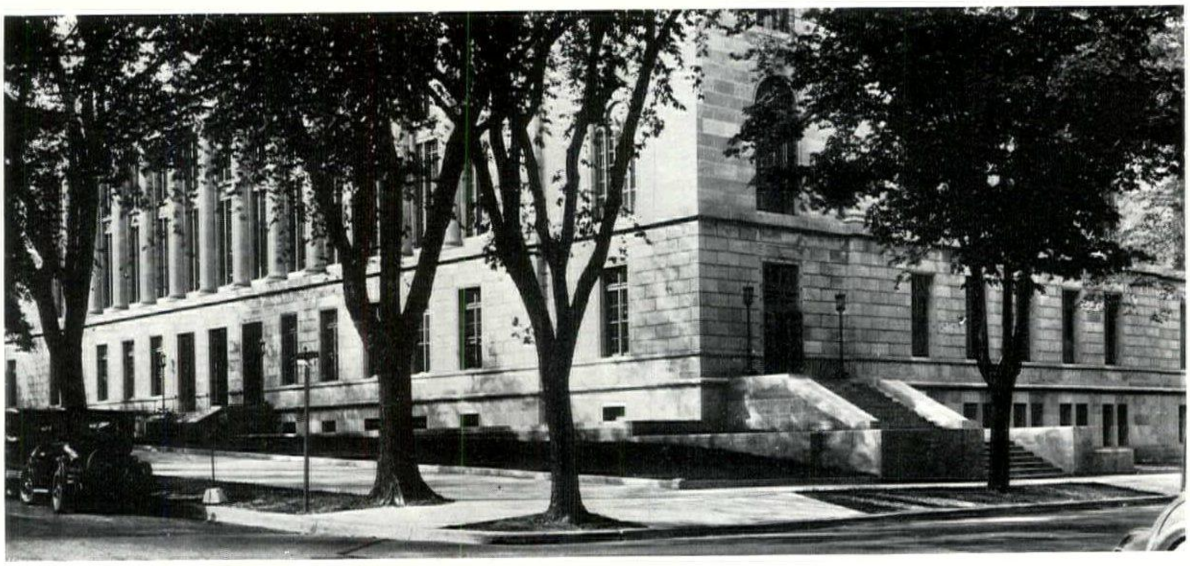
U. S. POST OFFICE AND COURT HOUSE, TUCSON

U. S. POST OFFICE AND COURT HOUSE, DALLAS



Crooks

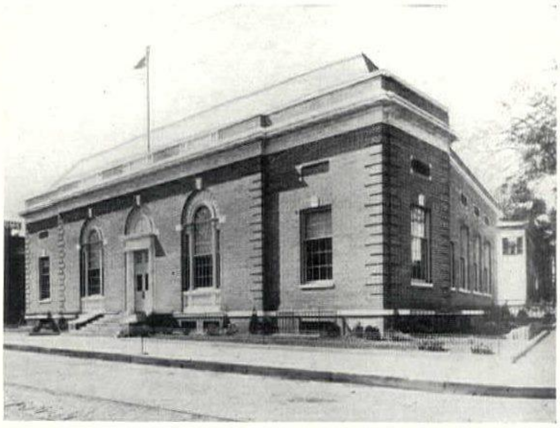
U. S. POST OFFICE, FLINT, MICH.



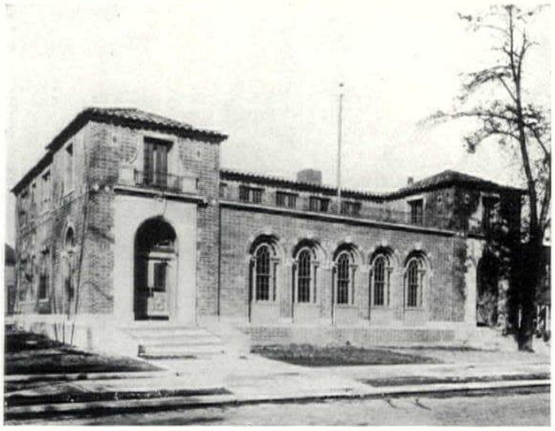
U. S. POST OFFICE, MADISON, WIS.

POST OFFICES DESIGNED BY THE OFFICE OF THE SUPERVISING ARCHITECT

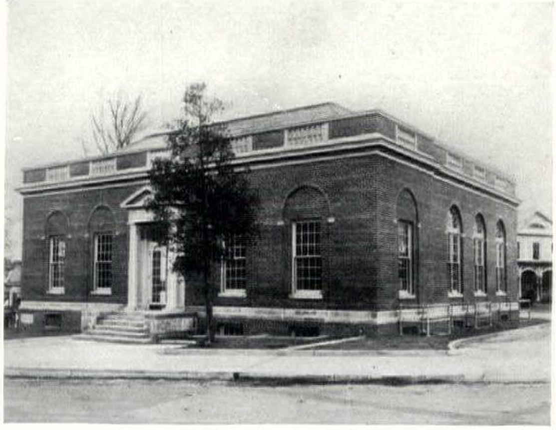
U. S. POST OFFICE, THIBODAUX, LA.



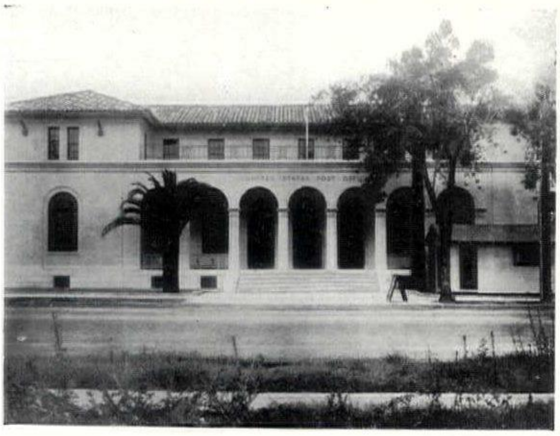
U. S. POST OFFICE, NEWBURYPORT, MASS.



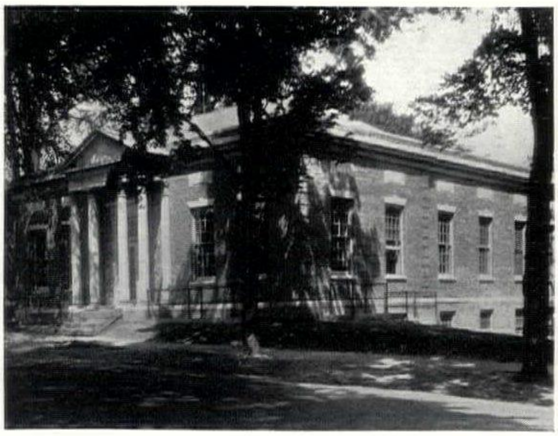
U. S. POST OFFICE, SAYRE, PA.



U. S. POST OFFICE, BRANFORD, CONN.



U. S. POST OFFICE, SAN BERNARDINO, CAL.

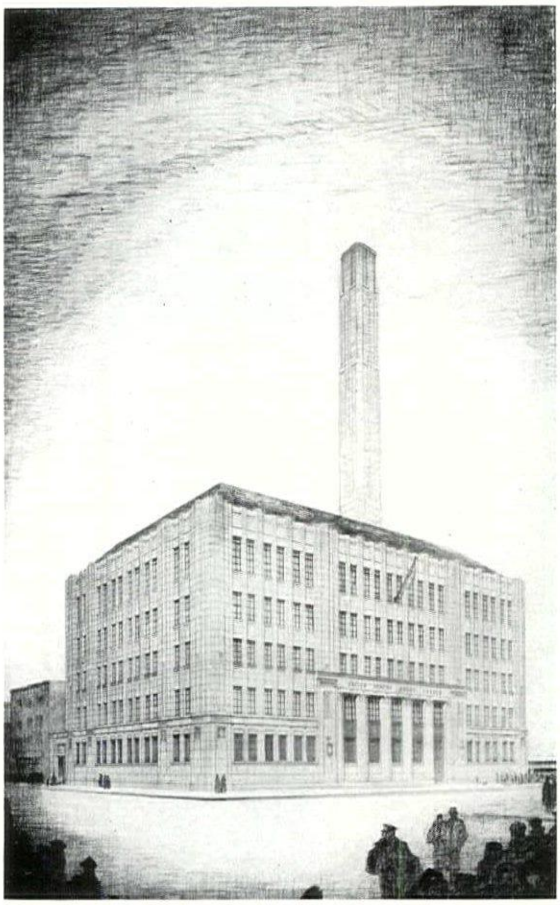


U. S. POST OFFICE, HANOVER, N. H.

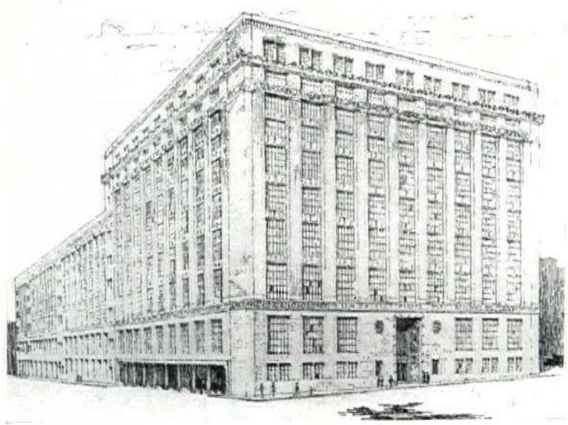
POST OFFICES DESIGNED BY THE OFFICE OF THE SUPERVISING ARCHITECT

U. S. POST OFFICE, BALTIMORE, MD.

U. S. POST OFFICE, PROVINCETOWN, MASS.

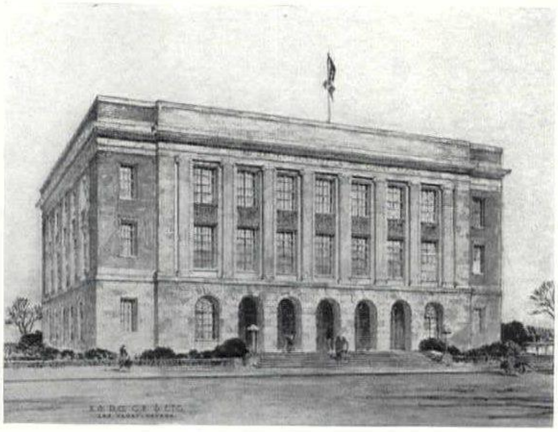


U. S. ASSAY OFFICE, NEW YORK, N. Y.



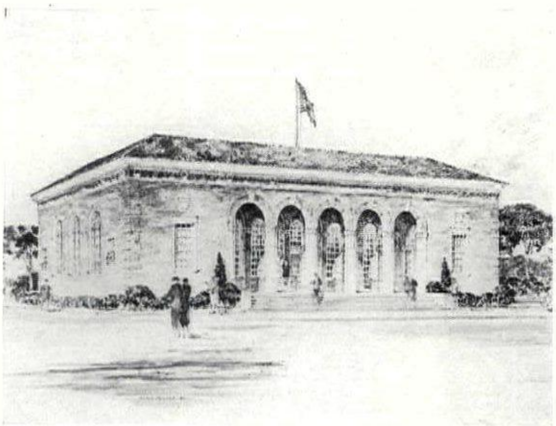
PARCEL POST BUILDING, NEW YORK, N. Y.

BUILDINGS RECENTLY DESIGNED BY THE OFFICE OF THE SUPERVISING ARCHITECT

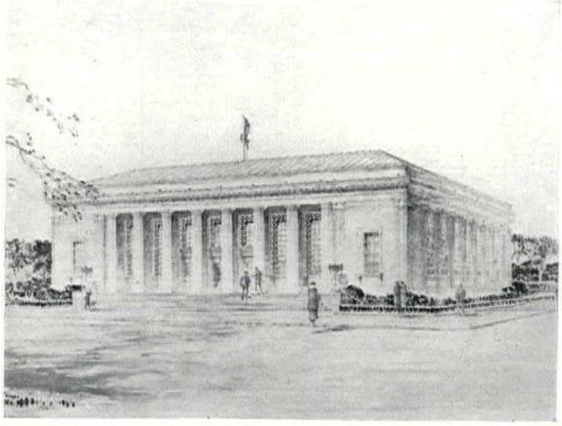


U. S. POST OFFICE AND COURT HOUSE,
LAS VEGAS, NEVADA

U. S. POST OFFICE AND COURT HOUSE,
KANSAS CITY, MO.



U. S. POST OFFICE, CROCKETT, TEX.

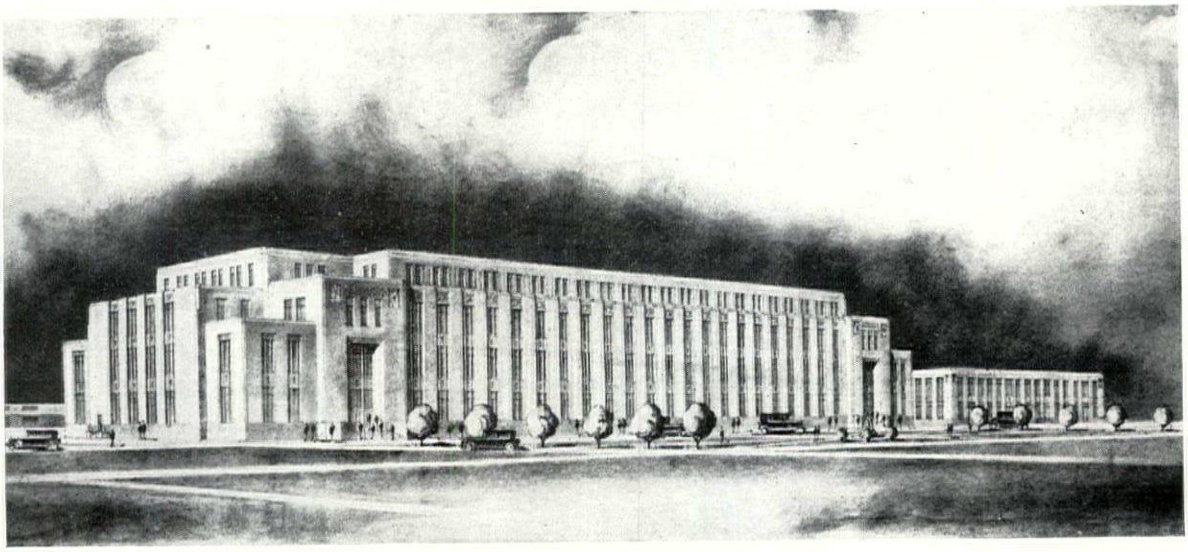


U. S. POST OFFICE, POTSDAM, N. Y.

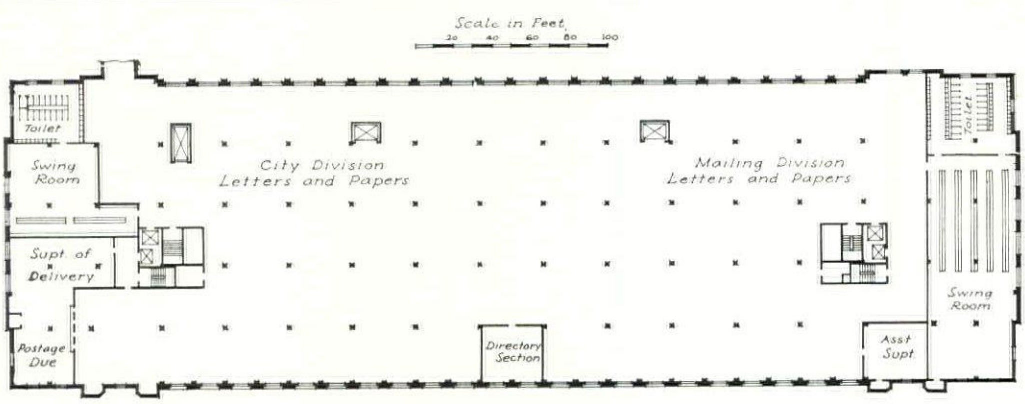
U. S. POST OFFICE, MONTE VISTA, COLO.

U. S. POST OFFICE, WICHITA, KAN.

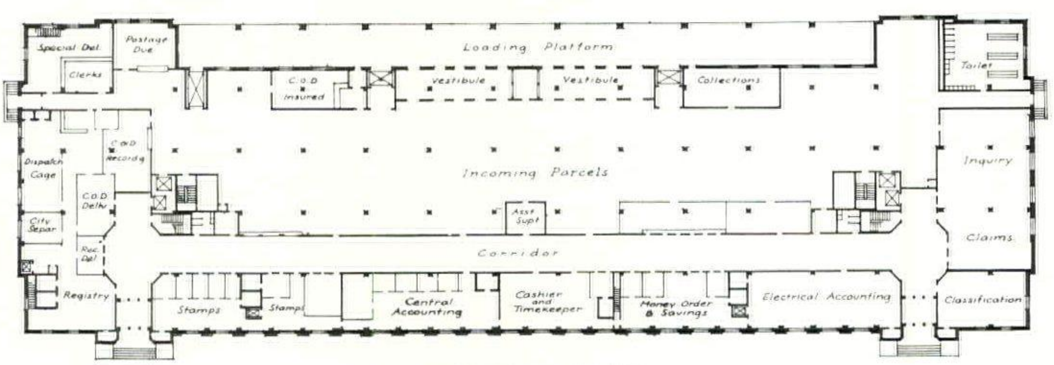
BUILDINGS RECENTLY DESIGNED BY THE
OFFICE OF THE SUPERVISING ARCHITECT



PERSPECTIVE, MINNEAPOLIS POST OFFICE



SECOND FLOOR PLAN



FIRST FLOOR PLAN

MINNEAPOLIS POST OFFICE

MINNEAPOLIS, MINN.

MAGNEY AND TUSLER, INC., ARCHITECTS AND ENGINEERS

GOVERNMENTS AND ARCHITECTS

BY

A. L. BROCKWAY

REGIONAL DIRECTOR, A. I. A.

THE American Institute of Architects document No. 186, entitled "Functions of the Architect," sets forth so clearly the relationship between the architect and his client, the owner, that it is unnecessary to take space to outline it in this article. In private practice this relationship is quite generally understood by the profession and the owner, whether the latter be individual, partnership, or corporation. The same principles apply when any branch of government is the owner or client. The extent to which the architect is able or permitted to function successfully depends upon his ability, and upon the understanding and knowledge on the part of the client of what may be expected from the architect.

Why, then, all this fuss when Government work or public buildings are under consideration? And why is it assumed by Government officials that there is something peculiar and unusual about Government work which can be better handled by a Government bureau than by the private architect? How about the buildings that make the skyline of New York or Chicago or Detroit, or for that matter our municipalities generally? Is a Government bureau responsible for them? It is an extraordinary thing that the situation which exists between the Federal Government and the architectural profession should occur in the United States, under our Constitution and our form of government. The same applies equally to many State governments, particularly New York State.

Aside from questions of design, planning, composition, and the execution by the professional architect as compared possibly with the work of a governmental bureau, there is a much larger, vastly more important fundamental principle involved in the taking over by government as a legitimate function of the planning, designing, and executing of public buildings. I refer to the fact, recognized from the beginning in the organization of the Federal Government and the adoption of the Constitution and the succeeding amendments, that there is grave danger to the welfare of the various states in the assumption by the Federal Government of too great centralized power and authority.

Back of this in the minds of the framers of the Constitution was the belief that the greatest good would come under that form of government which relied upon the effort, initiative, and responsibility of the individual. Subsequent to the adoption of the Constitution itself amendments thereto were intended to make clear and explicit the exact status of this relationship between the Federal Government and the individual states. The Fifth Amendment is notable in this respect by denying to the Federal Government specifically the power to deprive any man of life, liberty or property without due process of law, or to take private property for public use without just compensation.

The record of the Constitutional Convention, reporting the debates participated in by the framers of our Constitution, shows conclusively that the fear of a too strong central government was the basis of serious opposition and delayed its adoption. Those opposing the adoption of the Constitution as proposed took the position that any central or Federal government which acted directly upon the people and not through State governments would inevitably gather to itself functions and powers which would eliminate the right of local governments to manage their own affairs. The supporters of the proposed Constitution, men like Alexander Hamilton and James Madison, as our history shows, argued that under the limitations in the Constitution as written no such result should be feared. The distinction between the executive, legislative and judicial functions, they claimed, were so carefully and specifically outlined, creating checks and balances of authority, that the government resulting must be one of severely limited powers in all these directions. They claimed that the powers granted to the Federal Government were specifically granted and that all other powers had been reserved to the people of the nation acting through local and State governments.

As against the understanding of the framers of the Constitution, in the course of these one hundred and forty-odd years succeeding, what we have seen is a gradual assumption on the part of Congress of the power and authority by legislative act to assume more and more power and authority for the Federal Government. While the fundamental principle of individual initiative is still recognized and public statement made that the Government "should keep out of business," nevertheless the encroachment upon the field of business—and I use "business" in the broad sense as covering professional activities also—has been more or less consistent and steady on the part of Congress.

These usurpations of power are numerous and are based upon more or less plausible arguments, one of which is commonly referred to as "Grants In Aid To The States." Such a one relates to making provision for vocational training through agricultural colleges and appropriating money therefor conditioned upon an appropriation by the state of an equal amount. This has grown to an extent and an importance probably not fully recognized by the dwellers in our municipalities but has been of tremendous importance to the residents of the rural areas, as it is the basis upon which the Farm and Home Bureau organizations and allied functions are founded.

I am thoroughly familiar with the manner in which this works out. I have served since the beginning on the Farm Bureau executive committee in my own county and for the last eight years have been President of the allied Junior Project vocational educational work commission also. This act is known as the Smith-Lever Act. Its results are very valuable and the movement is nationwide. Yet it is a usurpation of authority taken from the States and its beneficent results furnish argument for the next piece of legislation where the encroachment on individual initiative is more destructive. Reports through the county agents go to Washington rather than to the individual States. The same is true in the matter of appropriations by Congress for highway construction. The citizen of any State probably thinks that it is costing him individually less because Congress is appropriating half of the cost of construction. No matter whether the result be beneficial or otherwise, the effect upon the fundamental principle referred to must be viewed with more or less grave concern.

What I am trying to stress with my colleagues in the architectural profession is the importance of the position of the architect as a citizen, and his responsibility as a factor in the election of our governmental representatives. We, the people, in the last analysis are the Government and all of these matters rest absolutely in our hands. The Constitution is the foundation upon which we work as citizens. The procedure and the measures for modifying the contractual conditions of that document are clearly expressed and provided for. Without adherence to the provisions of the Constitution, we must recognize that there is very scant security for permanent good government in the United States. If it be necessary to amend these contractual provisions of the Constitution, let us do it with our eyes open, rather than under cover and by evasion by grouping things under the assumed powers covered in "Grants In Aid To The States," "Taxation And General Welfare Clauses," and other similar items in the Constitution interpreted so as to cover "Implied Powers" and "Practical Measures."

Without embarrassing this article with too much evidence along this line, let me say that the next step of constitutional invasion has been for some time and is at present knocking at our door, for there are many advocates in Congress vigorously demanding that the Federal Government should enter the field of private business. Of course, in a time of emergency, as during a war, we recognize the necessity of mobilizing the nation for self-defense. Under normal conditions, however, we never have believed in this. The example of Government operation of railroads I hope has made a lasting impression.

It is also evident that there is strong opposition to this action on the part of the Federal Government; otherwise we would not have seen the long debate in Congress as to the disposition of the great development that was started at Muscle Shoals, questioning whether the Government should operate and sell power and fertilizer. Is is not a fair question to ask, if the Government can manufacture and distribute electrical energy, what is to prevent the Government from mining and transporting energy in the form of coal, gasoline, or gas? Complete nationalization of all industry is the logical conclusion. The Government is at present in the transportation business on inland waterways, by act of Congress. Interpretation by Congress as to what is covered by the title "Mail" is making the Post Office Department transport and deliver, through the parcel post, articles of merchandise. In fact, a quotation from a statement made recently by Postmaster-General Brown says that "Except on sealed letter mail, the Post Office Department has the keenest competition. The railroads, express companies, trucking companies, steamship, and other common carriers compete with it in the handling of magazines, circulars, printed advertising matter, and merchandise of every kind"; certainly an extraordinary situation, when one considers the Fifth Amendment to the Federal Constitution.

The list of statutes passed by Congress encroaching upon what has always been considered the field of private business could be very generously extended, but space will not permit here. The report of the Board of Directors of the American Institute of Architects at the Convention at San Antonio quoted President Hoover, former President Coolidge and former Secretary Franklin MacVeagh as making statements entirely in line with the historic understanding of the Fifth Amendment of the Federal Constitution, and the Convention pledged its aid and cooperation on the basis of those statements as expressing the general policy of the Government. In other words, these statements of so-called policy are nothing more or less than a recognition of constitutional provisions and limitations.

Possibly the application of the Fifth Amendment to our case should be outlined. The term "private property" is very broad in its application. It is not limited to an action appropriating and taking forcibly physical property itself. If Congress enacts laws putting the Government into the field of industry or professional activity where individual initiative has always functioned, and by so doing enters into competition with a private party, destroying the income from such private property, in that way breaking down its earning powers, then that is surely the taking of private property without either just compensation or due process of law.

This consideration is stressed, first, as a reminder to every individual architect of his duties as a citizen to see to it that his representative in Congress appreciates, in considering proposed legislation, the thought that such legislation is complying with the mandates of the Constitution. It is through an act of Congress that the important step in changing the Government's present attitude toward Government buildings must be taken, Congress being responsive to expressed public opinion; second, because the first reaction on the part of the Government officials to the campaign of the architectural profession for the employment of private architects on Government buildings is, they claim, that we are looking for jobs; the implication is that this is somehow discreditable or open to challenge.

The officers of the Institute have, of course, disclaimed that this is the purpose of the campaign. I think from what I have shown that Government officials will be obliged to recognize that we as a profession are simply defending our constitutional rights. When the architectural profession can point to the architecture created by private architects for private individuals and corporations, showing an enormous preponderance in total cost of the buildings erected over even the very large amount of money appropriated by Congress this last year for public buildings, the profession need not be apprehensive that this stand for law and order will be indefinitely misunderstood.

It is because the situation in the matter of Government work is only one instance of a great many involved in the slow breaking down of the constitutional provisions referred to, that I have gone to this length upon this one point. In other words, we find ourselves in company with many other lines of professional activity, business, and industry where Government is deliberately entering the field of private business, and doing it by act of Congress. It is time to call an alarm, for I believe it is attacking the fundamentals in our form of government upon which the success of this nation is founded.

It is gratifying to note that the activities of the President and officers of the American Institute of Architects, in negotiating with the Treasury Department, have resulted in the actual employment of possibly some one hundred to one hundred and fifty individual private firms of architects. Why there should be any assumption that the relations between the private architect and the Government differ in any respect from the relations as existing between the architect and the private owners, it is difficult to see. They differ only in magnitude and scale. My connection with Government work began about in 1913 and has been confined entirely to the State of New York and not to the Federal Government. The questionnaire covering the States and cities of the nation, preceding the Convention at San Antonio, showed conclusively that, outside of the Federal Government, the State of New York was the largest State government maintaining anything in size or importance in the shape of a bureau of architecture similar to the Supervising Architect's office in the Treasury Department of the Federal Government.

My experience, for a period of ten or twelve years following, was a very close one, giving me an important insight into the workings of governmental departments, commissions, and bureaus. My connection has extended at intervals to 1930. Like the Federal Government, the State of New York owns a very large amount of real estate, including a relatively large number of buildings. The maintenance and upkeep alone of such property requires the existence of a bureau or department entrusted with their care. There is absolutely no reason why a bureau or department so created could not function to represent the State, as client, with any private architect who, because of standing, ability, and experience, might be worthy of being entrusted with the planning and designing of any institutional or other building that the State or Federal Government might have in hand.

As a point of contact, it could and should assemble from the various departments of government involved, the information as to requirements for the intended project. Such information could be passed on to the private architect exactly as the building committee of any corporation functions in private practice. Such a bureau or department entrusted with the care of any buildings must necessarily maintain a supervising or inspecting force. Such a force could, of course, be utilized in the matter of supervision and construction of new work even though the planning, design and detail of the project were done by the private architect. I think that it is not open to challenge that such an organization on the part of the Government would function vastly better and more economically if the duties and responsibilities were confined to some such outline as the above.

The limitations in the matter of salaries to Government employes, civil service restrictions, hours of work, and other factors involved, place a government function for planning and designing at a great disadvantage as compared to the conditions surrounding the private architect. Surely the Government would be better served, both in cost and time, by the retention of private architects under such conditions than by endeavoring to maintain and expand a planning function. The offices of private practitioners are going, well established organizations, ready to step in and adapt themselves to increasing or decreasing volumes of work. In the case of the governmental bureau, the salary limitation affects the character and quality of the employe available.

At the Regional Conference held at Cooperstown, N. Y., the memorandum adopted by that body took occasion to call attention to the fact that constructive progress does not necessarily have to be based upon unfair criticism and repudiation of honest effort on the part of those entrusted with governmental duties. This problem is by all odds too large for any one of us, whether in private practice or in Government employ, to place too much importance upon the personality of the individual. It is not a personal question. As I have tried to show, it involves a question fundamental to the future welfare of the nation and when the creative work of the profession throughout the country is taken into consideration the profession certainly has to make no apologies.

In conclusion, it is hard for me to understand why the Federal Government, or for that matter any State government, should take the attitude that has been taken toward the work of one of the learned professions, recognized both in this country and abroad as dealing most intimately and vitally with the actual living conditions and welfare of its citizens, and whose creative efforts not only rank as one of the fine arts but are the admiration of the world. When one considers the attitude of the governments of Europe, such as England, France, Belgium, Germany, Italy, etc., one finds that the private practitioner is invariably the creator of the monuments of architecture both of the modern and ancient times. Not only that, but the governments of those countries look with pride upon the work of their architects, and honors are heaped upon the outstanding individuals. Government over there does not undertake the design and creation of its public buildings. Upon what grounds can our Government expect to base its actions when the history of the world shows a succession of monumental creations—the work of the private individual as designer!

U. S. to Restrict Hiring of Private Architects

Own Staff More Satisfactory in Emergency, Says Heath

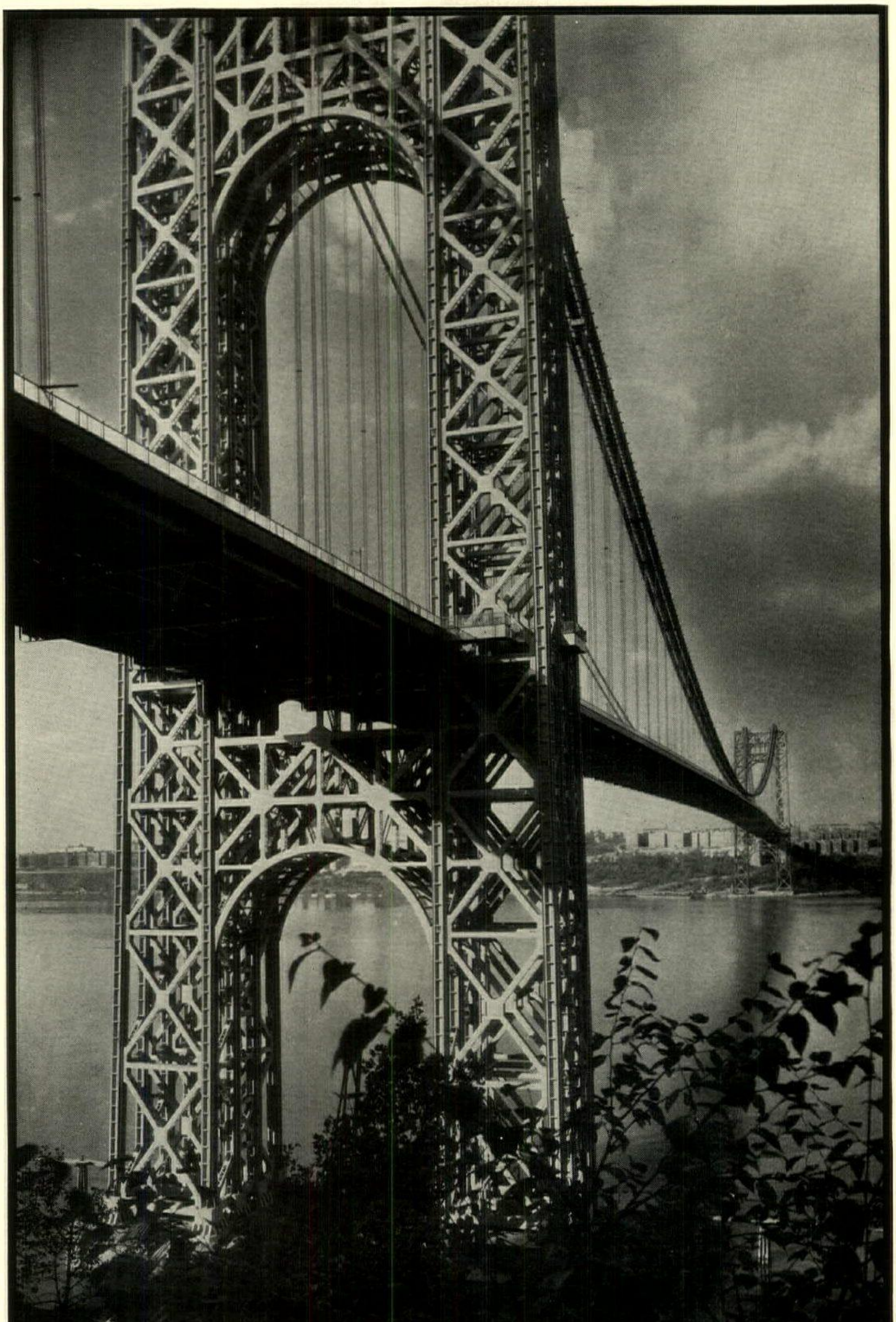
WASHINGTON, Aug. 4.—The hope of the American Institute of Architects to have all future government buildings designed by private architects dwindled today when Ferry K. Heath, Assistant Secretary of the Treasury in Charge of Public Buildings, announced that the government's own staff of architects had proved more satisfactory in the present emergency.

To speed up President Hoover's emergency building program, the last session of Congress authorized the Treasury to use private architects to an unlimited extent. In compliance with this authorization, the Treasury let out a large number of designing contracts which otherwise would have been handled by government architects.

Mr. Heath said today that this experience had shown that the government construction had proved much faster than outside professional architects.

As a result, it is probable the Treasury will oppose any recommendation to Congress to limit the work of the supervising architect's office to a purely supervisory status, leaving all of the designing to be let out to private architects. The use of outside architects, except in unusual circumstances, will be limited to the present emergency, with which the present staff of the supervising architect is unable to keep pace, it was said.

Reprinted from the Herald Tribune of August 5, 1931.



New York Times

THE GEORGE WASHINGTON BRIDGE

THE WORLD'S GREATEST SUSPENSION BRIDGE, SPANNING THE HUDSON RIVER, WAS OPENED OCTOBER 24TH, 1931

THE
ARCHITECTURAL
FORUM

VOLUME LV NUMBER FIVE

NOVEMBER 1931

RESEARCH AND ENGINEERING BUILDING
OF
THE A. O. SMITH CORPORATION

HOLABIRD & ROOT, ARCHITECTS

THE completion of the Research and Engineering Building of the A. O. Smith Corporation marks a certain epoch in contemporary architecture. It is an example of a structure in which the three influences of design, engineering and business have been combined to produce an unusual solution to the architectural problem. An architectural design has been formulated that is remarkable for its simplicity and for its obvious fusion with the requirements of engineering and business, and it is the evidence of this fusion which stamps the building as being worthy of more than passing notice. It is this combination of parts which also makes a description of the building's design unavoidably linked with at least some consideration of the problems involved in its engineering and construction.

Plan. In the development of the plan and the design of this building every effort was made to produce a structure which would meet all immediate requirements and yet be flexible enough to permit rearrangement of the research laboratories and engineering groups as the assignment of new problems in research and the development of new manufacturing processes might require.

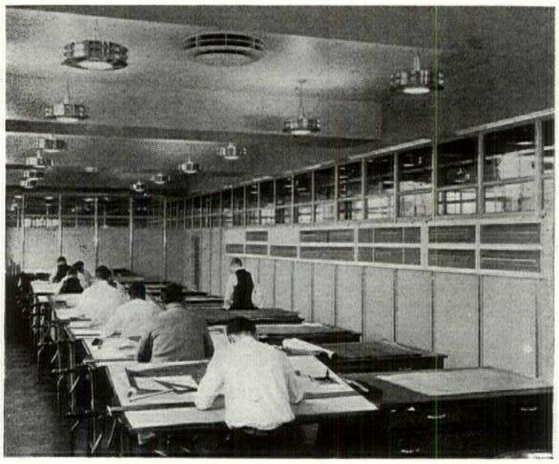
The A. O. Smith Corporation is a concern manufacturing many products which necessitate much research and practical experimentation for their final development. For this reason the corporation retains a large staff of highly trained engineers organized into groups of specialists which include chemists, metallurgists, structural designers, electrical engineers, mechanical draftsmen, etc. Their work is complex; it demands intensive concentration even under ideal conditions, and the primary purpose of the Research and Engineering Building was to provide the best possible working conditions for these groups under one roof.

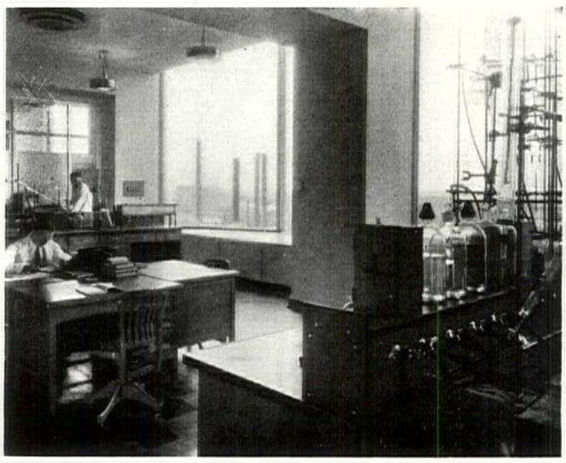
The building is U-shaped, the width of the wings and the base of the "U" being determined to suit both the occupancy layouts and the exterior design. With the exception of the basement, which is under the entire building and an attic floor in which are contained the heating and ventilating equipment, motor generators, pumps, etc., the floors do not contain any partitions other than the permanent ones enclosing the elevators, stair halls, and service rooms.

The site available for the building fixed the maximum width at approximately 170 ft. The proportionate floor space requirements of the mechanical and electrical research laboratories, engineering groups, and chemical research laboratories, together with a consideration of pleasing proportions for the exterior, and economy of construction, led to the adoption of a seven-story design. The immediate floor space requirements, with reasonable allowance for expansion, determined the length. The floor area was left free of partitions so that a possible reorganization of personnel or a change in the type of activity on certain floors could be accommodated easily by a series of movable, easily erected partitions.

The arms and base of the "U" are 45 ft. wide from center to center of columns, with a width in the court of 80 ft. The wall columns are spaced 20 ft. on centers except at the corners, where the spacing is 25 ft. The column spacing, the width

Hedrich-Blessing Photos





Three interior views of the completed building showing the almost ideal conditions that have been provided. Notice the even quality of daylight, the clear space and the arrangement of the electric light units

of the wings, and the type of construction employed were decided upon as a development from the idea of providing the maximum amount of comfortable working areas and proper working conditions with respect to light, heat, and air conditioning. Elsewhere in this issue are described the various details of the structure and the mechanical installations but it is a notable fact that the actual design of the building grew from the relation of structure to the development of the best working conditions as already noted.

At an early stage in the planning of the building, it was decided to employ mechanical ventilation and air conditioning throughout the entire structure. For this reason, the windows were sealed. The desire for the admission of the greatest possible amount of daylight led to the use of the plate glass windows on the three outside elevations and determined to some extent the design of the V-bays, the theory in this case being that the angular walls of glass tend to admit a more even flow of light than would otherwise be the case, with a consequent minimization of shadow and interior reflection. The element of design also influenced the shape of the window bays as it was thought that a perfectly flat wall, which could have been built, in this case would

This view of the library illustrates the simplicity of the furniture which fits admirably with the simplicity of the general interior treatment. The furniture is metal, painted blueprint blue

Hedrich-Blessing

have proved uninteresting and monotonous. On the west end of the building and on the side surrounding the interior court the windows are fixed steel sash, since it was considered unnecessary to strive for any architectural effect in the court area and since the west end of the building may be opened in time for an addition to the building.

Besides the practical considerations of the unrestricted space in the bays and the great amount of available daylight which is admitted to the building, the U-shaped plan is excellent in theory. On the first two floors, the interior court is utilized as a craneway, approximately 80 x 160 ft., roofed over with sky lights. It is equipped with a 20-ton crane and is designed to provide a testing place for the various mechanical products which will be investigated by the occupants of the building. It is reached conveniently by stairways and elevators from three points in the building and is a logical central experimentation area. It is illustrated on page 600.

Exterior. Although the exterior design of the building is decidedly modern in appearance, an attempt has been made to provide an interest beyond that which would expose merely the mechanical and structural provisions of the building. There has been a conscious use of contrasting materials to gain an architectural effect as well as to produce structural and mechanical efficiency.

The exposed materials that have been employed are stone, aluminum and glass. The stone is confined to the corners of the building, the entrance, and the base, and the three exterior walls between are composed entirely of aluminum and glass. The base and the entrance are of black Benedict stone, a composition made from cement and black granite chips which was precast in large flat blocks and polished to a semi-gloss. The stone at the corner piers is buff Indiana limestone in large slabs, the only ornament on it being a small amount of carving at the top. The cornice of the V-shaped window bays is a satin finish aluminum, as are the mullions and the spandrel strips which hold the plate glass sections in place. The unique feature of these V-shaped bays is that they are virtually a continuous wall of glass from the base of the building to the cornice.

Interior. The entrance vestibule is almost entirely of buff and satin finish aluminum fluted and paneled in forms indicative of a business fundamentally based on the metal industry. The side walls merge into a metal ceiling which houses an indirect lighting fixture of tubular lamps recessed in extruded aluminum ribs. The floor is black terrazzo and contains a flush rubber mat.

The lobby is approximately 80 x 20 x 16 ft. The wall treatment consists of narrow black base, polished aluminum fluted columns, a fluted wainscot of black enameled steel and dark blue-green Formica panels above, set in aluminum strips. The cornice is run plaster of a wide, flat design with very fine offsets, and the ceiling is rough acoustic plaster. Both ceiling and cornice are painted a soft green to harmonize with the

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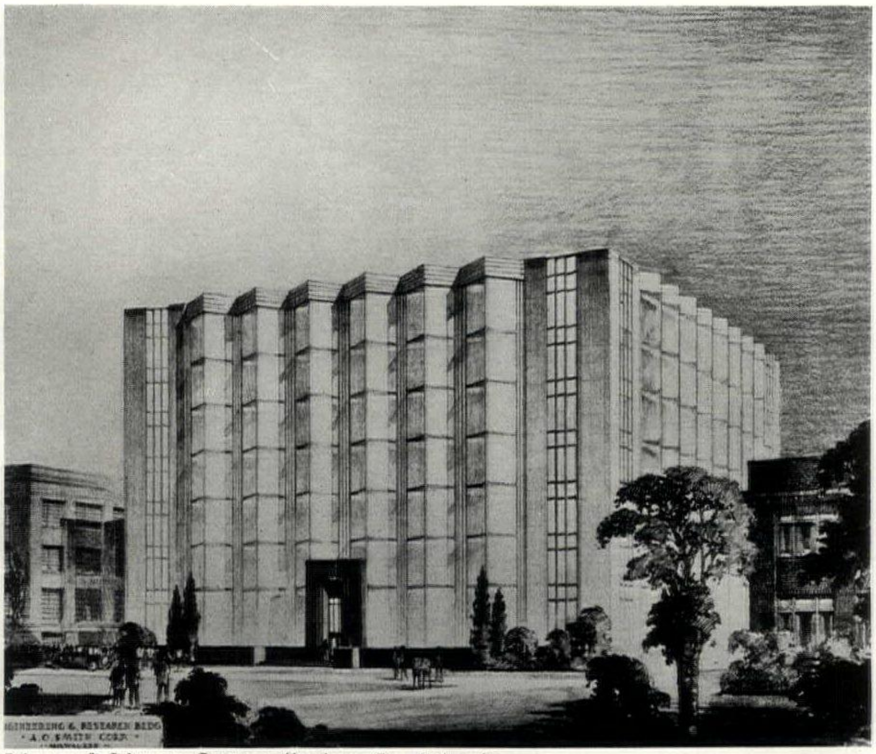
A view of the main elevator lobby looking toward the craneway. The floor is black terrazzo and contains a pattern of glass plates set in metal strips beneath which are housed the lighting units. The wall panels are of a satin finish, black enameled steel, set in aluminum strips and the pilasters which flank the door, as well as the door itself, are of polished aluminum. Through the glass panel above the door may be seen a part of the 20-ton crane. It is interesting to note the harmony between this machinery and the treatment of the elevator lobby



A general view of the building, reproduced from the architects' rendering. A similar view of the finished building is shown on page 533

Johnston & Johnston, Courtesy Aluminum Co. of America

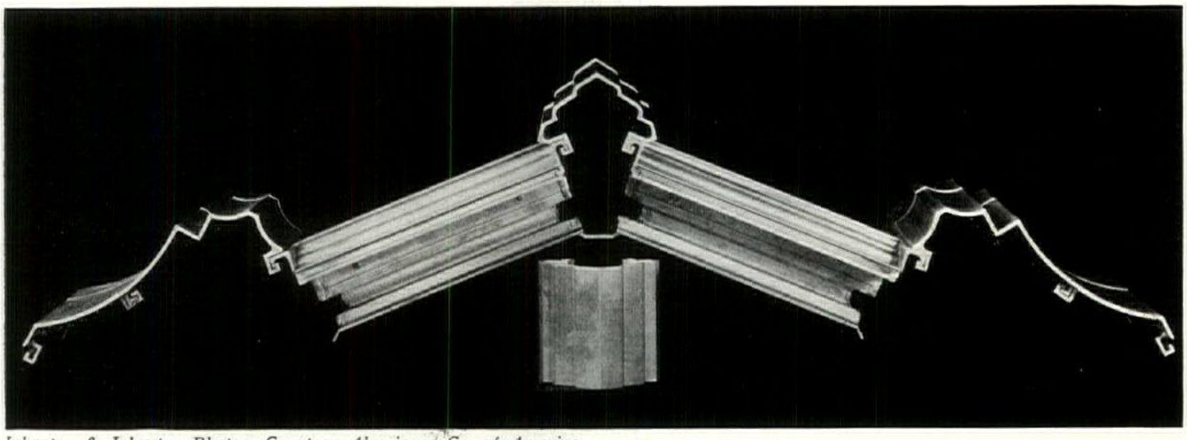
wall panels. The floor is of black terrazzo and contains a pattern of glass plates set in metal strips beneath which are housed all the lighting units of the room. This is more fully described on pages 606 to 608. The elevator lobby is designed to conform in its general characteristic to the main lobby except that the panels are of satin finish black enamel steel instead of green Formica. The elevator cabs are similar in design and color to the lobby. The floor is terrazzo with a lighting fixture similar to that in the main lobby.

On the upper floors the offices and laboratories are formed by removable partitions of special design. The panels are laid out in units 40 in. wide from center to center of pilasters. The partitions are solid to the top of the doors with glass panels above, the solid portions being made of two steel plates with a sound-deadening material between. The pilasters and cornice are aluminum. The general color scheme of the upper floors is gray, using light gray ceiling and a darker gray on the walls and partitions. Blueprint blue was used for ceilings of the toilets, locker rooms, and the soffits of the stairways and girders where no offices occur. Base boards and plinths are black.

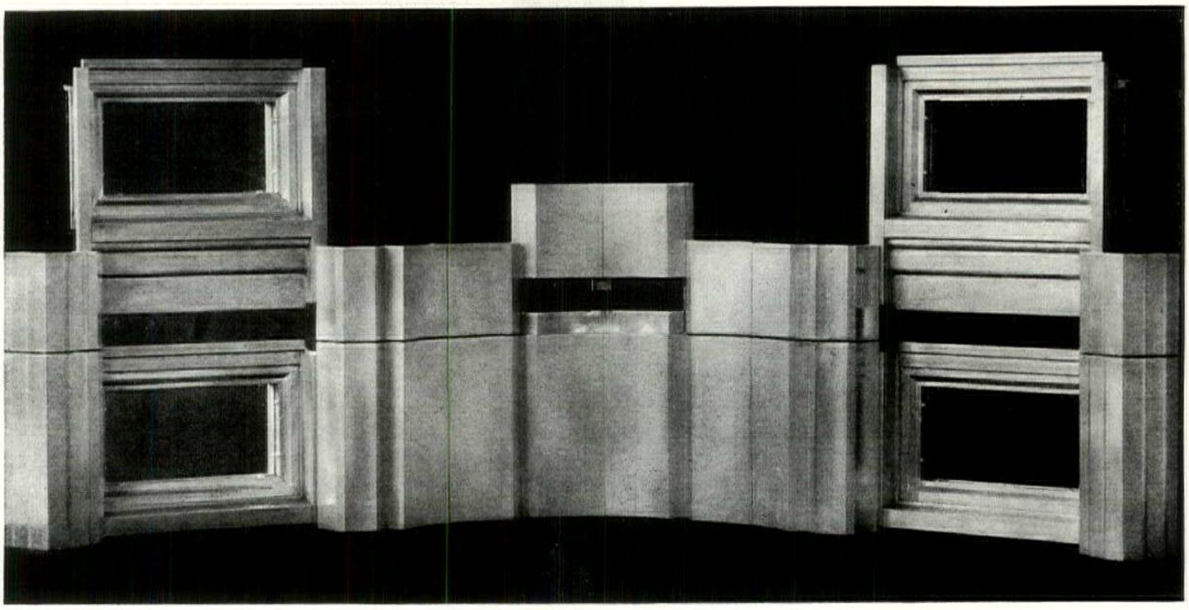
Furniture. Every piece of office and laboratory equipment is new and has been specially planned for its particular place in the building. The offices of the officials are as complete in details and color scheme as forethought and careful planning could make them. The desks and tables are steel, finished in a soft green with aluminum trimmings; the chairs are made of aluminum, upholstered in green leather to match the desks. The bookcases and filing cabinets are similarly finished, while the desk lamps, waste paper baskets, etc., are of aluminum. The floors of the offices are covered with heavy rugs of the same color as the desks.

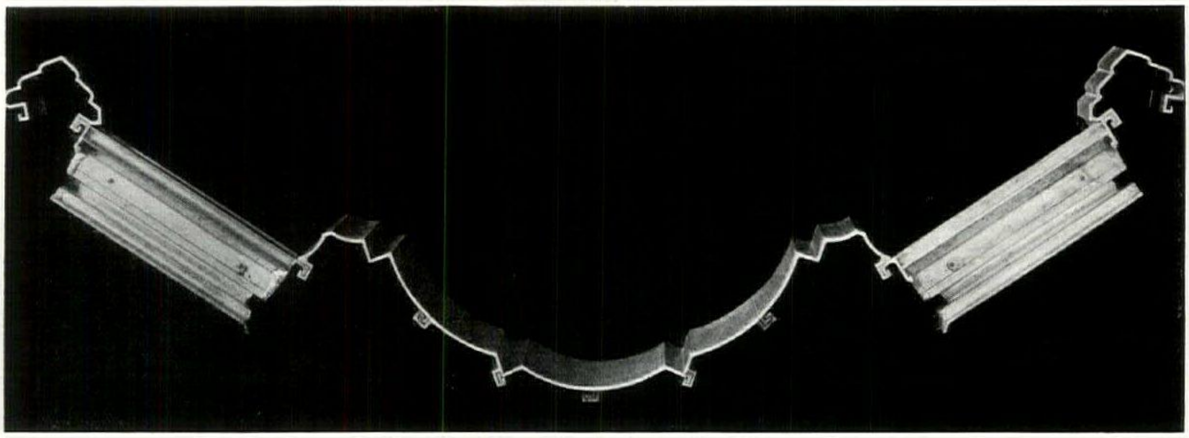
The offices of minor officials have much the same equipment, but the desks, tables, files and bookcases are black, trimmed with aluminum. The rugs are maroon and the upholstery of the chairs is in maroon leather. All other offices throughout the building are finished in a color scheme of blueprint blue and aluminum. The furniture characteristic of the laboratory portions of the building are all of special design, those in the drafting rooms being finished blueprint blue. The tops of the chemical laboratory tables are of asbestos ebony, the reagent shelves are of wood, and the cabinets are steel. All trimmings are of stainless steel. Table tops and shelves are black, while the cabinets are finished in blueprint blue. In each instance the furniture and equipment have been designed in form and finish to be easily used and pleasant to work with.

Metal Work. The use of metal throughout the building aptly illustrates the manner in which the architectural design was linked to structural requirements and field erection. On the exterior the use of metal for the window frames instead of the more usual stone or brick piers made it

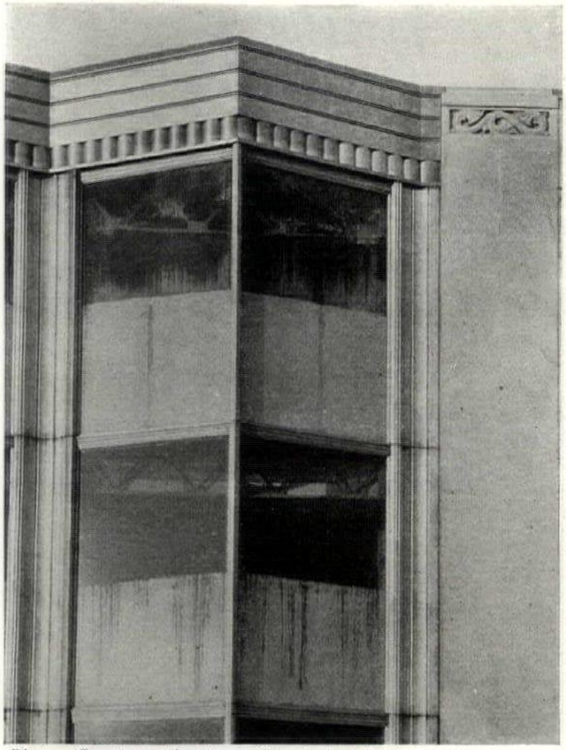


Johnston & Johnston Photos, Courtesy Aluminum Co. of America





The pictures on this page are of extruded aluminum sections to show the actual profiles in plan and elevation and also the method of attaching the various plates to each other. The picture above is a detail of the mullion at the apex of one of the V-bays. Below is a section showing the pilaster between the bays in relation to the mullion already mentioned. The picture in the center is a composite one showing the elevations of the V-shaped bay mullions, the molded aluminum pilasters, and the window frames



Photos Courtesy Aluminum Co. of America

Detail of a V-bay. It shows the relation of the cornice to the pilasters and window frame

Johnston & Johnston

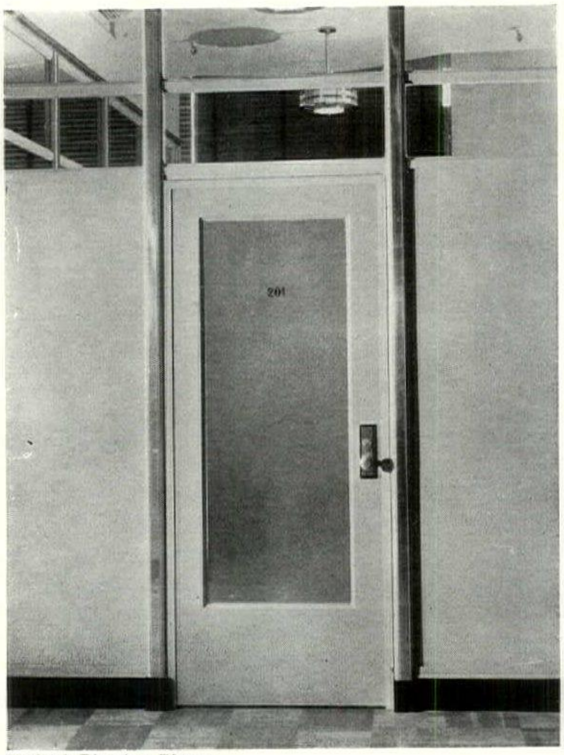
Setting a portion of the extruded pilaster. Compare this picture with those on the opposite page

possible to employ a larger glass area and increased the daylight opening by more than 30 per cent. The choice of the metal was influenced by three factors: first, it was desirable to use a metal which could be molded to the form required by the V-shaped bays; second, a material was necessary which would be reasonably free from corrosion, would resist wear, and could be easily maintained, although the climatic conditions did not require the use of an absolutely impervious metal; third, it was desirable that the original color would form a contrast to the highly reflected surface of the plate glass and would mellow in age to conform with the adjacent materials.

Various tests, which included working with a full size model in sheet iron, indicated that aluminum would fulfill all these requirements. Much of the metal has been used in a sheet form, and because of the ready workability of the metal the window frames and pilasters as well could have been fabricated from sheets at a material saving in weight. However, the advantages to be derived from the use of extruded shapes more than offset the additional weight-saving feature of sheet metal. An extruded section has a straight and true arris. It presents no difficulties in plumbing and is both easy and simple to erect.

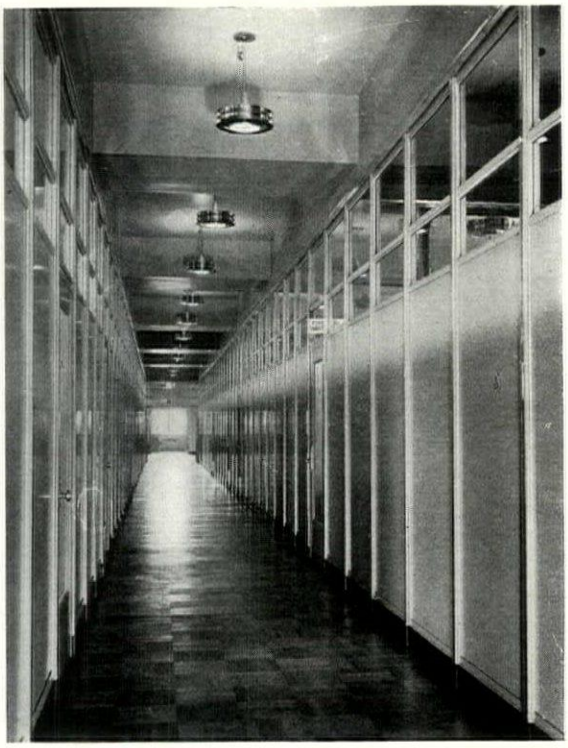
Being limited as to the size in diameter of a member which can be extruded under present fabricating conditions, the development in the metal design involved a three-fold requirement. First, the forms to be created should be simple enough so that each form could be sub-divided into smaller units to meet die requirements; second, they should be designed so that the various units could be made of interlocking construction for ease of erection, weatherproofing and segregation of the window frame and sash from the adjacent metal areas; third, expansion joints had to be provided so that sufficient free action would be possible without detracting from the appearance.

A full size model of each metal area was constructed of galvanized iron sheets formed to the desired profiles. From this model the problems of joinery, welding, expansion, assemb'y, and erection were analyzed and solved, after which it became a simple problem to specify the metal in convenient lengths. In general, the horizontal members are of an interlocking and overlapping design, provision being made for drips wherever possible. The vertical members, with the exception of the window frames, are of the butt joint type, provision being made for a continuous skirt on the top of each lower member, the skirt being continuously welded to the inside of the extruded member, thus forming a weathertight joint when the upper member was erected in place. These skirts were formed of No. 14 gauge aluminum



Hedrich-Blessing Photos

A typical office partition door. The door is metal painted gray, with a panel of obscure glass



A corridor between partitions. The panels are painted steel to a height of seven feet

and assumed the same profile as the extruded piece to which it was welded.

The extruded aluminum window frames were attached by means of aluminum screw bolts to 4 x 4 structural steel angle brackets welded to the steel plate floors. Each frame is hung from two brackets with four bolts holding the frame to the bracket. A piece of fiber serves as insulation between the aluminum frame and the bracket. The window frames of the V-bays are joined on both the outside and the inside by means of a strip of extruded aluminum molding. Expansion and contraction in the vertical column of windows are taken care of by expansion joints at each floor level. Fluted aluminum pilasters connect the V-shaped columns of windows and form an integral part of the construction. The pilaster sections, which are 14 and 16 feet in length, are composed of six pieces of extruded aluminum molding held together by means of flush, locked-lap joints. As in the case of the window frames, an expansion joint is provided at each floor level. The weight of the pilaster section is carried on two structural steel column brackets fastened to the pilaster by means of three angle clips. Another set of column brackets and angle clips towards the top of each pilaster section holds the pilaster rigidly in place.

A 6-foot banded and fluted aluminum cornice follows the plan of the windows. This cornice was fabricated from No. 16 gauge sheet and erected in 11-foot sections, with each section carried on three 2 x 2 in. angle brackets fastened to the structural members at the head of the windows. The expansion in the cornice is provided for by connecting the lintel member of the windows to the soffit of the cornice. The cornice is capped with an aluminum sheet metal coping which covers the parapet wall and serves as a flashing for the built-up, precast cement tile roof.

Aluminum plinth blocks were employed for the water table. They were made by the sand casting process and set into the forms when the Benedict stone base was being manufactured. The result was a neat, waterproof, and easily maintained joint between the base and the vertical members.

Due to the lightness of the metal and the fact that the sections were fabricated almost entirely in the shop, no scaffolding was required in the erection of the facade other than a portable stage which was hung from the roof. The window frame and pilaster sections were hoisted into position with but little effort, and the ease with which the building was closed in reflects the close cooperation between the elements of design and construction. Six days only were required to close in the first of the two side elevations. The second side was enclosed in one-half that time and it is not too optimistic to suppose that a second building could not be completely enclosed in seven days.

Hedrich-Blessing

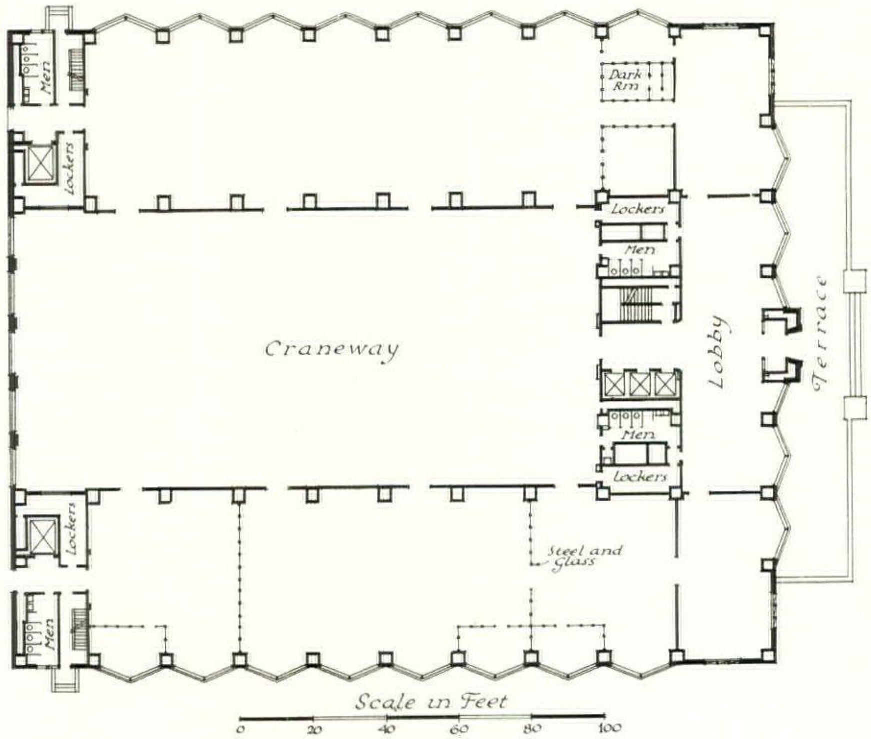
RESEARCH AND ENGINEERING BUILDING

OF

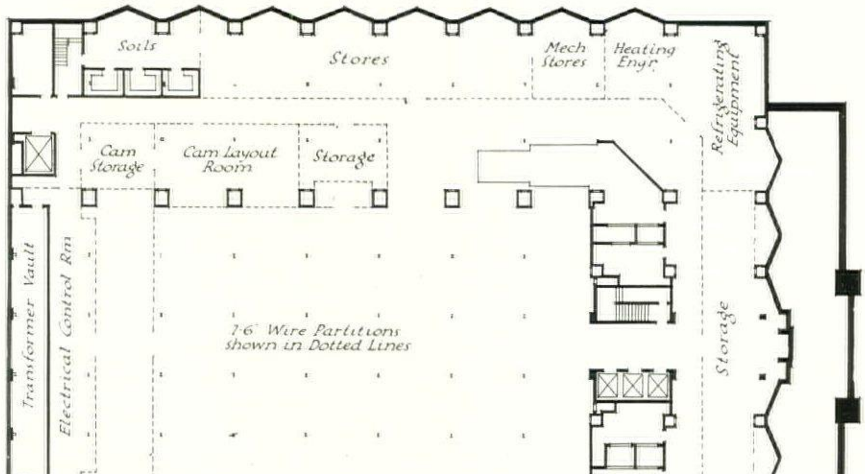
THE A. O. SMITH CORPORATION, MILWAUKEE, WIS.

Unusual in its entire conception, design and detail, this building has been planned to provide a maximum efficiency of light, air and space for the occupancy of a large group of highly trained engineering specialists. The plan has been considered to develop the highest degree of adaptability to a variety of uses and has been designed to provide either an unobstructed space or a series of many small offices on each floor. The unique appearance of the building is a logical result of a design which provides the best interior working conditions. The windows on every wall of the building are fixed, and on three sides the walls are almost entirely of glass. The ventilation throughout is mechanical and is combined with a system of heating and air-conditioning. The design of the building, including a discussion of the color scheme, is described in the preceding pages; an exposition of the structural and mechanical systems is contained in pages 597 to 610.

HOLABIRD & ROOT, ARCHITECTS



FIRST FLOOR PLAN



BASEMENT FLOOR PLAN

BUILDING FOR THE A. O. SMITH CORPORATION, MILWAUKEE, WISCONSIN

HOLABIRD & ROOT, ARCHITECTS

Hedrich-Blessing

MAIN ENTRANCE

BUILDING FOR THE A. O. SMITH CORPORATION, MILWAUKEE, WISCONSIN

HOLABIRD & ROOT, ARCHITECTS

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ELEVATOR LOBBY

BUILDING FOR THE A. O. SMITH CORPORATION, MILWAUKEE, WISCONSIN

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ENTRANCE VESTIBULE

BUILDING FOR THE A. O. SMITH CORPORATION, MILWAUKEE, WISCONSIN

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EXECUTIVE OFFICE

BUILDING FOR THE A. O. SMITH CORPORATION, MILWAUKEE, WISCONSIN

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MAIN LOBBY

BUILDING FOR THE A. O. SMITH CORPORATION, MILWAUKEE, WISCONSIN

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LOUNGE ROOM

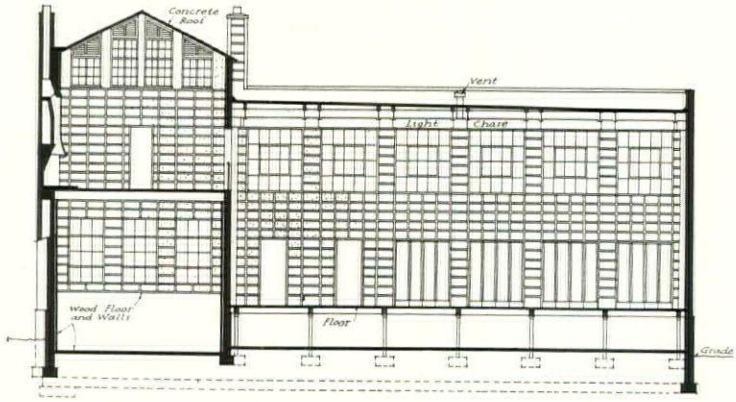
BUILDING FOR THE A. O. SMITH CORPORATION, MILWAUKEE, WISCONSIN

HOLABIRD & ROOT, ARCHITECTS

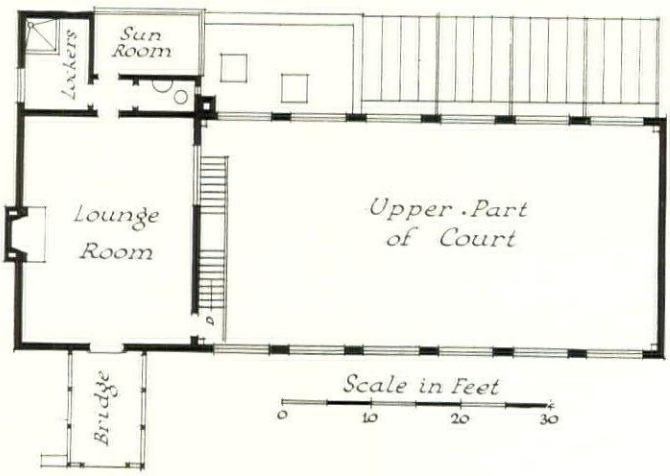
Weber

A MINOR SPORTS HOUSE NEAR BOSTON

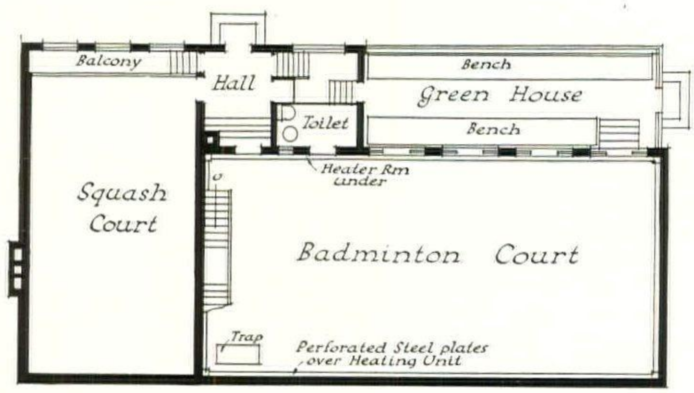
GUNTHER & BEMIS ASSOCIATES, ARCHITECTS



LONGITUDINAL SECTION



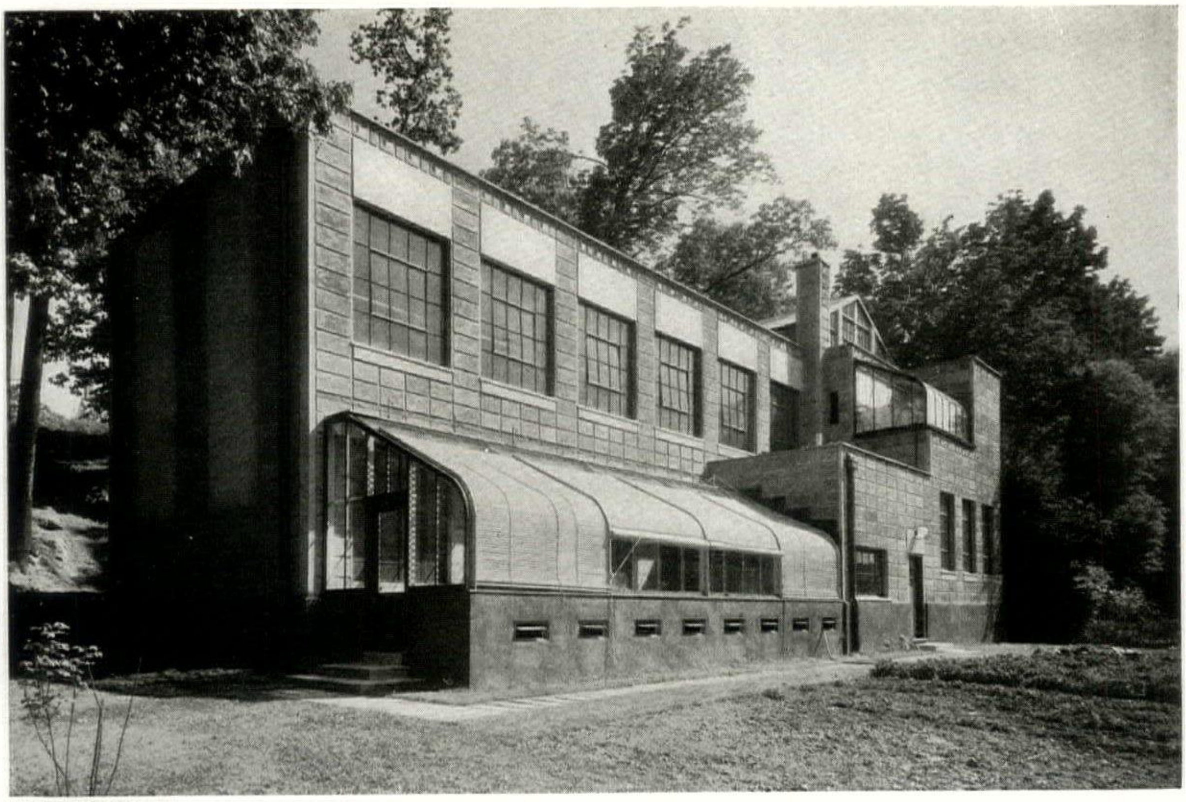
SECOND FLOOR PLAN



FIRST FLOOR PLAN

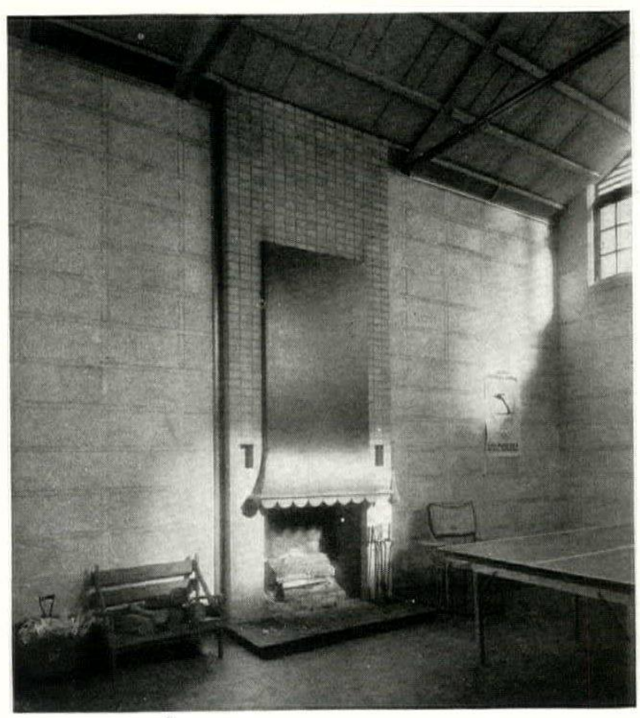
A MINOR SPORTS HOUSE, CHESTNUT HILL, MASS.

GUNTHER & BEMIS ASSOCIATES, ARCHITECTS



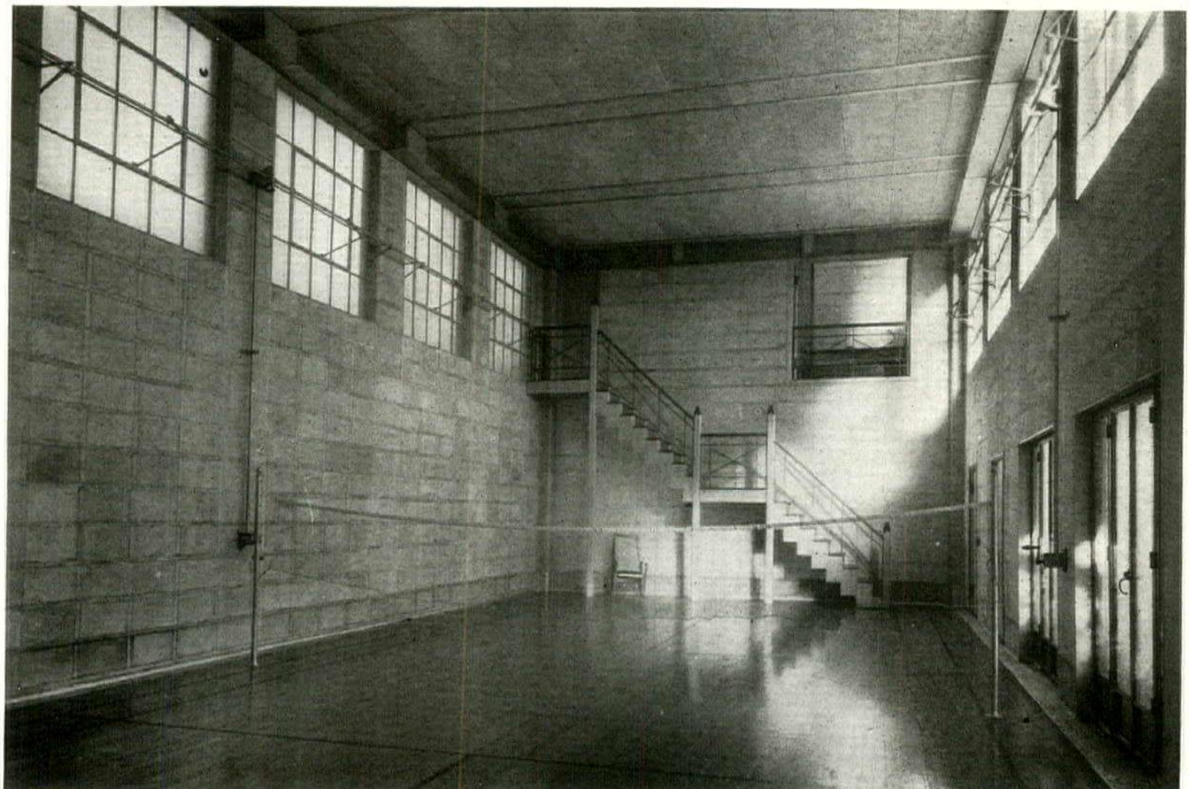
Weber Photos

The building was planned as an informal sports house for the use of a small community, and its plan and design was influenced by the method of construction. The walls are of standard size cement slabs keyed to the joints with small aligning strips; the roof is supported by steel I-beams. The exposed slabs are the color of a variegated purple slate; the panels are stuccoed in a warm buff; and under the cornice there is a band of green and red tile. The trim is light blue and the cast concrete foundation has been stained a deep brown. The picture above shows the building from its lower level; at the right is the lounge room, toward the fireplace

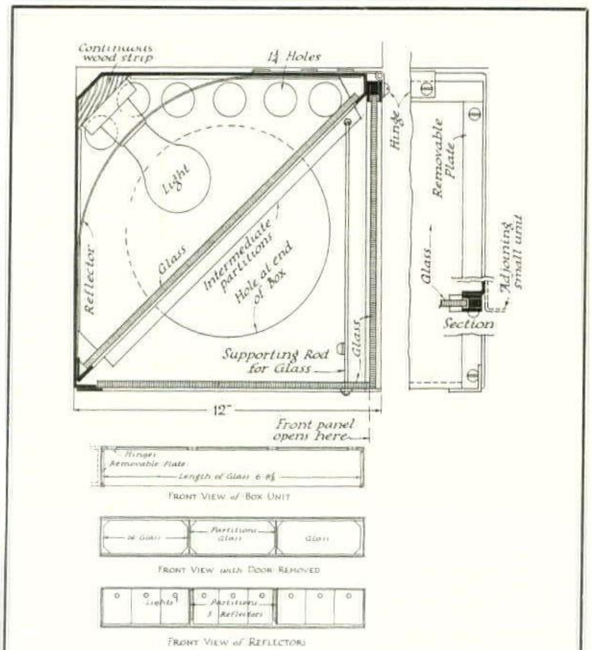


A MINOR SPORTS HOUSE, CHESTNUT HILL, MASS.

GUNTHER & BEMIS ASSOCIATES, ARCHITECTS



Weber

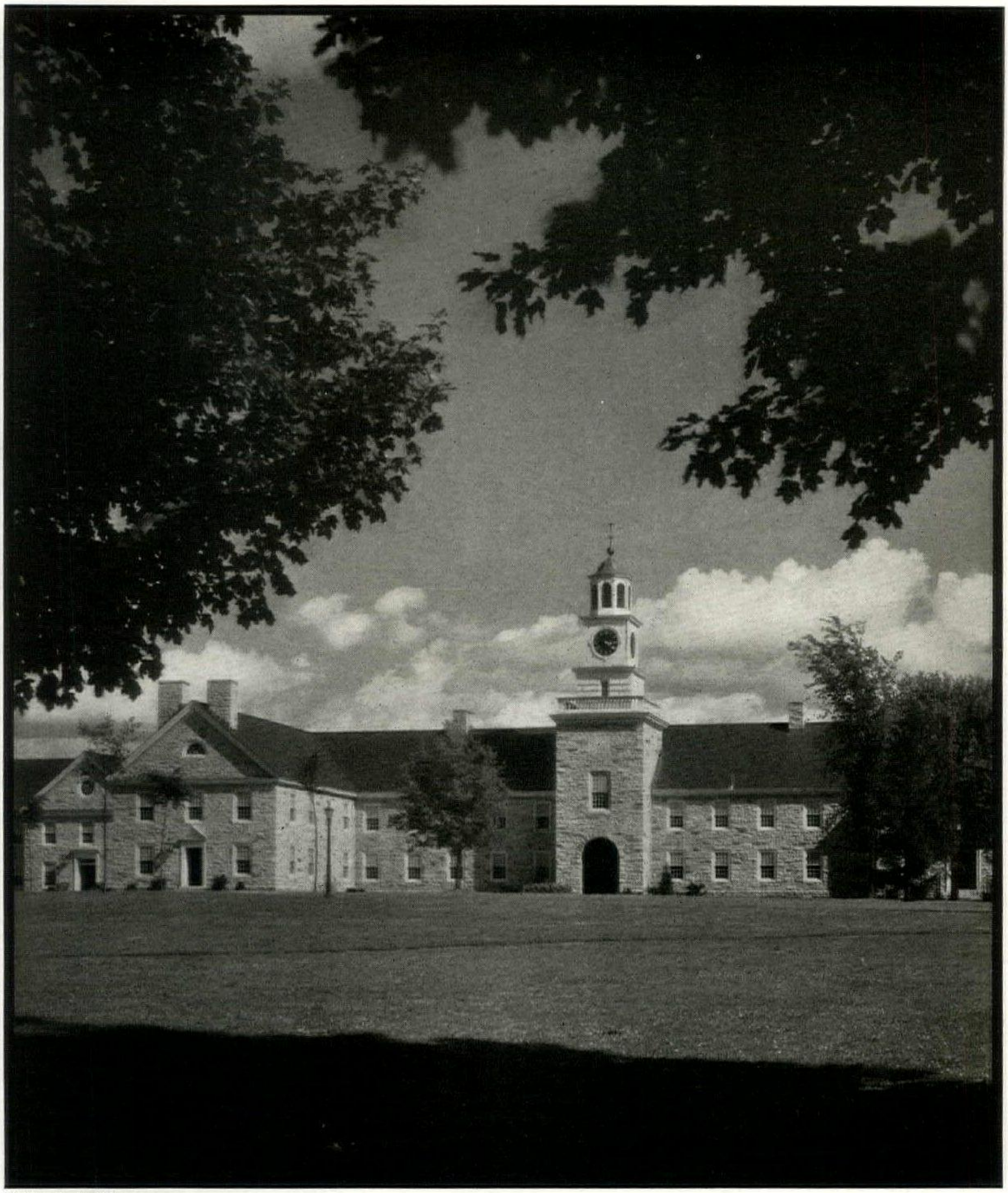


Cornice lighting fixture

The interior of the badminton court looking toward the lounge is shown above. The floor of the court is waxed maple and the walls are of gypsum-and-wood-chip slabs of a warm buff color. The ceiling is made of 2x8 ft. strips of acoustic material supported at each end by the flanges of the I-beams. The ceiling is silvered and the flanges of the beams are painted light blue to match the door and window trim. The walls of the lounge room, shown on the preceding page, are similar to those of the badminton court. The floor of this room is black terrazzo. The trim is orange and contrasts well with the simple hood and plain chimney breast of black sheet steel

A MINOR SPORTS HOUSE, CHESTNUT HILL, MASS.

GUNTHER & BEMIS ASSOCIATES, ARCHITECTS

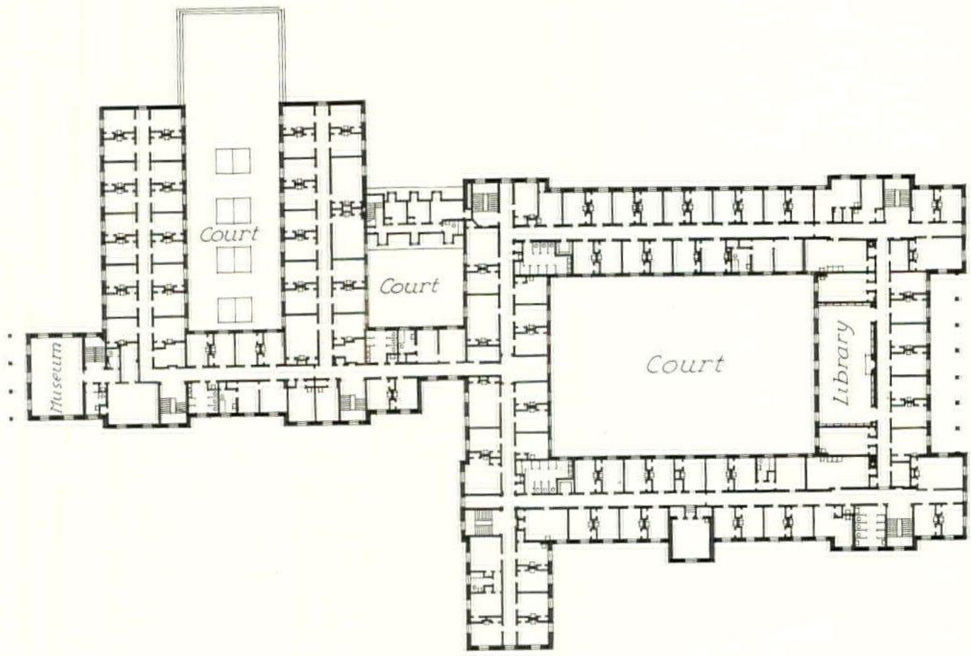


Tebbs & Knell

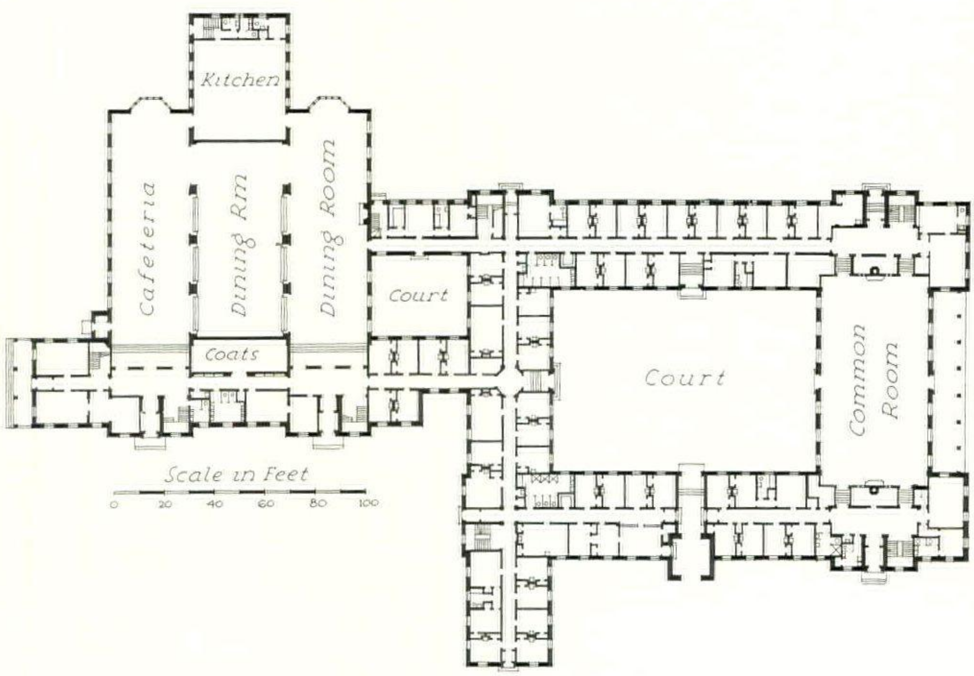
The Men's Dormitory, which has just been completed, has been planned for 200 students and contains a large common room, library, dining rooms and museum. In effect it is a series of houses, each with separate entrances. The student rooms are of the study bedroom type and each house contains a master's suite. The building cost 45 cents a cubic foot, or a total of $570,000, exclusive of fees and equipment

ST. LAWRENCE UNIVERSITY, CANTON, N. Y.

ERNEST SIBLEY AND LAWRENCE C. LICHT, ARCHITECTS



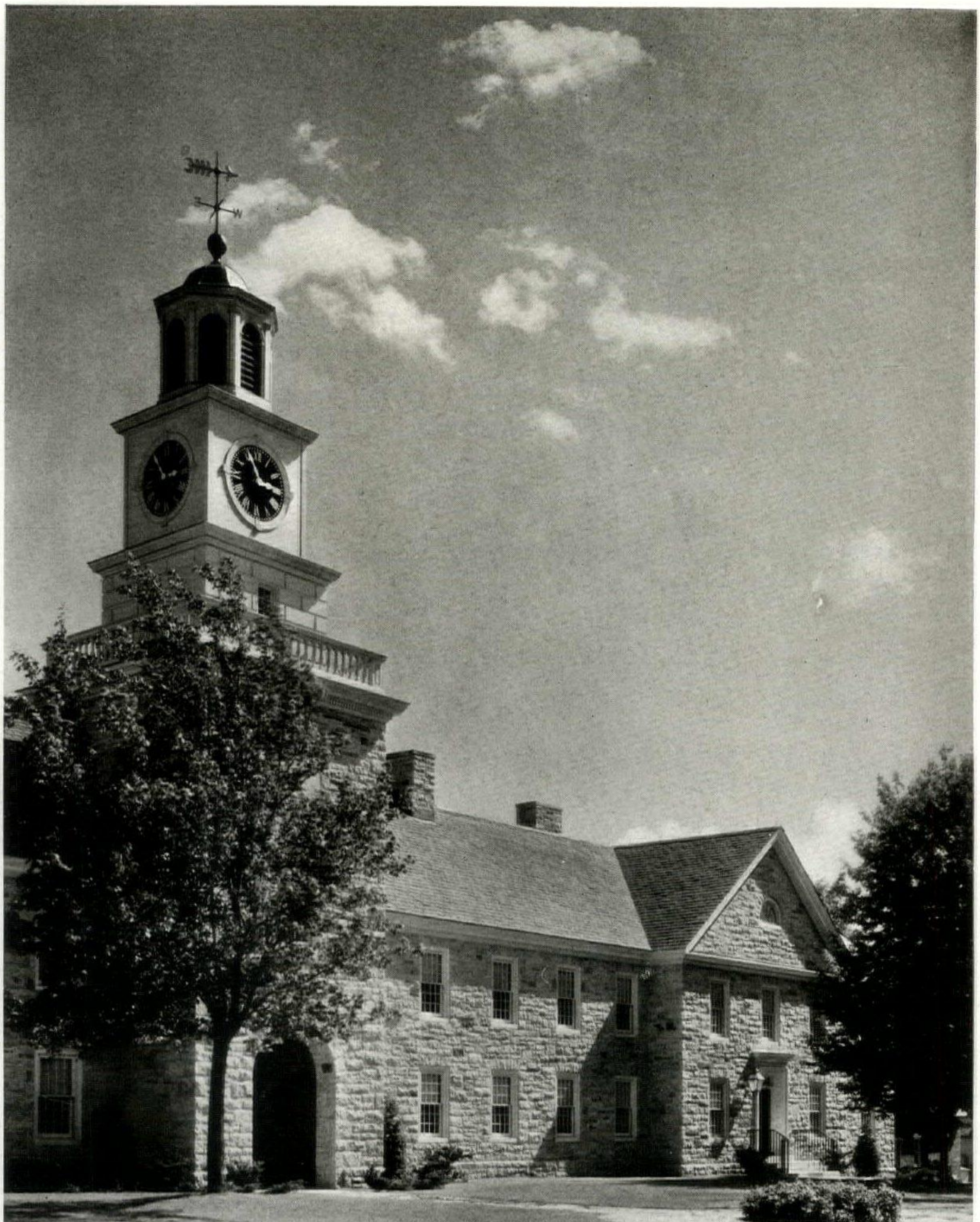
SECOND FLOOR PLAN



FIRST FLOOR PLAN

MEN'S DORMITORY, ST. LAWRENCE UNIVERSITY, CANTON, N. Y.

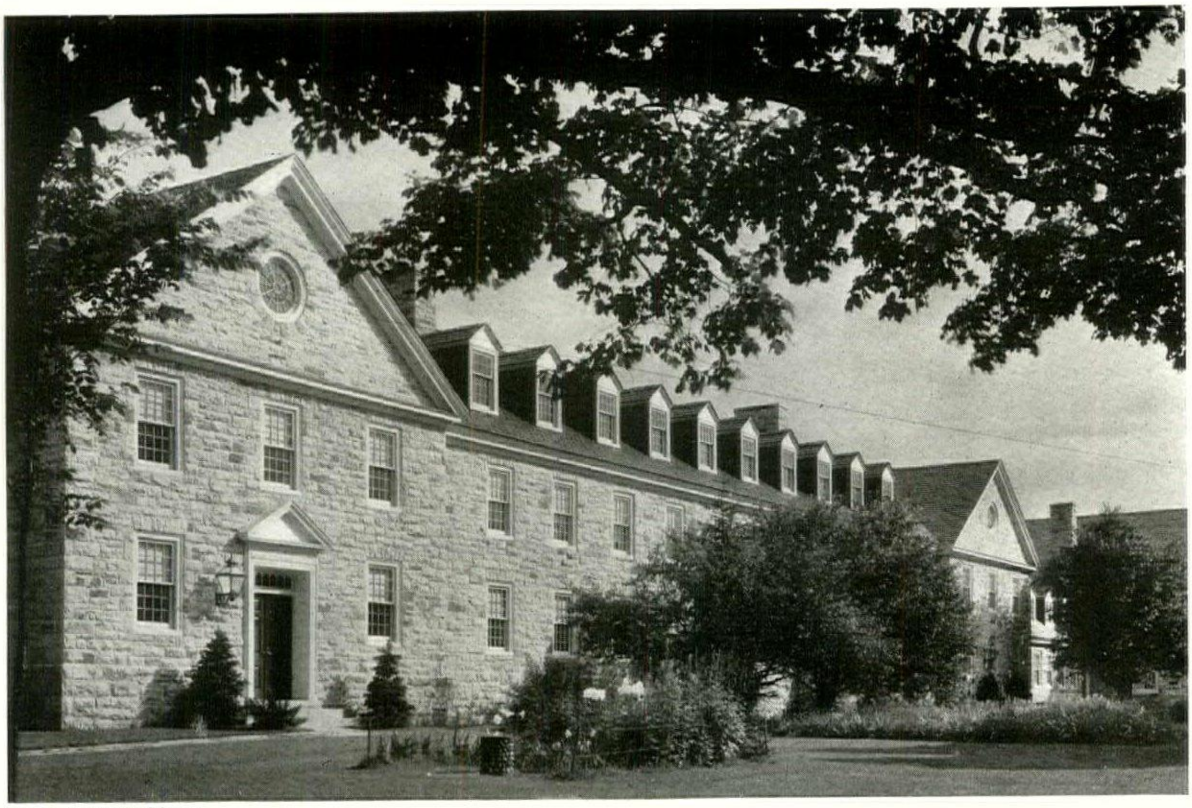
ERNEST SIBLEY AND LAWRENCE C. LICHT, ARCHITECTS



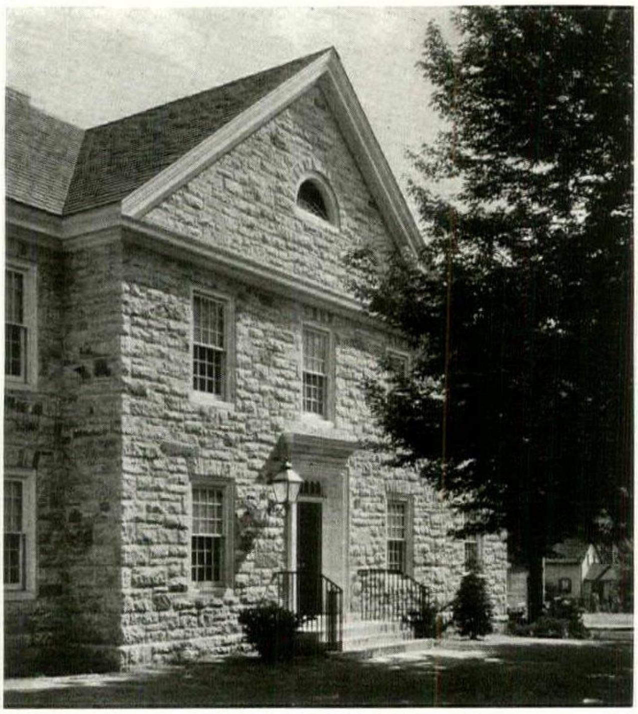
Tebbs & Knell

MEN'S DORMITORY, ST. LAWRENCE UNIVERSITY, CANTON, N. Y.

ERNEST SIBLEY AND LAWRENCE C. LICHT, ARCHITECTS



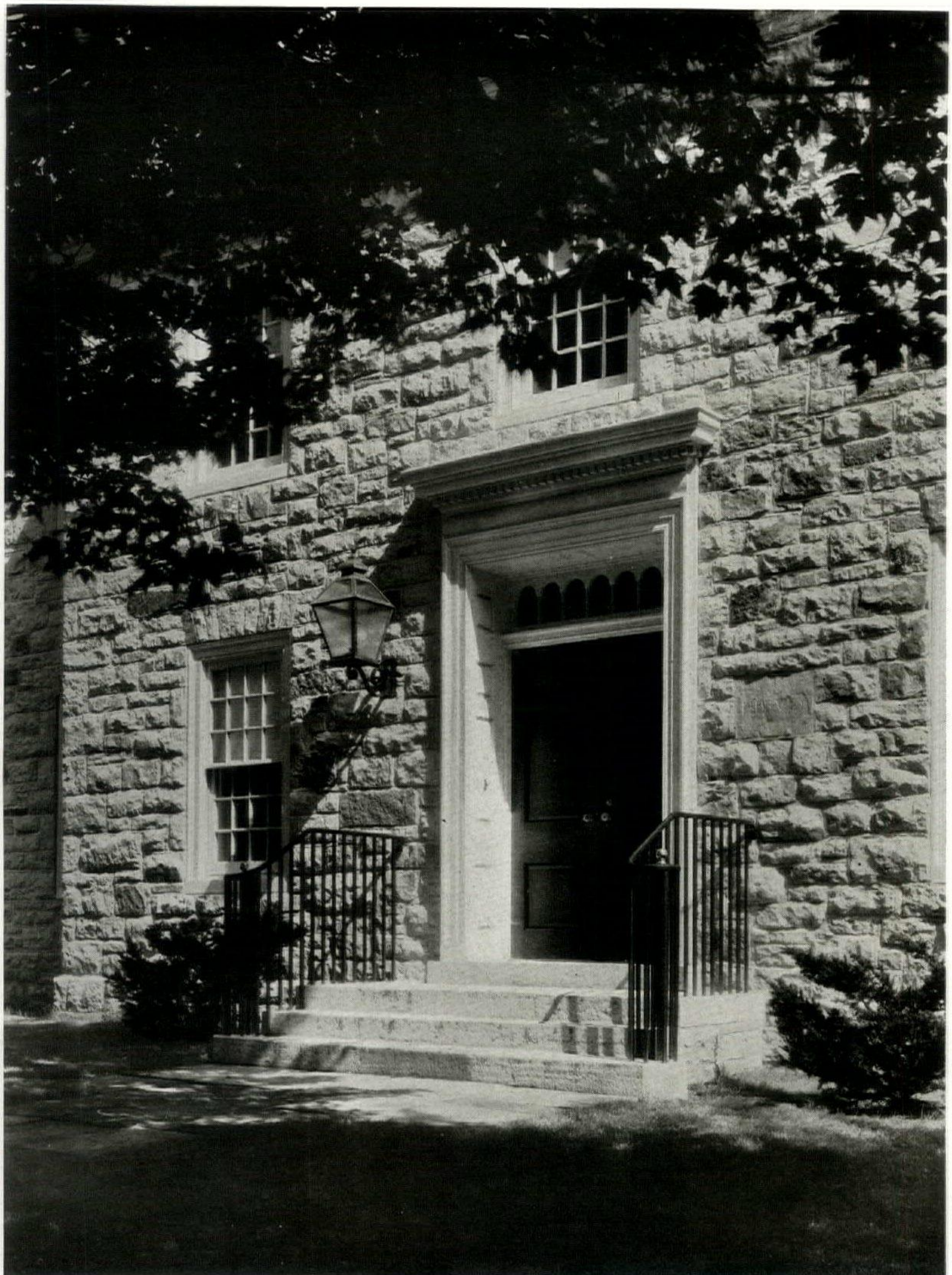
Tebbs & Knell Photos



The building is of concrete construction faced on the exterior with a variegated buff stone. The floor construction is of reinforced concrete; the interior partitions are of clay tile and the rafters are of long leaf yellow pine on steel trusses and purlins. The terraces, walks and porch floors are of flagstone varying from warm red to buff. The floors throughout the interior are of oak except those of the cafeteria and corridors which are of composition tile

MEN'S DORMITORY, ST. LAWRENCE UNIVERSITY, CANTON, N. Y.

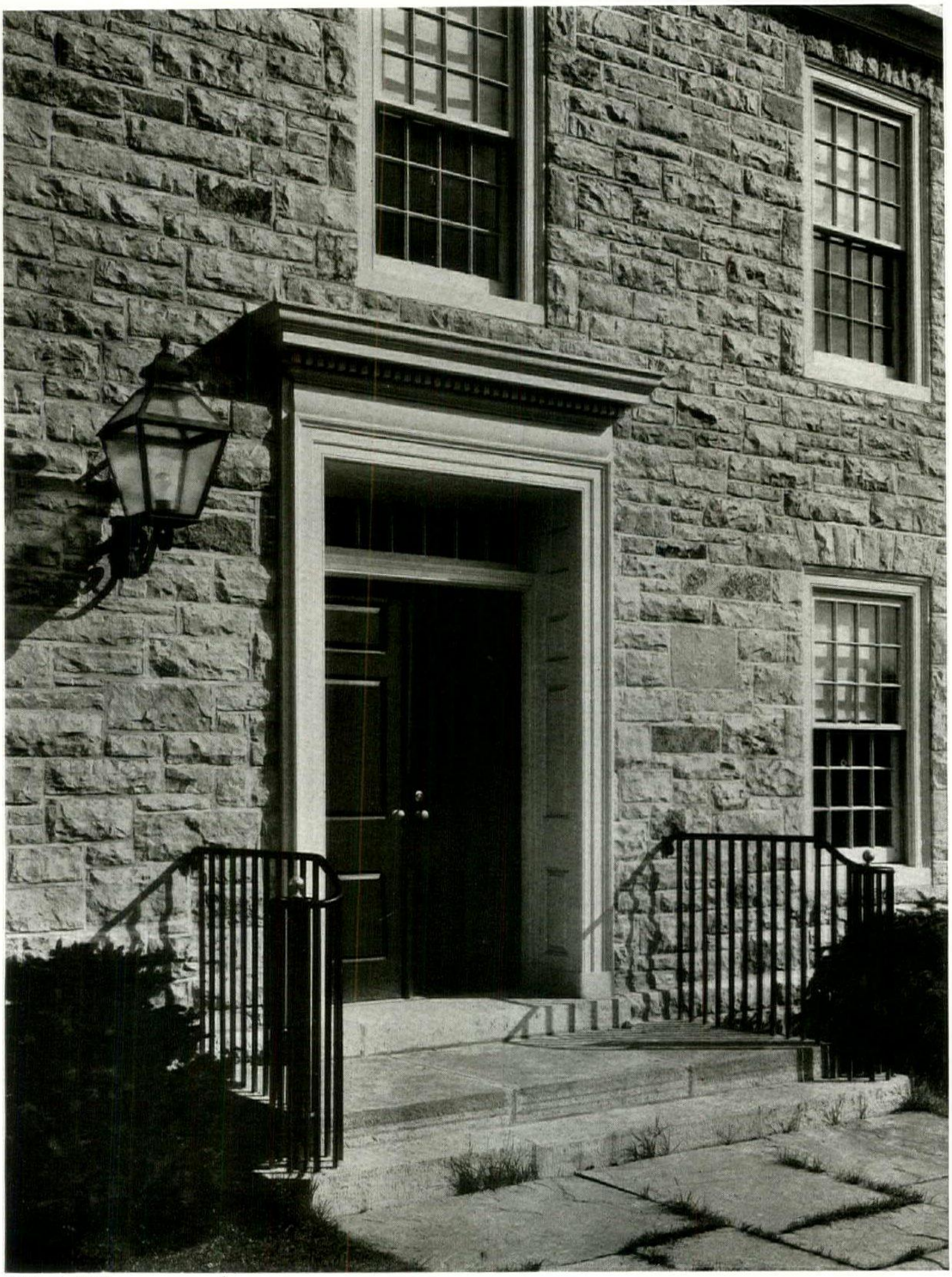
ERNEST SIBLEY AND LAWRENCE C. LICHT, ARCHITECTS



Tebbs & Knell

MEN'S DORMITORY, ST. LAWRENCE UNIVERSITY, CANTON, N. Y.

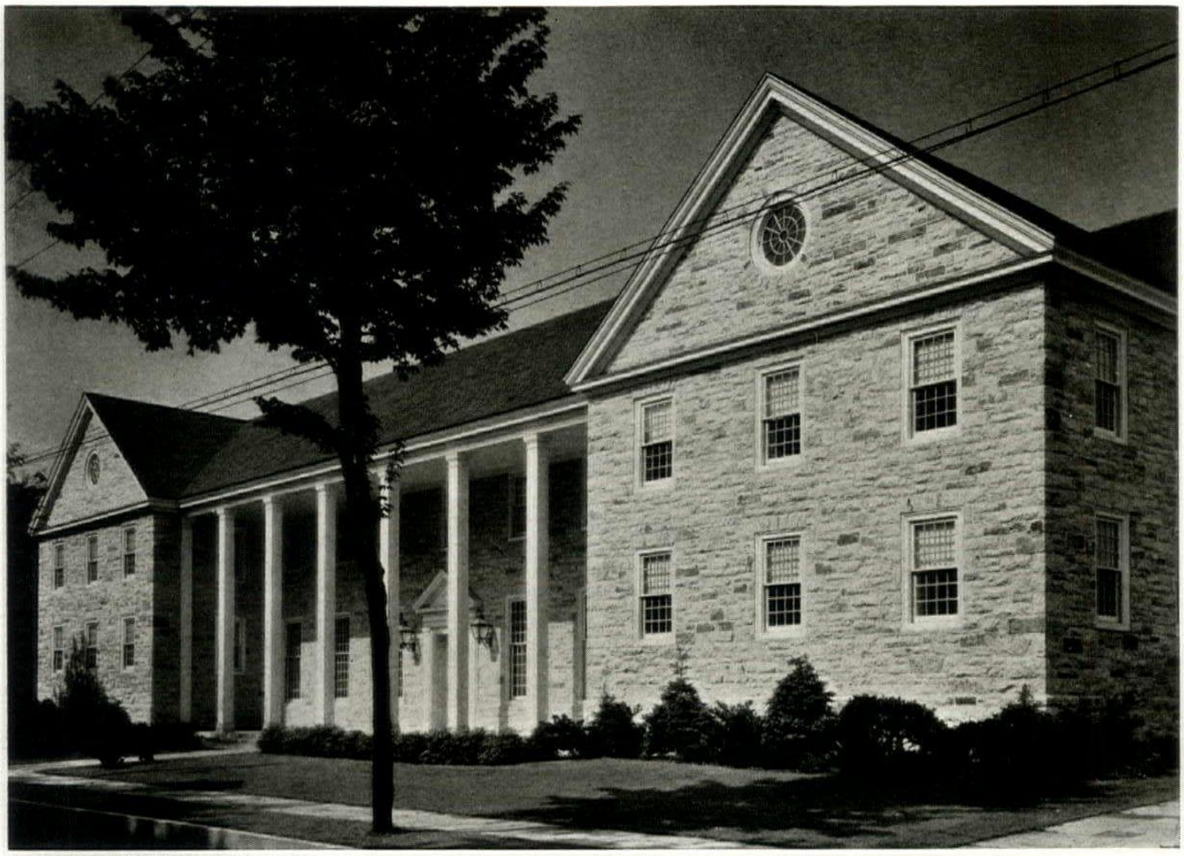
ERNEST SIBLEY AND LAWRENCE C. LICHT, ARCHITECTS



Tebbs & Knell

MEN'S DORMITORY, ST. LAWRENCE UNIVERSITY, CANTON, N. Y.

ERNEST SIBLEY AND LAWRENCE C. LICHT, ARCHITECTS



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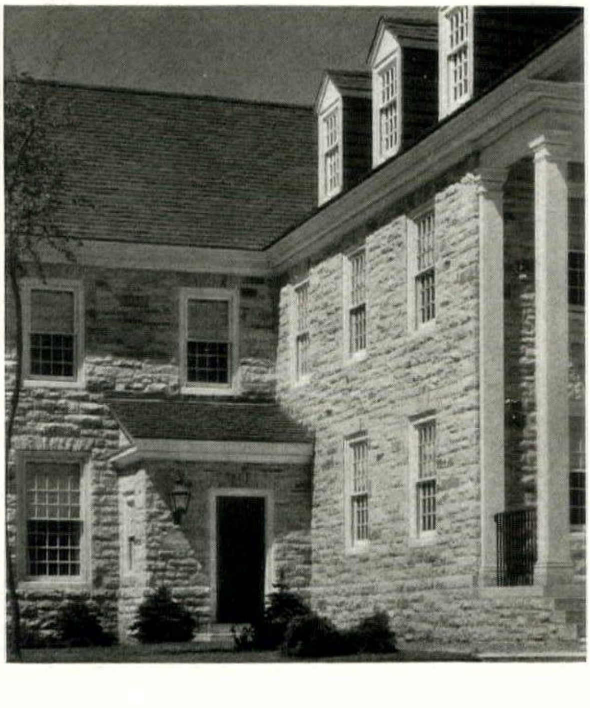
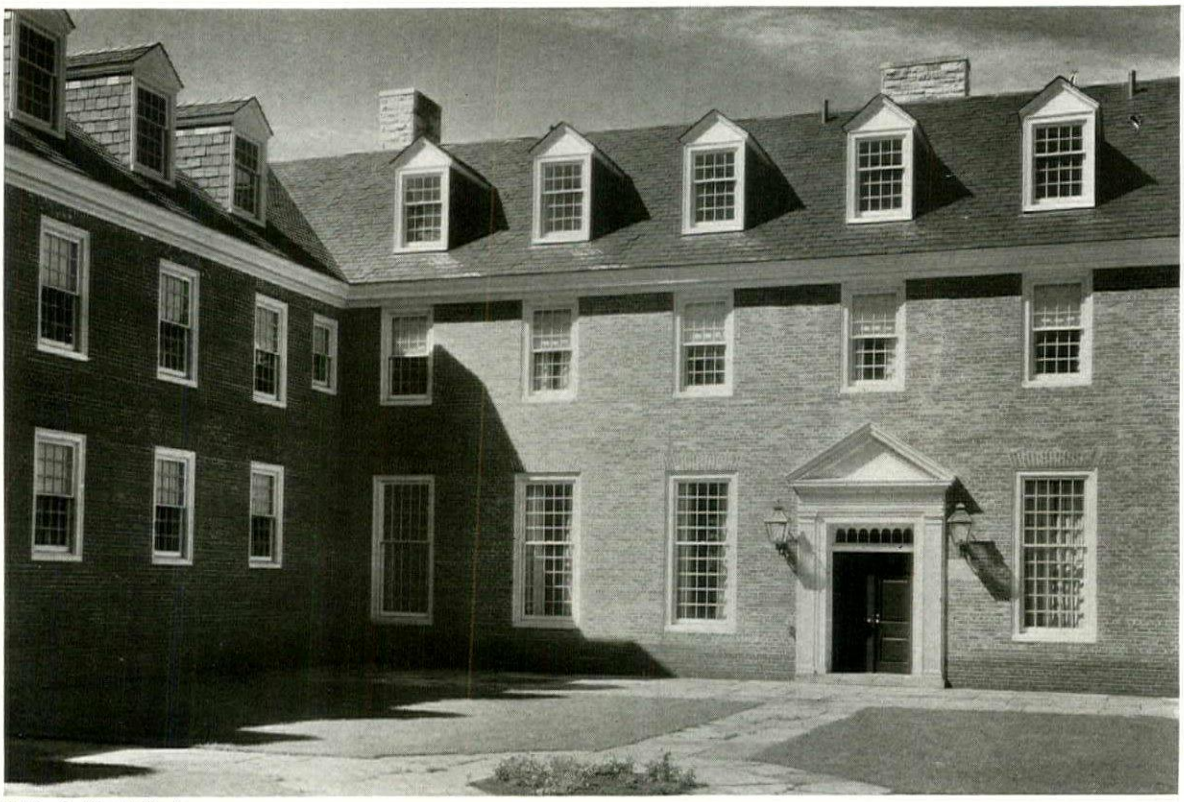


The dormitory is divided into houses, each with its separate entrance and stairway. Each house contains a master's suite which consists of study, bedroom, bath and kitchenette. On the opposite page is one of the dormitory entrances. The picture above is the entrance portico of the common room and below is the entrance to the cafeteria

MEN'S DORMITORY, ST. LAWRENCE UNIVERSITY, CANTON, N. Y.

ERNEST SIBLEY AND LAWRENCE C. LICHT, ARCHITECTS



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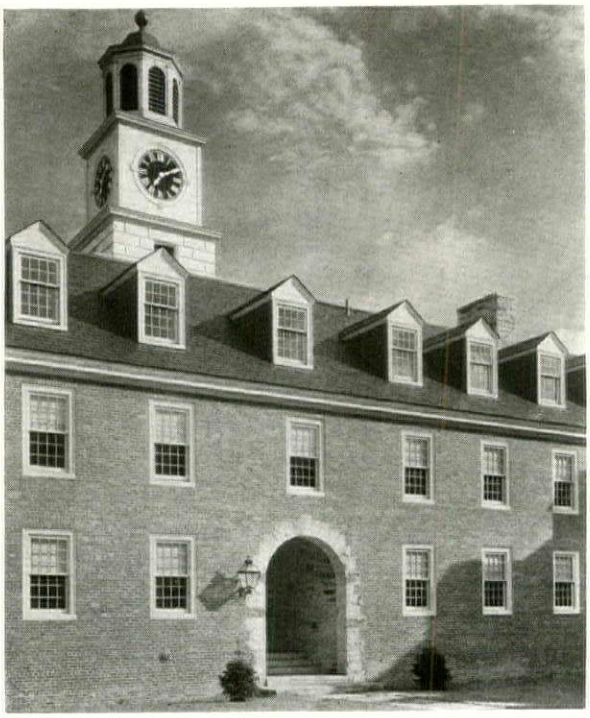


Two views in the large court which is approximately 75 x 100 ft. and is somewhat below the level of the surrounding terrain. It is large enough so that the rooms get the benefit of sun and air throughout the day

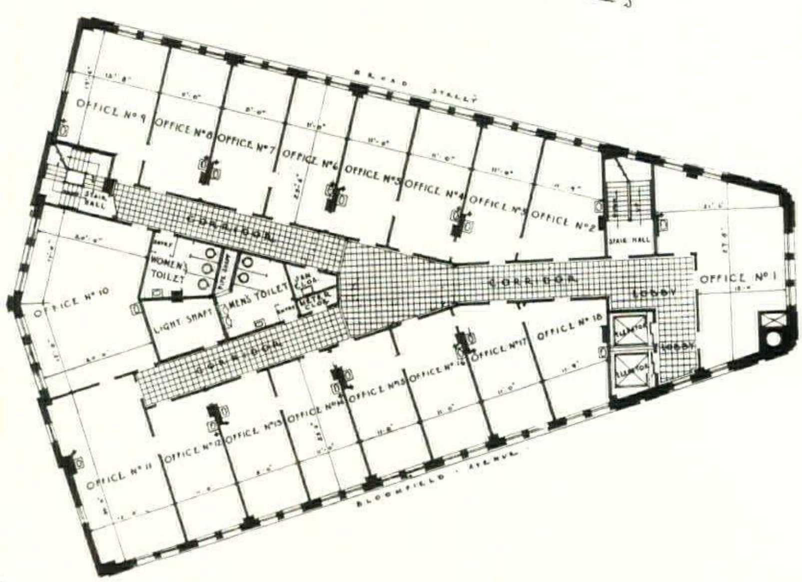
MEN'S DORMITORY, ST. LAWRENCE UNIVERSITY, CANTON, N. Y.

ERNEST SIBLEY AND LAWRENCE C. LICHT, ARCHITECTS

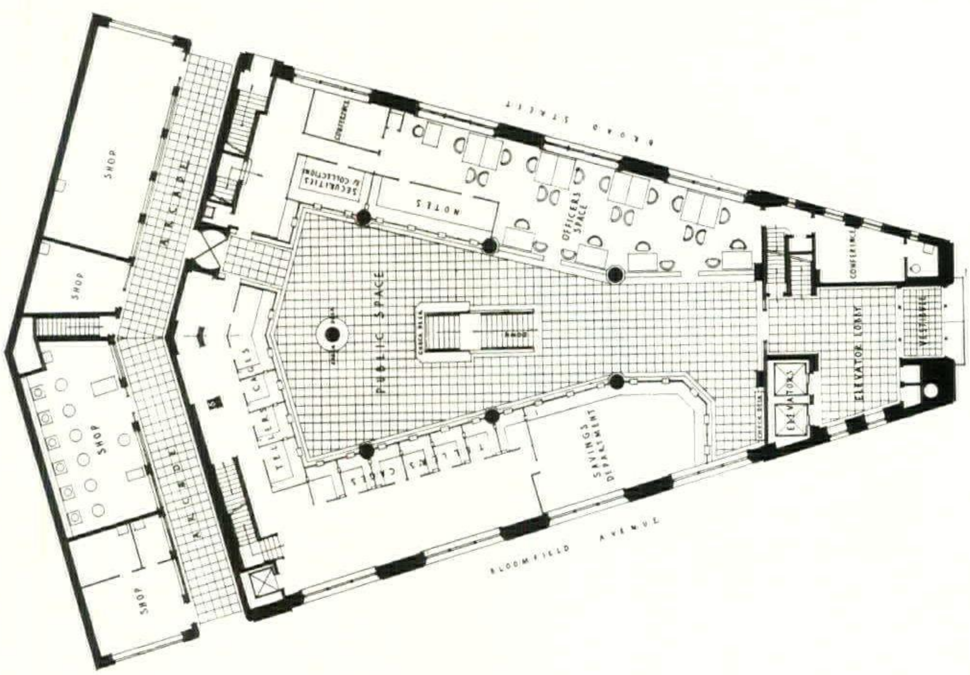
BLOOMFIELD BANK AND TRUST COMPANY

BLOOMFIELD, NEW JERSEY

UFFINGER, FOSTER & BOOKWALTER, ARCHITECTS



TYPICAL FLOOR PLAN



FIRST FLOOR PLAN

BLOOMFIELD BANK AND TRUST COMPANY, BLOOMFIELD, NEW JERSEY

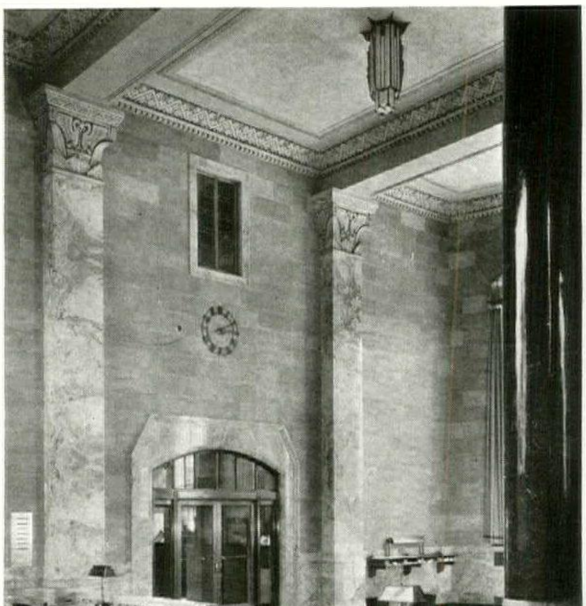
UFFINGER, FOSTER & BOOKWALTER, ARCHITECTS

Wurts

GENERAL VIEW

BLOOMFIELD BANK AND TRUST COMPANY, BLOOMFIELD, NEW JERSEY

UFFINGER, FOSTER & BOOKWALTER, ARCHITECTS



CONSTRUCTION: The building was constructed with the usual type of steel frame on pile foundations. The floors are concrete, poured over tin pan forms, with long spans between the columns. The building was completed in the latter part of 1930 at a cost of 54 cents a cubic foot, exclusive of special foundations and banking room equipment

EXTERIOR: The base is of polished granite and the walls to the third floor are variegated Indiana limestone rubbed finish. The remainder of the building is faced with a smooth buff brick; the windows are bronze

INTERIOR: The office portions have a typical plaster finish. The banking room, two views of which are shown on this page, has a Roman travertine floor and a Laredo Chiaro marble wainscot and trim. The walls are imitation travertine and the ceiling is of acoustic plaster with a decorated plaster cornice. The columns are of polished Scagliola

BLOOMFIELD BANK AND TRUST COMPANY, BLOOMFIELD, NEW JERSEY

UFFINGER, FOSTER & BOOKWALTER, ARCHITECTS

THE EDITOR'S FORUM

THE HOUSING OPPORTUNITY

INDIVIDUAL architects or groups in each community do not need to await the formation of a comprehensive plan to undertake one course of action that will be consistent with any program later developed. This course of action is directly in line with "the production of better buildings to fulfill real needs, scientifically determined." The opportunity is one of creating housing developments,—not speculative subdivisions, but large scale housing projects that may be planned either for blighted areas or for strategically located undeveloped property. This is even more pertinent now than when first brought to the attention of architects by THE ARCHITECTURAL FORUM in February. In this effort it is possible for the architects to take the initiative and to interest civic organizations, city planning commissions, chambers of commerce, builders and loaning institutions. These bodies should be vitally interested for two reasons: first, because such a housing project will be a permanent improvement, an asset to the community and an object of civic pride; second, because the work involved in the production of required buildings will give employment to many who might otherwise be idle due to the cessation of local speculative building. There are far-reaching effects of stimulation to be given to general business through an active housing program on an adequate scale.

The need for housing is found in the majority of communities, but before any project is launched, a complete survey should be made to determine the actual needs and the exact requirements, both of the size and the type of development best suited for those particular needs. In this work architects should take active part. Whether the project is planned to be philanthropic, municipal, cooperative or for investment, a thorough analysis of the economics of the situation must also be undertaken, for any project should show a return sufficient to take care of conservative interest payments and the amortization of long-term mortgages. Only by large scale operations can the lowest prices for construction be obtained even in this period of prevalent low-construction costs. The sale prices or rentals to be charged can be kept at a minimum, and will be an inducement that will encourage prompt and adequate occupancy.

While the interests of the architect, by natural inclination, may be in the planning of the actual buildings and in their design and detail, it is essential that such projects have the benefit of architectural imagination from its very inception. The function of the architect should be that of creator and collaborator in the development of a complete workable project and not a hired producer of blue prints. The members of the profession can take their proper places in the life of the community and in the minds of the public only in proportion to their part in this work for civic welfare.

A FOUNDATION FOR THE FUTURE

UNHERALDED, unpublicised, unknown—except to a few—a meeting was held in Washington which marks the most significant step yet taken by the architectural profession in its relation to the building industry. Quietly, unostentatiously, there gathered together a group of men of serious purpose, invited by the American Institute of Architects through its Committee on Industrial Relations, with the approval of the officers of the Associated General Contractors and the Producers' Council. Fully realizing the chaotic lack of organization in the industry and aware of the seriousness of the condition, these men came to discuss the possibility of creating a medium for concerted action.

The object was not to create another organization which would undertake to solve the many problems by forming a multitude of committees to make all manner of investigations and reports. Rather the object was to form a group of representatives from all branches of the industry that will meet for mutual cooperation and coordination of effort—a group that will discuss the movements which have significance to the whole industry: movements now under way in one branch or another, of which all groups should be informed and to which they might well give their support. In this way, duplication of effort may be minimized and a concentration on worthy ends may be brought about. By this conference method, each branch of the industry can shape much of its program in conformity with that of others. Existing agencies can function better with the knowledge and support of the other organizations in the field.

The idea met with the approval of the representatives of the nineteen groups at the Octagon, September 23 and 24. They agreed that further conferences should be held regularly and that other groups in the industry should be included at subsequent meetings. Some twenty-five or thirty national organizations of the building industry can thus be brought together for the good of all. Through these conferences, the discussions, and the contacts, there will be developed a group-consciousness, an industry-consciousness which has never been possible before. The realization by each branch of industry that it is interdependent with others, that it is but one part of a great industry, will do much to eliminate working at cross-purposes, and will tend to produce closer cooperation, one with the other, each coming to realize just what its particular functions are and how each can best contribute to the general good. The potentialities of this cannot be over-estimated. The growth, development and evolution of this movement toward active cooperation in the industry is of the greatest importance. In many ways this responsibility is ours; in inaugurating such a league with our fellow-workers in building, we must be prepared to carry on. Leadership will be needed; advice will be sought; the industry will call on its professional members and we, as architects, either individually or as an organization, cannot be found wanting.

A GROUP with such potentialities will, by its very nature, constitute a force in bringing about a better organization of the industry. It seems that the objective of the group thus far might be summed up as "the building of cooperative effort." This is the first phrase in the stated objective of the "Preliminary Plan for the Building Industry" as published in THE ARCHITECTURAL FORUM, August, 1931. This in full, is, "the building of cooperative effort in the production of better buildings to fulfill real needs, scientifically determined." The profession has responded not in mere words of agreement but now by this definite action in forming the group within the industry. A natural development of the thought and work of the group would be as outlined, step by step, with all its implications. The evolution of a plan for the building industry has thus made a distinct advance.

A plan at this time cannot be a dogmatic, inflexible program. In its earlier stages this plan must be evolved by analysis of the major difficulties and the program will limit itself to the directing of thought to certain channels by such analysis. A plan at this stage is rather an indication of directions for thought and action than a formula for procedure.

IN evolving a plan, there are four primary considerations. These have been brought out by Charles L. Beard, historian and sociologist. They are:

1. How much planning shall there be?
2. Who shall do the planning?
3. By whose authority and under whose auspices?
4. To what ends?

These questions must be answered by those responsible for the development of the building industry. The answer to the first question may range all the way from an adherence to the policy of *laissez faire* (even in the face of the present situation) to a complete system of regulation and control. If the agreed answer to this first question is that there must be some measure of planning, the answer to the second question is either that the planning shall be done by governmental agencies or through the cooperation of leaders of the various industries. The planning may be done voluntarily or by force. Planning by industries and groups within industries seems to indicate that results can be achieved by the former method. The third question is partially answered by the second. It is one of whether or not control of planning should come from within or from without. To the fourth consideration we have already given some attention, for as far as the building industry is concerned, we believe that the objective has been well stated and has had wide acceptance.

The great significance of the meeting last month, which resulted in the formation of the Construction League of the United States, is that an impetus has been given to the spirit of cooperative enterprise for the good of all. No panaceas have been concocted; no universal formula for the solving of the industry's problems has been attempted; no elaborate program or involved procedure has been set up; no complicated machinery has been designed—yet the most important thing for the industry has been accomplished, that is, that the representatives of many branches and interests have sat down together to discuss their mutual problems and to learn what each is doing toward the common end. The consciousness that each is but a part of a great industry and the willingness of one to cooperate with the other is the only basis on which we can build a better industry.

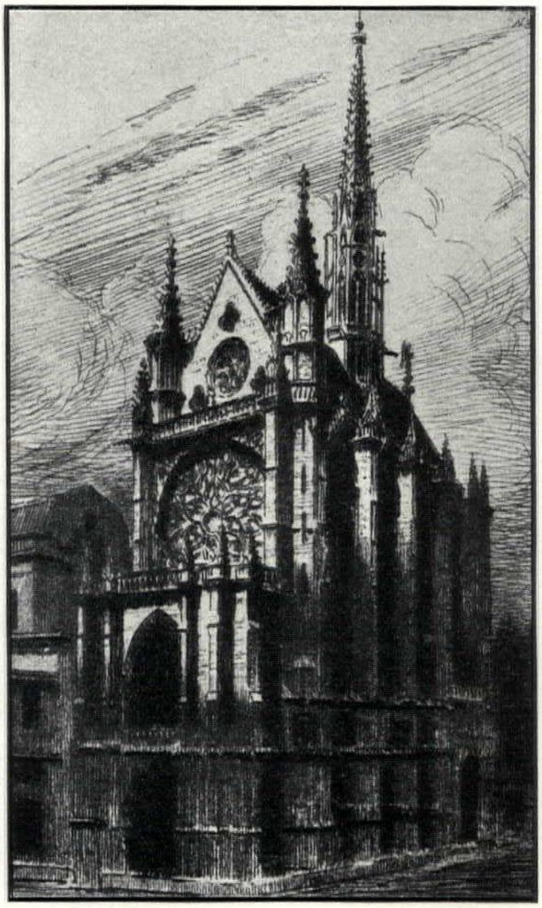
Kenneth K. Stowell

EDITOR

ROMANCE

BY

WILLIAM ORR LUDLOW



". . . the slender, ethereal beauty of a St. Chapelle . . . a vital part of our architectural inheritance"

PERHAPS we are at the beginning of a new and great era in the history of architecture. The world has seen only four or five types of architecture that really were great, although plenty that were merely new.

But in any event I believe we are starting out on the greatest adventure since the Renaissance. The omens are propitious for we have many of the qualifications needed for great things: we have broken with mere tradition, we want facts, we want truthfulness, we want to be practical, we are searching, we are inventive.

And we have had put into our hands new things to build with, structural steel, non-corrosive sheet metal, asbestos products, and a dozen other things. More important, indeed, are reinforced concrete, the elevator, and the steel skeleton; these are revolutionizing building and will revolutionize architecture; these will make the age-old necessity of horizontal building a thing of the past and give us verticality—a new and unlimited dimension.

Yet best of all we have the spirit of adventure which dares to go new places and do new things. Granted then that we have everything else to make this one of the world's great periods of progress in architecture, have we the artistic soul to round out the requirements, or as a nation are we like Germany of which someone says "Germany in pursuance of the robot ideal is fast becoming a nation of brains without temperament."

And yet something more than tools and temperament are needed for great architecture, indeed something more than a sense of beauty; the creators of an art that shall be lasting must have a sense of something of which beauty is only the flower, that something that stirs not only the emotions but the very soul—something that we may perhaps call romance.

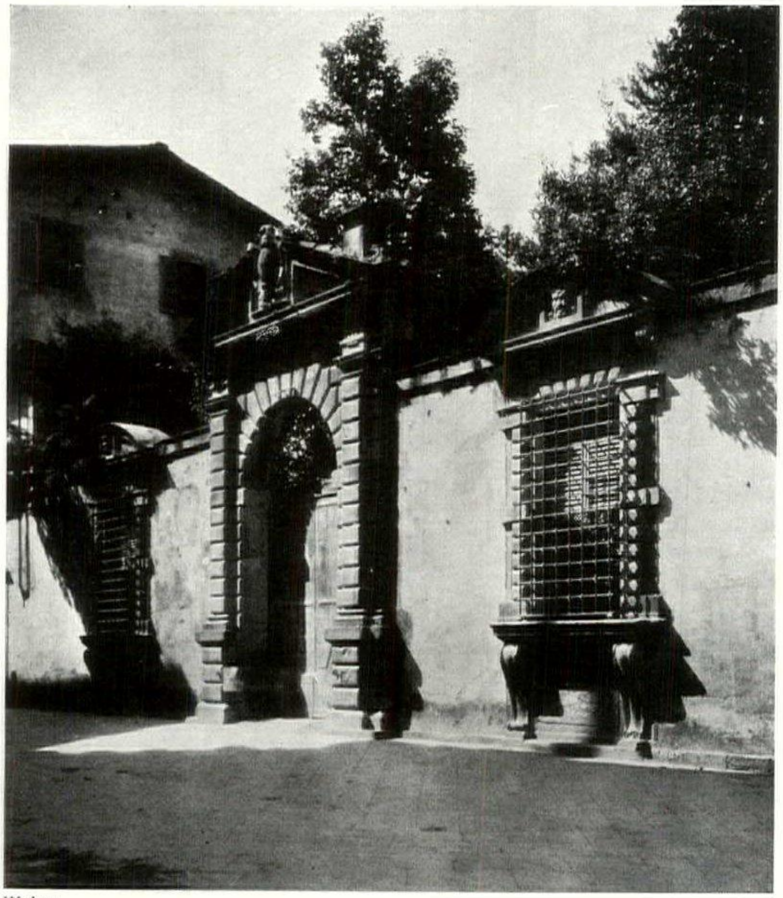
And what do we mean by romance? Someone says that "It is a desire to escape, to get into the land where I am not. Escape, to get out of the dreary, or at least commonplace here and now, to transcend the baseness and cruelty inherent in what we know as facts, to have play for the untamed center of the being that can never be reconciled to its bondage."

Or perhaps we may say that romance in architecture is poetry, telling a story in symbols, in pictures, in suggestion; it may be a story of old times and customs, told by clothing modern frames in ancient habiliments; it may be a story of the marvelous way that structural materials are woven together to serve our modern way of living.

But if the imagination is not excited to see something more than the actual in our buildings, if it is not stirred to tell a tale of something beautiful, something fanciful, something thrilling, there is no romance.

Of course, if architecture is simply a matter of the most practical way to house our wants, we have no business to look to architecture for beauty and romance, and it looks very much as if a machine age were impelling us that way.

But man is not long satisfied with facts and logic; from earliest ages he grew up with forests and rivers and sunsets; his body and mind were formed by these things; and Nature, while predi-



Weber

". . . something more than tools and temperament are needed for great architecture; the creation of an art that is to be lasting must have a sense of something that we may perhaps call romance"

cating everything on facts makes everything so everlastingly beautiful that she needs no styles and periods; she is always "in style." And Nature has put into the soul of man more than the craving for beauty; she has added imagination, and thereby made him incurably romantic. And so quite naturally any form of art or architecture that is without romance does not satisfy man's cravings and cannot be great or enduring.

And where then shall we begin to add romance to our modern architecture? By throwing into the discard everything traditional as some would have us?

When we remember charming bits of architecture of the old world, the mystery of color and form within a Chartres Cathedral, the slender ethereal beauty of a St. Chapelle, the eternally sturdy grace of the columns of the Parthenon, can we imagine for a moment that no matter what architects do, that plain folks are going to throw these things into the discard, or that these things shall ever cease to be a vital part of our architectural inheritance, helping to form our ideas of beauty and appropriateness? And why, is it because Chartres, St. Chapelle, and the Parthenon represent a perfectly logical use of materials, or an ideal, practical solution of a housing problem? I believe that they will always live because theirs is an enduring romance not only of historic association but Nature's kind—an expression of use and trust in beautiful form and color.

Well, suppose we start by first putting away that absurd modernistic phrase "whatever is useful is beautiful." Let us also bury as quickly as possible meaningless lightning strokes and uncomfortable geometric patterns; let us discourage the factory-izing of the school building, the mere mechanizing of the home; let us insist in producing our art in a natural way—everything useful and everything beautiful. And although the Parthenon and Chartres will always be an inspiration, let us no longer be copyists, but so modify the old or invent the new that we may tell a modern story in modern language.

But most of all, let us encourage romance where it begins, in the nursery with stories, with Alice in Wonderland, Jungle Tales, and later in the schools with poetry and art. Let us make our art galleries and our museums tell more simple and wonderful stories. When we lay the perfect concrete road, let us beautify with trees and flowers the roadside. And when we build our homes may they not look like factories, for home is where love begins, and love is expressed by all the little adornments not necessary to bare existence.

STABILIZING CONSTRUCTION

THROUGH PLANNED CIVIC IMPROVEMENT

BY

DAVID CUSHMAN COYLE

CONSULTING ENGINEER

THE world at the moment is full of panaceas. The idea here expressed is not one of them. What is claimed for it is that it will contribute not only toward an equalization of the peaks and valleys that distort the business cycle, but to the advancement of the standard of living.

It is generally admitted that building, among all of our activities, is one of the most important economically in that it employs more labor and requires more manufactured products than most others. When the country is busy building it is prosperous. There are, however, two distinct kinds of buildings; one of these increases the capacity of our industrial plant; the other raises the standard of living. The first consists of factories, office buildings, markets, stores, shops, speculative housing—buildings in general that are put up to bring a return to the individual. The second classification consists of buildings which are constructed, not for individual profit, but for the profit of all of us—educational buildings, hospitals, recreational buildings, museums, libraries, parks, playgrounds, roads, and the home that a man builds for himself, or housing of the nonspeculative type.

At present we are in the valley of a business cycle; we can make more goods than we can buy. Any building, therefore, that tends to increase our capacity for making more goods will only make matters worse. The rapid growth of new factories is not a sign of good times; it is a sign of coming trouble. Building of the second category will not increase our capacity to manufacture more goods, but will tend to elevate the whole standard of living—in other words, produce dividends for all of us rather than for the individual. President Hoover's use of extended public building programs in these times is a move in the right direction, but it does not go far enough. If we could at the moment start building enough of these "general improvements" we should all be busy, since extended building activity induces similar activity in the whole of our national life.

This type of work has no essentially fluctuating character. While it is in process it helps prosperity like any other construction work; after it is finished it does not reduce the profits of business or act to bring on a depression. Superfluous commercial buildings intensify competition, increase the overhead of all their competitors and destroy profits all round. No such ill effects follow the completion of non-commercial projects. The types of buildings which are not expected to make profits are seldom overbuilt and therefore it will be worth while to seek a method of undertaking a larger proportion of public and semi-public work. The larger the proportion of such unspeculative building the greater will be the stability of the construction industry.

A governing board for the industry could do a good deal to prevent local overbuilding by making studies of local needs and, by its recommendations, steering investment money away from the more hopeless risks. The pressure of surplus money, hungry for profits, is so tremendous in boom times that overbuilding, suppressed in one place, is bound to occur in another. It is not merely a question of directing the flow of investment funds to the most profitable projects. If we are really going to decrease the total amount of overbuilding, it is a question of actually controlling a considerable amount of the money seeking investment, and turning it into non-dividend-paying projects instead. That seems difficult to accomplish and yet it is already being done on a small scale. If it can be done on a larger scale, it will reduce the amount of unrentable area and idle machinery that accumulate toward the end of a boom. By the same token the crash will be longer in coming and not so violent when it comes—an objective well worth striving for.

The present situation is, as we know, a period when our manufacturing plant has grown too big for its function; growth due to seeking profits without thought of real needs or demands. On the other hand, we do really need a greatly increased plant for bettering living conditions, lifting with its growth the standards of our civilization. We can agree now that we should have anticipated a time like this and should have turned from the construction of more plants, to occupy ourselves with the construction of "general improvements!" The real foundation of business is the standard of living, the desire of the people for amenities beyond the bare necessities of food and shelter. Money invested in better living conditions is invested in stabilizing the whole industrial system, while money invested in excess "productive" equipment is invested in overbuilding and depression. If a project helps to produce stabilization it is a misnomer to call it non-productive. The country is developed now to the point where we no longer suffer from a shortage of goods for sale, but from a shortage of buying power. Depressions are not brought on by spending too much money on libraries, playing fields or parkways, but from putting too much money into speculation and floating too many new enterprises destined to bankruptcy. We cannot cling any longer to the quaint old idea that nothing is profitable unless it shows a book profit.

BUT how to increase the amount of non-cash-producing building? Probably the greatest obstacle is the difficulty of financing. For most of us, surplus capital must be directed by some means stronger than personal inclination, else we shall continue to put it all back at the job of making more capital, each for himself. The majority of people with large capital do not usually invest in avowedly non-dividend-paying enterprises. The less well-to-do should not be asked to do so because they need some return on investments for personal security. If more taxes are imposed on sales, on business profits, or on real estate improvements, they are necessarily passed on to the consumer and reduce his buying power. The problem is how to obtain money which is not buying power but which would normally be used in overbuilding some type of "investment" or profit-producing property, and to use it in building needed structures of other types.

We have already established a method which is economically sound and which does not involve any interference with the management of business or with freedom of initiative. Our personal income tax, with its high exemptions, draws almost entirely from investment money; it has practically no effect on buying power. The stabilization of building, and with it, of business in general, calls for a means of drawing large sums out of investment money and turning them into non-dividend-producing construction, which will produce buying power. This can be done by imposing a heavy income tax on the "higher brackets," with complete exemption for all contributions such as those for which Mr. Harkness is famous. Such money is not buying power; in no case would it be spent for shoes and toothbrushes. It might be used, in the next boom, for the overbuilding of some inflated industry, but by this form of taxation it could be turned into public or semi-public channels where its effect will be to increase the stabilizing factor of construction. In so far as we can increase the proportion of non-commercial work we shall stabilize our own industry and be largely instrumental in stabilizing the whole body of American business. As a key industry, we have a heavy responsibility. Here is the spectacle of a nation able and willing to work, but with a factory and commercial equipment grown too big for it. Is it not obvious, therefore, that we should turn from building more factory and "productive" plants and build instead some of the many other things that will benefit all of us, and not merely the individual?

Construction has been the vehicle of unhealthy distribution, and suffers from the cyclical paralysis in an exaggerated form. More than any other industry, we need to work for a smoother market, and the way out of our troubles is through the reduction of overbuilding. Overbuilding is caused by too much capital looking for commercial investment. The solution is to use the excess capital, for which there is no legitimate commercial opening, in building up the market on which business depends.

Industrial planning will be a valuable means of preventing waste and maladjustment, but any such planning, to be successful, must eliminate the notion that the field for investments for profit is unlimited, and recognize the fact that we grow only so much each year. Any investment money beyond that is unassimilated and needs to be properly directed before it gets to be poisonous. The safe and straightforward method of directing it is through the use of the income and inheritance taxes. This method is drastic and unpleasant, but the alternative is worse, because whatever we fail to direct that way will eventually come out through the bankruptcy courts. During the past year a dozen States have increased their income taxes, and the movement will no doubt gather way. If it goes far enough it will throw enough money on the stabilizing side of the market to cause a real extension of the next period of prosperity. That possibility is of critical importance to the building industry.

THE EARL CARROLL THEATER

GEORGE KEISTER, ARCHITECT

JOSEPH J. BABOLNAY, DESIGNER

OF more than customary influence in the design of the Earl Carroll Theater were the elements of publicity value, and maximum impressiveness for a minimum amount of money. Although these factors are important in almost every theater project, they were accorded even greater importance in this instance by an owner whose ability to catch the public eye is widely celebrated. In satisfying the demands of the owner, it was necessary to design in superlatives, so that there would be a sufficient number of "biggest" or "newest" items in the theater around which to build publicity.

Behind the plan was the intention of the owner to have a theater of sufficient seating capacity to permit comparatively low ticket prices, and so to compete with moving picture theaters. With 1,500 seats on the orchestra floor, 1,300 in the loges and balcony, and approximately 200 chairs in the boxes, the 3,000 seating capacity not only permits a $3 top price for seats, but it gives the owner the right to claim possession of "the world's largest legitimate theater."

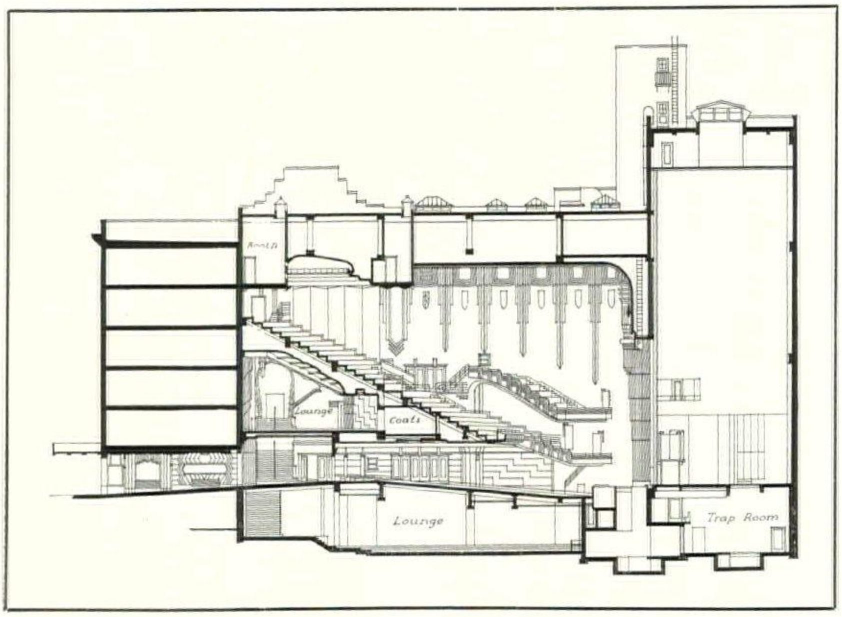
The building is L-shaped, with its main entrance on Seventh Avenue, and the stage entrance on 50th Street. Expenditure of money was concentrated on the interior, leaving the exterior very simple. The exterior walls are of brick in two colors, ivory buff and black, which form a pattern that is decorative, but which has no structural significance. Over the main entrance, and over the side-street exit are two galvanized iron marquees, painted in black and white, with neon tube lettering. Near the top of the 50th Street wall is another neon tube sign which stands out from the building in bold relief.

Lobbies. The ticket lobby is unique in that the usual cage from which tickets are generally sold has been replaced by a long counter, waist-high. The walls and ceiling of the lobby, and the counter itself are of highly polished black vitrolite, streaked with brown. The floor is of terrazzo with a marble border, and all trim is of chrome-nickel steel. Typical of all lighting throughout the theater, illumination of the lobby is supplied from a concealed source. Against a white vitrolite dome, the lights are thrown from a cove that encircles it.

Space that is usually devoted to standing room behind the orchestra has been converted into the main lobby 100 ft. long and 40 ft. wide. The etched chrome-nickel steel doors, which give off

Courtesy, General Electric Co.

A general view of the auditorium looking toward the stage from the balcony. An effort has been made to concentrate the attention upon the stage by means of light, decorative lines and contrasting color



A longitudinal section through the theater, showing the relation of the auditorium to the basement spaces and to the service areas of the stage. Below the orchestra floor will be a cafe, working studios, dressing rooms and club rooms for the members of the theater personnel. Mechanical equipment of the theater has been designed to be adaptable to the production of many unusual scenic effects and includes several movable platforms below the stage proper. The lighting control is from a console located in a pit just behind the orchestra leader

it, lead directly into the aisles of the orchestra, thus increasing the seating capacity of the orchestra. A polished black cement, known as "burkstone," has been used for the walls, with its joints covered by strips of chrome-nickel steel. The floor is of terrazzo, and has a marble border. The ceiling is plaster, painted black and gray, with an aluminum-leafed decorative cornice.

Auditorium. There are many innovations in the auditorium proper, not the least interesting of which is the use of black velvet, relieved by vertical bands of aluminum, to cover the hard plaster walls. The metal bands frame lighting coves that run part way across the ceiling. At right angles to these coves, seven light troughs run from the proscenium arch across the ceiling as far back as the arc room, which is suspended from the ceiling above the balcony cross-over. The walls behind the cross-over are painted in black, gray and white horizontal bands. The ceiling itself is of hard plaster, the light coves being painted aluminum-silver in color, separated by bands of black. The soffit is painted black with aluminum-painted recessed light channels curving gracefully across it.

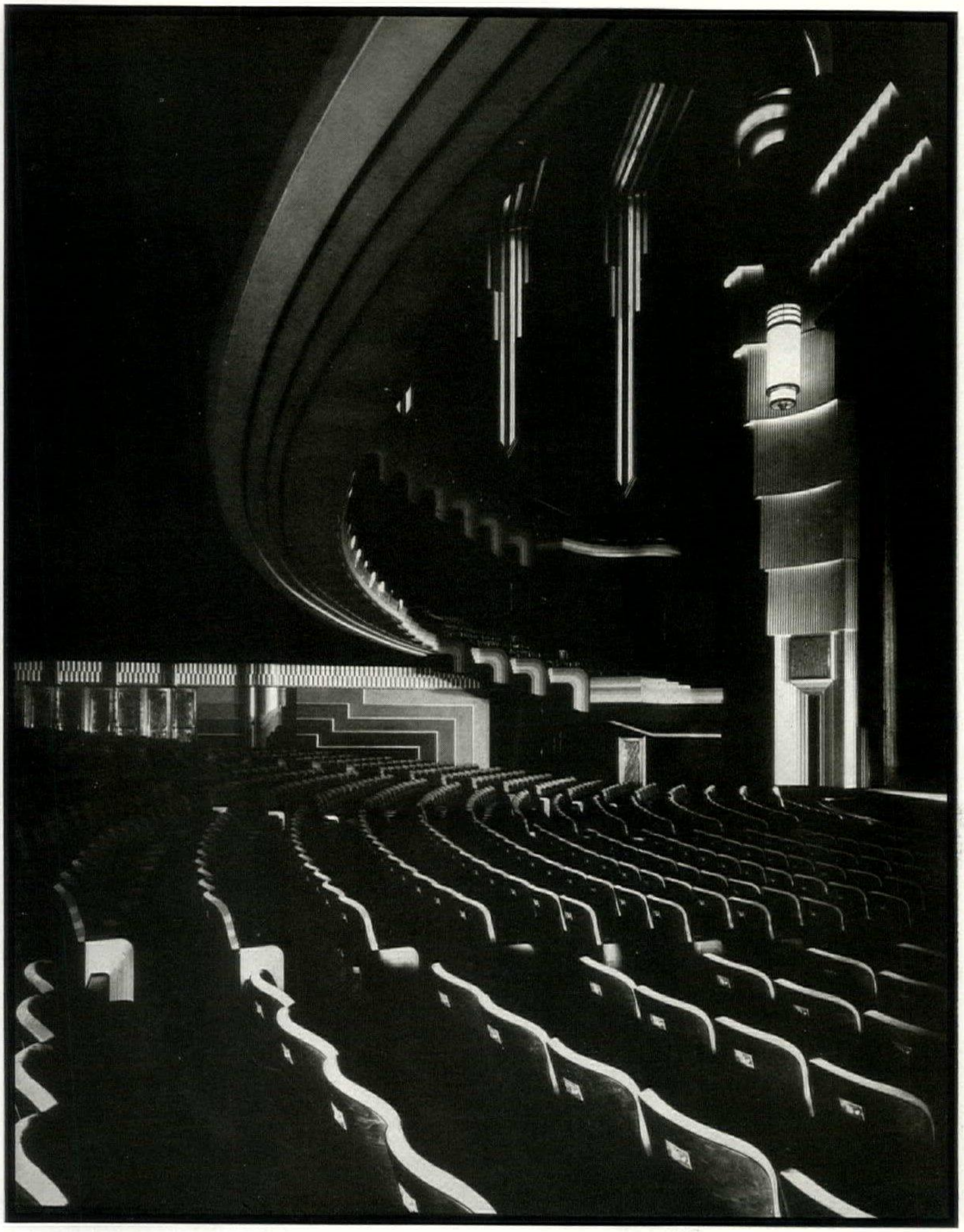
The legs of the proscenium are of molded plaster, and consist of a series of overhanging sections with concealed lights at each division. They are aluminum painted, as is the molded plaster proscenium arch itself. On either side of the arch is suspended a huge fixture that is designed to repeat the motif of the fluted proscenium legs. Additional lighting is supp'ied by a series of light panels that are recessed in the balcony front, which is painted black and gray.

Green predominates in the color scheme of the carpet. The chairs are upholstered in varying coral shades; but more interesting than the color is the fact that the back of each chair is equipped with a convenient small program light.

Undoubtedly, the most significant feature of the theater from the architectural standpoint is the use of light as the chief decorative element. The lights are controlled from a huge "console" located in a pit just behind the orchestra director in full view of the audience. One of the advantages of this system is that the lighting director sees instantly the result of his work, and is thus able to avoid delays and errors. White, blue, red, and green lights, or any combination of these, will be used not only to illuminate the stage, but to illuminate the theater itself.

Mezzanine Lounge. Just below the balcony cross-over is located the mezzanine lounge, 100 ft. long, and 60 ft. wide, with a ceiling that follows the slope of the balcony, 9 ft. 6 in. high at one point, and 20 ft. at the rear. The rear wall is composed of mirrors that reach from floor to ceiling, separated by plaster columns. The walls and ceiling are painted olive green, to supplement the deeper green tone of the carpet. On the stair landing of each of the two stairways at the sides is a decorative fountain with a Belgian black marble base and a bronze figure above. Two murals by A. Lindenfrost complete the decorative scheme.

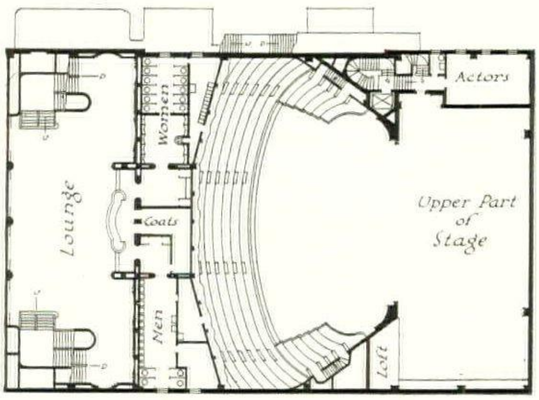
Although the work in the two floors below the orchestra has not been completed, it is intended to devote the major part of one floor to a continental cafe, and the remainder of the floor and the floor below to studios, dressing rooms, clubrooms for the musicians, stage hands, etc., and to the various mechanical departments.



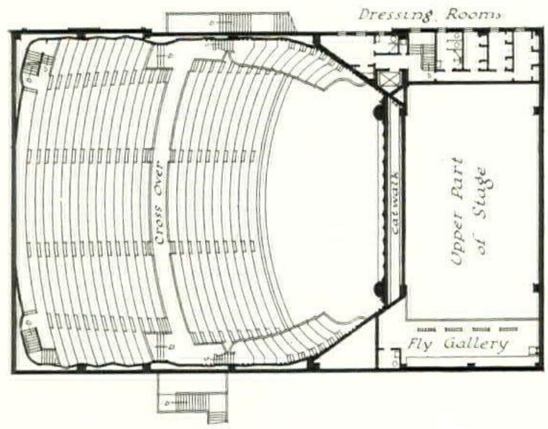
A view of the auditorium from one of the side aisles. The general color scheme in the room is black, gray and aluminum, relieved by coral upholstery on the chairs and a carpet in which green is the predominating color

EARL CARROLL THEATER, NEW YORK, N. Y.

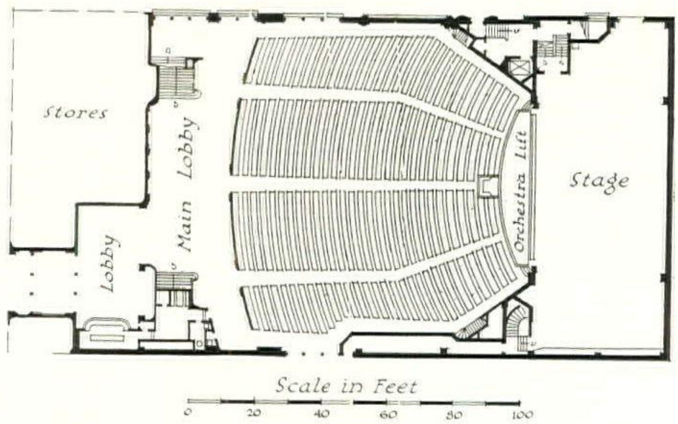
GEORGE KEISTER, ARCHITECT, JOSEPH J. BABOLNAY, DESIGNER



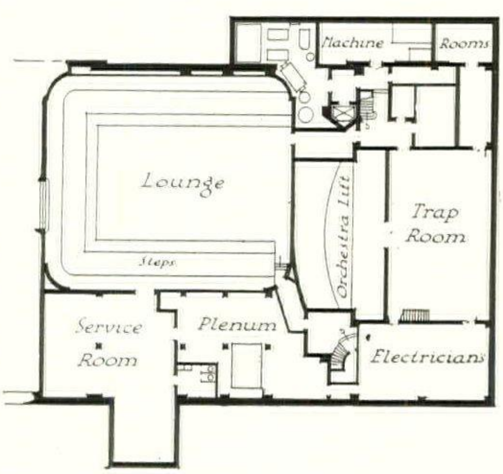
MEZZANINE FLOOR PLAN



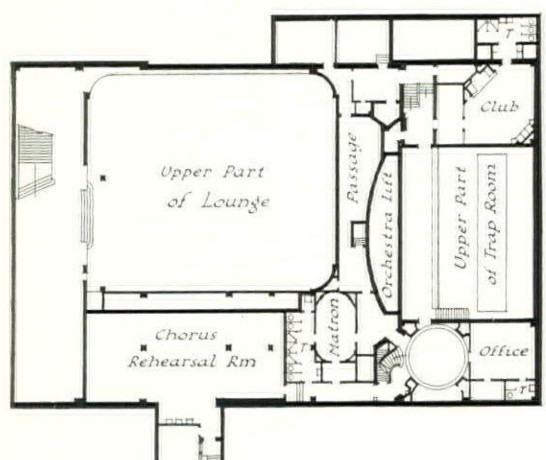
BALCONY FLOOR PLAN



ORCHESTRA FLOOR PLAN



LOWER BASEMENT PLAN



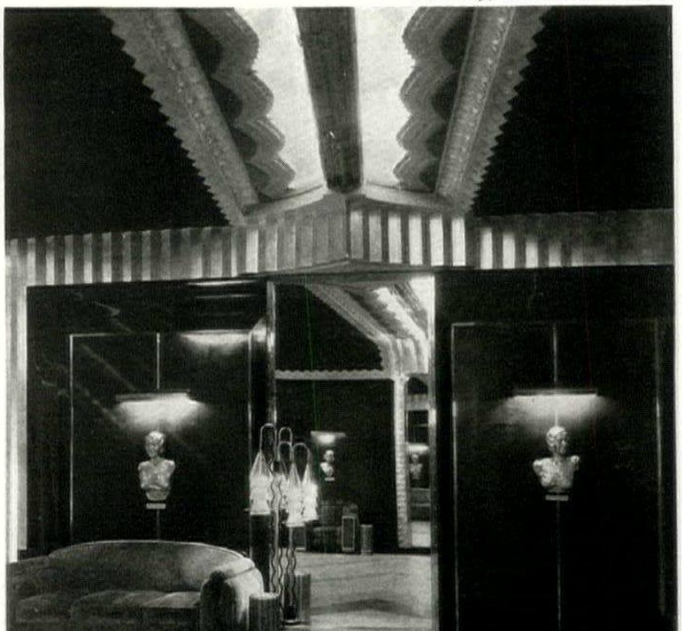
BASEMENT PLAN

EARL CARROLL THEATER, NEW YORK, N. Y.

GEORGE KEISTER, ARCHITECT, JOSEPH J. BABOLNAY, DESIGNER

Browning

Courtesy, General Electric Co.

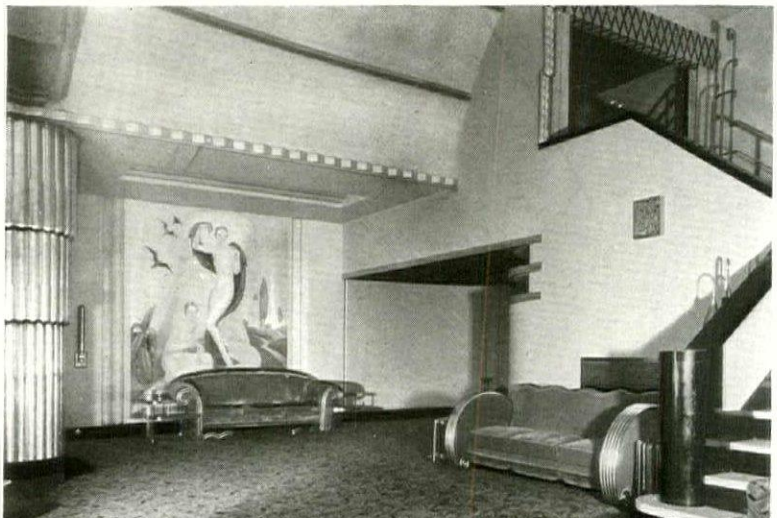


Two views of the main lobby. The floor is terrazzo with a marble border. The walls are of a polished black cement known as "burkstone." The ceiling is plaster painted black and gray with a cornice coated with aluminum leaf. Trim is of chrome-nickel steel. The stairway in the picture above leads to the mezzanine lounge. The picture below shows a detail of the coves which conceal the lights. The ornament is covered with aluminum to blend with the cornice

EARL CARROLL THEATER, NEW YORK, N. Y.

GEORGE KEISTER, ARCHITECT, JOSEPH J. BABOLNAY, DESIGNER

Browning



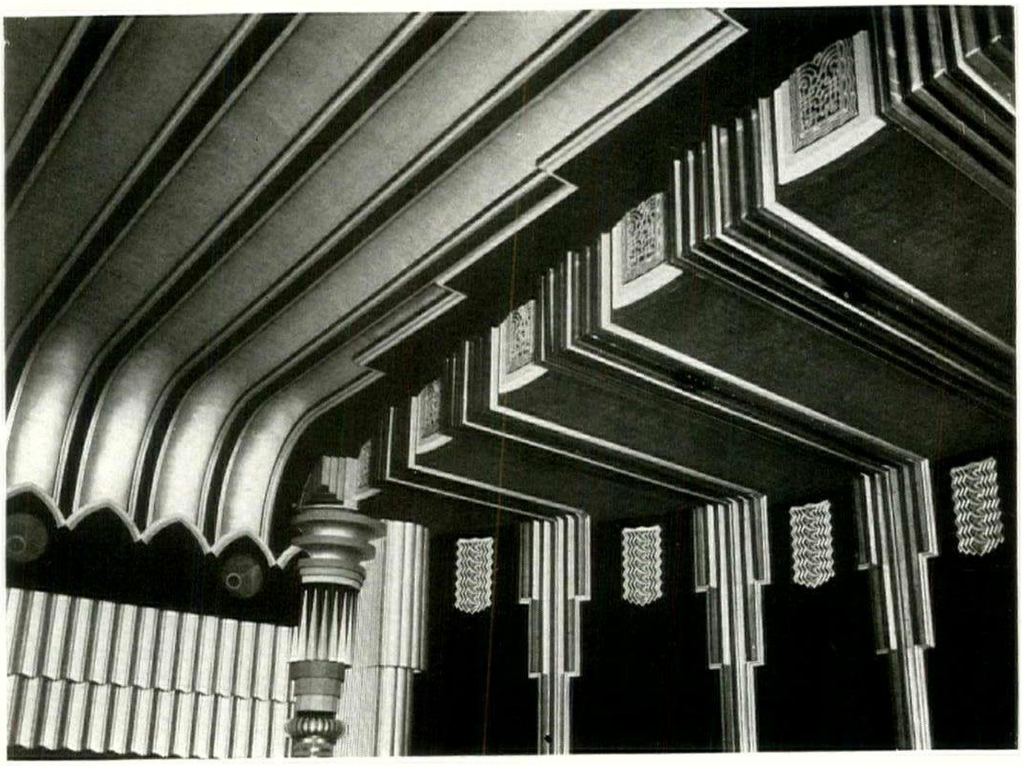
These two pictures and that on the opposite page are of the mezzanine lounge. The rear wall is composed of mirrors which reach from the floor to the ceiling and are separated by plaster columns covered with aluminum. The walls and ceilings are painted olive green to supplement the deeper green tone of the carpet. The figure in the stairway niche is of polished bronze set on a Belgian black marble base

EARL CARROLL THEATER, NEW YORK, N. Y.

GEORGE KEISTER, ARCHITECT, JOSEPH J. BABOLNAY, DESIGNER

EARL CARROLL THEATER, NEW YORK, N. Y.

GEORGE KEISTER, ARCHITECT, JOSEPH J. BABOLNAY, DESIGNER



Browning

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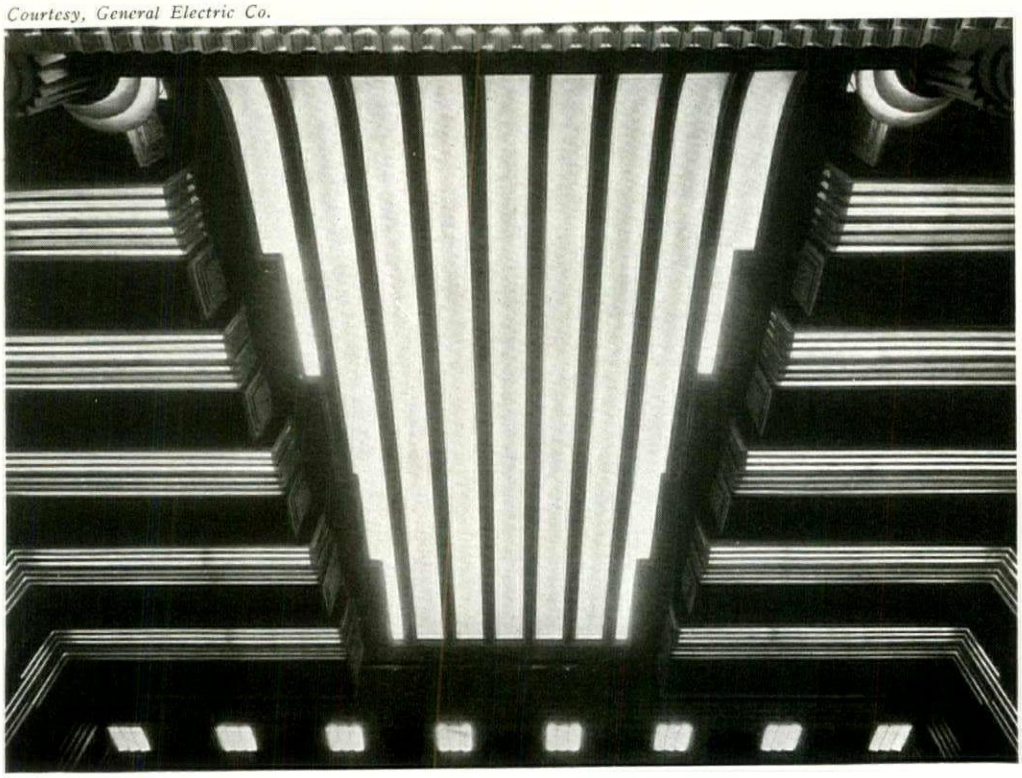
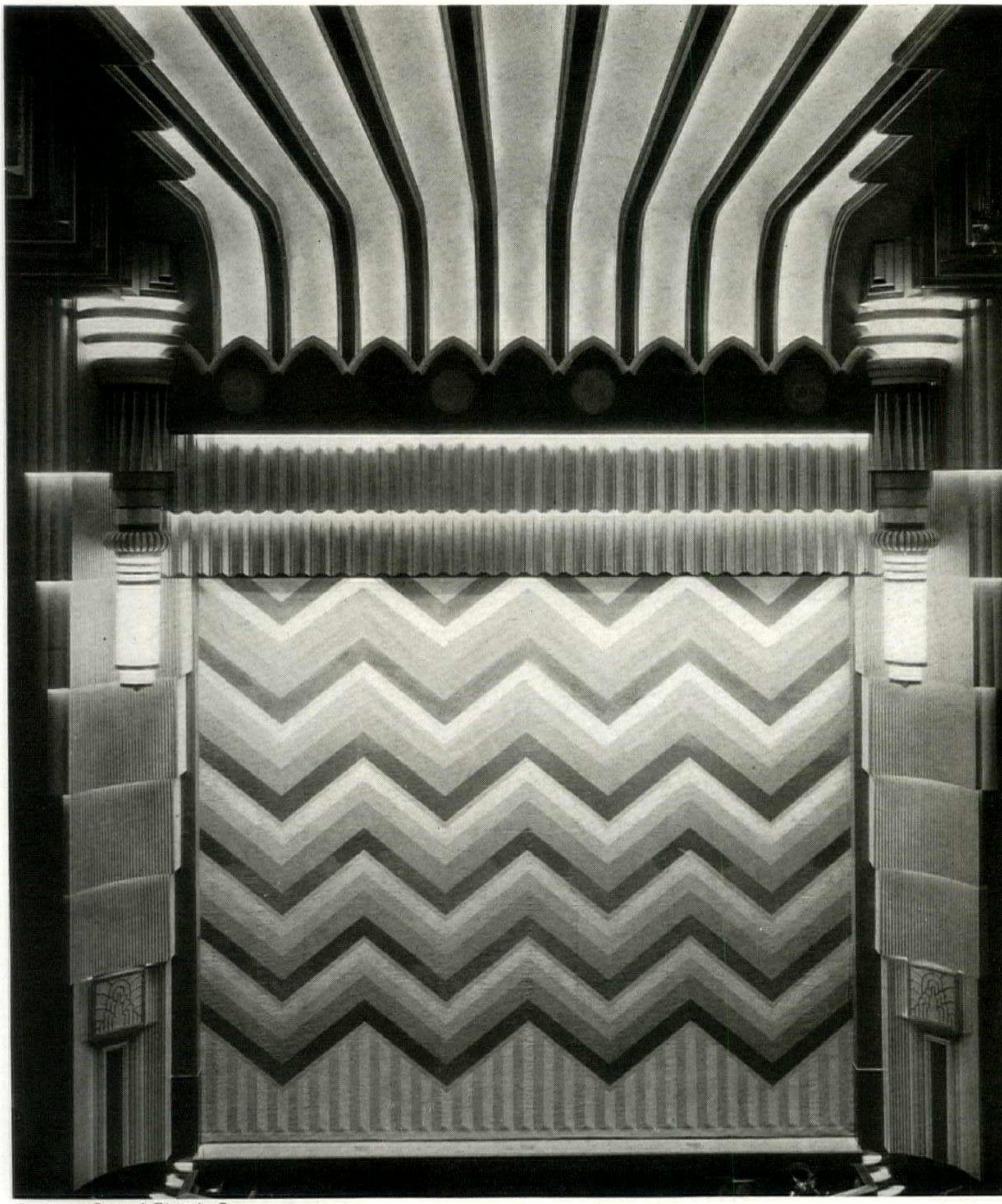


EARL CARROLL THEATER, NEW YORK, N. Y.

GEORGE KEISTER, ARCHITECT, JOSEPH J. BABOLNAY, DESIGNER

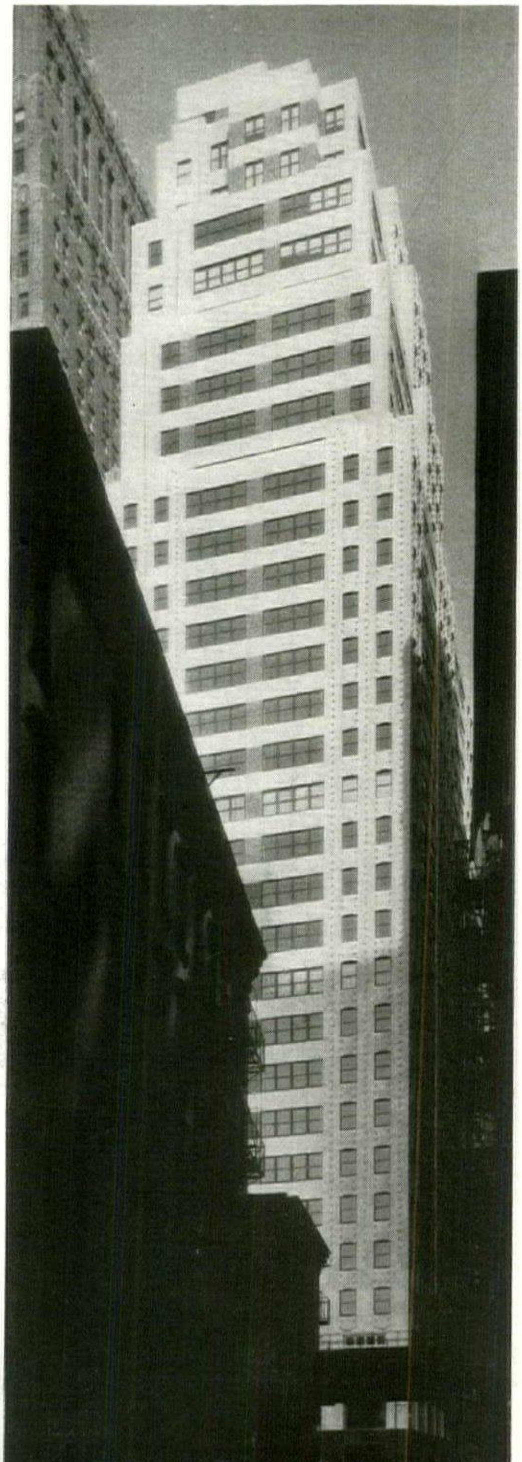


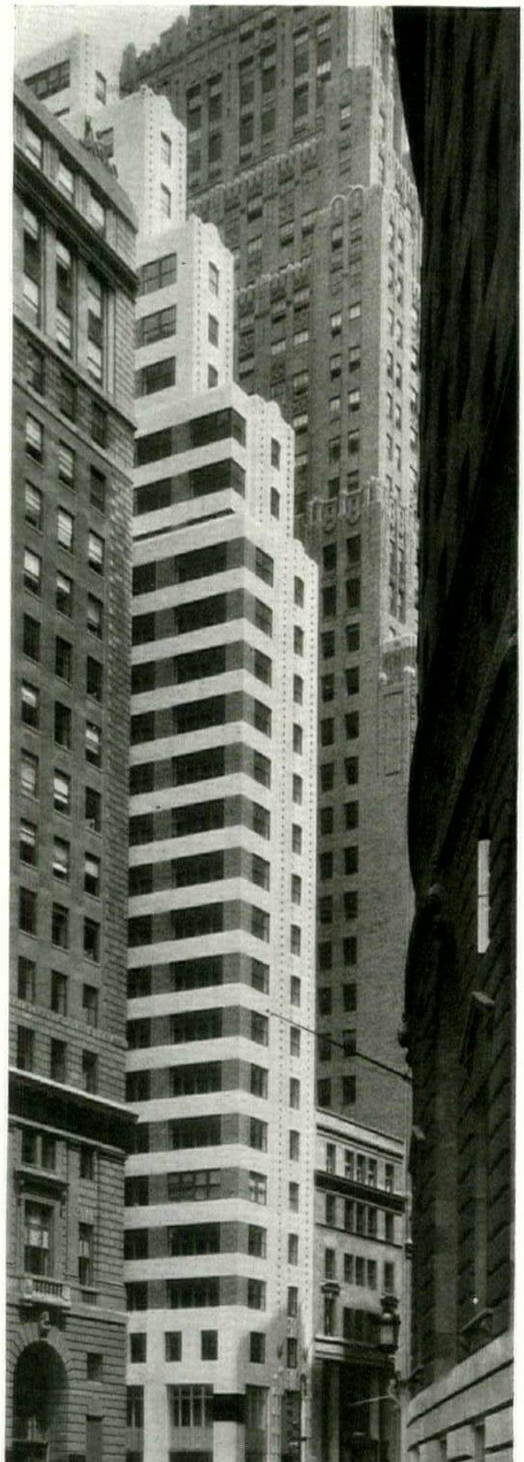
Courtesy, General Electric Co.

A view of the proscenium with the fire curtain lowered. The legs of the proscenium and the lighting fixtures above, as well as the proscenium arch, are covered with aluminum. The fire curtain itself is painted in stripes of black, white and coral. On the opposite page are two views of the ceiling and the stainless steel fixtures on the wall. On the ceiling the lights are concealed in coves and are reflected by troughs covered with aluminum. The soffit between the metal bands is painted black and the walls are entirely covered with black velvet

EARL CARROLL THEATER, NEW YORK, N. Y.

GEORGE KEISTER, ARCHITECT, JOSEPH J. BABOLNAY, DESIGNER



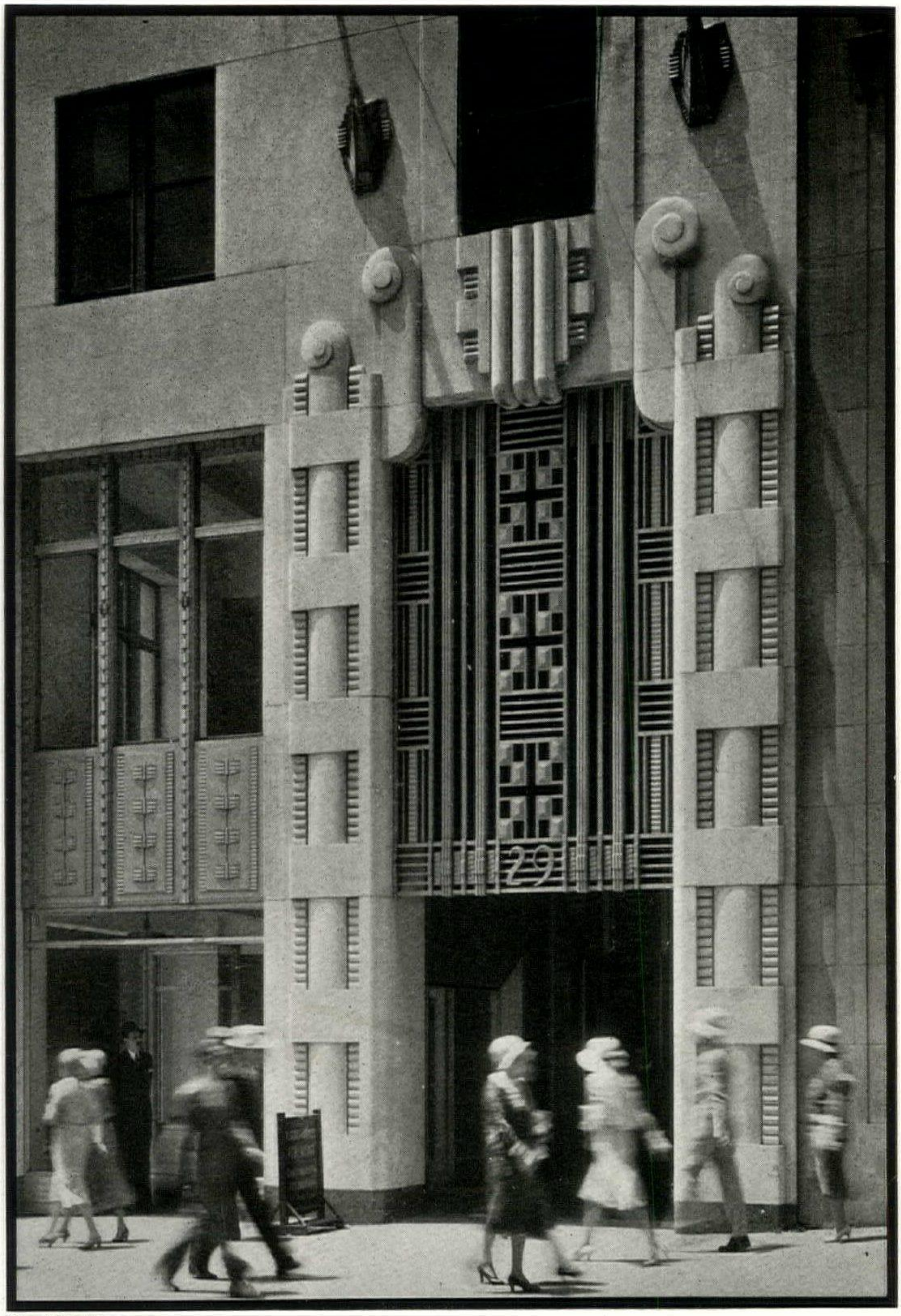


Sigurd Fischer Photos

Two general views of the building. White Dover marble is used for the base and trim to the twentieth floor. The piers and bands are of enameled brick, the metal work is of brushed aluminum

29 BROADWAY BUILDING, NEW YORK, N. Y.

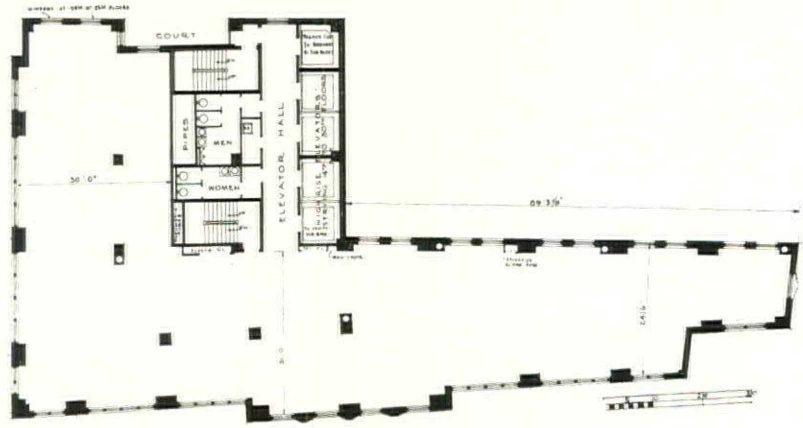
SLOAN & ROBERTSON, ARCHITECTS



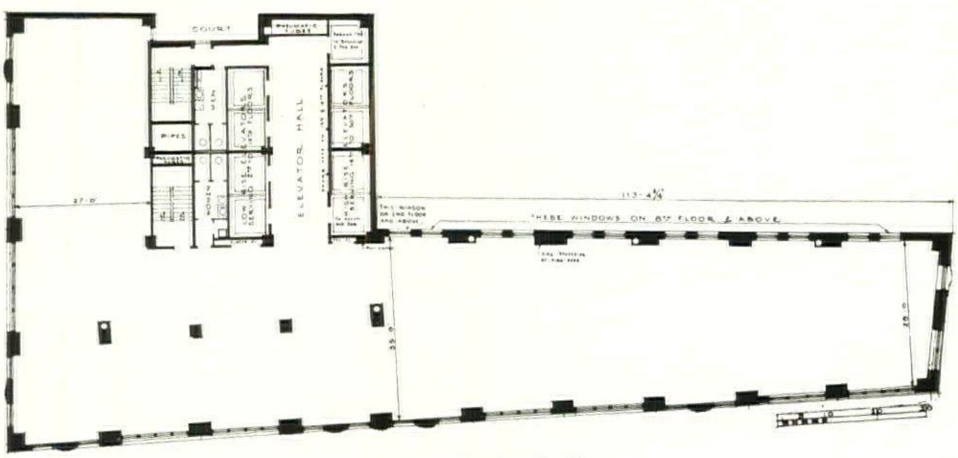
Sigurd Fischer

29 BROADWAY BUILDING, NEW YORK

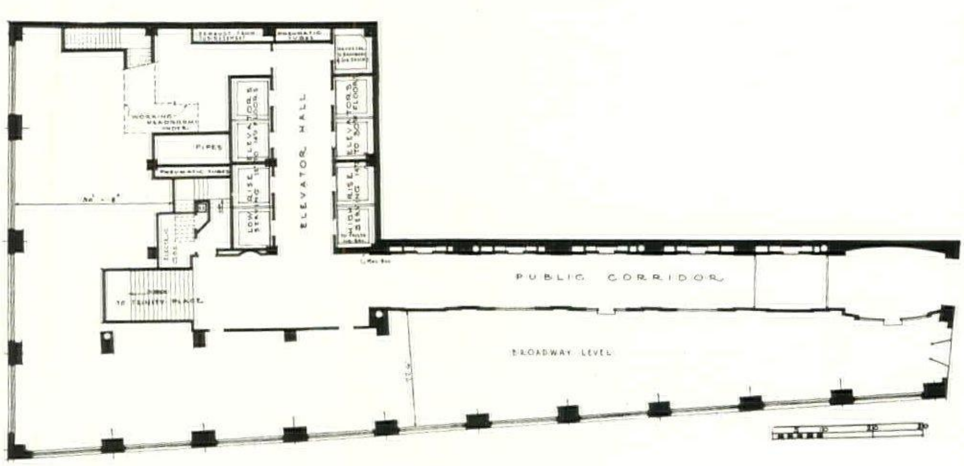
SLOAN & ROBERTSON, ARCHITECTS



TWENTY-SECOND FLOOR PLAN



FOURTH FLOOR PLAN



FIRST FLOOR PLAN

29 BROADWAY BUILDING, NEW YORK, N. Y.

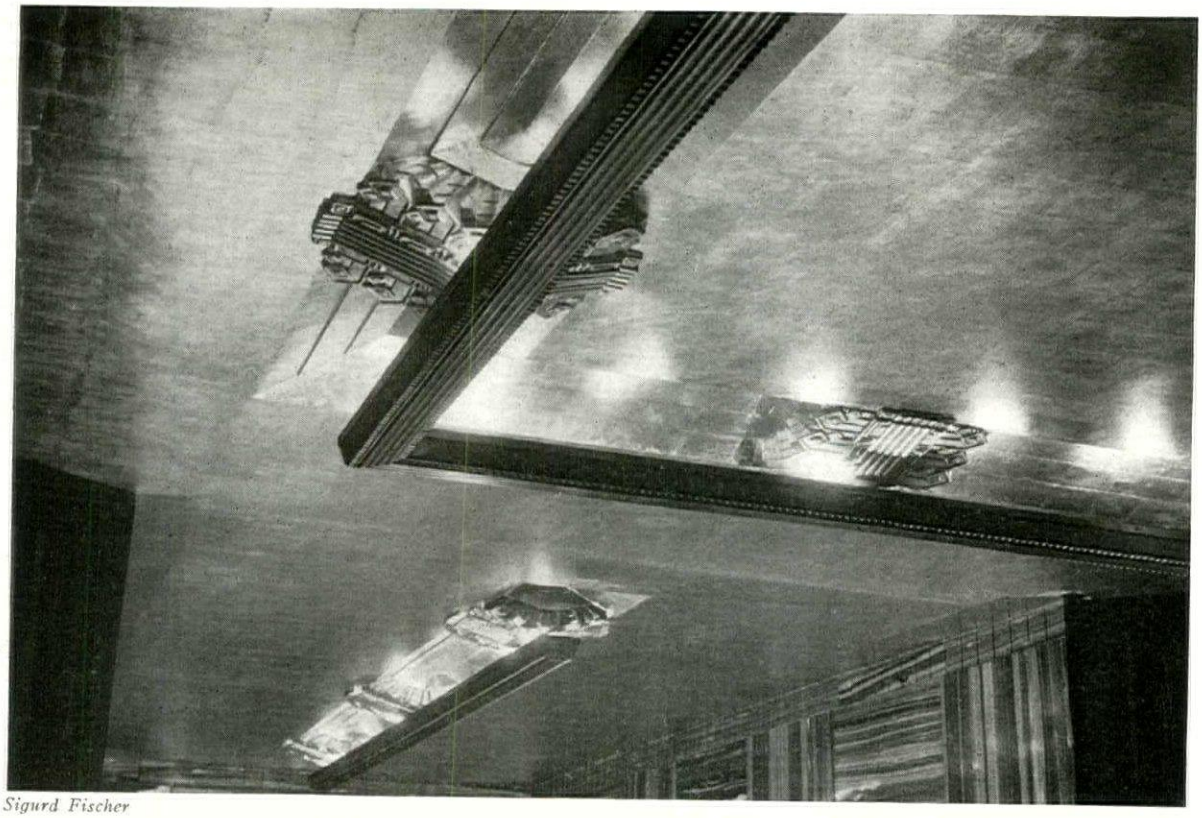
SLOAN & ROBERTSON, ARCHITECTS

Sigurd Fischer

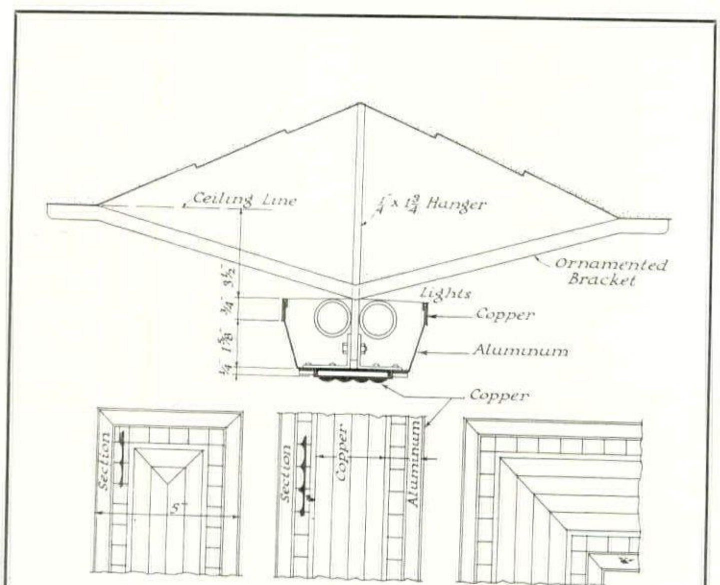
ENTRANCE LOBBY

29 BROADWAY BUILDING, NEW YORK, N. Y.

SLOAN & ROBERTSON, ARCHITECTS



Sigurd Fischer



At the left is a detail of the lighting fixture shown above. On the opposite page is a view of the elevator lobby toward the main lobby of the building. The ceiling is aluminum leaf. The walls are Greek Cipollino marble; the trim and the grilles are of brushed aluminum and the floor is of Roman and Sienna travertine

29 BROADWAY BUILDING, NEW YORK, N. Y.

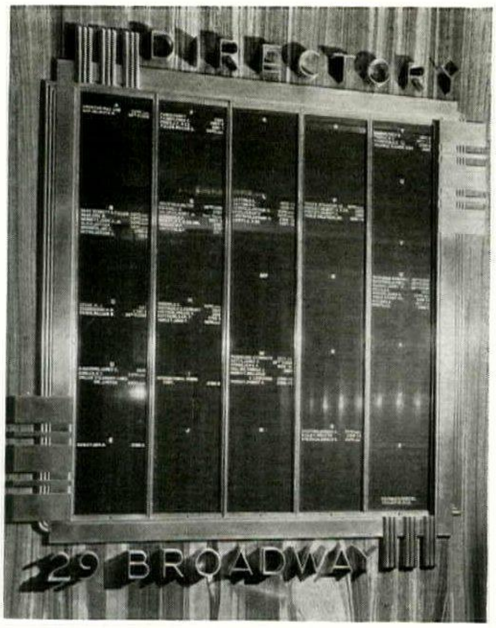
SLOAN & ROBERTSON, ARCHITECTS

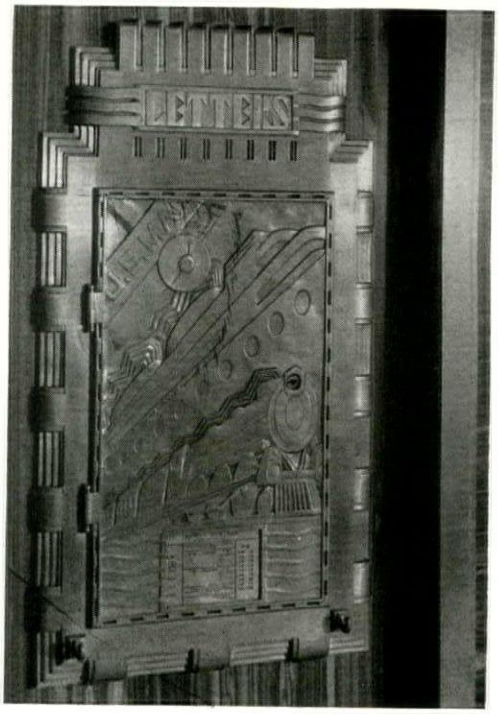
Sigurd Fischer

ELEVATOR LOBBY

29 BROADWAY BUILDING, NEW YORK, N. Y.

SLOAN & ROBERTSON, ARCHITECTS



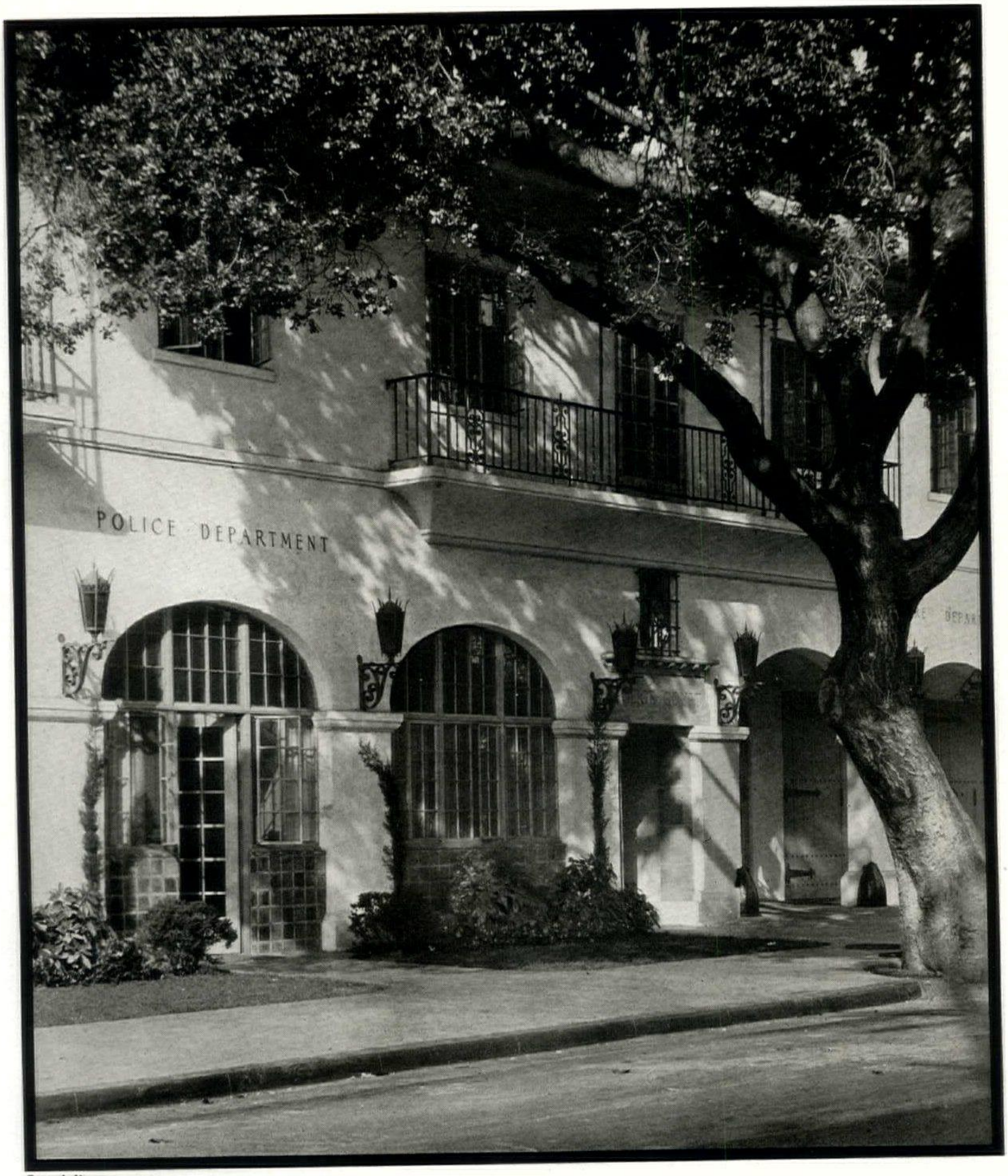


Sigurd Fischer Photos

The picture at the left is a detail of the information desk and niche in the main lobby of the building. Both desk and niche are made of fluted aluminum with stain finish. At the right above is a view of the directory board which was made of cast aluminum with a brushed satin finish. Below is a picture of the mail box front which was also made of cast aluminum with a finish similar to the directory board. Both fixtures are consistent in design with the motif established at the entrance to the building shown on page 573

29 BROADWAY BUILDING, NEW YORK, N. Y.

SLOAN & ROBERTSON, ARCHITECTS



Crandall

BUILDING FOR FIRE AND POLICE DEPARTMENTS

PALO ALTO, CALIFORNIA

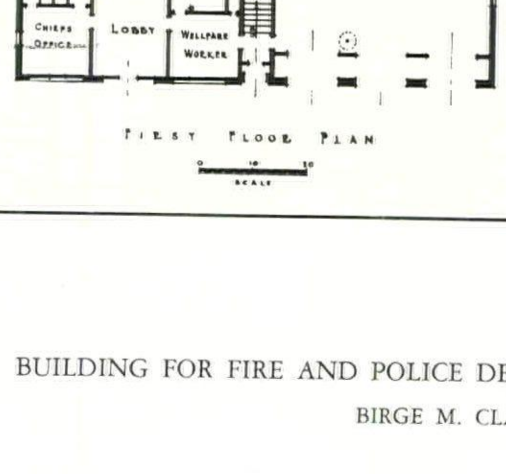
BIRGE M. CLARK, ARCHITECT

TWO SMALL FIRE STATIONS

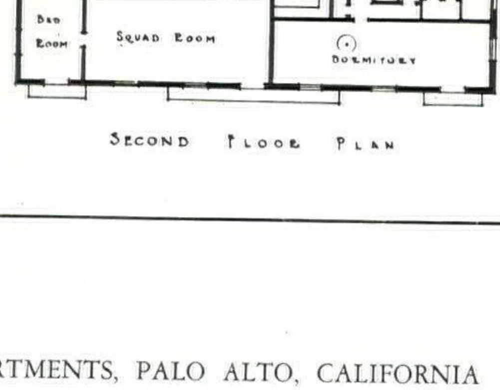
IN CALIFORNIA AND CONNECTICUT

Crandall

This building, completed about three years ago, cost approximately $53,000, including the steel cells in the Police Department. It is built with reinforced concrete external walls, columns and girders; the floor joists and interior partitions are of wood with the exception of the jail portion which is entirely enclosed with reinforced concrete. The exterior is finished with stucco, with a moderately rough texture. The roof is of red tile; the balcony railings and all hardware are of wrought iron



FIRST FLOOR PLAN



SECOND FLOOR PLAN

BUILDING FOR FIRE AND POLICE DEPARTMENTS, PALO ALTO, CALIFORNIA

BIRGE M. CLARK, ARCHITECT

Corbet

GENERAL VIEW

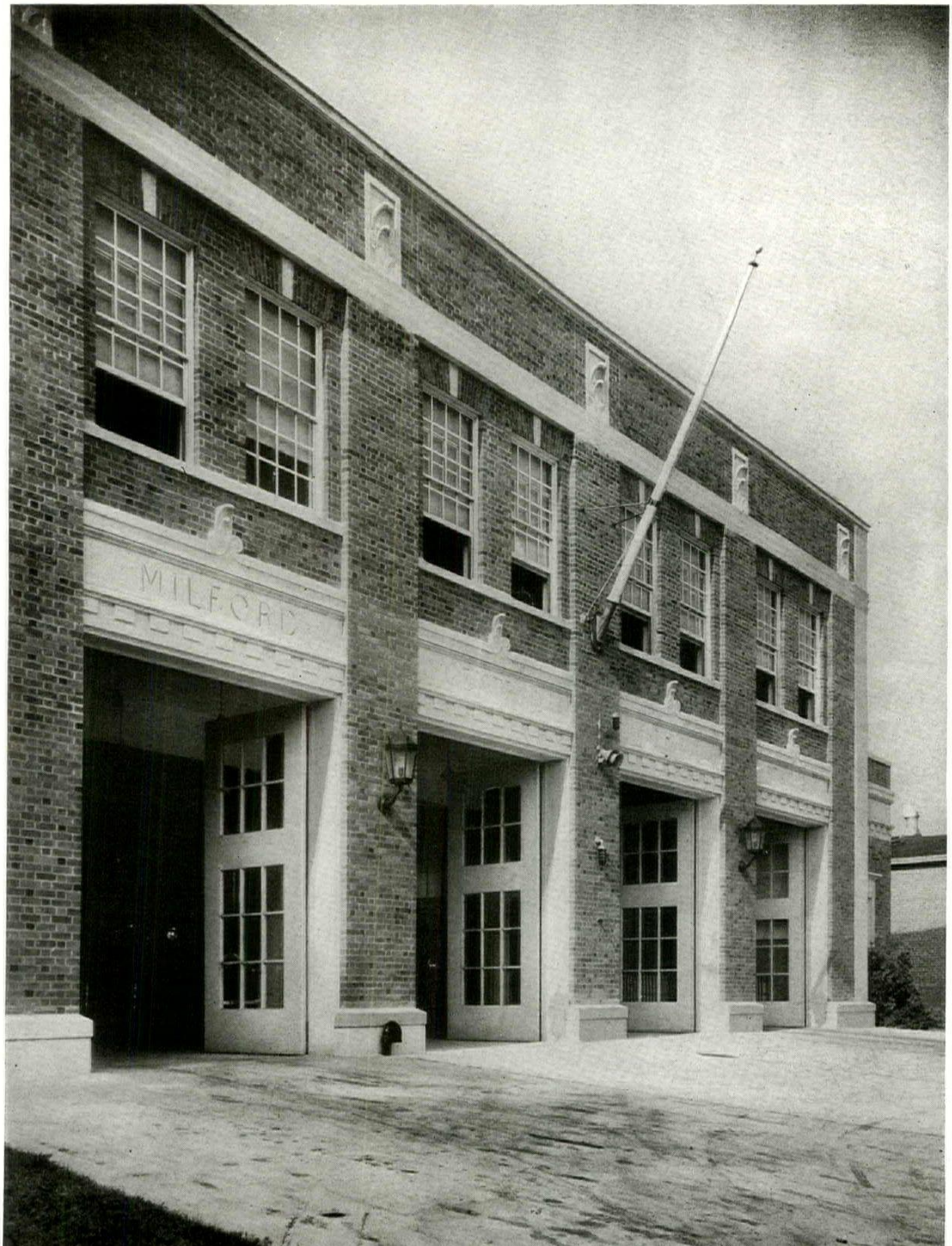
CONSTRUCTION: This building was completed in 1929 at a cost of 41¼ cents per cubic foot, or a total of $113,900. It is of fireproof construction throughout, the walls being of solid brick and the first floor of reinforced concrete. The second floor and the roof are constructed with steel joists with plaster on metal lath below and a reinforced concrete slab above.

PLAN: The plan, shown on page 584, is somewhat unusual in that it houses a volunteer department as well as a paid one. The volunteers' quarters are reached by a separate entrance and include a dining room, kitchen, bowling alley and library.

DESIGN: The style of the building is designated as "Greek Revival" by the architect. The exterior walls are of red common brick, trimmed with Indiana limestone. The interior of the apparatus room is finished in tan waterproof brick. The interior partitions throughout are painted plaster.

CENTRAL FIRE STATION, MILFORD, CONNECTICUT

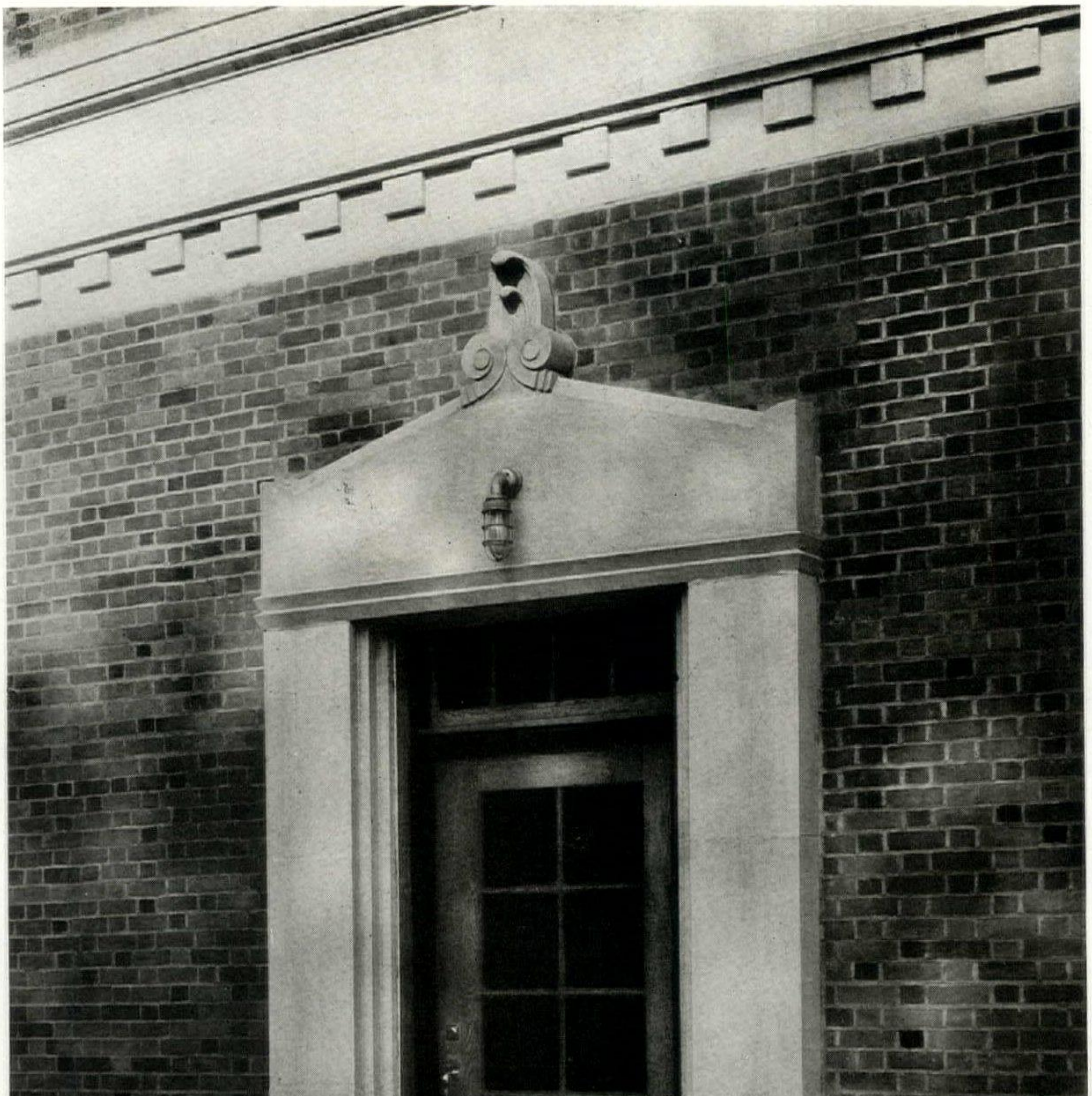
LEONARD ASHEIM, ARCHITECT



Van Anda

CENTRAL FIRE STATION, MILFORD, CONNECTICUT

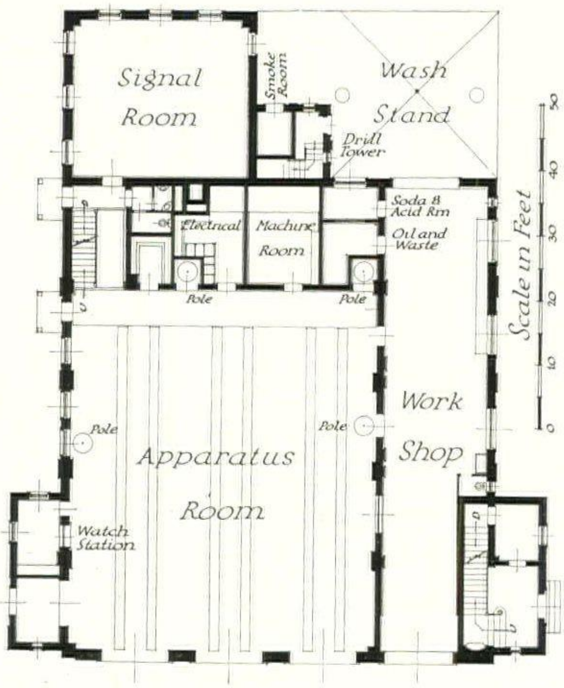
LEONARD ASHEIM, ARCHITECT



Van Anda

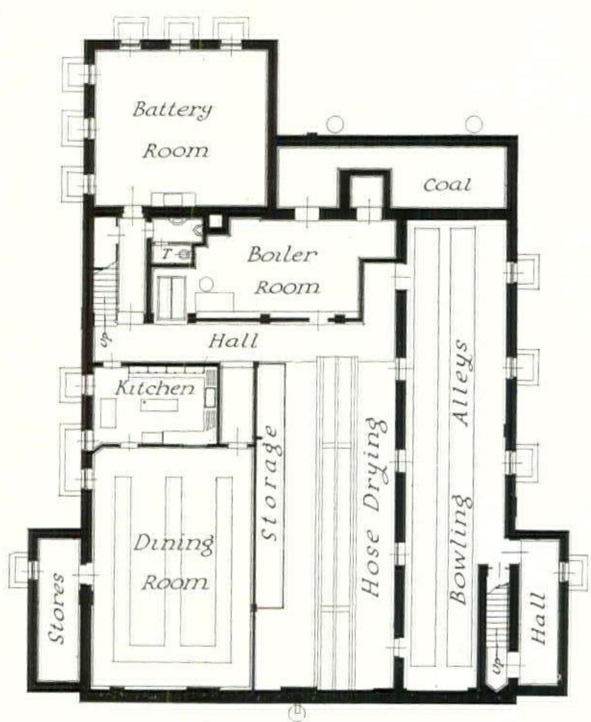
CENTRAL FIRE STATION, MILFORD, CONNECTICUT

LEONARD ASHEIM, ARCHITECT



FIRST FLOOR PLAN

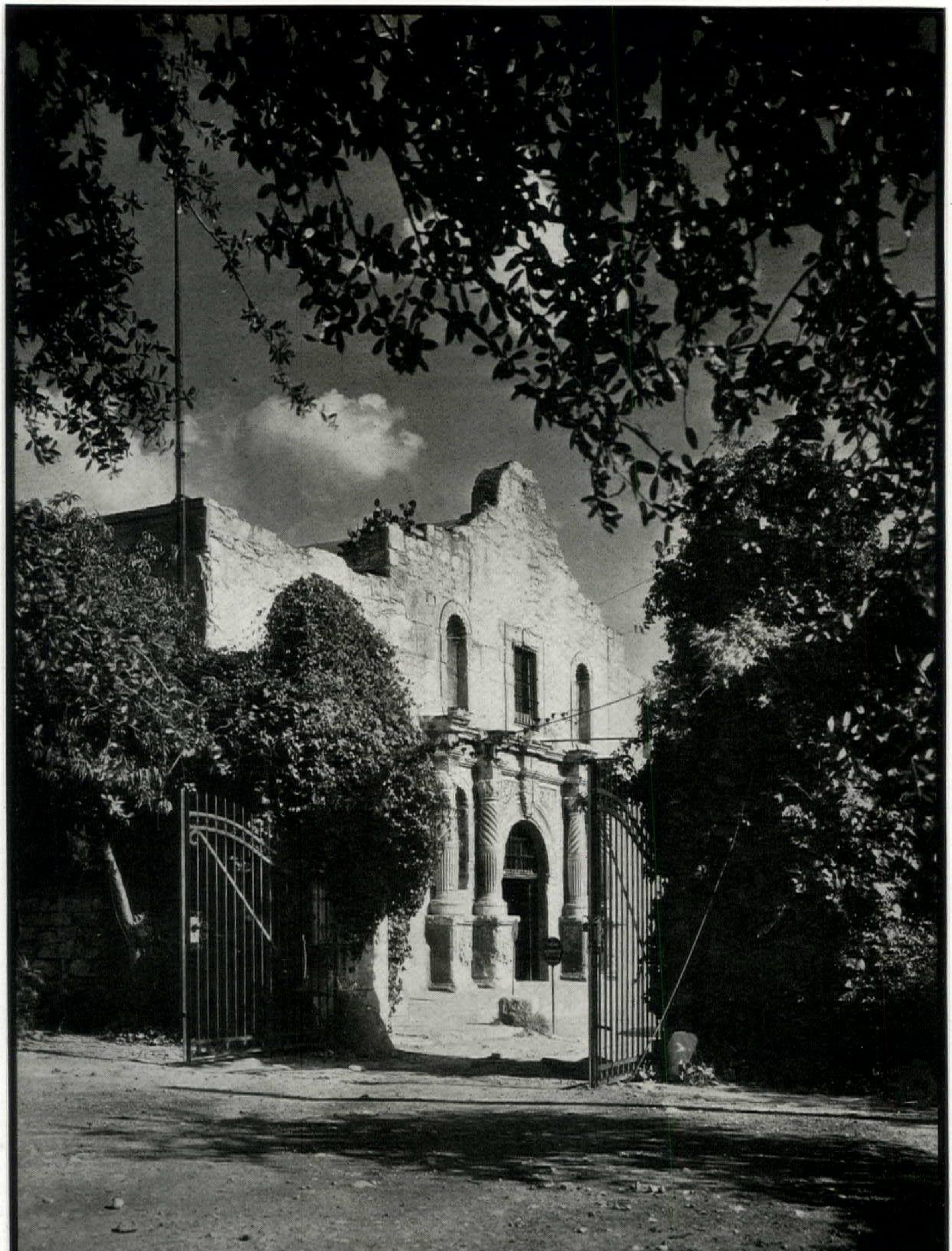
SECOND FLOOR PLAN



BASEMENT PLAN

CENTRAL FIRE STATION, MILFORD, CONNECTICUT

LEONARD ASHEIM, ARCHITECT



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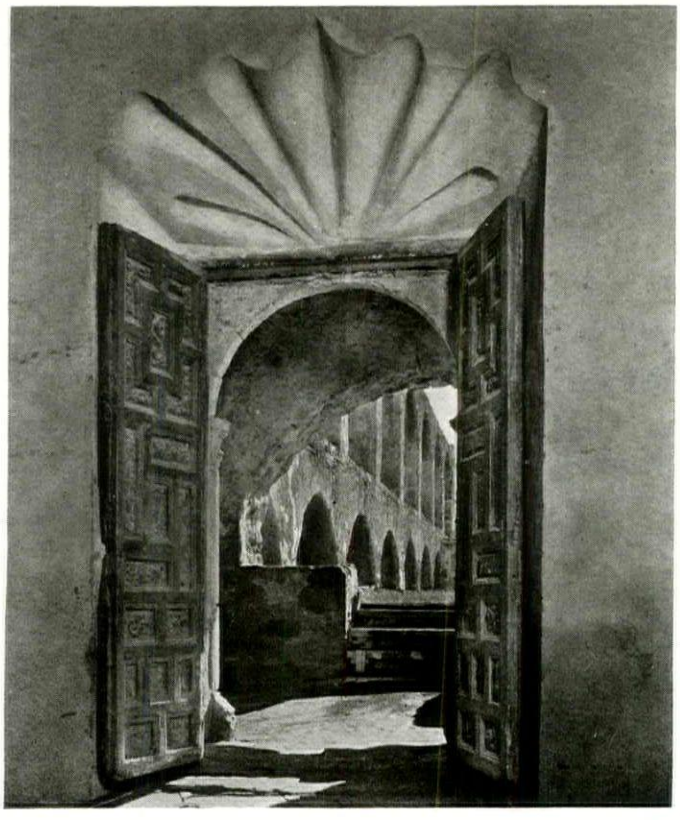
THE ALAMO, SAN ANTONIO, TEXAS

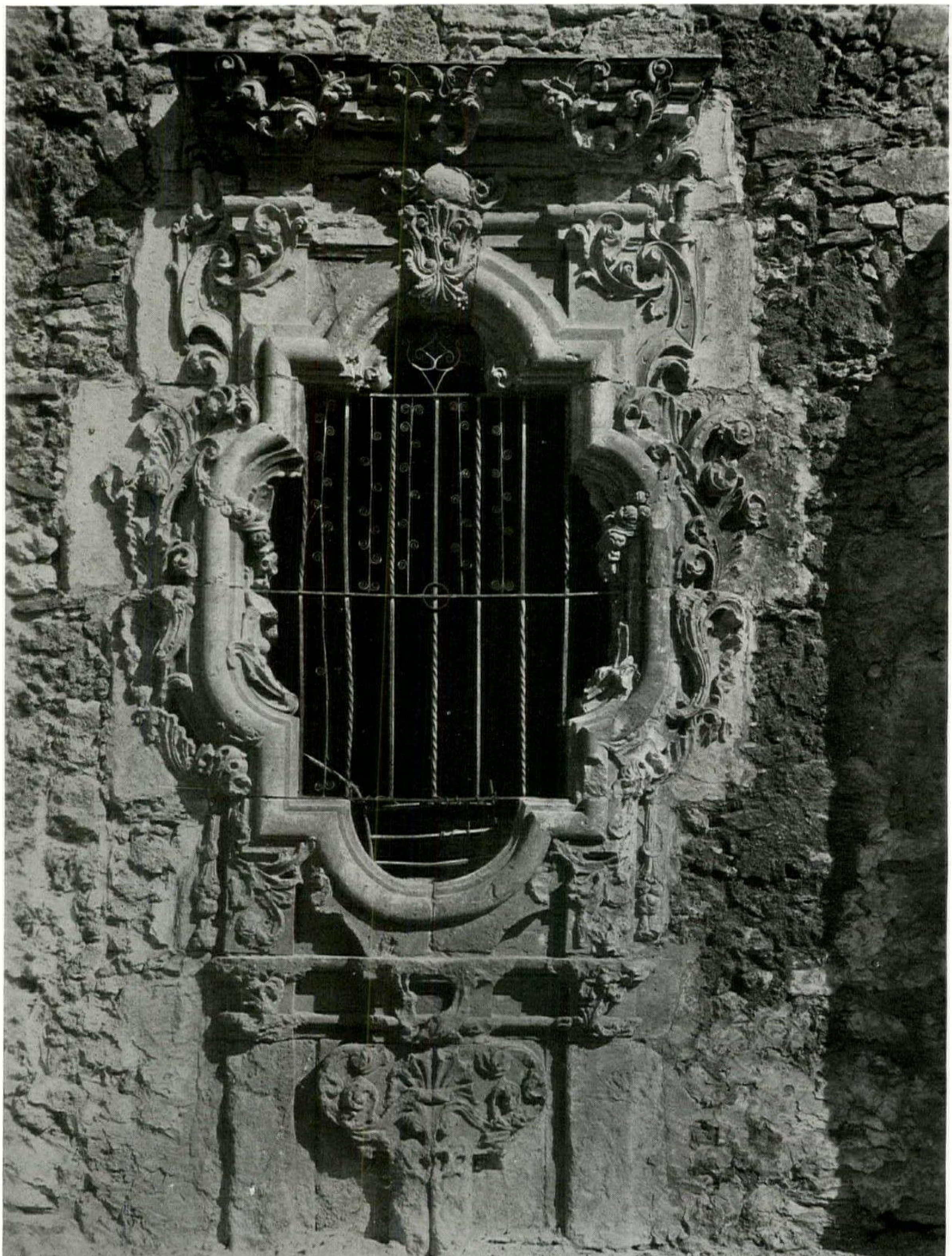
THE SPANISH TRADITION OF THE SOUTH

Photos, Copyright, Patteson



In a day when architectural tradition is caught in the turmoil of new times and clouded issues, these pictures of architecture built in our own country to fulfill the needs of American life will serve to indicate one influence which must be considered in the ultimate development of a pure American style. The picture on the preceding page and that directly above are of the Alamo, built about 1722. The three others in this group are of the Mission San José, built in 1720 and once used by the Spanish Franciscan Fathers. Both buildings are near San Antonio

THE SPANISH MISSION OF SAN JOSÉ
SAN ANTONIO, TEXAS



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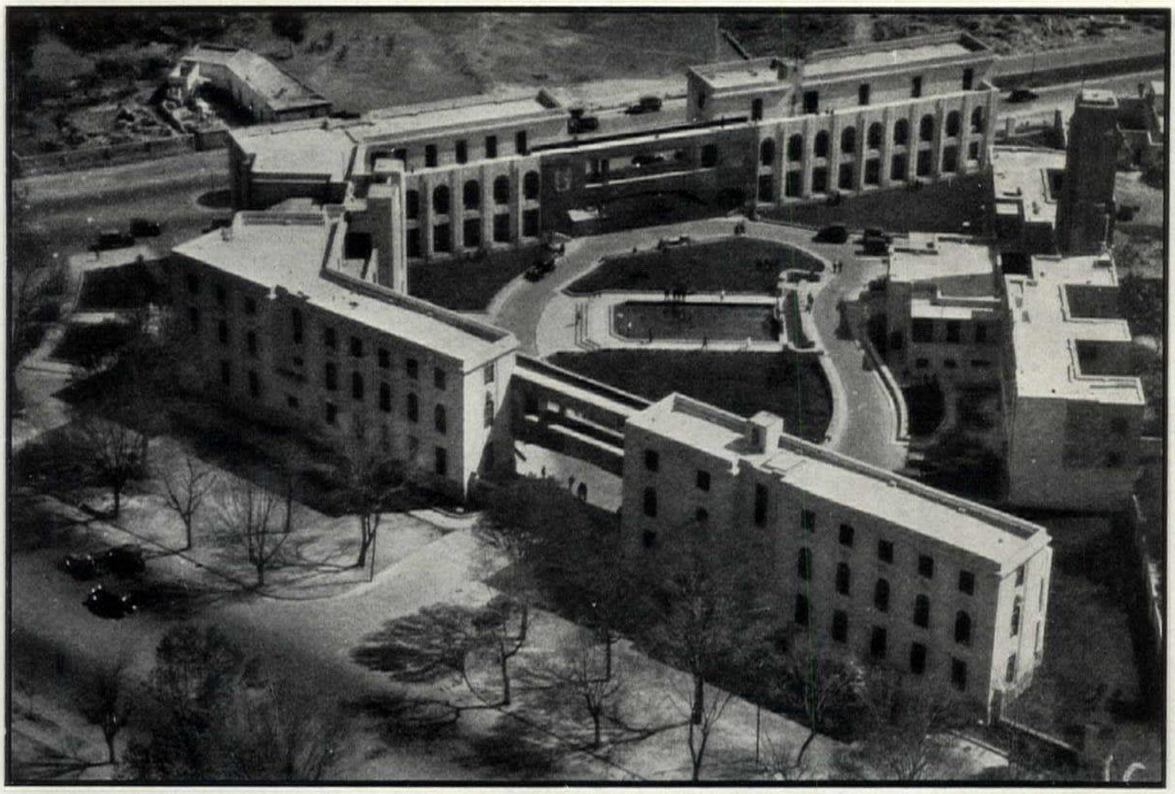
THE SPANISH MISSION OF SAN JOSÉ
SAN ANTONIO, TEXAS



THE PUBLIC HEALTH CENTER

MEXICO CITY, MEXICO

BY

WILLIAM SPRATLING

ASIDE from its importance as an expression of a certain social and economic integration, the Mexican government's new central building for the public health administration is significant as being the finest example of modern architecture in that country. This building is attracting international attention as a sane solution of given needs expressed in good architecture.

The architect, Carlos Obregon y Santacilia, is a young Mexican who is as representative, in his work, of the achievements of the new Mexico as Rivera and Orozco are in painting. He is already well known for the reformation of the Secretariat of Foreign Relations and for the more recently completed Bank of Mexico. In being identified with a movement such as has taken place in Mexico within the past ten years he has enjoyed an opportunity for expression seldom permitted the architect of today. This new building for "Salubridad," one feels, in a sense justifies the aspirations attributed to his particular group.

Salubridad, for its very freedom from the restrictions which complicate our own public building programs, should be of extraordinary interest to American architects. Also, certain factions in Mexico might disagree, but in the opinion of this writer, it is perhaps the most Mexican building which has been done in Mexico since the Conquest.

In its construction have been realized all the marvelous possibilities of masonry, materials, decorative motifs and rare craftsmanship peculiar to Mexico—even to the fine woods and metals used in the interior trim and the specially designed furniture. This was not accidental nor even merely economic but the result of conviction and planning on the part of the architect. Decorative motifs, aside from the parts sculptured by Centurion and Pillig, portraits of Mexico's founders of the public health movement and distinguished

ENTRANCE TO THE MAIN BUILDING FROM THE PATIO

THE PUBLIC HEALTH CENTER, MEXICO CITY

CARLOS OBREGON Y SANTACILIA, ARCHITECT

One of the bridges over the two main entrances into the patio. Notice the unusual form of the arch to express a truss form in stone and the simple vertical treatment of the bridge wall surface

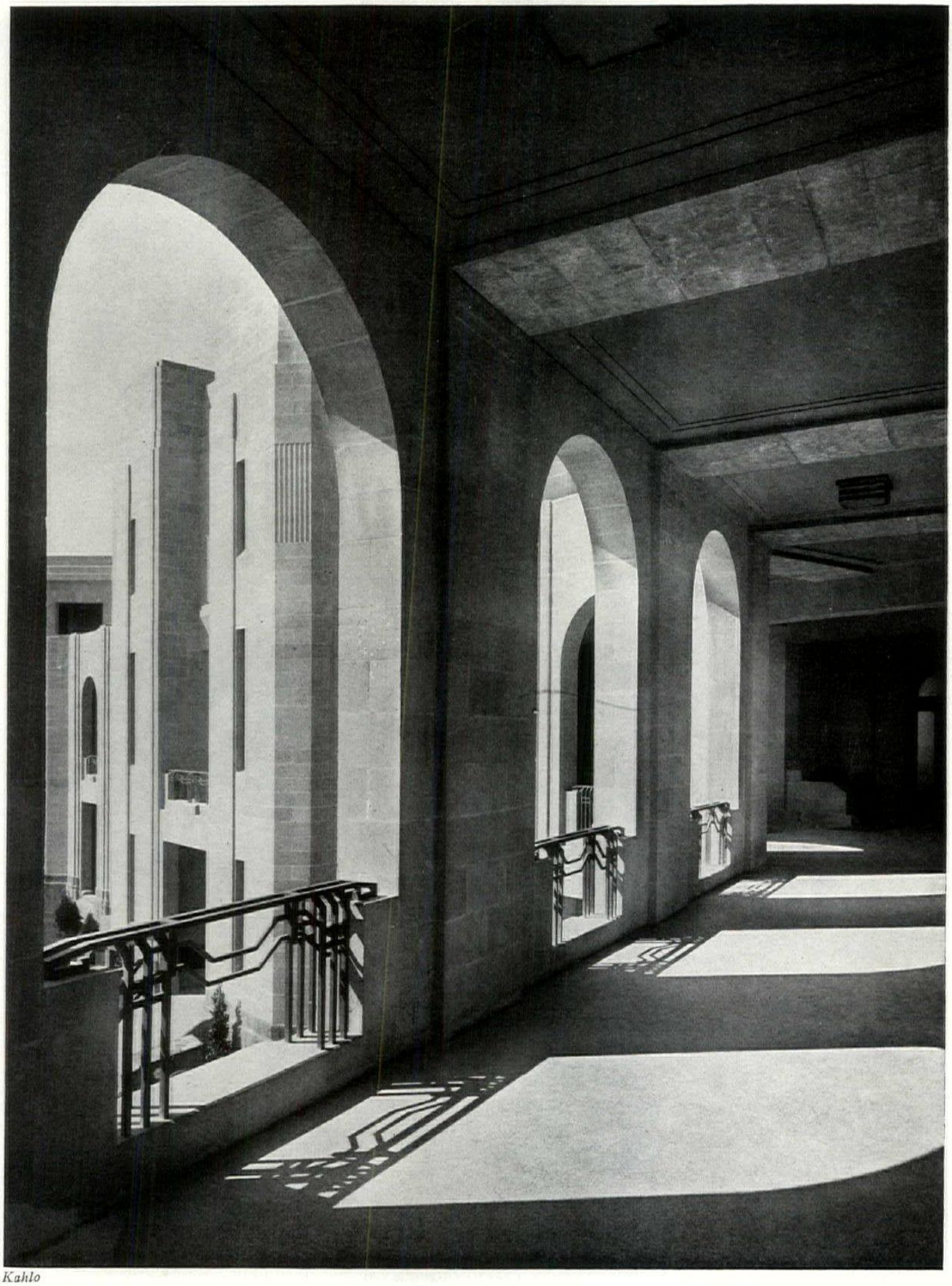
research scientists, and the frescoes and decorative windows by Diego Rivera, have been, on the whole, sparsely applied. The building has been kept clear of labored traditional stuff. Carlos Obregon himself refers to the fact that he "wished to conceive a public health department where light and air would be principal adornments. . . . "

He also credits the administration with having allowed him the greatest possible "liberty of idea and form" in the conception and carrying out of his project. Incidentally, due to climate he was also free to dispose various parts without the limitations of central heating plants, etc., which made possible a sumptuousness in the arrangement of wings and especially in the circulation which is principally out of doors.

The architectural mind, on viewing the building, must experience a pleasant glow of admiration for the absolute sculptural simplicity of the whole and, on passing through, note the perfect articulation of the parts in relation to circulation.

The architect has summed up the scheme of the building in the following words: "Salubridad is organized in this manner: In the principal part (or cerebrum) are the offices of the directors and the conference room where they may meet with the chiefs of services. In the center are the laboratories where are studied and made applicable the ideas which the cerebrum has conceived. And on the sides, unifying the rest, are four great wings in which function the arms which are to carry to the people measures and practices for public betterment: as a symbol for each one of these wings there has been given the name of one of the elements of nature: Earth, Water, Air and Fire. This is by way of a systhesis of the building and its functioning."

In referring to the actual character of the building he continues: ". . . the only one possible solution was sought—that is, considering that we are living in Mexico and in the twentieth century —to employ the marvelous materials provided by our country, disposing the parts as made possible by our climate and combining those materials with the simplicity required by a functioning organism. . . . The solution is the present building and the resulting forms become apparent as something far removed from the influence of antiquated

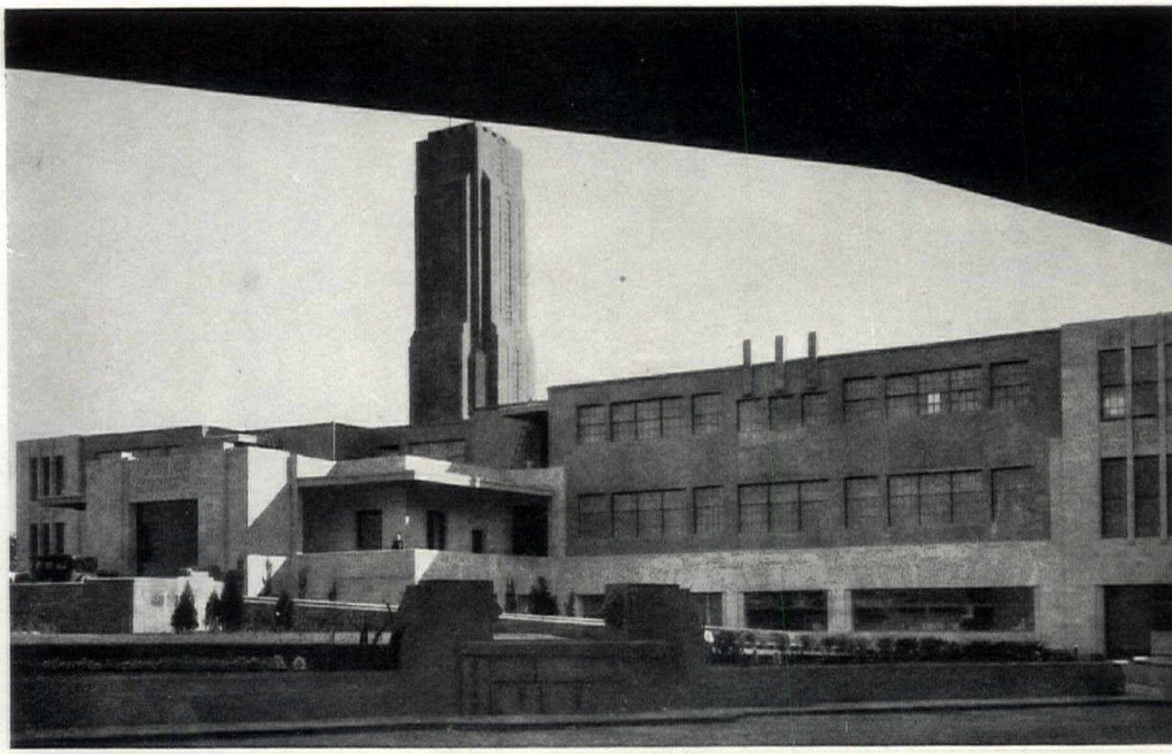


Kahlo

THE SECOND FLOOR LOGGIA

THE PUBLIC HEALTH CENTER, MEXICO CITY

CARLOS OBREGON Y SANTACILIA, ARCHITECT

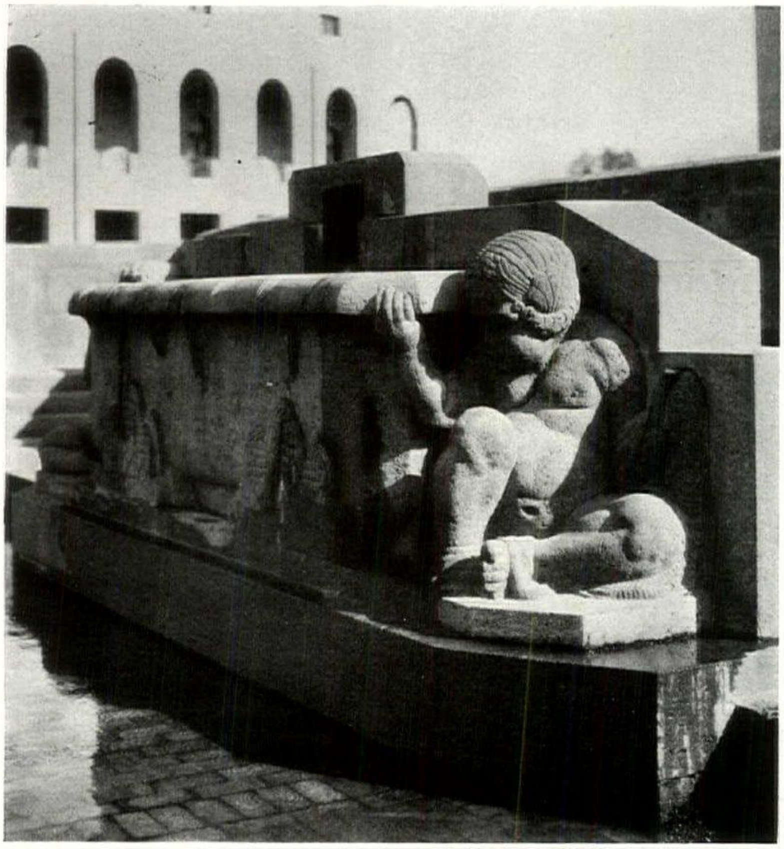


The picture above was taken from beneath the loggia looking across the patio toward the Service Building. The patio has been treated as a garden and contains a large pond in the center. The main entrance to the Service Building (at the left in the picture) is on the second floor. Other entrances are reached by a ramp underneath. Below is a detail of one of the entrances. The door frame and carving above are of black volcanic rock

styles which have never had any reason to exist in our time, nor in our manner, nor which could in any way correspond to the necessities of today. Thus, removed from those dangers, I have assayed to produce a Mexican style of our times which the country's ancient civilization has not impeded and in which it may be perpetuated in the architecture of the present day."

One sees all that and much more in the actual building. The black volcanic rock of the base, which is also used for exterior sculpture, was a favorite building stone of the Aztecs and is called "reconto." The gods of the ancients which fill the national museum are made of this stone. The rest of the building is executed in a fine gray stone quarried in Xaltocan, State of Mexico. Most of the carving was done on the spot and the bronze and other metal work and fine office fittings and furnishings of wood were done by cabinet makers of the City of Mexico.

In this attempt at a modern Mexican architecture, the architect has revealed a directness of approach and a desire to utilize and express his country which, whether one insists on viceregal buildings or not, had never existed in Mexico during the colonial period. In this Salubridad may be considered a notable and impressive sign of a new Mexican epoch.



At the left is a detail of the fountain which is carved in black volcanic rock and supplies the pond in the middle of the patio. Below is a picture of the Conference Hall in the main building. The murals are by the Mexican painter, Diego Rivera

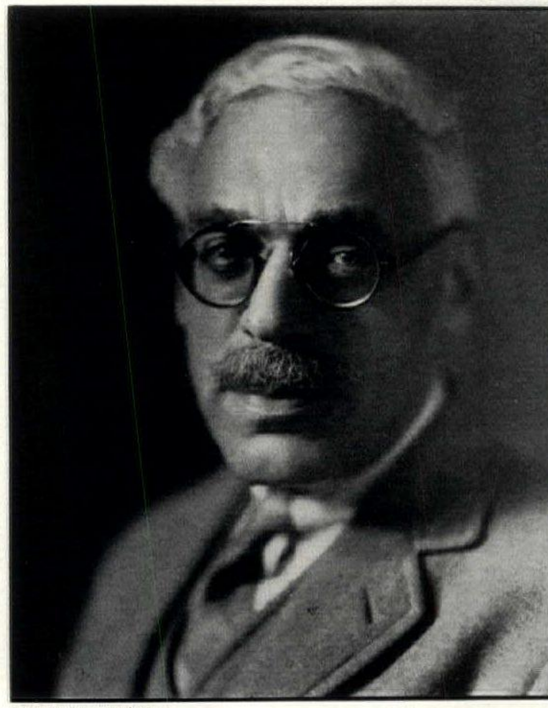
Kahlo

THE EXECUTOR OF A PUBLIC TRUST

A SKETCH OF ROBERT DAVID KOHN, PRESIDENT OF THE AMERICAN INSTITUTE OF ARCHITECTS AND INDEFATIGABLE WORKER FOR COOPERATION WITHIN THE BUILDING INDUSTRY

BY

JOHN CUSHMAN FISTERE



Blank & Stoller

ROBERT DAVID KOHN

" . . . a loose tweed suit, a pipe, progressive consistency, and a gracious sense of humor"

THE architectural profession is more fortunate than it knows in having Robert David Kohn as the president of The American Institute of Architects. His election in Washington a year ago last spring was in the nature of a surprise to many, and perhaps to Kohn himself; for despite his eminence as an architect, he was comparatively unknown to all but his New York associates. His reelection in San Antonio was ample evidence that the choice had been a wise one.

A former President of the United States, famous for his aphorisms as well as for his adhesion to the principles expressed, was author of the phrase, "A public office is a public trust." To this principle Kohn subscribes in script and action. He views the Institute presidency, as he did the presidency of the New York Building Congress and several other offices he has been persuaded to fill, not as an end to be obtained, but as a means to accomplish worthy ends. Kohn works at being head of the A. I. A. just as assiduously as he does on an addition to the Macy store in New York. It is not in him to assume an honor without assuming its responsibilities.

In the language of the Early Twentieth Century novelists, Kohn is a "fine figure of a man"—6 ft. tall, 175 pounds, and as rugged as the measurements indicate. His moderately curly shock of iron gray hair, the appropriately full iron gray mustache, the friendly but occasionally penetrating eyes framed in heavy horn-rimmed glasses—these are some of the exterior markings of the man. Despite his many official appearances, he seems most familiar in a loose tweed suit, with a pipe in his mouth, held at the proper meditative angle. Basing a supposition entirely upon appearance, he might be mistaken for a professor of philosophy, the father of a large family, a country squire, or a member of some other class recognized for its ability to view life calmly but with interest.

Kohn has one deception. He appears never to work hard nor to think hard. He takes everything in stride, whether it be a conference with the nation's chief executives, a meeting of adamantine clients, or a good morning to the office boy. The active mind is seldom exposed. The results of its activity are always translated into action.

Unlike most men who are capable independently, Kohn is even more capable cooperatively. He knows the valuable formula for changing an "I think" to a "We think."

His conference mood is one of informal understanding. While he listens, he analyzes what is being said. And such analysis! His mind is like a threshing machine that strips the chaff and retains only the grain. This is, perhaps, his greatest asset.

A certain architect who was interested in having the A. I. A. sponsor a rather ridiculous program broached the subject to Kohn in his usually positive manner. Kohn's views were in direct opposition, but he listened attentively. Then he asked a few questions, agreed in part with his visitor, asked a few more questions, and at the end of a half hour's talk, he was able to say with truth, "Well, I'm glad you stopped in, and I'm happy to think that we agree on the foolishness of such a move."

It is this manner of dealing with men which led a friend to say, "After I've had a talk with Kohn, I feel first that he's a great fellow: but then I feel that I'm pretty smart myself."

Architecture first crooked its persuasive finger at Kohn when he was 15 years old. His father, a precious metal designer and jeweler, and in later years, an oil painter, supported his son's intention by sending him to Columbia to study under William Ware, and then to Paris for four years. Upon his return to the country, he did not burst upon his profession as a new astroid; he simply took his place with hundreds of others trying to gain experience before opening his own office.

Three years after his return, still a young man, he had his first client, and his own office. One of his first commissions was the old Evening Post Building in downtown New York, into which he crowded almost all he had learned in his years of study. It was an achievement in its day. From that time to this, his work has been marked by progressive consistency. In his professional work as well as in his work for the Institute, he has grouped about him men whose knowledge and experience complement his own, Butler, Stein, Wright, Stern, and others.

Although less mentioned than many others, Kohn played an important part in the development of commercial building architecture, sharing prominently in the work of deleting cornices, and sponsoring vertical composition. Strangely enough, his chief architectural monument is not an office building, but a church, the Temple Emanu-El, in which his office was associated with Bertram Grosvenor Goodhue Associates.

Away from the office, in his century-old farmhouse at Ossining, New York, Kohn lives as active a life as he does in his business. His are not the strenuous diversions, but rather the milder indulgences which give him the relaxation he is seeking. His wife, a talented sculptress, is his companion in mountain climbing—a sport which he enjoys partially for the exercise, but most of all for the opportunity it affords for quiet reflection. Like Walt Whitman, he invites his soul.

His reputation as a keen financial analyst is due, no doubt, to his insatiable appetite for economics; and his ability to coordinate the thought and action of various minded groups may be attributed, in part at least, to an equally ravenous desire for ethical and philosophic fare.

No sketch of Robert D. Kohn would be complete without a few strong strokes to suggest the amiability of the man, a characteristic which has converted many a disordered meeting into a triumph of concerted action. To say that a man has a sense of humor is to say nothing, since the range of humor is as wide as the poles; but to say that a man has a gracious sense of humor is to indicate the presence of good taste as well as good humor. Kohn is gracious. He sees no reason why the transaction of business should be a solemn affair; and, in fact, holds that tense situations obstruct the flow of constructive thought.

Early in life, Kohn formed an admiration for Charles Follen McKim, an admiration which has increased with the years. Perhaps without consciously striving to emulate him, Kohn's activities as a member of the profession closely follow those of McKim. No one since McKim has had so great an influence upon the welfare of the profession as has Kohn. No one would work harder for the fulfillment of the aims common to all architects. Within the short time that he has held national office he has come to be loved by the profession, and to be respected by those with whom he has worked in the strengthening of the building industry.

Although the Temple Emanu-El will stand as a monument to his architectural skill, the work which he has started for the coordination of the building industry will, if successfully accomplished, be a far greater accomplishment. Conceiving of each branch of the industry as an essential strand in a cable he is endeavoring to lay the strands of each, and then to splice so as to make a stronger, more flexible, more useful whole.

It is a simple analogy, but Kohn's methods are the simple ones. He is no promoter, no high pressure organizer. He recognizes common feelings, common aims, and sees no reason why they should not lead to common action.

To those who suggested recently that his efforts to coordinate the industry be given wide publicity, he replied, "Wait until the accomplished facts speak for themselves."

The Architectural Forum

"OPPORTUNITY FOR INDIVIDUAL DEVELOPMENT"

A KINDERGARTEN IN THE DAVID SMOUSE OPPORTUNITY SCHOOL, DES MOINES, IOWA. PROUDFOOT, RAWSON, SOUERS & THOMAS, ARCHITECTS

THE ARCHITECTURAL FORUM

VOLUME LV

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MODERN IDEAS FOR MODERN SCHOOLS

BY

N. L. ENGELHARDT

PROFESSOR OF EDUCATION

TEACHER'S COLLEGE, COLUMBIA UNIVERSITY

EDUCATION has been defined as that agency which will provide an opportunity for individual growth and individual development. It is the instrumentality which assists the individual in living a happy and productive life. It maintains ideals and sets up purposes. It provides for initiative and growth and is designed for the service of the social group as well as for the service of the individual. World developments within recent years have made it clear that the social and economic order constantly changes. As our social order changes, thus education changes. Education cannot remain static but must be a dynamic force always forging ahead with new methods and new aspirations into new experimentations. Because of this constant evolution taking place in the purposes as well as the methods of education, it follows that a similar change must occur in the school buildings in which the educational program is to be advanced.

Some of the most striking changes which have taken place within recent years in public education are connected with the larger numbers of children going to school. A few decades ago the high school was the institution which selected a relatively few children from the grades and gave to them, because of their peculiar abilities, a training which fitted them for the college and university world. Compulsory education laws, the attitude of the labor interests, and the influences of the machine age, have forced more children to stay in school during the high school years. At the same time, the social order has changed its ideas concerning its responsibility of education for the masses. A new philosophy of education advanced by Professor John Dewey and advocated and put into effect by his followers laid down a new charter of human rights. More children in school over longer periods of time have thus resulted in vast problems for public education.

What was to be taught these children during their school attendance; how to adjust subject matter to the needs of all types of children over a long range of time; and how to prepare children for an economic order in which their specific skills might not be required. The answers to these pressing questions have by no means been fully secured. The most serious problems of what to teach the children of the coming generation and for what to train them will continue to stand as most significant challenges to society. One may rest assured that the education program of the next few decades will change very rapidly and that the problems of housing this educational program will require from the architect even greater skill and more devoted attention than has been true in the past.

At all levels the public education program has modified its general plan to the degree that planning and construction of any school building are vitally affected. Only a few years ago our elementary schoolhouses were merely nests of classrooms, but changes have taken place which include a complete reconstruction of educational aims and methods from the kindergarten through the high school.

Probably the most significant statement of the new objectives in elementary education has been prepared by the classroom teachers of New York State.[1] Their report on "Cardinal Objectives in

[1]Second Report Prepared by the Committee on Elementary Education of the New York Council of Superintendents, October 1, 1929. Cardinal Objectives in Elementary Education, p. 13, University of the State of New York, Albany, N. Y.

Rosenfell, Courtesy Electrical Research Products Co.

Activities of first grade pupils in a Bronxville, N. Y., public school. Primary school children are endeavoring to satisfy their individual needs and much more equipment is therefore necessary than has been needed formerly. Note how interested the children are in what they are doing. Articles with which they work require storage space

Elementary Education" states that it is the function of the elementary school to help every child:

1. To understand and practice desirable social relationships.
2. To discover and develop his own desirable individual aptitudes.
3. To cultivate the habit of critical thinking.
4. To appreciate and desire worthwhile activities.
5. To gain command of the common integrating knowledge and skills.
6. To develop a sound body and normal mental attitudes.

In reviewing these cardinal objectives, it is clear that what was once the sole aim of the elementary school, namely, gaining command of common integrating knowledge and skills, is today considered fundamental but not the only part of the problem which confronts the elementary schools. To secure results in the other fields mentioned, the military precision of the classroom must be eliminated. The elementary school child must be thought of as endeavoring to find himself within his own social group. He must learn to adapt himself wholesomely and wholeheartedly to his environment. He should be given the opportunity for expressing desirable attitudes, for thinking his problems out by himself, and for participating in wholesome social activities. He ought not to be sent to the elementary school merely to prepare for the future, but he should be given the opportunity in the school itself to live a thoroughly expressive, contented and worthwhile life.

It is clear that this kind of an educational program can be carried on only with great difficulty in the formalized and institutional type of classroom which is to be found in so many school buildings. Teachers who are attempting to train in accordance with these objectives require materials of instruction, of testing, and individual use which are far more extensive and comprehensive than were needed in that kind of a school where the textbook constituted in large measure the sole teaching equipment.

It is interesting to note that the kindergarten first learned to carry out these new principles of education. This was probably due to the fact that the school tried to make for the young child a more easy transition from the home life with its many opportunities to the school life with its traditional and limited program. It was felt that the kindergarten should be a place where sunlight entered, where music was played, where opportunities abounded for the study of plants and birds and fish, and where children might learn the "give and take" of social contacts. Thus, the kindergarten in the past has been made the most attractive room in the elementary school. It has also been that room which has been best adapted to teaching needs as well as to pupil development and pupil activities.

A better integration of kindergarten and primary grade programs and an analysis of what should be taught in the primary grades for children of the ages seven to nine have resulted in requiring material for children's use, such as easels, work benches, work materials, animal cages, and the like, which have made new demands upon teaching space. The modern primary classroom is quite unlike the classroom of twenty years ago. It recognizes the teacher's desire to give children a maximum number of contacts with literature, material things, and animal and plant life. It provides a maximum of teaching space so

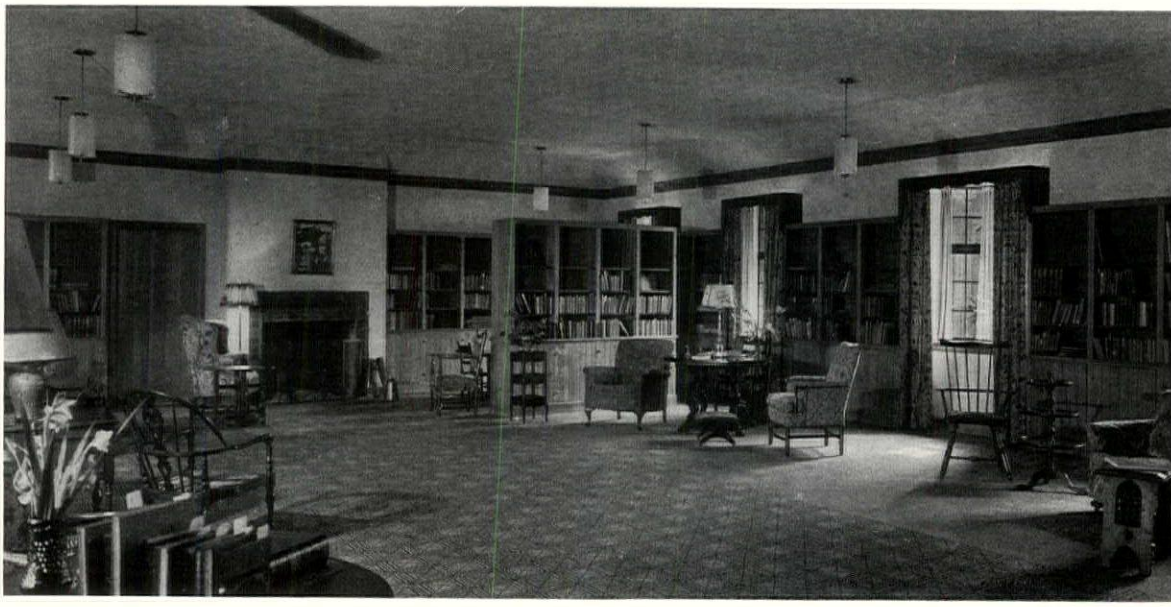
Activities of sixth grade pupils in a Bronxville, N. Y., public school. The system started in the first grade has been expanded to include such activities as the making of simple electrical circuits, block prints, pictures, etc. Note the grouping of the tables, the desks and chairs, also the equipment and materials which need storage space

Rosenfell, Courtesy Electrical Research Products Co.

that a clear space of a 23 x 30 ft. minimum is available. Storage spaces abound in the classroom, spaces for teachers as well as for children. The blackboard is limited in amount. Bulletin boards upon which children may display the products of their own initiative at heights permitting the entire class to see, supplant the blackboard in large measure. Bookcases, magazine racks, and library table are developed to form a library nook. The teacher is supplied with storage cases for the large charts and posters which are brought in or which the children make. There are also installed vertical files for tests and achievement supplies, and storage cases with adjustable shelves for the many materials which children use in their various activities. The equipment of the classroom consists of movable desks and chairs, or movable tables and chairs, planned for both individual use and for grouping as the situation demands. As part of the built-in equipment each pupil is provided with a cupboard or nook in which he may keep his own private work materials. Even primary rooms take on the aspects of a laboratory in which children are actively engaged in interesting tasks culminating in individual as well as group development.

Intermediate School Buildings. Grades 4, 5, and 6, have not been content with the restrictions of bare classroom walls and desks attached to the floor. The very nature of the subject matter in these grades has changed significantly. Instead of studying factual geography and factual history, the children of these grades learn about transportation or the interdependence of nations, or the history, achievements and results of changes in communication among peoples. The child is being taught to associate the geography of the world with his own life. He is learning to find himself among the wealth of materials which world geography provides. Thus it goes with the other subjects of the curriculum. Again, in the classroom, the child is being given the opportunity to live a well-rounded, integrated, and good life. The color scheme of the classroom, the preparation of the room for teacher and pupil materials, and the opportunities for bringing the world into the classroom through the agency of radio and sound picture, are all potent elements affecting architectural planning.

The important objective in all of the grades of the elementary school is the development of a sound body, and the growth of normal mental attitudes. This requires that well sunlighted and well ventilated rooms be set aside for play, and that these rooms be occupied a significant part of the school day so that the money investment may bring an adequate return. The demands for body development suggest the elimination of basement playrooms, and of poorly conceived and poorly equipped spaces which have in the past been designated as playrooms. The program of health and physical education requires a large school site, at least five acres, for each elementary school with special provisions for play for the kindergarten children, the primary grade children, and the larger children of the fourth, fifth and sixth grades. In congested centers the elementary school should have a playground on the roof where all types of active games may be played under complete protection from bad weather conditions. No elementary school is complete today without its auditorium, its health suite, its library and its special rooms for nature study and



These pictures illustrate the trend in education to create a homelike atmosphere. Above is the library in the Avery Coonley School at Downers Grove, Ill. Below is a first grade room in the Longfellow Elementary School at Pontiac, Mich. Childs & Smith, architects

art. Where the platoon system has been adopted, these rooms are provided as a matter of course. There is every reason, however, for the inclusion of these spaces in all types of elementary schools which pride themselves on providing modern educational opportunities.

It should be borne in mind that an attractive building with a planned landscaping effect, with playgrounds offering play opportunity as well as protection from the streets, should be the aim for every elementary school. Anything less than a building well adapted to its educational purpose and one which makes a distinct contribution to community development and beauty should not leave satisfaction with those who plan.

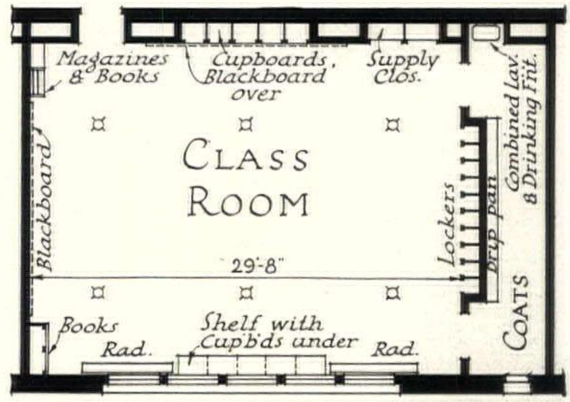
Junior High School Buildings. The most significant change which has taken place in outlook and method in public education is concerned with the development and progress of the junior high school. Based upon the fundamental philosophy of equal opportunity and promoted in terms of the universally accepted psychology of individual differences, the junior high school has rapidly taken the place of the deadly and repetitive seventh and eighth grades and has formed a splendid connecting link between the elementary grades and the upper three years of the high school itself. The junior high school age is the age of adolescence. The educational program for this age requires a building on a large site of twelve acres or more, with particular emphasis on competitive sport areas and special opportunities for the studying of nature and agriculture. Brooks and trees, flowers and shrubs, and hills and valleys should be characteristic of such a site. This intermediate type of education should provide for the beginnings of differentiation in pupils' work, should give ample opportunity for social development and should make available the workshops and laboratories where boys and girls may secure first-hand contacts with the developments in our industrial and commercial civilization.

The junior high school has been created for the purpose of giving youth confidence in his own ability and in his own native powers. The building itself should be a structure which adds to the enjoyment and development of its patrons. The architectural aim will be symbolic of the age of the children attending, of their earnestness of purpose, and of their intentness upon achieving success. Sunlight and fresh air in open types of buildings are to be sought. A maximum of safety and the utmost of sanitation should be the aim. Fire-resistive material of long life should be the main materials of construction. Flexibility of interior arrangement and the possibility of addition should be definitely secured in a building which should be built not in the ground, but as much as possible above the ground level.

The junior high school has been rapidly taking on the characteristics of the more advanced senior high school. It requires, in addition to the classrooms, special laboratories for science, household arts, industrial arts, commercial arts, and the fine arts. Its general service rooms should include an auditorium, a cafeteria, an audio-visual studio, gymnasium, and library. The administrative rooms needed are offices for the principal, for teachers, for health service, student activity rooms, and frequently offices for deans of girls and for the educational guidance department. In planning the classrooms care should be taken not to provide too limited a space, because one of the significant problems confronting the school administrator is concerned with the size of classes in both the junior and senior high schools. Much research work is still to be done to discover how adequately children learn in large groups as compared with small groups, and also to ascertain whether lessons in appreciation of literature, art, and music cannot be given just as successfully with groups of 50, 75, and 100 children as with groups of 35. This research will have a significant effect upon the planning of building spaces.

Until more definite knowledge is secured, it is reasonable to expect that each building will have a maximum of flexibility for interior arrangements and that no special rooms will be so designed as to prevent use for other than the special purpose. Even greater care should be utilized by the architect in planning the interior of all of the instructional spaces in junior high school buildings. Not only should the interior plan and decoration of the classroom contribute significantly to the educative processes, but also the character, design and decoration of the corridors should be considered to add their quota to the sum total of human incentive and human learning.

Each classroom and each special room should be planned so that the teaching process may be carried on with a maximum of ease. Special provision should be made for the storage of all materials required for teaching. Regular textbooks, supplementary textbooks, magazines, charts, paper supplies, and many illustrative materials are used in modern teaching. Bookcases, magazine display rack, chart and poster cases, teacher files for testing and teaching materials, general supply cases, and a storage cabinet for large articles are needed in each room. Library nooks with storage spaces for reference materials should be provided, especially in English, social sciences, and similar subjects requiring extensive reference. Above blackboards and bulletin boards, map and display rails should be installed. Whenever possible, window shelves with cabinets underneath should be provided. A lavatory is needed in many special classrooms.



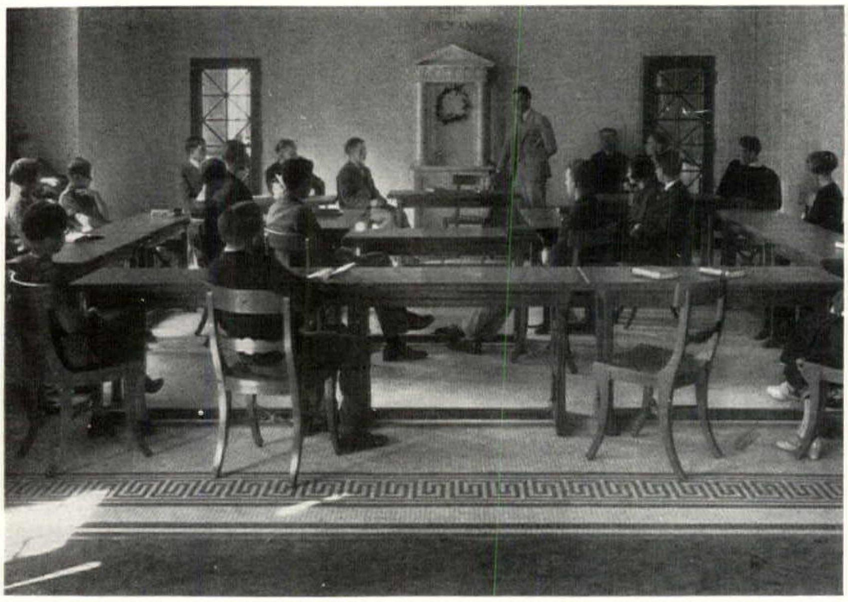
AN EFFICIENT USE OF SPACE

A plan of a typical classroom developed by Tooker & Marsh, architects, which contains all necessary storage facilities with a coat room and individual lockers

High School Buildings. Dr. Thomas H. Briggs of Teachers College, Columbia University, in the 1930 Inglis lecture[2] given at Harvard, called secondary education in a democracy "a great investment" and analyzed at great length the problems confronting the high schools of this country and their aspirations. This lecture is exceedingly well worth reading for any architect who is attempting to plan a high school building; in fact, its reading is worthwhile to any citizen who desires to secure an appreciation of what our public high schools have failed to do and are proposing to do.

The aims of the high school have been very clearly set forth by national groups spending many hours in discussion and conference. The seven objectives—the development of student health, the command of fundamental processes, the inspiration and knowledge for worthy home membership, the beginning of vocational aspirations and participation, the development of proper citizenship, the worthy use of leisure, and the creation of worthy character—are universally accepted as

[2]Briggs, T. H. Inglis Lecture 1930. Harvard University Press, 1930.



The setting of the classroom itself is often a stimulus to a more genuine interest in the subject which is being taught. The illustration is of a Latin room in the Jackson High School, Jackson, Mich. Childs & Smith, Architects

fundamentals in high school development. For the purpose of attaining these ends, public high schools cannot be mere recitation rooms with a few laboratories and one or two large spaces for the congregation of groups. The school must be planned with the purpose of creating the most democratic institution in our midst. It must serve all kinds of students and offer an abundance of opportunities for establishing responsibilities in students and for securing universal participation in a well-rounded life, as well as appreciations for the finer things that life affords. Skill and knowledge must be imparted in certain fundamental processes and include such fields as the languages, mathematics and commercial arts. There must be provided every opportunity for recognizing the fact that people in society work as individuals and that, therefore, the school itself must tend to give individual guidance and assistance. Exploration into the major fields of human activity should be encouraged and the program for guidance should be sufficiently extensive to prevent the thwarting of ambitions of no individual. The architect who would build a school after the functional concept will do well to become thoroughly conversant with the writings of such men as L. V. Koos[3], A. J. Inglis[4] and H. C. Morrison.[5]

In planning classrooms, the beauty of the subjects taught and its inspirations may well be drawn out of the architectural setting of the classroom itself. It may not be possible in every school to reproduce a Roman Forum for Latin classes, or an Elizabethan theater for instruction in Shakespeare, or to surround each mathematics room with pictures of the history of mathematics. There ought, however, to be the possibility of expressing classroom individuality to a far greater degree than is to be found in most schools. The interesting development in special classrooms for high schools has been proceeding with such rapidity that the near future may make all rooms special in nature. In no sense should such special rooms be developed to prevent use during the entire school day. The content, however, of all teaching subjects is being refined and expanded to such a degree that every classroom agency must be utilized as a medium of instruction. Given the proper classroom setting every teacher should be able to secure classroom results far beyond those that result where the teaching process must overcome the deadening effects of unattractive, unadorned and poorly planned classrooms.

In the high school, as in the junior high school, very definite efforts are being made to solve problems related to the size of classes. Without doubt, many types of classes will increase in size. Especially will this be true of classes where broadening, exploratory, and æsthetic aims are being sought. American history taught in connection with speeches by national characters brought by radio into classrooms and large assembly rooms, European economic conditions portrayed through sound and picture showing present-day conditions, and vocational guidance outlined by having workers in special activities pass on the screen before the student body, indicate changes in the approach to high school teaching. Such changes will vitally affect building planning.

[3]Koos, L. V. The American Secondary School. Ginn and Company, 1927.
[4]Inglis, A. J. Principles of Secondary Education. Houghton Mifflin Co., 1918.
[5]Morrison, H. C. The Practice of Teaching in the Secondary School. University of Chicago Press, 1931.

Not only will an auditorium of large size be required, but small rooms seating 100 to 125 for audio-visual, dramatic and inspirational presentations must be included in such buildings. Even the auditorium stage has begun to change its nature because stage activities are being tied up with student production of scenes and equipment so that large work spaces for this purpose have become essential.

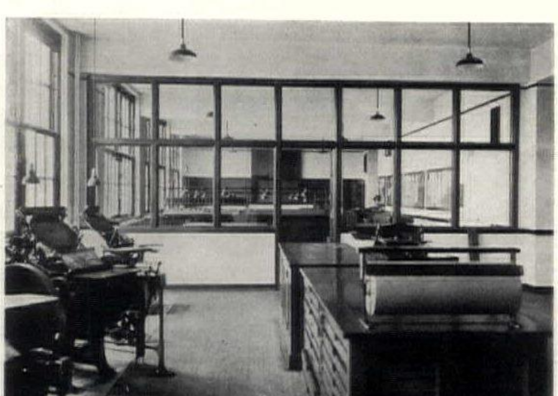
The laboratories in the past have been planned very frequently in terms of college tradition. Even the college lecture room has been handed down to the high school without reason. The elimination of lecture rooms, a more active participation by students in the work of the laboratory, the use of visualization equipment as a substitute for many laboratory experiments, and more comprehensive instruction covering the science fields are aspects of the instructional program which affect building planning.

Only recently so-called model housekeeping apartments were included in the household arts department. For example, the folly of incorporating model household arts apartments has been frequently pointed out by teachers who find no way in which these spaces may be utilized for class purposes. The household laboratories for cookery, and for clothing, should be planned to reproduce home conditions and at the same time to provide for group activities. Here the highest type of architectural skill is constantly challenged. The architect who seeks aid in this field should read "Buildings and Equipment for Home Economics in Secondary Schools" as written by Dr. Melvin Brodshaug[6]. Industrial arts shops will more and more take on the characteristics of industry so that boys may work not in the world of make-believe but in the world of reality.

Gymnasium facilities should be provided in abundance not that students may have one or two hours a week of gymnasium instruction, but that four hours a week in this field of physical development may be allotted to each student. Locker and shower space, too frequently planned as an afterthought or cramped into a congested space, is only sufficient in amount when its area equals or exceeds that of the gymnasium floor itself. Music rooms, large in size, and soundproofed from the remaining part of the building, libraries planned in conformance with the detailed standards of the American Library Association, and art rooms expressive of the achievements of man in this field, are types of spaces which give opportunity for real architectural planning.

The administration of a high school building has become more and more complex. Because of constant curriculum changes, the statistical analysis of students' work, the psychology and vocational guidance attention to individuals, the care spent in the health and social guidance of both girls and boys, the administration suite takes on a new character. It not only is the office of the principal but it is the combination of spaces where principal, research worker, vocational guide, psychology assistant, and the dean of girls or boys may work as a team for the successful development of human individuals during one of the most crucial periods of their lives. The social program of the school, the student activity work, and the teacher student conferences demand building spaces for their successful expression. Thus, the high school student body teeming with aims and ambitions, and forging forward in the creation of a new generation of human activities, furnishes the opportunity for architectural planning which recognizes the true place of our secondary school in the social order. Large sites, with ample playground, buildings in which teachers and students may equip themselves for real achievement, and building interiors inspiring individuals toward success are the essential criteria for architectural planning.

[6]In press. Bureau of Publications, Teachers College, Columbia University, 1931.



Press room in the Ottawa Hills High School, Grand Rapids, Mich. H. H. Turner, Architect

Photo Art

Cooking room of the John Deere Junior High School at Moline, Ill. William H. Schulzke, Architect

PLANNING FOR MULTIPLE USE

Multiple use of rooms through flexibility in planning is an important factor in keeping school construction costs low. From his wide experience, Mr. Betelle has drawn many interesting conclusions, and points out here several methods of intensifying the use of space

BY

JAMES O. BETELLE

OF GUILBERT & BETELLE

ARCHITECTS

IN recent years building costs have become so high and the demand for public instruction so great that there has been a severe strain upon the public purse to provide proper school building accommodations. In many localities school buildings, for one reason or another, have not been provided as they should have been. To provide the necessary additional school building accommodations various methods have been adopted: the erection of new buildings, the more intensive utilization of existing buildings, changes in educational programs, and the multiple use of classrooms.

When school building costs were low a number of years ago, school room space could be used with a liberality which is impossible at the present time. Rooms for which there were only limited uses could be, and were, left idle part of the time. Classrooms could be reserved for the special use of individual teachers, which meant they would be vacant one or two periods each day. There also could be pupil accommodations in laboratories, shops, domestic science departments, and similar rooms which were unused a portion of each day, if there were not sufficient classes in those subjects to use the rooms all the time.

The progressively high building costs have forced the school authorities to a different point of view, and have made them use their buildings more intensively. They began to realize that education was a business proposition and that they owed it to the tax-payer to make the greatest possible use of their buildings, just as a business man owes it to the stockholders to use his factory to the greatest possible extent.

It is sometimes said that the architect is not particularly interested in how intensive a use is made of the building which he designs after it is completed. But the architect who understands enough of the fundamentals of educational administration to be able to show the school board ways and means of taking care of more pupils, with less space, is surely rendering a valuable service to his client. An architect designing an industrial plant would know the routine and processes of production to be carried out in the factory, and would route the raw material through the building in such a way that the least amount of space would be occupied and there would be no retracing of steps by the unfinished goods. He would make every effort to lay out the building so that there would be maximum production, a maximum of use for all equipment, and a minimum of waste and effort. This is expected of an architect handling industrial work, and school boards have just as much right to expect a similar type of service from the architects designing their school buildings, so that the architect not only has to know building design and construction but also educational routine as well.

Flexibility in Use. When a survey is made of the use of existing school buildings it almost always shows that a greater number of pupils could be accommodated in them and still more could probably be accommodated with certain minor alterations in the building or in the equipment. For example, the auditorium may be used only in the morning for fifteen minutes of chapel exercises and for one or two other periods during the day, and possibly some days not at all. It is now realized that in order to justify the expense of an auditorium which costs anywhere from fifty to seventy-five thousand dollars, it must not only be used for assembly purposes but also by several classes at a time during each period of the day. The auditorium is suitable for any subject which can be taught in groups, such as singing, visual instruction, English, dramatics, etc. Three classes of 35 each could easily be accommodated in an auditorium. This immediately increases the number of pupils the school can accommodate.

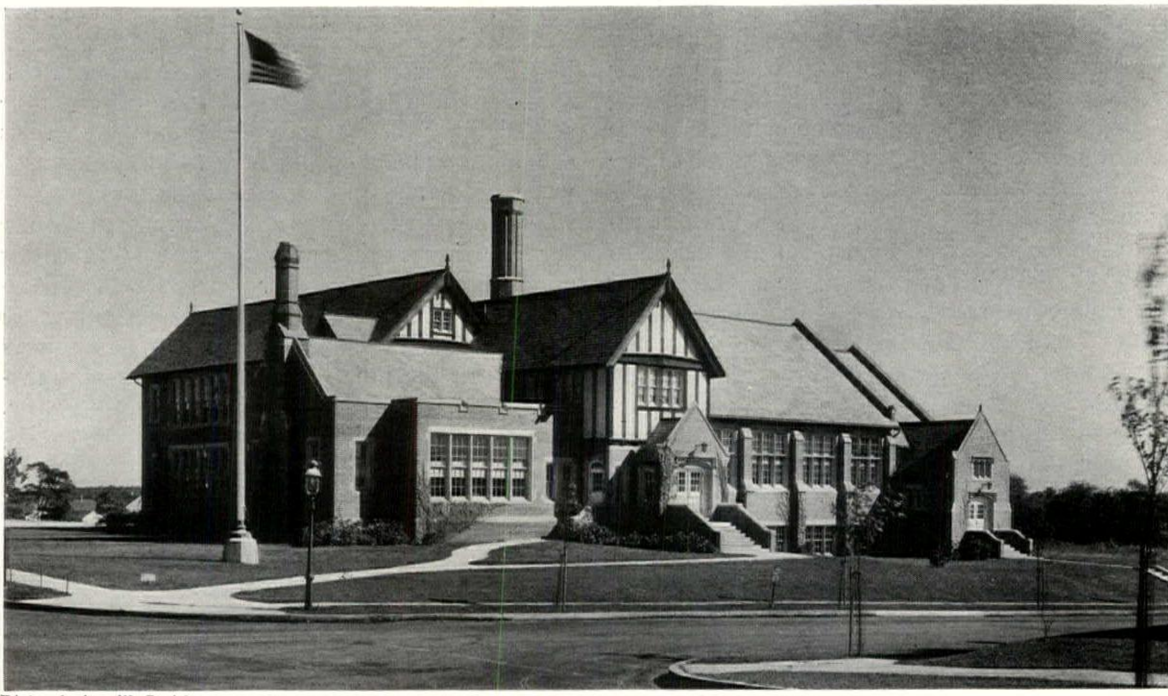
It is in the smaller high schools that the greatest difficulty in proper utilization of the building is encountered. A high school for less than 500 pupils is an uneconomical unit, yet the architect is often called upon to design a high school for 200 pupils or less. There are usually just as many subjects taught in a small high school of 200 pupils or less as there are in a building accommodating 2,000 pupils. In the smaller building it will be difficult to use special classrooms for all of the periods unless special attention is given to making their equipment flexible. With the small number of pupils in a school there is not the chance to use the building so intensively as in a large school where there are many classes available at different times and of different sizes to use the otherwise vacant rooms. Classrooms with highly specialized equipment, suitable for only one purpose, will cut down the general use of the rooms for other purposes and thereby probably reduce the total capacity of the school.

The architect can be expected only to design and erect a well planned building and it is then up to the educators to make proper use of it. It is essential that the architect be familiar with the ways in which a school building can be made to work to maximum capacity, and that he understand the educators' point of view. It is to be assumed that the architect is familiar with architectural problems and building practice, but if (in addition to this) he understands school management and equipment and can talk in the language of the educators, and understands their problems, he then promotes good will for himself and establishes confidence in his service.

Elements of Intensive Use. There are three elements which make for greater use of a school building. First is proper layout of the plan. Assuming that a building is properly planned, the second thing that makes for its intensive use is suitable equipment—equipment which can be used when necessary for more than one purpose, by which means the classroom, if not always in use for the purpose originally planned, can be used for other purposes. The other element is the educational program. To make up the program for a high school and keep all of the teachers and rooms busy all of the time in the many different activities, is very much like solving a jig-saw puzzle. If enough time and trouble are spent in arranging the many parts or classes, everything can be made to fit in properly, but it takes time and patience to do this.

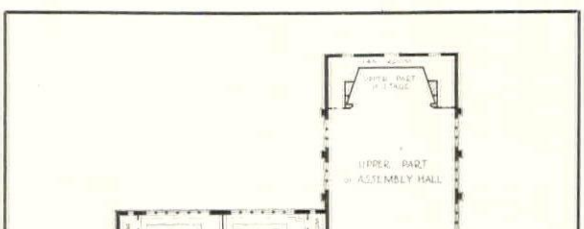
The old or traditional school program is not so difficult to arrange as the modern platoon program. In the traditional scheme there is a home room for each class, and when these home rooms are all in use many of the special rooms are vacant, and vice versa. In the platoon program scheme it is the aim not only to use the home classrooms but also the special rooms as nearly all of the time as is possible, which means that the laboratories, the auditorium, the gymnasium, the shops, etc., are busy at all times. In a platoon system, 25 to 30 per cent more pupils can be accommodated than in the traditional program.

The English room in the Jackson High School, Jackson, Mich., Childs & Smith, architects. The room has been designed primarily as a setting for the study of English literature and may also be used for play rehearsal, public speaking, music and art work. The stair leads to a room used for costume design and special work



Richard Averill Smith

The Forest Avenue Grade School at Glen Ridge, N. J., Guilbert & Betelle, architects, has been planned to give the maximum of use for a variety of purposes. The classrooms may be adapted to any number of subjects, and the assembly hall may be used as a public auditorium or as an instructional space for special subjects



Multiple Use of Rooms. Another element entering into the intensive utilization of the school building is the multiple use of rooms. It is very difficult to use intensively a high school designed to accommodate 200 pupils, or less, because of the many special rooms required, which cannot be used all the time during the day for the particular purpose for which they were designed, due to an insufficient number of pupils. By putting in the proper kind of equipment, suitable for multiple use, a special room may be used at different times for different purposes. For instance, a single laboratory can be used for chemistry, physics and biology, if the proper equipment is provided. There can be a combined cooking and sewing room, combined auditorium and gymnasium, and some schools, especially in the Middle West, have combined the auditorium, gymnasium and cafeteria. A cafeteria lunch room, if used only for lunch purposes, is one of the least used rooms in a school and is often one of the largest and most costly rooms. This represents a considerable waste as far as economy in use is concerned. Lunch rooms in many schools, where arrangements have been made so that the kitchen and serving counter can be quickly closed off, are used as study halls or libraries, for special conference purposes, sometimes for sewing, and for any purpose where a flat-top table with chairs can be made to serve as equipment. This duplicate use of the lunch room helps to justify the expense of including it in a school plant.

Teachers' rest rooms, which are vacant much of the day, can be used also as medical inspection rooms. The superintendent of schools' office suite can be combined with the board of education meeting rooms, which are used only a few times a month. Mechanical drawing and free-hand drawing rooms can be combined, and if there are still vacant periods, this room could be further used for a regular classroom. Mechanical drawing is sometimes taught in the manual training room by placing the drawing board on a multiple service workbench with drawing-board facilities. Still further utilization of the shop is sometimes obtained by using it and the pupils in the maintenance and repairs of the local school buildings. The smaller the school enrollment, the greater the necessity for flexibility in use, if the principles of specialized public instruction are to be carried out, and if subjects such as dramatics, classroom work, socialized recitations, etc., are all to be carried on in the same room.

These cases of multiple uses of rooms and equipment may not be ideal, but they are possible and are carried out in various parts of the country. Small communities cannot afford high schools and other adequate school facilities unless they are willing to justify the expense by reducing the number of rooms required to a minimum and to use these rooms for many purposes and during every school period.

Working Capacity. It is realized that no school building can be used to 100 per cent of its capacity; that is, it is not possible to put a child in every seat in every classroom, in every station in the gymnasium, shops, and laboratories, and in the various special rooms—all at the same time. Many schools operate only on a 50 or 60 per cent efficiency basis, and if the school is operated on a basis of 80 per cent of its maximum capacity when all seats and stations are counted, it is about all that can be hoped for. Classes vary in size and all rooms cannot be exactly full all the time. A room may have two or three more pupils than can be accommodated, or a few less; then again there may be too many pupils for one class and too few for two classes, which means that two rooms have to be used at reduced capacity.

Pupil Capacity. The term "pupil capacity," as used by the educator and the architect, often varies, and the different points of view are not thoroughly understood by both parties. The superintendent of schools thinks of the capacity of the building as its working capacity, whereas the architect usually thinks in terms of its maximum capacity. The working capacity is equal to about 80 per cent of the maximum capacity, but if seats or spaces which may accommodate pupils are not used, they are nevertheless paid for and enter into the cost of the building. Therefore, in speaking of the capacity of the building, it should be made clear whether we are thinking of the working capacity or the maximum capacity, and the architect, in arriving at cost per pupil, or cubic foot space per pupil, always speaks in terms of maximum capacity.

Possibly an illustration of an accepted method of computing pupil capacity of a high school building might be in order:

14 Classrooms	390
Bookkeeping Room	40
Typewriting Room	25
Sewing Room	20
Domestic Science and Household Suite	30
Art Room	24
Biology Laboratory	24
Chemistry Laboratory	24
Physics Laboratory	24
Lecture Room	24
Mechanical Drawing Room	20
Manual Training Room	24
Gymnasium 60 x 80 ft.	60
Auditorium 55 x 80 ft.	60
Maximum Pupil Capacity	789
Working Pupil Capacity	631

This figure represents the number of pupils the building will probably accommodate working under normal capacity—80 per cent of the maximum capacity.

Cubage of Building	1,110,000
Cubic foot space per pupil	1,406

(1,110,000 ÷ 789)

The number of cubic feet per pupil is one of the architect's important units of measure. It has been found in a series of buildings that grade schools average from 800 to 1,000 cu. ft. per pupil, junior high schools 1,000 to 1,200 cu. ft. per pupil, and high schools from 1,200 to 1,500 cu. ft. per pupil, with gymnasium and auditorium, all depending upon whether they are rather complete schools or whether they contain only the minimum requirements with these rooms.

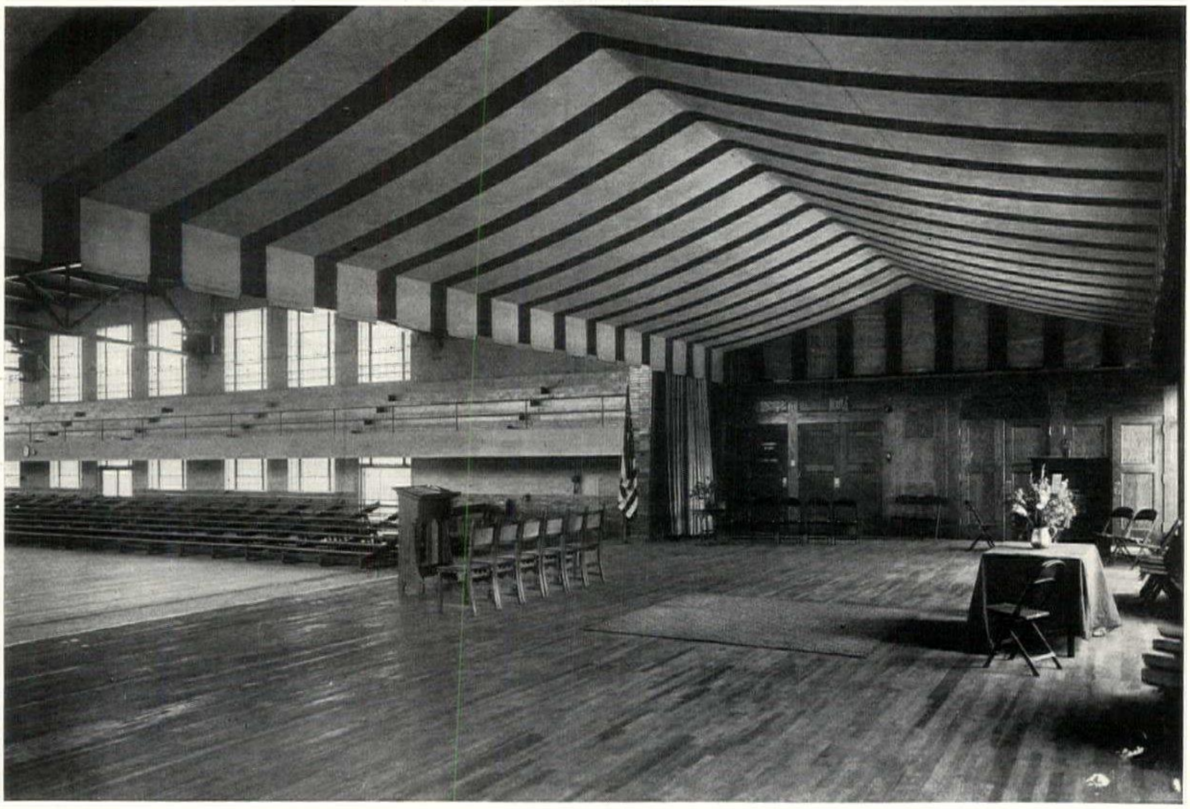
The cost of a high school building, exclusive of architect's fee and equipment, can be quickly and approximately arrived at by multiplying the maximum pupil capacity by 1,500 cu. ft. per pupil, and this product by the local construction cost per cubic foot.

Community Use of Schools. It is important that the school system of a community have the moral as well as the financial support of the citizens and taxpayers of the community. Naturally, every family desires the best school accom-

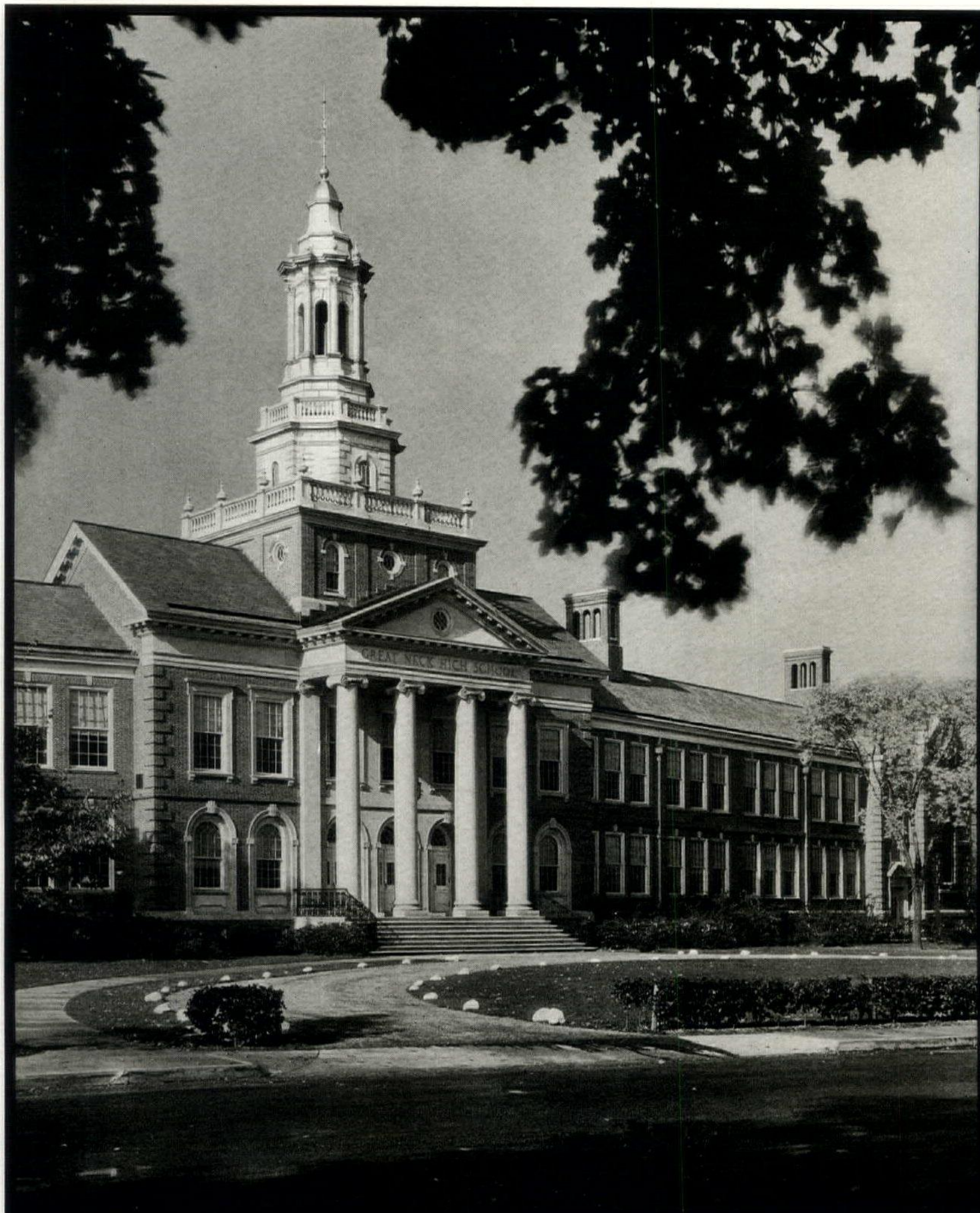
Courtesy R. A. Fife Corp.

A laboratory room in the White Plains High School, White Plains, N. Y., Starrett & Van Vleck, architects, which may be used for chemistry, physics, or general science and also as a classroom for any or all of these subjects. The special equipment usually makes planning for multiple use a necessary economical measure

modations for its children, and in most cases is willing to pay a share of the cost. If school buildings were designed with some provision for community activities, this share would be more cheerfully borne. By using the building for community activities, the intensive utilization of the building is increased for the reason that these community activities in a great majority of instances take place outside of school hours and, of course, the more hours the building is in use each day, the more the cost of the building is justified to the community. Different cities make different provisions for the community use of their buildings; many of them use the schools for polling places on Election Day, and all of them use the auditorium for political meetings, charitable and civic entertainments, community choruses, etc. The kindergarten is sometimes used for parent-teachers' meetings, the sewing and cooking rooms and shops for adult education along these lines, the gymnasium for community basketball games and adult physical training, the swimming pool for the teaching of swimming and community uses, and the play court is used by the local children and Boy Scouts. All of these uses promote the good will of the community toward the school, lower the costs of education, and provide recreational possibilities for leisure.



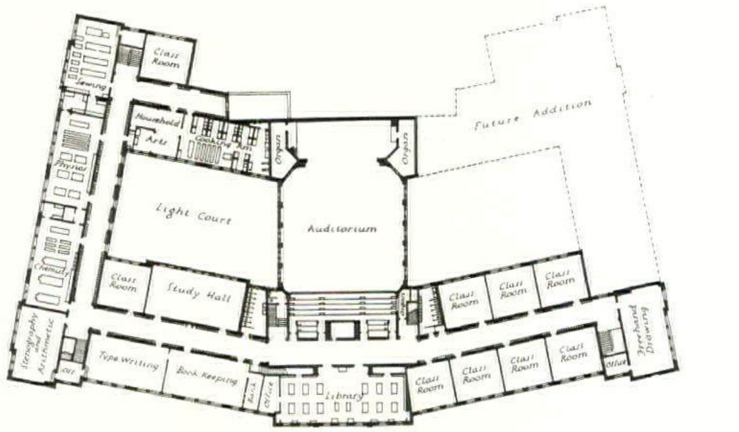
The stage of the field house in the Lincoln High School, Wisconsin Rapids, Wis., Childs & Smith, architects, may be shut off from the gymnasium and used as an auditorium, dance hall, study hall, or instructional space



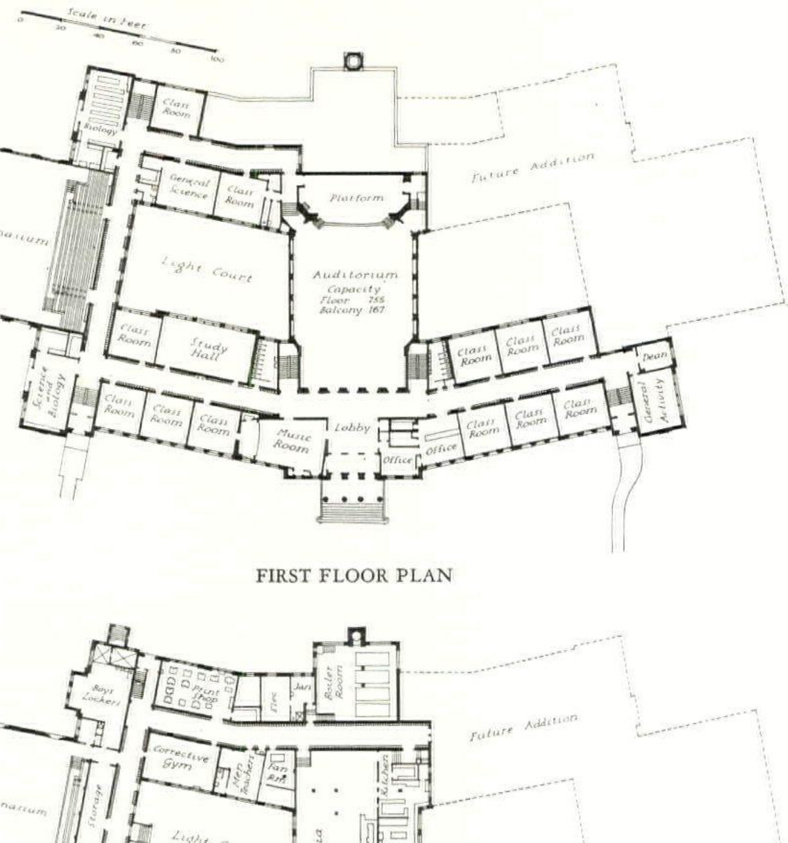
Richard Averill Smith

GREAT NECK HIGH SCHOOL, GREAT NECK, L. I., N. Y.
GUILBERT & BETELLE, ARCHITECTS

NINE SENIOR HIGH SCHOOL BUILDINGS



SECOND FLOOR PLAN



FIRST FLOOR PLAN

BASEMENT FLOOR PLAN

GREAT NECK HIGH SCHOOL, GREAT NECK, L. I., N. Y.

GUILBERT & BETELLE, ARCHITECTS

Stackliff

A GENERAL VIEW OF THE SCHOOL

EXTERIOR: The Colonial character of the building was decided upon as being in harmony with the history and earlier architecture of the community. The walls are of red brick, with limestone trim, and the roof is of green slate. The windows are of wood, double hung

INTERIOR: The corridors and stairs have glazed-brick wainscoting, plaster walls and ceilings. For most of their length the corridors are lined with lockers. The classrooms, library, administrative offices, etc., have plaster walls, chestnut trim, and maple floors. Corridor floors are of concrete. Toilet rooms have tile floors and walls, and metal toilet partitions. The building is heated by direct steam radiation, and ventilated by unit ventilators; the controlled cut-off system permits heating of the library, auditorium, and cafeteria independently of the balance of the building

COST AND CONSTRUCTION: The building is of fireproof construction, with solid brick walls, concrete floor slabs and steel framework over the large spans of the auditorium and gymnasium. The non-bearing partitions throughout are of terra cotta. Total cost, exclusive of land and architect's fee, was $907,000, or 1,905,000 cu. ft. at 46½ cents per cu. ft.

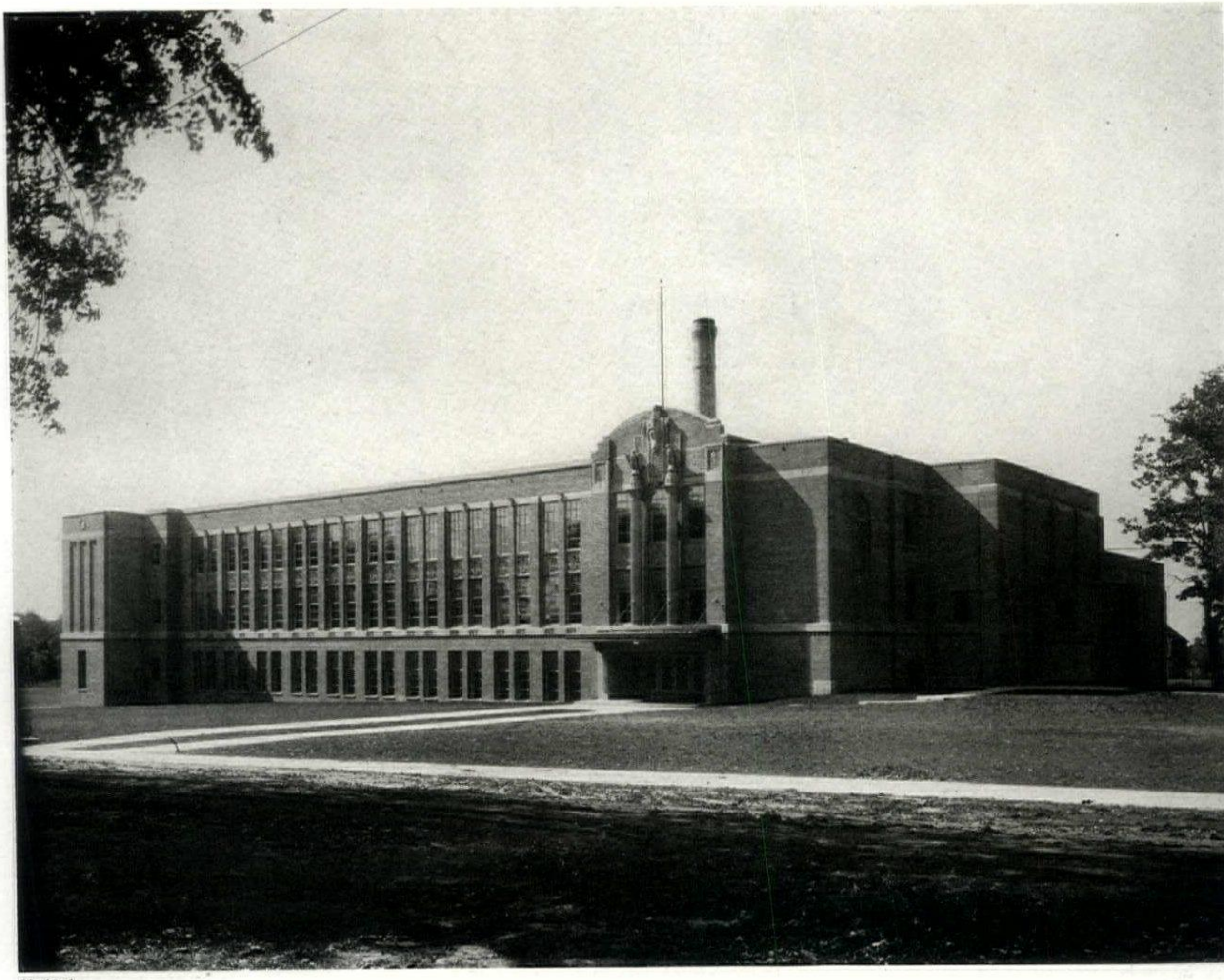
GREAT NECK HIGH SCHOOL, GREAT NECK, L. I., N. Y.

GUILBERT & BETELLE, ARCHITECTS

United

COMMUNITY HIGH SCHOOL, NORMAL, ILLINOIS

LUNDEEN, HOOTON, ROOZEN & SCHAEFFER, ARCHITECTS



United

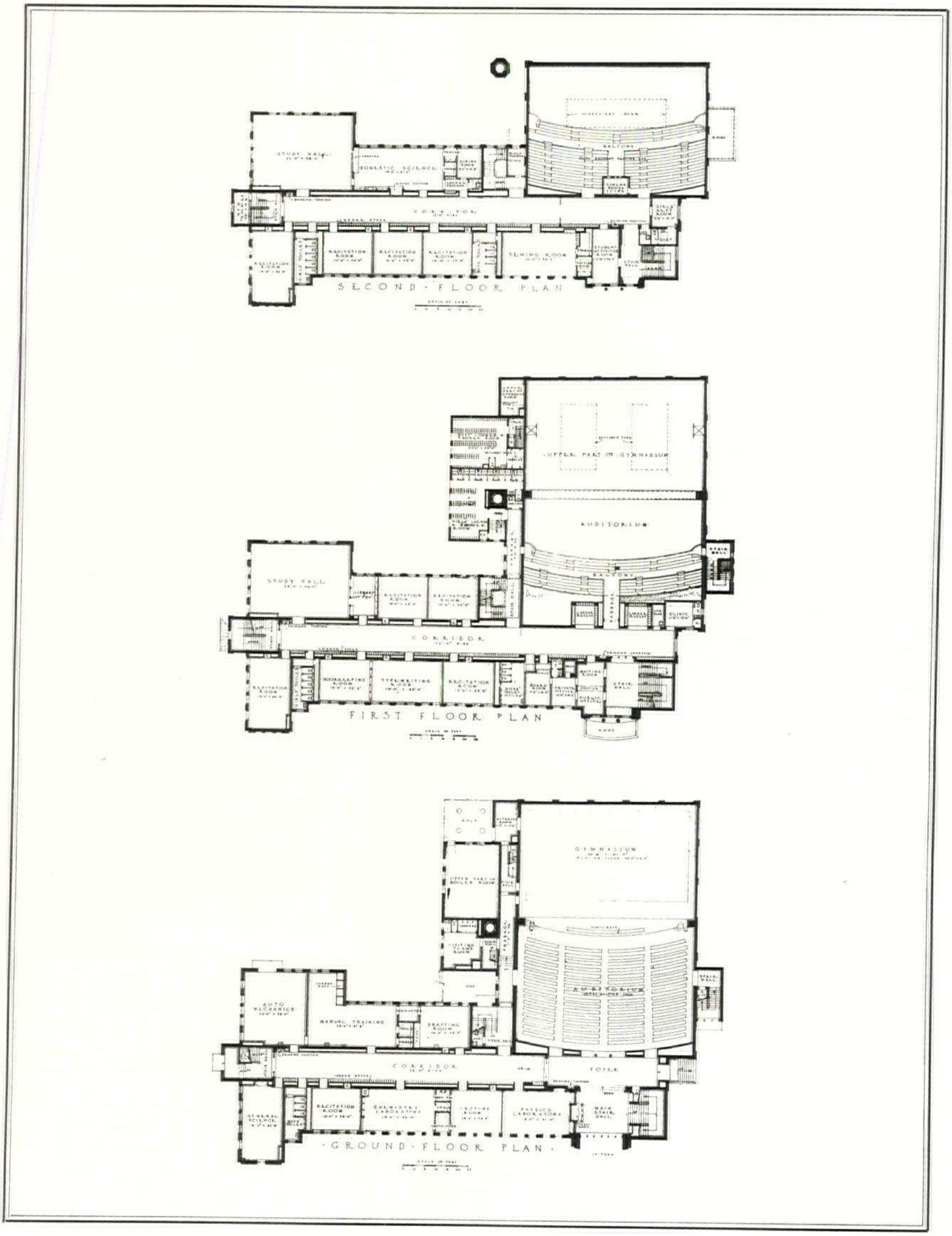
EXTERIOR: The walls are of variegated buff brick, stipple textured, with trim of light buff cast stone. Spandrels are of cast cement, finished in copper green. Horizontally pivoted steel sash are used for the windows. The roof is of a built-up asbestos composition

INTERIOR: All walls are sand finish plaster, except those in the gymnasium, which are cream color pressed brick. Floors in classrooms, study halls, administrative offices, etc., are of olive green mastic; in stair systems and corridors, the floors are of gray and black terrazzo, with wainscoting of gray terrazzo. Trim throughout is natural finish white oak. A direct radiation steam heating system is used, with separate thermostatic control in each room, and automatic control of the ventilating system, which consists of a fan blast system in the school proper and auditorium, and unit heaters in the gymnasium. One of the two study halls is separated from the library only by a glass partition, permitting one teacher to supervise both the library and the study hall. The other study hall serves as a lunch room during the noon hour

COST AND CONSTRUCTION: The building is constructed on a poured concrete foundation, and with the exception of the roof, which is of wood construction, is entirely fireproof. A bar joist, concrete slab system is used for the floor construction. The walls are of face brick with hollow tile backing. Total cost including architect's fee, equipment, grading, walks, drives, planting, and athletic field, was $254,771.72, or 27 cents per cu. ft. for 949,000 cu. ft.

COMMUNITY HIGH SCHOOL, NORMAL, ILLINOIS

LUNDEEN, HOOTON, ROOZEN & SCHAEFFER, ARCHITECTS



COMMUNITY HIGH SCHOOL, NORMAL, ILLINOIS

LUNDEEN, HOOTON, ROOZEN & SCHAEFFER, ARCHITECTS

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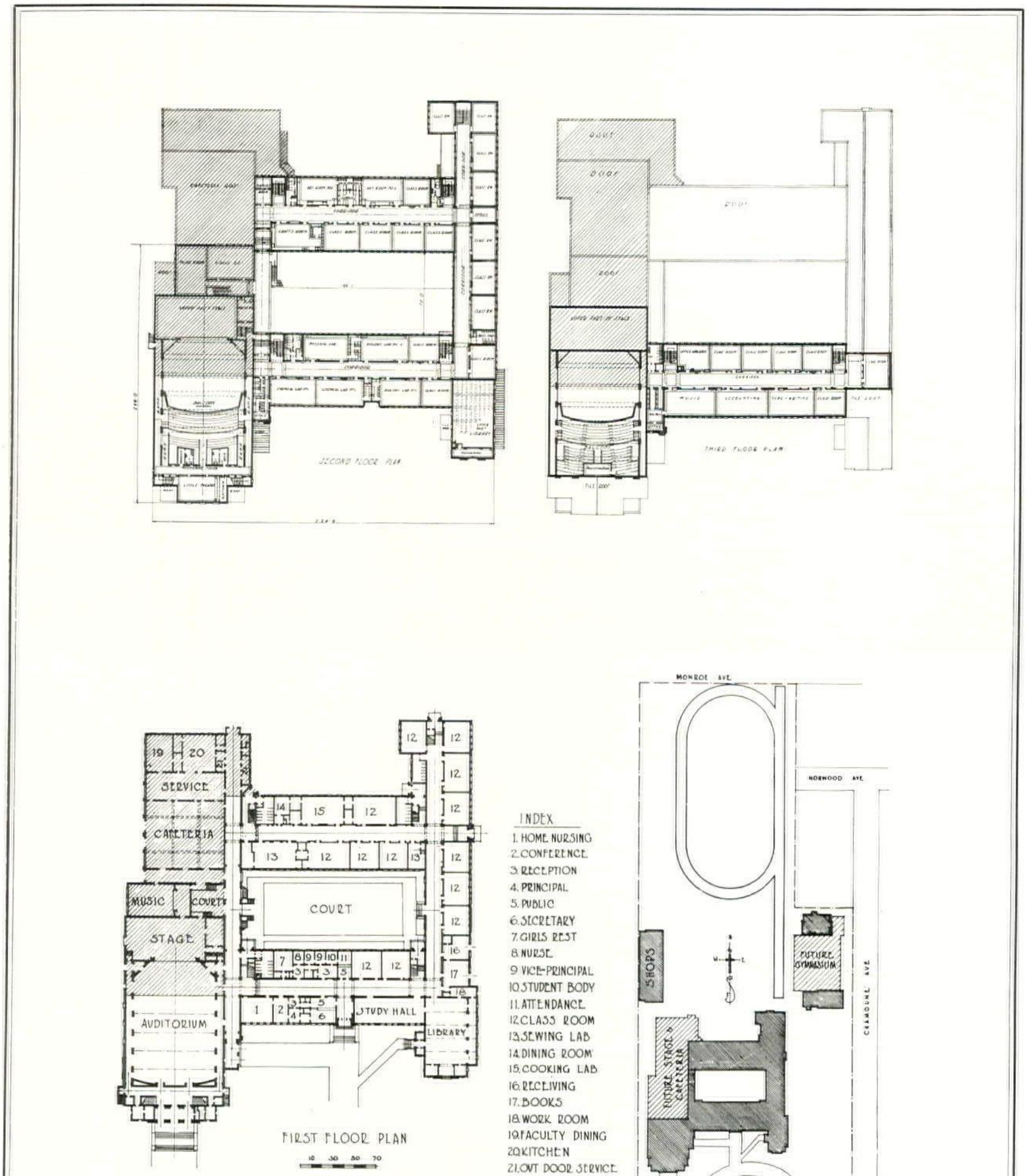
HERBERT HOOVER HIGH SCHOOL, SAN DIEGO, CALIFORNIA

T. C. KISTNER & CO., ARCHITECTS



HERBERT HOOVER HIGH SCHOOL, SAN DIEGO, CALIFORNIA

T. C. KISTNER & CO., ARCHITECTS

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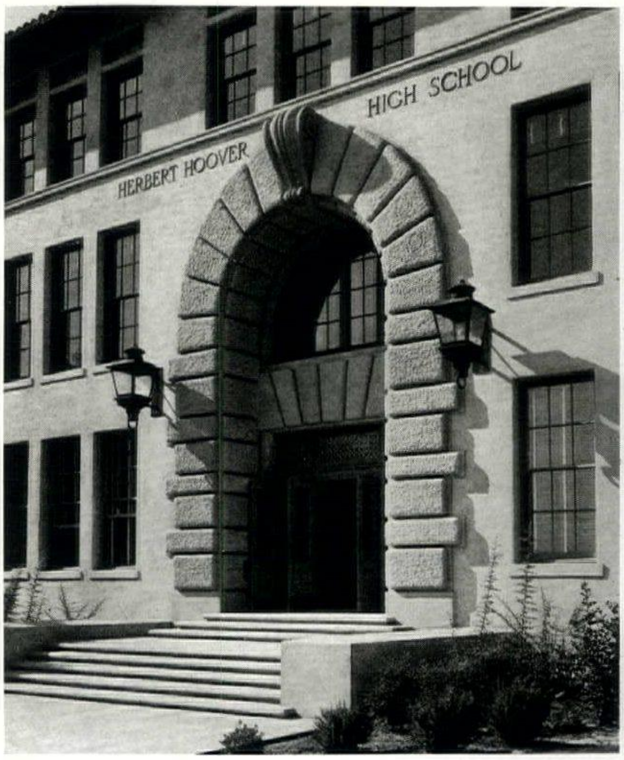


EXTERIOR: The walls are of steel troweled stucco, light buff in color. The roof is part composition and part red Mission tile

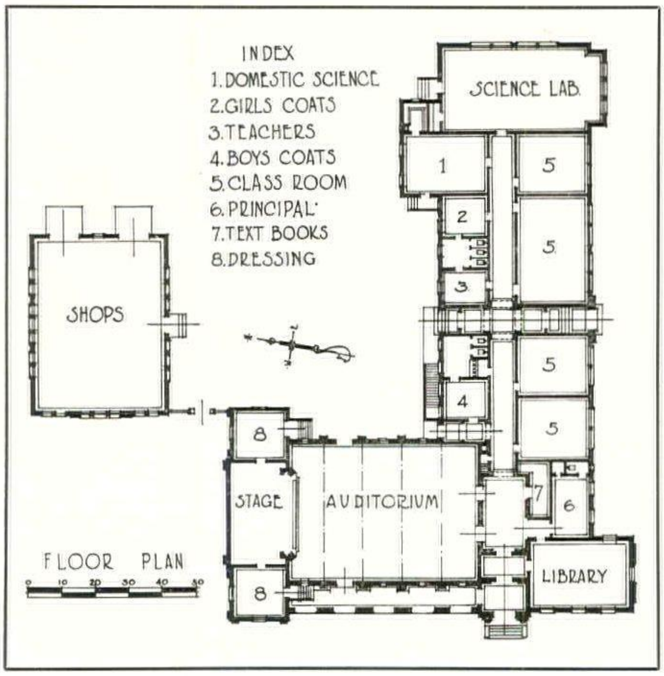
INTERIOR: Floors are of concrete in public areas, maple and composition tile in others. The walls and ceiling are of sand finished gypsum plaster with pine trim in all but first floor corridor and offices, which have mahogany trim. Walls and ceiling of auditorium and ceilings of library and corridors are acoustically treated. A steam vacuum return heating system is used, with a univent in the auditorium

COST AND CONSTRUCTION: The building is of steel and concrete frame construction on a concrete foundation. Interior bearing walls are of hollow terra cotta. Completed in 1931, the total cost of the building was $615,183, or 206,062 cu. ft. at 29¾ cents per cu. ft.

HERBERT HOOVER HIGH SCHOOL, SAN DIEGO, CALIFORNIA

T. C. KISTNER & CO., ARCHITECTS

Mott



EXTERIOR: Sand dashed light buff stucco is used for the walls, red Mission tiles and composition for the roof. The windows are wood casements

INTERIOR: All floors are of maple, and the walls and ceilings are of sand finished gypsum plaster with pine trim

COST AND CONSTRUCTION: The foundation is concrete, and the building is of wood frame construction with a structural tile veneer. Interior bearing walls are of 4-in. hollow terra cotta tile. Sanitation and drainage are supplied by septic tanks. Total cost, including the shop building, was $48,682, at 23 cents per cu. ft.

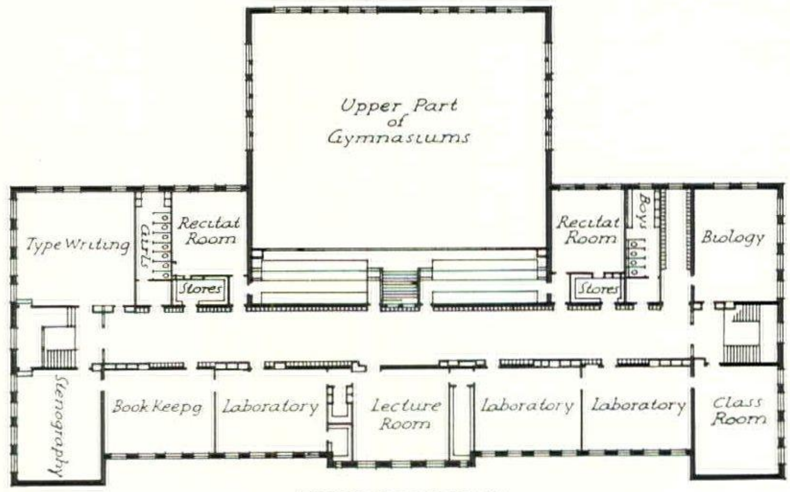
UNION HIGH SCHOOL, SAN JUAN CAPISTRANO, CALIFORNIA

T. C. KISTNER & COMPANY, ARCHITECTS

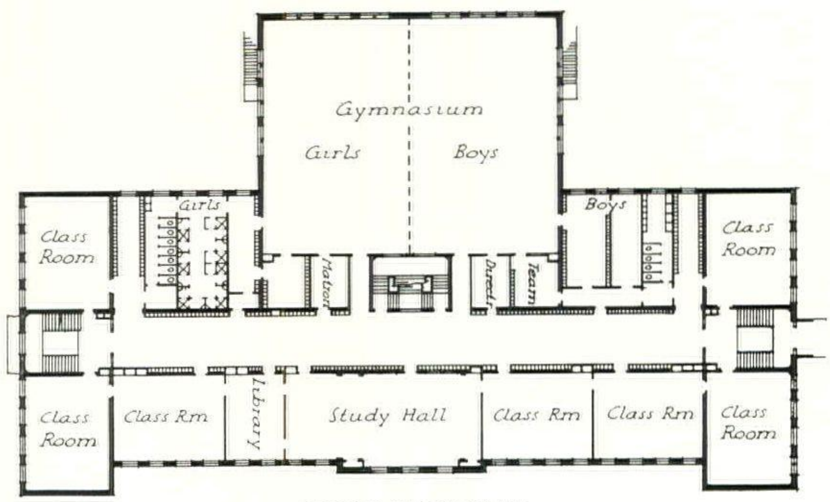
Hanson & Walsh

JUNIOR-SENIOR HIGH SCHOOL, DANVERS, MASS.

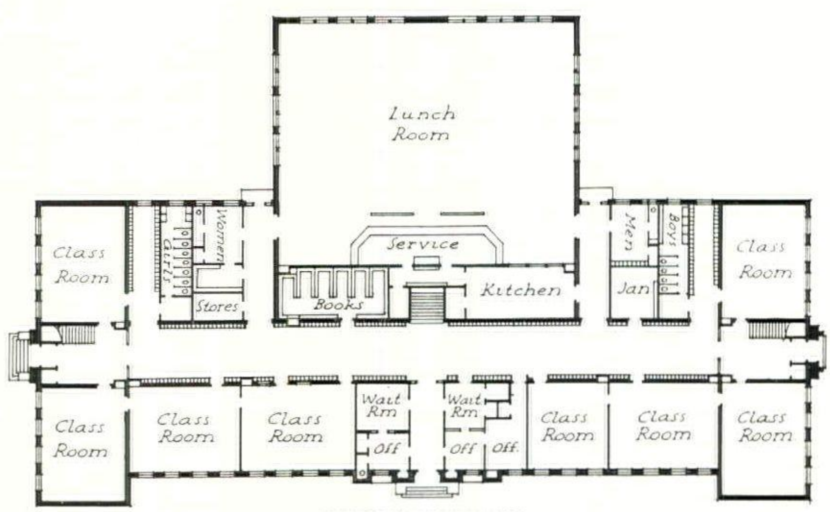
CHARLES G. LORING, ARCHITECT



THIRD FLOOR PLAN



SECOND FLOOR PLAN



FIRST FLOOR PLAN

JUNIOR-SENIOR HIGH SCHOOL, DANVERS, MASS.

CHARLES G. LORING, ARCHITECT

Hanson & Walsh

GENERAL: This building is one of two which together form a junior-senior high school group, containing every facility for an educational center of this type. Besides the common gymnasium contained in this building and the auditorium which is contained in the other, the only other common facility is the heating system. The floor plans on the opposite page are for the senior high school unit only, which is connected with the junior unit by an enclosed bridge

EXTERIOR: The design, chosen to conform with the traditions of the locality, has been executed with red shale brick walls, buff limestone and granite trim and wood framing and finish in the cupola and wrought iron railings. The windows, with the exception of the steel sash in the gymnasium, are of wood, double hung. The roof is built up and finished with tar and gravel

INTERIOR: The interior walls are finished in salt glazed brick with acoustical tile ceilings in special rooms. The floors are covered with linoleum tile throughout

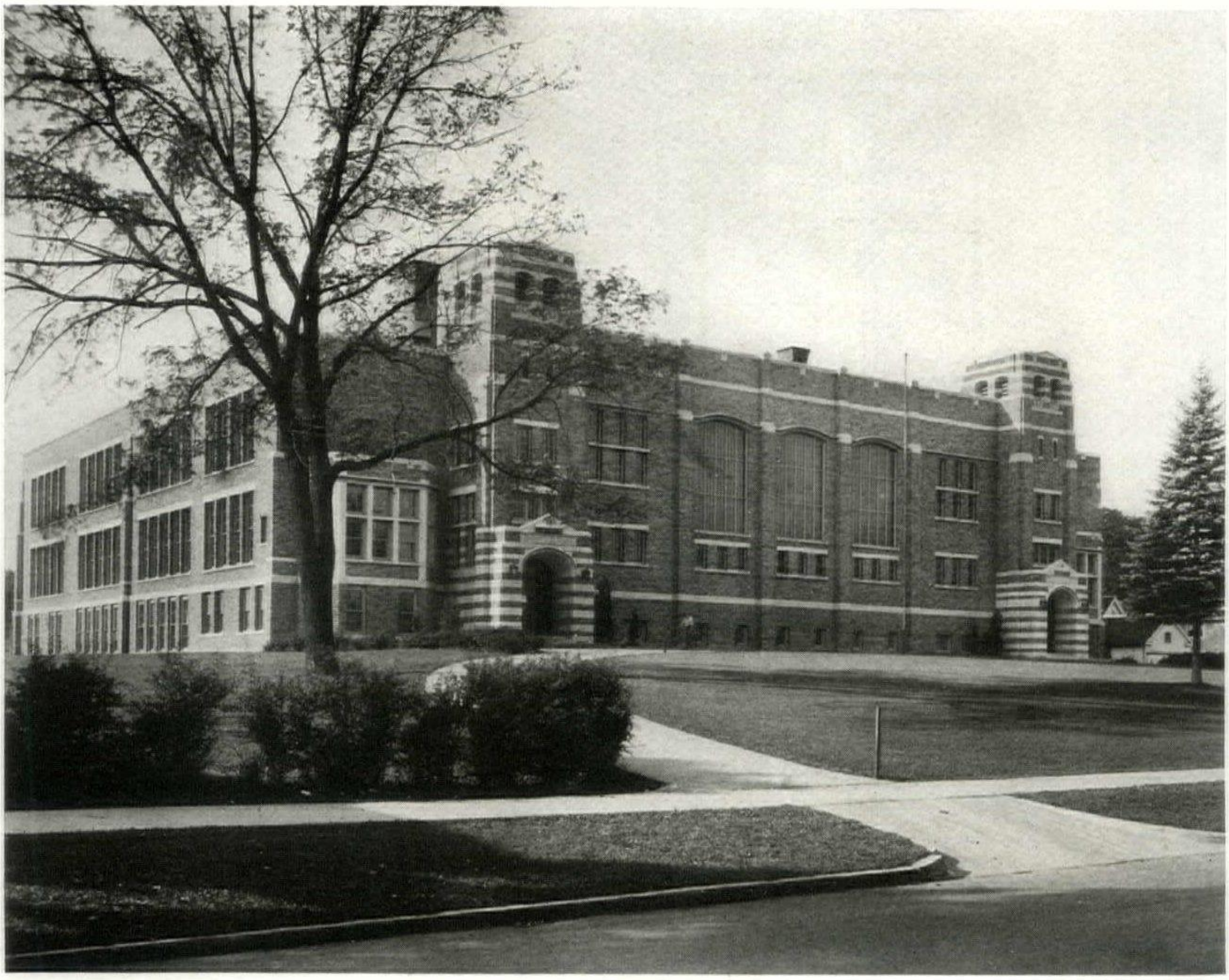
CONSTRUCTION: The building is of the semi-fireproof type with a reinforced concrete and granite foundation and a bar joist and wood framed floor construction. Heat is supplied by a steam system and ventilation from unit ventilators. The drainage system and sanitary lines discharge into a concrete septic tank. The school was completed in January, 1931, and contains 1,458,000 cu. ft. The cost was 34.2 cents per cu. ft., the gross cost being $498,419 which included $284,179 for the senior unit and $214,240 for the junior unit

JUNIOR-SENIOR HIGH SCHOOL, DANVERS, MASS.

CHARLES G. LORING, ARCHITECT

FAIRPORT HIGH SCHOOL, FAIRPORT, N. Y.

O. W. & H. B. DRYER, ARCHITECTS



A GENERAL VIEW OF THE SCHOOL

GENERAL: Although designated as a high school, the building is almost a consolidated school in that space is provided on the first floor for seventh and eighth grade classes, the high school division occupying the entire second floor. The basement will be sub-divided in the future into a gymnasium, classrooms, a lunch room, and a kitchen

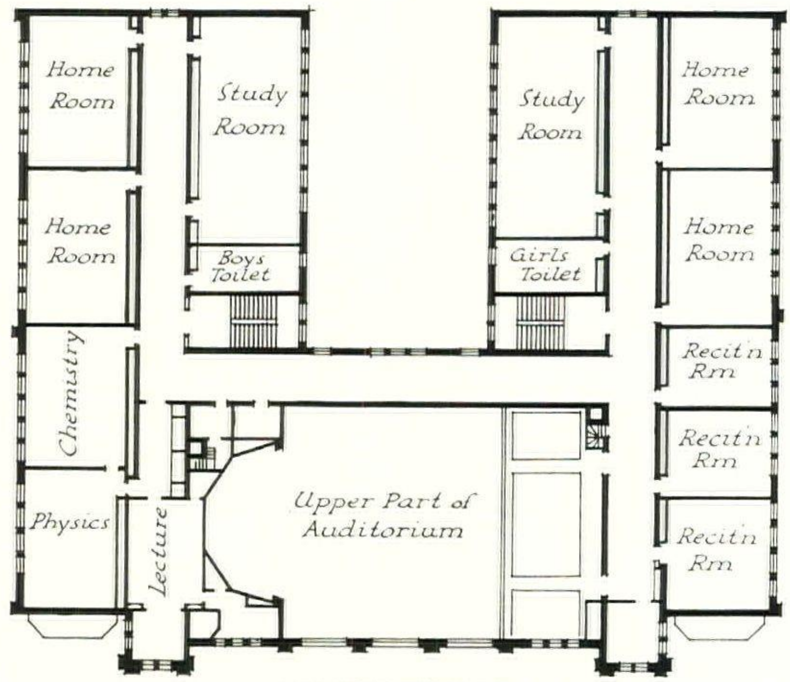
EXTERIOR: The exterior is finished in a warm gray, rough textured brick trimmed with light gray limestone. The windows are generally of double hung wood sash except those in the auditorium. The roofing is of a built-up type

INTERIOR: The general interior treatment is of sand finished plaster with oak trim. The wall and ceiling surfaces have been painted a warm tan throughout. The building is heated by warm air with a forced ventilation system

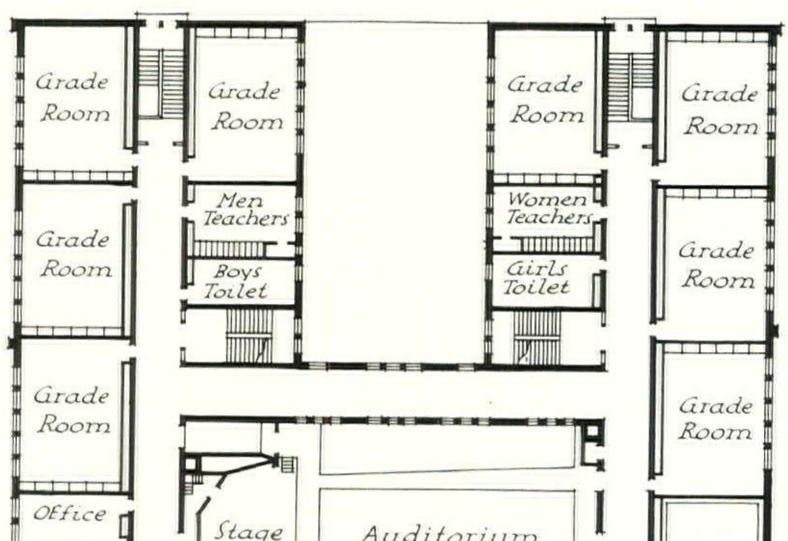
CONSTRUCTION: The school is of fireproof construction throughout, with a reinforced concrete foundation, reinforced concrete floors which utilize the pan system and solid masonry walls of hollow tile finished with face brick. No special features of construction have been used and the building contains no special provision for either sound or heat insulation. It contains 1,250,000 cu. ft. and was constructed at a cost of 30 cents per cu. ft., or a total of $375,000

FAIRPORT HIGH SCHOOL, FAIRPORT, N. Y.

O. W. & H. B. DRYER, ARCHITECTS



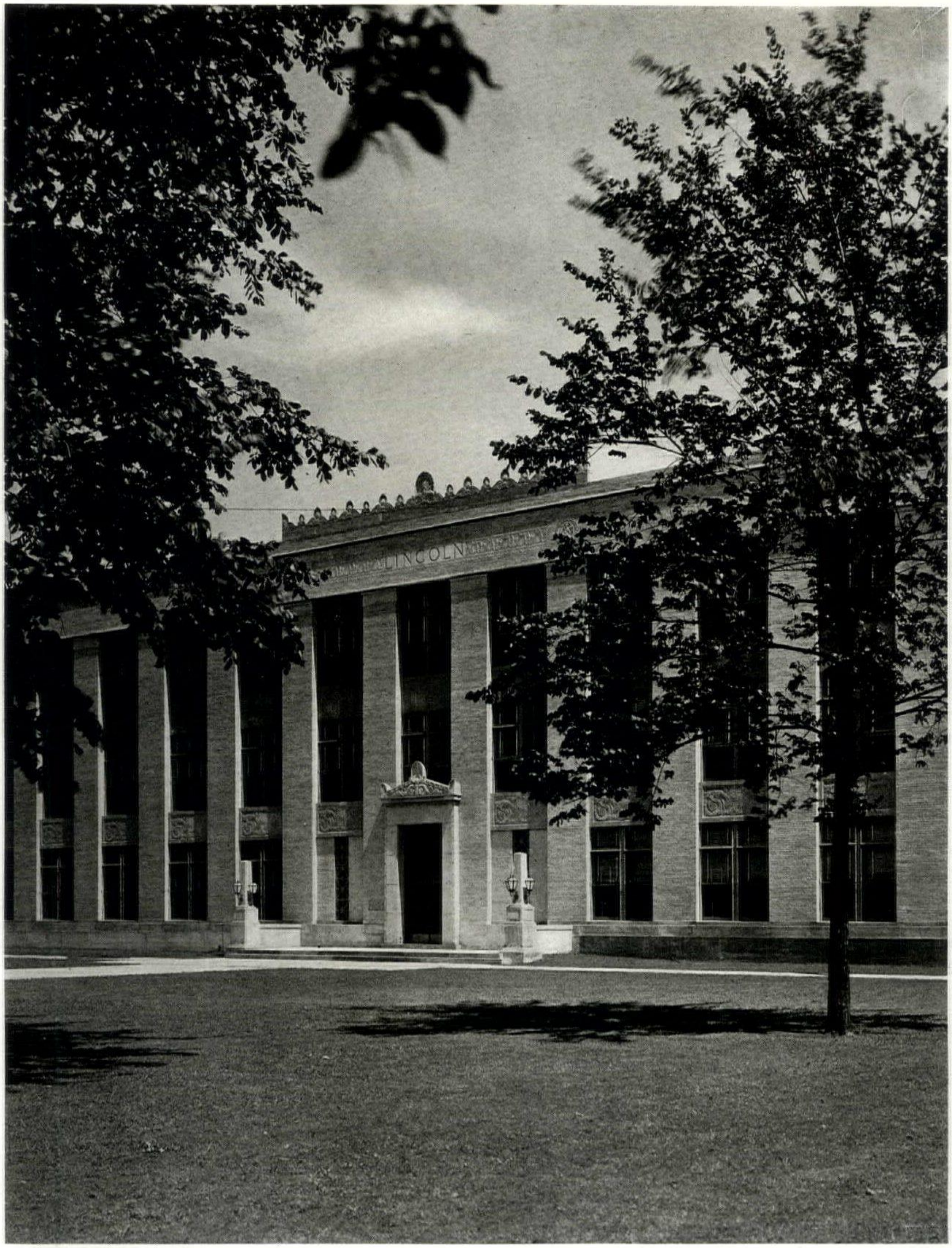
SECOND FLOOR PLAN



FIRST FLOOR PLAN

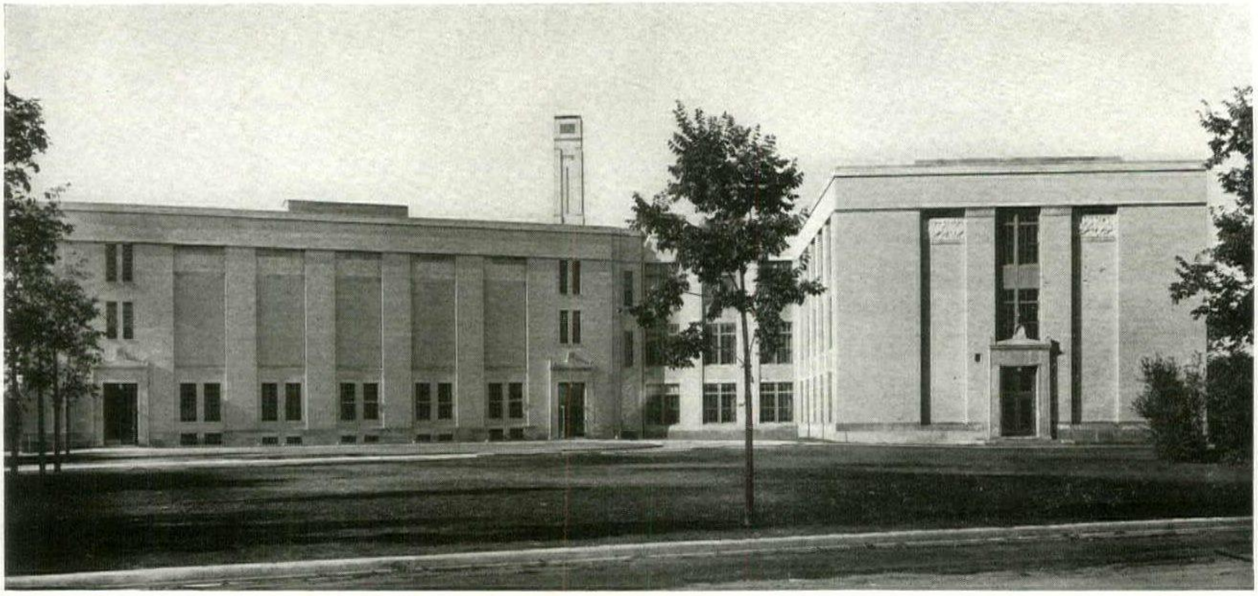
FAIRPORT HIGH SCHOOL, FAIRPORT, N. Y.

O. W. & H. B. DRYER, ARCHITECTS

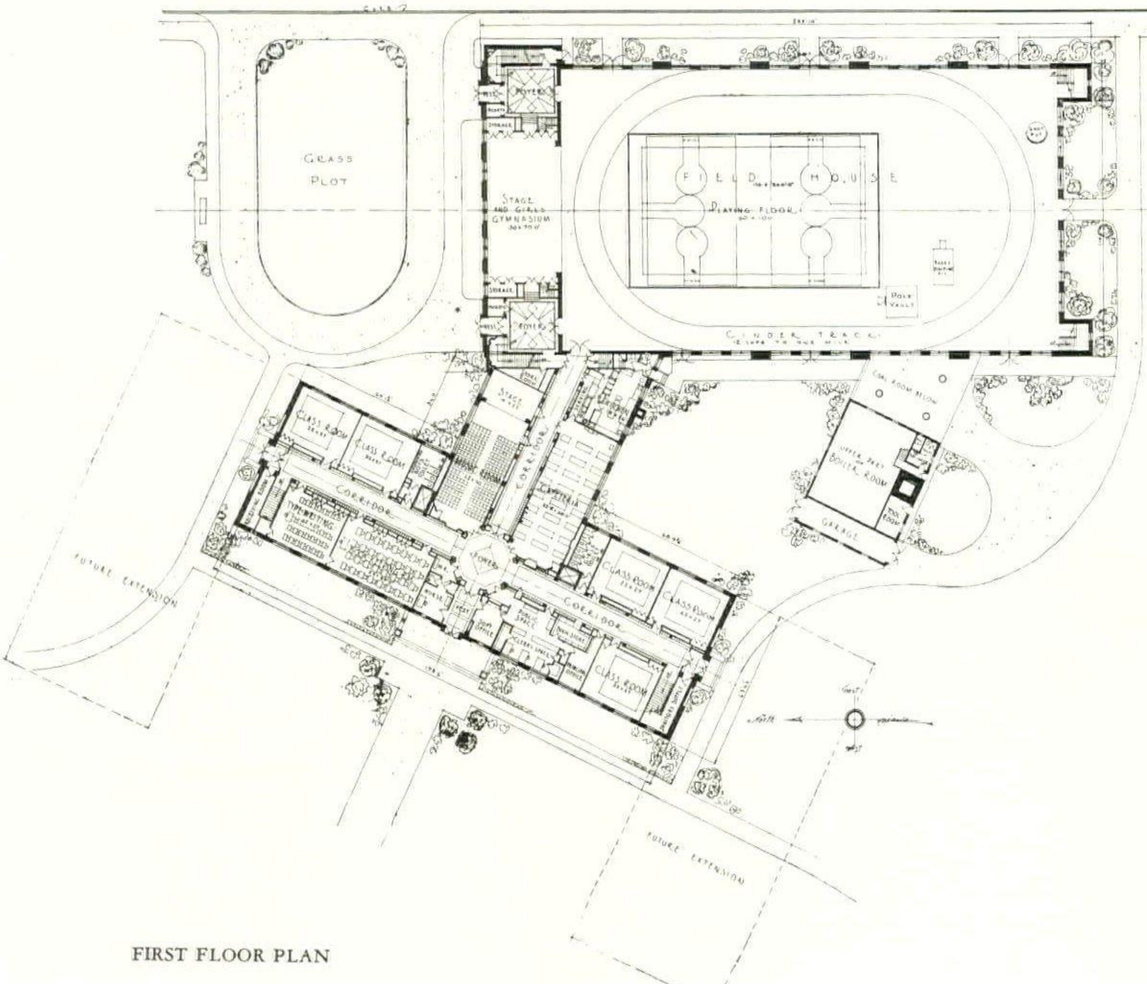


LINCOLN HIGH SCHOOL AND FIELD HOUSE, WISCONSIN RAPIDS, WIS.

CHILDS & SMITH, ARCHITECTS



VIEW FROM THE NORTHEAST



FIRST FLOOR PLAN

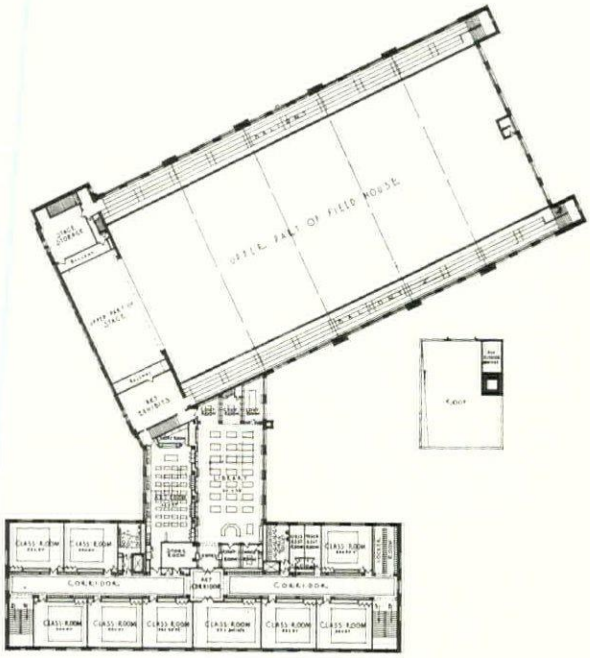
LINCOLN HIGH SCHOOL AND FIELD HOUSE, WISCONSIN RAPIDS, WIS.

CHILDS & SMITH, ARCHITECTS

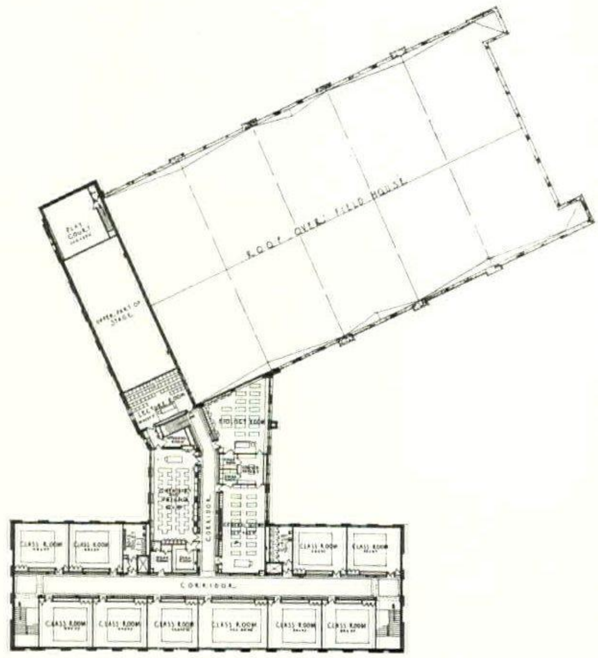
MUSIC ROOM

LINCOLN HIGH SCHOOL AND FIELD HOUSE, WISCONSIN RAPIDS, WIS.

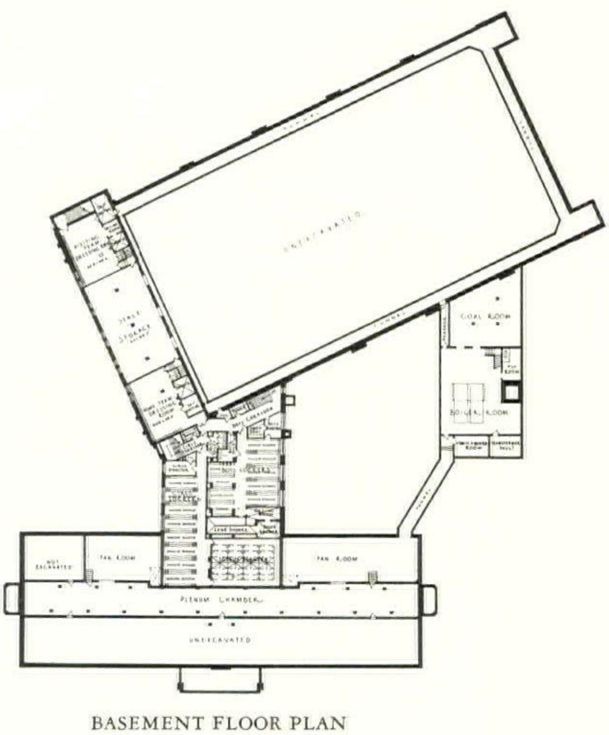
CHILDS & SMITH, ARCHITECTS



SECOND FLOOR PLAN



THIRD FLOOR PLAN



BASEMENT FLOOR PLAN

COST AND CONSTRUCTION DATA

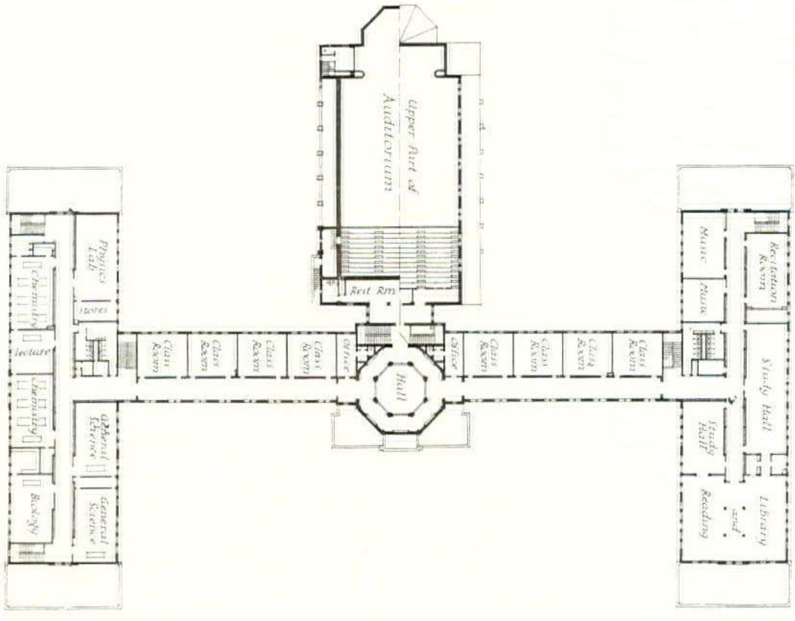
The entire building is of reinforced concrete construction, with exterior walls of brick, and stone trim. The floors and roof are of reinforced concrete, the latter being insulated with masonite. Steel windows and frames are used throughout. Floor finishes are terrazzo in the corridors and other public spaces, linoleum in most of the classrooms, and tile in other areas. Corridor walls have glazed brick wainscoting, and hard finish plaster walls. The heating system is of the low pressure steam vacuum type, and ventilation is supplied by fans after the air has been filtered. The total cost of the building, including all fixed and movable equipment and the architect's fee, was $585,800, or 1,997,829 cu. ft. at 29.3 cents per cu. ft. The building was completed in 1931

LINCOLN HIGH SCHOOL AND FIELD HOUSE, WISCONSIN RAPIDS, WIS.

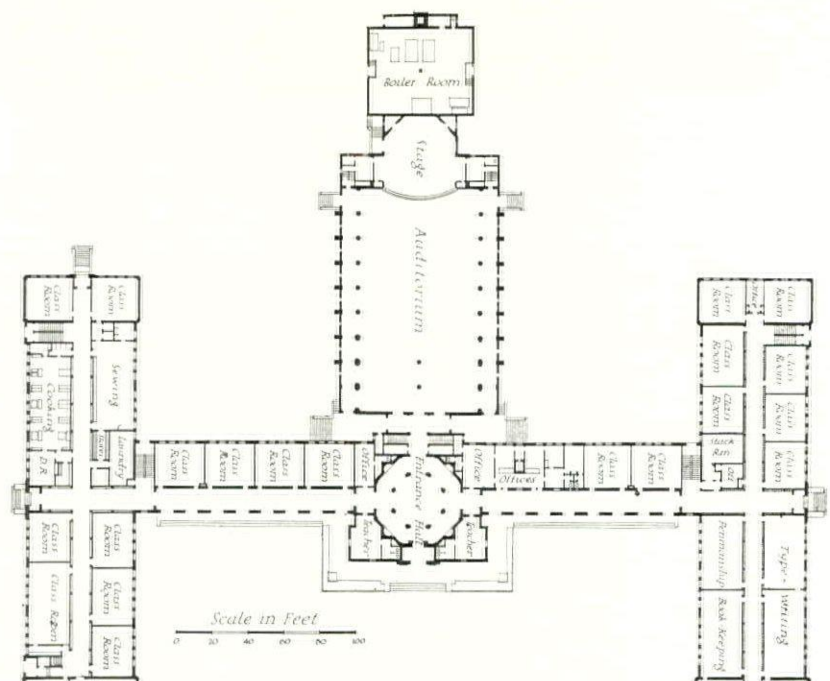
CHILDS & SMITH, ARCHITECTS

MAIN ENTRANCE

FAIRFAX HIGH SCHOOL, LOS ANGELES, CALIFORNIA
JOHN PARKINSON AND DONALD B. PARKINSON, ARCHITECTS



SECOND FLOOR PLAN



FIRST FLOOR PLAN

FAIRFAX HIGH SCHOOL, LOS ANGELES, CALIFORNIA

JOHN PARKINSON AND DONALD B. PARKINSON, ARCHITECTS

Mott

A GENERAL VIEW OF THE SCHOOL

EXTERIOR: The school is an interesting example of a problem in which the conservation of ground area was not important and in which athletic facilities are provided outside the academic area. The design, characterized by the architects as "Medieval Sicilian Arabo-Normano," is carried out in painted common brick with precast cement and tile trim with double hung windows of painted wood. The roof is of red clay tile

INTERIOR: The walls are of sand finished plaster and natural concrete with a cement wash finish. Floors are of maple except those in the corridors which are of reinforced concrete with a cement finish. The entrance rotunda as well as the auditorium has been built of concrete with the natural surface untouched. The auditorium roof is supported by decorated wooden trusses built up of solid pieces, the main chord being a single piece 16 in. x 24 in. x 70 ft. The panels between the trusses are acoustically treated

COST AND CONSTRUCTION: The building is of semi-fireproof construction with common brick and reinforced concrete walls. The corridors and stairs are built of reinforced concrete but the floors are framed with wood. The heating system is oil-fired, with direct steam radiation for classrooms and a ventilation system for the auditorium. The structure contains 2,858,000 cu. ft. and was built at a unit cost of 20 cents per cu. ft., or a total of $575,000

FAIRFAX HIGH SCHOOL, LOS ANGELES, CALIFORNIA

JOHN PARKINSON AND DONALD B. PARKINSON, ARCHITECTS

Mott

FAIRFAX HIGH SCHOOL, LOS ANGELES, CALIFORNIA
JOHN PARKINSON AND DONALD B. PARKINSON, ARCHITECTS

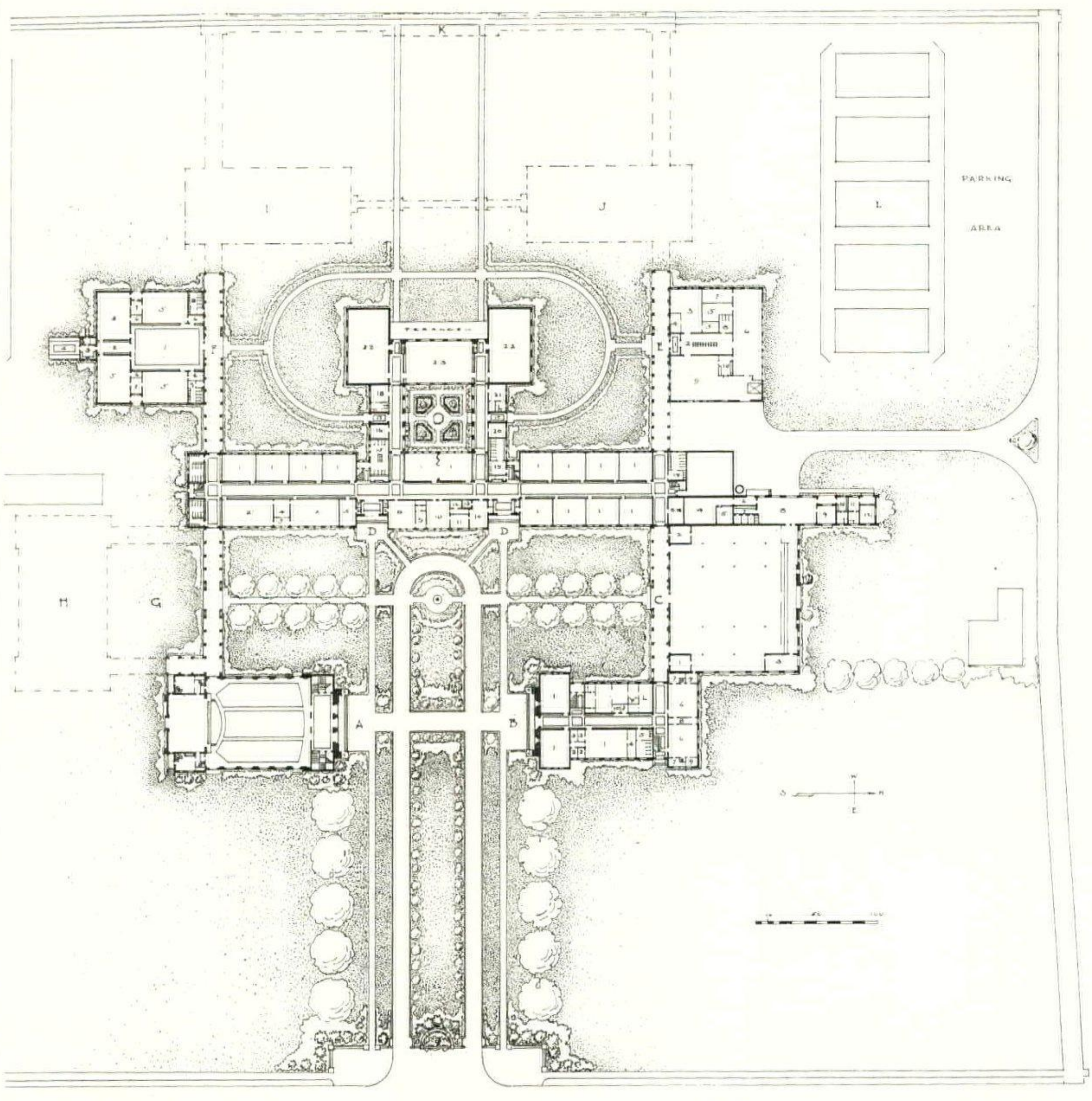
Tebbs & Knell

EXTERIOR: The walls are of rough textured stucco, painted light tan, and all ornamental features are of caststone. Mixed colored tile is used on the roof, and all windows have steel sash, of the projected type in the classrooms and of special design elsewhere

INTERIOR: The troweled plaster walls are painted light gray. A continuous metal wainscot in the corridors is formed by the steel lockers, which are painted olive-green. The corridors themselves are day lighted by means of glazed classroom doors, and by continuous transoms above the lockers. The ceilings are painted, but not plastered. All floor finishes of vestibules, corridors and toilets are of adamantile, a local product. Other floors are mastic. Heating is supplied by a steam system, with wall radiators in classrooms, and floor radiators elsewhere

COST AND CONSTRUCTION: The building has a reinforced concrete skeleton, the ground floor having a cinder fill, and the upper floors being of removable pan construction. Exterior bearing walls are of cement tile, and interior of clay tile. The flat roof construction is of the insulated concrete slab type, and the pitched roof is framed in concrete, insulated and covered with double wood sheathing. Gross cost was \$704,000, or 2,454,000 cu. ft. at 28 cents plus per cu. ft.

MURPHY HIGH SCHOOL, MOBILE, ALABAMA
GEORGE B. ROGERS, ARCHITECT
PERKINS, FELLOWS & HAMILTON, ASSOCIATE ARCHITECTS



FIRST FLOOR AND PLOT PLAN

A—AUDITORIUM (SEATING CAPACITY 1,200)
B—DOMESTIC ARTS BUILDING
C—CAFETERIA
D—ADMINISTRATION BUILDING
E—MANUAL TRAINING BUILDING
F—BIOLOGY BUILDING
G—PROPOSED SWIMMING POOL
H—PROPOSED GYMNASIUM
I—PROPOSED CLASS ROOM BUILDING
J—PROPOSED CLASS ROOM BUILDING
K—PROPOSED COLONNADE

MURPHY HIGH SCHOOL, MOBILE, ALABAMA
GEORGE B. ROGERS, ARCHITECT
PERKINS, FELLOWS & HAMILTON, ASSOCIATE ARCHITECTS

Tebbs & Knell

MURPHY HIGH SCHOOL, MOBILE, ALABAMA
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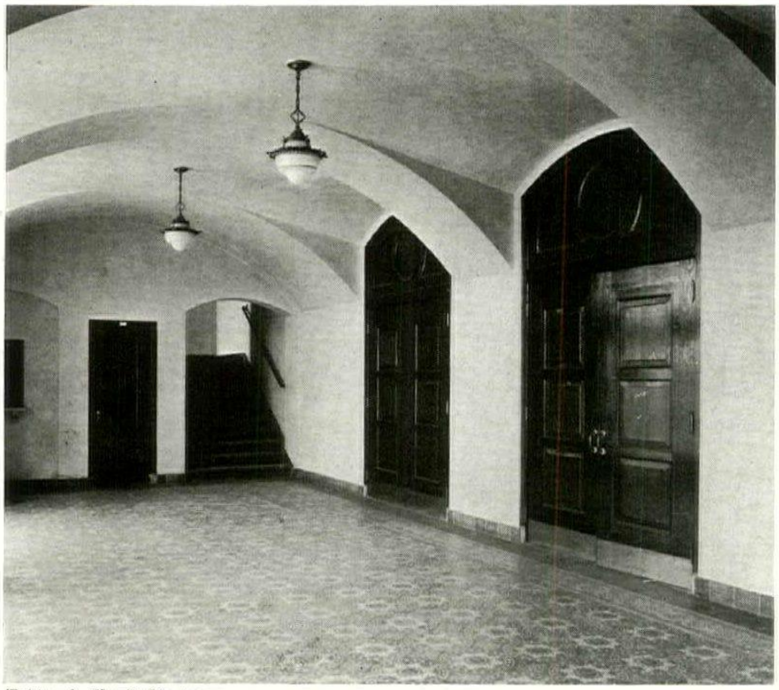
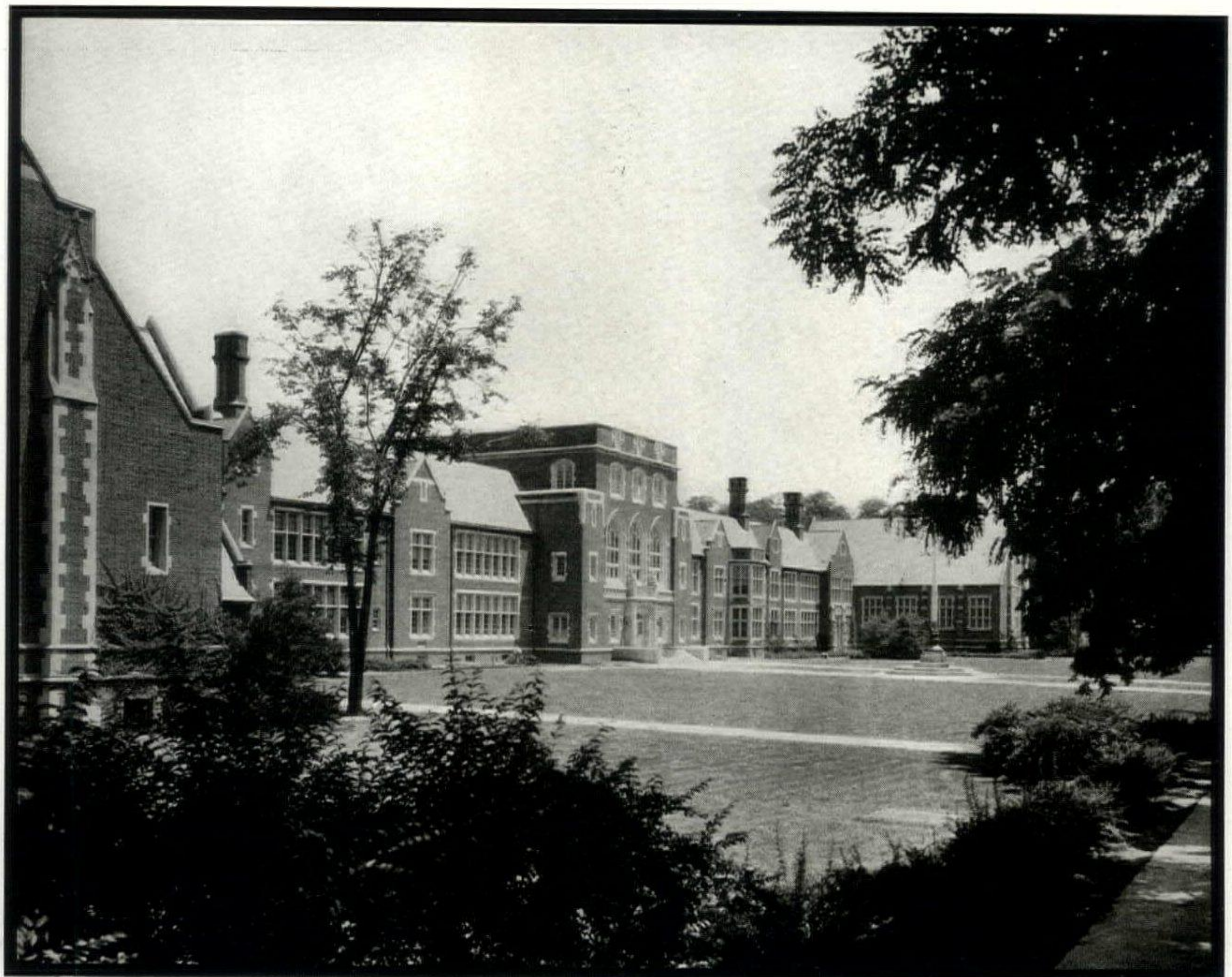


Tebbs & Knell Photos

LEFT, ENTRANCE LOBBY
BELOW, AUDITORIUM

MURPHY HIGH SCHOOL, MOBILE, ALABAMA
GEORGE B. ROGERS, ARCHITECT
PERKINS, FELLOWS & HAMILTON, ASSOCIATE ARCHITECTS



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THE BRONXVILLE SCHOOL, BRONXVILLE, N. Y.

HARRY LESLIE WALKER, GUILBERT & BETELLE AND HARRY LESLIE WALKER, ASSOCIATED

ARCHITECTS

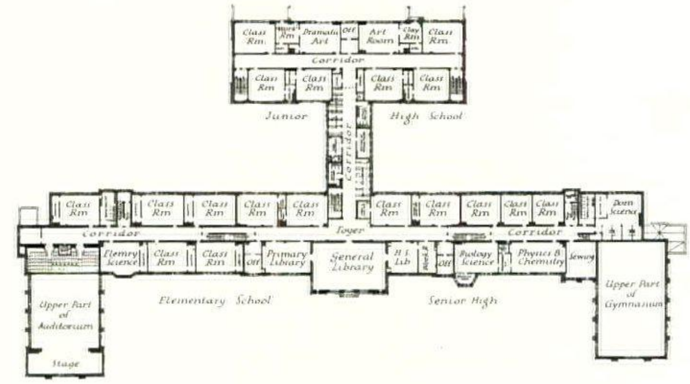
GENERAL: This building contains facilities for elementary, junior high school and high school students. The plan is worthy of study in that it achieves almost complete segregation of the activities of the various school units and at the same time allows for the common use of the important special spaces. The fourth floor occupies the central portion of the building only and contains a large cafeteria and kitchen

DESIGN: Although the two end wings were planned by Guilbert and Betelle with Harry Leslie Walker associated two years before the central portion was built, the design is of a uniform character throughout the building. It is executed in a dark red, rough textured brick, laid with smooth gray joints and trimmed with limestone. The roof is of variegated slate, sea green in color. Windows have painted wood sash

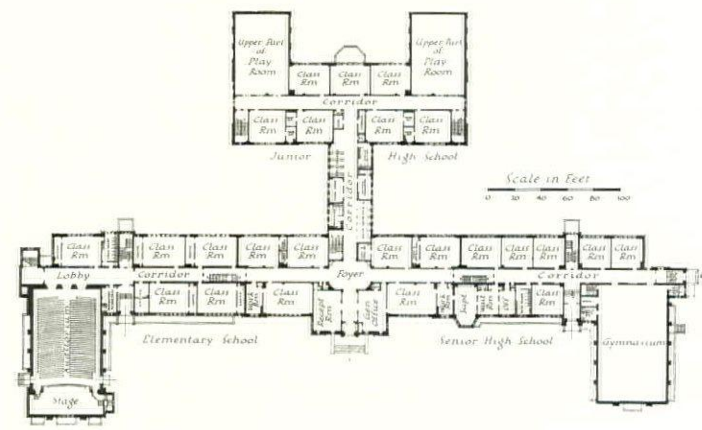
INTERIOR: In the interior the classroom floors are of wood, those in the corridors being linoleum. The walls and ceilings are of plaster, unpainted. Those in the play rooms and gymnasium are of glazed brick

CONSTRUCTION: The building is of semi-fireproof construction on a concrete pile foundation. The corridor, gymnasium and auditorium floors are framed in reinforced concrete, those in the classrooms with wood joists. The two wings of the building have brick bearing walls and the central portion is framed with steel. Heating is from a steam vapor system with unit ventilators in the classrooms. The building contains 2,641,000 cu. ft. and cost 56.3 cents per cu. ft. or a total of $1,488,000

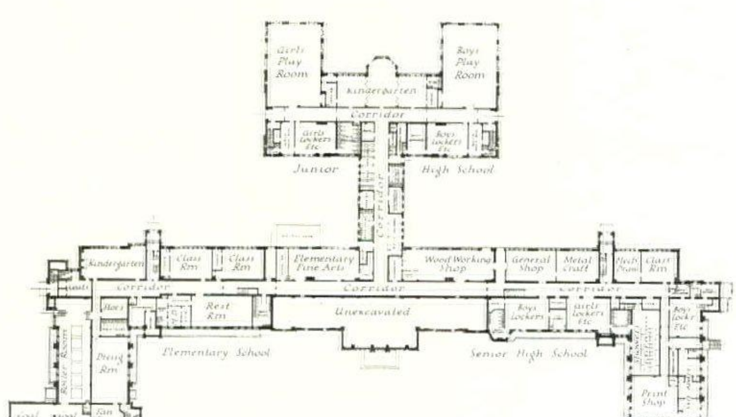
A SUBURBAN CONSOLIDATED SCHOOL



SECOND FLOOR PLAN



FIRST FLOOR PLAN

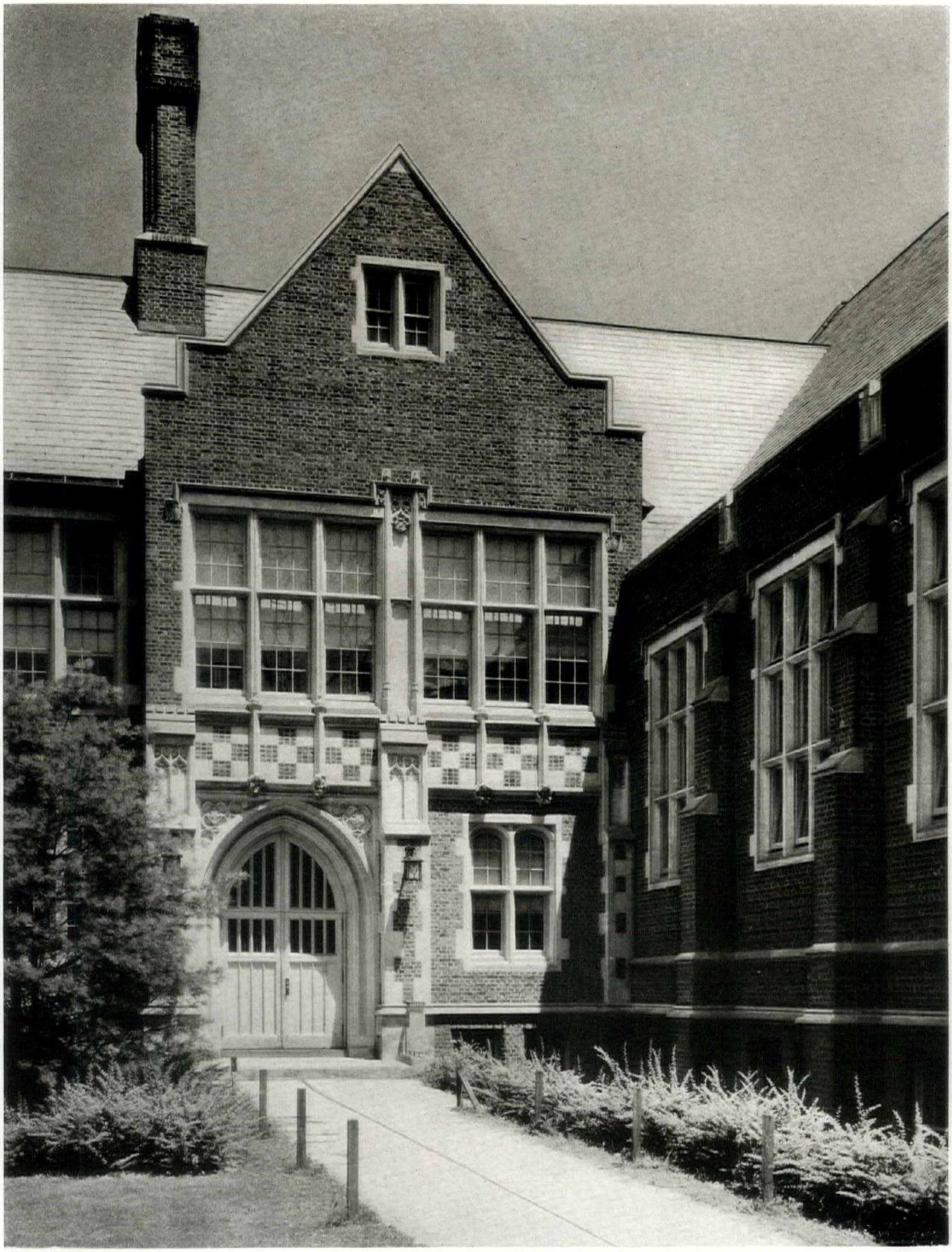


GROUND FLOOR PLAN

THE BRONXVILLE SCHOOL, BRONXVILLE, N. Y.

HARRY LESLIE WALKER, GUILBERT & BETELLE AND HARRY LESLIE WALKER, ASSOCIATED

ARCHITECTS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THE BRONXVILLE SCHOOL, BRONXVILLE, N. Y.

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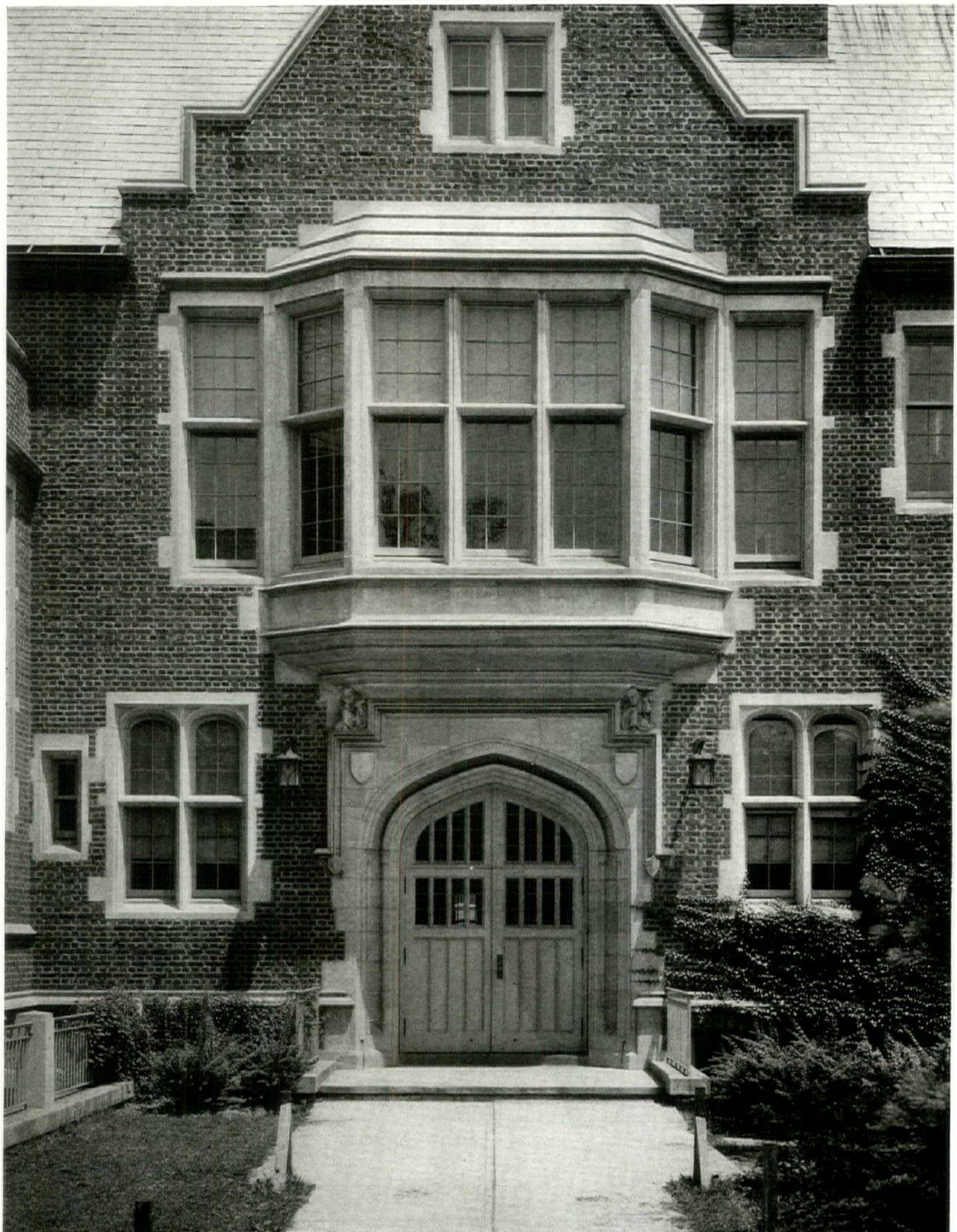

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THE BRONXVILLE SCHOOL, BRONXVILLE, N. Y.

HARRY LESLIE WALKER, GUILBERT & BETELLE AND HARRY LESLIE WALKER, ASSOCIATED

ARCHITECTS

THE EDITOR'S FORUM

IS THE NEW SCHOOL NEW?

ALTHOUGH our general impression may be the school building is largely standardized, the moment we go below the surface we find that it is actually subject to rapid change and the new school becomes a fascinating study. The new purposes and methods of teaching are already having pronounced effects on the building which is to house these activities,—and more are coming.

The most significant change in recent years is that in the *objectives* of education. This is brought out very clearly in the article by Dr. Engelhardt in this issue. The statement of the objectives of education as formulated by the teachers of New York, which he quotes, is a revelation to many who have not followed closely the recent developments. The change from the ideals of the "little old red schoolhouse," with its emphasis on the three R's, to the concept of education as a means to a better adjustment of the individual to his social and economic life in later years, is of the utmost importance to those who will plan the buildings for the education of the coming generation.

An understanding of these new purposes and new methods, many of which are of course experimental at this time, will fire the imagination of school designers and will produce buildings differing radically from those which have been erected even during the past few years. This vista of new solutions to the school problem as opposed to a cut and dried standardization is both a challenge and an opportunity. It necessitates a more intensive study on the part of architects and their closer cooperation with educational authorities. The aims and teaching methods of the school and the present and future possibilities, must be thoroughly discussed before even the most preliminary sketches are made. The school problem is no longer that of providing a "10-room school like that in District Number 5." The entire contents of this Reference Number emphasizes this fact. It will serve its purpose well if it proves a stimulant to constructive thought and a source of information for the practical working out of the school building problem—a problem that is ever and increasingly new.

HOUSING, TO THE FRONT AND CENTER

OF all problems challenging architects today, that of housing takes precedence. It takes precedence because it is universal in its interest, whether we consider it from an economic, sociological, political or æsthetic point of view. From the economic side, the "frozen assets" representing residential mortgages constitute one of the most troublesome factors in the present depression. This has been recognized by the Administration and a plan has been devised in an attempt to relieve the situation by the formation of a Home Loan Discount Bank somewhat along the lines of a Federal Reserve System. The purpose of this proposed banking system is to allow banks holding mortgage paper to discount qualified mortgages up to 50 or 60 per cent of their face value. Only 25 or 30 per cent of the sound appraisal value of the property would be available in such rediscount loans. The Home Loan Discount Bank would not, on its own account, make mortgage loans to home builders but would act through the already established channels for such financing.

It is hoped that such a bank will stimulate home building by making available large funds for the financing of housing. Certainly in its present form it would be of inestimable value to all banks now embarrassed by large holdings of first mortgage paper which cannot be liquidated. If the new system became operative, such banks would be in a much better cash position and could, if they chose, make new real estate loans for housing. In their present state of mind, however, they might prefer to remain in a liquid position or to use the funds thus liberated for investments that might promise higher profits than mortgage loans. Unless the new system is so devised as to make it obligatory to invest in new construction work the funds liberated, the benefit to housing may not be so enormous as is contemplated. "Once burned, twice shy" is as true of bankers as of school children. Through the proposed system, relief to the lending institutions is assured. It is equally important that distinct provision be made for the passing on of the benefits to new housing projects.

The plan for the establishment of the home loan discount bank, since it involves the use of federal money, must be submitted to Congress.

This will necessarily mean some delay, and also brings up the political aspects of the housing problem.

The study of housing by the government is not limited to the economic aspects although these are the most widely stressed as being strongest in their appeal. A comprehensive conference has been called to meet in Washington on December 2nd to consider the whole subject of "home building and home ownership." Committees have been appointed and have been studying all phases of housing. At the conference, reports will be presented on design, on large-scale housing projects, on reconditioning and modernizing, on interior furnishing, equipment, etc. The published reports should be a great stimulus to the general interest in housing as well as a mine of information and definite suggestion to architects, builders, contractors, decorators, loan agencies, insurance companies and others so vitally involved in finding solutions for the many problems in housing. It is sincerely hoped that they will provide more than inspiration and information. Only insofar as they provide plans for direct action will they be effective. Recommendations and reports have a faculty for remaining just that. If housing is to lead the country out of the slough of despond the reports on large-scale housing, on design, and on financing methods deserve our closest attention. As architects are taking a leading part in the formation of the reports and recommendations, so also must they devote their subsequent efforts with renewed vigor to forcing definite action, or their previous work may prove largely in vain.

OUR COLLABORATORS ORGANIZE

ARCHITECTS have frequently collaborated with the professional interior decorators, making use of their specialized knowledge and their ability to deal with the particular problems of the interior of the building and its furnishings. But more than once architects have been puzzled by the operating methods of the business side of interior decoration. It has been difficult sometimes to determine when the decorator was serving in a professional capacity as an artist, and when he was serving as a dealer in fabrics, furniture and other merchandise.

For years the architect has, through the Code of Ethics of the American Institute of Architects, eliminated all financial interest in the construction work as such, or in the sale of building materials. It is evident that the various practices which have grown up like Topsy in the field of interior decoration in these respects were not satisfactory either to the decorators, the architects or the clients. The leaders in the profession of interior decoration, therefore, have recently formed the American Institute of Interior Decorators for the purpose of elevating the standard and standing of its members to gain for them the confidence and high regard of the public. The A.I.I.D. has to this end formulated a code of ethics recently published in *Interior Architecture and Decoration.*

The code has many interesting features, for it is both like and unlike the code of the A.I.A. For instance, qualification for membership has three aspects: Education, Experience and Financial Responsibility. The qualification of Financial Responsibility is of special interest. It takes up the matter of payment for services by the client and stipulates that the "client is to be advised of the system of charges when he requests service." How much misunderstanding and litigation could be avoided if it were stipulated that architects should advise in writing of their system of charges when first dealing with a client. The obligations of the decorator to the client are no less definite comprising four rules which stipulate that the decorator shall submit definite specifications, shall supervise all work, shall "advise the client rightly regardless of personal profit," and shall "assume all responsibility for errors caused by indefinite clauses and improper execution of contracts." The relation of the decorator to the trade and to other decorators is made specific, as are also the obligations of the client to the decorator and the rules for the methods of work in the practice of interior decoration.

We welcome the newly formed American Institute of Interior Decorators into the fellowship of professional organizations and wish it every success in its splendid undertaking. We hope that it will send to every architect an outline of its purposes and work and its excellent code of ethics. We feel sure that this new organization will do much to insure the best kind of collaboration with its professional confreres in the production of buildings functionally efficient, economically sound and æsthetically satisfying.

Kenneth K Stowell

EDITOR.

AN ANALYSIS OF SCHOOL PLANNING

BY

ARTHUR B. MOEHLMAN

PROFESSOR OF EDUCATION
UNIVERSITY OF MICHIGAN

ANY study of school plant plan efficiency must be approached from the standpoint of plan purpose. Briefly, the public school plant is a physical means of satisfying a social need. It is one of the major agencies in the facilitation of the instructional process for both child and adult. The public school plant has no meaning or function apart from this primary purpose.

A public school plant has two functions: (a) to develop in permanent form the best architectural expression of curricular needs at the time of construction, and (b) to be an inspiration to both the child and the community. The primary essential of the school plant is to act as an efficient agency in the educational process. The second essential is to determine the most economical manner of translating this purpose into physical form. This functional approach to the problem of plan efficiency is essential if we are not to be unduly influenced by the always dominant question of economy, popularly conceived and expressed as "money cheapness." All architects are aware that an initially cheap product may prove finally to be very expensive; on the other hand, faulty educational designing or unwarranted architectural extravagance also may result in an expensive product. Both extremes should be avoided.

Architects and educators are quite familiar with certain extravagances in school plant construction that are commonly justified because "the community demands these things." The question that naturally arises is: can both physical efficiency and economy in planning be secured if the primary consideration—meeting instructional requirements—is adequately satisfied? The answer is simple. Instructional needs in the majority of school plants erected today are determined subjectively. The dead hand of tradition, the fancied requirements of individual teachers, or principals, the architect's desire, the superintendent's desire to build monuments, and the fancied popular demand determine building needs rather than the direct translation of the entire instructional program. As soon as the objective study of curricular activities—the size of class and the method of administration—is considered with respect to space requirements, the traditional method of planning becomes untenable and real economy in basic plan design may be achieved.

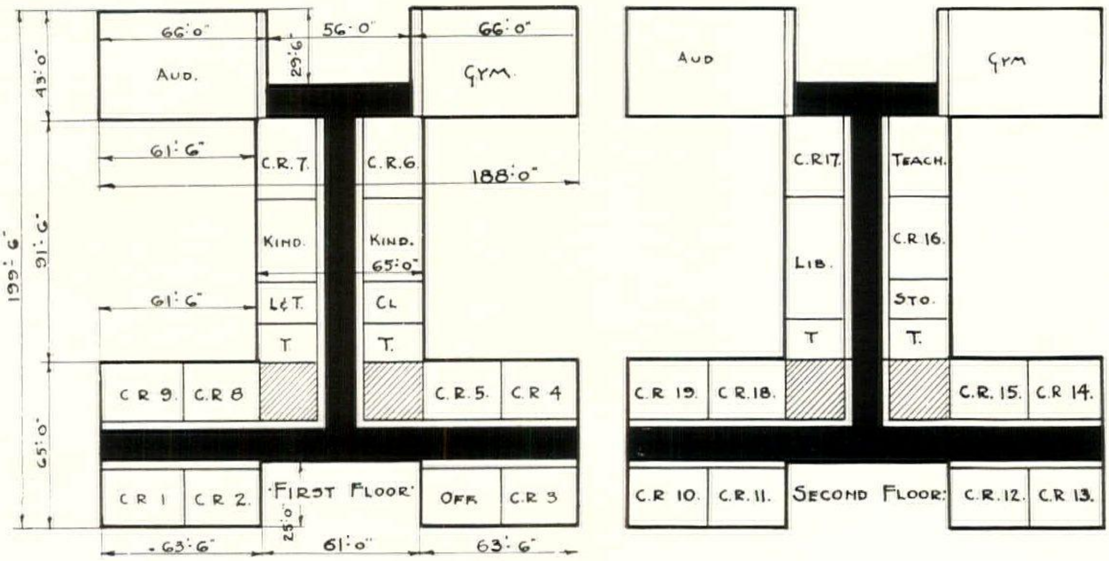
Since the primary function of the school plant is to meet instructional need, the first essential in planning is to secure the maximum instruction-space-efficiency. After that it is the architect's function to develop the most economical physical expression of these needs. In any study of the efficiency of a school plan both factors must be given careful consideration.

Types of Physical Efficiency. The physical efficiency of a building must be judged primarily with respect, first to the proportion of instructional area to total area; second, by how well it satisfies the criteria of instructional need, and third, the relationship of physical envelope to volume. To meet the needs of instruction a building should be efficient in: (a) flexibility, to permit easy physical adjustments to changing curricular activities; (b) expansibility, to provide economically for possible future extension; (c) safety, or freedom from hazards to life either through fire or panic, demanding traffic area efficiency[1], and adequate exits from rooms; (d) health requirements, adequate natural and artificial lighting, sanitation, and ventilation; (e) use, and (f) location. Use efficiency is the ratio between absolute and working capacity[2], and the actual daily use of this working capacity.

The physical efficiency of a building may be further considered from the standpoint of material and construction, maintenance and operation. While these elements are not of primary importance to instruction they are nevertheless closely related to efficiency of instruction since they directly affect school costs. The material construction efficiency of a building is expressed in the cost of maintaining the building at its orig-

[1] Traffic area efficiency is considered as the ratio between the instructional area and the area devoted to corridors, stairways, and entrance halls.

[2] See THE PUBLIC SCHOOL PLANT PROGRAM, Chapter IV, p. 149.



"H" TYPE

Instruction-Space-Efficiency	0.451
Physical-Envelope-Efficiency	7.08
Instruction-Envelope-Efficiency	3.19

This type of plan obviously does not lend itself to economical design in terms of this particular problem. Limited by the factor of adequate orientation, it was impossible to secure a well-designed plan. The attempt to arrange the specific facilities required by the problem resulted in much waste space. This does not mean that the "H" plan is inherently an expensive and extravagant design; it merely indicates that unavoidable orientation deficiencies can be overcome only in a large building. The only conclusion that may be safely drawn, then, is that the "H" plan tends to be uneconomical except for very large buildings

inal efficiency. It is best expressed by maintenance efficiency, which is the ratio between erection cost and annual costs. Annual cost includes repairs necessary to maintain the plant at its original physical efficiency. Operating efficiency may be determined by actual costs in relation to adopted standards. It is complicated by variables in construction, mechanical efficiency, personnel, and use[3].

Instruction-Space-Efficiency. This is considered as the relation between total area of a building and that portion available for instructional purposes. In general practice the immediate efficiency of a plan is now so determined. The mere allocation of 50 or 60 per cent of the total space to instruction does not mean necessarily that all rooms are the proper size, nor that they are properly lighted, ventilated, located, or efficiently used. An efficient and economical basic design may be very inefficient in the execution of details. For comparative purposes, it may be assumed that at least in all open plans it is possible to satisfy these criteria after the basic distribution of space has been made.

The ratio of instruction-space-efficiency can be determined by dividing the instruction space area by the total floor area.

$$\frac{\text{I.S.A.}}{\text{T.A.}} = \text{Instruction-Space-Efficiency}$$

The ratio thus secured is only a gross measure[5].

Physical-Envelope-Efficiency. This may be expressed in terms of building units, a variety of which have been used for this purpose, including both the cube and area. These two factors considered together furnish a good index of efficiency. Area is best expressed as shell area; i.e., the sum of the areas of the outside walls, and all floor areas. The ratio of physical efficiency will be expressed in the number of cubic feet of building secured for every square foot of shell area.

$$\frac{\text{Volume}}{\text{Shell Area}} = \text{Physical-Envelope-Efficiency}$$

Instruction-Envelope-Efficiency. The instruction-envelope-efficiency of a school plant may be considered as the product of the ratios of instruction-space-efficiency and physical-envelope-efficiency[7]. Both factors are given equal weight.

[3] Maintenance and operating efficiency is treated in the fourth volume of the series on Public School Plant Operation and Maintenance.

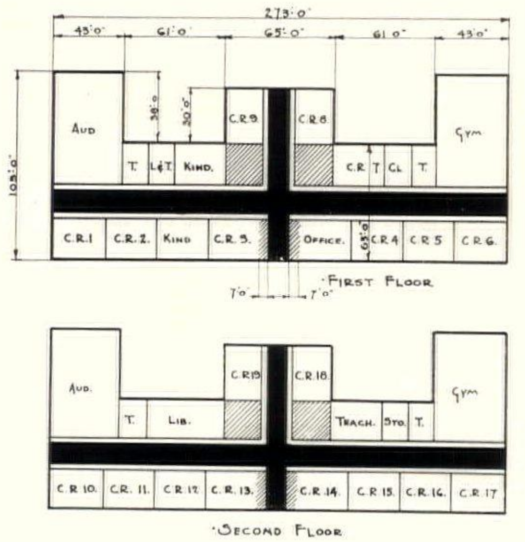
[5] The efficiency of actual use is discussed in The Public School Plant Program, Chapter IV, pp. 127-32.

[7] These studies were prepared for Public Elementary School Plant and may be studied in this book in relation to many other factors impossible of consideration here.

"E" TYPE

Instruction-Space-Efficiency	**0.454**
Physical-Envelope-Efficiency	**7.64**
Instruction-Envelope-Efficiency	**3.47**

The "E" plan is very common, in which it is usual to find both the gymnasium and auditorium centered on the rear elevation with the classrooms in the lateral wings. Under practical conditions, where the size of the building and the slope of the site indicate the desirability of this type plan, it is possible to get higher ratios than indicated here. Like the "H" plan, the "E" type is one that may be used successfully with buildings larger than the one considered. The greatest weakness of this type is the factor of orientation. If the lateral wings are given east and west exposure, then the main elevation must be oriented north and south. This might be overcome to some extent if the plan were placed at an angle to major compass points



Question may be raised with respect to the validity of equal consideration. Arguments might be made that instruction-space-efficiency is worth more than mere equality in relation to physical-envelope-efficiency. There may be truth in this contention. At the present time, however, it is impossible to state objectively what the actual weighting of the instructional factor should be in relation to the physical factor. Weighting the instructional factor by two, in conformance with extreme opinion in this field, would mitigate seriously against plan efficiency, because the factor of poor physical design would be much undervalued in the final product. On the other hand, it may be argued that these two factors, in terms of scientific planning, are quite evenly balanced. It was an earlier contention that, after satisfying instructional needs, it is necessary to design the physical plant as efficiently as possible in terms of these instructional requirements. From this point of view each of the ratios have an equal value in determining instruction-envelope-efficiency. In view, therefore, of the absence of a valid objective means of weighting the instruction-space-efficiency in relation to physical-envelope-efficiency, both are assumed to be of equal value.

Plan Types. Instructional facilities, developed into building plan types, may be classified as (a) closed plans and (b) open plans. Closed plan types may include the solid square or rectangle, and the hollow square or rectangle. The closed type may be either solidly built up or may have interior light courts. In this type a number of rooms have inside light, facing a court, or overhead light if the court is used for large capacity rooms. Open plan types take their name from the letter they most nearly represent and are classified as **T, L, I, U, E,** and **H** plan. Open plans are so named because all of the rooms receive direct outside lighting.

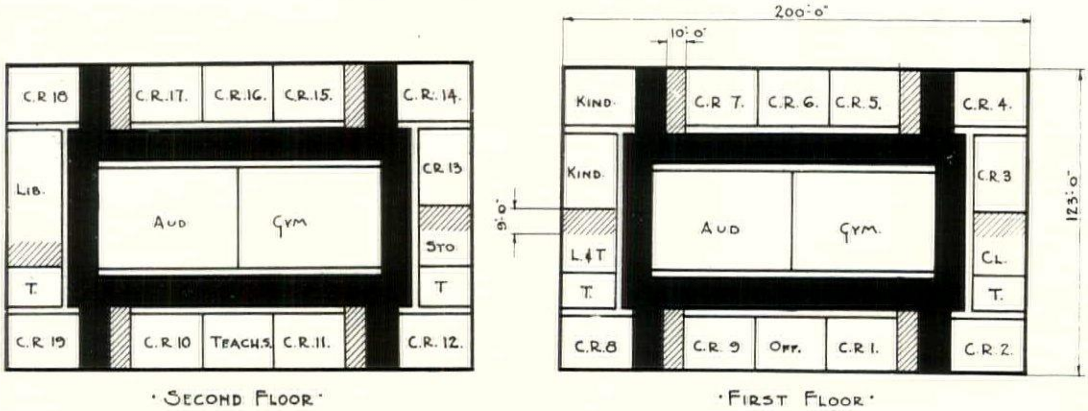
Comparison of Plan Types. By setting up the following theoretical problem, it was possible to make a fairly accurate computation of the relative efficiency of different plan combinations for elementary schools.

The selected capacity was 1,120 *children, with a semi-departmentalized form of organization, and* 40 *children to a class, except the kindergarten. The building was to be the two-story type, with flat roof and no basement. The required facilities were*: 2 *kindergartens* (22 x 30 *ft.*); 1 *kindergarten service unit* (22 x 15 *ft.*); 19 *classrooms* (22 x 30 *ft.*); 4 *toilets* (22 x 15 *ft.*); 1 *teacher's rest room* (22 x 30 *ft.*); 1 *storage unit* (22 x 15 *ft.*); 12 *ft. ceilings;* 12 *ft. corridors; and heating area underground;* 42,350 *cu. ft. Corridor lockers were considered as built into the breather wall.*

Each building was developed physically in accordance with the same standards and dimensions. Unit construction was identical in every case, the single variable being shape or form of plan. The results of the comparison are shown in the following table, type H having the lowest efficiency and type T the highest.

Practical Application. In applying the instruction-envelope-efficiency formula to existing plants a different problem was created. In the theoretical study it was possible to reduce all plants to the single variable of shape. Eight existing plants were chosen for measurement[8] in which

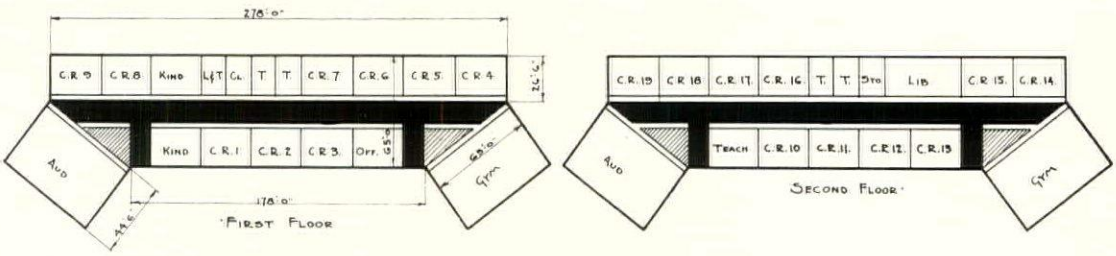
[8] These data may be found in THE PUBLIC ELEMENTARY SCHOOL PLANT.



THE SOLID RECTANGLE

Instruction-Space-Efficiency	0.422
Physical-Envelope-Efficiency	8.39
Instruction-Envelope-Efficiency	3.54

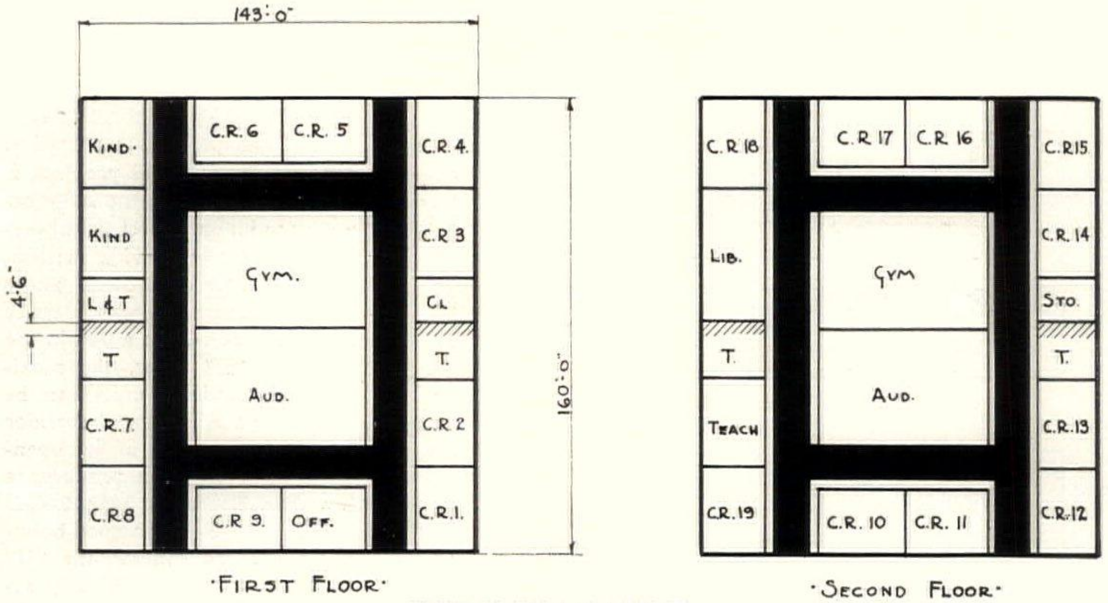
The size of this plan, with its accompanying large amount of waste space, resulted from the problem requirements of placing the large capacity units, the auditorium and gymnasium, in the center of the plan. From the instructional standpoint the basic defects of the plan are more vital than the rating developed in this instance. The lack of provision for economical expansibility, orientation defects, and the overhead lighting of the gymnasium and auditorium are serious weaknesses. The high P-E-E is expected, since the closer a plan approaches a cube, the higher the envelope efficiency. In general, it is not a desirable type



STAGGERED "U" TYPE

Instruction-Space-Efficiency	0.480
Physical-Envelope-Efficiency	7.74
Instruction-Envelope-Efficiency	3.72

This plan represents a variation from the conventional "U" type, secured by placing the large capacity units at an angle upon the front elevation. Such practice is often employed when it is necessary to place the building on a triangular site. The I-S-E might have been higher if a longer extension of the "U" and a foreshortening of the main axis had been permitted by the problem, an arrangement that would also have improved the orientation of classrooms. This is not considered a type for common use, but one designed to meet unusual site conditions. In general, it is somewhat less efficient than the "U" type, due to the space in the outside angles between main axis and lateral wings



THE SOLID SQUARE

Instruction-Space-Efficiency	**0.455**
Physical-Envelope-Efficiency	**8.41**
Instruction-Envelope-Efficiency	**3.83**

The Solid Square Plan is frequently recommended to boards of education because of its economy of construction. Auditorium and gymnasium were placed in the center and assumed to be lighted by skylights. Under field conditions the waste space would probably be absorbed into units for storage and room extensions. Although it is infrequently done in practice, the main corridors were extended from one end to the other, because safety requirements demand that a child standing at any point in a building may see either an exit or a stairway. Although the Solid Square has a high P-E-E, the value is more than balanced by the low I-S-E

the educational designing had been carefully developed for a specific curriculum. In this comparison, however, a number of variables were present that could not be controlled. These included: shape, size, height, orientation, and roof (flat or pitched).

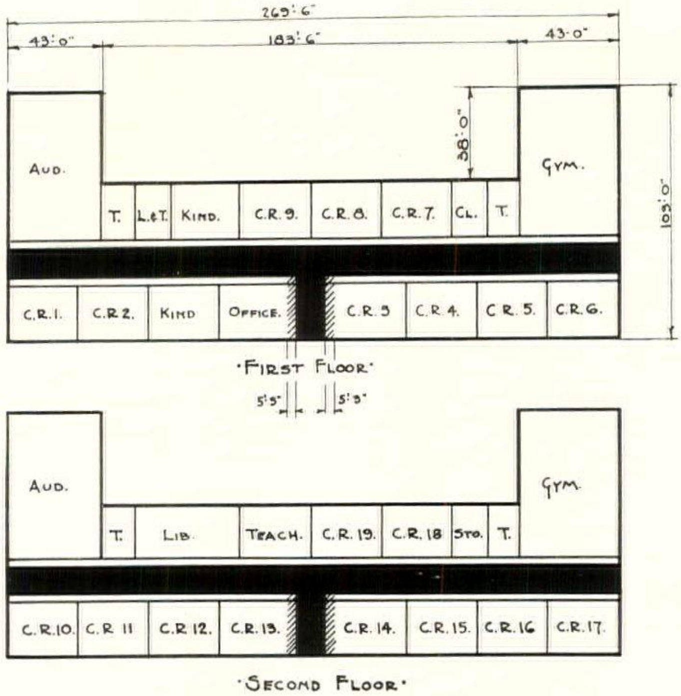
Summary of Relative Efficiencies

Type	I-S-E	P-E-E	I-E-E
H	0.451	7.08	3.19
E	0.454	7.64	3.47
The Solid Rectangle	0.422	8.39	3.54
Staggered U Type	0.480	7.74	3.72
Solid Square	0.455	8.41	3.83
U	0.503	7.65	3.85
I	0.496	7.77	3.85
L	0.506	7.86	3.98
T	0.506	7.86	3.98

Closed Plans. Two closed plans, practically square, showed an instruction-envelope-efficiency of 4.295 and 4.275. While essentially the same plan, the one with the lower rating was not originally planned for expansion beyond 1,140 capacity. To make the additions and complete the square, it was therefore necessary to add extra corridor space which accounts for the difference. The theoretical rating of the square plan was 3.83. The variables of height and size (1,840 capacity) must be given consideration in this comparison. The conclusion that may be drawn with respect to this type is that the square building may be designed educationally to rate high with respect to instructional space and its shape will give the highest physical-envelope-efficiency of any plan. The obvious disadvantages of lack of expansibility, inside lighting, and orientation must weigh very heavily against any closed type.

U-Plans. Two U-buildings with exactly the same capacity resulted in an instruction-envelope-efficiency of 4.743 and 4.351. The difference in this case was due to a pitched roof on one building and a flat roof on the second. Given the same perimeter, the addition of a pitched roof will result in a higher physical-envelope-efficiency[9]. In this case the ratios were 9.68 and 8.78, or a

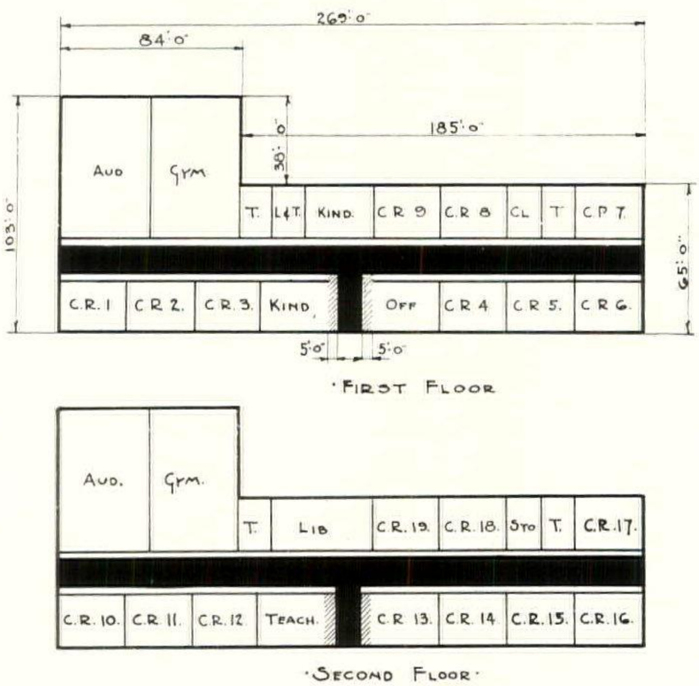
[9] Practically, however, the flat roofed building is cheaper in total construction cost. The attic space is relatively cheap cubage and increases the ratio of cubic feet of volume to square feet of shell area.



Like the "E" plan, the "U" type is well adapted to rectangular sites. In terms of the problem, it was developed with the large capacity units on the east and west axis in order to provide the best orientation for classrooms. There is a minimum of waste space here, and, as will be noted in the "L" and "T" plans, the maximum instructional units can be served by a minimum of corridor space. As a result of its openness, the elongation produces a low P-E-E; but a high I-E-E and a low P-E-E is a good building ratio. In general, the "U" plan is a good one, the only serious objection being that in practice it offers the same difficulty of obtaining proper orientation that was displayed in the "E" plan

"U" TYPE

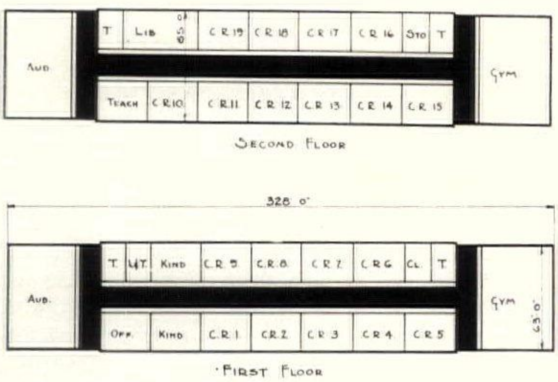
Instruction-Space-Efficiency	0.503
Physical-Envelope-Efficiency	7.65
Instruction-Envelope-Efficiency	3.85



In this example of a very popular type, the instructional facilities have all been oriented on the main axis, and the large capacity units placed at one end at right angles to the main axis. The "L" type can be criticized from only one standpoint, and that is that the large units are not centered to secure their more efficient administration. It lends itself well to orientation, waste space is low, and economical expansion is possible. This plan is of equal standing with the "T" plan, the only advantage possessed by the latter being the centering of auditorium and gymnasium

"L" TYPE

Instruction-Space-Efficiency	0.506
Physical-Envelope-Efficiency	7.86
Instruction-Envelope-Efficiency	3.98



"I" TYPE

Instruction-Space-Efficiency	0.496
Physical-Envelope-Efficiency	7.77
Instruction-Envelope-Efficiency	3.85

This type represents the simplest of the open plans, and is strongly favored by the National Education Association. Where site conditions permit, it is favored because it can be oriented perfectly. The "I" plan may be developed with the large capacity units centered, and in efficient size up to 2,000 capacity. In this case, common practice was followed, the large units being placed at each end of the building. As the ideal in instructional space and orientation is approached, the basic plan becomes more expensive to construct. Had the large capacity units been centered, the corridor space would have been reduced, and the plan would have received a higher rating

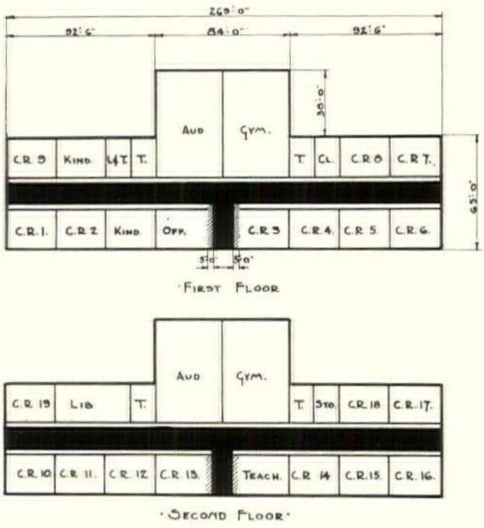
difference of 0.90 in favor of the pitched roof. The theoretical index of 3.85 is considerably lower than the practical. As pointed out, however, this was due to the nature of the problem which called for perfect orientation of all classroom facilities. In actual practice the U-plans neglect this factor and at least one wing has north and south orientation. Apart from difficulties in orientation, the U-plan is inherently a good one.

T-Plans. The T-plan which with the L-plan rated highest, theoretically was low with respect to the other six buildings. The instruction-envelope-efficiency was 3.747 and 3.719. Although the buildings were of the same size and shape, one had a pitched roof over part of the building and a flat roof on the other. The result, as in the case of the U-plan, is reflected in the physical-envelope-efficiency ratios of 8.20 and 8.14. The theoretical efficiency of this type was 3.98, somewhat higher than the practical findings. Again, the reason is not difficult to find. In the theoretical consideration the building was designed specifically as a T-plan. In the building actually measured, the plan shows a long corridor between gymnasium and auditorium on the base of the T-plan. The purpose of including this corridor was to make possible the ultimate expansion of the T into an H-plan. If the future connecting corridors were eliminated and the large units redesigned on the rear elevation, these T-plans would rate high.

E-Plan. The E-plan is high in instruction-envelope-efficiency, rating 4.495, exceeded only by the U-type. The theoretical rating was 3.47. Building size in the problem as pointed out was not adapted particularly to the E-plan which is essentially a large building type. Again, it was necessary to provide for perfect orientation while the practical application neglects this factor. In addition the practical example is a three-story building with respect to the central part of the main elevation. The presence of all for these variables, particularly size and orientation, easily accounts for the difference between the type theoretically and the chosen existing building.

Mixed Type. A one-story building furnished a mixed plan type. Half of the structure was a closed plan with light courts, and half consisted of long parallel wings. The instruction-envelope efficiency was 4.034 due chiefly to a very high rating with respect to instruction-space-efficiency. The physical-envelope-efficiency was 7.39, the lowest of the eight buildings considered. This is accounted for by the large perimeter in relation to the cubage. The difference in physical-envelope-efficiency between two buildings of practically the same size in which the only variables are shape and height is seen strikingly in comparison with the E-plan. In the one-story type the school district received 7.39 cu. ft. for every square foot of shell area and in the E-type, 8.78 cu. ft. for every square foot of shell area.

Plan Type Summary. Due to many factors the matter of determining absolutely the most efficient elementary school plan type with respect both to instruction-space-efficiency and physical-envelope-efficiency is a difficult one. Such study must be conditioned upon the ability to make the comparison on a single variable. Setting up a specific problem, in this instance a building size of 1,120 capacity and adapting all plans to that problem indicates that certain types are more efficient than



"T" TYPE

Instruction-Space-Efficiency	0.506
Physical-Envelope-Efficiency	7.86
Instruction-Envelope-Efficiency	3.98

It will be noted that the same efficiency ratios obtain for both the "T" plan and the "L" plan, the only difference in value being, as has been pointed out, that in the "T" plan, the auditorium and gymnasium have been centered. All classrooms have east and west orientation, and the large capacity units north and south. If it is desired, expansion is simply a matter of converting it into a "H" type plan, the only change required being the separation of the gymnasium and auditorium by a corridor. For this particular problem, and for all problems similar, the "T" plan is to be preferred

others in terms of the problem size. It also shows that, considering the factors of flexibility, expansibility, and orientation certain plan types must be preferred. On the other hand, the investigations pursued indicate the certain plan types are adapted to small and medium sized buildings while others are more efficient when capacities of 1,800 or greater are involved.

The judging of existing buildings involves variables that must be considered and equated before it is possible for such comparisons to have real validity. Thus the U- and E-plans in practice rated higher than the T-plan in the theoretical problem. In each of these plans the factor of orientation was disregarded and, unless orientation is given weight, the actual rating would stand. The same factors may be pursued through each of the other building plans and the major differences between the theoretical and practical in this problem is the presence in one of at least four discernible variables as opposed to a single variable in the theoretical findings. Considering all of these facts it is possible within the obvious limitations of the problem to make certain generalizations with respect to plan types.

Closed plans, especially the square and rectangular, because of the factor of shape, rate high in physical-envelope-efficiency. By efficient planning they can also in any specific case rate high in instruction-space-efficiency, resulting in good instruction-envelope-efficiency. They do, however, lack expansibility, outside lighting for all rooms, and are deficient in orientation. Despite a possible high instruction-envelope-efficiency, which measures only certain physical factors, they must be judged negatively in terms of expansibility, lighting and orientation.

Open plans are divided into two classes: those that lend themselves efficiently to planning with small[10], moderate, and fairly large sizes and those that are adapted primarily to very large structures. The I, U, L, and T types fall in the first group and the E and H types in the second group. There are no fundamental difficulties in orientation with the I, T, L, and H types. The U and E plans possess certain inherent orientation problems difficult to overcome and the closed plans, unless they can be placed at an angle to the cardinal directions, rate lowest in this respect.

In general, other factors being equal, the I, T and L plans are preferred in elementary school plant construction. Practical field conditions in many instances make it impossible to achieve the ideal building type and the problems must be solved by the method of the best fit. In practically every case, however, it is possible to avoid the use of the closed plans. In terms of the theoretical assumptions, the summary of rank order rating of two-story elementary plan types is as follows:

Type	Rank Order			
	Physical-Efficiency	Instruction-Efficiency	Corridor Ratio	Physical-Instruction-Efficiency
T	3	1	1	1
L	3	1	1	1
I	5	4	5	3
U	7	3	1	3
Solid Square	1	6	8	5
Staggered U	6	5	4	6
Solid rectangle	2	9	9	7
E	7	7	6	8
H	9	8	7	8

[10]Small buildings, under 800 capacity; medium sized buildings 800-1,200 capacity; large buildings 1,200-1,800 capacity, and very large buildings, over 1,800 capacity.

FROM EXPERIENCE WITH SCHOOL BUILDING COMMITTEES

BY

JOHN J. DONOVAN

AUTHOR OF "SCHOOL ARCHITECTURE"

THE ever passing caravan of souls contributing to the welfare of their fellow beings as members of boards of education is truly a medley of human nature, a cross section of which would introduce the banker, the farmer, the merchant, the former school teacher, the housewife, the lawyer, the laborer, the hotel bus driver, and even the architect. Just how the architect managed to get aboard is still a mystery. No matter who composes the board, and no matter whatever else they may be, it has been my experience that boards of education are honest, earnest and conscientious.

The architect's most important relation with a board of education is generally during the first contact; for then it is that perhaps he is to be or not to be the architect. If he is capable and understands the problem and the board, dealings after employment are not difficult but friendly. But it is the first contact that counts.

All boards, while functioning according to law, proceed very much alike in their acts but not always so in their deliberations or impressions. They are good buyers in that they are good listeners until they have warmed up to the man and his subject. Board members, as a whole, are laymen, generally unfamiliar with the technical problems or architecture, engineering and educational planning. Consequently, they are prone to disregard distinctions and differences. Seldom do they have the time and more often lack the inclination to investigate the accomplished work of the architect, or to visit his office and observe his organization which produces the instruments of service.

The most unfortunate predicament an architect can create for himself, and the one which eventually proves to be most embarrassing to his clients, is to under-estimate the final cost of the building, or to over-state the quantity of building that can be produced with the available funds. It jeopardizes the progress of education, it is poor sportsmanship, and worst of all it is a handicap to a good name among a man's professional colleagues. It would be far better for the architect to admit openly that he intends to build as cheaply as possible, that quantity takes precedence over all else, and that an Act of God may sustain the structure as well as destroy it.

Very few school districts are provided with sufficient funds to attain the ultimate fulfillment of their needs and requirements. The requirements in school building projects, in fact in nearly all cases, exceed the appropriations. The architectural problem is to make the money go as far as possible without jeopardizing safety, sound construction, and the use of the proper materials. It is the worst form of economy to build cheaply. I firmly believe that the cost of maintenance should be even more firmly implanted in the minds of members of boards of education and building committees than the first cost, because maintenance cost is perpetual and the hardest expense to meet.

A prevalent absurdity with many boards of education in making their choice of an architect is to invite a number of them to appear before them for fifteen or twenty minutes and demonstrate their fitness for the work. It is pernicious, as well as distracting and confusing. It usually develops into competition of gab-fest, embarrassing to a man with any finer sensibilities. I wonder if any member of a board of education would adopt such a method of engaging a doctor or a lawyer to perform a valuable service? The procedure followed is very much like that followed in purchasing school supplies. In the latter case, however, the school supply salesman has his products before them so that they may follow as he points out the finer points of each article. He can demonstrate this and that feature, and it is not difficult for a Board to form a reasonably good judgment and make a satisfactory choice. But what a difference in dealing with the architect whose services until produced and finished are unseen, intangible and almost abstract! Drawings, perspectives and data are carried through the door unfolded and out again, drawings and data which are highly technical are often meaningless to the board member.

Very often a board will ask an architect if he will guarantee that the cost will be not more than an amount stipulated by them. Sometimes the man will tumble into this unintended pitfall. By no means is it possible for an architect to guarantee truthfully the cost of his work and be true to his clients and to his work without recognizing that, in the last analysis, the guarantee is worthless and may lead to detrimental results to the building, the architect and the owner. When an architect guarantees the cost of a building, he is practically saying in the same words, "I will place in this building just the kind of materials and requirements for their use that will enable me to keep within the cost which I have guaranteed regardless of results."

There is no need of enlarging upon this statement, no need of mentioning the danger of it. The architect is in a position to state to his client what he believes the cost will be from knowledge and data that he possesses, based on what similar buildings have cost in the past, and with a knowledge of prevailing market conditions and prices. That is as far as he can go honestly with respect to the intelligence of his client and that of his own. There is no harm in an owner establishing the up-set price that the building shall cost. It then behooves the architect to meet that price, if it is at all possible with established requirements and with safe construction and the use of good materials. The problem is then reduced to fixing a unit floor area cost and a unit cubage cost and establishing the maximum floor area and cubage this money will permit. If the results do not square with the requirements fixed by the board and its officers, the architect should make known the facts before proceeding too far.

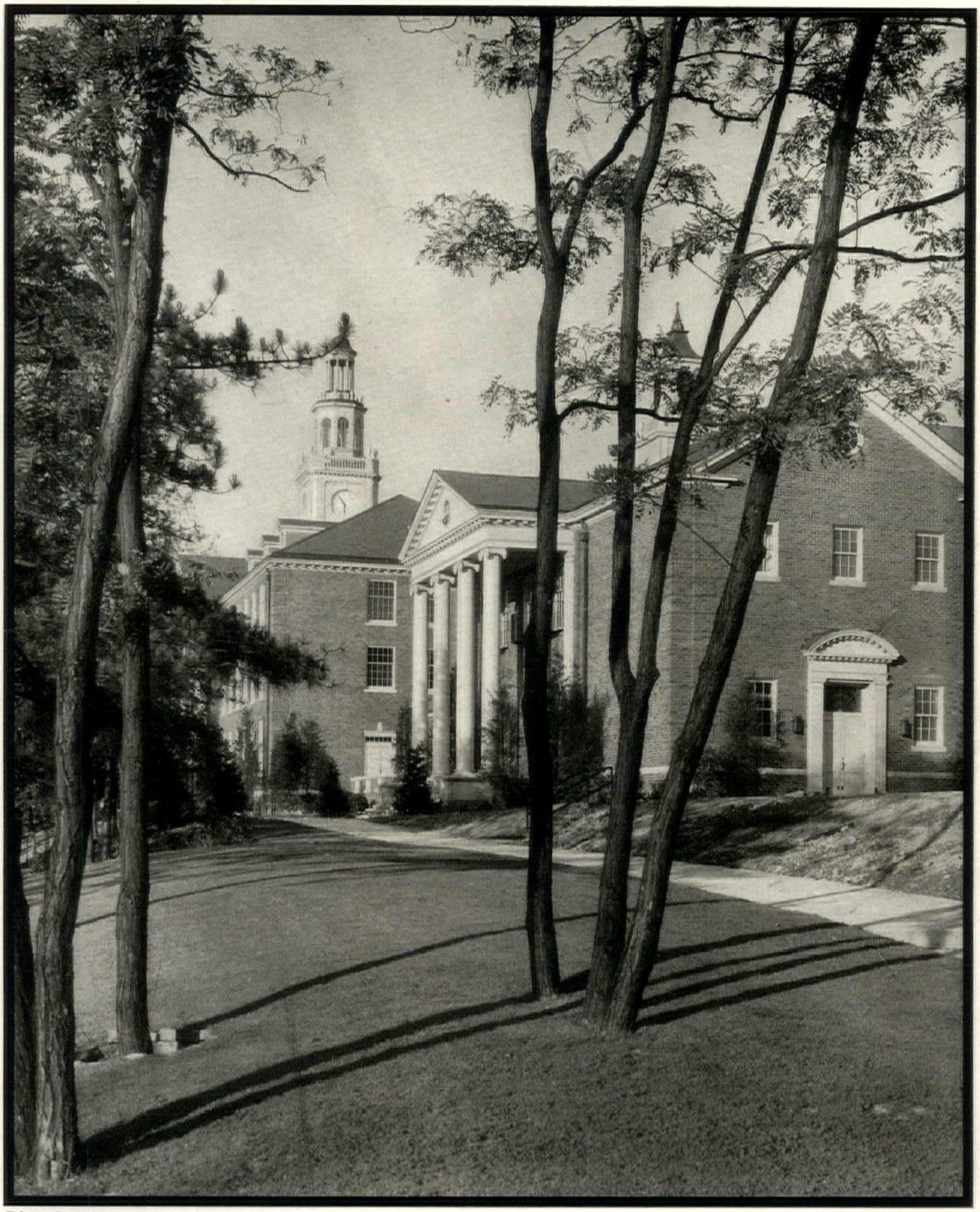
TODAY, I believe, most boards of education realize that superintendence and inspection of the work is part of the building budget, and the cost should be borne by the board and rightly so, because the profit or reserve from any job does not warrant an architect paying for this expense, provided he devotes himself and his organization to a thorough study of the problem and enters into the research that every job requires. School buildings are awarded to the lowest bidder. Any bidder who can produce a certified check and obtain a surety bond is generally regarded as qualified to build the building, unless it can be proved that his record is questionable and that he has failed previously to build satisfactorily. Otherwise he is the lowest bidder in the eyes of the law and every court in the land will sustain him in his contention if any other bidder is favored. One recourse to riddance lies in rejection of all bids. However, that does not always prove to be good riddance, because very often he is the low bidder in the second proposals. The consequences which follow this procedure established by our democracy are of importance to the peace of mind, and health and safety of all concerned.

If the work is left unguarded, temptations will arise, short cuts and cheating are apt to follow. This is not a condemnation of the contractors of our country, for by and large they are good citizens, and as a rule they endeavor to give value for that which they receive. Nevertheless, the low bidder is not always of that class, and a board of education might preferably donate to the contractor from the public funds any sum of money he might be tempted to pilfer in cheating the job; and it would be far better for the school district and for the occupants of the building. Of course, they cannot do this.

This is a phase of the problem which, if thoroughly explained to a building committee or the board will make for a better understanding of just what the architect's function is on the work. It is his province to interpret the drawings and specifications and to visit the work in order to see that it is properly coordinated and that the plans and specifications are complied with. He cannot do this unless he has the assistance of an able man in the field, constantly following the work. An inferior man in this important position as superintendent of the work, leads to trouble, trouble for the contractor, trouble for the architect and for the board of education.

The conduct of the business, that is, the management of the building operation rests with the architect. It is his function to prepare the legal documents and then to have them properly approved by the parties authorized by law, such as the board, the district attorney, state and county officials, and on this point boards of education can either step into trouble or obviate it.

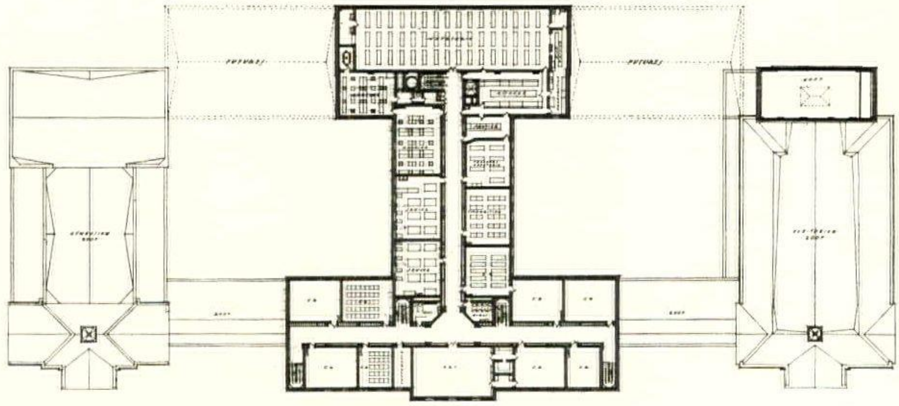
Keeping a board fully informed regarding the conduct of the work is conducive to a sincere appreciation of the architect's service. This does not mean petty reports about the contractor's errors or self-aggrandizement of the architect, but rather that of information pertaining to the coordination of the work of the several trades. There is no sounder course to follow than that of acknowledging, at the very beginning of construction, the legal powers invested by law in the board alone, namely, authorization to change and modify that shown on the drawings and specifications. This makes for clear understanding between the board, the contractor, and the architect and precludes embarrassment at the time of final acceptance of the work. This policy followed to rightful conclusions leads to respectful and worthwhile confidence on the part of all. An architect never need fear advising his client of having made a mistake either by omission or commission.



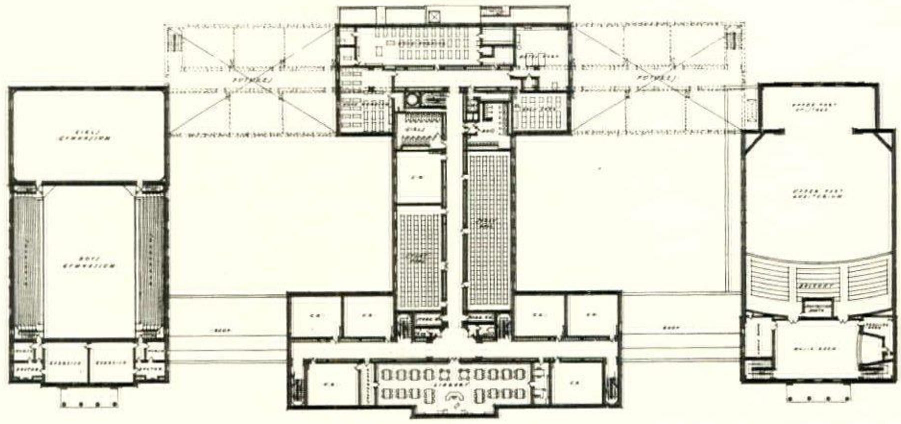
Edmondson

THE W. H. KIRK JUNIOR HIGH SCHOOL, EAST CLEVELAND, OHIO
WARNER, McCORNACK & MITCHELL, ARCHITECTS

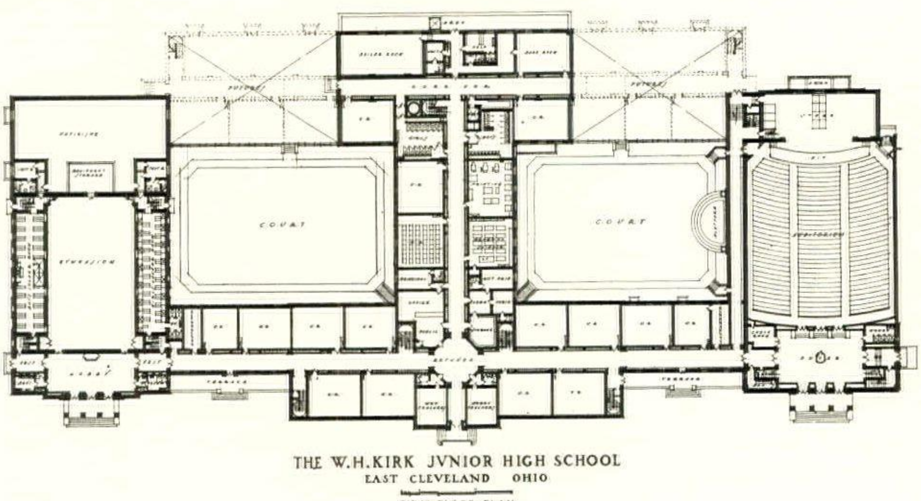
THREE JUNIOR HIGH SCHOOLS



THIRD FLOOR PLAN



SECOND FLOOR PLAN



FIRST FLOOR PLAN

THE W. H. KIRK JUNIOR HIGH SCHOOL, EAST CLEVELAND, OHIO

WARNER, McCORNACK & MITCHELL, ARCHITECTS

Edmondson

PLAN: The building is notable for its well defined separation of activity and the groupings of mass to provide the maximum of sunlight, fresh air, and pleasant outlooks. Excellent advantage has been taken of the location and special notice should be taken of the large courts which may be used as play areas

EXTERIOR: The walls are of old Virginia oversized brick with stone and white painted wood trim, composed in the tradition of the University of Virginia buildings. Windows are of painted wood and are double hung; the roof is of variegated slate

INTERIOR: The general interior finish is sand finished plaster with dark finished birch woodwork, except in the auditorium, where the woodwork is light in color. Wood flooring and rubber flooring are used generally, except in special rooms where cellized wood blocks are used. The auditorium, cafeteria, and music room are acoustically treated. Heating is supplied by an oil-fired atmospheric pressure steam system, and ventilation by a unit system in the school proper, with a mushroom system in the auditorium

COST AND CONSTRUCTION: The building is of fireproof construction, with brick and tile walls, and a steel tile floor system. Completed in 1931, it contains 2,530,000 cu. ft. and cost 37.2 cents per cu. ft., or a total of $939,700

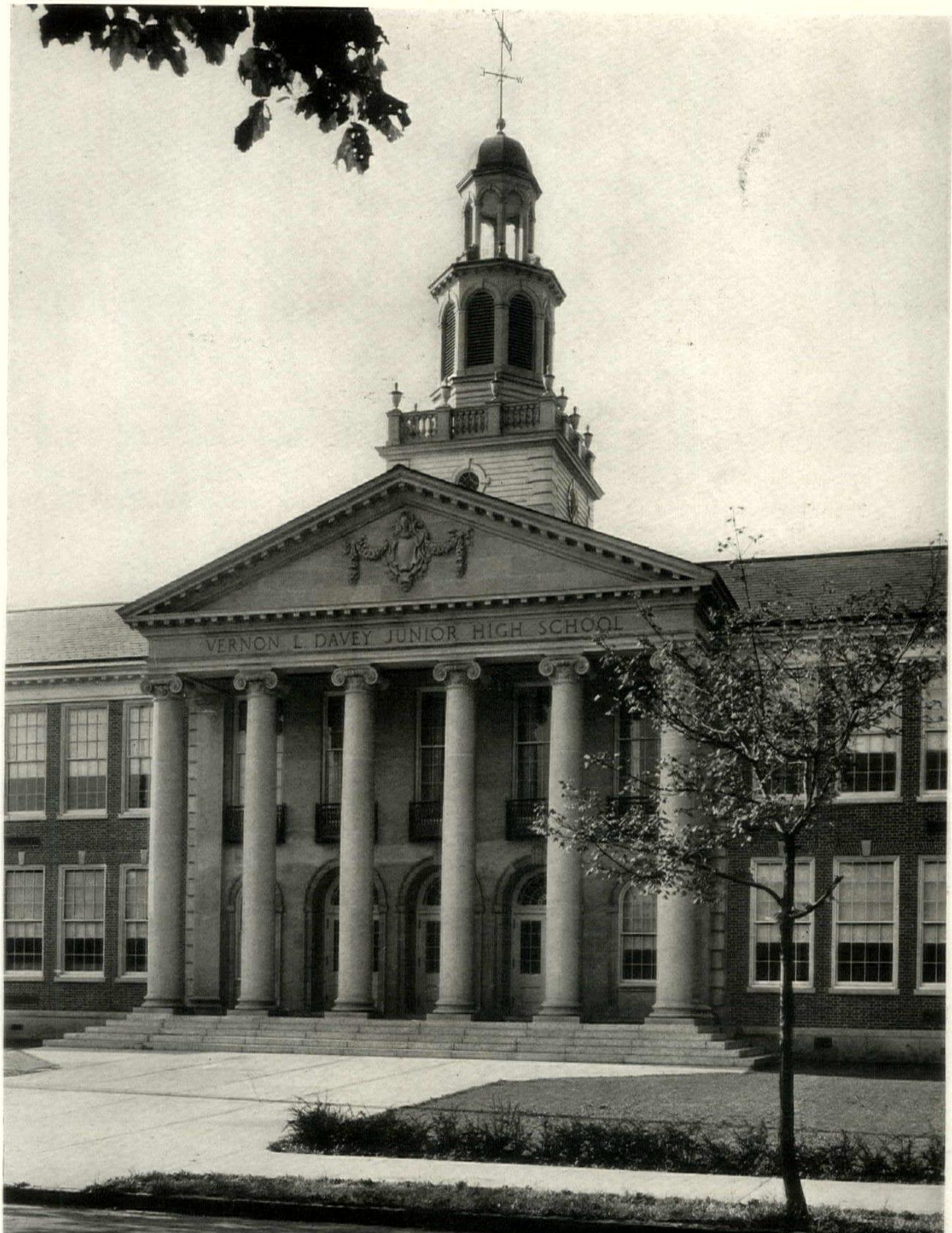
THE W. H. KIRK JUNIOR HIGH SCHOOL, EAST CLEVELAND, OHIO

WARNER, McCORNACK & MITCHELL, ARCHITECTS

Tebbs & Knell

THE W. H. KIRK JUNIOR HIGH SCHOOL, EAST CLEVELAND, OHIO

WARNER, McCORNACK & MITCHELL, ARCHITECTS



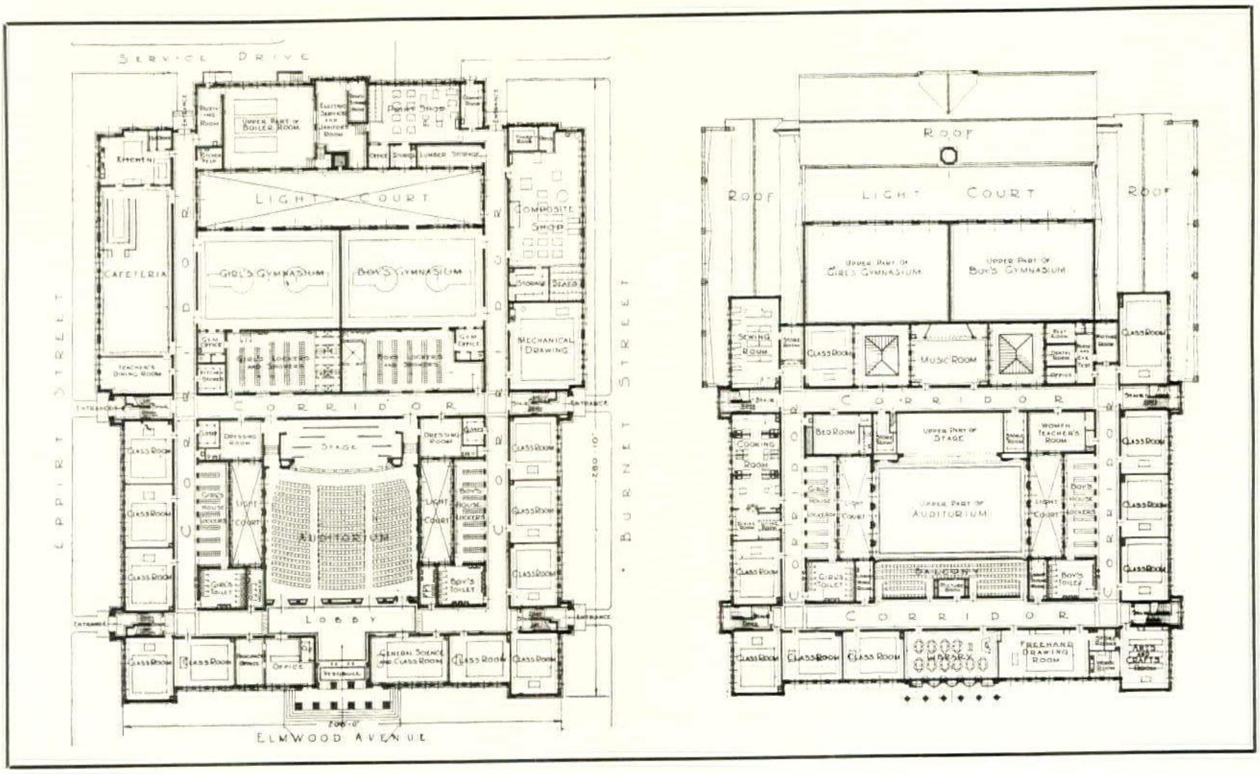
Richard Averill Smith

VERNON L. DAVEY JUNIOR HIGH SCHOOL, EAST ORANGE, N. J.

GUILBERT & BETELLE, ARCHITECTS

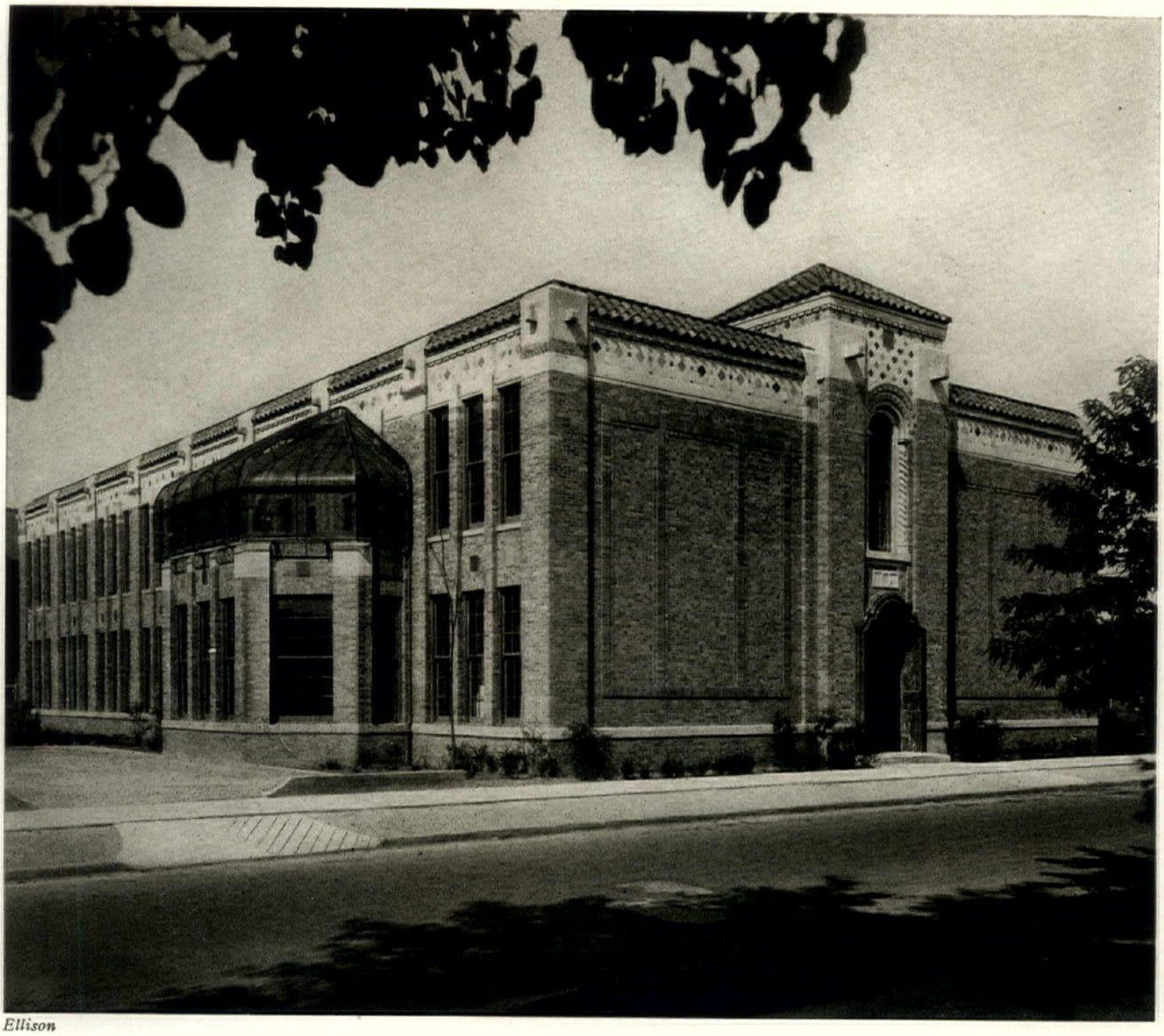
Richard Averill Smith

The school plant occupies an entire city block, the building itself being placed on one end, the remaining space being devoted to a playground which measures approximately 260 x 360 ft. The school is built of fireproof construction, with reinforced concrete foundations, brick walls, reinforced concrete floors and a timber trussed roof. The exterior is finished in dark red brick, with limestone trim and a green slate roof. The windows are double hung and are of wood painted white. The building was completed in 1930 for a student capacity of 800. It contains 1,600,000 cu. ft. and was erected at a total cost of $720,000, or a unit cost of 45 cents per cu. ft.



VERNON L. DAVEY JUNIOR HIGH SCHOOL, EAST ORANGE, N. J.

GUILBERT & BETELLE, ARCHITECTS



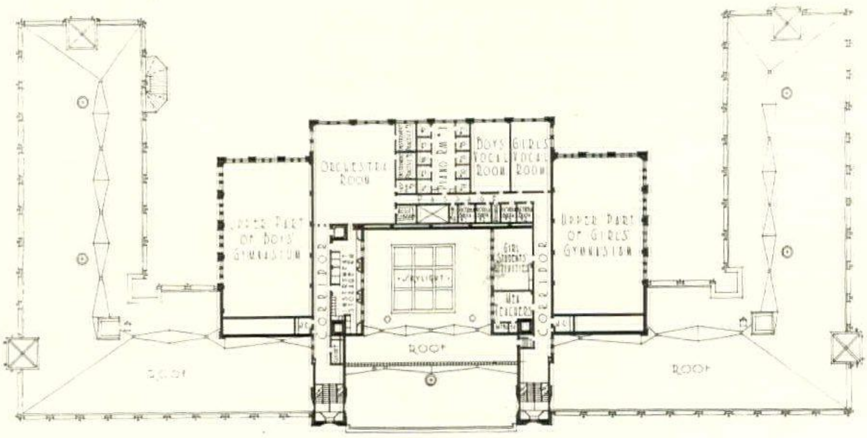
Ellison

THE KINDERGARTEN AND CONSERVATORY WING

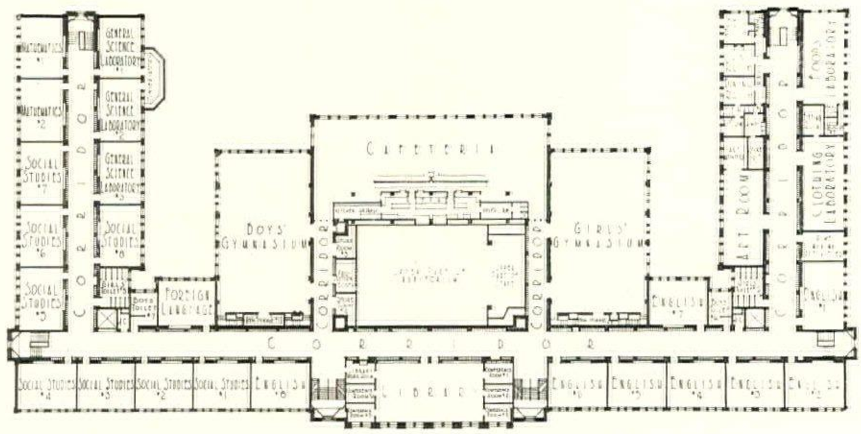
The building is of fireproof construction throughout, with reinforced concrete columns and beams in both exterior and interior walls, and concrete floors and roof slabs, and steel roof trusses. The exterior walls are orange colored brick, with limestone and polychrome terra cotta trim. Windows are of wood, double hung, and the roof is covered with a built-up asphalt roofing. Maple flooring is used for classrooms, terrazzo for corridors, cafeteria and kitchen, and linoleum tile for other areas. Corridors and toilet rooms have tile wainscoting; all interior wood finish color-lacquered birch. The ceilings of the auditorium, cafeteria, shops, natatorium, gymnasiums, speech and music department rooms are acoustically treated. A "split" heating system is used, radiators for heating and tempered air for ventilation, using oil for fuel. There are four zones of heating control. Total cost was $860,000, or 2,579,429 cu. ft. at 33 cents per cu. ft. The student capacity is 2,450

COPERNICUS JUNIOR HIGH SCHOOL, HAMTRAMCK, MICH

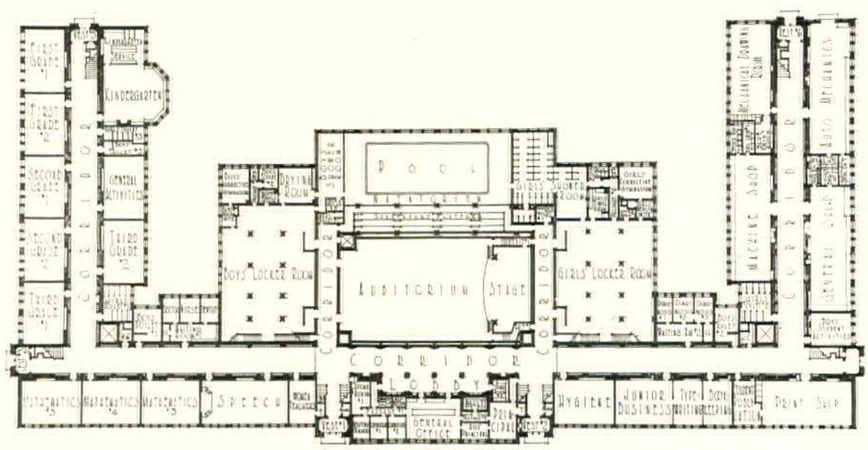
B. C. WETZEL & COMPANY, ARCHITECTS



THIRD FLOOR PLAN



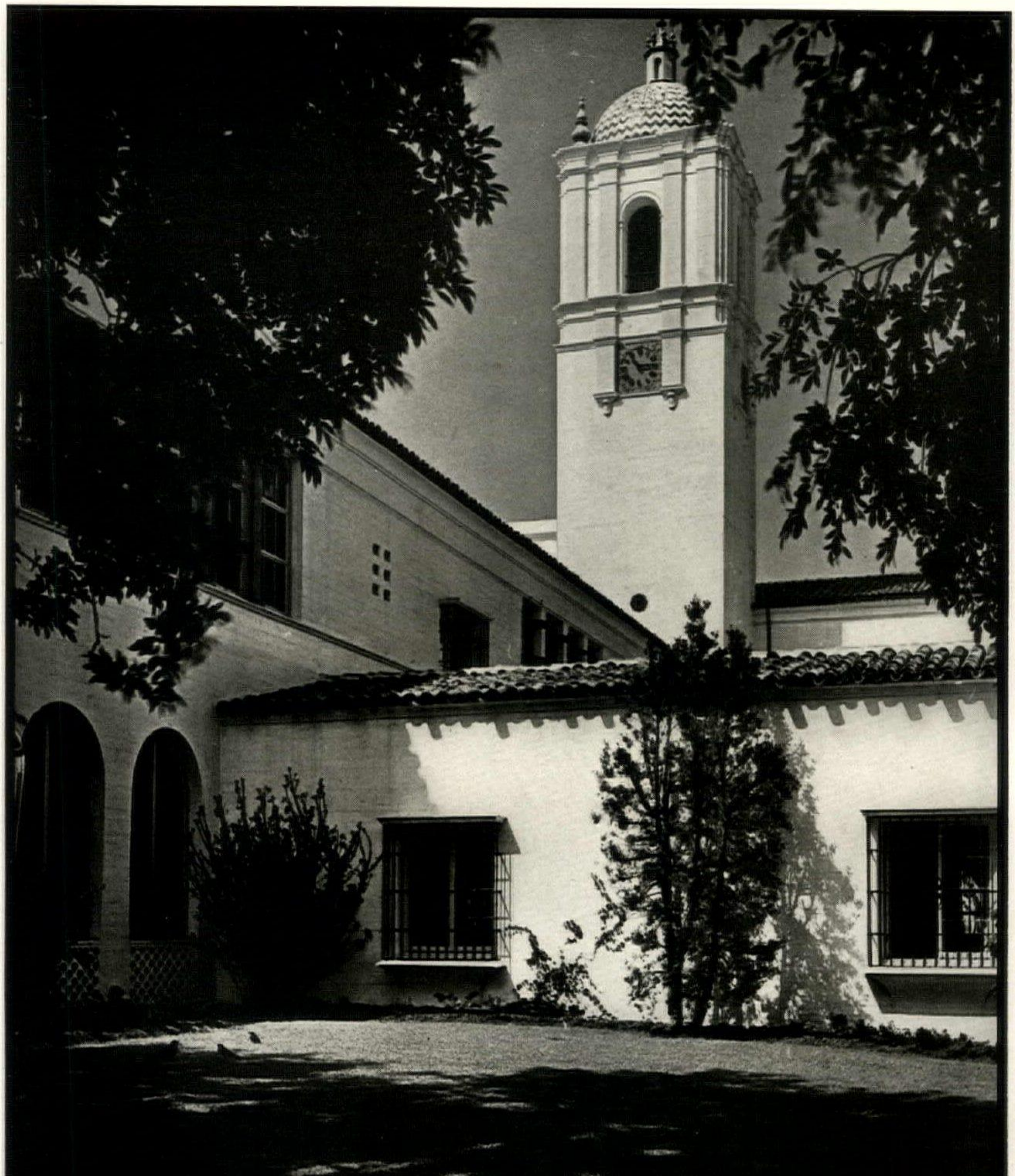
SECOND FLOOR PLAN



FIRST FLOOR PLAN

COPERNICUS JUNIOR HIGH SCHOOL, HAMTRAMCK, MICH.

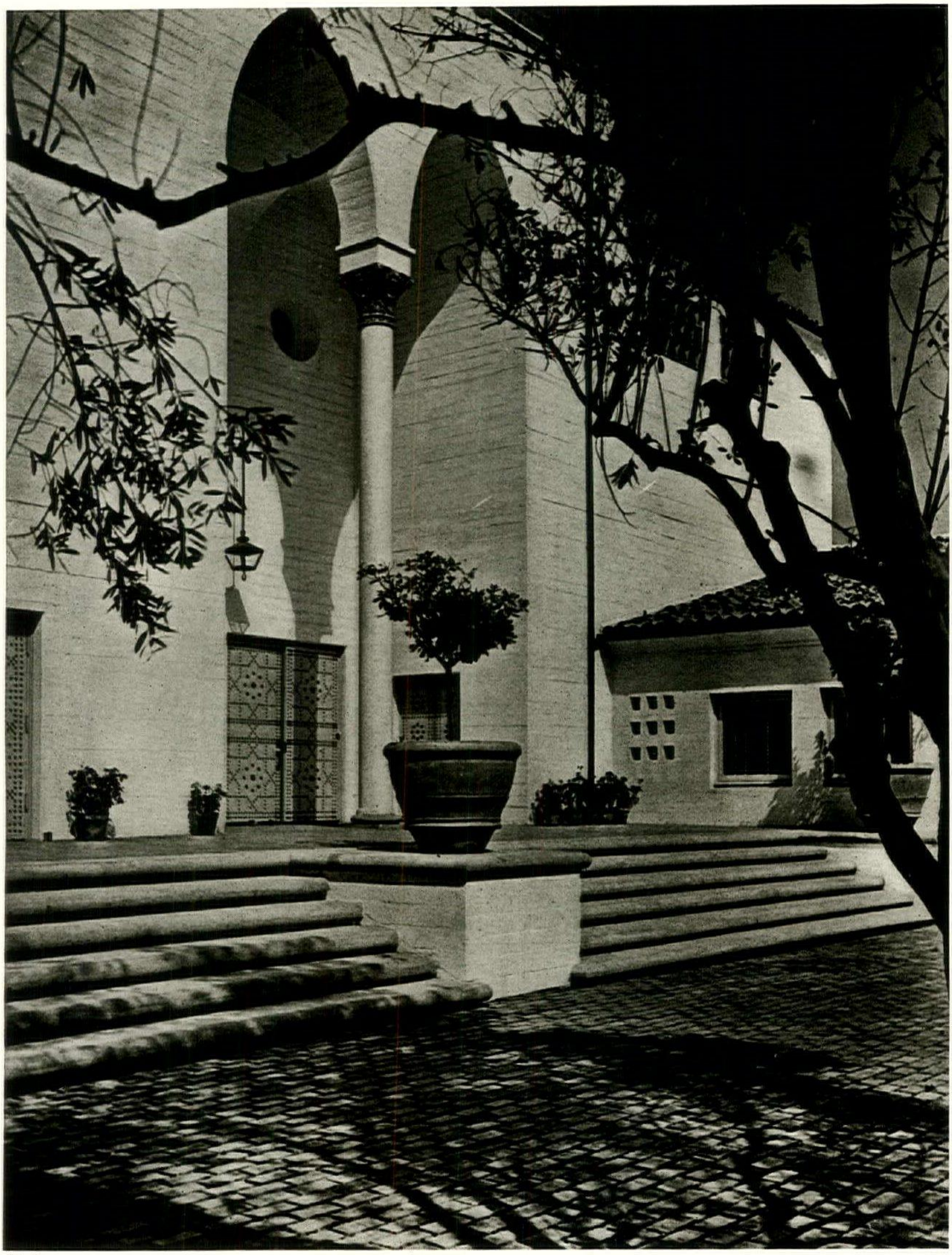
B. C. WETZEL & COMPANY, ARCHITECTS



Clarke

HAWTHORNE GRAMMAR SCHOOL, BEVERLY HILLS, CALIFORNIA
RALPH C. FLEWELLING, ARCHITECT

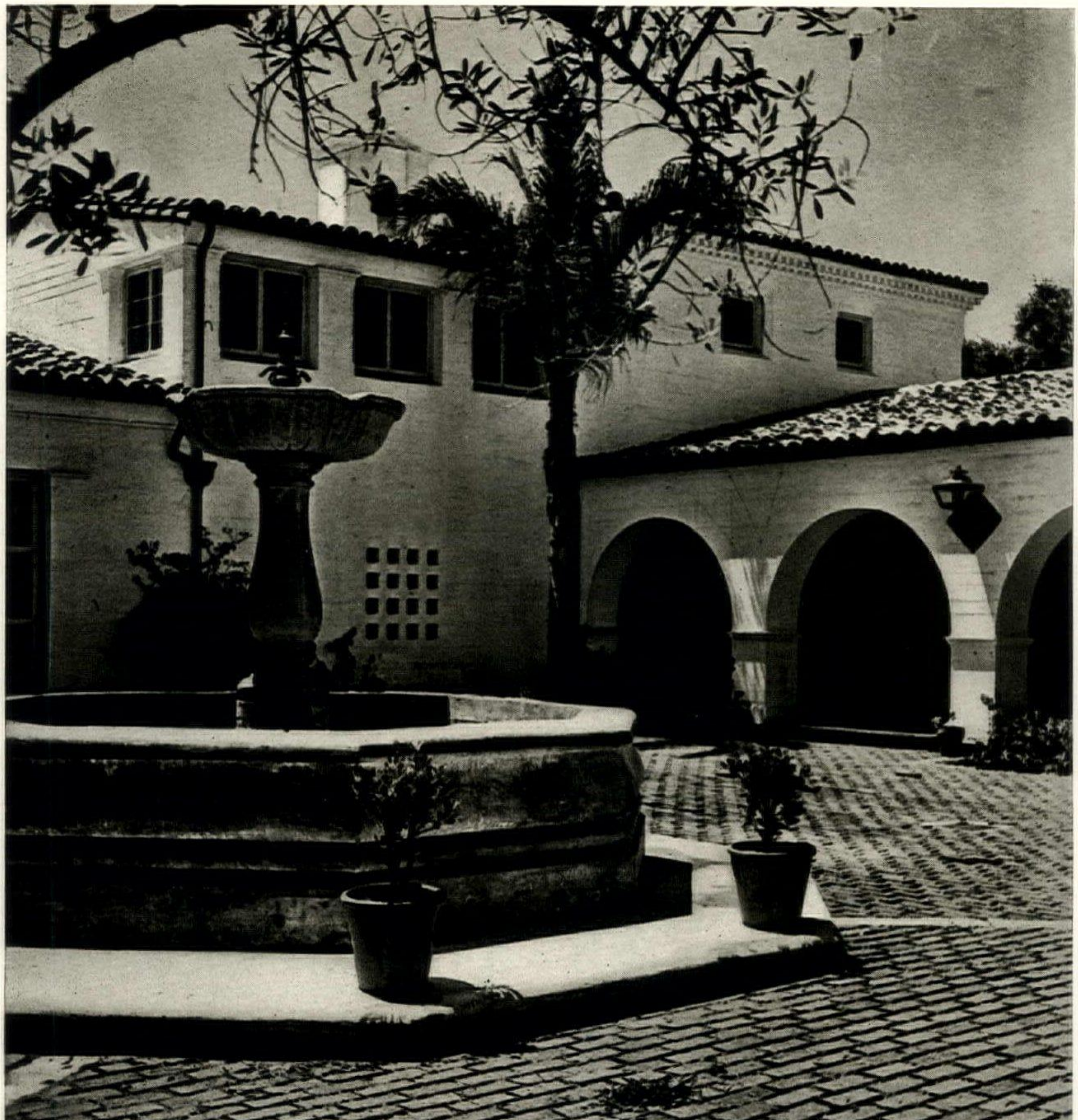
THIRTEEN ELEMENTARY SCHOOLS



Clarke

HAWTHORNE GRAMMAR SCHOOL, BEVERLY HILLS, CALIFORNIA

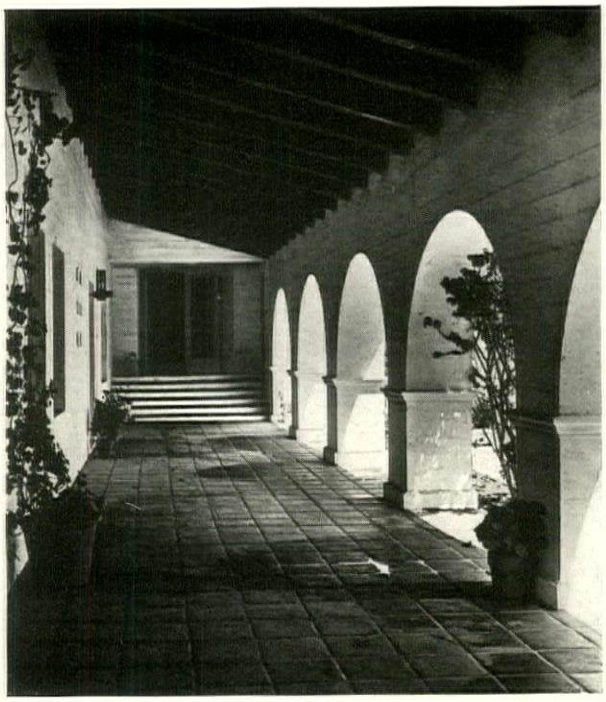
RALPH C. FLEWELLING, ARCHITECT



Clarke

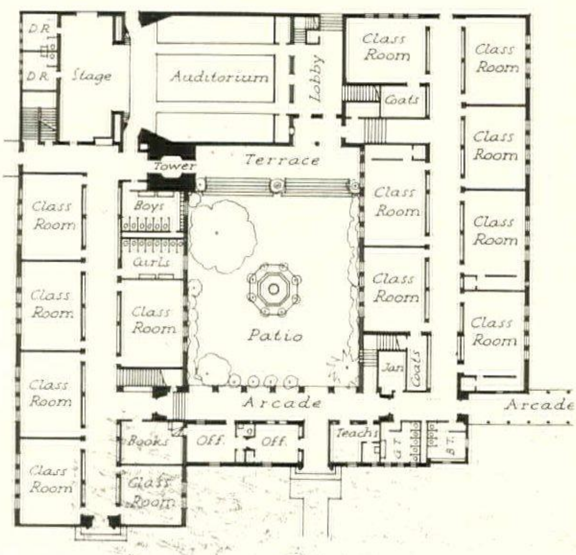
HAWTHORNE GRAMMAR SCHOOL, BEVERLY HILLS, CALIFORNIA

RALPH C. FLEWELLING, ARCHITECT

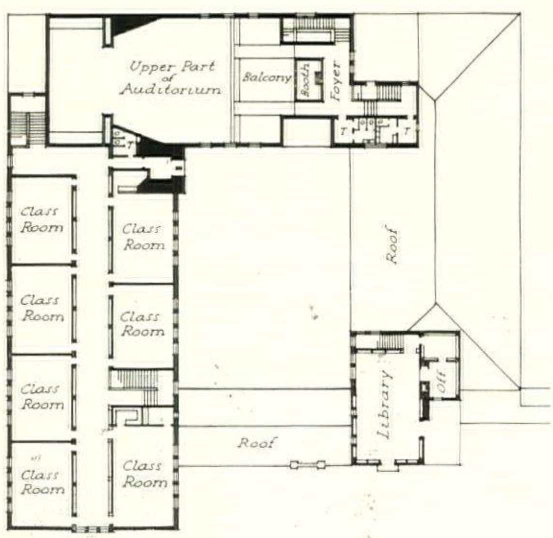


Clarke Photos

The exterior walls are of concrete with tufa stone trim. The roof is of red hand-finished tile. The wall surfaces are painted white and the window and door trim Colonial yellow. The interior walls are painted concrete. In the corridors, the ceilings are cement color, the walls oyster white, and the woodwork blue-green. Floors are of maple in the classrooms and quarry tile elsewhere. The structure was built with a reinforced concrete frame and filler walls to resist earthquake stress and contains insulation in the floor construction. It is heated by a gas-fired vacuum system with concealed radiation. Completed in 1929, the building contains 940,000 cu. ft. and cost 24 cents per cu. ft., or a total of $225,000



GROUND FLOOR PLAN



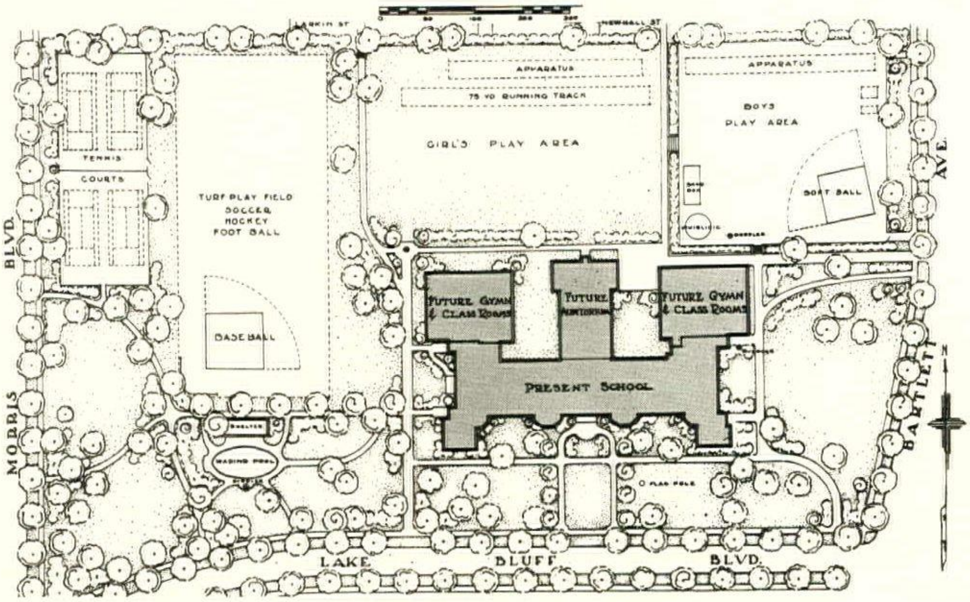
SECOND FLOOR PLAN

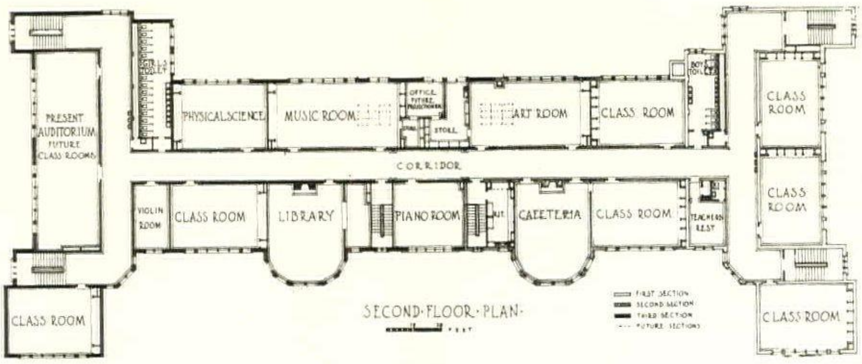
HAWTHORNE GRAMMAR SCHOOL, BEVERLY HILLS, CALIFORNIA

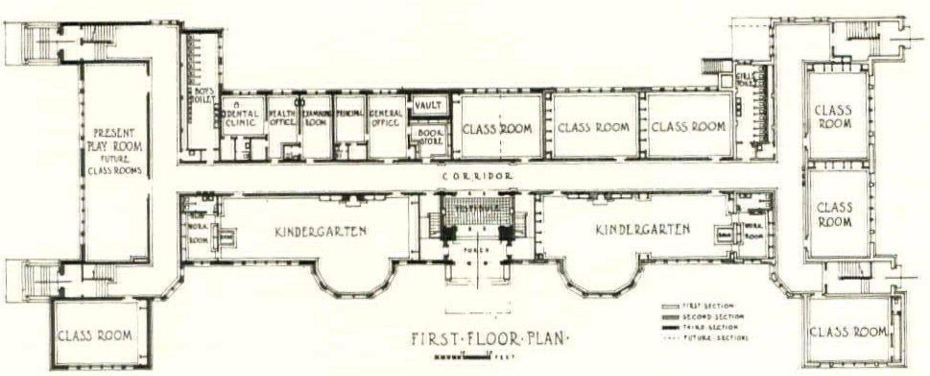
RALPH C. FLEWELLING, ARCHITECT

LAKE BLUFF GRADE SCHOOL, SHOREWOOD, WISCONSIN

ESCHWEILER & ESCHWEILER, ARCHITECTS

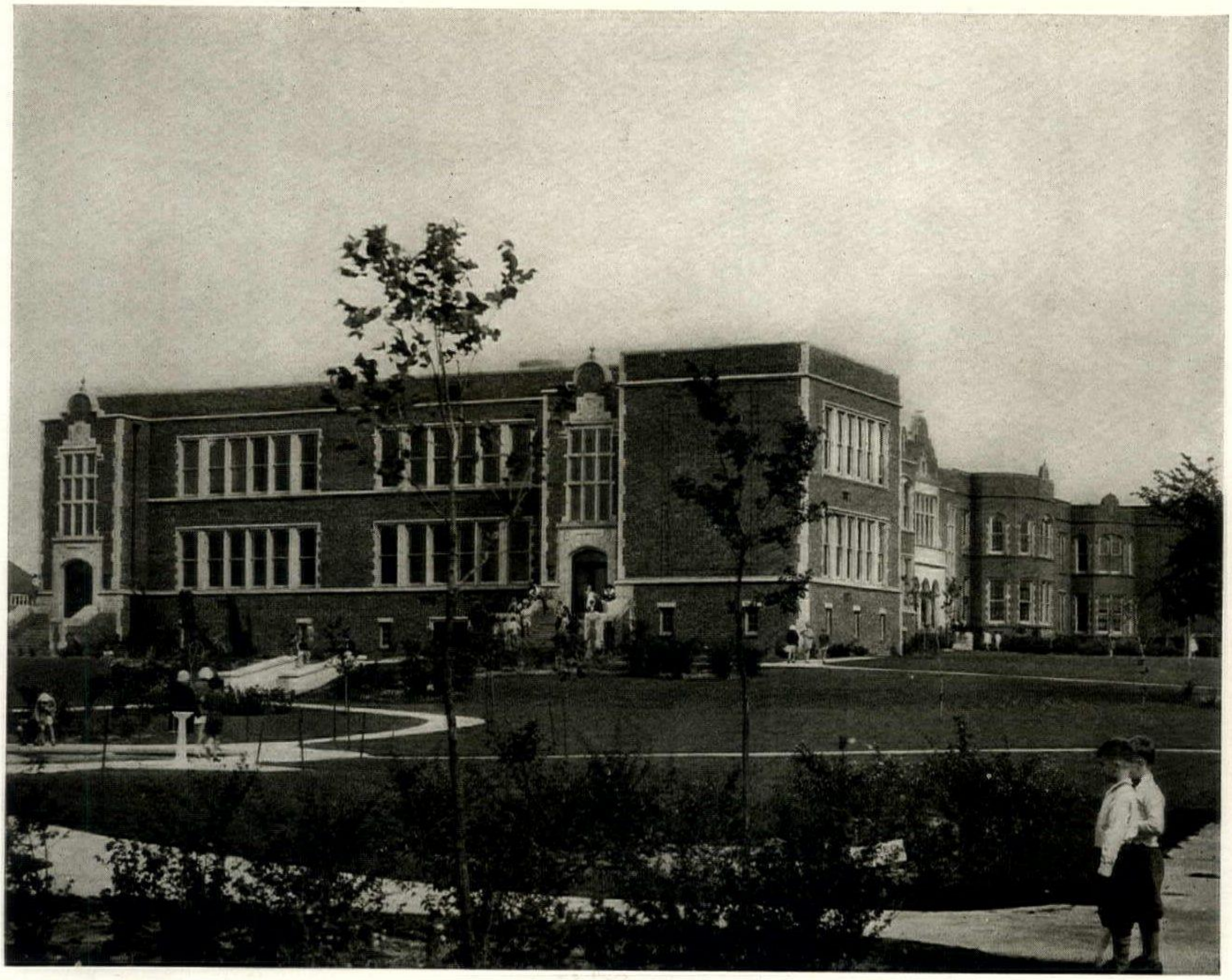






LAKE BLUFF GRADE SCHOOL, SHOREWOOD, WISCONSIN

ESCHWEILER & ESCHWEILER, ARCHITECTS



GENERAL VIEW OF THE SCHOOL

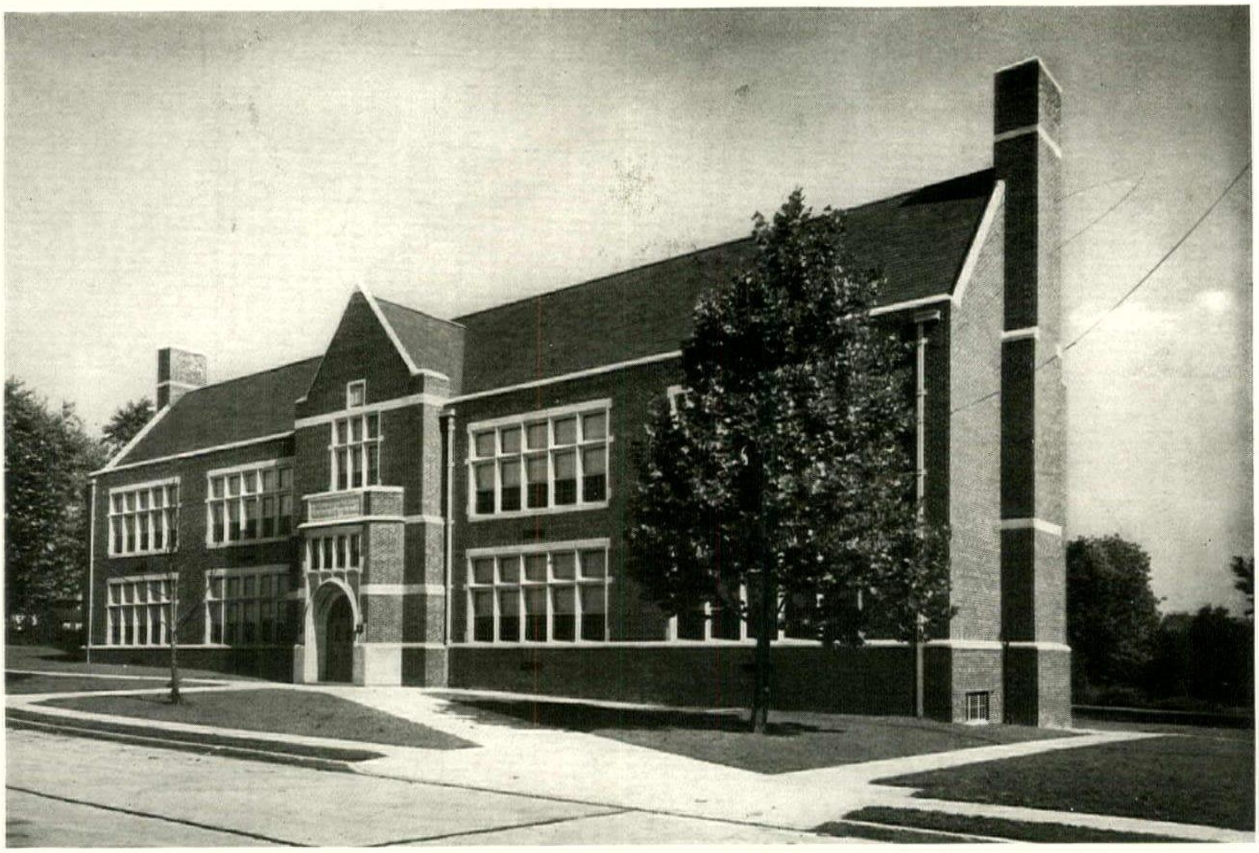
EXTERIOR: The walls are of variegated red brick with a yellow ochre joint, and limestone trim. Windows are generally of wood, double hung, but steel sash and leaded glass are used for windows in the entrance and stair halls. Roofing is of a high-grade double-ply built up type

INTERIOR: Walls are of colored sand float finish plaster, with oak trim, quarry tile stools, base and border. Blackboards are of natural slate. Special features of the interior design are the built-in wardrobes, and the faience tile basins and drinking fountain backs. All flooring is linoleum. The heating system is an oil-fired steam type, with concealed radiators; ventilation is supplied by unit ventilators, the air being filtered. Double tile walls and double glazing are a feature of the health suite

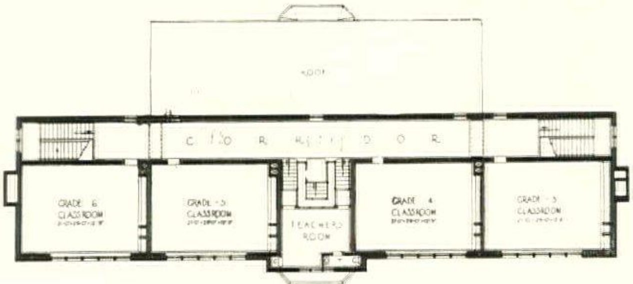
COST AND CONSTRUCTION: The building has a concrete frame, tile and concrete joist floors and brick and hollow tile walls; a gypsum tile system is used for the roof construction. The building was built in three sections, the latest being completed in August, 1930. The total cubage is 828,540 cu. ft., the average cost for all three sections being approximately 39.4 cents per cu. ft., or a total of $322,576

LAKE BLUFF GRADE SCHOOL, SHOREWOOD, WISCONSIN

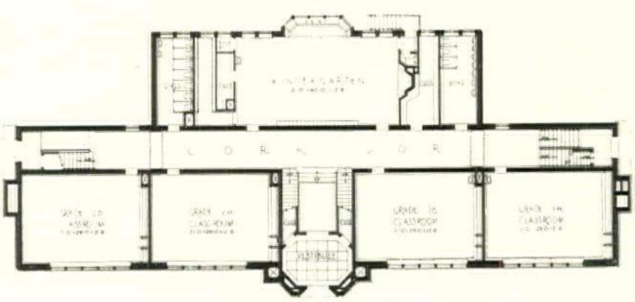
ESCHWEILER & ESCHWEILER, ARCHITECTS



Wallace



SECOND FLOOR PLAN



FIRST FLOOR PLAN

EXTERIOR: Walls are of red brick with light joints, and limestone trim. The windows are of the steel sash convertible type, and the roof is of slate

INTERIOR: Corridors and stairs have glazed brick wainscots; all walls are plastered, and all trim is of wood. Classroom floors are of maple, corridor floors of concrete. An oil-fired steam heating system is used, with unit ventilators in all classrooms

COST AND CONSTRUCTION: The building is of semi-fireproof construction, having wood joists and floors, except in corridors and stair halls. These and the floors over boiler room are of concrete. The building, completed in February, 1931, contains 265,000 cu. ft. and cost $83,000 or 31.33 cents per cu. ft.

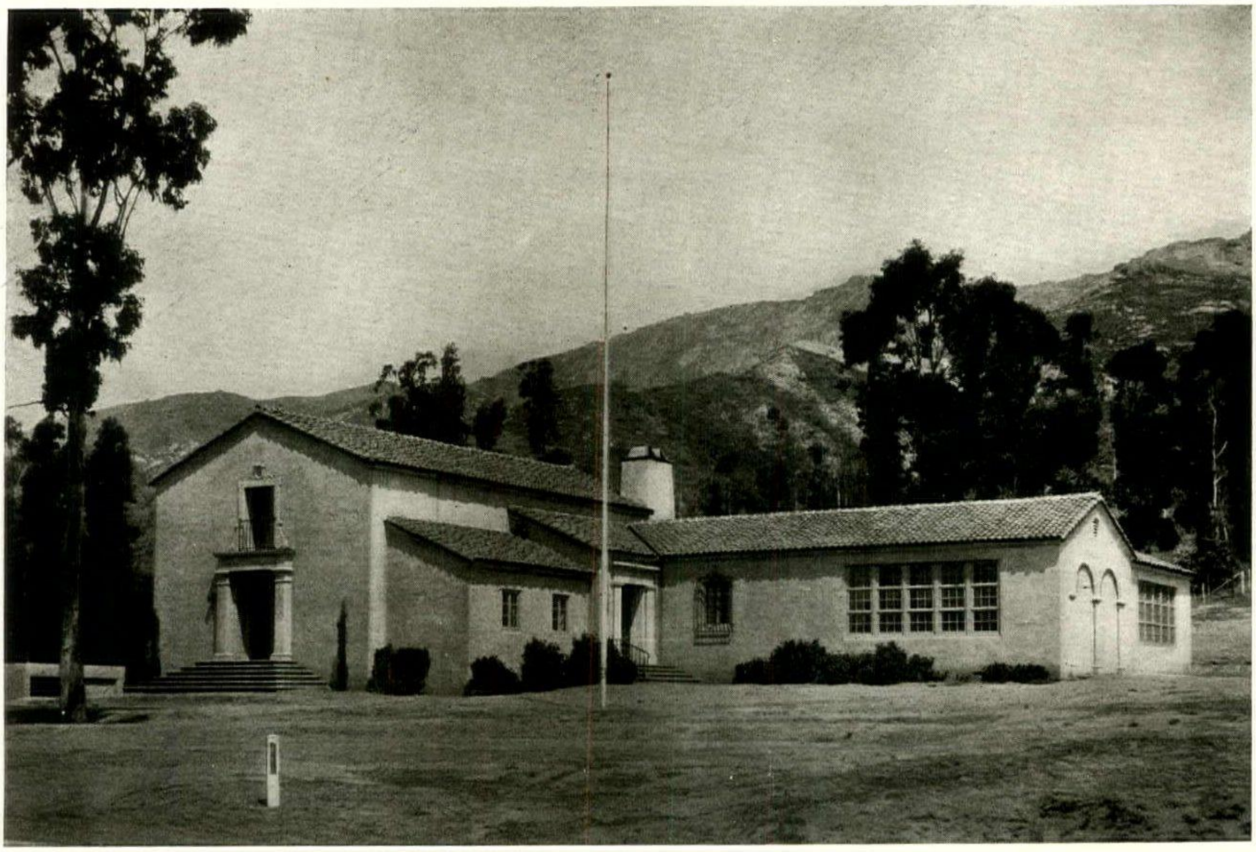
ARDMORE AVENUE ELEMENTARY SCHOOL, LANSDOWNE, PA.

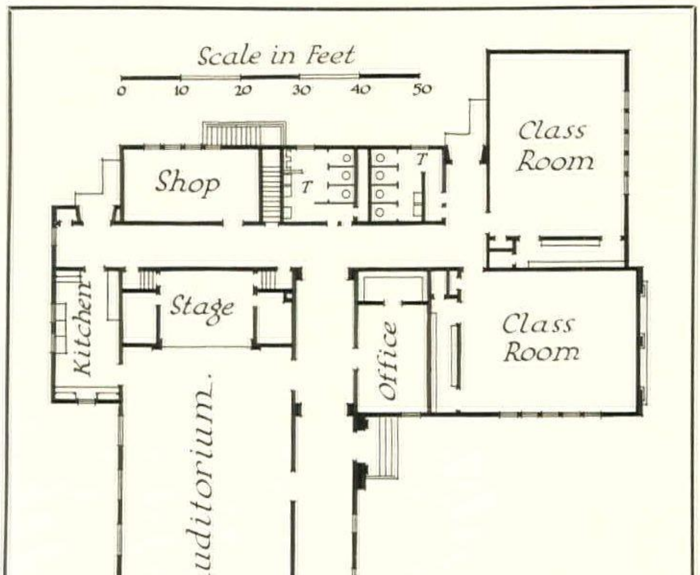
CLARENCE W. BRAZER, ARCHITECT

Wallace

ARDMORE AVENUE ELEMENTARY SCHOOL, LANSDOWNE, PA.

CLARENCE W. BRAZER, ARCHITECT





GENERAL: This school is an example of a building in a small rural community which has been designed to serve as a meeting place and recreation center for the members of the community in addition to its educational facilities

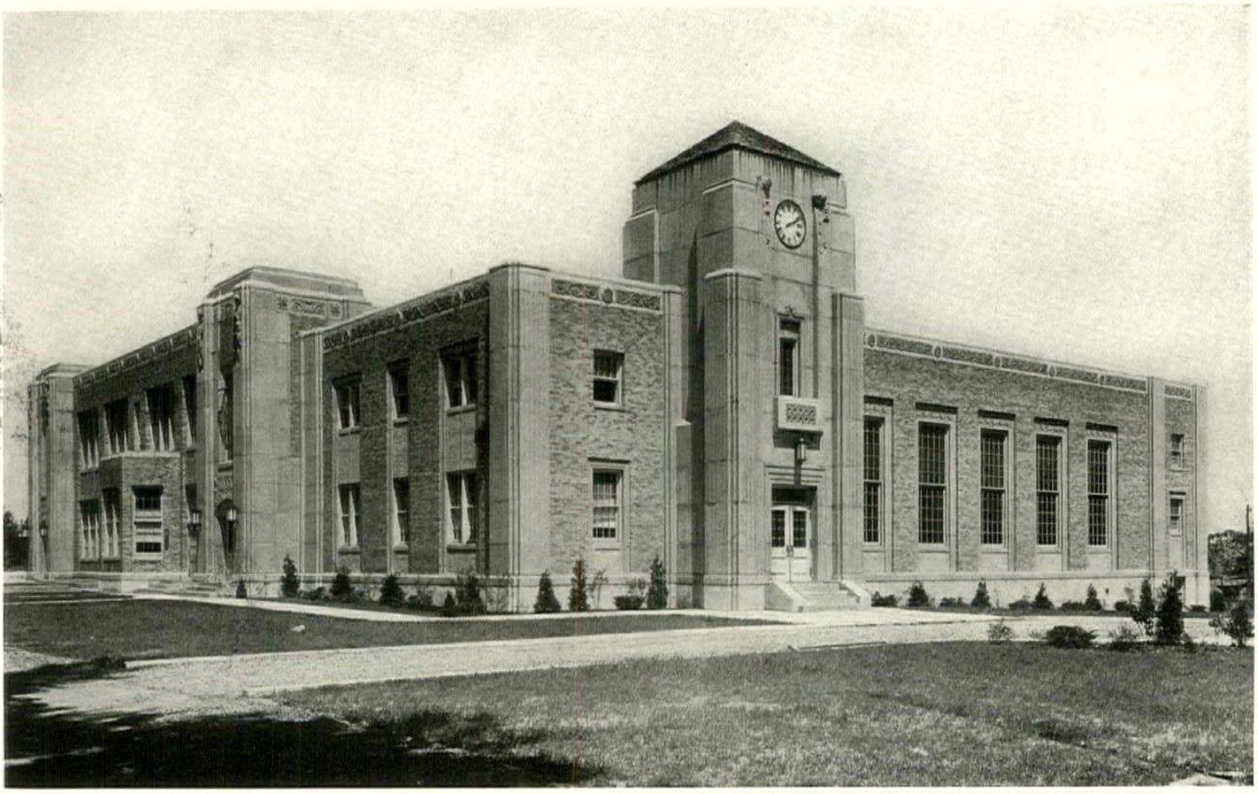
DESIGN AND CONSTRUCTION: The exterior has been finished in a smooth, cream colored stucco trimmed with cast stone and wrought iron. The roof is of red clay tile. Windows throughout are of steel of the three-section awning type. The structure is of class "D" construction, built with frame walls and floors on a concrete foundation. The interior walls are of smooth finished plaster and the floors throughout are of maple. Heat is supplied by a hot air recirculating system. The building contains 144,366 cu. ft. and cost 16.7 cents per cu. ft., or a total of $24,220

VISTA DEL MAR SCHOOL, GAVIOTA, CALIFORNIA

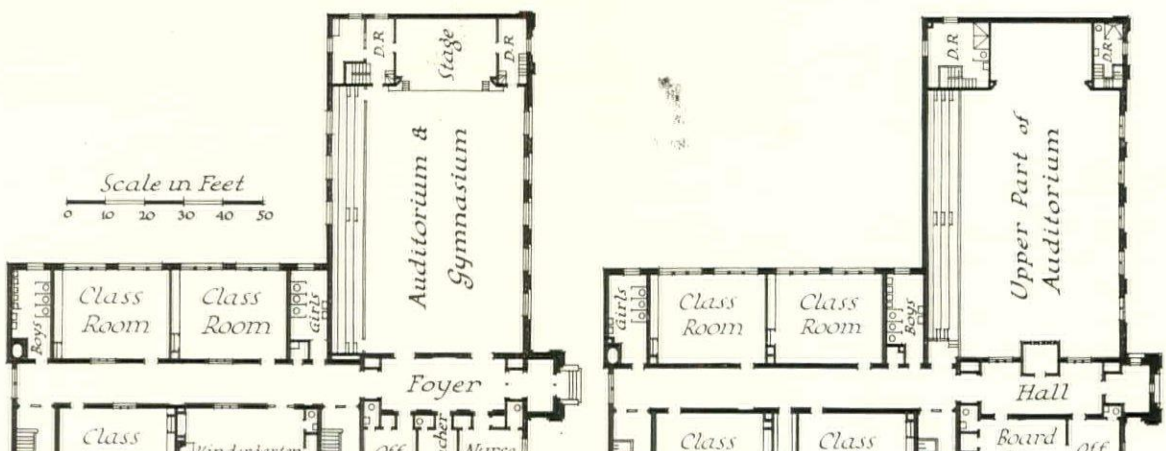
LOUIS N. CRAWFORD, ARCHITECT

JOHN HILL SCHOOL, BOONTON, NEW JERSEY

HACKER & HACKER, ARCHITECTS



The walls are of orange-brown brick, trimmed with cut caststone, with a terra cotta frieze in colors at the parapet. Interior walls have brick wainscoting, and textured acoustical finishes in special rooms. Corridor and toilet floors are terrazzo. A split heating system is used. Cu. ft. cost, 37.4 cents



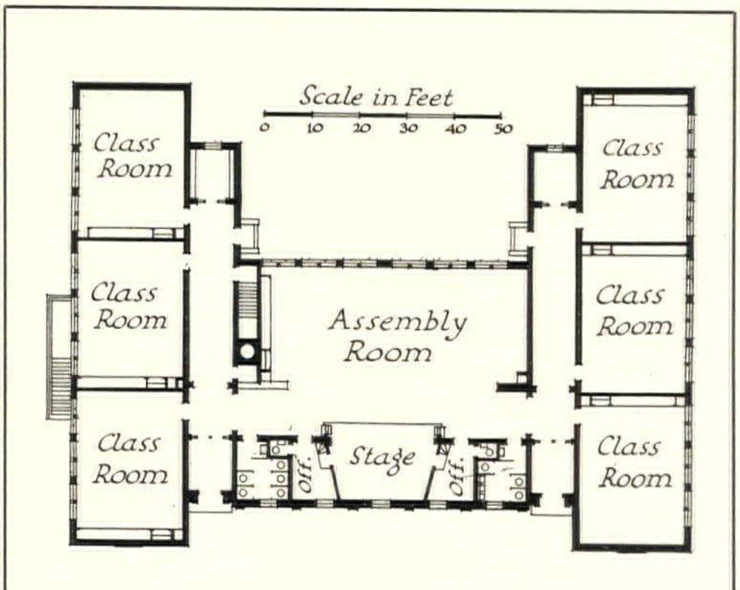
FIRST FLOOR PLAN

SECOND FLOOR PLAN

JOHN HILL SCHOOL, BOONTON, NEW JERSEY

HACKER & HACKER, ARCHITECTS

Exterior wall surface of central section is tooled buff stucco, the wings being red brick; all trim is cut caststone, and the roof is of tile. Interior walls are smooth finish plaster, with red brick wainscoting, and chestnut trim stained. Terrazzo and linoleum are used for the floors. Folding partitions separate two class units, which form assembly room. Heating is supplied by a vapor-vacuum system, and ventilation by unit ventilators. Cost per cu. ft. was 37.3 cents

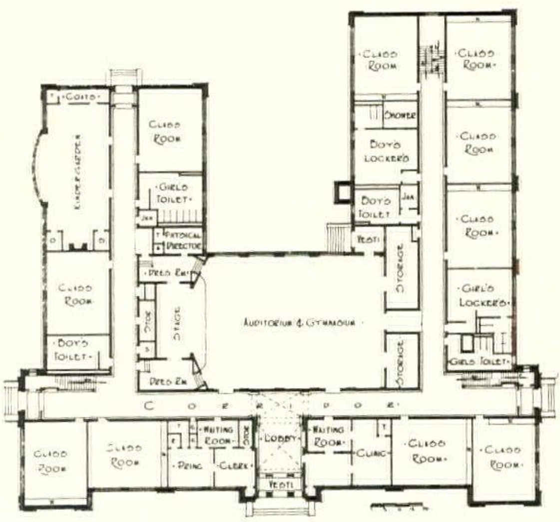


BRYANT SCHOOL, TEANECK, NEW JERSEY

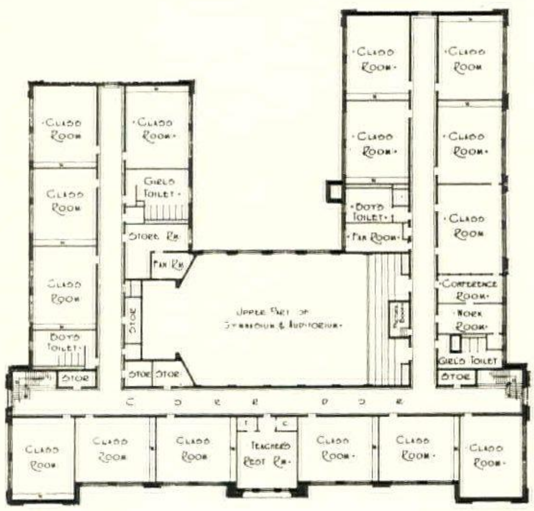
HACKER & HACKER, ARCHITECTS

Crawford

The building is of reinforced concrete construction on a concrete foundation; the roof is formed of precast concrete blocks. Exterior walls are of tan brick with buff stone trim; interior walls have sand float finish surfaces. Floors are double maple. The walls of the auditorium are acoustically treated, and the roof is insulated with 1 in. celotex. The building has a vapor steam heating system, and a central fan ventilating system. Completed in 1931, the total cost was $384,425, or 33.4 cents per cu. ft. for a cubage of 1,150,000 cu. ft.



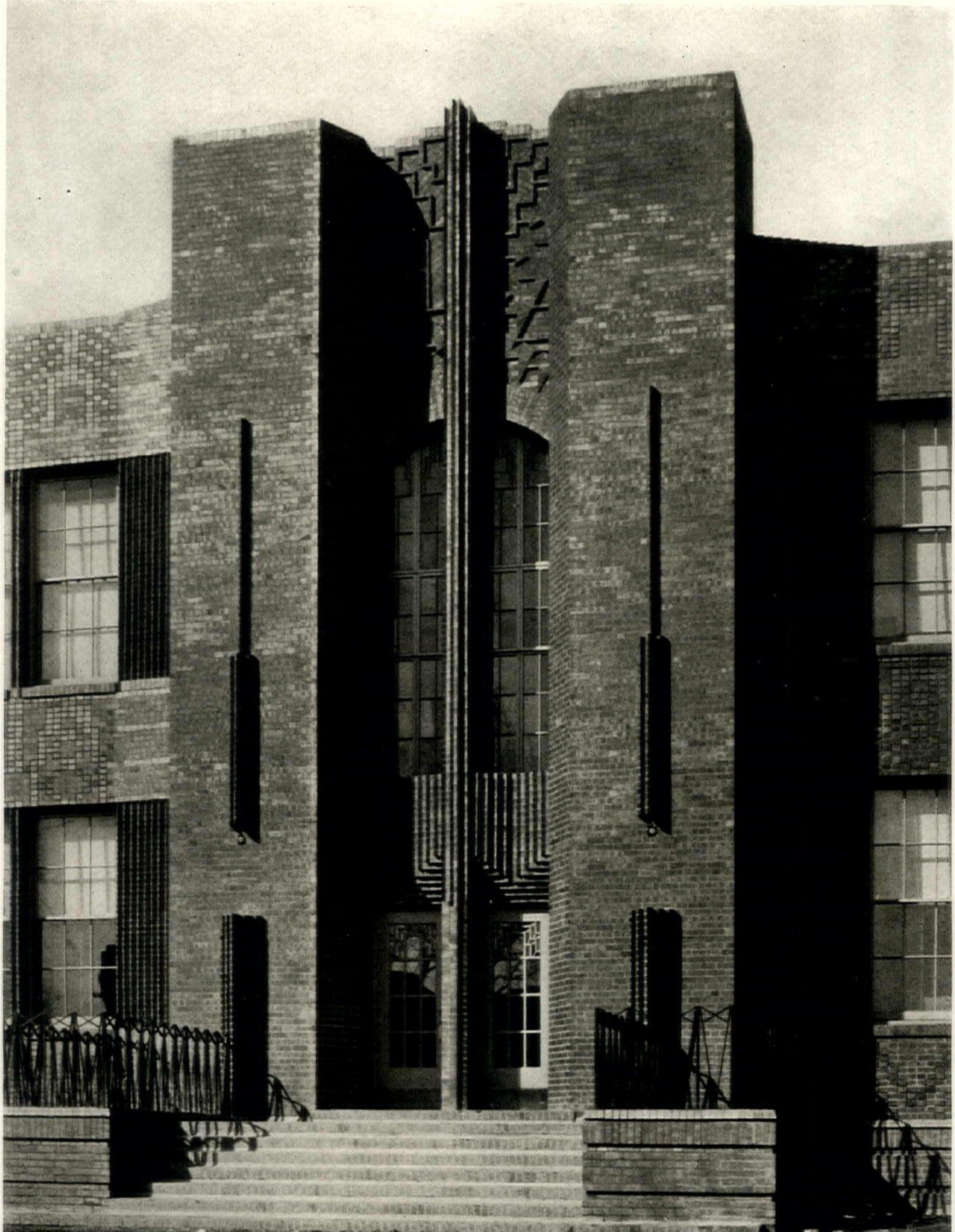
FIRST FLOOR PLAN



SECOND FLOOR PLAN

FRAZER SCHOOL, SYRACUSE, N. Y.

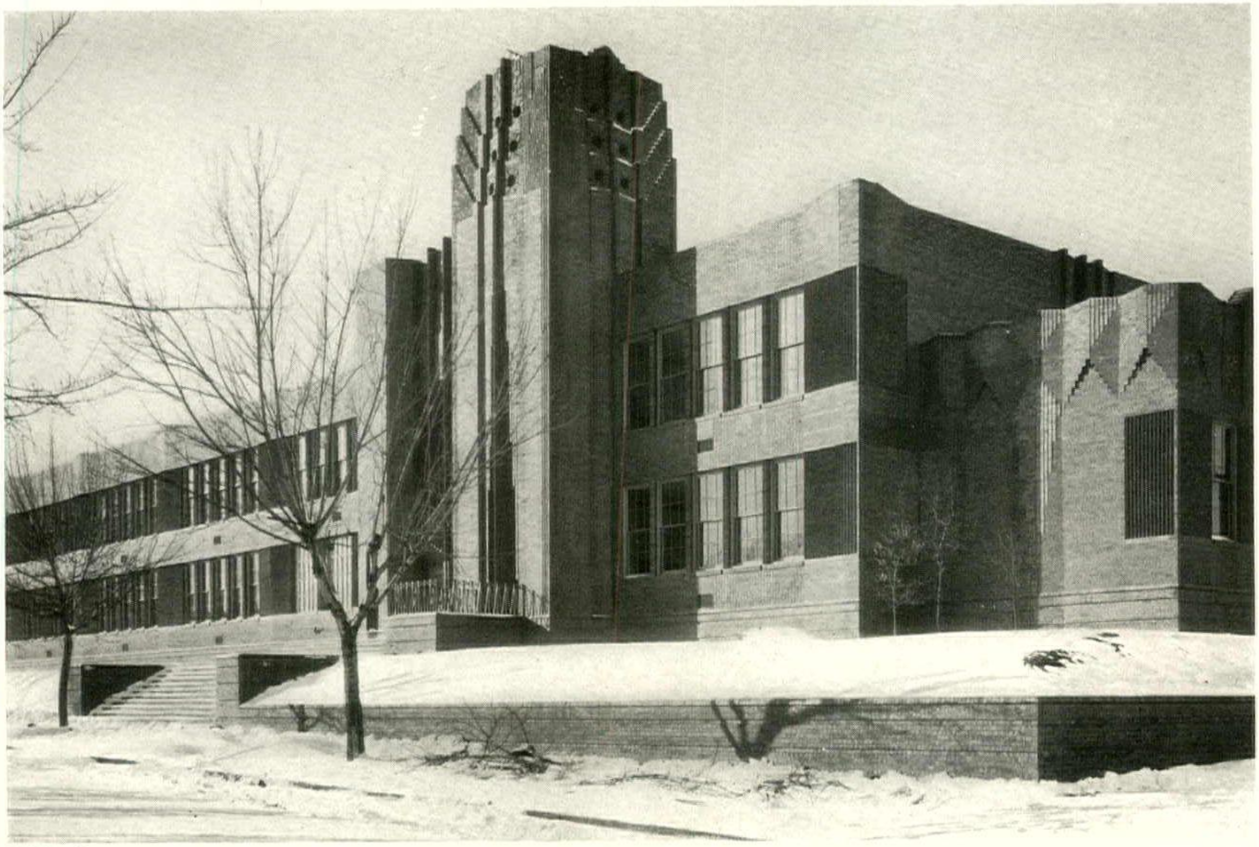
RANDALL & VEDDER, ARCHITECTS



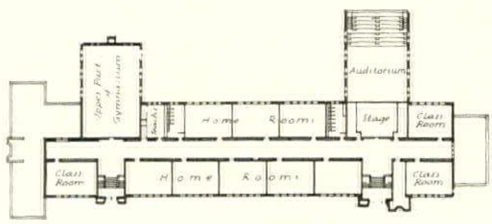
Kai Studio

BRYANT-WEBSTER SCHOOL, DENVER, COLORADO

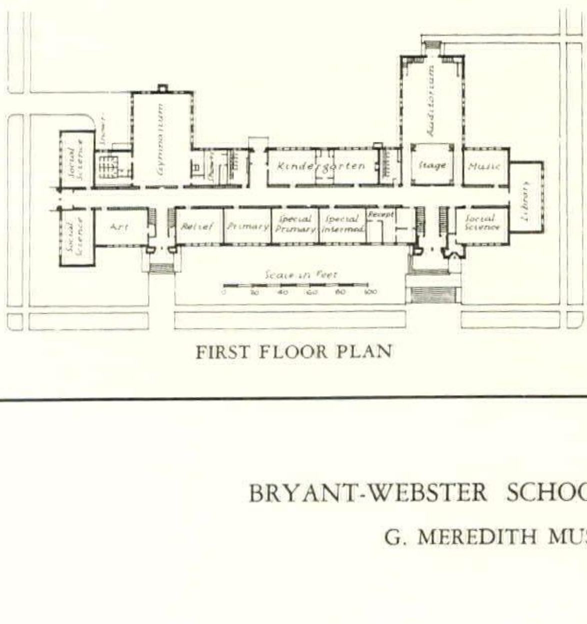
G. MEREDITH MUSICK, ARCHITECT



Kai Studio



SECOND FLOOR PLAN



FIRST FLOOR PLAN

EXTERIOR: The special brick patterns and shapes, inspired by Southwest Indian motifs, are worked out in common brick, ranging from red to brown in color. Classroom windows are of wood, double hung, and are grouped in units of five separate frames with 8 in. shadowless masonry mullions. The roofing is a composition material over wood sheathing

INTERIOR: Floors are maple over wood joists. Walls are generally smooth finish plaster. The corridor wainscoting and the gymnasium walls are of glazed brick. All trim is Michigan birch. A split heating system is used, with unit ventilators, and forced air and direct radiation. Toilet, showers, auditorium, and gymnasium are air conditioned

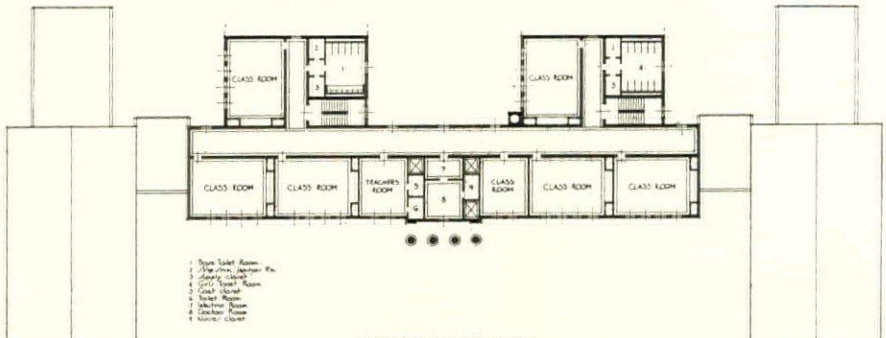
COST AND CONSTRUCTION: The building is of Class B construction, and rests on a concrete foundation. With a gross cubage of 967,000 cu. ft., at a cu. ft. cost of 24.7 cents, the total cost of the building was $239,190

BRYANT-WEBSTER SCHOOL, DENVER, COLORADO

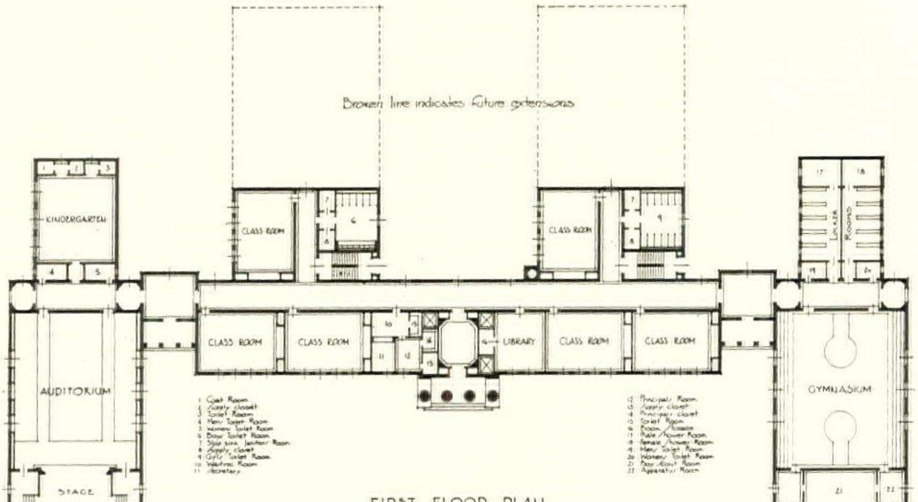
G. MEREDITH MUSICK, ARCHITECT

Wurts Bros.

HEWLETT GRADE SCHOOL, HEWLETT, L. I., N. Y.
LAWRENCE J. LINCOLN, ARCHITECT



SECOND FLOOR PLAN



FIRST FLOOR PLAN.

EXTERIOR: The walls are shale brick in a range of reds and browns. The columns, cornice, double hung windows and tower are of wood painted white. The roof is a mixture of oxford gray and black slate

INTERIOR: Vestibule floors are of terrazzo, corridors and lobbies linotile blocks, classrooms maple, gymnasium wood blocks, all others linoleum. Walls, generally of plaster painted white, are brick in the gymnasium. Classroom trim is of birch. Toilet rooms are lined with buff-colored tile, capped with a black band; the stalls are of Tennessee marble. The heating system is steam, vacuum return, and ventilation is supplied by a central fan system, the cupola being used for fresh air intake. Kindergarten and gymnasium are separately ventilated by unit ventilators

COST AND CONSTRUCTION: The gymnasium and auditorium units, all corridors, stairs, and toilet rooms are fireproof; the classroom floors are wood framed. Total cost, $315,000, with a cubage of 900,000 cu. ft., at a cost of 35 cents per cu. ft.

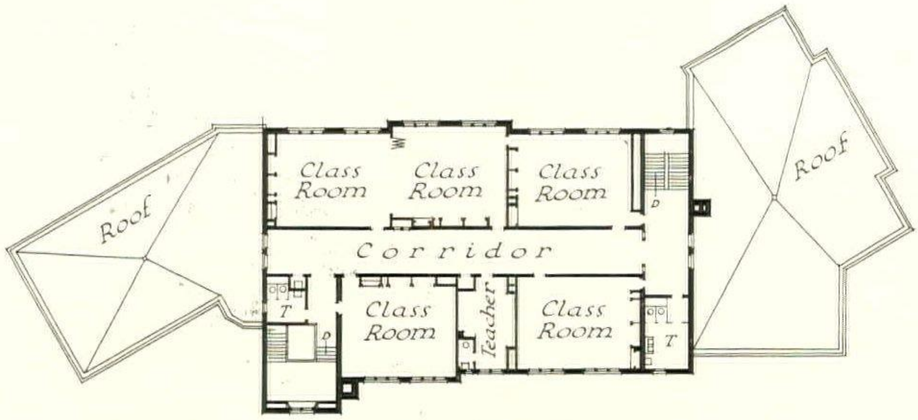
HEWLETT GRADE SCHOOL, HEWLETT, L. I., N. Y.

LAWRENCE J. LINCOLN, ARCHITECT

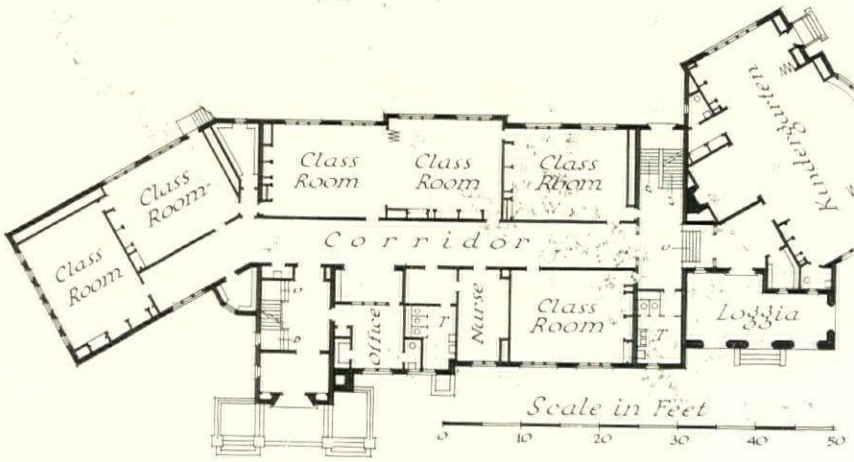
The building is located in a residential community and the design was chosen to harmonize with the surrounding buildings. The kindergarten unit is completely isolated, with separate entrances, toilets, etc. Exterior walls are of red waterstruck brick, with stone trim. The pitched roof is of slate, the flat roofs of tar and gravel. The interior walls are generally smooth plaster with metal trim. Corridor floors are terrazzo, others linoleum and granolithic. The building is of fireproof construction, employing junior steel beams and tie rods. The gross cubage is 505,954 cu. ft., and the gross cost was $234,099.31 cents, at 46.3 cents per cu. ft.

JOHN WARD SCHOOL, CHESTNUT HILL, NEWTON, MASS.

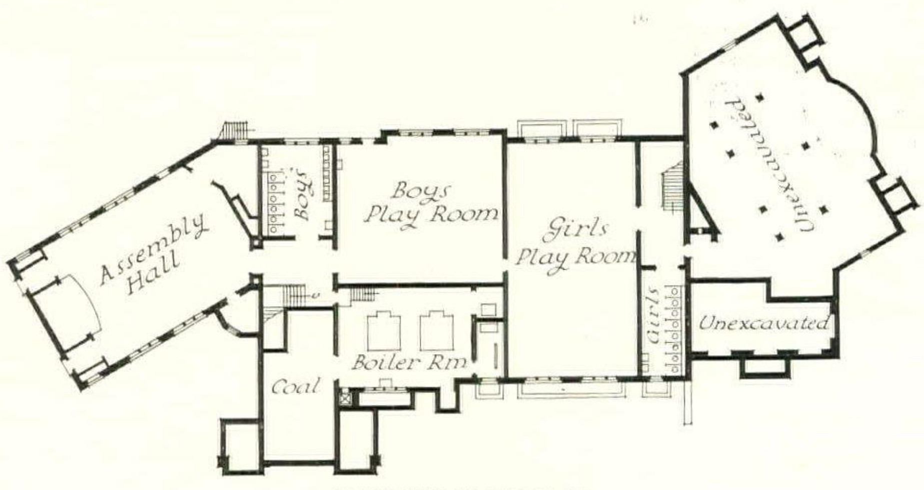
JAMES H. RITCHIE & ASSOCIATES, ARCHITECTS



SECOND FLOOR PLAN



FIRST FLOOR PLAN

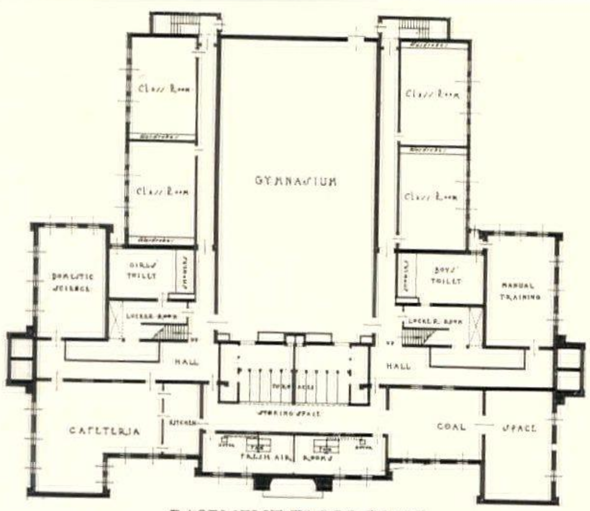


BASEMENT FLOOR PLAN

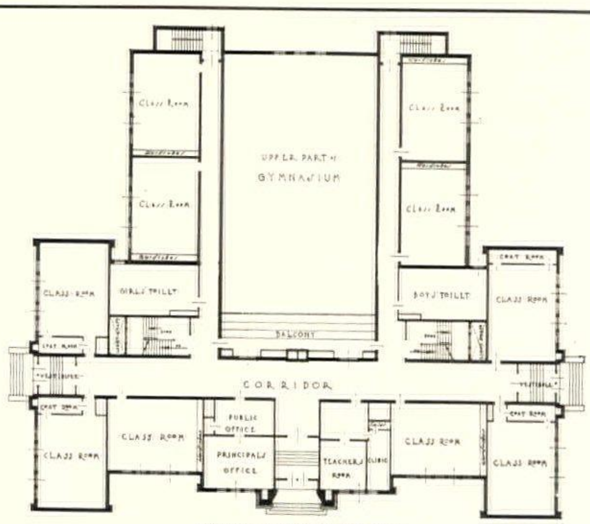
JOHN WARD SCHOOL, CHESTNUT HILL, NEWTON, MASS.

JAMES H. RITCHIE & ASSOCIATES, ARCHITECTS

The exterior is finished in variegated gray brick with cut caststone trim. The interiors are of sand finish plaster with wood trim. The building was built in two parts, the first containing 16 classrooms, a gymnasium, and administration space. The addition consisted of 12 additional rooms with the necessary corridors and stairways. It is interesting to note that the original building contained all the rough plumbing for both parts. The building is of fireproof construction throughout with reinforced concrete floors and bearing walls of tile and face brick. The cost of the original structure was 27.4 cents per cu. ft.; that of the completed structure 29 cents per cu. ft.; the total cost being $270,000



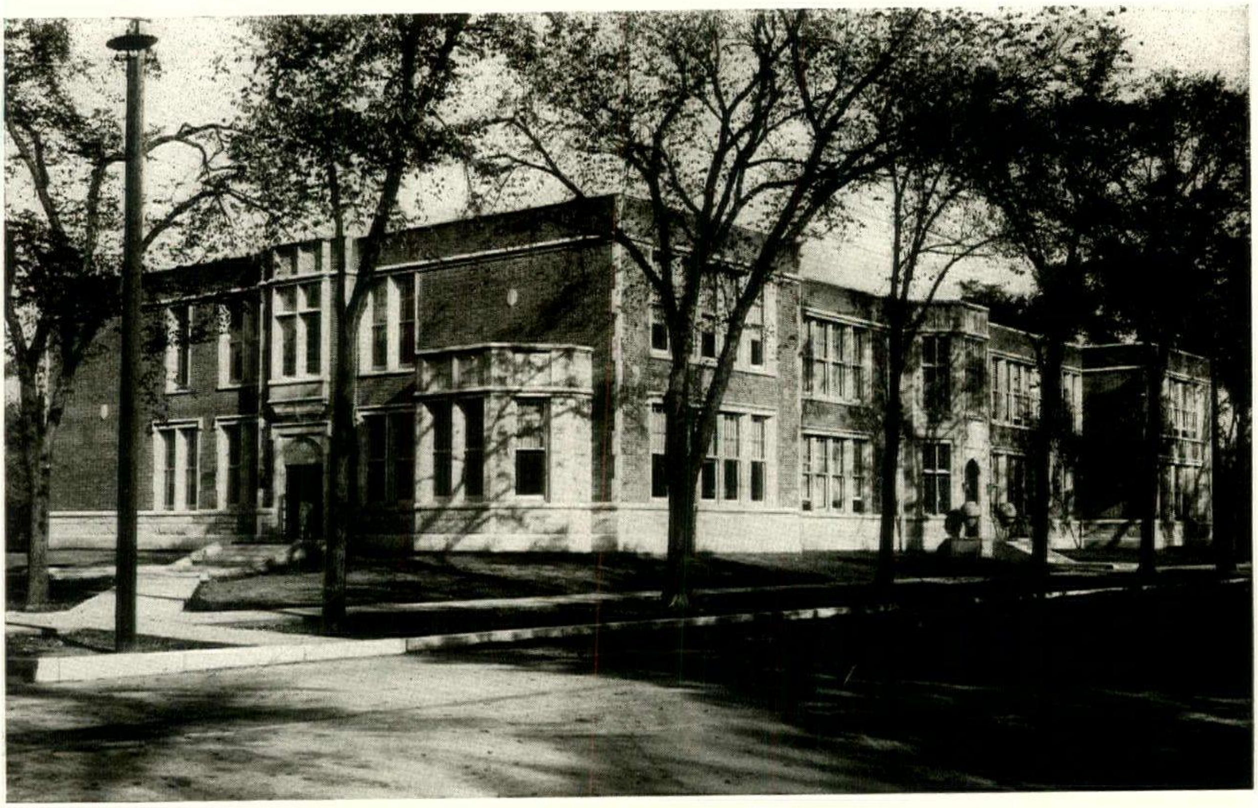
BASEMENT FLOOR PLAN



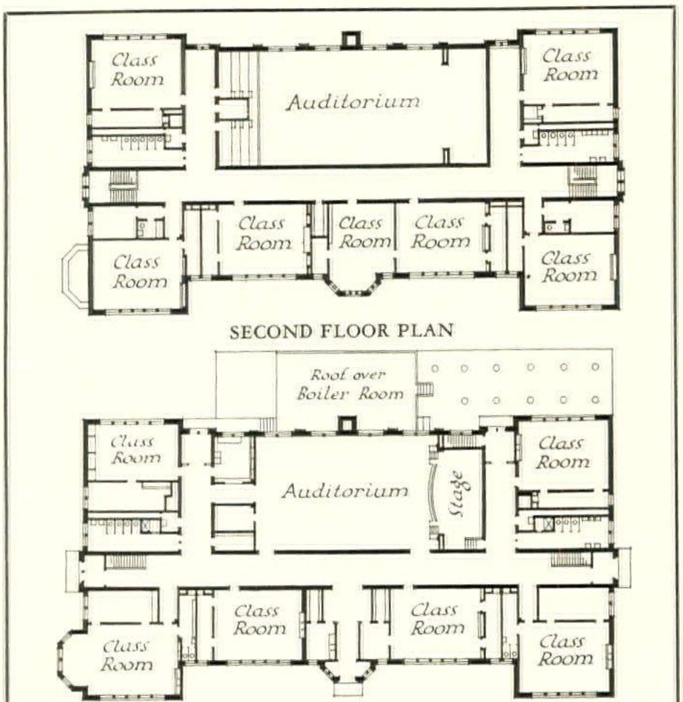
FIRST FLOOR PLAN

EAST ROCHESTER GRADE SCHOOL, EAST ROCHESTER, N. Y.

O. W. & H. B. DRYER, ARCHITECTS



Cutler



EXTERIOR: The red brick walls are trimmed with local travertine, and the roofing is of the built-up asphalt type. Windows have double hung wood sash

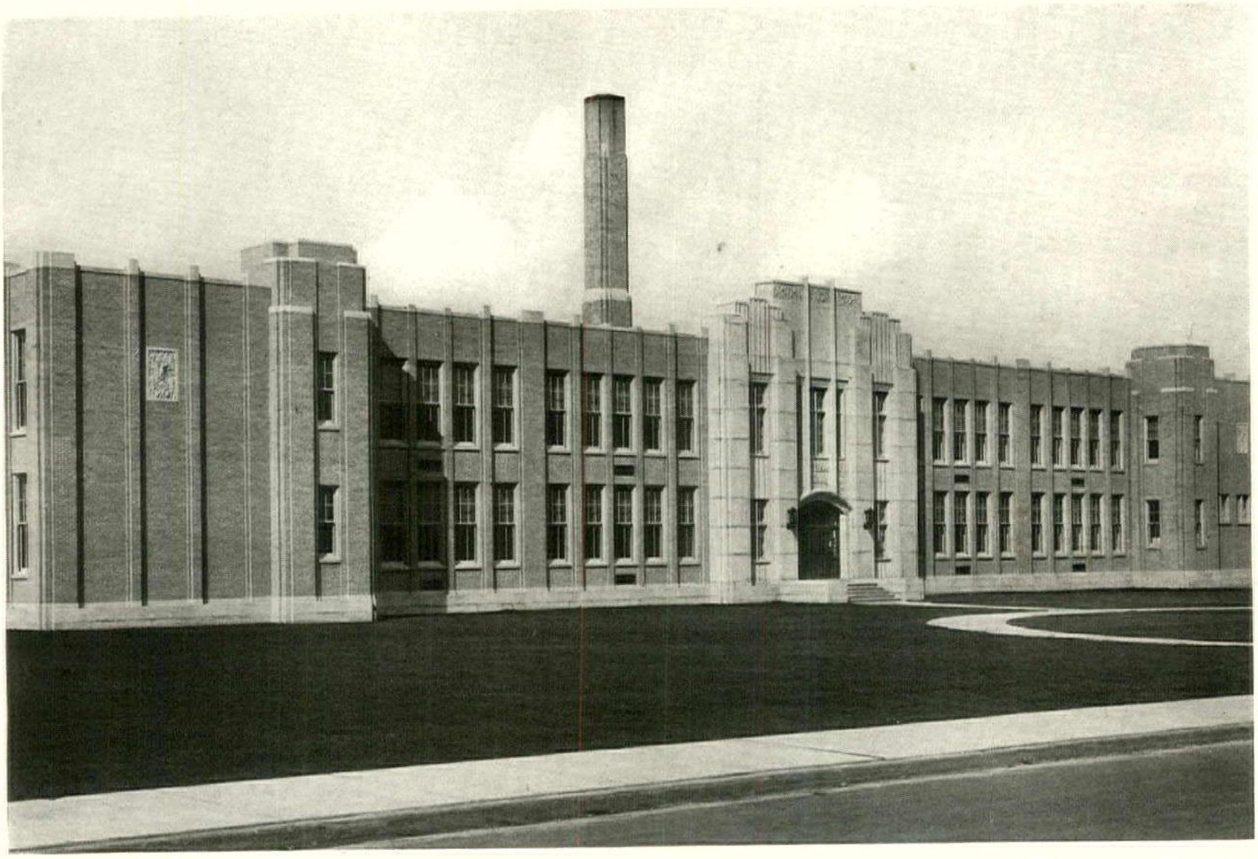
INTERIOR: Floors throughout are of terrazzo, except in the classrooms which are of maple. Walls are of smooth finished plaster with tile wainscoting in the corridors and toilet rooms. The building is wired so that all classrooms may receive radio programs, and so that the principal may speak to all rooms at once. A vacuum steam heating system is used, with wall hung radiators and automatic temperature controls. A central fan system supplies washed air to all rooms

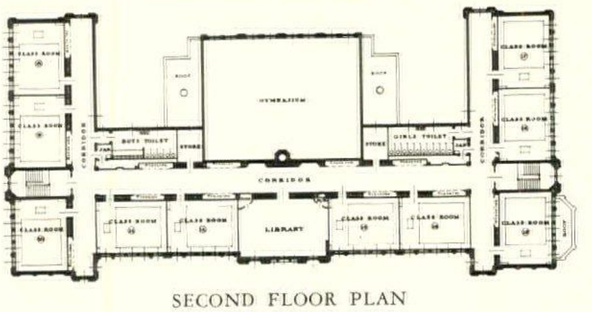
COST AND CONSTRUCTION: The building is of fireproof construction, with brick and tile walls and concrete joist floor construction. It contains 530,000 cu. ft., and at 31.6 cents per cu. ft., cost $167,000

CENTRAL GRADE SCHOOL, WINONA, MINNESOTA

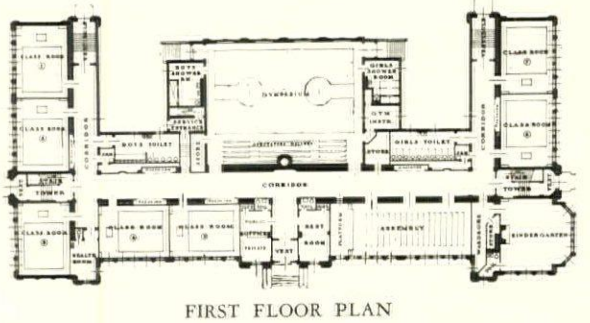
BOYUM, SCHUBERT & SORENSEN, ARCHITECTS

CENTRAL GRADE SCHOOL, WINONA, MINNESOTA
BOYUM, SCHUBERT & SORENSEN, ARCHITECTS





SECOND FLOOR PLAN



FIRST FLOOR PLAN

Except for the steel joist roof frame, the building is constructed entirely of reinforced concrete frame with face brick and back up tile curtain walls. The exterior is finished with matt texture gray brick with cut caststone trim. Windows are double hung throughout except those in the gymnasium which are of the steel projection type. The corridors have floors of linoleum with a terrazzo base and border, a wainscot of painted Keene's cement and smooth finished painted plaster walls and ceilings. Classrooms have maple floors, oak trim, and smooth finish plaster walls and ceilings. The floors in the office, kindergarten and rest rooms are linoleum. The flooring in the gymnasium is maple; the walls are of brick and the ceiling is of plaster with an acoustic treatment. Heating is by a low pressure steam system with an automatic control. The building is ventilated with unit ventilators and gymnasium shower rooms. The building contains 662,500 cu. ft. and cost 37 cents per cu. ft., or a total of $245,645

JEFFERSON SCHOOL, ERIE, PENNSYLVANIA

MEYERS & JOHNSON, ARCHITECTS

IDEAS FROM EUROPEAN SCHOOLS

American supremacy in many departments of school planning is recognized. From Europe, however, may be learned something regarding the uses of unusual materials to produce lighter, more airy, and more economical buildings. In this article are described several interesting innovations that have local application

BY

FREDERICK J. WOODBRIDGE

OF EVANS, MOORE & WOODBRIDGE, ARCHITECTS

WHY should American architects study modern European schools? There are, of course, various answers. We have been told that historic styles must express function, and that modern schools should be housed in new architecture expressive of modern educational ideas. Such conclusions might be drawn from certain examples, but I believe there are more important and fundamental lessons to be learned.

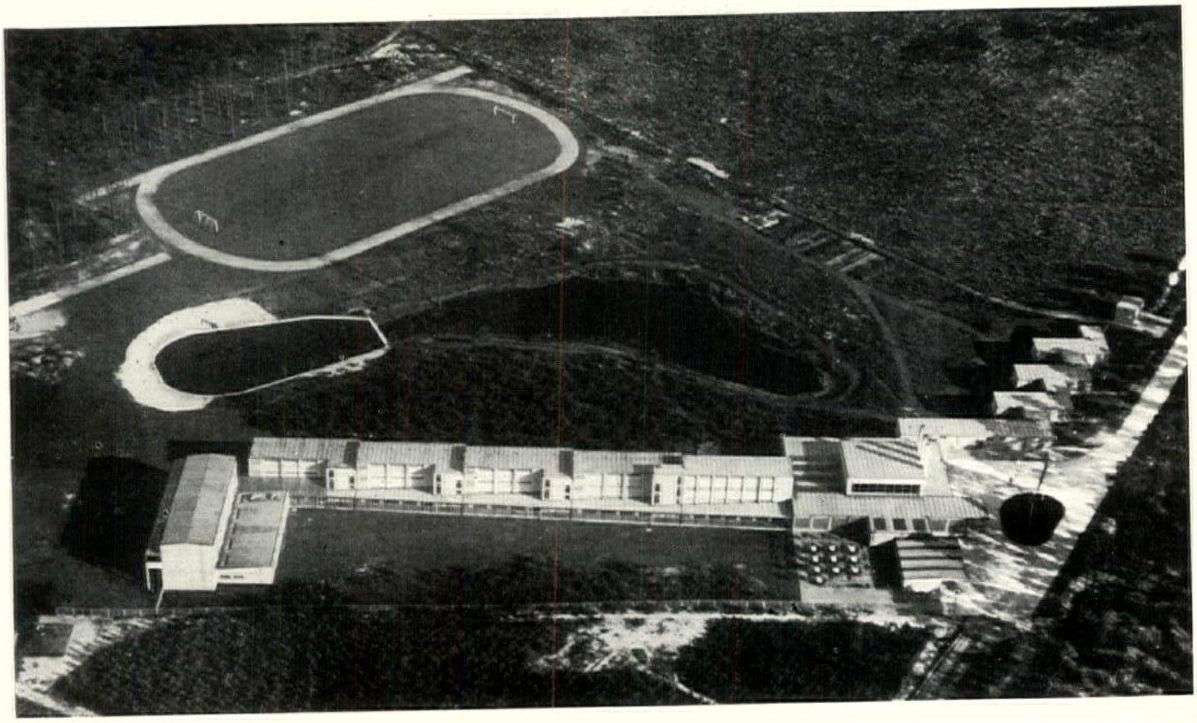
During a recent three months' survey of European schools it was my good fortune to be received in the municipal architects offices in Berlin, Dresden, Frankfort-on-Main, and Hamburg, in Germany, and Hilversum, in Holland. In these offices there was none of the familiar patter about form and function, and no wholesale condemnation of traditional design. Instead there was an atmosphere of earnest effort and careful study. This is brought about by necessity. Limited appropriations have forced upon most of the city architects as the primary consideration the most rigid economy. The character of nearly all the new schools of Germany is due directly or indirectly to economic stricture. Poverty has been a challenge, and it is from the way the challenge has been met that we can learn most.

The abandoning of traditional styles has not been due so much to an iconoclastic spirit of revolt as to the inadequacy of those styles for a practical solution of many present-day problems. Furthermore time-honored architectural forms have proved to be simply an unjustifiable extravagance. Under the pressure of having to get the best possible building for the least money, attention has been focused on the essential requirements of each problem and in every department of design fresh solutions have resulted.

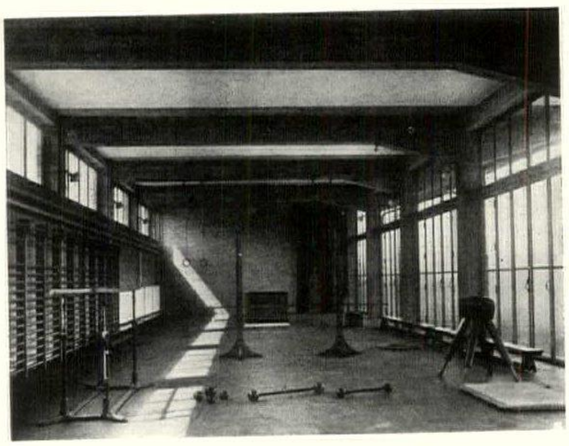
Judging from conversation with such men as Dr. Paul Wolfe of Dresden, Professor Martin Elsaesser of Frankfort, and William Dudok of Hilversum, and from dozens of schools actually visited the vital factors, divided for convenience under three headings, seem to be: first, the plan, in a three-dimensional sense, with careful consideration of the site and proper orientation of every part; second, simple, straightforward construction and the effective use of materials; third, the elimination of everything (particularly ornament and architectural forms) at all superfluous.

Orientation, Plan and Composition. At first glance the size and spaciousness of many of the new schools present a contradiction to many obvious measures of economy. The corridors are generally much wider, the stair halls more spacious and airy, and the rooms themselves larger than is usual in American institutions. A critical analysis, however, shows that this characteristic is not an extravagance but an important and practical factor of the buildings. The plans have been laid out with strict regard for the contour and surroundings of the site, for the absolute maximum of air and sunlight consistent with individual working conditions and for producing masses that by their very shapes and combinations will make the naked structure handsome. The elements of the exterior design are kept simple, and much is accomplished by clever fenestration. The large glass areas required to obtain the desired light and air are combined in powerful patterns. Corridor windows are composed in long horizontal lines and stair towers are often made entirely of glass and metal.

The generous sizes of halls and rooms makes circulation easy and rapid. When possible, special rooms are made to do double service. Gymnasiums are often subdivided and used as assembly halls; balconies may be used as music rooms and stages as drawing rooms, etc. Whenever possible, classrooms are confined to one side of a corridor so that each room gets the best available exposure. A development of this idea has resulted in the pavilion type of plan in which classrooms are located in wings all facing the same direction.



The Bundesschule, Bernau-Berlin, for which Hannes Meyer was the architect, is characterized by originality in plan, design, and construction. Above is an air view of the school plant. Below are two pictures of the interior, the one at the top being the gymnasium and the other a recreation room. The design is based chiefly on the problems of light and air and "one feels that he is separated from outdoors by the thinnest possible film of structure"



Construction and Materials. With a few exceptions the actual construction of European schools is surprisingly conservative. The majority of them have solid masonry bearing walls both exterior and interior; the floor construction is reinforced concrete slab or concrete and tile. When a skeleton is used it is of reinforced concrete. Steel framing is rare because it is more expensive than any of the other methods. The fact that labor is still so cheap abroad practically reverses conditions so that what is cheap in America is costly in Europe, and vice versa. In a few extreme cases a reinforced concrete frame is used with cantilevered floor slabs and walls chiefly of metal and glass. The effect is of the ideal open-air school with walls merely adjustable screens to create comfortable interiors.

The exterior surfaces are generally of brick or stucco, and occasionally of large, square, yellow tile. The stucco is frequently colored, sometimes with strong deep tones. Reds and blues and black have successfully withstood the weather for years, even in a climate very little milder than ours. All the brickwork shows careful workmanship and understanding of the medium. In certain examples the bricks themselves are dark and gloomy or harsh in color, making the building either grim or brutal, but in Holland and Sweden the bricks are warm and mellow and of a considerable range of color and size.

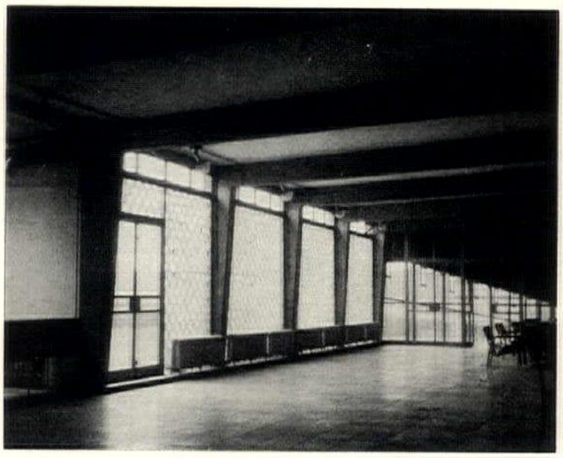
a covered porch. Additional light and ventilation are obtained from a low clerestory.

Trade Union School, Bernau. The naked structural forms are its only pretense to architecture; bright colors and a profusion of light the only attempt at charm. Yet it is an exceptionally interesting place. It possesses the distinctive character of functionalism carried to a conclusion. The architect, Hannes Meyer, used a ferro-concrete skeleton and slab construction allowing the supports and lintels to show, sometimes in the natural rough concrete. The windows of the entrance foyer are small. They are set near the ceiling and used only for ventilation, the walls being of glass bricks. This feature gives a striking and pleasant effect of soft light and spaciousness to the interior. The pattern of the joints is pleasing but the contrast of the glass and the thick mortar is not.

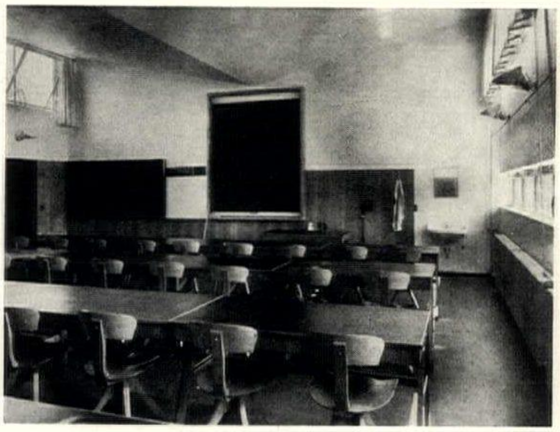
Their classroom ceilings are V-shaped in section and light from high horizontal windows is reflected from the slanting panes directly upon the desks. Artificial light is supplied from wall reflectors to accomplish the same result. A low row of windows on one wall appears to be chiefly for ventilation. Practically all other rooms, seminar rooms, library, bedrooms, dining rooms and gymnasium have at least one wall of glass. In the library, skylights light the book shelves on the inner walls. The dining room is also illuminated by sidewalk lights set in the ceiling. The wash rooms have one wall of glass bricks with a small window at the top for ventilation. In fact it might be said that the design is based chiefly on the problem of light and air. One felt that he was separated from outdoors by the thinnest possible film of structure.

Stuttgart. In one school, classrooms are ventilated with the windows closed by wooden ducts leading across the ceiling from small openings above the windows. This school also has a device for holding posters, maps, etc., which consists of wood stripping with cork rollers behind in place of a picture mold. (See sketch.) The paper is held by the friction of the rollers but is easily removed by a little juggling back and forth. In another Stuttgart school, frosted glass with red or green painted backs was substituted for blackboards in order to give the children positives instead of negatives to look at. In practice, however, white chalk seemed to be used.

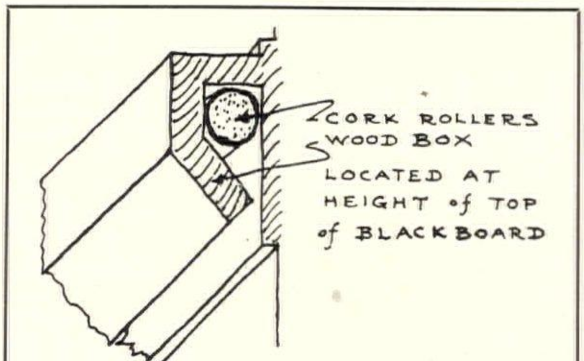
One of the newest of several successful schools is a pavilion school built on sloping ground in the suburb of Bornheimer Hang. The classrooms are arranged in one story, parallel wings at different levels, and all face east. A corridor connecting the wings climbs up the hill to the main



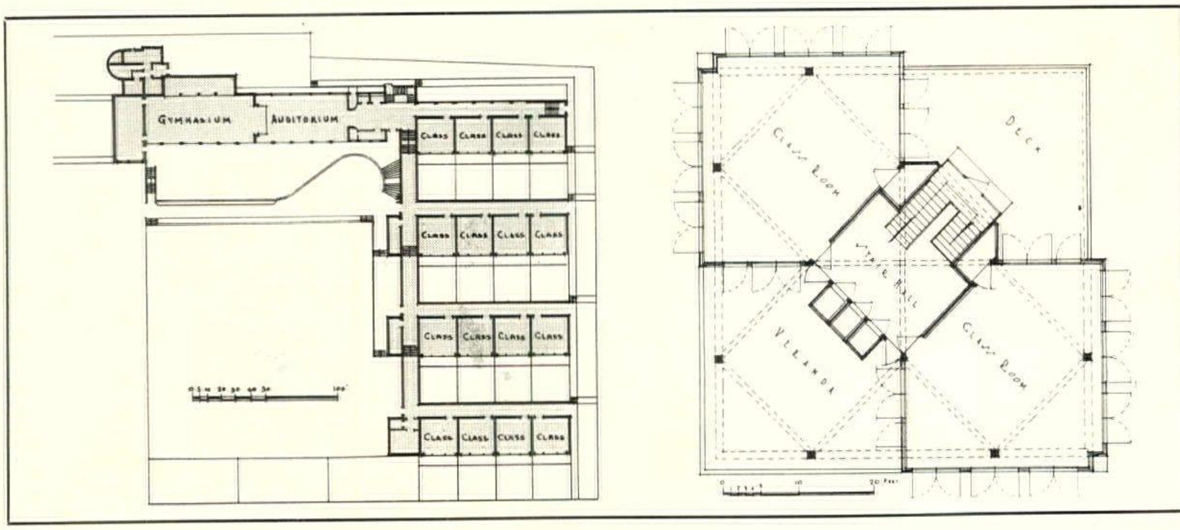
Trade Union School at Bernau. The wall is of glass brick with small windows at the top for ventilation



An interior of a classroom with a V-shaped ceiling, which serves as an aid to ventilation and a reflecting surface for both natural and artificial light. The row of low windows at the extreme right are used chiefly for ventilation. Note how the eye goes naturally to the blackboard in the center of the room and the manner in which the horizontal is accented



This device for holding posters, maps, etc., is one of the many original details found in European schools



These plans take the utmost advantage of contour and orientation. At the left is the plan of a school in Bornheimer Hang, near Stuttgart. At the right is a plan of the Open Air School at Amsterdam

block which has three floors of classrooms and laboratories, as well as the director's house and the gymnasium and auditorium which may be combined at the stage end of the latter. In the corridor are high horizontal windows and on one side low down are show cases built in the thickness of the exterior wall with clear glass on the inside and frosted glass on the outside, lighting both exhibits and corridor. The corridors of the classroom pavilions, serving also as coat rooms, are low and are top lit by skylights. The classrooms are lighted by clerestory windows above the corridor, and by the east wall which is all glass. The rooms are heated by a few small radiators which have proved inadequate, due to the large glass areas and the exposure. The dressing rooms form a terrace in front of the gymnasium wing and are lighted by a continuous band of glass bricks with metal casement sash set in at intervals for ventilation. Beyond this terrace is a large play court and there are pleasant grass plots between the pavilions. The sole decoration of the building is the brightly painted metal work, but the great glass areas, the general composition and the attractive situation make it charming.

Ludwig-Richter Schule. The outstanding characteristic of this school is the attempt to reduce the scale of the classrooms to that of the children, at the same time keeping the required volume. Each room has two rows of windows, one above the other. The upper row is on the inner face of the wall and the lower windows on the outer face, forming alcoves in the room. The upper part of the walls are stepped in a bit and painted in with the ceiling. The lower part, crowned by a picture mold, is painted in color making the room seem half its actual height.

Open Air School, Amsterdam. The design is purely functional and the structure looks like an X-ray of a building, for all the interiors are visible. The skeleton is of reinforced concrete with part of the floor slabs cantilevered. Above a low parapet the exterior walls are entirely of glass and metal, the latter painted bright blue. This color and flowers in window boxes give the school some gayety. The plaster walls of the few interior partitions are bright yellow, and the rooms are of course flooded with sunlight. Blue tile and aluminum paint contribute to the general effect of cheerfulness. The gymnasium is glass enclosed and forms a wing on the ground floor only. Each of the other three floors contains two classrooms and an open veranda. Eventually the school with its playground will be completely surrounded by a housing block.

Hilversum. The most attractive and personally charming modern buildings anywhere were those designed by William Dudok in Hilversum. Pictures fail to do them justice because, although their masses, proportions and plans are excellent, it is their brilliant color which is particularly striking. They are built of warm yellow bricks which are carefully laid to produce a remarkably smooth but mellow brick surface. Horizontal rows of corridor windows are separated by piers of glazed blue brick. The metal work of glass stair towers and gymnasium windows is coral red. Window boxes, built into the walls, are gay with flowers, which also grow inside the buildings. Interior columns are encased in blue and white or gold tiles. Classroom doors are of the flush type and are "Ducoed" vermilion or ultramarine, with push and kick plates of aluminum; stair rails are coral red.

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